ÖLFLEX® CONNECT CHAIN

Cable Chain Systems made by LAPP 2018 | 19

LAPP

ÖLFLEX® CONNECT

Reliably connecting the world.

The days in which the manufacturing and service sectors could be clearly separated are well and truly over. A change is taking place in people's minds, in factories and in businesses like LAPP. Customers are searching for solutions rather than components, and manufacturers are now developing and providing complex systems.

Our **ÖLFLEX® CONNECT** range shows what can happen when components and solutions are seen as a single entity rather than treated separately.

Legend

Cable chain engineering guideline

This flap supports you with easier page navigation. The 8 steps refer to cable chain selection from page 25 onwards.

1 **Input data to determine the type of cable chain**
Collect all necessary application requirements: cable and hose specifications (weight, outer diameter, jacket material, bend radius), chain travel distance, available space, bracket fixing configuration, etc.

2 **Cable chain layout design**
Determine required inner cable chain space while applying all basic rules and check with available application space

3 **Selection of cable chain type**
Select a cable chain which fits to requirements using a product selection table

4 **Bend radius**
Calculate suitable bending radius in accordance with parameters of all flexible cables and hoses

5 **Cable chain length calculation**
Calculate appropriate cable chain length in accordance with given travel distance

6 **Self-supporting capacity calculation**
Determine self-supporting capacity with respect to an additional load

7 **Double-check of selected cable chain type**
Choose cable chain that fits to determined requirements

8 **Selection of accessories**
Specify additional components such as end brackets, separators and channels in accordance with selected chain type

Industries

- Automation
- e-Mobility
- Food & beverage
- Mechanical and plant engineering
- Oil & gas
- Rail
- Solar energy
- Wind energy

Product Characteristics

- Suitable for outdoor use
- Chemical resistance
- Flame-retardant
- Wide clamping range (MAX.)
- Halogen-free
- Heat-resistant
- Cold-resistant
- Corrosion-resistant
- Maximum vibration protection
- Mechanical resistance
- Assembly time
- Low weight
- Oil-resistant
- Optimum strain relief
- Space requirement
- Power chain
- Clean room
- Robust
- Acid-resistant
- Reliability
- Integrated SKINTOP® cable gland
- Voltage
- Connector with standard housing unit
- Interference signals
- Temperature-resistant (°C)
- Torsion-resistant
- Torsion load
- UV-resistant (UV)
- Waterproof
- Variety of approval certifications

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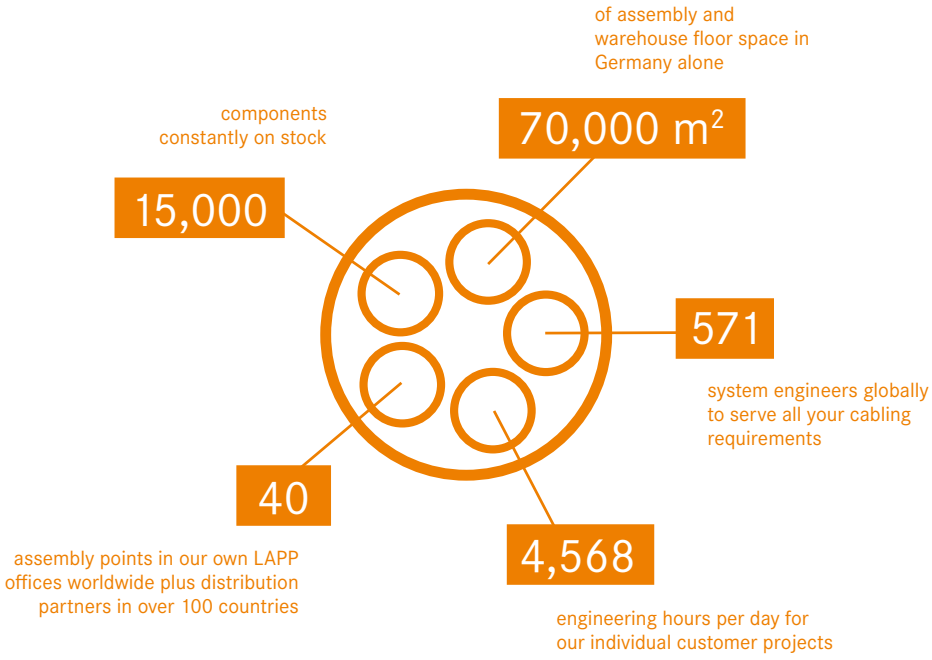
Please note: the purpose of the icons is to provide you with a quick overview and a rough indication of the product features to which the corresponding information relates. You can find details of product characteristics in the “technical data” sections on the product pages.

Andreas Lapp,
Matthias Lapp,
Ursula Ida Lapp,
Alexander Lapp,
Siegbert Lapp.



When eight high-quality brands become one strong solution: **ÖLFLEX® CONNECT.**

Products

With over 40,000 branded components and thousands of products in stock, we are able to support you with individual cabling solutions and optimum development expertise.

ÖLFLEX®
Power and control cables

UNITRONIC®
Data communication systems

ETHERLINE®
Data communication systems for ETHERNET technology

HITRONIC®
Optic transmission systems

EPIC®
Industrial connectors

SKINTOP®
Cable glands

SILVYN®
Protective cable conduit systems and cable carrier systems

FLEXIMARK®
Marking systems

Solutions

Everything is possible – from customised cable assemblies to industry standard servo connections right through to sophisticated high-speed cable chain systems. Do it all with

ÖLFLEX® CONNECT –
System Solutions made by LAPP.

ÖLFLEX® CONNECT: This is the name under which LAPP is expanding its range of cable assemblies, taking the logical step from a component supplier to a system provider. The focus is on expanding what we do best. At LAPP, this means cables, connectors and accessories, as well as the resulting complete system solution.

But why are we repositioning ourselves like this? When technologies become more complex, solutions for customers have to be simpler. But this requires more than just the components. It requires joined-up thinking, collaborative development and cooperation. This means offering solutions that complement the customer's needs, including the processes.

INFOBOX

ÖLFLEX® CONNECT

Expanding cable assembly, giving better advice to customers and standardising global activities – these are the ideas behind **ÖLFLEX® CONNECT**. To this end, LAPP is building up its engineering, production and assembly capacities in America, Europe and Asia. We have invested in many sites all over the world and will continue investing to strengthen the service we provide to our customers.

With our three distinct harnessing services, we customize solutions, covering all your connectivity needs:

ÖLFLEX® CONNECT CABLES
Cable Systems made by LAPP

ÖLFLEX® CONNECT SERVO
Servo Systems made by LAPP

ÖLFLEX® CONNECT CHAIN
Chain Systems made by LAPP

Start thinking smart today

Our idea of a system

Start focusing your resources on your core project and let LAPP handle your connectivity needs for maximum profitability.

We accompany you on the search for sophisticated, tailored and cost-efficient connectivity solutions.
With **ÖLFLEX® CONNECT**, we provide you with an extensive selection of custom cable or industry standard servo assemblies right through to complex drag chain applications. From engineering and design to customer specific testing, delivery or on-site installation to small batch sizes or series production - we do it all.

ÖLFLEX® CONNECT – your benefits

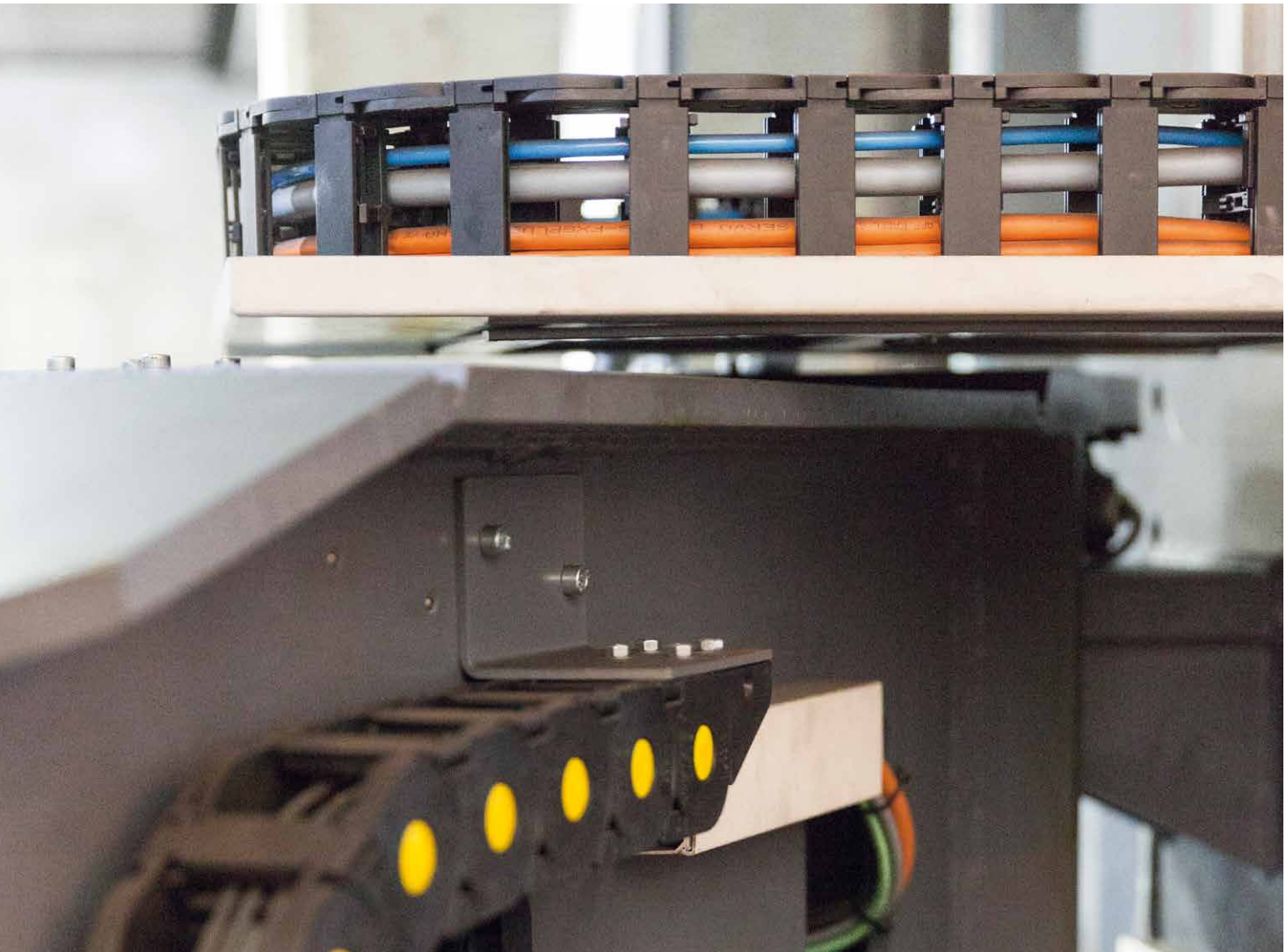
1 **No capital expenditure**
Avoid investing in your own production facilities – leverage our state-of-the-art equipment and tools

2 **Less operating expenditure**
Benefit from a simplified supplier base and reduced operating expenditure – get all your cable connectivity solutions from a single source: LAPP

3 **Reduced Inventory**
No stocks of connectors, cables, conduits and hoses. No component scrap or cutting waste

4 **Highest scalability**
With LAPP you can immediately respond to changes in market demand. There is no need to worry about component inventories, machines or worker capacities. Just order what you need

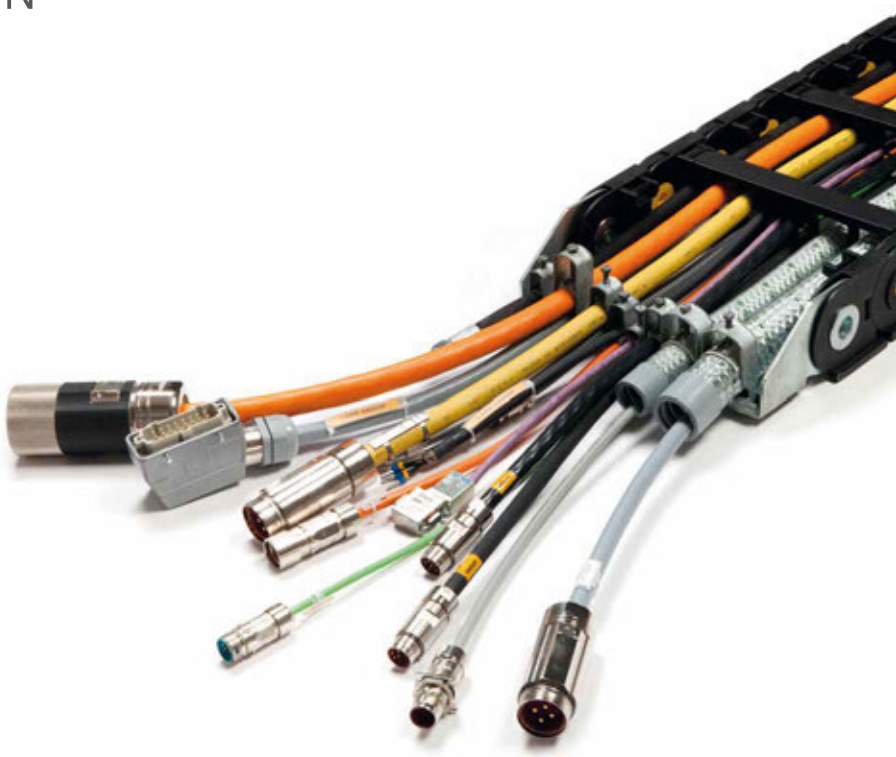
5 **Technical expertise**
Make use of our cabling technology expertise and get uncompromising quality branded products for maximum reliability and safety



ÖLFLEX® CONNECT CHAIN

Chain systems made by LAPP

Our idea of a cable chain system includes chains made of nylon or steel with highly flexible cables, cable protection conduits, hydraulic hoses or pneumatic hoses **including termination** (connectors, fittings) **and functional units** such as towing arms or supporting structures.



Your benefits with our cable chain systems:

- **Reliable cutting-edge technology**
  High-quality components, assembled to deliver minimum maintenance and maximum service life
- **Guaranteed brand quality**
  Our cable chain systems are rigorously tested to guarantee hassle-free operation
- **Closer to you**
  With multiple manufacturing sites in Europe, Asia and the Americas, we can support your cable chain assembly needs wherever you are
- **Competent system supplier**
  With LAPP, you receive everything from one source, from individual cable chain assemblies to a whole integrated system

Our cable chain service

LAPP is there throughout all project phases - from design to component selection to assembly. Our experts work with you every step of the way:

1. **Technical evaluation**
   - On-the-spot meeting
   - Definition of project scope
   - One contact person during project phase
   - Planning and timing
2. **Initial CAD design of the cable chain system**
   - Incl. cable layout
3. **Complete project management**
   - Documentation
   - Drawings
   - Selection of components (BOM)
   - Cost and interface controlling
4. **Completion of chain system design**
   - Delivery to operation site
   - On-site installation service by LAPP specialists
   - Shipping in professional LAPP packaging
   - After-Sales-Services

Comprehensive test reports and individual installation instructions can be provided upon request.

Configuration options

What can be included in a cable chain system:

- Nylon or steel cable chains in accordance with application requirements
- Highly flexible power, control, signal and data network cables including accessories (cable lugs, connectors, etc.)
- Protective cable conduits with conduit glands
- Hydraulic hoses with fittings
- Pneumatic hoses
- Towing arms or other functional units
- CAD drawing of your chain including cable layout (optimal placement and separation of all energy lines in a chain)

Possible cable chain types

Nylon cable chains

- Cable chains made from nylon (polyamide PA 6) cable chains for selfsupporting, sliding or circular motion applications
- Open or fully closed design available

Steel cable chains

- Cable chains made of steel (galvanised steel or stainless steel) for standard self-supporting, sliding applications or applications with circular motion
- Open or fully closed design available

Combined cable chains

- Steel (galvanized or stainless) cable chains for standard self-supporting, sliding or circular motion application
- Open or fully closed design available

Three system packages – the choice is yours

Optimize your assembly, procurement and logistics processes with three distinct system packages.

	basic chain	core chain	extended chain
Series: Nylon, Steel or Robot	•	•	•
All media, incl. layout (cables, hoses)	•	•	•
Accessories (channels, rollers)	•	•	•
Terminations (connectors, fittings)		•	•
No electrical installation needed		•	•
100 % electrical testing		•	•
No cable cutting loss		•	•
Plug-and-Play system		•	•
Multi-chain/ nested chain applications			•
Functional units (supporting structures, towing arms, cabinets)			•

ÖLFLEX® CONNECT CABLES
Cable Systems made by LAPP

We produce different cable types for fast cabling of CNC machinery, switch boxes, control cabinets and electrical assemblies. Our product range stretches from single cores and multi-core cables through to EMC-shielded cables which can be fitted with a wide selection of crimp contacts, connectors and housings. We also supply highly flexible and durable premium quality spiral cables. Another of our specialities: glass fibre system solutions, which we stock in standard lengths or produce, test and supply in exactly the length you require.

Our range of assembly services

- Cable cutting as required
- Winding with specified bending radius
- Stripping
- Crimping
- Heat shrinking
- Markings (labels, sleeves, marking rings, stainless steel marking)
- Cable printing
- Crimp force monitoring (CFM)
- Push-pull tests
- Resistance testing

ÖLFLEX® CONNECT SERVO
Servo Systems made by LAPP

With our smart servo solutions you get cables in 3 classes: Basic Line, Core Line and Extended Line.

basic line | **core line** | **extended line**

All cables are fitted with our newly designed connector. This connector is tamper-proof, as it is pressed rather than screwed like conventional connectors. The 360° screen contact makes a huge improvement to EMC shielding (6db).
In addition, the cable design in our Core Line enables a semi-automated production process. This ensures higher process reliability and a globally regulated quality standard accordingly.

Your benefits at a glance

- Improved EMC shielding (6db) through new connector design size 1/M23 (SIEMENS®, Lenze®, SEW® and Rockwell®)
- Improved quality through semi-automated assembly process
- Tamper proof (connector cannot be opened)
- Complete LAPP solution incl. new controller connector for harnessing according Siemens®

Curiosity is what drives us

Our long term experience in highly flexible cables in combination with cable chain systems allows us to discover market trends quickly and work efficiently on valuable innovations for our customers.

Multi-flexible chain

In 1989 we developed the first “ROBOT” chain that you can find in nearly every cable chain catalogue in the industry today. With our next development step we will enter the level of highly flexible cable chain solutions for anthropomorphic robots.

Industry 4.0

Intelligent production requires intelligent products. Every movement, every cycle is recorded by the intelligent brain of our chains of tomorrow and wear is tracked so that maintenance can be scheduled in advance to eliminate downtimes and to guarantee fault-free performance of the entire **ÖLFLEX® CONNECT** CHAIN system.

Green manufacturing

In accordance with LAPP's ambitious environmental goals, all chains are 100% recyclable at the end of their lifecycle. Some of our new chains in addition allow a 50% (or more) reduction in the pushing-pulling force. This means lower absorption of energy for moving our chains, which saves energy costs and helps the environment.

Premium quality spiral cables

When producing spiral cables, we have a wealth of expertise at our disposal. Flexibility and durability are key factors for applications requiring long-term high performance. It is also crucial to have the appropriate insulation and the right conductor material. With LAPP, your spiral cables are definitely in safe hands.

CAD-design of cable chain system

Glass-fibre assemblies

Did you know - you can also rely on us for sophisticated glass fibre assemblies. We offer glass fibre harnessings from standard lengths available in stock and manufacture, test and deliver special lengths assembled to your needs. We can even design and incorporate them into your cable chain system.

Highly dynamic applications

Four requirements: low weight, high acceleration, compact dimensions and a long service life. With premium components from LAPP you get a wide range assortment of servo, energy and data cables as well as cable chains for your application needs. Innovative in speed and efficiency, they enable productivity improvements through faster position changes in your system.

ÖLFLEX® CONNECT – more than just a system solution

Every single component used in a LAPP system solution has undergone a demanding development and testing process. With us you will always be on the safe side.

The LAPP Lab

The electrical mechanical and chemical parameters of every component are tested in-house with state-of-the-art testing methods. Our highly flexible cables have to withstand millions of bending cycles at different speeds and with extreme bending radii. They also need to to resist mechanical and chemical stresses. Our lab assures performance by:

- Heat, cold and climate tests for aging resistance
- Chemical substance tests
- Mechanical and robot torsion tests
- IP protection rating tests
- Static and dynamic pulling protection tests
- Resistance tests
- Electrical tests and material analysis

System test

Cable assemblies and entire cable chain systems are tested in-house in our test centre. The facility includes robot test applications and high-speed drag chain tracks. Specialised teams test the complete system including all products in their intended field of use – sometimes in extremely hot or cold conditions or with particular environmental influences.
Your **ÖLFLEX® CONNECT** CHAIN will be delivered with a comprehensive test report.

Service point network

With our rapidly increasing tight-knit service point network, we are able to support you globally with any kind of cable, servo or drag chain assembly. We understand your local needs, markets and language.

Scalability

We offer harnessing services from easy cable assembly to highly complex drag chain systems, from batch size 1 to serial production and from short cable harnessings, to cable trees, right through to highspeed drag chain systems with long travel distances.

In-house production

Our branded components are developed, designed and produced by our own hands. We serve your needs directly from 18 production facilities across America, Europe, and Asia.

Logistics

Who actually likes waiting for a solution or replacement? We won't leave you waiting, as we guarantee a quick delivery all over the world with our sophisticated network of logistic centres and professionally trained engineering experts.

Service

Our customers are important to us. That's why we make lots of time for them. Time to fully understand their wants and needs; time to offer the right solution. We are absolutely convinced that this is the only way to establish a long-term partnership beneficial to both sides.

Certifications

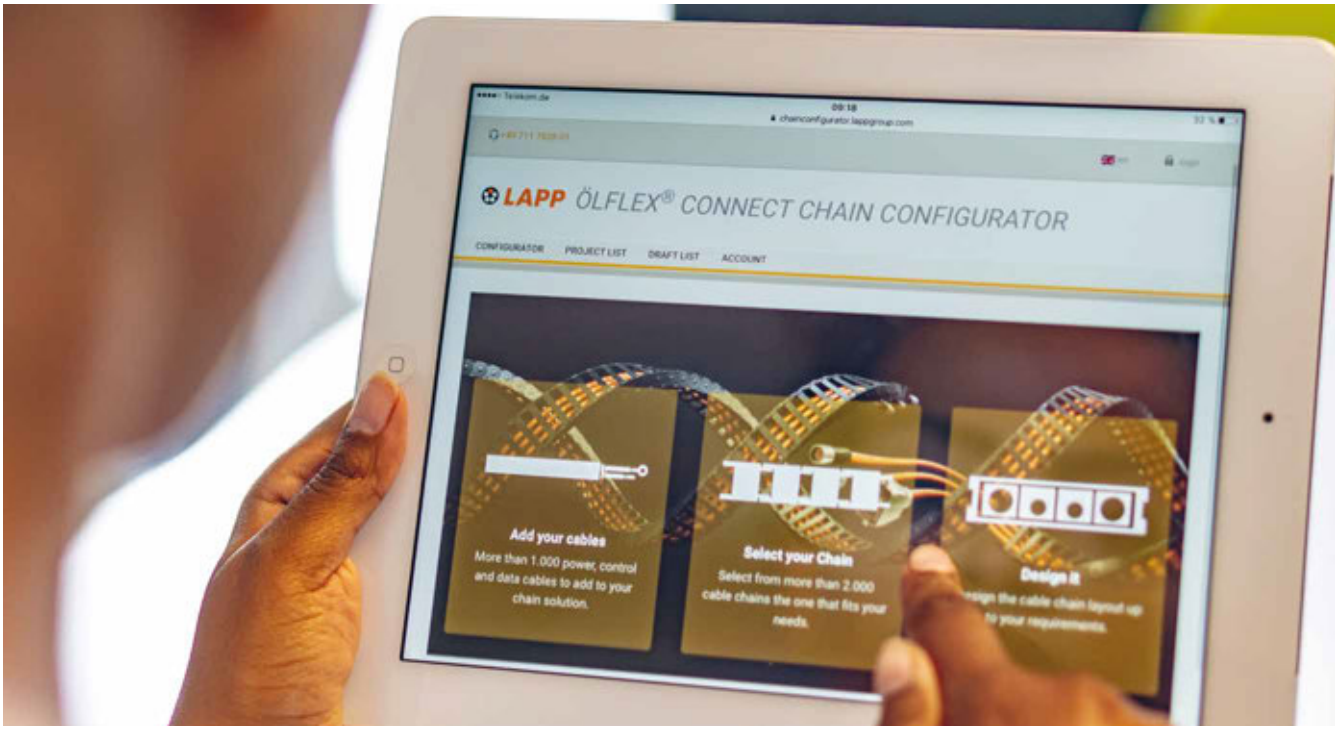
Our products are used in almost every industry and are frequently found in the most sophisticated machines that operate around the clock – where downtime is not an option. But it is not just in major machinery that you need to be able to rely on the smallest of connections. It is everywhere. As an evidence of LAPP quality and reliability, our products carry the world's strictest approvals.

Examples of global approvals:

Sustainability

Technological advancement and ecological sustainability are important to us. That is why we are environmentally conscious regarding natural resources. For example, our photovoltaic system in Stuttgart, Germany, generates 1,000 MWh of energy, thus reducing CO_2 emissions by around 650 tonnes per year!

No chance of misconfiguration:
ÖLFLEX® CONNECT CHAIN Configurator



The new **ÖLFLEX® CONNECT** CHAIN configurator: You can use it to digitally engineer a power chain online with just a few clicks of the mouse. Configuring power chains is no longer a complicated task as this tool makes it easy, even for less experienced users. The **ÖLFLEX® CONNECT** CHAIN configurator automatically switches off all error sources and always finds the best solution.

The online configurator acts as a step-by-step guide through the choice of cable chain, cables and relevant accessories. It makes sure that components are compatible every step of the way, especially when it comes to the cables' minimum bend radius. The cable chain must not have a smaller bend radius than the cable. If this is the case, the configurator will display a warning message and suggest other types of cable chain. Other criteria include the travel length, acceleration, temperature behaviour and shielding. The configurator automatically excludes cables that are not suitable for the application. When the configuration is complete, you will recieve a personalised quotation and are then able to choose whether you want to purchase the power chain fully assembled by LAPP or as individual components, with the option of having the cables pre-cut to the appropriate lengths.

Please find more info here:

Online configurator

Configure your individual **ÖLFLEX® CONNECT** CHAIN here online incl. all media (cables, hoses)

Optimized for tablet:

> www.lappkabel.com/chainconfigurator

ÖLFLEX® CONNECT CHAIN catalogue

Find complete **ÖLFLEX® CONNECT** CHAIN catalogue here online or download as pdf

> www.lappkabel.com/catalogues

Chain-Engineering Guide

50 pages full of technical expert know-how around your chain configuration

> www.lappkabel.com/chainguide

There for you worldwide

To contact your local LAPP representative, please visit our website **www.lappgroup.com**

- **ÖLFLEX® CONNECT** CABLE service-points in over 40 LAPP locations
- Additionally servo harnessings and drag chain assemblies available in regional hubs
- Global engineering centre for special drag chain applications and systems requirements

Engineering Guide
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Section 1
Introduction

Cable chain introduction

A cable chain is a mechanical system designed to protect, carry and guide cables (power, control, data or fiber optics) and hoses (hydraulic or pneumatic) in dynamic motion applications - to transfer power and signal between two points in relative movement to each other (translation, rotation or combined movements). That is why cable chains are also considered an energy supply system for equipment with motion sub-systems.

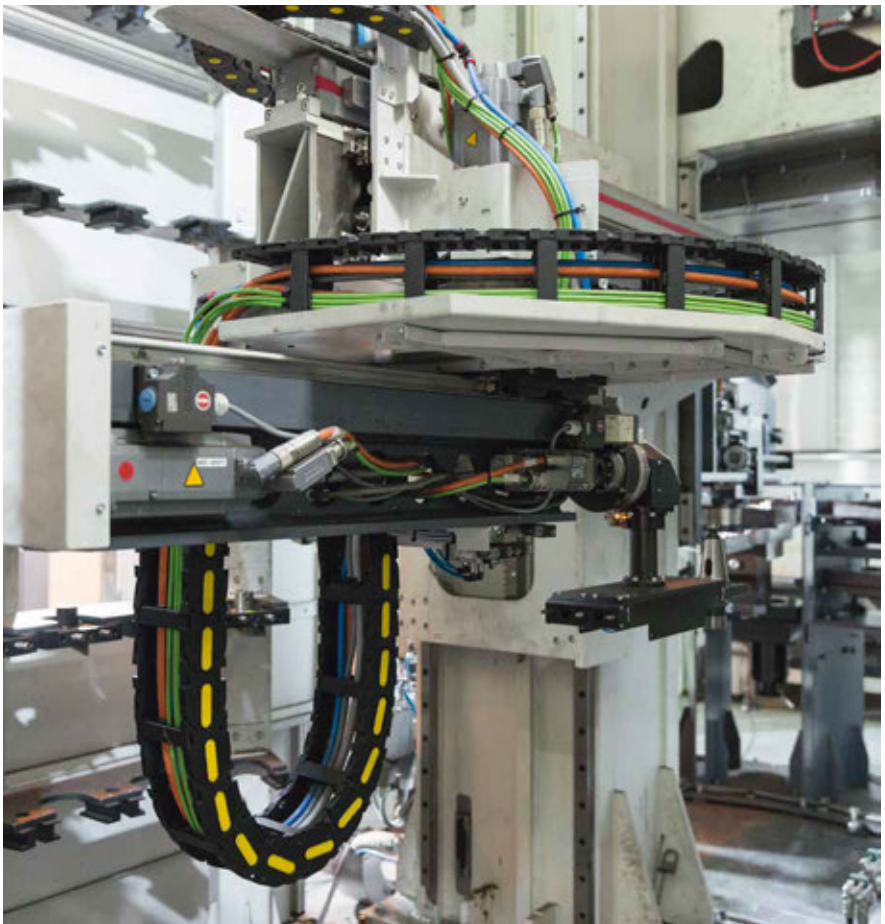
cable chain
also referred to as
"drag chain"
"cable track"
"cable carrier"
"energy chain"

Advantages of cable chains
Competitive advantages of the cable chains as compared to the traditional systems of conductor bars and festoon systems are:

- The ability to carry different kinds of utilities (power, signal, data cables, hydraulic and industrialhoses)
- Compatibility of their use in harsh environments (presence of dust, humidity, aggressive chemical and atmospheric components, etc.)
- High speed and acceleration
- Shorter installation times (no motors or drives needed like in reels of festoons)
- Less and easier maintenance
- Much lower length of the utilities with equal travel distance of the mobile point

Main functions of a cable chain

- Allows the electrical and/or fluidic connection between between two moving points, relative to each other in an easy and economical way
- Carries the cables and the hoses so that their motion will be controlled and determined
- Protects the cables and hoses mechanically and separates these from the effects for harsh environments
- Supports the cables and hoses which are installed inside the chain



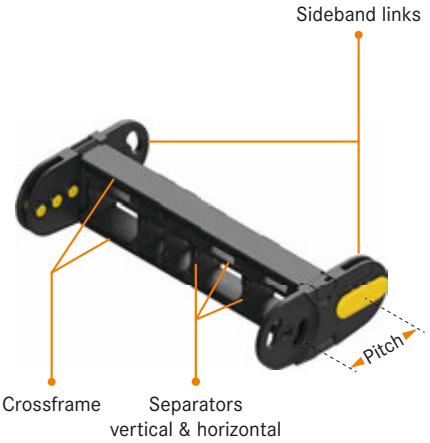
Elements of a cable chain system

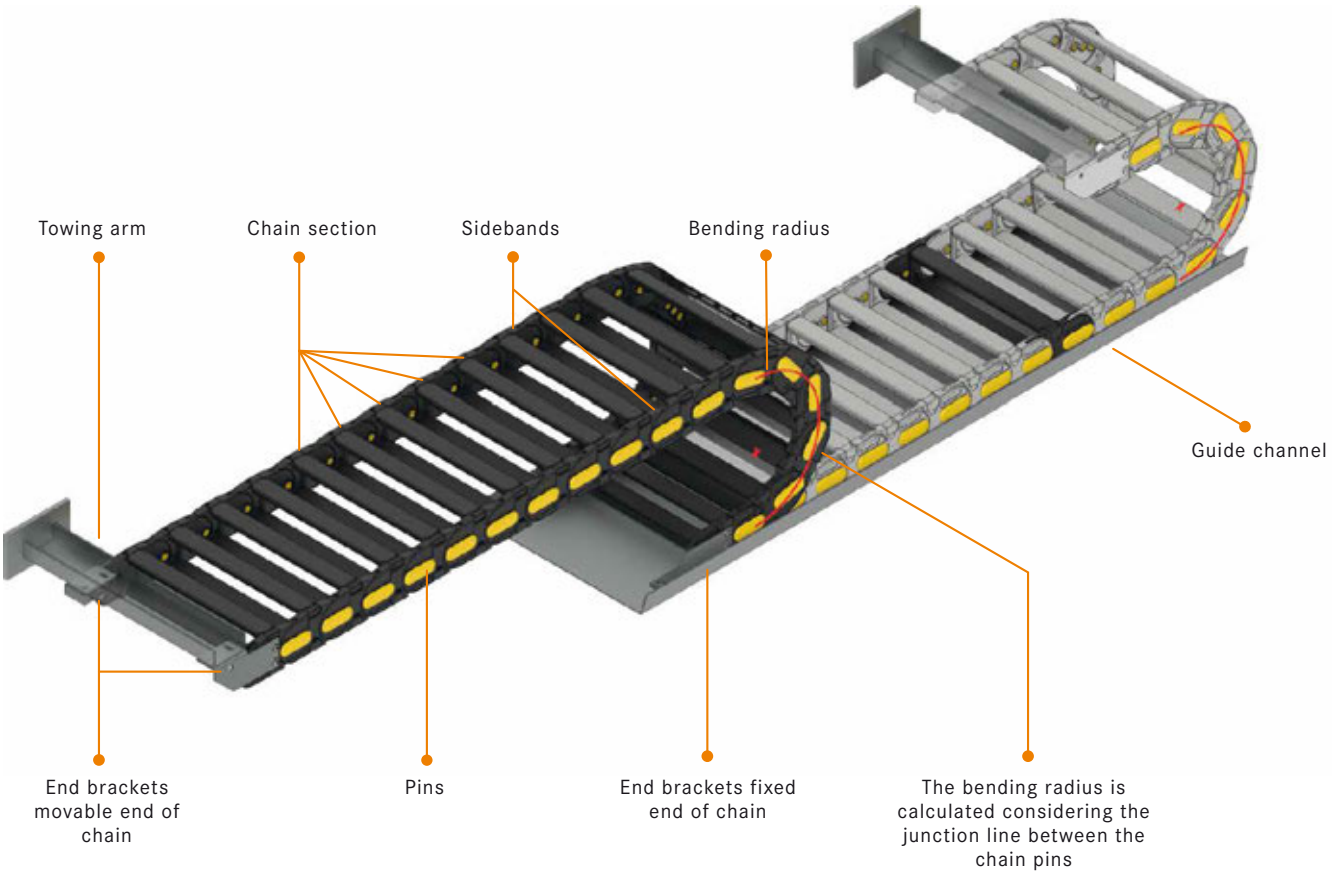
A cable chain is an assembly of interconnected chain links terminated by end brackets on both sides. A wide range of accessories such as support rollers, guiding channels, etc. extends the possibilities of cable chain use.

One chain link consists of the following elements:

- Sideband composed of links
- Frames
- Separators
- Protective covers
- Pins

End brackets can be equipped by different types of cable fixing systems (nylon tie wrap clamps, steel cable clamps).





Frames

Different frame options are available depending on customers' application requirements.

For further details please see section "Frame variants" on page 36.

Open cross frame

Protection cross frame

Custom cross frame

Profile cross frame

Rod cross frame (available in plastic, aluminum or steel)

Machined cross frame

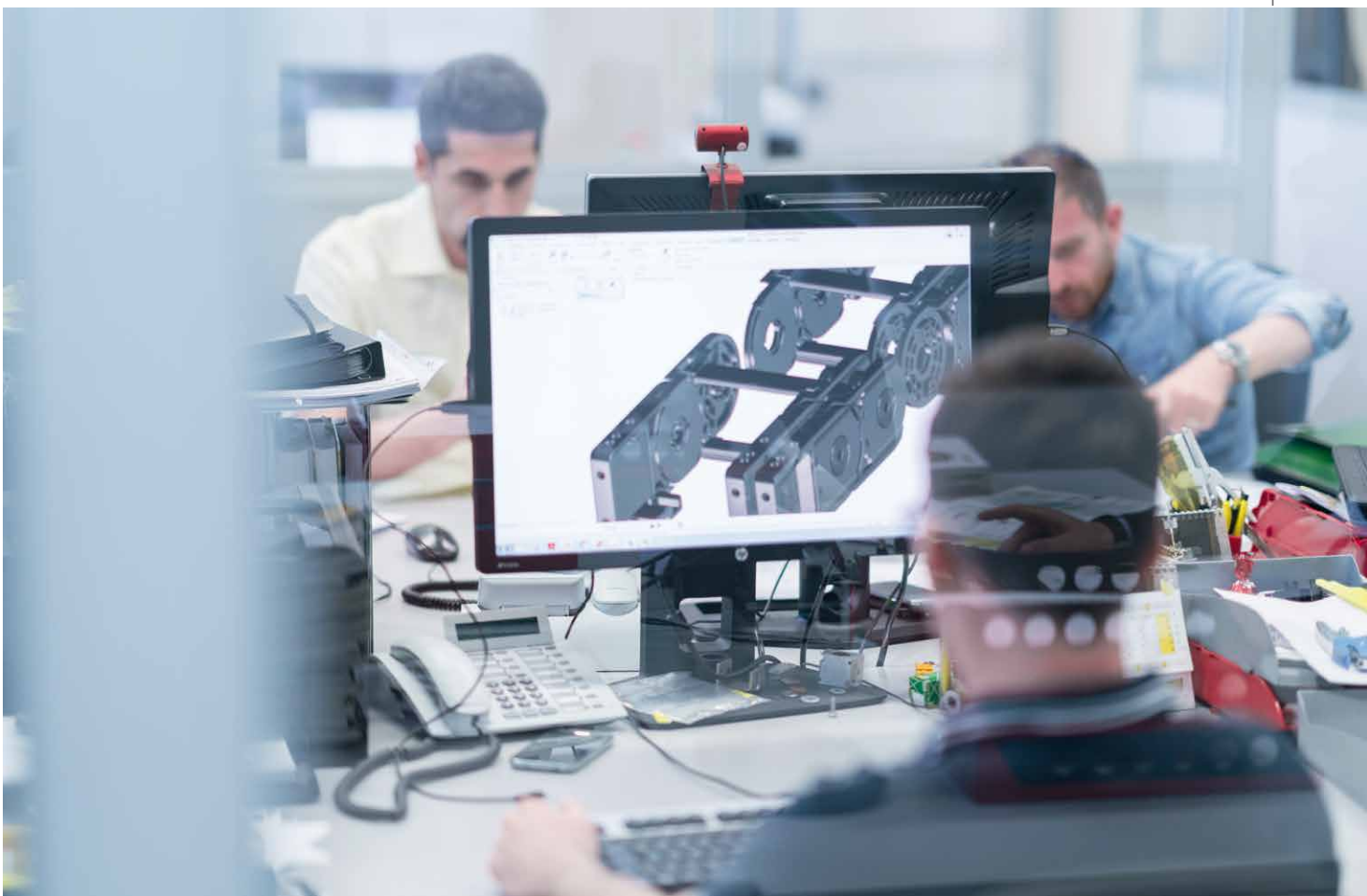
Separators

Cables and hoses need to be separated from each other in many cases. A wide range of cable chain separators is available for each type of chain, which allows infinite combinations of use to fit any requirement positions.
For further details and info please see section "Separation options" on page 38.

Different separator options

INFOBOX

As a general rule, the separators are mounted every second pitch. Different mounting frequencies may be required.



Protective covers

Cable chains are often located in very harsh environments, where a standard open-frame design is not enough. Nylon, aluminum, galvanized or stainless steel covers are available for additional protection.

For further details and info please see section “Frame variants” on page 36.

Pins

Typical yellow pins connect chain links in most cable chain designs. A combination of black nylon chain and yellow pins are carefully selected to clearly visualise the possible danger of moveable devices. Different pins can be used as a sliding element in cable chains working on side.

Pin colours can be customised according to customers’ specifications.

End brackets

The end bracket connects the cable chain system to the machine. It can be delivered in many different configurations and materials.

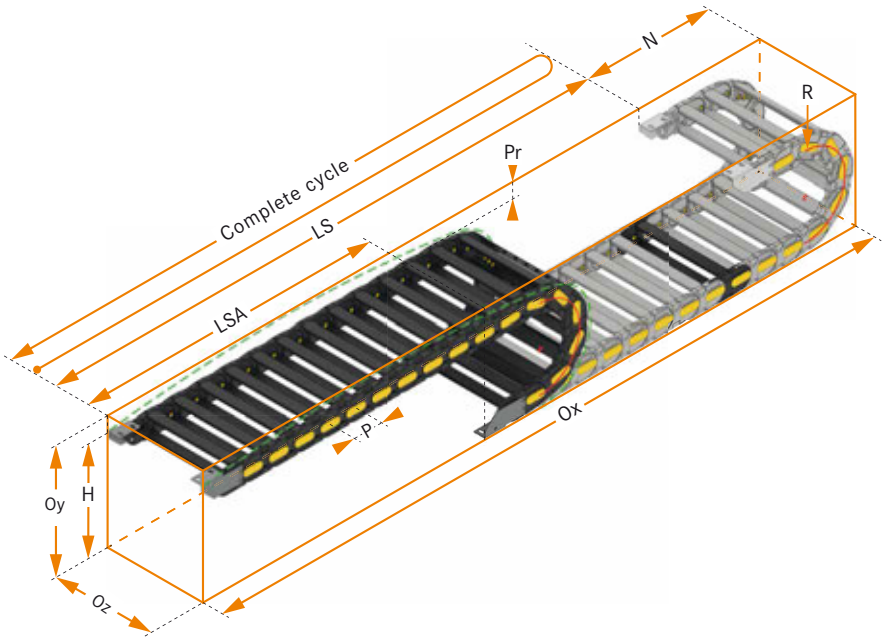
A single kit code includes hardware for both end terminations.

Different end bracket type examples
For further details see section “End brackets” on page 33.

Dimensional cable chain parameters

The main geometrical features of a self-supporting cable chain are:

LS - Travel distance (stroke length)
R - Bending radius
P - Chain link pitch (distance between two hinge points on a side link)
H - Minimum upper installation height of the mobile point end bracket
Pr - Pre-set (also called “pretension”)
Ox, Oy, Oz - Overall system dimensions
LSA - Distance of the feeding point from the extended end of the stroke
A - External chain link width
B - External chain link height
C - Inner chain link width
D - Inner chain link height
N - Position at reverse parking



Constructional material properties

Used materials

The cable chains are distinguished by the materials used for the chain links and the materials used for the cross frame. We therefore divide the chains into:

Nylon cable chains

- Both cable chain links and the cross frames are made of a compound based on polyamide PA6 (BRYLON 6) for self-supporting, sliding applications or applications with circular movement
- For use in standard applications in most environments
- Open or fully closed design available

Steel cable chains

- Chain links are made of steel (galvanised steel or stainless steel - AISI304 or AISI316) for standard self-supporting, sliding applications or applications with circular movement
- Ideal for an environment in which nylon does not resist (e.g. extremely low or high temperatures, hot chips, etc.)
- Open or fully closed design available

Hybrid cable chains

- Chain links and cross frames are made of combined materials (e.g. nylon sidebands with aluminium frames or aluminium covers) for special requirements
- Combination of nylon, aluminium or steel parts help to withstand critical environments and to increase chain lifetime while maintaining optimal cost
- Open or fully closed design available

All materials used to manufacture cable chains are environmentally friendly (RoHS and WEEE)

Resistance and behaviour of nylon chains

Nylon cable chains are developed with a special polyamide reinforced with glass fibre, BRYLON 6. The high resistance to tension, the low friction coefficient together with the general characteristics of the most evolved compound thermoplastics allow the cable chains to be used in most environments and temperatures. The main characteristics of BRYLON 6 are:

Self-Extinguishing
BRYLON 6 has the certificate UL-94HB. Polyamide V0 or V2 can be used on request.

Chemical Resistance
BRYLON 6 is generally resistant to oils, grease, petrol, ammonia and water (sea water). Problems could arise with the presence of acids.

Operational Temperature

- Nylon cable chains can be used in application with a temperature range between -25 °C and +125 °C
- In case of application with “continuous” temperature lower than -15 °C or higher than +95 °C, the mechanical values could be reduced. We are able to offer solutions using special compounds here.

For application ranging lower than -25 °C or higher than +125 °C, please contact our technical office.

UV Rays
BRYLON 6 is resistant to UV rays and it is therefore suitable for outdoor applications.

Explosion Proof
Drag chains suitable in high-risk explosion environments can be supplied made of the special material BRYLON AD. These chains comply with ATEX Directive 94/9/CE. For further information, please contact our engineering experts.

Clean room-proof
The standard version of the cable chain 305A009 has been tested and proved to be Class 1. For further information, please contact our engineering experts.

Colouring
Our drag chains come with a standard Colouring of black links and the yellow pins. On request, drag chains and/or pins can be produced in customised colors.

Resistance and behaviour of steel chains

Operational Temperature

- Steel cable chains can be used for temperatures up to 200°C because in case of higher temperature the surface treatment (zinc-plated galvanisation or painting) are damaged by heat
- Stainless steel lowercase cable chains can be used for temperatures up to 400°C

Self-Extinguishing

Not applicable

UV Rays

Steel and stainless steel are resistant to UV rays and they are therefore suitable for outdoor applications.

Chemical Resistance

- Zinc-plated steel is generally resistant in “normal” atmospheric environments. It is absolutely not suitable for marine or food environments. Moreover, problems could arise with the presence of acids, especially in presence of sulphur, chlorine and ammonia
- Stainless steel is suitable for harsh, food and nuclear environments. It is also suitable (in grade AISI316L) for use of sea water. If in water and in contact with other metallic parts, galvanic corrosion can occur. The corrosion resistance of stainless steel can be improved with surface treatments such as electro-polishing

Colouring

There are no limitations for steel chain colouring. However the relative movement between the links can damage the painting, so painting steel chains is not recommended.

Explosion Proof

Stainless steel cable chains are suitable in explosion-proof environments. These chains comply with ATEX Directive 94/9/CE. For further information, please contact our engineering experts.

Clean room-proof

Steel chains are not suitable for the use in clean rooms. Not applicable.

Environmental and chemical conditions

The table shows the resistance to chemical agents of BRYLON 6 and steel.

		BRYLON 6		STEEL
Chemical agents	**Concentration %**	**Amorphous**	**Crystal**	
Methyl acetate	100	+++++ 3	+++++ 2	+++++
Acetone	100	+++++ 4	+++++	+++++
Acetic acid (aqueous solution)	40	++	++	++
Acetic acid (aqueous solution)	10	++	++	++
Acetic acid		++	++	
Citric acid	10	+++ 15	++++	+++
Hydrochloric acid (aqueous solution)	36	+	+	+
Hydrochloric acid (aqueous solution)	10	++	++	+
Hydrochloric acid (aqueous solution)	2	++	+++	+
Chromic acid (aqueous solution)	10	++	++	++
Chromic acid (aqueous solution)	1	++++	++++	++
Hydrofluoric acid	40	++	++	+
Formic acid (aqueous solution)	85 S	+		+++
Formic acid (aqueous solution)	40 S	++	++	+++
Phosphoric acid (aqueous solution)	10	++	++	+
Oleic acid	100	+++++ 3	+++++ 3	++++
Sulphuric acid	98	+	+	+
Sulphuric acid (aqueous solution)	40	++	++	+
Sulphuric acid (aqueous solution)	10	++	++	+
Sulphuric acid (aqueous solution)	2	++	+++	+
Tartaric acid (aqueous solution)		++++	+++++	++++
Water		+++++ 10	+++++ 9	++++
Chlorine water		++++	++++	+++
Ethyl alcohol	96	++++ 17	+++++ 3	+++++
Ammonia	10	+++++1 1	+++++	++
Petrol	100	+++++ 1	+++++	+++++
Bitumen		++++	++++	+++++
Potassium carbonate	100	+++++	+++++	++
Sodium carbonate	10	+++++ 10	+++++ 3	++
Ammonium chloride (aqueous solution)	10	+++++	+++++	++
Calcium chloride (aqueous solution)	20	+	+	++
Calcium chloride (aqueous solution)	10	+++++	+++++	++
Sodium chloride	10	+++++	+++++	++
Formaldehyde (aqueous solution)	30	++++	+++++	+++
Fat		+++++	+++++	+++++
Milk		+++++	+++++	+++++
Mercury		+++++	+++++	+++++
Oils		+++++	+++++	+++++
Oil		+++++	+++++	+++++
Paraffin oil		+++++	+++++	+++++
Silicon oil		+++++	+++++	+++++
Diesel oil		+++++	+++++	+++++
Mineral oil		+++++	+++++	+++++
Ozone		++	++	++
Oil		+++++	+++++	+++++
Potassium hydroxide (aqueous solution)	10	+++++ 9	+++++ 3	+
Sodium hydroxide (aqueous solution)	50	++++	++++	+
Sodium hydroxide (aqueous solution)	10	+++++ 5	+++++	+
Sodium hydroxide (aqueous solution)	5	+++++ 9	+++++	+
Aluminium sulphate	10	+++++	+++++	++
Soap (aqueous solution)		+++++	+++++	+++++
Tincture of iodine		++	++	+++
Trichloroethylene		++++ 5	++++ 4	+++++
Vaseline		+++++	+++++	+++++

Resistance classification indicator

+++++	Very good resistance
++++	Good resistance
+++	Limited resistance
++	Poor resistance
+	Soluble
Amorphous	Polymer in amorphous state
Crystal	Polymer in crystalline state

The number beside the resistance classification indicator (+++++, ++++, etc.) shows the percentage of weight increase due to absorbtion.

Possible system configurations

	Self-supporting	Sliding
Single chain configuration	Upper moving Lower moving 	Sliding
Multiple chains configuration	Side by side Ring configuration Nested cable chains configuration 	Two sliding cable chains in ring configuration
Multi-axis motion	Upper moving 	
Rotations single chain	Robot series 	
Rotations multiple chain	Multiple Robot series cable chains 	

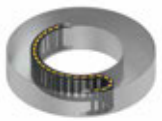
Side mounted

Cable chain side mounted

Two cable chains in ring configuration side mounted

Cable chain side mounted

Single cable chain side mounted



Single cable chain side mounted - rotating floor

Multiple cable chains side mounted

Multilayer up to ± 330° /layer

Vertical

Vertical with lower radius

Vertical with curve above

Zig zag

Vertical two cable chains in ring configuration

Vertical nested cable chains

Vertical side by side

Radius below

Radius above

Single cable chain - horizontal axis

Robot nested

Multiple cable chains horizontal axis

Multilayer up to ± 330° /layer

Section 2
Cable chain engineering

Cable chain engineering in 8 easy steps

1 **Input data to determine the type of cable chain**
Collect all necessary application requirements: cable and hosespecifications (weight, outer diameter, jacket material, bend radius), chain travel distance, available space, bracket fixing configuration, etc.

2 **Cable chain layout design**
Determine required inner cable chain space while applying all basic rules and check with available application space

3 **Selection of cable chain type**
Select a cable chain which fits to requirements using a product selection table

4 **Bend radius**
Calculate suitable bending radius in accordance with parameters of all flexible cables and hoses

5 **Cable chain length calculation**
Calculate appropriate cable chain length in accordance with given travel distance

6 **Self-supporting capacity calculation**
Determine self-supporting capacity with respect to an additional load

7 **Double-check of selected cable chain type**
Choose cable chain that fits to determined requirements

8 **Selection of accessories**
Specify additional components such as end brackets, separators and channels in accordance with selected chain type

▸ Please find detailed information on each point above in the following sections.

1 Input data to determine the type of cable chain

The choice of cable chain should not only be based on a mathematical calculation of certain factors but should consider and analyse carefully all the available data. The following information will provide basic help in making the right decision.

The first step in cable chain selection is the definition of the internal chain link dimensions. Therefore, key technical parameters must be defined:

Utilities

Cables

- Overall diameter ODc (mm)*
- Weight (Kg/km)*
- Minimum dynamic bending radius MBR (mm)*
- Type → power, signal, data, optical
- Material → PVC, PUR, etc.

Hoses

- Overall diameter ODh (mm)*
- Empty weight (kg/m) and full weight (Kg/m)*
- Minimum dynamic bending radius MBR (mm)*
- Working pressure
- Linear expansion % under pressure
- Radial expansion % under pressure
- Type → industrial, hydraulic, pneumatic
- Media → air, water, mud, oil, etc.

Application parameters

- Type of movement (linear, rotation, combined)
- Travel distance LS
- Speed
- Acceleration
- Installation available room (Ox, Oy, Oz – mm) (Possibility to use more than one chain)

Duty cycle and service factor

- Cycle time
- Working hours a day
- Working days a week
- Service factor %

Application environment

- Temperature
- Humidity %
- Outdoor vs. indoor
- Clean vs. dirty
- Presence of chemical agents

*Mandatory data (required spare space **Sp%** and distance **Du** of separation between different utilities if required)

INFOBOX

Cable chain is used for protection and guiding of flexible cables and hoses installed in a cable chain. For that reason chains must always be designed in accordance with cable/ hose features and not the other way round.

Our long-term experience in cables enables us to support you with any kind of technical advice. Please contact our technical engineers.

2 Cable chain layout design

To ensure proper cable chain functions and to avoid any damage to the cables, please determine the right chain size according to following basic rules:

Legend

● Cable

○ Hose

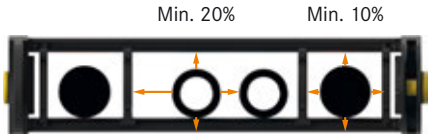


Fig. 1

Fig. 2

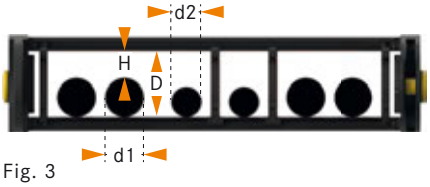


Fig. 3

1) For electric cables, a clearance of at least 10% between the cable and the outer frame must be guaranteed; for pneumatic lines the clearance should be 15%, while for hydraulic hoses the clearance should be at least 20% **(Fig. 1)**

2) Avoid placing cables/hoses that have different outer sheaths together in one section so that friction can be eliminated (e.g. cables and hydraulic hoses) **(Fig. 2)**

3) If several cables/hoses are used, it is preferable to avoid them rubbing each other by placing them in an isolated space and using separators to separate them. If this is not possible, verify that the internal space does not allow cables/hoses to be twisted. H< d2 or, for any couples of utilities not separated each other, → d1 + d2 > D **(Fig. 3)**

Fig. 4

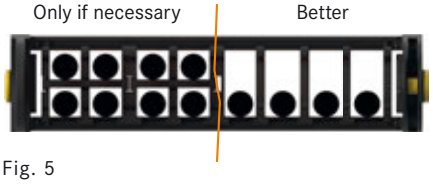


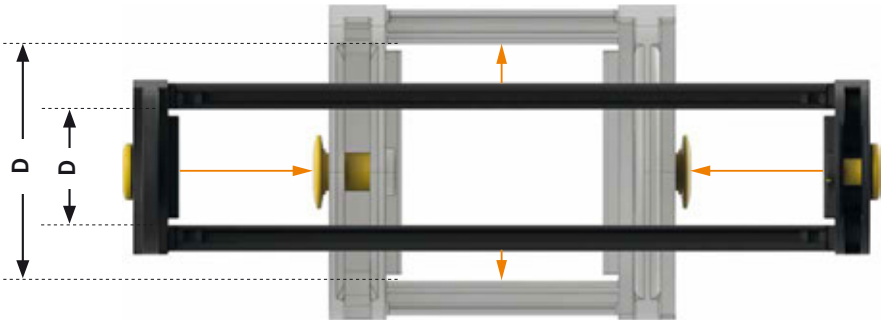
Fig. 5

4) Place cables/hoses symmetrically according to their dimensions and weight, placing the largest and heaviest externally and the smaller and lighter ones internally **(Fig. 4)**

5) If possible, all cables should be placed in one single layer. This will improve the operating life time of the system. Multi-layer separators are difficult to assemble, maintain and are more expensive **(Fig. 5)**

Multi-layer layout
In case of space limitations, one option can be to reduce the link width. Link height must be increased accordingly. Then utilities have to be placed on more layers.

For multi-layer utilitiy layouts, please contact our specialists.



D > 1.1 ODc (for cables)/ D > 1.2 ODh (for hoses)

3 Selection of cable chain type

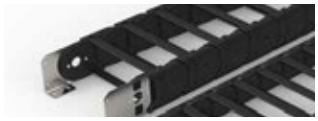
Make the first selection of a cable chain from our product selection table (see page 52/53) in accordance with the required inner chain link dimension, taking into account material type (nylon vs. steel), speed, acceleration and other factors.

If the calculated cable chain width is too wide, please choose from the following options:

- Multiple chains in nested or ring configuration (see page 22/23)
- Layout with utilities on more layers inside the cross section of the cable chain (see step 2)

Nylon

Multiple Application Series



Heavy Duty

Sliding Applications

Steel

Multiple Application Series

Sliding Applications

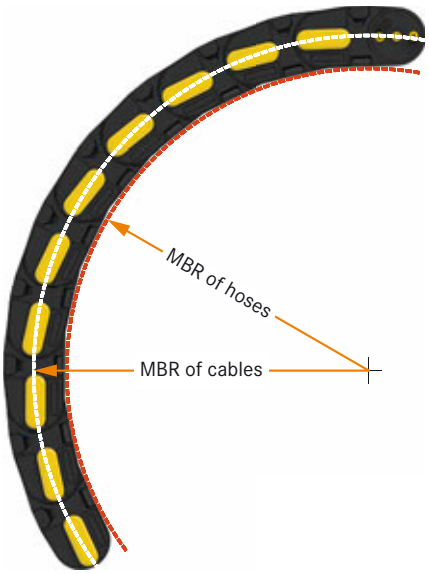
Robot

Robot Series

4 Bend radius

In order to define the → **B**end **R**adius (BR) of a cable chain, the list of all the cables and hoses needs to be considered: all bending radii of cables and hoses determine which chain BR has to be chosen → chain BR has to be equal or higher than highest cables/hoses MBR (**M**aximum **B**end **R**adius).

Please check the technical data sheet of each input utility.



Please consider that:

- The cable MBR is calculated in relation to the central axis
- The hose MBR is calculated in relation to the inner bending

5 Cable chain length calculation

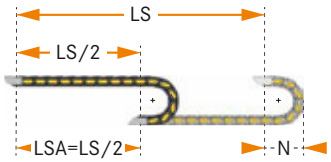
Considering the distance LSA between the feeding point and centre of travel distance LS, five different configurations are possible:

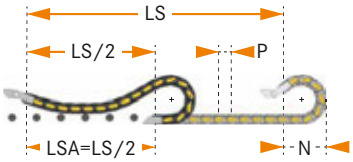
Feeding point position

LSA=LS/2 — Centre feed

Most common type of configuration

L_{calc} = LS + M – LSA (when LSA ≤ LS/2)





L_{calc} = M + LSA (when LSA > LS/2)

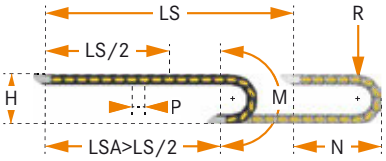
Feeding point position

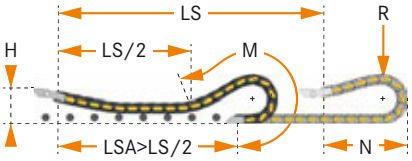
LSA>LS/2 — Overlength mobile point

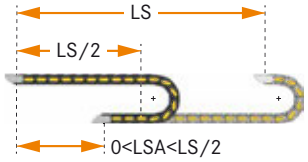
0<LSA<LS/2 — With offset

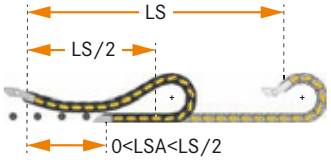
LSA=0 — End feed

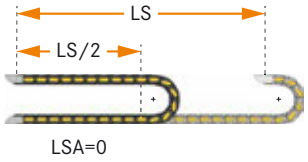
LSA<0 — Overlength feeding point

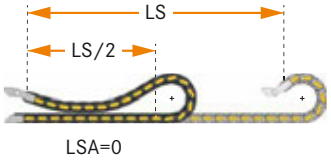


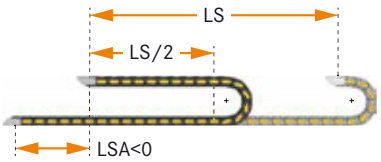


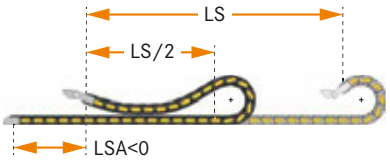












INFOBOX

Since a cable chain is a sequence of links, the chain length must be a multiple of the pitch "P".

For the steel chain N- series only, the round up must be taking account of the odd number of chain links.

Legend

LS = Travel distance
LSA = Fixed point displacement in relation to the extended end of the stroke
M = Bent length of the chain
R = Chain's bending radius
P = Pitch
N = Parking space when the chain is completely retracted*
H = Mobile point installation height

* based on chain's minimum length needed to achieve the travel distance.

L, LSA → input data
M → value in catalogue table **(Fig. 1)**. M is determined under point 4, bending radius definition

Difference between M & M1:
M → value of the bent chain's length in self-supporting configurations

M1 → value of the bent chain's length in sliding configurations

Chain bending radius **"R"**

Bent chain length **"M", "M1"**

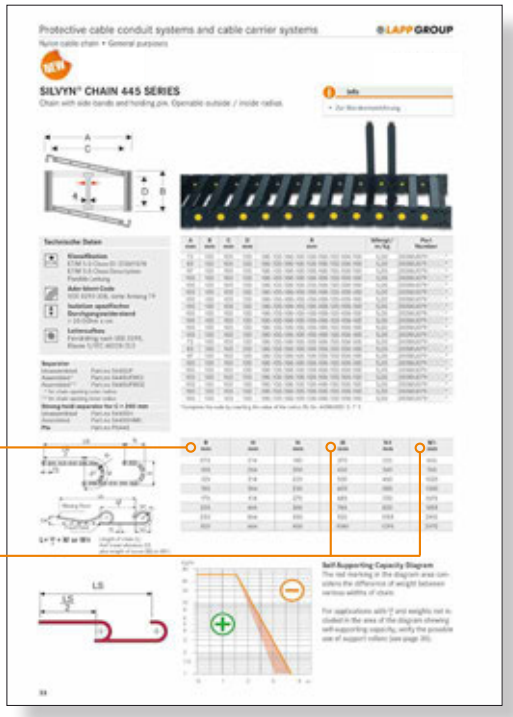


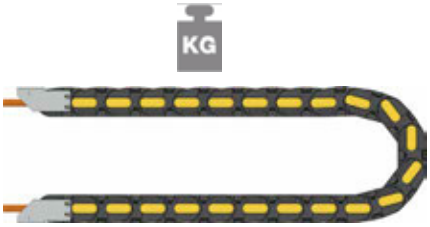
Fig. 1

6 Self-supporting capacity calculation

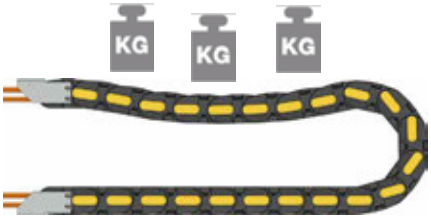
Pre-set

The pre-set (Pr) is a fundamental feature in cable chains. This determines the self-supporting capacity which allows the cable chain to support not only its own weight, but also the weight of the cables/hoses placed inside. Empty cable chains therefore appear to be curved upwards slightly. Each chain has its own self-supporting diagram, which shows the maximum additional load (Kg/m) that the cable chain can support in relation to the unsupported length LS/2 (m). No support is needed when the cable chain stays below the curve. Cable chains above the curve need to be supported or switched to stronger cable chain or a sliding configuration.

Pre-set cable chain without load

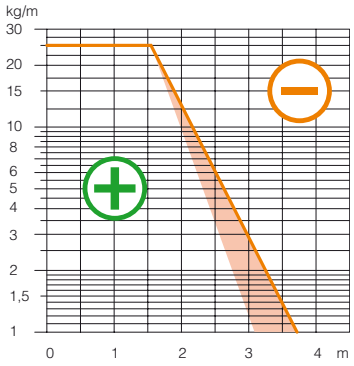


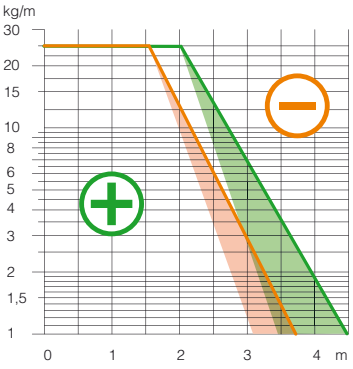
Pre-set cable chain with load



Pre-set cable chain with load and negative sag

Self-supporting diagram





Self-supporting with admissible sag

Self-supporting without admissible sag

The curve in the self-supporting diagram (orange line) represents the free deviation length of the cable chain (self-supporting length SL) that nullifies the cable chain's pre-set with a certain additional load. The light orange area on the left side (the descending line) of the curve takes into account the fact that, for equal sidebands, a wider cable chain corresponds with a bigger weight and therefore a lower capacity to support the additional load of the utilities.

A cable chain can also be used outside its self-supporting area, accepting that the suspended portion of the chain works with a sag. Please also note that cable chains with a sag must be operated with lower speed and acceleration. In addition, the lifetime will be reduced.

INFOBOX

If the application parameters require that the intersection between the two lines falls above the diagram, the chain must be supported or sliding. Please refer to the specific section "self-support diagram and system configurations" on page 39.

For the maximum value of the admissible sag of each series, please contact our technical office.

7 Double-check of selected cable chain type

If the calculated values apply to the properties of the selected cable chain, the selection process is finished.
The cable chain dimensions can then be determined: when selecting a chain, available space conditions must match dimensions C and D (**Fig. 1**). Please check that the overall dimension A is lower than the available space Oz. (See illustration on page 18)

Fig. 1

Legend
A - External chain link width
B - External chain link height
C - Inner chain link width
D - Inner chain link height

However if it is necessary to find another chain, the following options are available:

- Selection of a stronger/bigger cable chain type (go back to step 3)
- Cable chain in sliding configuration (go back to step 3)
- Steel cable chain (go back to step 3)
- Possibility to use support rollers (see page 41)

8 Selection of accessories

Necessary accessories need to be specified from relevant product pages, for example end brackets, separators, cable fixing clamps, guiding channels, etc.

Useful tips and recommendations for use of different kinds of cable chain accessories and system configurations in section 3 (from page 33 onwards).

Section 3
Specific product topics

Cable chain accessories

End brackets

Mounting positions

The mounting positions of the end brackets allow the cable chain to be fixed in the configurations described below. Unless otherwise specified, the chains are supplied with the end brackets mounted in Pos. 1.

Any mounting needs not listed below? Please contact us.

Pos. 1, mounting both external radii

Pos. 2, mounting external radius & internal radius

Pos. 3, mounting both internal radii

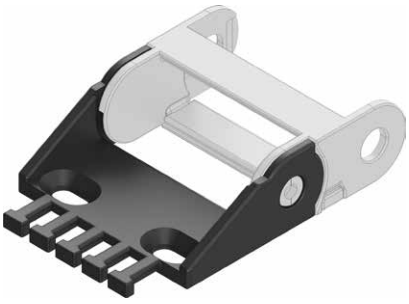
Pos. 4, mounting front

Pos. 5, mounting turned inside

Pos. 6, mounting turned outside

Materials and shapes

End brackets can be delivered in different materials and shapes.



Bracket in “U” shape
Available for small chains in steel or nylon. The correct mounting position must be specified. It is fastened using slots that allow a mounting tolerance.

Bracket in “L” shape
Available in steel or nylon. The correct mounting position must be specified. It is fastened using slots that allow a mounting tolerance.

Bracket in “I” shape
Available in nylon.
The mounting position is automatically determined by the end bracket. It is fastened using holes that require low mounting tolerance.

Universal bracket
Available in nylon.
Different mounting possibilities in one piece.

Locked or pivoting
Depending on the shape or use of the end brackets they can be locked or pivoted.

Locked end bracket
Suggested for standard horizontal or vertical applications.

Pivoting end bracket
Used for sliding applications and rotations.

Due to the dynamic behaviour in sliding applications it is mandatory for the end bracket to be pivoting in order to balance the downward and upward movement of the cable chain while keep following the linear movement of the towing arm.

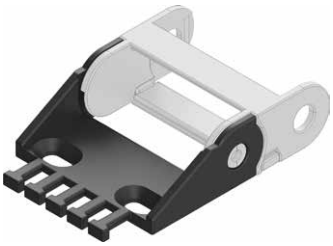
Fixation devices

Cable clamps, cable combs and fixation profiles are fixation devices. They allow the utilities to be fixed at the end of the chain, which preserves them from unexpected breakage. A minimum distance of 15 x OD of the utility will be left between the last link that bends during the movement of the chain and the position of the fixation system.

Fixation profiles

Cable clamps

Cable combs



Integrated combs

Depending on the type of chain, these combs can be found directly integrated into the end bracket (usually for small chains).

Clip mounted on cross frame

Can be mounted as a clip directly on the end bracket cross frame.

Clip mounted on a profile

For larger cable chain sizes, these combs are mounted as an additional component on a special aluminium profile designed to ensure optimal strength.

Frames

Frame variants

Nylon open cross frame version
Lightness: ****
Cable harnessing: ***
Stiffness:*
Cable protection: **
Customisation: **
Price: *

Protection cross frame version
(available in plastic or aluminum)
Lightness: ***
Cable harnessing: **
Stiffness: **
Cable protection:****
Customisation: **
Price: **

Aluminum profile cross frame version
Lightness: ***
Cable harnessing: **
Stiffness:***
Cable protection: **
Customisation: ***
Price: ***

Definition of terms

Customisation
Ability to meet the customer's dimensional requirements.

Stiffness
Capacity which has the cross frame to oppose to the elastic deformation caused by a force applied.

Cable harnessing
Is related to the utilitites (cables/hoses) in the chain.

Cable protection
Ability to protect the utilities from external agents and to minimise their wear.

Rod cross frame version
(available in plastic, aluminum or steel)
Lightness: ***
Cable harnessing: **
Stiffness: ***
Cable protection: **
Customisation: ***
Price: ***

Machined cross frame version
(available in plastic or aluminum)
Lightness: *
Cable harnessing: **
Stiffness: ****
Cable protection: ***
Customisation: ***
Price: ****

Legend

Custom cross frame version
Lightness: ***
Cable harnessing: ***
Stiffness: ***
Cable protection: **
Customisation: ****
Price: ****

Frame opening options

Our portfolio contains modular frame opening options for different nylon cable chains:

- The **hinge open frame** stays fixed to the side band, facilitating and speeding up the harnessing operations.
- The **snap open frame** offers the advantage of easy and fast removal and allows the possibility to position the cables in a convenient way. This is mandatory when the cables are already equipped with connectors.

Hinge open outside bending radius

Hinge open inside bending radius

Snap open outside bending radius

Snap open inside bending radius

Universal hinge/snap opening

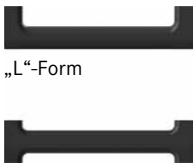
This option allows maximum flexibility during wiring while maintaining a good stifness of the chain.

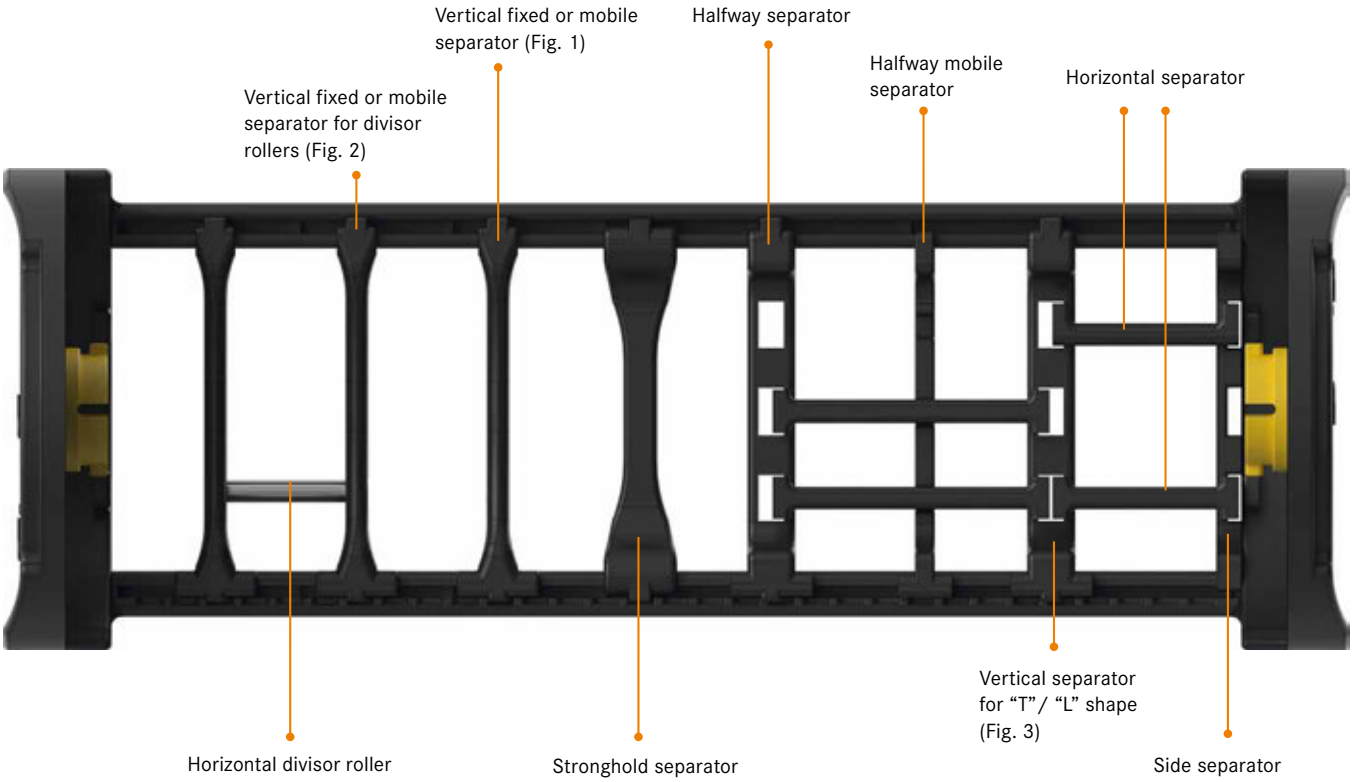
Bolted cross frames

This option also offers the possibility to open the chain. This operation requires more time but ensures greater stiffness of the chain.

Separation options

The wide range of separators available for each type of chain allows infinite combinations of use to fit any requirement. As a general rule the separators are mounted in every second chain link. Different mounting frequencies may be required.





Side separator:
The vertical separator which prevents damage to the utilities caused by their contact and wearing against the chain sidebands or is used to keep horizontal separators in position.

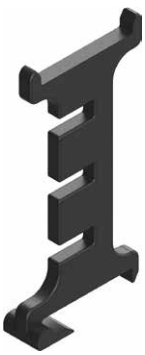
Internal vertical separators:
All types of separators which are not side separators.

Other vertical separator types:

Vertical fixed or mobile separator **(Fig. 1)**

Horizontal separation options work with:

Vertical fixed or mobile separator for divisor rollers (**Fig. 2**)



Vertical separator for “T” and “L” shape **(Fig. 3)**

For separation systems available for specific chain types, please refer to the respective product pages.

Self-supporting diagram

There are two ways to work with the self-supporting diagram **(Fig.1)**:

A. Starting from the additional load (so from the cross section sizing), the maximum self-supporting length that the chain can reach can be checked

B. Starting from the self-supporting length (so from the system configuration), the maximum additional load that the chain can support can be checked

The list of utilities that the system should drag is called the input data. To carry addtional loads, often the only way is to use more than one chain, distributing it on more chains (nested, side by side or in a ring configuration). In accordance with this, the self-supporting diagram is used in the "B" option, mainly at the beginning of system dimensioning, when the decision needs to be made to use one or more chains.

After determining the chain number and distributing of utilities among them, use the diagram in the way "A" to define the configuration of the cable chain system. This just relates to self-supporting configurations with fixed point in centre position, SSL = LS/2.

The horizontal axis represents the maximum self-supporting length SSL of the configuration (often mistakenly defined as half of the travel distance LS/2).

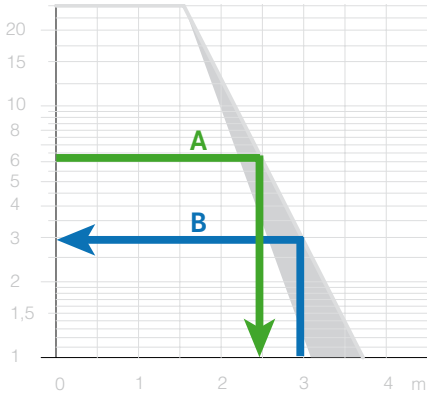


Fig. 1

Looking at the diagram **(Fig.2),** and working in the way "B", the green line level is fixed (because the additional load is determined). Viceversa, the vertical blue line moves to the right increasing the travel distance. When the maximum self-supporting length is exceeded, a configuration has to be chosen that supports the chain in a better way.

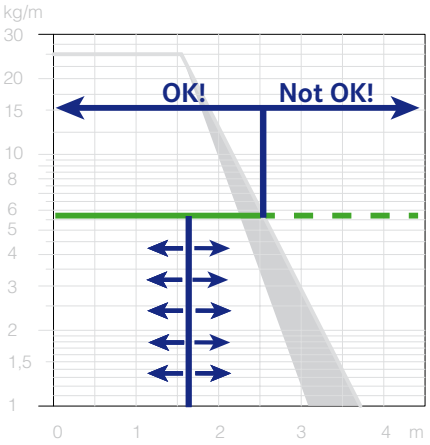


Fig. 2

Considering an application with fixed point in centre position:

- Self-supporting applications → SSL = LS/2
- Supported application with 1 support roller on the extended side of the stroke → SSL = LS/3 (single support roller should be positioned at a distance of LS/3 from the extended end of the stroke) (**Fig. 3**)
- Supported application with 2 support rollers on the extended side of the stroke → SSL = LS/4 (the two support rollers should be positioned at the centre and at ¾ of the travel distance) (**Fig. 4**)

*SSL = Self-supporting length

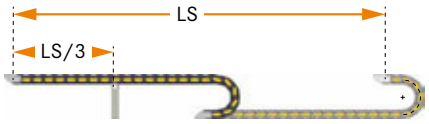


Fig. 3

Generally there are no limitations in the number of support rollers.
However, if the stroke exceeds its capacity (Max SSL < LS/4) sliding configurations or other system accessories have to be used such as supporting hooks, side rails or trolleys.

INFOBOX

The self-supporting diagram is determined by testing the chain when it is new. But the self-supporting performance of the chain declines as wear and tear increases, so a used chain has less self-supporting capacity than a new one. This must be considered in the calculation of the system requirements.

If your application results are close to the limit values, please contact our technical office for additional evaluations.

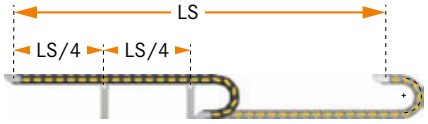


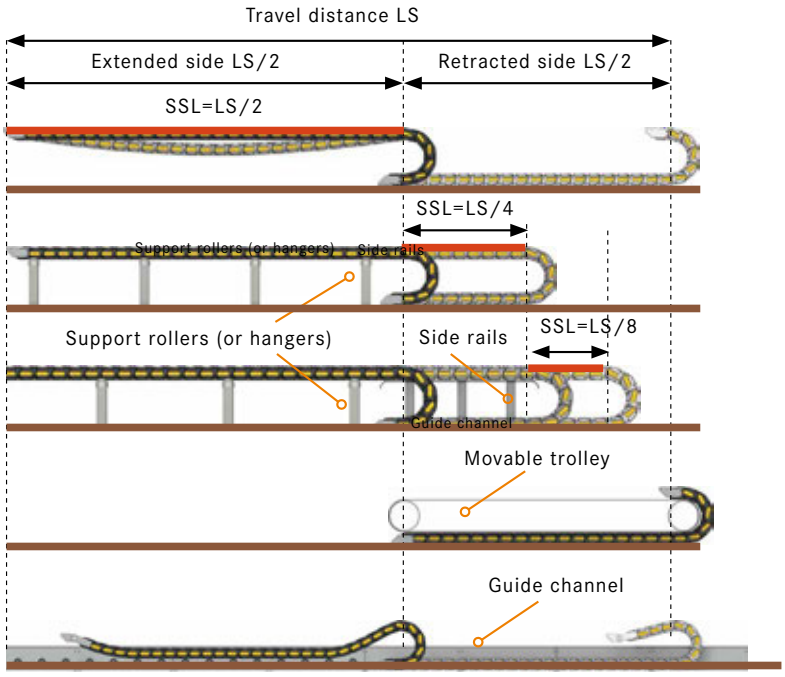
Fig. 4

System configurations

Depending on the ratio between the travel distance **LS** of the mobile point and the self-supporting length **SSL,** there are different possible configurations:

Additional load

- **a** Self-supporting LS/2<SSL (red curve) →
- **a** Self-supporting with sag LS/2<SSL (green curve) →
- **b** Supported on the extended side LS/2>SSL>Lc/4 →
- **b** Supported on the retracted side* LS/4>SSL>Lc/8 →
- **b** Supported on the whole length* LS/8>SSL →
- **c** Sliding LS/8>SSL →



The chain section that is not possible to support is highlighted in red. The combination of additional load and self-supporting length must remain lower than the self-supporting curve of the diagram.

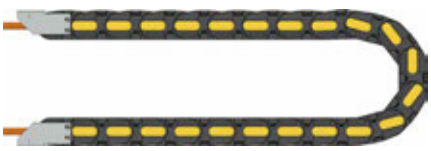
*Among the three configuration options, the sliding configuration guarantees longer travel distances and is more cost effective since no side rails and trolleys are needed.

a Self-supporting configuration

In self-supporting configuration, the chains work with or without sags. The advantages are:

Self-supporting chains without sag

- Operate with higher speed and acceleration
- Stress chain and cables less, so the operational life is longer



Self-supporting chains with sag

- Reach longer travel distances
- Sometimes the cheaper solution due to smaller cable chain sizes

All the self-supporting configurations

- Do not require a guiding channel but at least a ground channel on the retracted side (see page 41)
- Require a strain relief mounted on both ends (see page 50/51)
- Are manufactured with pre-set
- Must be connected at installation height H or higher (not lower)
- Have less wear than sliding configurations (no friction between chain when operating)
- Increasing pre-tension may increase the self-supporting length
- he end brackets need to carry the system's complete load (weight of chain & cables plus dynamic forces)

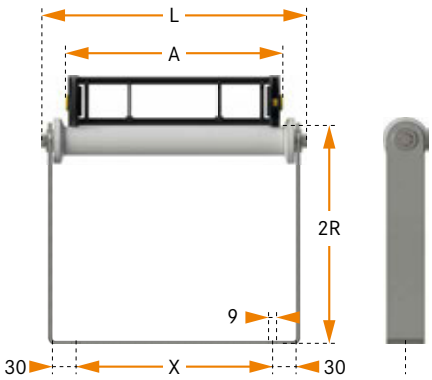
Supported configurations

Support rollers

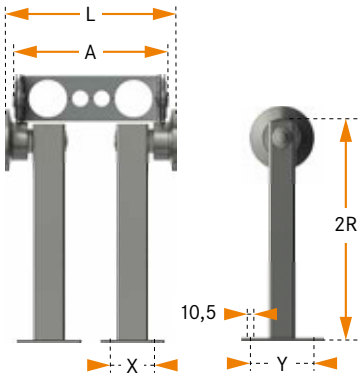
In case of supported cable chain configurations, different kinds of support rollers can be used. See dimensions of our standard rollers in the table below.

Many different custom types can be created upon request.

Chain Type		X	Y	L
Nylon		A-23	\\	A+60
Steel	20	70	100	A+22
	30	70	100	A+22
	35	70	100	A+26
	40	70	100	A+26
	45	130	180	A+26



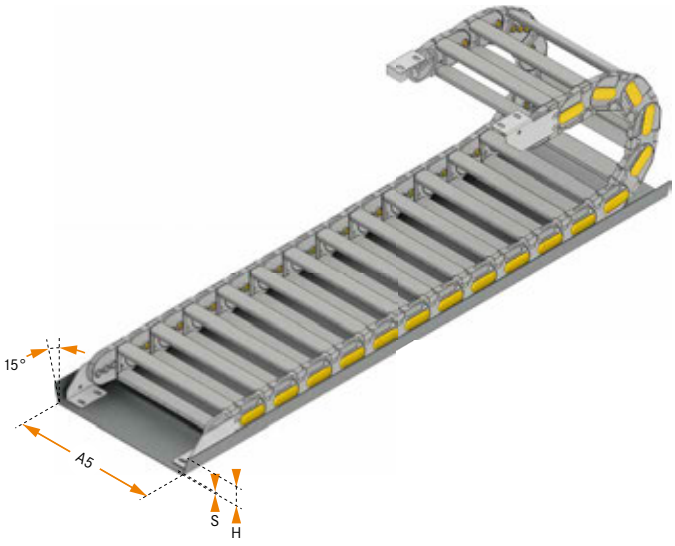
Support roller for nylon chains



Support roller for steel chains

Guiding channels/ground channels

Chain Series	A5	H	S
200 - 250	A + 2mm	10	1.5
325	A + 2mm	25	1.5
335 - 445 - 660A - 770A - 306 - 307 - 660 - 770 - 20	A + 2mm	30	1.5
308 - H57 - 30	A + 2mm	40	1.5
475 - 309 - H80	A + 2mm	50	1.5
35	A + 2mm	50	3
40 - 42	A + 4mm	50	4
45	A + 4mm	70	4
H110	A + 4mm	80	1.5



Ground channel

Legend

W → Distance between fixing holes
Y → Distance between fixing holes
A → External chain link width
L → Max. width of support roller
A5 → Internal base width of channel
H → Max. height of channel
S → Thickness of channel
2R → Double radius

Sliding configurations

In case of sliding applications, the cable chain works in combination with other mechanical elements, so as the required performances increase (travel distance, speed, acceleration, duty cycles), the level of complexity increases.

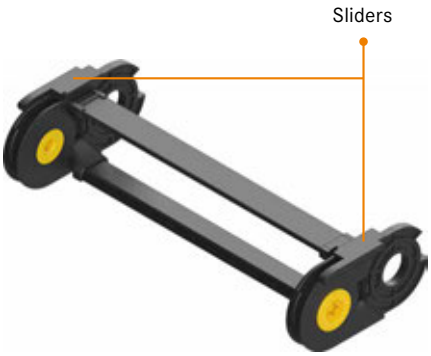
Sliders

Our chain series for sliding applications are designed to minimise friction and wearing even with heavy loads. Therefore the sliders integrated into the link are made with low friction polymers to increase the contact surface.

In some series the sliders are easily removable so that:

- In case of maintenance, only the wearing parts have to be replaced, reducing the maintenance costs and increasing the working life of the system
- The sidebands and the sliders on the chain can use different polymers according to the different functions of the parts of the chain

The dimensions of the sliders allow the chain to keep itself stable. Even in applications with high accelerations.



Upon request, it is possible to produce cable chains with special polyamides for applying in particularly aggressive environments. Ask our technical office for additional information.

INFOBOX

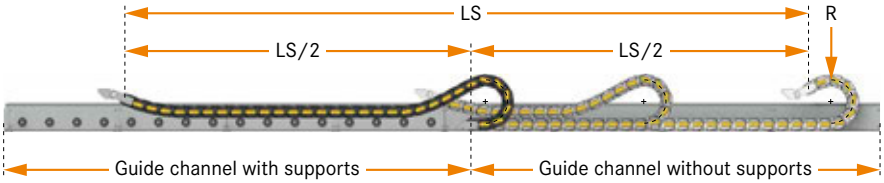
In order to achieve the best funtionality result the distance between the fixed point of the cable chain and the beginning of the supports mounted on the extended side of the guide channel has to be as small a possible - however not more then 500 mm.

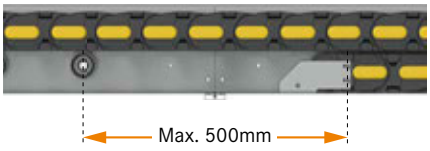
The materials available for the channels are: Zinc-plated steel, stainless steel AISI 304 or 316L, Aluminum.

Sliding with single chain

To properly operate in sliding configuration, the cable chains require the use of a guide channel.

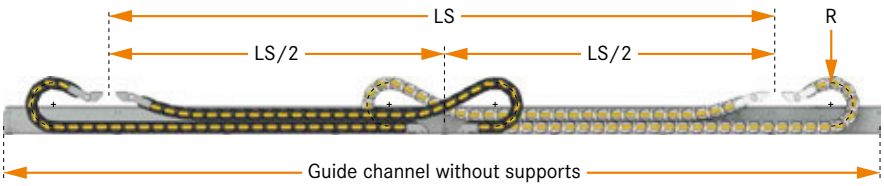
In single chain applications, along the retracted side of the travel distance the chain slides on itself, while the extended side of the travel distance is supported by suitable supports mounted directly on the side of the guide channel.

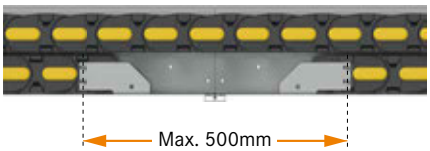




Sliding with multiple chains

In applications with two cable chains in ring configuration, the chains slide on themselves in both directions, so there are no supports along the entire guide channel (except between the two fixed points, in case they are far away from each other).





Avoiding friction

In case of long travel sliding systems, the main functions of the accessories are:

- Guidance and reduction of friction of the cable chain during movement
- Guide channel to guide the cable chain and guarantee its alignment
- Misalignment recovery system **(Fig. 1)** for the mobile point in order to reduce the friction between the sidebands of the chain and the walls of the channel
- Wheel systems (mounted on the channel and/or on the chain) to further reduce the friction between the upper and the lower part of the cable chain

Misalignment recovery system

Fig. 1

Correct mounting of guiding channels

It is very important that the cable chain can move freely along the whole travel length. To guarantee optimal and friction-free guidance of the cable chain, the guiding channel must be mounted:

- As level as possible (both in longitudinal and transversal direction **(Fig. 2)** – to avoid additional friction between the upper chain and the lower chain (or the supports) or to avoid possible lifting of the cable chain
- As straight as possible to avoid friction between the sidebands and the walls of the channel **(Fig. 3)**

Despite the precautions taken in the assembly phase, it may be that the channel is not aligned with the movement of the towing arm. If the maximum disalignment between the guide channel line and the movement of the towing arm is bigger than ±4mm **(Fig. 4)**, it is necessary to recover this gap using a misalignment recovery system mounted on the mobile point of the cable chain **(Fig. 1)**.

Fig. 2

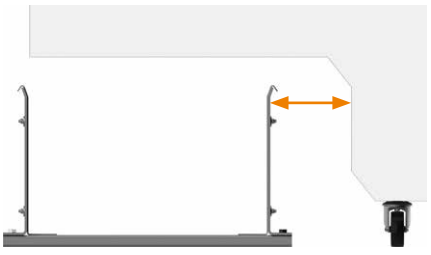


Fig. 3

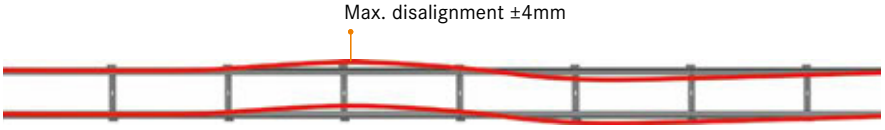
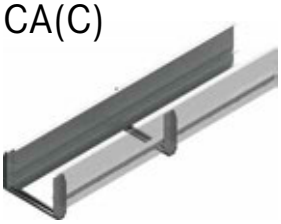
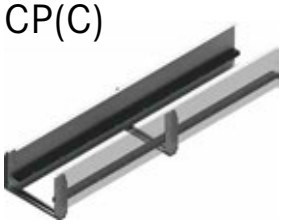
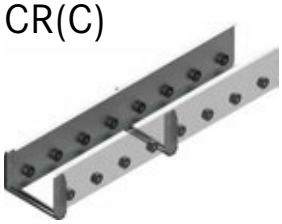


Fig. 4

Different channel options

	Retracted side	Extended side		
Open chanels	without supports CS 	with angulars CA 	with glide profiles CP 	with wheels CR
Closed channels		CA(C) 	CP(C) 	CR(C) 

Steel closed channels can be used (on the extended side of the travel distance only) to prevent possible lifting of the chain. Suggested for travel distances LS >40 -50m.

	CA(C) Angular	CP (C) Profiles	CR (C) Wheels
Friction	***	**	*
Noise	**	*	***
Price	*	***	**

(C) = closed · ***= high → * = low

Vertical application

Vertical application means that the direction of motion is vertical and the arc of the chain radius doesn't touch the ground or the ceiling.

There are two different options

- Hanging applications → the chain is suspended and the arc of the chain radius is at the bottom **(Fig. 1)**
- Standing applications → the arc of the chain radius moves upward on top of the chain **(Fig. 2)**

Cable fixation
In all the vertical applications

- chain's only function is to contain and protect cables and hoses. The utilities should bear their own weight without loading the chain
- Cables/hoses have to be fixed on both ends using the appropriate accessories (strain relief) and should not touch the cable chain **(Fig. 3)**
- Locking end brackets should be used

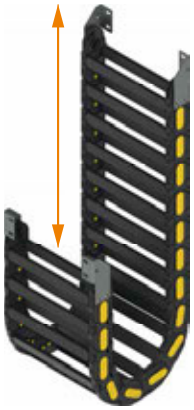


Fig. 1

Fig. 2

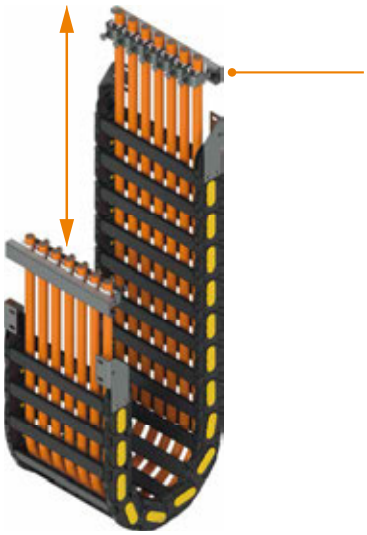


Fig. 3

Hanging applications
A cable chain is far less stressed and more stable in a hanging application. In addition, transversal accelerations can happen (in the event of side winds or if the cable chain is installed on moving machinery). The following must be considered:

- If the application only concerns a vertical movement, the cable chain does not need any specific support
- If the chain is affected by transversal accelerations **(Fig. 4)**, a support (guide trough) is required
- For special applications, frames with completely closed guiding systems are available

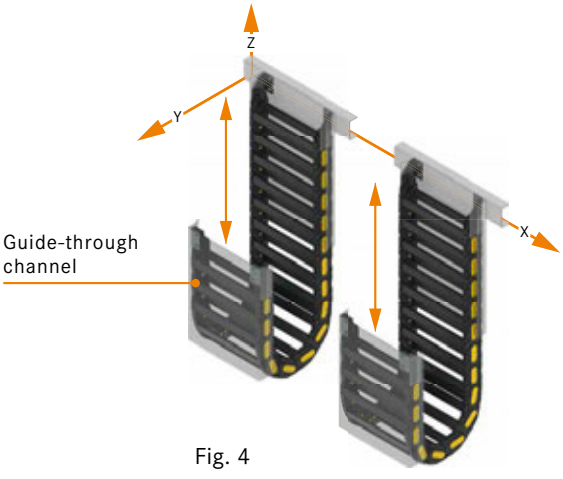


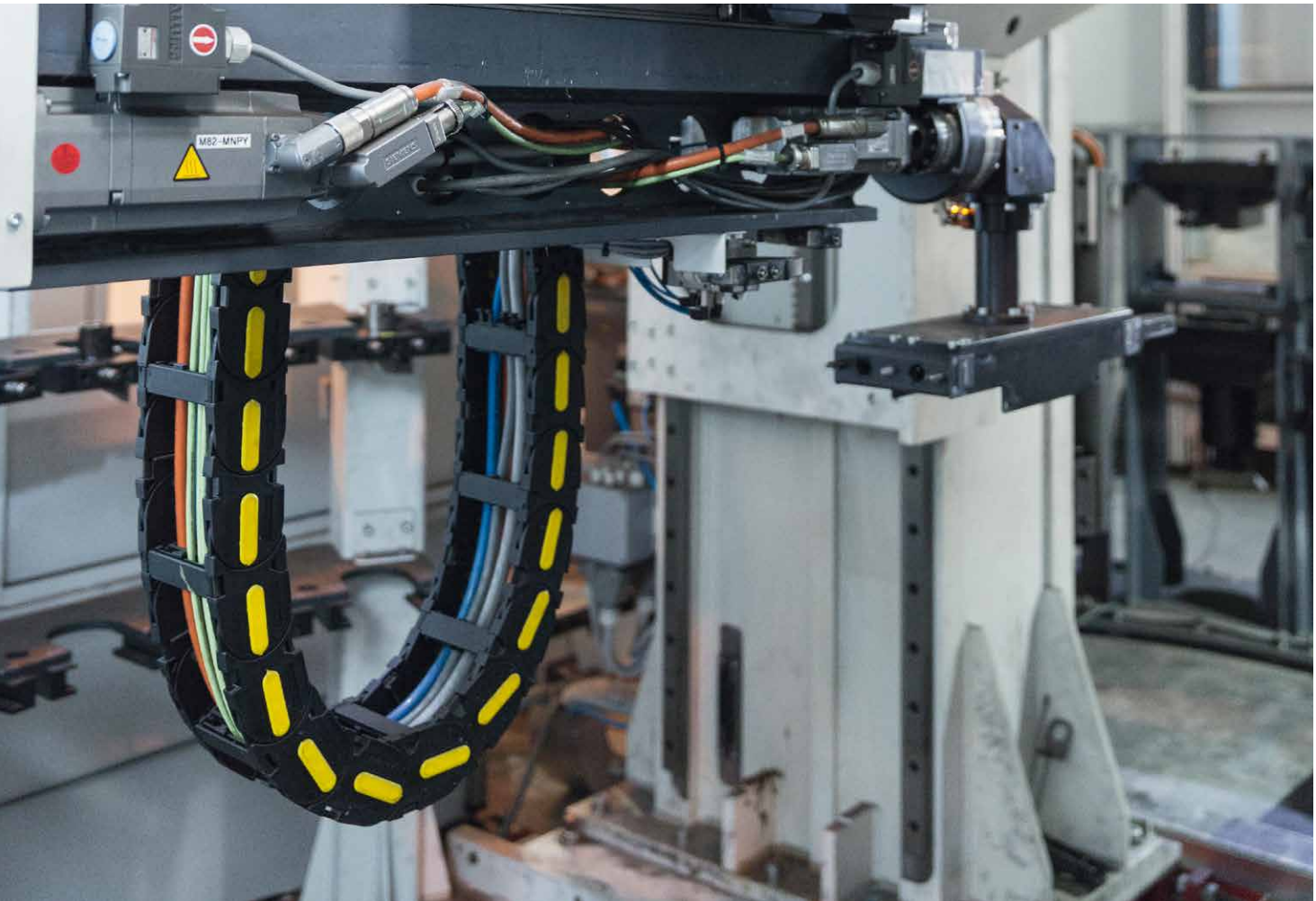
Fig. 4

Vertical applications at a glance

	Vertical hanging applications	Vertical standing applications
Working parameters	Max. travel length: 100m	Max. travel length (without support): 4m Max. travel length (with support): 6m Max. travel length (with full support): 14m
Pre-set (Pr)	A normal chain with pre-set can be used, if there is enough space for the installation. In case of reduced available space, a chain without pre-set must be used*.	A normal chain should be used, and the customer should consider the pre-set in calculating the space for the installation.
Installation space**	Without pre-set: 2x(R + S) + B	With pre-set: 2x(R + S + Pr) + B
Layout	• Layout of cables/hoses inside the cross section is secondary, since they are strain relieved and suspended on both ends • Separations inside the cross section are not mandatory but suggested	• The layout of cables/hoses inside the cross section is symmetrical and should be strain relieved at both ends and stand without loading the chain • Vertical separators are recommended to allow the utilities to move freely inside the chain

*Our recommendation:
vertical applications without pre-set.

** **R** = Chain bending radius
Pr= Chain pre-set
S = Thickness of the guide trough channel
B = Outside height of the chain



Side mounted configurations

Side mounted application means that the chain works mounted on its side. This configuration becomes necessary when there is a limited space upwards and mounting the cable chain would normally take up too much space, or when the additional load of the utilities exceeds the maximum self-supporting capability of the chain but for some reason the sliding configuration cannot be used.

The following options are available:

- Supported applications where the cable chain is moving on a floor, inside a guide channel **(Fig.1)**, for example in long travel distance applications
- Suspended applications where the cable chain is not supported from the bottom, for example in machine tools. In this case at least the first three links near both the mobile and the fixed point should be supported from the bottom **(Fig. 2)**, depending on factors like travel distance, additional load, unsupported length. Note: this configuration can place excessive stress on the cable chain

In a supported application, to have a smooth movement and reduce the friction between the cable chain and the carpentry floor, the use of anti-friction skids or pivoting wheels is recommended **(Fig. 3)**

Since pivoting wheels reduce the stability of the cable chain they must be used in combination with a guidance system

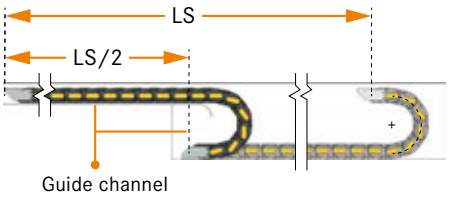


Fig. 1

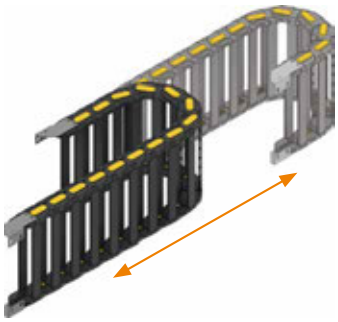


Fig. 2

Fig. 3

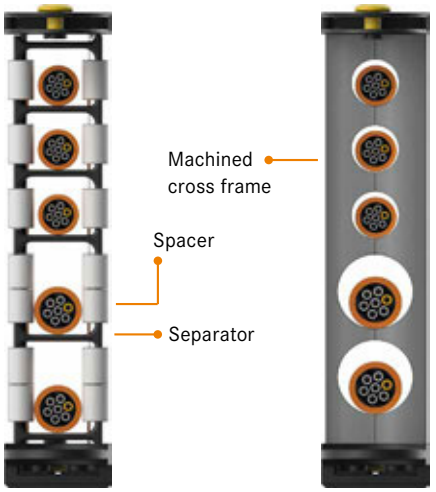


Fig. 4

Fig. 5

Spacers

Particular attention should be paid to determine the section of the cable chain. In fact, mounting the chain on its side means that cables/hoses have a tendency to bunch towards the ground and get squashed. To avoid this, spacers can be mounted between the vertical separators to hold them (and the utilities) in position **(Fig. 4)**. The vertical separators (and their fixation to the cross frames) are also designed to resist cables' additional load. The heavier utilities should be positioned at the bottom to reduce the stress on the cross bars. In case of lay on side machined cross frames can also be used to hold in position the utilities and maintain them in line with the neutral axe of the chain reducing the stress **(Fig. 5)**.

Rotary applications

The rotary configuration is a specific application that allows rotations between fixed and mobile points. This configuration is an alternative when the ROBOT series cannot be used (e.g. limited space conditions or incompatibility of the available diameters for the installation).

If the cable chain operates while mounted all the considerations made for the supported lay on side applications are still valid for the rotary one.
In this configuration, the cable chain links must rotate each other in both directions, so the chain has a bending radius and a counter bending radius **(Fig.1)**. All chains (except the PROTECTION series) can be delivered with this counter-radius.

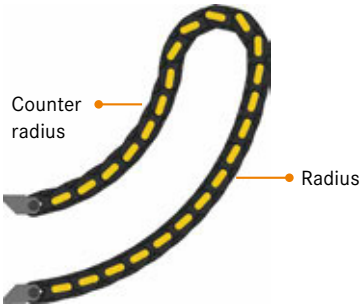


Fig. 1

Possible rotary configuration options (Fig. 2)

- For single applications, the chain is guided by the housing only. For multi chain applications, the chains are in a ring configuration (1 or 2 chains for each half ring) and are guided in their movement by an inner movable frame.

For applications with rotations over 180°, it is necessary to use a multi-chain configuration. The maximum rotation achievable depends on the system geometry. Rotation up to 600° could be possible.

- For fixed housing, the chain moving inside the housing is pulled and pushed by the towing arm, and there is sliding motion between the chain and the floor of the housing

- In movable housing, the housing is divided into two parts concentric to each other, one of which is fixed (connected to the fixed point of the chain) and the other is movable (connected to the mobile point of the chain). There is no relative movement between the chain and the housing, except for the links which are on the bending radius

The movable housing option reduces the wearing of the links but requires a very precise installation to guarantee the planarity of the two floors of the housing (movable and fixed) and their concentricity. Whether the movable point is positioned inside or outside the diameter depends on the motion pattern of the application.

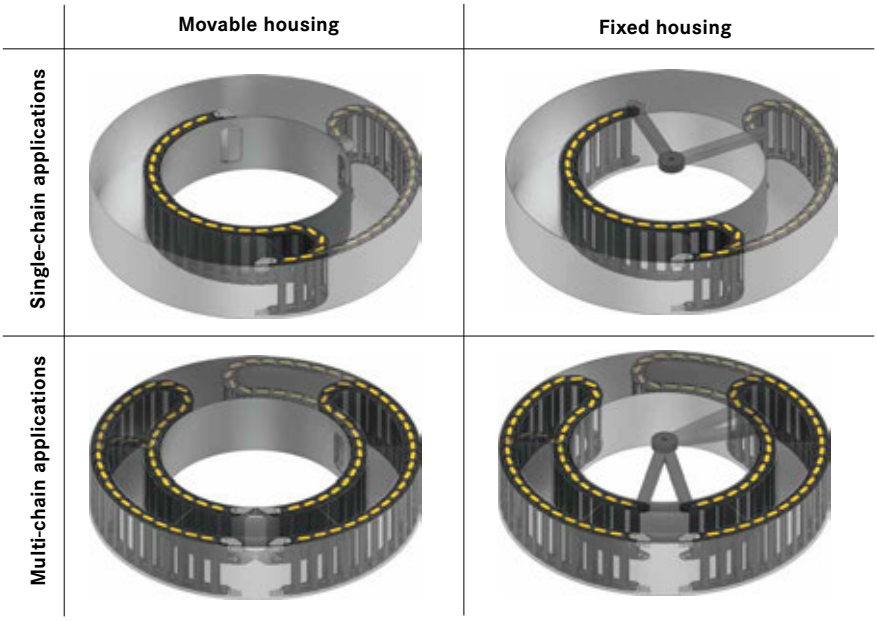


Fig. 2

Inner frames
Inner frame moves on anti-friction skids or pivoting wheels **(Fig. 3)** and, in combination with the guide housing, guarantees the guide of the chains

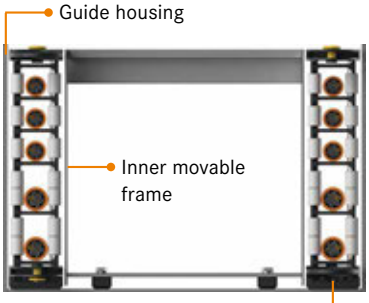
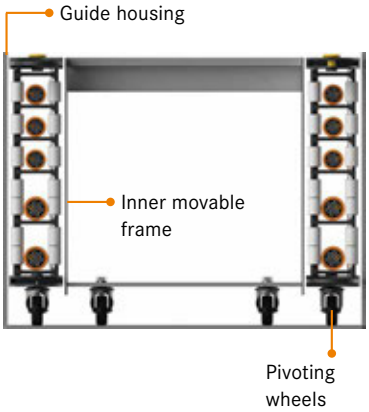


Fig. 3



Robot chain applications

The “ROBOT” chain series is a series that, due to the particular construction of the links, enables them to rotate around two axes in a natural way.

This concept is specifically designed for use in combination with anthropomorphic (= humanlike) robots, and allows rotation of up to 540°.

Basically the chain works like any other self-supporting or supported configuration, the only difference being that the movement of the mobile point is a rotation instead a translation **(Fig. 1)**. The chains from the “ROBOT” series are self-supporting and they do not need any support up to 200°.

Accessories

Applications with rotations require the use of their own appropriate accessories:

- Base cradle **(Fig. 2),** that functions as a channel guide in linear movement and guides the lower part of the cable chain.

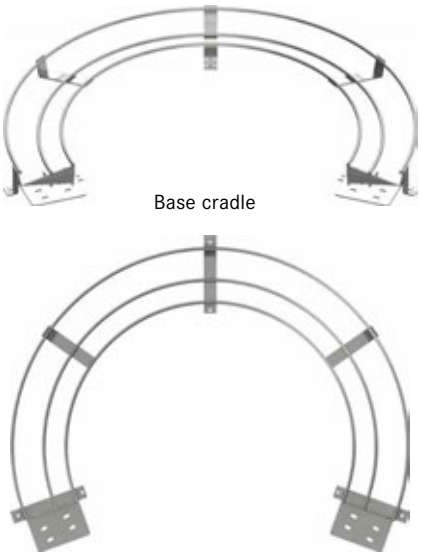


Fig. 2

For applications with rotations exceeding 200°, we have developed the following supports for guide the chain:

- Supporting rollers **(Fig. 3)** that can support the chain on the extended side of the travel distance
- Supporting hooks **(Fig. 4)** that can support the chain also on the retracted side of the travel distance

Fig. 3

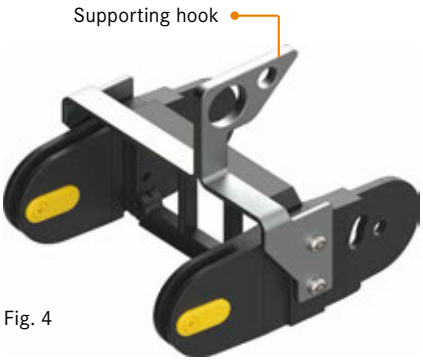


Fig. 4

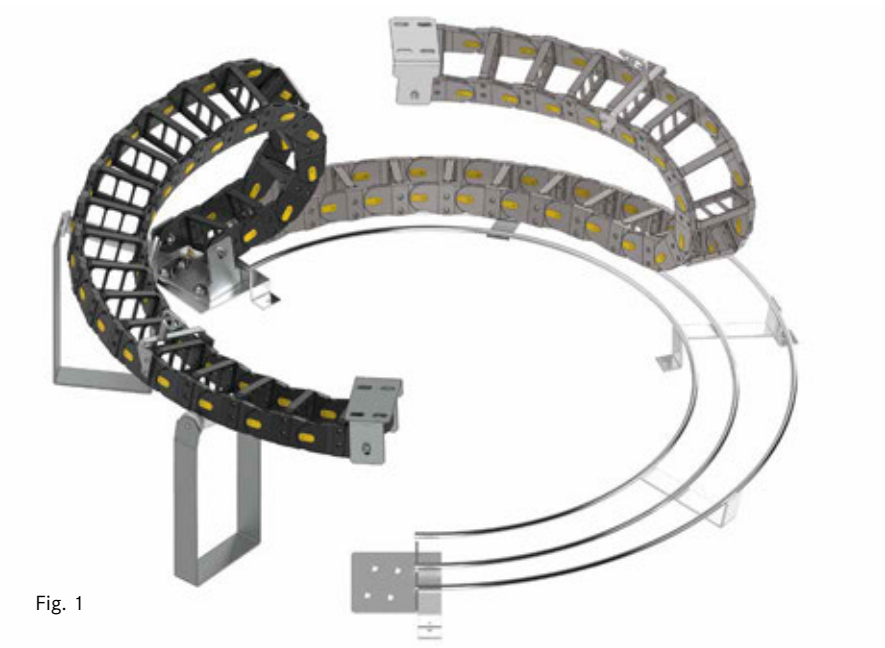


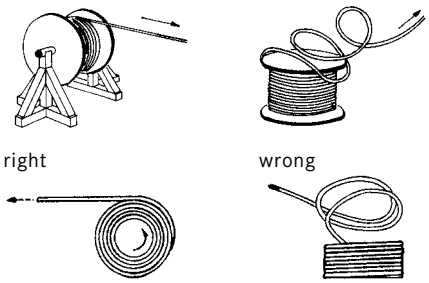
Fig. 1

When the use of one cable chain is not sufficient to contain all the cables/hoses, it is possible to use several chains in the same application increasing the space holding them.
The “ROBOT” chain series can be customised for special application needs. Please contact our technical office for more information.

ÖLFLEX® FD/CHAIN, UNITRONIC® FD, ETHERLINE® FD and HITRONIC® FD cables in cable chains

1. Power chains must be selected in accordance with the relevant project documentation of the chain manufacturers. The bending radius must comply with the minimum bending radius of the cables. If possible, we recommend avoiding a multi-layer cable configuration, i.e. >25 cores, and instead distributing the required quantity amongst several cables.

2. The cables must be unreeled from the ring or drum free of any twists (at a tangent) and must be laid out straight. This work should be carried out before starting the installation works so that the cables can relax in this time. Due to the manufacturing process, the markings on the cables run round in a gentle spiral. Therefore this cannot be used to ensure that the cables have been straightened out without any twists.

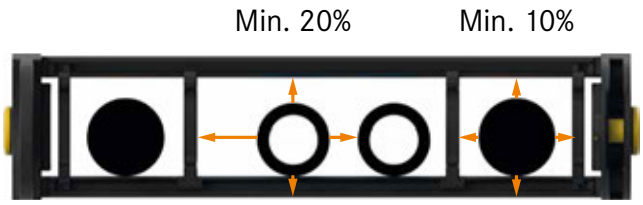


right wrong

3. The cable temperature should not drop below +5°C at any point during installation.

4. The cables also need to be installed without any twisting when inserted into the chambers. If a cable is twisted during installation, it can lead to premature damage to the core stranding. This effect can be reinforced during operation and result in so-called corkscrewing. This leads to core breaks, which ultimately cause malfunctions.

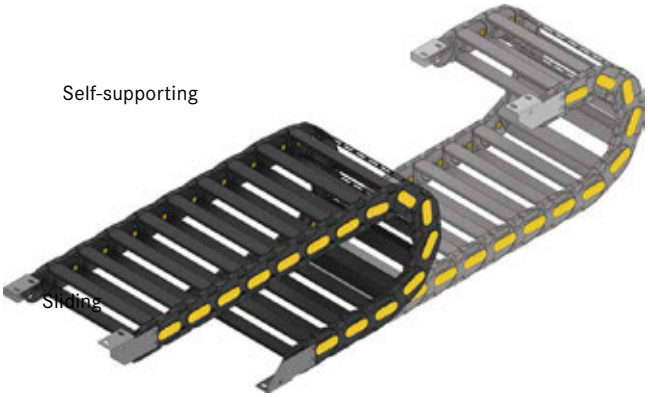
5. The cables must lie loosely next to each other in the chain chambers. They should be separated as much as possible using separators. The clearance between the cables and the cross bar, the separators or the neighbouring cables should be at least 10% of the cable diameter.



6. The cables should be installed symmetrically in terms of their weight and size; those with greater diameters and weights on the outside, those with smaller diameters and weights on the inside. They can also be placed in descending size order from inside to outside. Avoid arranging the cables above one another without the use of a shelf.

7. If the chain configurations are suspended vertically, additional free space must be provided in terms of the stay height, as the cables are lengthened during operation. After a short period of operation time, it is important to check whether the cables are still running along the neutral zone. It may be necessary to readjust them.

8. With self-supporting chain configurations, a cable is fastened both to the moving point and to the fixed point. Suitable cable supports of the chain manufacturer should be used here. With high accelerations, cable ties only have limited suitability. Avoid tying multiple cables together. The cables must not be secured or in any way bound together in the moving part of the chain. The clearance between the fixed point and the bending movements should be sufficiently wide.



9. With sliding chains, we recommend that the cable only be fastened to the moving point. A small cable reserve should be factored in at the fixed point. (Note the assembly instructions of the chain manufacturer).

10. Make sure that the cables in the bending radius run in the neutral zone, i.e. there must be no forced guidance through the chain in the inner or outer radius, so that the cables can still move relative to one another and to the chain. (Fig. 1)

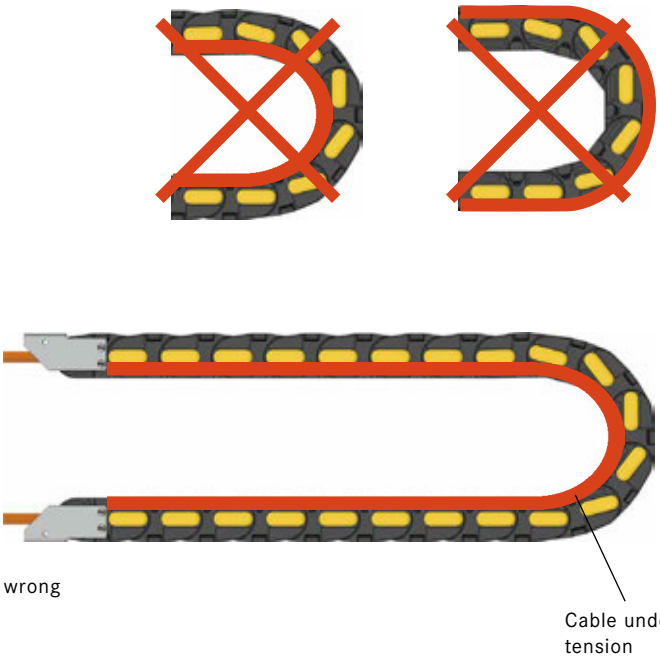
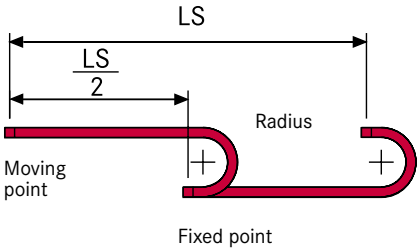


Fig. 1

11. If a cable does not run smoothly, i.e. if it becomes twisted along the longitudinal axis during operation, the cable should be rotated gradually at one of the fastening points until it runs smoothly again.

12. The length-changing characteristics of a cable and a chain differ considerably from one another in terms of their absolute sizes. In the first few hours of operation, cables undergo natural lengthening. With chains, it takes many hours of operation for this effect to take place. This oppositional behaviour should be addressed by regularly checking the installation position of the cables. We recommend carrying out the inspections regularly, every three months, in the first year of operation – after they should be carried out whenever a maintenance interval is due. This involves checking that the cables in the bending radius can move completely freely. It may be necessary to make readjustments. We recommend incorporating the maintenance instructions into the inspection plan of the system.

13. The travel distance (LS) results from 2 x chain length (L)



Product selection

Page	Chain series	Inner width		Inner height	Outer width		Outer height
		from (mm)	to (mm)	mm	from (mm)	to (mm)	mm
Nylon cable chains for multiple applications							
56	SILVYN® CHAIN 200	12	35	12	18	41	15
58	SILVYN® CHAIN 250L/LI/LE	15	50	17	26	61	23
64	SILVYN® CHAIN 325L/LI/LE	40	103	25	57	120	38
70	SILVYN® CHAIN 325PI	10	103	25	57	120	38
72	SILVYN® CHAIN 335L/LI/LE	40	150	35	56.5	166.5	50
78	SILVYN® CHAIN 335PS	40	150	35	56.5	166.5	50
80	SILVYN® CHAIN 435MU	40	150	35	60	170	49
82	SILVYN® CHAIN 435PU	40	150	35	60	170	48
84	SILVYN® CHAIN 445MU	50	362	45	72	384	64
86	SILVYN® CHAIN 445PU	50	362	45	72	384	64
88	SILVYN® CHAIN 445AU	50	362	45	72	384	64
90	SILVYN® CHAIN 445PS	61	125	45	83	147	64
92	SILVYN® CHAIN 660A	50	362	37	75	387	55
94	SILVYN® CHAIN 660	50	150	36	79	179	55
96	SILVYN® CHAIN 770A	45	357	60	80	392	78
98	SILVYN® CHAIN 770	85	250	51	120	285	78
100	SILVYN® CHAIN 475MU	74	498	75.5	112	536	100.5
102	SILVYN® CHAIN 475PU	74	374	75.5	110	410	100.5
104	SILVYN® CHAIN 306SU	43	355	37	79	391	55
106	SILVYN® CHAIN 306CU	43	355	37	79	391	55
108	SILVYN® CHAIN 306B	75	300	30	115	340	55
110	SILVYN® CHAIN 307SU	42	354	47	80	392	65
112	SILVYN® CHAIN 307B	75	300	40	117	342	65
114	SILVYN® CHAIN 307E	75	300	46.5	113	338	65
116	SILVYN® CHAIN 308SU	38	350	57	82	394	75
118	SILVYN® CHAIN 308CU	38	350	57	82	394	75
120	SILVYN® CHAIN 308B	100	300	48	156	356	75
122	SILVYN® CHAIN 308E	100	300	56.5	144	344	75
124	SILVYN® CHAIN 309SU	64	400	75.5	120	456	100
126	SILVYN® CHAIN 309CU	64	488	75.5	120	544	100
128	SILVYN® CHAIN 309B	100	400	70	156	456	100
130	SILVYN® CHAIN 309T	100	400	73	156	456	100
Nylon cable chains for heavy duty applications							
140	SILVYN® CHAIN H45SC	75	400	45	113	438	70
142	SILVYN® CHAIN H57SC	75	500	57	113	538	85
144	SILVYN® CHAIN H57PN	150	250	53.5	188	288	85
144	SILVYN® CHAIN H57PC	75	400	53.5	113	438	85
146	SILVYN® CHAIN H57B	100	400	57	138	438	85
148	SILVYN® CHAIN H57T	100	400	57	138	438	85
150	SILVYN® CHAIN H80SC/SA	64	400	80	120	456	100
152	SILVYN® CHAIN H80PC/PA	74	498	77	129	553	114
154	SILVYN® CHAIN H80B	100	500	81	155	555	114
156	SILVYN® CHAIN H80T	100	500	81	155	555	114
158	SILVYN® CHAIN H110SC/SA	200	600	112	260	660	150
160	SILVYN® CHAIN H110PC/PA	200	498	105	255	553	155
162	SILVYN® CHAIN H110B	200	600	112	255	655	155
164	SILVYN® CHAIN H110T	200	600	112	255	655	155
Nylon cable chains for sliding applications							
174	SILVYN® CHAIN 326SU	61	373	37	89	416	59
176	SILVYN® CHAIN 326B	75	300	37	115	340	59
178	SILVYN® CHAIN 328SU	61	373	57	116	428	79
180	SILVYN® CHAIN 328B	100	300	48	162	362	79
182	SILVYN® CHAIN 329SU	64	488	75.5	128	552	107
184	SILVYN® CHAIN 329CD	64	488	75.5	128	552	107
186	SILVYN® CHAIN 329B	100	400	70	164	464	107
188	SILVYN® CHAIN 478MU	74	498	75.5	112	536	106.5
190	SILVYN® CHAIN 478PU	74	498	75.5	112	536	106.5
192	SILVYN® CHAIN 60PU	115	539	60.5	165	589	90
194	SILVYN® CHAIN 60VU	115	539	60.5	165	589	90
196	SILVYN® CHAIN 80PU	115	539	80.5	195	619	117
Steel cable chains for multiple applications							
208	SILVYN® CHAIN 20LT	79	304	32	111	336	53
210	SILVYN® CHAIN 20LC	79	304	32	111	336	53
212	SILVYN® CHAIN 30LT	106	506	52	140	540	74
214	SILVYN® CHAIN 30LC	106	506	52	140	540	74
216	SILVYN® CHAIN 35LT	104	504	65	148	548	95
218	SILVYN® CHAIN 35LC	104	504	65	148	548	95
220	SILVYN® CHAIN 40LT	150	500	112.5	208	558	145
222	SILVYN® CHAIN 40LC	150	500	112.5	208	558	145
224	SILVYN® CHAIN 42LT	150	500	138	208	558	175
226	SILVYN® CHAIN 45T	300	600	182	390	690	220
Steel cable chains for sliding applications							
230	SILVYN® CHAIN 20LPT	79	304	32	121	346	58.5
232	SILVYN® CHAIN 20LPC	79	304	32	121	346	58.5
234	SILVYN® CHAIN 30LPT	106	506	52	151	551	81.5
236	SILVYN® CHAIN 30LPC	106	506	52	151	551	81.5
238	SILVYN® CHAIN 35LPT	104	504	65	148	548	107
240	SILVYN® CHAIN 35LPC	104	504	65	148	548	107
242	SILVYN® CHAIN 40LPT	150	500	112.5	230	580	161.5
244	SILVYN® CHAIN 40LPC	150	500	104	230	580	161.5
246	SILVYN® CHAIN 42LPT	150	500	138	230	580	191.5
Cable chains for robot applications							
254	SILVYN® CHAIN 495	45	-	35	69	-	45
256	SILVYN® CHAIN 500	65	-	30	93	-	43
258	SILVYN® CHAIN 510TN	88	-	46	132	-	55
258	SILVYN® CHAIN 515TN	88	-	46	132	-	55
260	SILVYN® CHAIN 545	62	-	46	123	-	62
262	SILVYN® CHAIN 599	210	-	59	272	-	85
264	SILVYN® CHAIN MULTIFLEX	63	63	63	77	77	77

Pitch	Bending radius		Self supporting capacity		Sliding application	Protection cover	Chain series	Page
mm	from (mm)	to (mm)	max m	kg				
							Nylon cable chains for multiple applications	
17	18	40	0.9	0.1			SILVYN® CHAIN 200	56
29	28	100	1.3	0.1			SILVYN® CHAIN 250L/LI/LE	58
45	50	150	1.9	0.5	On request		SILVYN® CHAIN 325L/LI/LE	64
45	75	150	1.7	0.5		✔	SILVYN® CHAIN 325PI	70
52	65	200	2.2	1	On request		SILVYN® CHAIN 335L/LI/LE	72
52	65	200	2.0	1		✔	SILVYN® CHAIN 335PS	78
50	60	200	2.2	1	On request		SILVYN® CHAIN 435MU	80
50	75	200	2.1	1		✔	SILVYN® CHAIN 435PU	82
67	75	300	3.7	1	On request		SILVYN® CHAIN 445MU	84
67	100	300	3.4	1		✔	SILVYN® CHAIN 445PU	86
67	100	300	3.4	1		✔	SILVYN® CHAIN 445AU	88
67	100	300	3.4	1	On request	✔	SILVYN® CHAIN 445PS	90
50	100	250	2.5	1	On request		SILVYN® CHAIN 660A	92
50	100	250	2.3	1		✔	SILVYN® CHAIN 660	94
70	150	300	3.8	1	On request		SILVYN® CHAIN 770A	96
70	150	300	3.5	1		✔	SILVYN® CHAIN 770	98
105	150	400	4.8	1	On request		SILVYN® CHAIN 475MU	100
105	180	400	4.5	1		✔	SILVYN® CHAIN 475PU	102
65	75	300	2.7	1			SILVYN® CHAIN 306SU	104
65	107	300	2.7	1		✔	SILVYN® CHAIN 306CU	106
65	75	300	3.1	1			SILVYN® CHAIN 306B	108
70	75	250	3.2	1			SILVYN® CHAIN 307SU	110
70	75	250	3.9	1			SILVYN® CHAIN 307B	112
70	75	250	3.2	1			SILVYN® CHAIN 307E	114
80	135	400	4.2	1			SILVYN® CHAIN 308SU	116
80	150	400	4.0	1		✔	SILVYN® CHAIN 308CU	118
80	150	400	5.0	1			SILVYN® CHAIN 308B	120
80	135	400	4.2	1			SILVYN® CHAIN 308E	122
100	150	600	6.5	1			SILVYN® CHAIN 309SU	124
100	200	500	5.8	1		✔	SILVYN® CHAIN 309CU	126
100	150	600	4.6	1			SILVYN® CHAIN 309B	128
100	150	600	4.6	1			SILVYN® CHAIN 309T	130
							Nylon cable chains for heavy duty applications	
75	75	300	3.0	1	On request		SILVYN® CHAIN H45SC	140
90	150	400	5.0	1			SILVYN® CHAIN H57SC	142
90	180	400	4.8	1		✔	SILVYN® CHAIN H57PN	144
90	180	400	4.8	1		✔	SILVYN® CHAIN H57PC	144
90	180	400	5.0	1			SILVYN® CHAIN H57B	146
90	180	400	5.0	1			SILVYN® CHAIN H57T	148
120	200	750	7.0	1			SILVYN® CHAIN H80SA	150
120	200	600	6.0	1		✔	SILVYN® CHAIN H80PA	152
120	200	600	7.0	1			SILVYN® CHAIN H80B	154
120	200	600	7.0	1			SILVYN® CHAIN H80T	156
160	200	750	9.0	1			SILVYN® CHAIN H110SC	158
160	250	750	7.8	1		✔	SILVYN® CHAIN H110PC	160
160	200	750	9.0	1			SILVYN® CHAIN H110B	162
160	200	750	8.0	1			SILVYN® CHAIN H110T	164
							Nylon cable chains for sliding applications	
65	107	300	-	-	✔		SILVYN® CHAIN 326SU	174
65	107	300	-	-	✔		SILVYN® CHAIN 326B	176
80	150	400	-	-	✔		SILVYN® CHAIN 328SU	178
80	150	400	-	-	✔		SILVYN® CHAIN 328B	180
100	150	600	-	-	✔		SILVYN® CHAIN 329SU	182
100	200	600	-	-	✔	✔	SILVYN® CHAIN 329CD	184
100	150	600	-	-	✔		SILVYN® CHAIN 329B	186
105	150	400	-	-	✔		SILVYN® CHAIN 478MU	188
105	180	400	-	-	✔	✔	SILVYN® CHAIN 478PU	190
90	150	400	-	-	✔		SILVYN® CHAIN 60PU	192
90	150	400	-	-	✔		SILVYN® CHAIN 60VU	194
110	200	700	-	-	✔		SILVYN® CHAIN 80PU	196
							Steel cable chains for multiple applications	
75	75	305	4.2	1			SILVYN® CHAIN 20LT	208
75	115	305	4.2	1		✔	SILVYN® CHAIN 20LC	210
95	150	535	5.8	1			SILVYN® CHAIN 30LT	212
95	150	535	5.8	1		✔	SILVYN® CHAIN 30LC	214
125	200	600	7.8	1			SILVYN® CHAIN 35LT	216
125	200	600	7.0	1		✔	SILVYN® CHAIN 35LC	218
180	250	850	12.9	1			SILVYN® CHAIN 40LT	220
180	250	850	11.8	1		✔	SILVYN® CHAIN 40LC	222
180	250	850	12.0	1			SILVYN® CHAIN 42LT	224
250	400	1500	13.0	1			SILVYN® CHAIN 45T	226
							Steel cable chains for sliding applications	
75	115	305	-	-	✔		SILVYN® CHAIN 20LPT	230
75	115	305	-	-	✔	✔	SILVYN® CHAIN 20LPC	232
95	150	535	-	-	✔		SILVYN® CHAIN 30LPT	234
95	150	535	-	-	✔	✔	SILVYN® CHAIN 30LPC	236
125	200	600	-	-	✔		SILVYN® CHAIN 35LPT	238
125	200	600	-	-	✔	✔	SILVYN® CHAIN 35LPC	240
180	250	850	-	-	✔		SILVYN® CHAIN 40LPT	242
180	250	850	-	-	✔	✔	SILVYN® CHAIN 40LPC	244
180	250	850	-	-	✔		SILVYN® CHAIN 42LPT	246
							Cable chains for robot applications	
-	100	-	-	-			SILVYN® CHAIN 495	254
-	100	150	-	-			SILVYN® CHAIN 500	256
-	125	-	-	-			SILVYN® CHAIN 510TN	258
-	175	-	-	-			SILVYN® CHAIN 515TN	258
-	100	-	-	-			SILVYN® CHAIN 545	260
-	220	-	-	-			SILVYN® CHAIN 599	262
18.5	100	-	-	-		✔	SILVYN® CHAIN MULTIFLEX	264

Nylon cable chains for multiple applications

Product	Page
SILVYN® CHAIN 200	56
SILVYN® CHAIN 250L/LI/LE	58
SILVYN® CHAIN 325L/LI/LE	64
SILVYN® CHAIN 325PI	70
SILVYN® CHAIN 335L/LI/LE	72
SILVYN® CHAIN 335PS	78
SILVYN® CHAIN 435PU	80
SILVYN® CHAIN 435PU	82
SILVYN® CHAIN 445MU	84
SILVYN® CHAIN 445PU	86
SILVYN® CHAIN 445AU	88
SILVYN® CHAIN 445PS	90
SILVYN® CHAIN 660A	92
SILVYN® CHAIN 660	94
SILVYN® CHAIN 770A	96
SILVYN® CHAIN 770	98
SILVYN® CHAIN 475MU	100
SILVYN® CHAIN 475PU	102
SILVYN® CHAIN 306SU	104
SILVYN® CHAIN 306CU	106
SILVYN® CHAIN 306B	108
SILVYN® CHAIN 307SU	110
SILVYN® CHAIN 307B	112
SILVYN® CHAIN 307E	114
SILVYN® CHAIN 308SU	116
SILVYN® CHAIN 308CU	118
SILVYN® CHAIN 308B	120
SILVYN® CHAIN 308E	122
SILVYN® CHAIN 309SU	124
SILVYN® CHAIN 309CU	126
SILVYN® CHAIN 309B	128
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Accessories	Page
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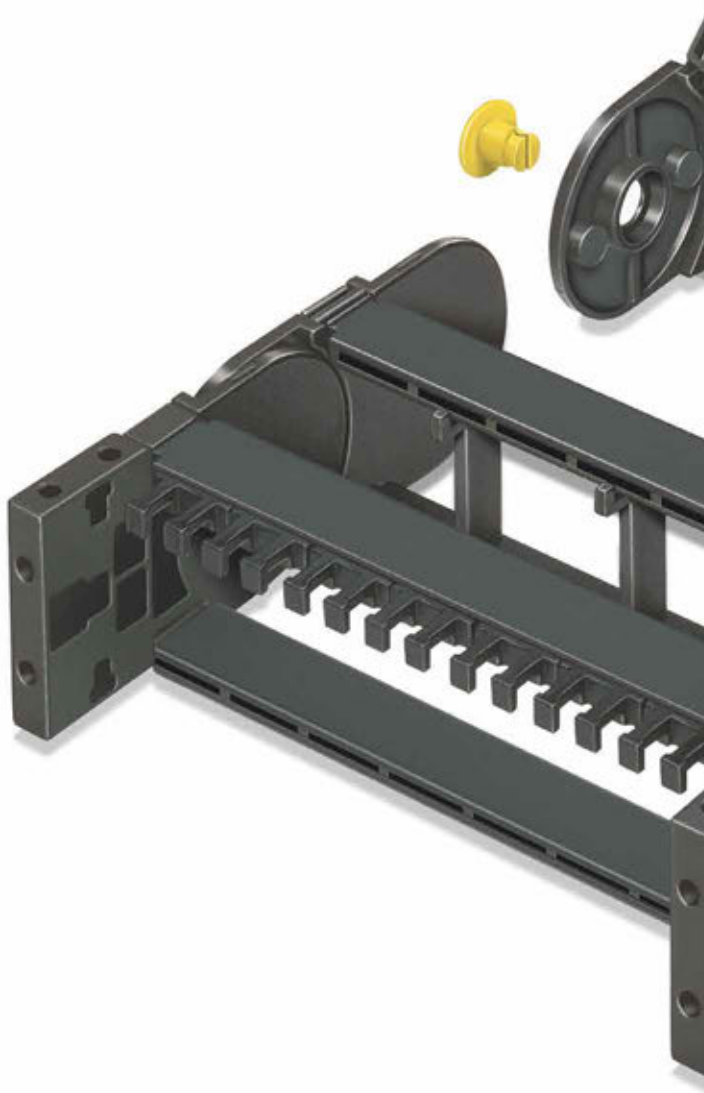
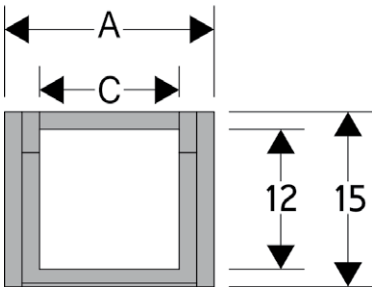


SILVYN® CHAIN 200

Nylon cable chain with non-openable frames



Technical data

Inner Height (D)
12 mm

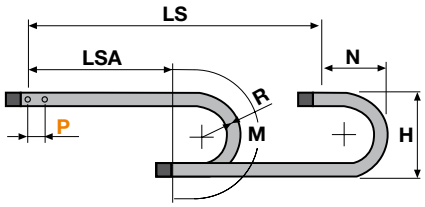
Pitch (P)
17 mm

Speed
10 m/s

Acceleration
50 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
18	15	12	12	018-030-040	0.13	20012□□□
31	15	25	12	018-030-040	0.14	20025□□□
41	15	35	12	018-030-040	0.15	20035□□□

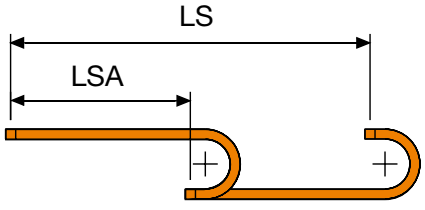
□□□ to be filled with Radius R

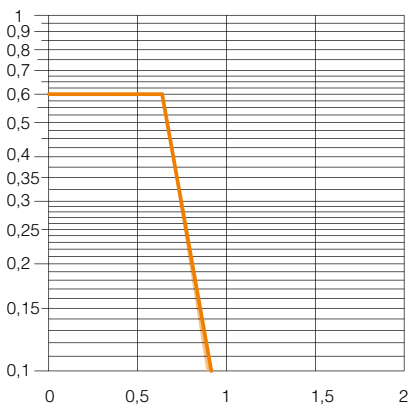


R	H	N	M
018	51	45	95
030	75	55	130
040	95	70	165

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram
The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

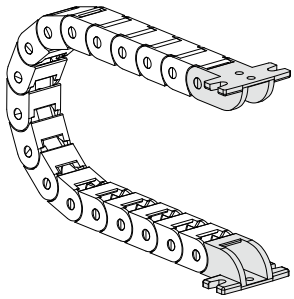
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

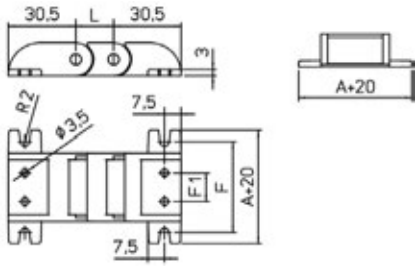
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type





Chain Type	F	F1
20012□□□	15	-
20025□□□	41	13
20035□□□	51	23

Nylon Type Part Numbers
Complete Set Assembled
AN200□□KM□
Complete Set Unassembled
AN200□□K

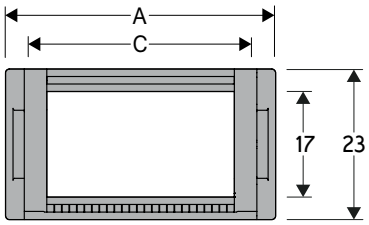
□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 250L

Nylon cable chain with non-openable frames

Info

- Sliding version to be ordered with pivoting end bracket set.



Technical data

Inner Height (D)
17 mm

Pitch (P)
29 mm

Height Moving Point (W)
100 mm

Speed
10 m/s

Acceleration
50 m/s²

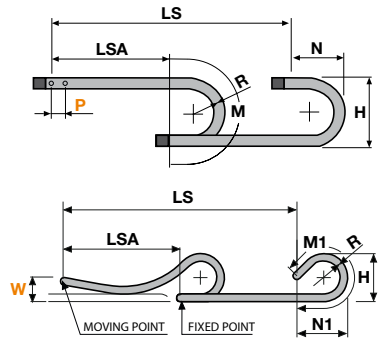
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
26	23	15	17	028-038-045-060-075-100	0.34	250L015□□□
36	23	25	17	028-038-045-060-075-100	0.37	250L025□□□
46	23	35	17	028-038-045-060-075-100	0.40	250L035□□□
61	23	50	17	028-038-045-060-075-100	0.43	250L050□□□

□□□ to be filled with Radius R

Separator

Unassembled	Article number S250L
Assembled	Article number S250LMC

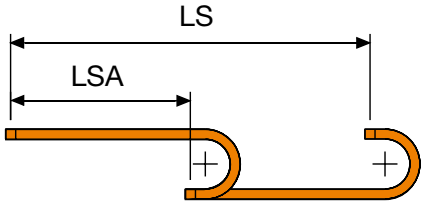
MCI: chain opening outer radius
MCE: chain opening inner radius

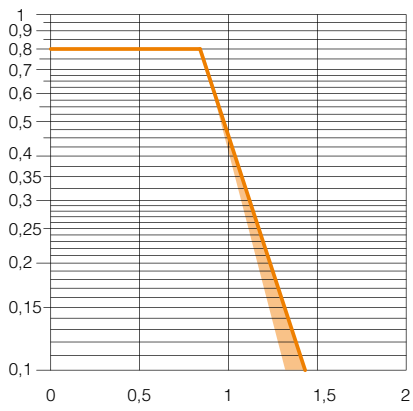


R	H	N	M	N1	M1
028	79	68,5	146	120	255
038	99	78,5	177	125	270
045	113	85,5	199	250	530
060	143	100,5	246	400	850
075	173	115,5	294	505	1085
100	223	140,5	372	650	1405

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

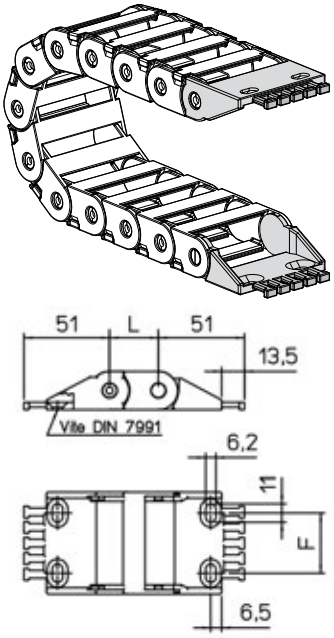
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type



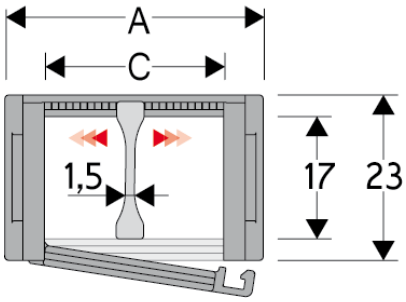
Chain Type	F
250L015□□□	11
250L025□□□	11
250L035□□□	21
250L050□□□	36

Nylon Type Part Numbers
Complete Set Assembled
AN250L□□□□KM□
Complete Set Unassembled
AN250L□□□□K□

□□□ Inner width (C)
□ Possible mounting positions:
1/2/3/5/6 (acc. to page 33)

SILVYN® CHAIN 250LI

Nylon Cable Chain with opening frames



Info

- Sliding version to be ordered with pivoting end bracket set.

Technical data

Inner Height (D)
17 mm

Pitch (P)
29 mm

Height Moving Point (W)
100 mm

Speed
10 m/s

Acceleration
50 m/s²

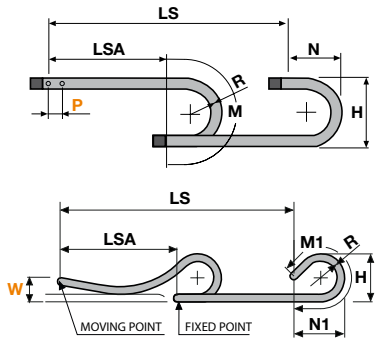
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
26	23	15	17	028-038-045-060-075-100	0.34	250LI015□□□
36	23	25	17	028-038-045-060-075-100	0.37	250LI025□□□
46	23	35	17	028-038-045-060-075-100	0.40	250LI035□□□
61	23	50	17	028-038-045-060-075-100	0.43	250LI050□□□

□□□ to be filled with Radius R

Separator

Unassembled	Article number S250L
Assembled	Article number S250LMC

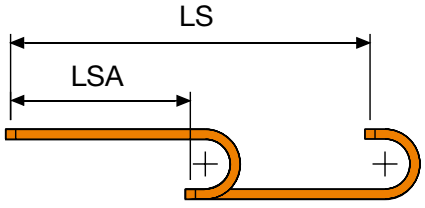
MCI: chain opening outer radius
MCE: chain opening inner radius

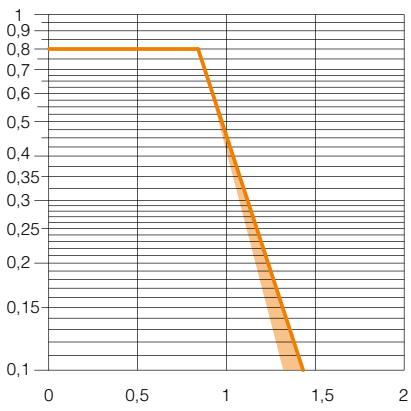


R	H	N	M	N1	M1
028	79	68,5	146	120	255
038	99	78,5	177	125	270
045	113	85,5	199	250	530
060	143	100,5	246	400	850
075	173	115,5	294	505	1085
100	223	140,5	372	650	1405

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

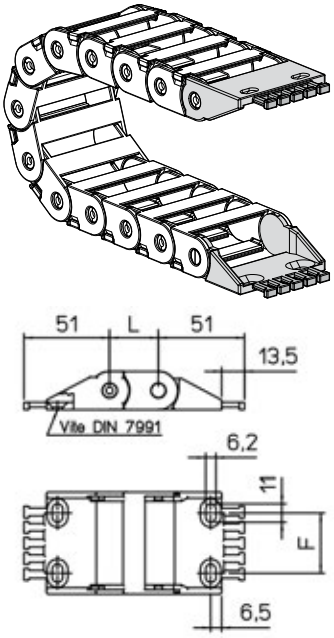
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type



Chain Type	F
250LI015□□□	11
250LI025□□□	11
250LI035□□□	21
250LI050□□□	36

Nylon Type Part Numbers
Complete Set Assembled
AN250L□□□KM□
Complete Set Unassembled
AN250L□□□K□

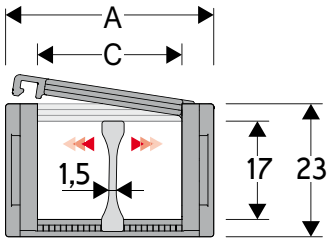
□□□ Inner width (C)
□ Possible mounting positions:
1/2/3/5/6 (acc. to page 33)

SILVYN® CHAIN 250LE

Nylon Cable Chain with opening frames

Info

- Sliding version to be ordered with pivoting end bracket set.



Technical data

Inner Height (D)
17 mm

Pitch (P)
29 mm

Height Moving Point (W)
100 mm

Speed
10 m/s

Acceleration
50 m/s²

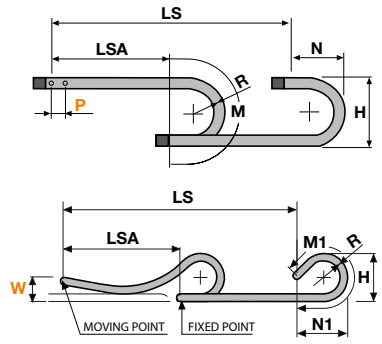
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
26	23	15	17	028-038-045-060-075-100	0.34	250LE015□□□
36	23	25	17	028-038-045-060-075-100	0.37	250LE025□□□
46	23	35	17	028-038-045-060-075-100	0.40	250LE035□□□
61	23	50	17	028-038-045-060-075-100	0.43	250LE050□□□

□□□ to be filled with Radius R

Separator

Unassembled	Article number S250L
Assembled	Article number S250LMC

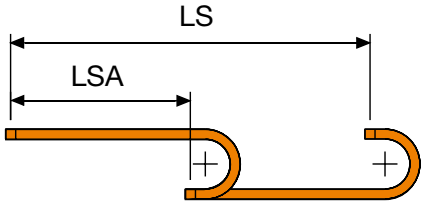
MCI: chain opening outer radius
MCE: chain opening inner radius

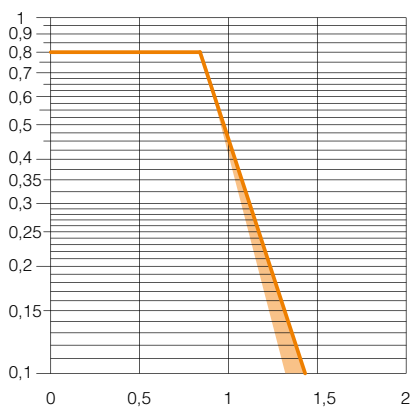


R	H	N	M	N1	M1
028	79	68,5	146	120	255
038	99	78,5	177	125	270
045	113	85,5	199	250	530
060	143	100,5	246	400	850
075	173	115,5	294	505	1085
100	223	140,5	372	650	1405

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

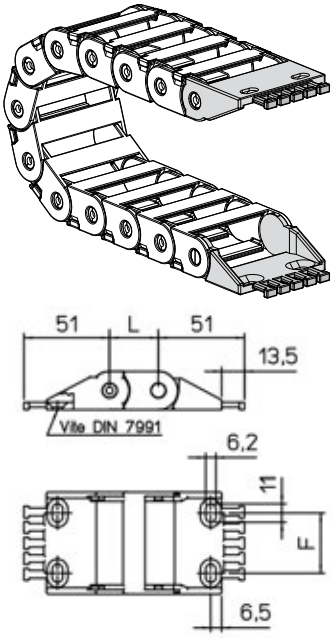
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type



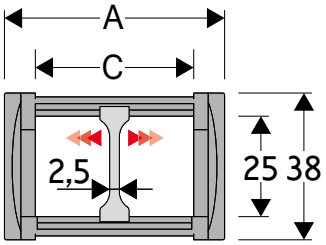
Chain Type	F
250LE015□□□	11
250LE025□□□	11
250LE035□□□	21
250LE050□□□	36

Nylon Type Part Numbers
Complete Set Assembled
AN250L□□□□KM□
Complete Set Unassembled
AN250L□□□□K□

□□□ Inner width (C)
□ Possible mounting positions:
1/2/3/5/6 (acc. to page 33)

SILVYN® CHAIN 325L

Nylon Cable Chain



Info

- Sliding version to be ordered with pivoting end bracket set.

Technical data

Inner Height (D)
25 mm

Pitch (P)
45 mm

Height Moving Point (W)
140 mm

Speed
10 m/s

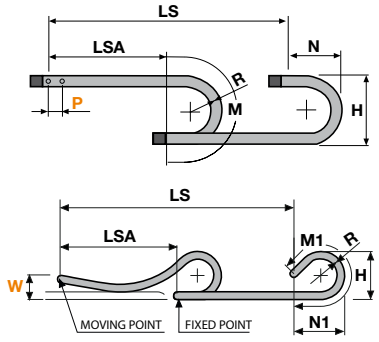
Acceleration
50 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
57	38	40	25	050-060-075-100-125-150	0.90	325L040□□□
77	38	60	25	050-060-075-100-125-150	0.95	325L060□□□
93	38	76	25	050-060-075-100-125-150	1.05	325L076□□□
120	38	103	25	050-060-075-100-125-150	1.15	325L103□□□

□□□ to be filled with Radius R

Separator	
Unassembled	Article number S325L
Assembled	Article number S325LMC

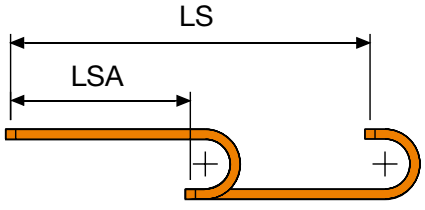
MCI: chain opening outer radius
MCE: chain opening inner radius

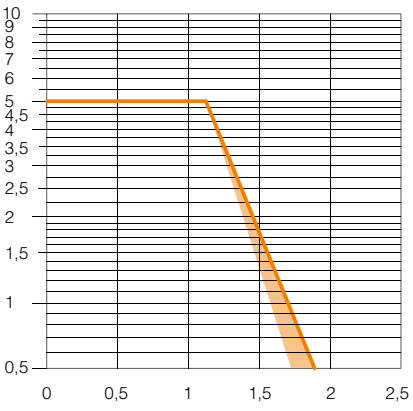


R	H	N	M	N1	M1
050	138	115	250	145	300
060	158	125	280	155	335
075	188	140	325	185	420
100	238	165	405	275	635
125	288	190	485	360	855
150	338	215	565	445	1075

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

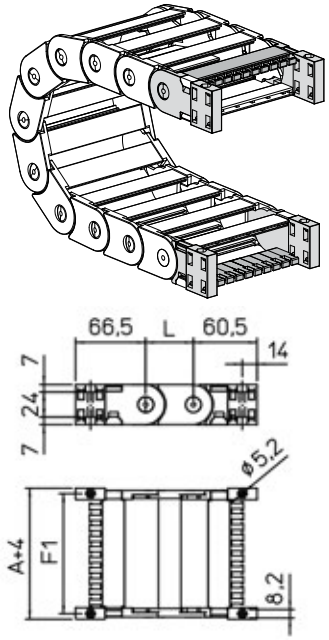
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type

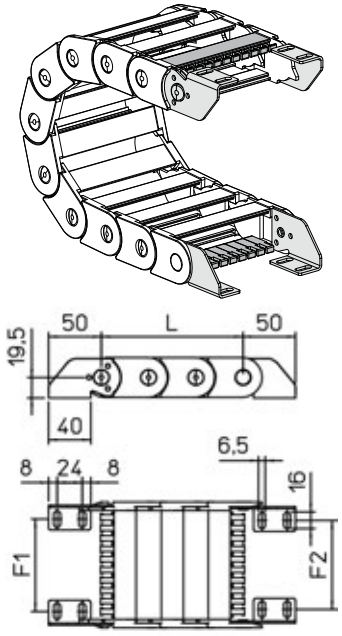


Chain Type	F1
325L40□□□	51
325L60□□□	71
325L76□□□	87
325L103□□□	114

Nylon Type Part Numbers
Complete Set Assembled
AN325L□□□KM
Complete Set Unassembled
AN325L□□□K
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC325L□□□KM
Complete Set Unassembled
CFC325L□□□K
Part Number Reducer Set
Complete Set Assembled
AQF325K

□□□ Inner width (C)

Steel Type

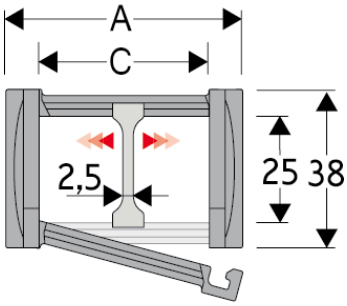


Chain Type	F1	F2
325L40□□□	25.5	22
325L60□□□	45.5	42
325L76□□□	61.5	58
325L103□□□	88.5	85

Steel Type Part Numbers
Complete Set Assembled
A325LKM
Complete Set Unassembled
A325LK
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC325L□□□KM
Complete Set Unassembled
CFC325L□□□K

SILVYN® CHAIN 325LI

Nylon Cable Chain with opening frames



Info

- Sliding version to be ordered with pivoting end bracket set.

Technical data

Inner Height (D)
25 mm

Pitch (P)
45 mm

Height Moving Point (W)
140 mm

Speed
10 m/s

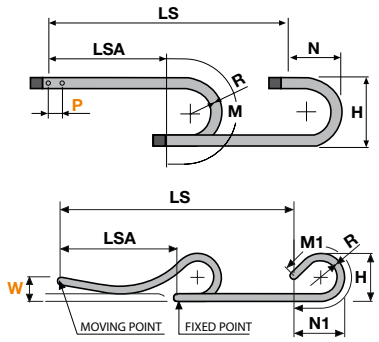
Acceleration
50 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
57	38	40	25	050-060-075-100-125-150	0.90	325LI040□□□
77	38	60	25	050-060-075-100-125-150	0.95	325LI060□□□
93	38	76	25	050-060-075-100-125-150	1.05	325LI076□□□
120	38	103	25	050-060-075-100-125-150	1.15	325LI103□□□

□□□ to be filled with Radius R

Separator	
Unassembled	Article number S325L
Assembled	Article number S325LMC

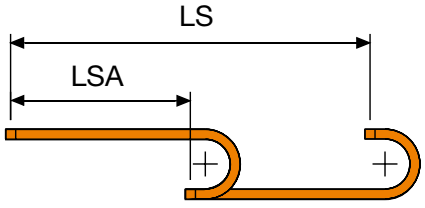
MCI: chain opening outer radius
MCE: chain opening inner radius

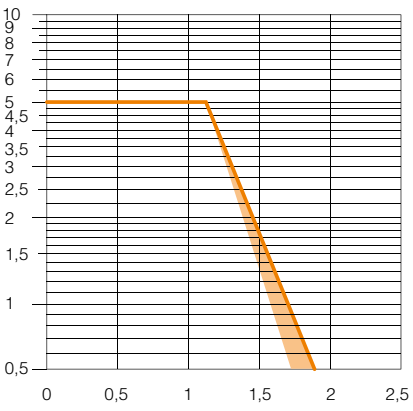


R	H	N	M	N1	M1
050	138	115	250	145	300
060	158	125	280	155	335
075	188	140	325	185	420
100	238	165	405	275	635
125	288	190	485	360	855
150	338	215	565	445	1075

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

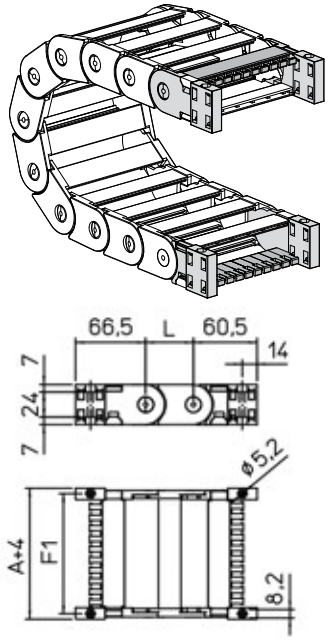
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type

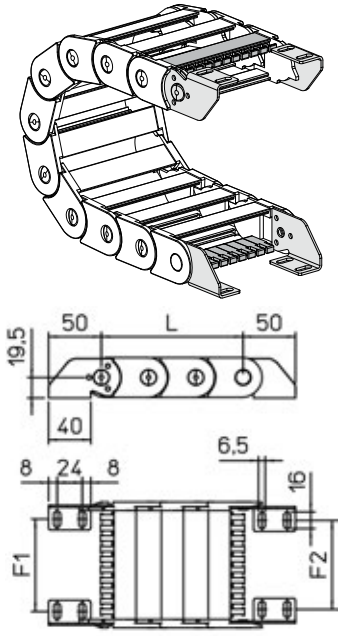


Chain Type	F1
325L40□□□	51
325L60□□□	71
325L76□□□	87
325L103□□□	114

Nylon Type Part Numbers
Complete Set Assembled
AN325L□□□KM
Complete Set Unassembled
AN325L□□□K
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC325L□□□KM
Complete Set Unassembled
CFC325L□□□K
Part Number Reducer Set
Complete Set Assembled
AQF325K

□□□ Inner width (C)

Steel Type

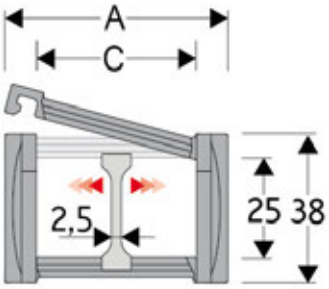


Chain Type	F1	F2
325L40□□□	25.5	22
325L60□□□	45.5	42
325L76□□□	61.5	58
325L103□□□	88.5	85

Steel Type Part Numbers
Complete Set Assembled
A325LKM
Complete Set Unassembled
A325LK
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC325L□□□KM
Complete Set Unassembled
CFC325L□□□K

SILVYN® CHAIN 325LE

Nylon Cable Chain with opening frames



Info

- Sliding version to be ordered with pivoting end bracket set.

Technical data

Inner Height (D)
25 mm

Pitch (P)
45 mm

Height Moving Point (W)
140 mm

Speed
10 m/s

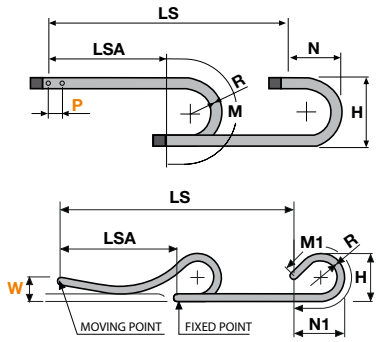
Acceleration
50 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
57	38	40	25	050-060-075-100-125-150	0.90	325LE040□□□
77	38	60	25	050-060-075-100-125-150	0.95	325LE060□□□
93	38	76	25	050-060-075-100-125-150	1.05	325LE076□□□
120	38	103	25	050-060-075-100-125-150	1.15	325LE103□□□

□□□ to be filled with Radius R

Separator	
Unassembled	Article number S325L
Assembled	Article number S325LMC

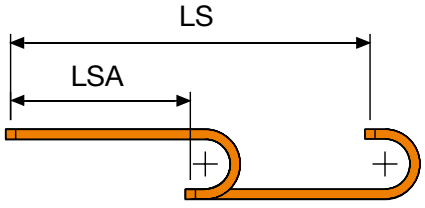
MCI: chain opening outer radius
MCE: chain opening inner radius

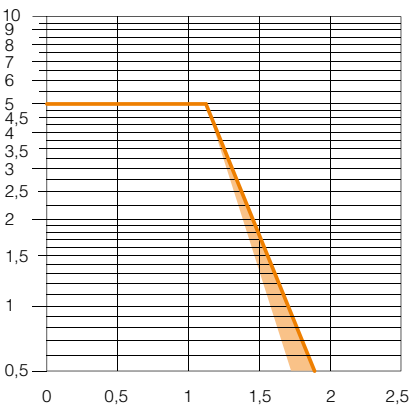


R	H	N	M	N1	M1
050	138	115	250	145	300
060	158	125	280	155	335
075	188	140	325	185	420
100	238	165	405	275	635
125	288	190	485	360	855
150	338	215	565	445	1075

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

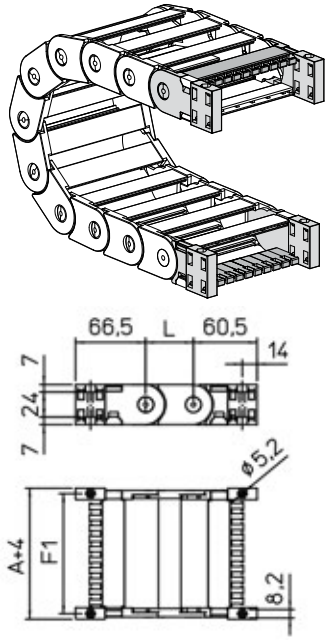
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type

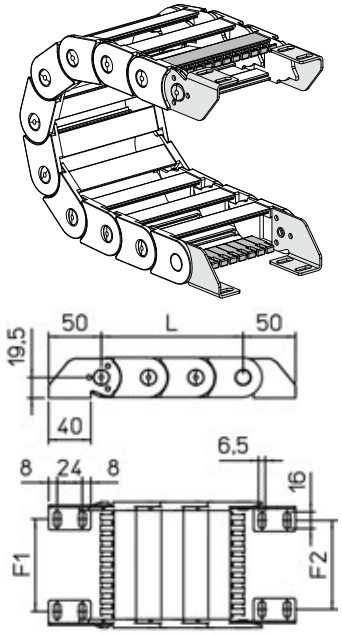


Chain Type	F1
325L40□□□	51
325L60□□□	71
325L76□□□	87
325L103□□□	114

Nylon Type Part Numbers
Complete Set Assembled
AN325L□□□KM
Complete Set Unassembled
AN325L□□□K
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC325L□□□KM
Complete Set Unassembled
CFC325L□□□K
Part Number Reducer Set
Complete Set Assembled
AQF325K

□□□ Inner width (C)

Steel Type



Chain Type	F1	F2
325L40□□□	25.5	22
325L60□□□	45.5	42
325L76□□□	61.5	58
325L103□□□	88.5	85

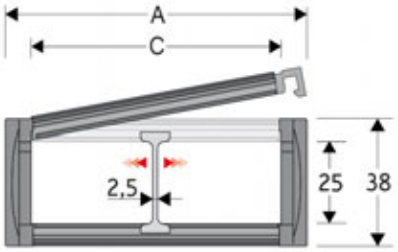
Steel Type Part Numbers
Complete Set Assembled
A325LKM
Complete Set Unassembled
A325LK
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC325L□□□KM
Complete Set Unassembled
CFC325L□□□K

SILVYN® CHAIN 325PI

Nylon cable chain with openable protection frames.

Info

- Sliding version to be ordered with pivoting end bracket set.



Technical data

Inner Height (D)
25 mm

Pitch (P)
45 mm

Height Moving Point (W)
140 mm

Speed
10 m/s

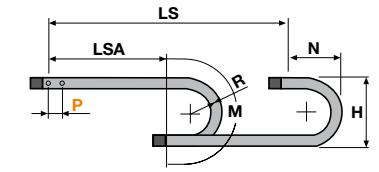
Acceleration
50 m/s²

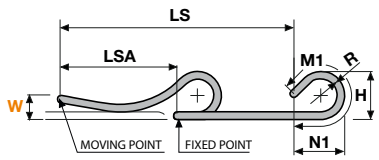
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
57	38	40	25	075-100-125-150	1.15	325PI040□□□
77	38	60	25	075-100-125-150	1.30	325PI060□□□
93	38	76	25	075-100-125-150	1.40	325PI076□□□
120	38	103	25	075-100-125-150	1.70	325PI103□□□

□□□ to be filled with Radius R

Separator	
Unassembled	Article number S325L
Assembled	Article number S325LMC

MCI: chain opening outer radius
MCE: chain opening inner radius

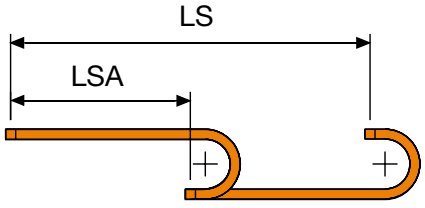


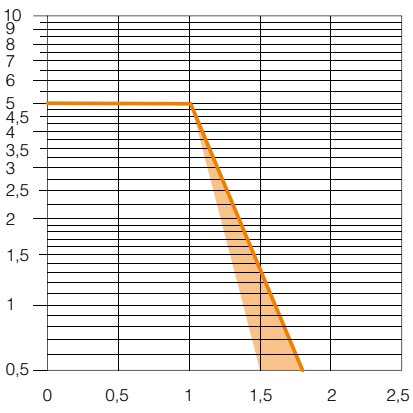


R	H	N	M	N1	M1
075	188	140	325	185	420
100	238	165	405	275	635
125	288	190	485	360	855
150	338	215	565	445	1075

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

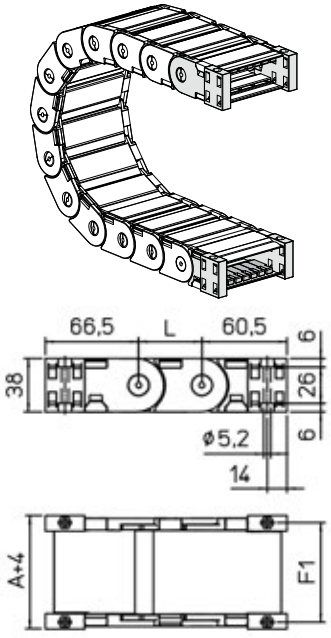
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type

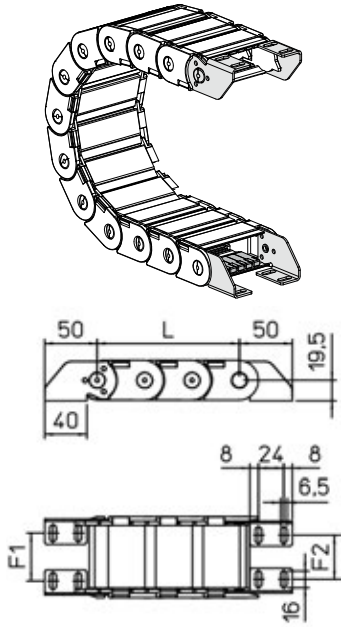


Chain Type	F1
325PI040□□□	51
325PI060□□□	71
325PI076□□□	87
325PI103□□□	114

Nylon Type Part Numbers
Complete Set Assembled
AN325P□□□KM
Complete Set Unassembled
AN325P□□□K
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC325L□□□KM
Complete Set Unassembled
CFC325L□□□K

□□□ Inner width (C)

Steel Type

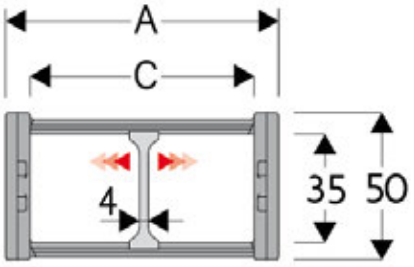


Chain Type	F1	F2
325PI40□□□	25.5	22
325PI60□□□	45.5	42
325PI76□□□	61.5	58
325PI103□□□	88.5	85

Steel Type Part Numbers
Complete Set Assembled
A325LKM
Complete Set Unassembled
A325LK
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC325L□□□KM
Complete Set Unassembled
CFC325L□□□K

SILVYN® CHAIN 335L

Nylon cable chain with non-openable frames



Info

- Sliding version to be ordered with pivoting end bracket set.

Technical data

Inner Height (D)
35 mm

Pitch (P)
52 mm

Height Moving Point (W)
140 mm

Speed
10 m/s

Acceleration
50 m/s²

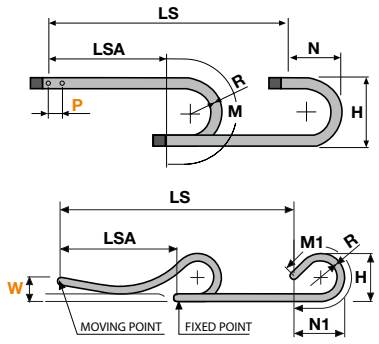
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
56.5	50	40	35	065-075-100-125-150-200	1.12	335L040□□□
66.5	50	50	35	065-075-100-125-150-200	1.15	335L050□□□
76.5	50	60	35	065-075-100-125-150-200	1.19	335L060□□□
92.5	50	76	35	065-075-100-125-150-200	1.25	335L076□□□
119.5	50	103	35	065-075-100-125-150-200	1.36	335L103□□□
141.5	50	125	35	065-075-100-125-150-200	1.44	335L125□□□
166.5	50	150	35	065-075-100-125-150-200	1.54	335L150□□□

□□□ to be filled with Radius R

Separator

Unassembled	Article number S4353
Assembled	Article number S4353MC

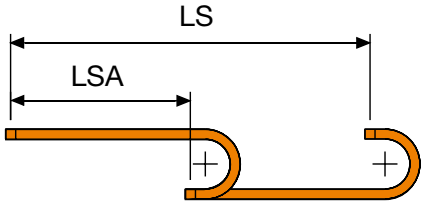
MCI: chain opening outer radius
MCE: chain opening inner radius

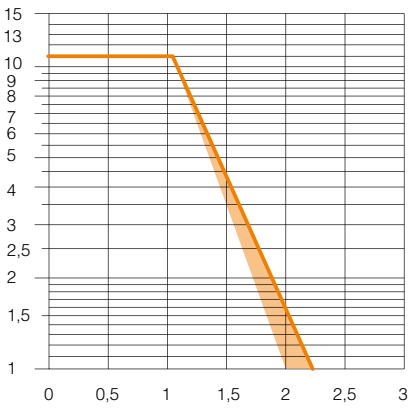


R	H	N	M	N1	M1
065	180	169	310	220	465
075	200	179	340	260	560
100	250	204	420	350	790
125	300	229	500	445	1025
150	350	254	580	540	1260
200	450	304	735	730	1725

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

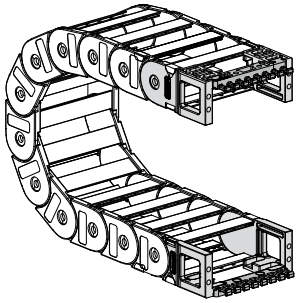
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

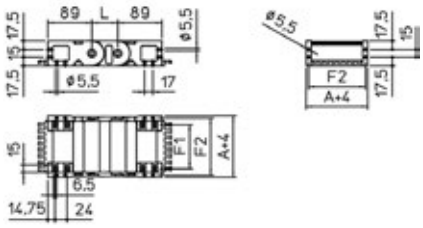
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type





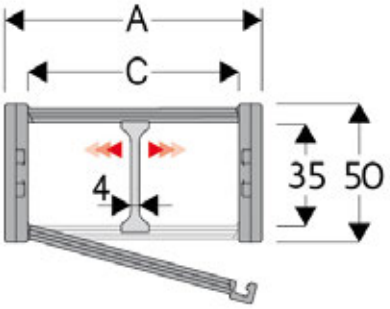
Chain Type	F1	F1
335L40□□□	25	51
335L50□□□	35	61
335L60□□□	45	71
335L76□□□	61	87
335L103□□□	88	114
335L125□□□	110	136
335L150□□□	135	161

Nylon Type Part Numbers
Complete Set Assembled
AN335L□□□KM□
Complete Set Unassembled
AN335L□□□K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
PFN335□□□

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 335LI

Nylon Cable Chain with opening frames



Info

- Sliding version to be ordered with pivoting end bracket set.

Technical data

Inner Height (D)
35 mm

Pitch (P)
52 mm

Height Moving Point (W)
140 mm

Speed
10 m/s

Acceleration
50 m/s²

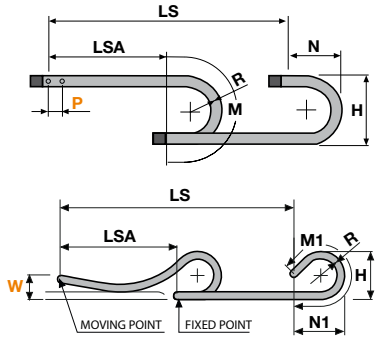
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
56.5	50	40	35	065-075-100-125-150-200	1.12	335LI040□□□
66.5	50	50	35	065-075-100-125-150-200	1.15	335LI050□□□
76.5	50	60	35	065-075-100-125-150-200	1.19	335LI060□□□
92.5	50	76	35	065-075-100-125-150-200	1.25	335LI076□□□
119.5	50	103	35	065-075-100-125-150-200	1.36	335LI103□□□
141.5	50	125	35	065-075-100-125-150-200	1.44	335LI125□□□
166.5	50	150	35	065-075-100-125-150-200	1.54	335LI150□□□

□□□ to be filled with Radius R

Separator

Unassembled	Article number S4353
Assembled	Article number S4353MC

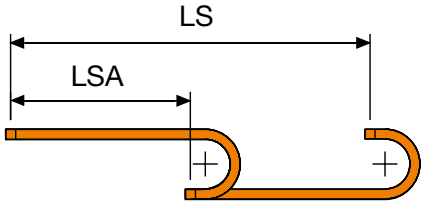
MCI: chain opening outer radius
MCE: chain opening inner radius

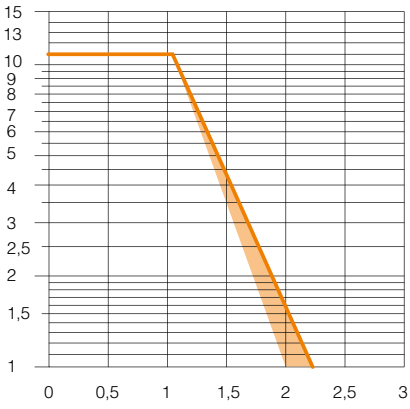


R	H	N	M	N1	M1
065	180	169	310	220	465
075	200	179	340	260	560
100	250	204	420	350	790
125	300	229	500	445	1025
150	350	254	580	540	1260
200	450	304	735	730	1725

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

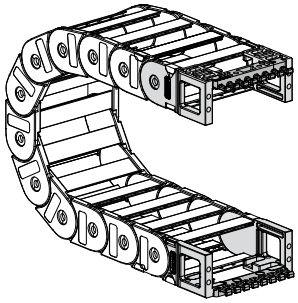
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

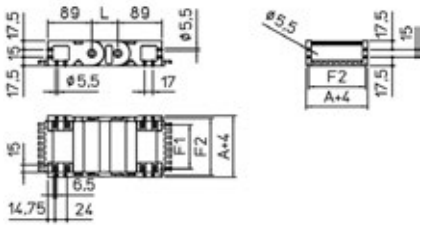
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type





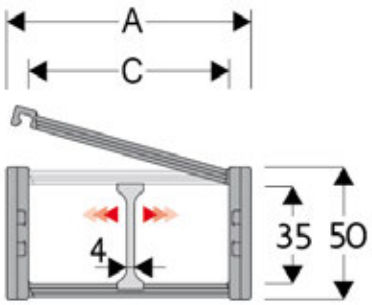
Chain Type	F1	F1
335LI40□□□	25	51
335LI50□□□	35	61
335LI60□□□	45	71
335LI76□□□	61	87
335LI103□□□	88	114
335LI125□□□	110	136
335LI150□□□	135	161

Nylon Type Part Numbers
Complete Set Assembled
AN335L□□□KM□
Complete Set Unassembled
AN335L□□□K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
PFN335□□□

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 335LE

Nylon Cable Chain with opening frames



Info

- Sliding version to be ordered with pivoting end bracket set.

Technical data

Inner Height (D)
35 mm

Pitch (P)
52 mm

Height Moving Point (W)
140 mm

Speed
10 m/s

Acceleration
50 m/s²

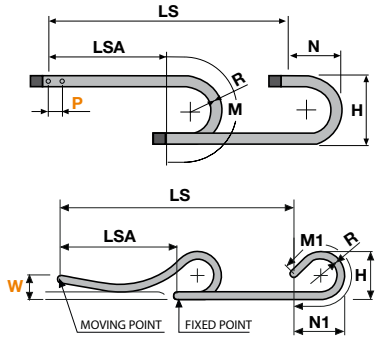
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
56.5	50	40	35	065-075-100-125-150-200	1.12	335LE040□□□
66.5	50	50	35	065-075-100-125-150-200	1.15	335LE050□□□
76.5	50	60	35	065-075-100-125-150-200	1.19	335LE060□□□
92.5	50	76	35	065-075-100-125-150-200	1.25	335LE076□□□
119.5	50	103	35	065-075-100-125-150-200	1.36	335LE103□□□
141.5	50	125	35	065-075-100-125-150-200	1.44	335LE125□□□
166.5	50	150	35	065-075-100-125-150-200	1.54	335LE150□□□

□□□ to be filled with Radius R

Separator

Unassembled	Article number S4353
Assembled	Article number S4353MC

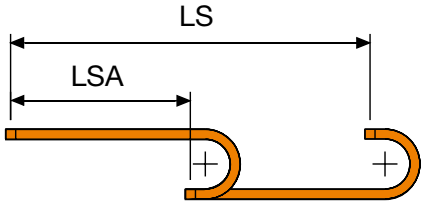
MCI: chain opening outer radius
MCE: chain opening inner radius

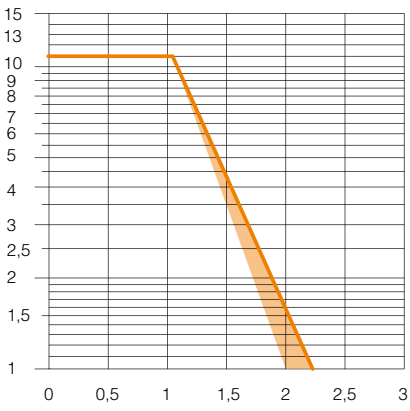


R	H	N	M	N1	M1
065	180	169	310	220	465
075	200	179	340	260	560
100	250	204	420	350	790
125	300	229	500	445	1025
150	350	254	580	540	1260
200	450	304	735	730	1725

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

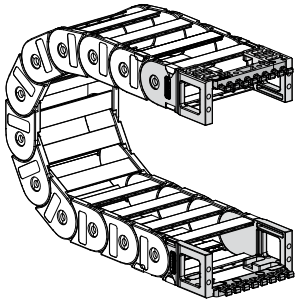
The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

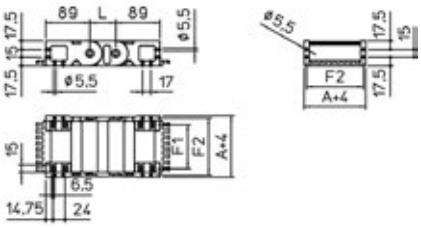
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets
The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type





Chain Type	F1	F1
335LE40□□□	25	51
335LE50□□□	35	61
335LE60□□□	45	71
335LE76□□□	61	87
335LE103□□□	88	114
335LE125□□□	110	136
335LE150□□□	135	161

Nylon Type Part Numbers
Complete Set Assembled
AN335L□□□KM□
Complete Set Unassembled
AN335L□□□K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
PFN335□□□

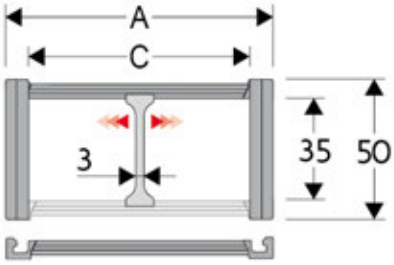
□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 335PS

Nylon cable chain with openable protection frames.

Info

- Sliding version to be ordered with pivoting end bracket set.



Technical data

Inner Height (D)
35 mm

Pitch (P)
52 mm

Height Moving Point (W)
140 mm

Speed
10 m/s

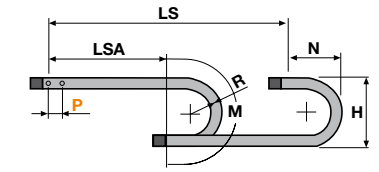
Acceleration
50 m/s²

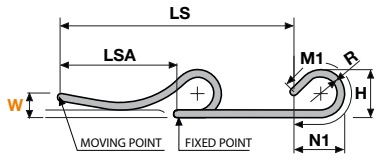
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
66.5	50	50	35	100-125-150-200	1.35	335PS050□□□
92.5	50	76	35	100-125-150-200	1.57	335PS076□□□
119.5	50	103	35	100-125-150-200	1.81	335PS103□□□
166.5	50	150	35	100-125-150-200	2.21	335PS150□□□

□□□ to be filled with Radius R

Separator	
Unassembled	Article number S4353
Assembled	Article number S4353MC

MCI: chain opening outer radius
MCE: chain opening inner radius

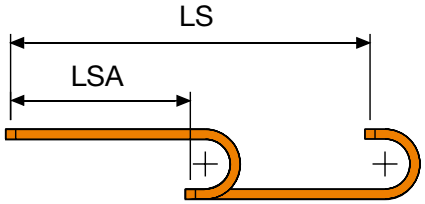


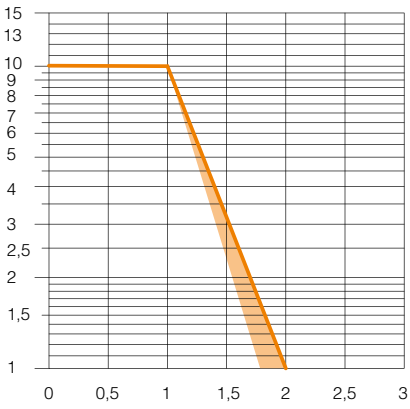


R	H	N	M	N1	M1
100	250	204	420	350	790
125	300	229	500	445	1025
150	350	254	580	540	1260
200	450	304	735	730	1725

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

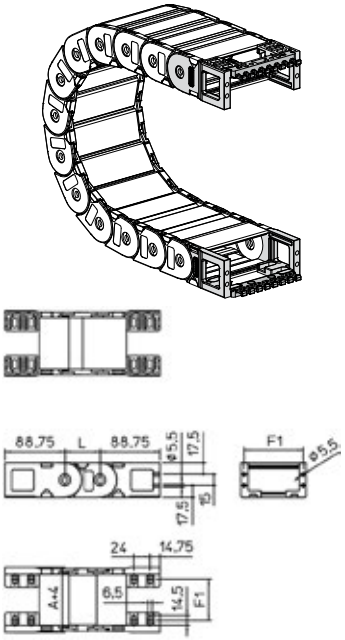
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type



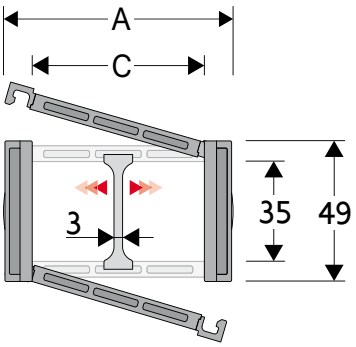
Chain Type	F1
335PS050□□□	61
335PS076□□□	87
335PS103□□□	114
335PS150□□□	161

Nylon Type Part Numbers
Complete Set Assembled
AN335P□□□KM□
Complete Set Unassembled
AN335P□□□K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
PFN335□□□KM

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 435MU

Nylon Cable Chain with opening frames



Info

- Sliding version to be ordered with pivoting end bracket set.

Technical data

Inner Height (D)
35 mm

Pitch (P)
50 mm

Height Moving Point (W)
140 mm

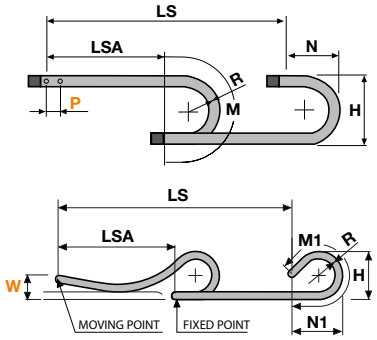
Speed
10 m/s

Acceleration
50 m/s²

Separator	
Unassembled	Article number S4353
Assembled	Article number S4353MCI, S4353MCIE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG445

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight kg/m	Article number
60	49	40	35	060-075-100-125-150-200	1.10	435MU040□□□
70	49	50	35	060-075-100-125-150-200	1.15	435MU050□□□
80	49	60	35	060-075-100-125-150-200	1.20	435MU060□□□
96	49	76	35	060-075-100-125-150-200	1.30	435MU076□□□
117	49	97	35	060-075-100-125-150-200	1.35	435MU097□□□
123	49	103	35	060-075-100-125-150-200	1.45	435MU103□□□
145	49	125	35	060-075-100-125-150-200	1.55	435MU125□□□
170	49	150	35	060-075-100-125-150-200	1.70	435MU150□□□

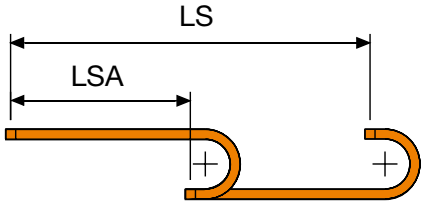
□□□ to be filled with Radius R

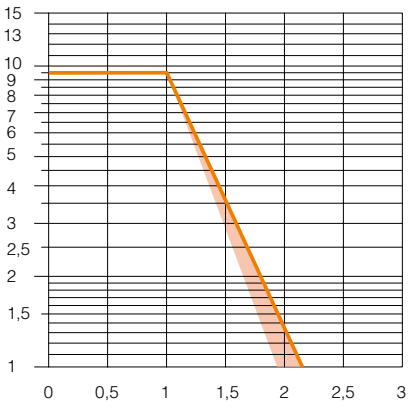


R	H	N	M	N1	M1
060	169	135	290	195	410
075	199	155	340	250	540
100	249	175	415	335	760
125	299	200	495	420	975
150	349	230	575	505	1195
200	449	275	730	680	1635

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

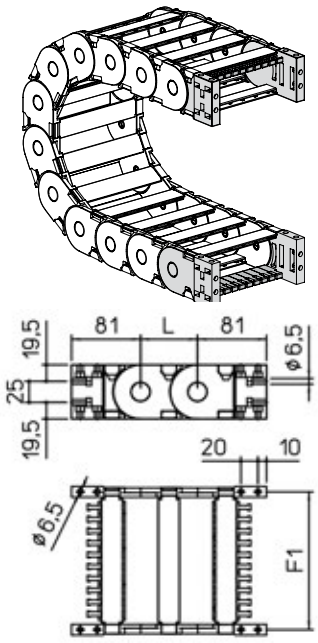
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type

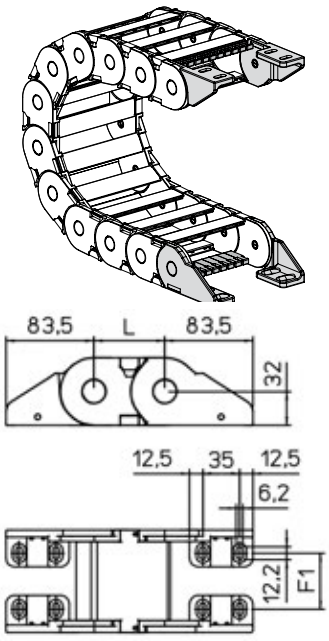


Chain Type	F1
435MU040	51
435MU050	61
435MU060	71
435MU076	87
435MU097	108
435MU103	114
435MU125	136
435MU150	161

Nylon Type Part Numbers
Complete Set Assembled
AN445M□□□KM
Complete Set Unassembled
AN445M□□□K
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC445M□□□KM
Complete Set Unassembled
CFC445M□□□K

□□□ Inner width (C)

Nylon Type

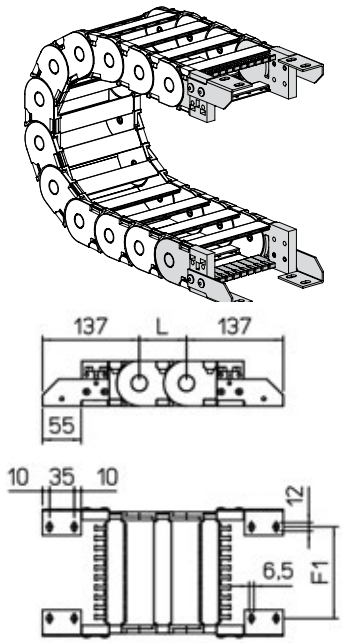


Chain Type	F1
435MU040	26,5
435MU050	36,5
435MU060	46,5
435MU076	62,5
435MU097	83,5
435MU103	89,5
435MU125	111,5
435MU150	136,5

Nylon Type Part Numbers
Complete Set Assembled
AN445KM□
Complete Set Unassembled
AN445K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCT445□□□KM
Complete Set Unassembled
SFCT445□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3/5/6 (acc. to page 33)

Steel Type



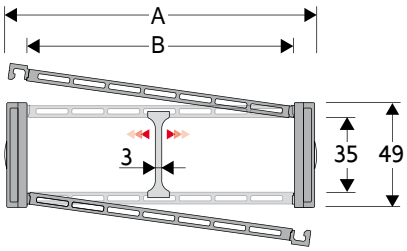
Chain Type	F1
435MU	F1=A-30

Steel Type Part Numbers
Complete Set Assembled
A445M□□□KM□
Complete Set Unassembled
A445M□□□K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC445M□□□KM
Complete Set Unassembled
CFC445M□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 435PU

Nylon cable chain with openable protection frames.



Technical data

Inner Height (D)
45 mm

Pitch (P)
67 mm

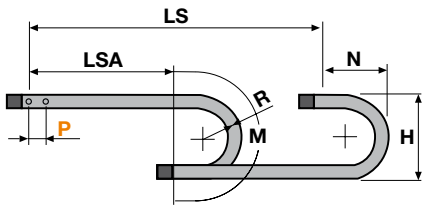
Speed
10 m/s

Acceleration
50 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight kg/m	Article number
60	49	40	35	075-100-125-150-200	1.25	435PU040□□□
70	49	50	35	075-100-125-150-200	1.40	435PU050□□□
80	49	60	35	075-100-125-150-200	1.45	435PU060□□□
96	49	76	35	075-100-125-150-200	1.60	435PU076□□□
117	49	97	35	075-100-125-150-200	1.75	435PU097□□□
123	49	103	35	075-100-125-150-200	1.90	435PU103□□□
145	49	125	35	075-100-125-150-200	2.10	435PU125□□□
170	49	150	35	075-100-125-150-200	2.35	435PU150□□□

□□□ to be filled with Radius R

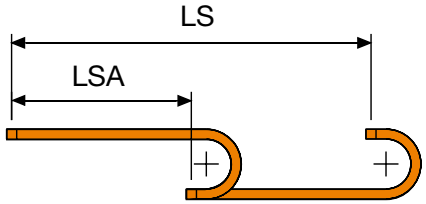
Separator	
Unassembled	Article number S445UF
Assembled	Article number S445UFMCI, S445UFMCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG445

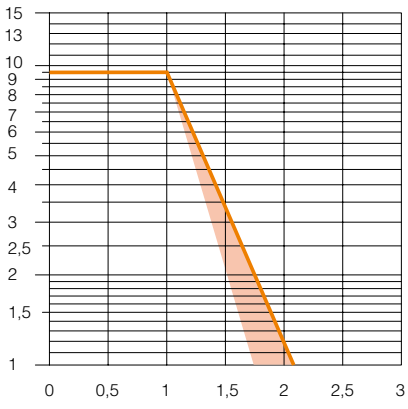


R	H	N	M
075	199	155	340
100	249	175	415
125	299	200	495
150	349	230	575
200	449	275	730

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

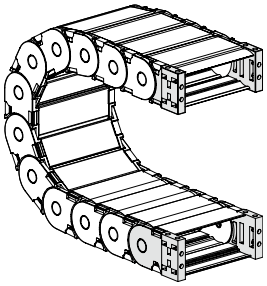
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

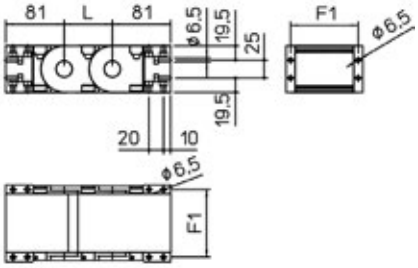
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type



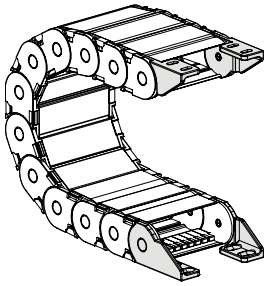


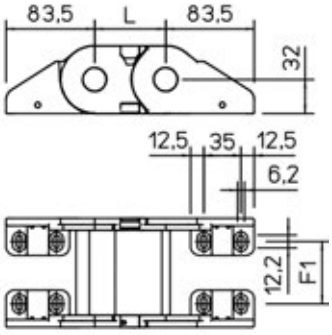
Chain Type	F1
435PU040	51
435PU050	61
435PU060	71
435PU076	87
435PU097	108
435PU103	114
435PU125	136
435PU150	161

Nylon Type Part Numbers
Complete Set Assembled
AN435P□□□KM
Complete Set Unassembled
AN435P□□□K
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC435M□□□KM
Complete Set Unassembled
CFC435M□□□K

□□□ Inner width (C)

Nylon Type



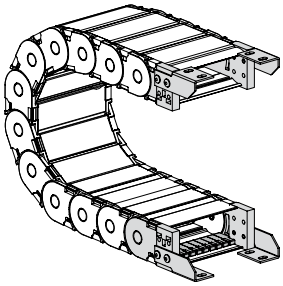


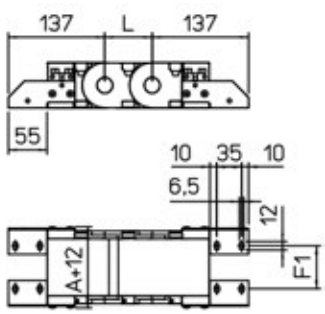
Chain Type	F1
435PU040	26,5
435PU050	36,5
435PU060	46,5
435PU076	62,5
435PU097	83,5
435PU103	89,5
435PU125	111,5
435PU150	136,5

Nylon Type Part Numbers
Complete Set Assembled
AN435KM□
Complete Set Unassembled
AN435K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCT435□□□KM
Complete Set Unassembled
SFCT435□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3/5/6 (acc. to page 33)

Steel Type





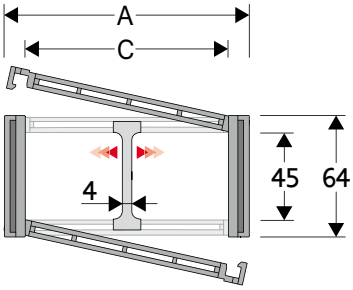
Chain Type	F1
435PU	F1=A-30

Steel Type Part Numbers
Complete Set Assembled
A435P□□□KM□
Complete Set Unassembled
A435P□□□K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC435M□□□KM
Complete Set Unassembled
CFC435M□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 445MU

Nylon Cable Chain with opening frames



Info

- Sliding version to be ordered with pivoting end bracket set.

Technical data

Inner Height (D)
45 mm

Pitch (P)
67 mm

Height Moving Point (W)
200 mm

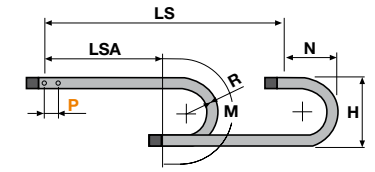
Speed
10 m/s

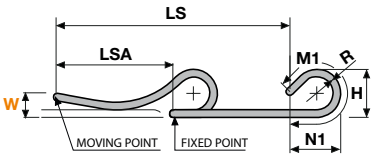
Acceleration
50 m/s²

Separator	
Unassembled	Article number S445UF
Assembled	Article number S445UFMCI, S445UFMCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Strong-hold separator for C > 200 mm	
Unassembled	Article number S445SH
Assembled	Article number S445SHMC
Pin	Article number PG445

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
72	64	50	45	075-100-125-150-175-200-250-300	1.64	445MU050□□□
83	64	61	45	075-100-125-150-175-200-250-300	1.64	445MU061□□□
97	64	75	45	075-100-125-150-175-200-250-300	1.76	445MU075□□□
103	64	81	45	075-100-125-150-175-200-250-300	1.79	445MU081□□□
107	64	85	45	075-100-125-150-175-200-250-300	2.15	445MU085□□□
117	64	95	45	075-100-125-150-175-200-250-300	1.86	445MU095□□□
122	64	100	45	075-100-125-150-175-200-250-300	1.87	445MU100□□□
129	64	107	45	075-100-125-150-175-200-250-300	1.90	445MU107□□□
139	64	117	45	075-100-125-150-175-200-250-300	1.93	445MU117□□□
147	64	125	45	075-100-125-150-175-200-250-300	2.01	445MU125□□□
158	64	136	45	075-100-125-150-175-200-250-300	2.07	445MU136□□□
172	64	150	45	075-100-125-150-175-200-250-300	2.13	445MU150□□□
197	64	175	45	075-100-125-150-175-200-250-300	2.25	445MU175□□□
222	64	200	45	075-100-125-150-175-200-250-300	2.39	445MU200□□□
233	64	211	45	075-100-125-150-175-200-250-300	2.44	445MU211□□□
247	64	225	45	075-100-125-150-175-200-250-300	2.52	445MU225□□□
274	64	252	45	075-100-125-150-175-200-250-300	2.66	445MU252□□□
283	64	261	45	075-100-125-150-175-200-250-300	2.70	445MU261□□□
308	64	286	45	075-100-125-150-175-200-250-300	2.81	445MU286□□□
334	64	312	45	075-100-125-150-175-200-250-300	2.92	445MU312□□□
356	64	334	45	075-100-125-150-175-200-250-300	3.05	445MU334□□□
384	64	362	45	075-100-125-150-175-200-250-300	3.18	445MU362□□□

□□□ to be filled with Radius R

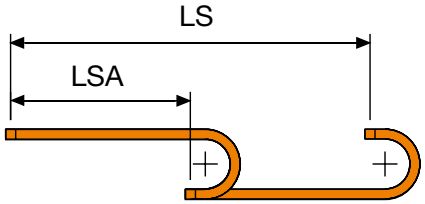


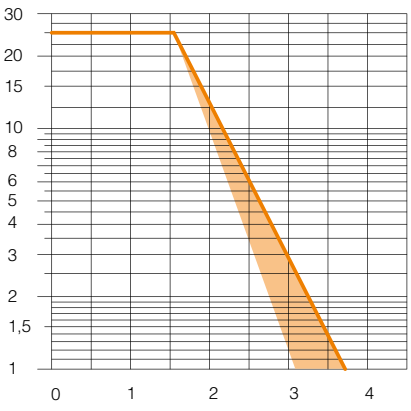


R	H	N	M	N1	M1
075	214	180	370	205	425
100	264	200	450	230	505
125	314	225	530	285	655
150	364	250	605	375	875
175	414	275	685	460	1085
200	464	300	765	550	1310
250	564	350	920	725	1750
300	664	400	1080	1295	2970

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

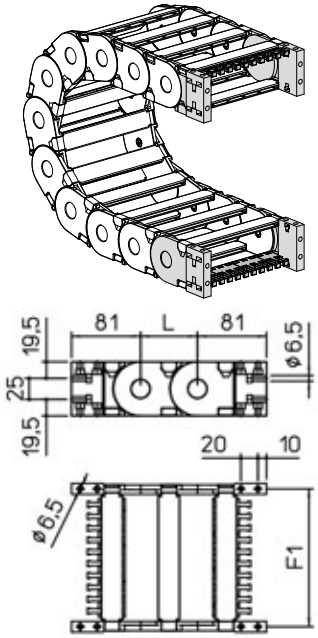
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type

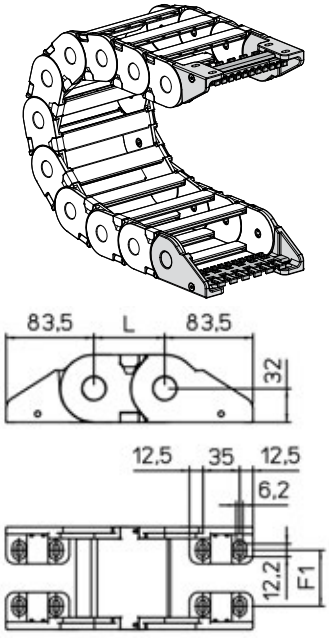


Chain Type	F1
445MU050	63
445MU061	74
445MU075	88
445MU081	94
445MU085	98
445MU095	108
445MU100	113
445MU107	120
445MU117	130
445MU125	138
445MU136	149
445MU150	163
445MU175	188
445MU200	213
445MU211	224
445MU225	238
445MU252	265
445MU261	274
445MU286	289
445MU312	325
445MU334	347
445MU362	375

Nylon Type Part Numbers
Complete Set Assembled
AN445M□□□KM
Complete Set Unassembled
AN445M□□□K
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC445M□□□KM
Complete Set Unassembled
CFC445M□□□K

□□□ Inner width (C)

Nylon Type

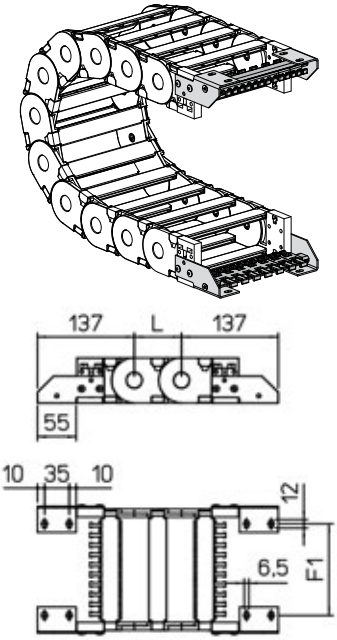


Chain Type	F1
445MU050	28
445MU061	39
445MU075	53
445MU081	59
445MU085	63
445MU095	73
445MU100	78
445MU107	85
445MU117	95
445MU125	103
445MU136	114
445MU150	128
445MU175	153
445MU200	178
445MU211	189
445MU225	203
445MU252	230
445MU261	239
445MU286	254
445MU312	290
445MU334	312
445MU362	340

Nylon Type Part Numbers
Complete Set Assembled
AN445KM□
Complete Set Unassembled
AN445K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCT445□□□KM
Complete Set Unassembled
SFCT445□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3/5/6 (acc. to page 33)

Steel Type



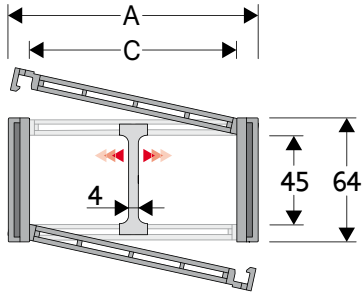
Chain Type	F1
445MU	F1=A-44

Steel Type Part Numbers
Complete Set Assembled
A445M□□□KM□
Complete Set Unassembled
A445M□□□K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC445M□□□KM
Complete Set Unassembled
CFC445M□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 445PU

Nylon cable chain with openable protection frames.



Technical data

Inner Height (D)
45 mm

Pitch (P)
67 mm

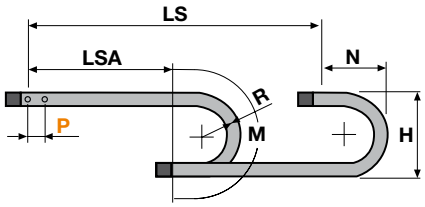
Speed
10 m/s

Acceleration
50 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
72	64	50	45	100-125-150-175-200-250-300	1.83	445PU050□□□
83	64	61	45	100-125-150-175-200-250-300	1.87	445PU061□□□
97	64	75	45	100-125-150-175-200-250-300	2.05	445PU075□□□
103	64	81	45	100-125-150-175-200-250-300	2.10	445PU081□□□
107	64	85	45	100-125-150-175-200-250-300	2.15	445PU085□□□
117	64	95	45	100-125-150-175-200-250-300	2.23	445PU095□□□
122	64	100	45	100-125-150-175-200-250-300	2.26	445PU100□□□
129	64	107	45	100-125-150-175-200-250-300	2.31	445PU107□□□
139	64	117	45	100-125-150-175-200-250-300	2.38	445PU117□□□
147	64	125	45	100-125-150-175-200-250-300	2.49	445PU125□□□
158	64	136	45	100-125-150-175-200-250-300	2.60	445PU136□□□
172	64	150	45	100-125-150-175-200-250-300	2.71	445PU150□□□
197	64	175	45	100-125-150-175-200-250-300	2.93	445PU175□□□
222	64	200	45	100-125-150-175-200-250-300	3.17	445PU200□□□
233	64	211	45	100-125-150-175-200-250-300	3.26	445PU211□□□
247	64	225	45	100-125-150-175-200-250-300	3.39	445PU225□□□
274	64	252	45	100-125-150-175-200-250-300	3.64	445PU252□□□
283	64	261	45	100-125-150-175-200-250-300	3.71	445PU261□□□
308	64	286	45	100-125-150-175-200-250-300	3.92	445PU286□□□
334	64	312	45	100-125-150-175-200-250-300	4.13	445PU312□□□
356	64	334	45	100-125-150-175-200-250-300	4.35	445PU334□□□
384	64	362	45	100-125-150-175-200-250-300	4.59	445PU362□□□

□□□ to be filled with Radius R

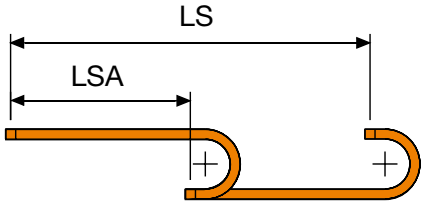
Separator	
Unassembled	Article number S445UF
Assembled	Article number S445UFMCI, S445UFMCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG445

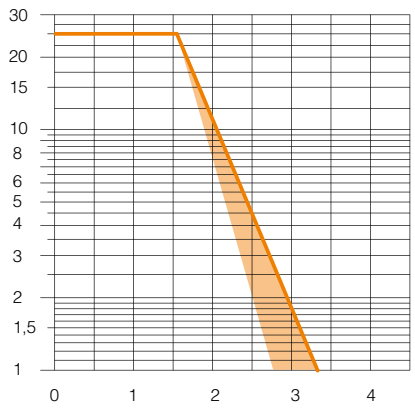


R	H	N	M
100	264	200	450
125	314	225	530
150	364	250	605
175	414	275	685
200	464	300	765
250	564	350	920
300	664	400	1080

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

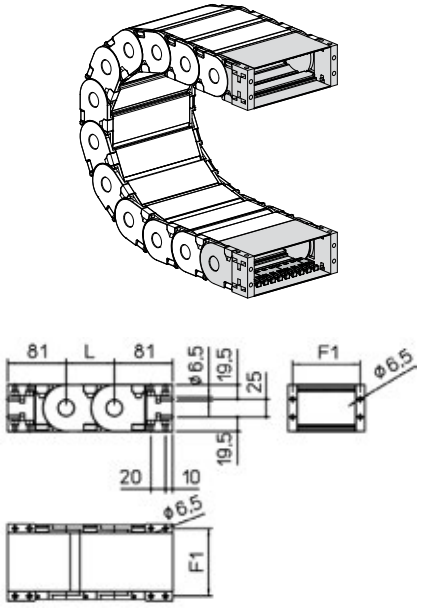
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type

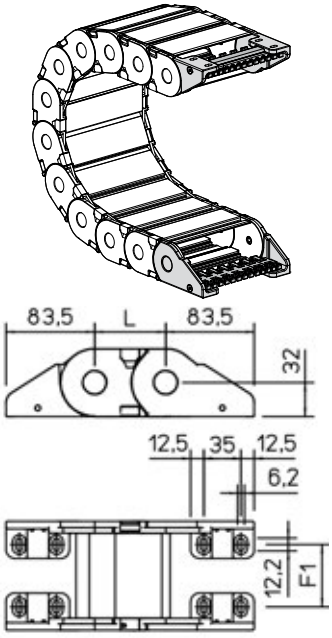


Chain Type	F1
445PU050	63
445PU061	74
445PU075	88
445PU081	94
445PU085	98
445PU095	108
445PU100	113
445PU107	120
445PU117	130
445PU125	138
445PU136	149
445PU150	163
445PU175	188
445PU200	213
445PU211	224
445PU225	238
445PU252	265
445PU261	274
445PU286	289
445PU312	325
445PU334	347
445PU362	375

Nylon Type Part Numbers
Complete Set Assembled
AN445P□□□KM
Complete Set Unassembled
AN445P□□□K
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC445M□□□KM
Complete Set Unassembled
CFC445M□□□K

□□□ Inner width (C)

Nylon Type

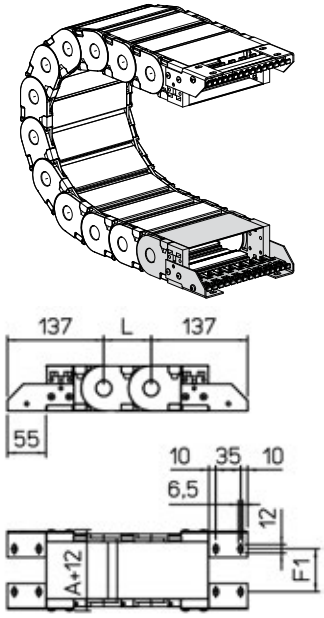


Chain Type	F1
445PU050	28
445PU061	39
445PU075	53
445PU081	59
445PU085	63
445PU095	73
445PU100	78
445PU107	85
445PU117	95
445PU125	103
445PU136	114
445PU150	128
445PU175	153
445PU200	178
445PU211	189
445PU225	203
445PU252	230
445PU261	239
445PU286	254
445PU312	290
445PU334	312
445PU362	340

Nylon Type Part Numbers
Complete Set Assembled
AN445KM□
Complete Set Unassembled
AN445K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCT445□□□KM
Complete Set Unassembled
SFCT445□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3/5/6 (acc. to page 33)

Steel Type



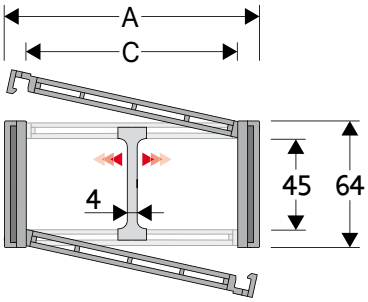
Chain Type	F1
445PU	F1=A-44

Steel Type Part Numbers
Complete Set Assembled
A445P□□□KM□
Complete Set Unassembled
A445P□□□K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC445M□□□KM
Complete Set Unassembled
CFC445M□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 445AU

Nylon cable chain with openable protection frames.



Technical data

Inner Height (D)
45 mm

Pitch (P)
67 mm

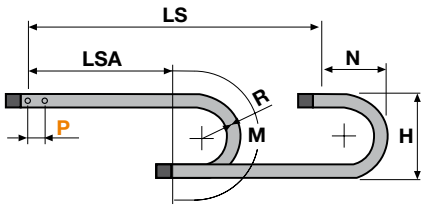
Speed
10 m/s

Acceleration
50 m/s²

Separator	
Unassembled	Article number S445UF
Assembled	Article number S445UFMCI, S445UFMCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG445

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
72	64	50	45	100-125-150-175-200-250-300	2.13	445AU050□□□
83	64	61	45	100-125-150-175-200-250-300	2.24	445AU061□□□
97	64	75	45	100-125-150-175-200-250-300	2.49	445AU075□□□
103	64	81	45	100-125-150-175-200-250-300	2.59	445AU081□□□
107	64	85	45	100-125-150-175-200-250-300	2.65	445AU085□□□
117	64	95	45	100-125-150-175-200-250-300	2.79	445AU095□□□
122	64	100	45	100-125-150-175-200-250-300	2.85	445AU100□□□
129	64	107	45	100-125-150-175-200-250-300	2.95	445AU107□□□
139	64	117	45	100-125-150-175-200-250-300	3.08	445AU117□□□
147	64	125	45	100-125-150-175-200-250-300	3.24	445AU125□□□
158	64	136	45	100-125-150-175-200-250-300	3.41	445AU136□□□
172	64	150	45	100-125-150-175-200-250-300	3.61	445AU150□□□
197	64	175	45	100-125-150-175-200-250-300	3.97	445AU175□□□
222	64	200	45	100-125-150-175-200-250-300	4.35	445AU200□□□
233	64	211	45	100-125-150-175-200-250-300	4.51	445AU211□□□
247	64	225	45	100-125-150-175-200-250-300	4.73	445AU225□□□
274	64	252	45	100-125-150-175-200-250-300	5.13	445AU252□□□
283	64	261	45	100-125-150-175-200-250-300	5.26	445AU261□□□
308	64	286	45	100-125-150-175-200-250-300	5.92	445AU286□□□
334	64	312	45	100-125-150-175-200-250-300	6.00	445AU312□□□
356	64	334	45	100-125-150-175-200-250-300	6.33	445AU334□□□
384	64	362	45	100-125-150-175-200-250-300	6.73	445AU362□□□

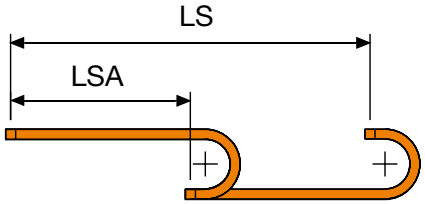
□□□ to be filled with Radius R

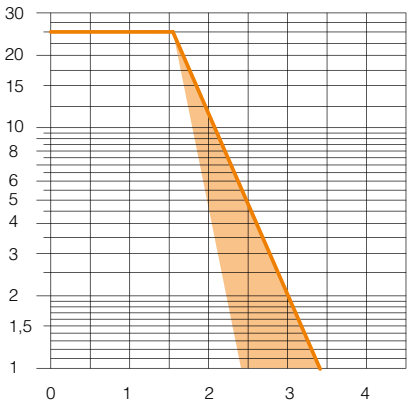


R	H	N	M
100	264	200	450
125	314	225	530
150	364	250	605
175	414	275	765
200	464	300	765
250	564	350	920
300	664	400	1080

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram
The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

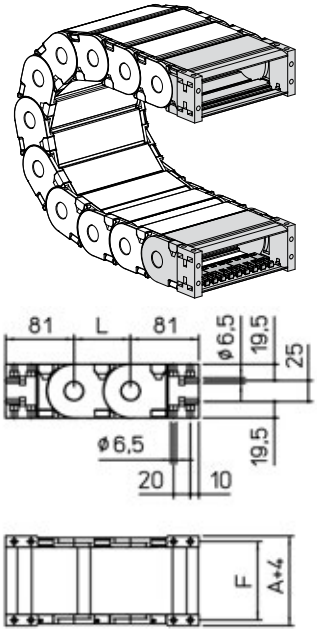
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type

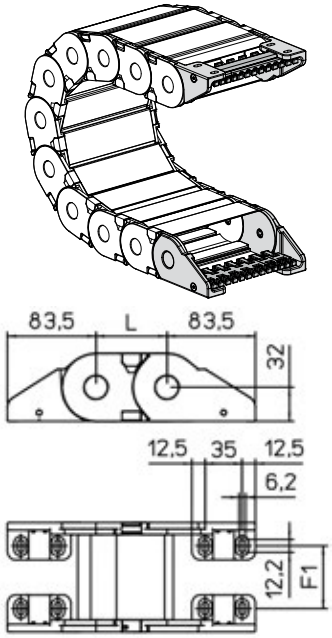


Kettentyp	F1
445AU050	63
445AU061	74
445AU075	88
445AU081	94
445AU085	98
445AU095	108
445AU100	113
445AU107	120
445AU117	130
445AU125	138
445AU136	149
445AU150	163
445AU175	188
445AU200	213
445AU211	224
445AU225	238
445AU252	265
445AU261	274
445AU286	289
445AU312	325
445AU334	347
445AU362	375

Nylon Type Part Numbers
Complete Set Assembled
AN445A□□□KM
Complete Set Unassembled
AN445A□□□K
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC445M□□□KM
Complete Set Unassembled
CFC445M□□□K

□□□ Inner width (C)

Nylon Type

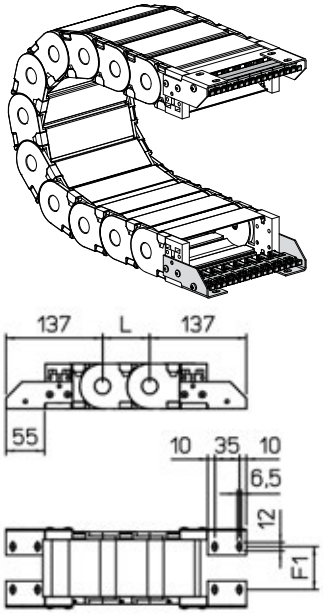


Kettentyp	F1
445AU050	28
445AU061	39
445AU075	53
445AU081	59
445AU085	63
445AU095	73
445AU100	78
445AU107	85
445AU117	95
445AU125	103
445AU136	114
445AU150	128
445AU175	153
445AU200	178
445AU211	189
445AU225	203
445AU252	230
445AU261	239
445AU286	254
445AU312	290
445AU334	312
445AU362	340

Nylon Type Part Numbers
Complete Set Assembled
AN445KM□
Complete Set Unassembled
AN445K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCT445M□□□KM
Complete Set Unassembled
SFCT445M□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3/5/6 (acc. to page 33)

Steel Type



Chain Type	F1
445AU	F1=A-44

Steel Type Part Numbers
Complete Set Assembled
A445A□□□KM
Complete Set Unassembled
A445A□□□K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC445M□□□KM
Complete Set Unassembled
CFC445M□□□K

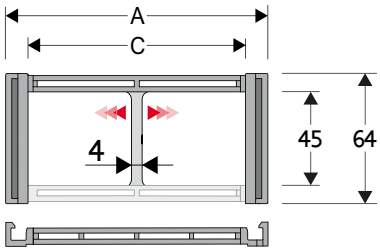
□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 445PS

Nylon cable chain with openable protection frames.

Info

- Sliding version to be ordered with pivoting end bracket set.



Technical data

Inner Height (D)
45 mm

Pitch (P)
67 mm

Height Moving Point (W)
140 mm

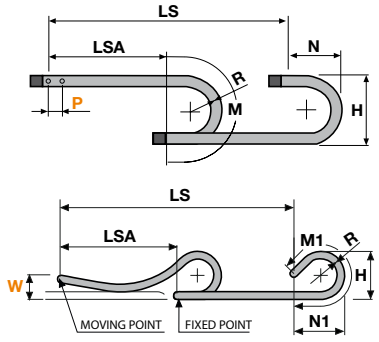
Speed
10 m/s

Acceleration
50 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
83	64	61	45	100-125-150-175-200-250-300	1.87	445PS061□□□
97	64	75	45	100-125-150-175-200-250-300	2.05	445PS075□□□
147	64	125	45	100-125-150-175-200-250-300	2.49	445PS125□□□

□□□ to be filled with Radius R

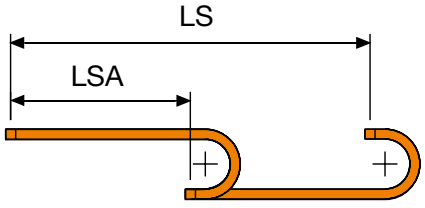
Separator	
Unassembled	Article number S445CNF
Assembled	Article number S445CNFMCI
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG445

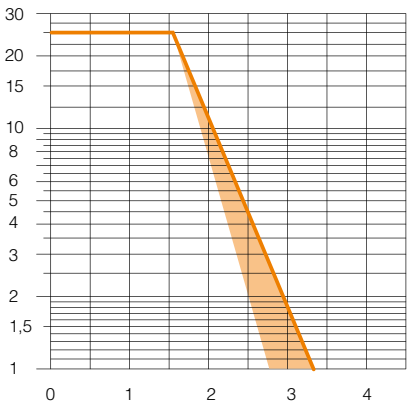


R	H	N	M	N1	M1
100	264	200	450	340	740
125	314	225	530	460	1020
150	364	250	605	580	1300
175	414	275	685	700	1575
200	464	300	765	820	1855
250	564	350	920	1055	2410
300	664	400	1080	1295	2970

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

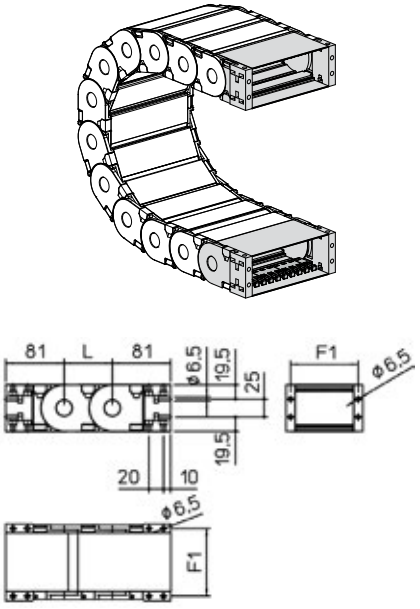
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type

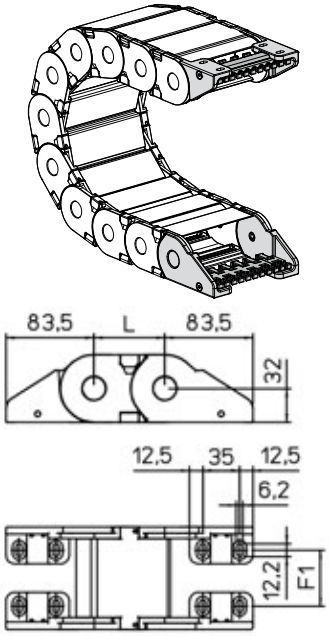


Chain Type	F1
445PS061	74
445PS075	88
445PS125	138

Nylon Type Part Numbers
Complete Set Assembled
AN445P□□□KM
Complete Set Unassembled
AN445P□□□K
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC445M□□□KM
Complete Set Unassembled
CFC445M□□□K

□□□ Inner width (C)

Nylon Type



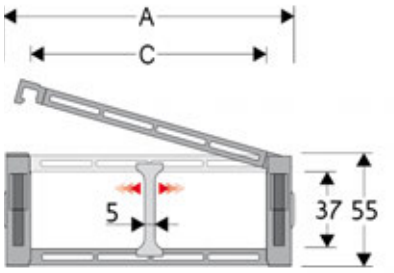
Chain Type	F1
445PS061	39
445PS075	53
445PS125	103

Nylon Type Part Numbers
Complete Set Assembled
AN445KM□
Complete Set Unassembled
AN445K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCT445□□□KM
Complete Set Unassembled
SFCT445□□□K

□□□ Inner width (C)
□ Possible mounting positions:
1/2/3/5/6 (acc. to page 33)

SILVYN® CHAIN 660A

Nylon Cable Chain with opening frames



Info

- Sliding version to be ordered with pivoting end bracket set.

Technical data

Inner Height (D)
37 mm

Pitch (P)
50 mm

Height Moving Point (W)
200 mm

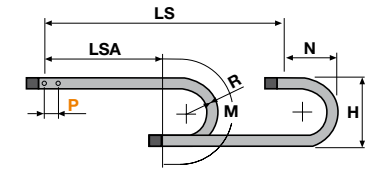
Speed
6 m/s

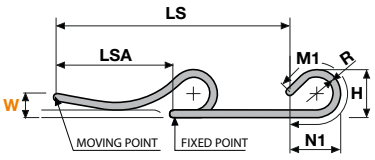
Acceleration
30 m/s²

Separator	
Unassembled	Article number S306SM
Assembled	Article number S306SMMC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Strong-hold separator for C > 200 mm	
Unassembled	Article number S660AH
Assembled	Article number S660AHMC
Pin	Article number PG660

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
75	55	50	37	100-150-200-250	1.51	660A050□□□
86	55	61	37	100-150-200-250	1.51	660A061□□□
100	55	75	37	100-150-200-250	1.59	660A075□□□
106	55	81	37	100-150-200-250	1.61	660A081□□□
120	55	95	37	100-150-200-250	1.66	660A095□□□
125	55	100	37	100-150-200-250	1.66	660A100□□□
132	55	107	37	100-150-200-250	1.69	660A107□□□
142	55	117	37	100-150-200-250	1.71	660A117□□□
150	55	125	37	100-150-200-250	1.76	660A125□□□
161	55	136	37	100-150-200-250	1.80	660A136□□□
175	55	150	37	100-150-200-250	1.84	660A150□□□
200	55	175	37	100-150-200-250	1.93	660A175□□□
225	55	200	37	100-150-200-250	2.02	660A200□□□
236	55	211	37	100-150-200-250	2.06	660A211□□□
250	55	225	37	100-150-200-250	2.11	660A225□□□
277	55	252	37	100-150-200-250	2.21	660A252□□□
286	55	261	37	100-150-200-250	2.24	660A261□□□
337	55	312	37	100-150-200-250	2.43	660A312□□□
359	55	334	37	100-150-200-250	2.52	660A334□□□
387	55	362	37	100-150-200-250	2.61	660A362□□□

□□□ to be filled with Radius R

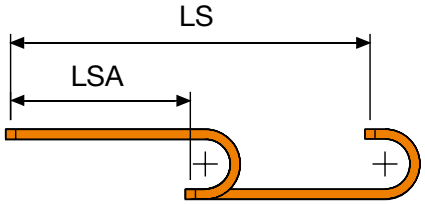


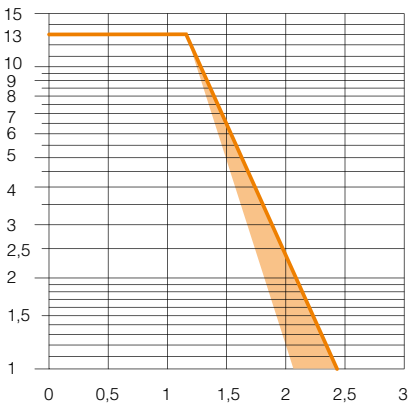


R	H	N	M	N1	M1
100	255	180	415	205	470
150	355	230	575	360	855
200	455	280	730	535	1290
250	555	330	885	705	1730

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

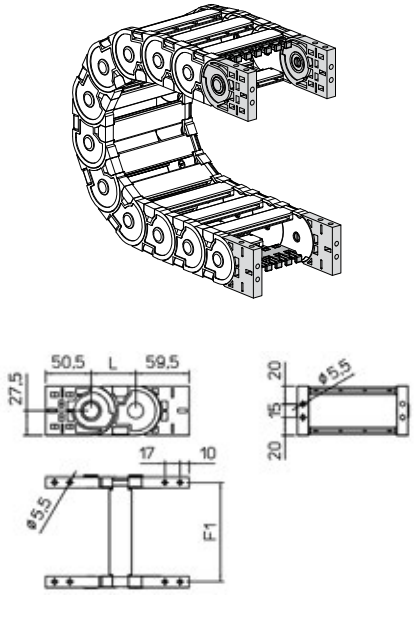
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type

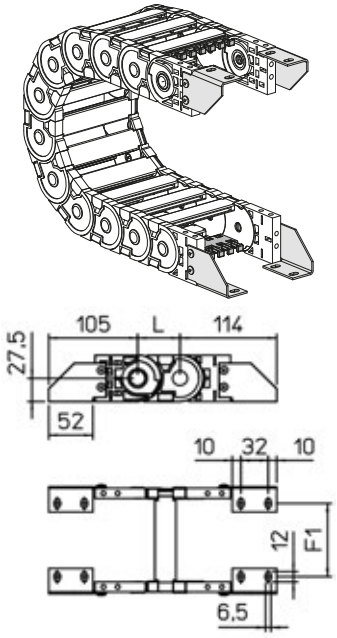


Chain Type	F1
660A050□□□	61
660A061□□□	72
660A075□□□	86
660A081□□□	92
660A095□□□	106
660A100□□□	111
660A107□□□	118
660A117□□□	128
660A125□□□	136
660A136□□□	147
660A150□□□	161
660A175□□□	186
660A200□□□	211
660A211□□□	222
660A225□□□	236
660A252□□□	263
660A261□□□	272
660A312□□□	323
660A334□□□	345
660A362□□□	373

Nylon Type Part Numbers
Complete Set Assembled
AN660AKM
Complete Set Unassembled
AN660AK
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC660A□□□KM
Complete Set Unassembled
CFC660A□□□K

□□□ Inner width (C)

Steel Type



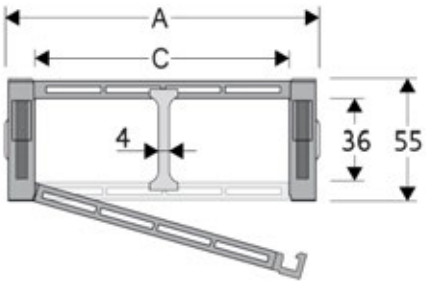
Chain Type	F1
660A050□□□	38
660A061□□□	49
660A075□□□	63
660A081□□□	69
660A095□□□	83
660A100□□□	88
660A107□□□	95
660A117□□□	105
660A125□□□	113
660A136□□□	124
660A150□□□	138
660A175□□□	163
660A200□□□	188
660A211□□□	199
660A225□□□	213
660A252□□□	240
660A261□□□	249
660A312□□□	300
660A334□□□	322
660A362□□□	350

Steel Type Part Numbers
Complete Set Assembled
A660AKM□
Complete Set Unassembled
A660AK□
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC660A□□□KM
Complete Set Unassembled
CFC660A□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 660

Nylon cable chain with openable protection frames.



Technical data

Inner Height (D)
36 mm

Pitch (P)
50 mm

Speed
6 m/s

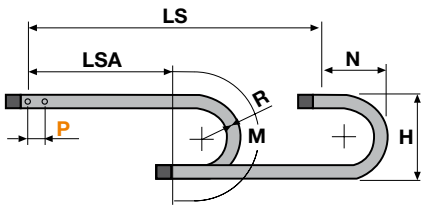
Acceleration
30 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
79	55	50	36	100-150-200-250	1.90	660050□□□
129	55	100	36	100-150-200-250	2.40	660100□□□
179	55	150	36	100-150-200-250	3.00	600150□□□

□□□ to be filled with Radius R

Separator	
Unassembled	Article number S660A, S600
Assembled	Article number S660MC, S600MC

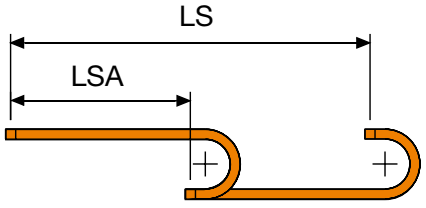
MCI: chain opening outer radius
MCE: chain opening inner radius

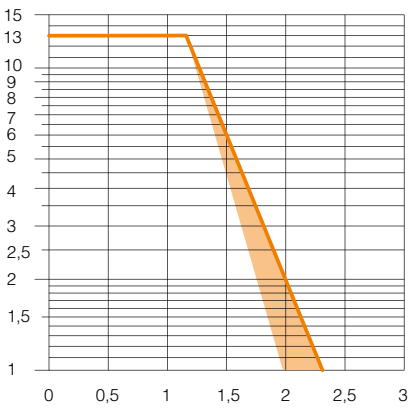


R	H	N	M
100	255	180	415
150	355	230	575
200	455	280	730
250	555	330	885

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram
The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

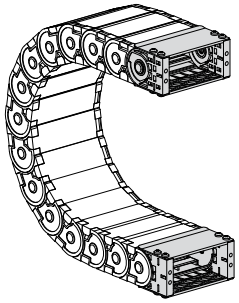
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

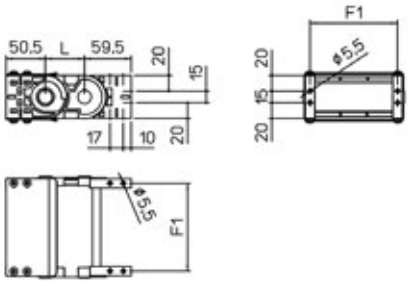
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type





Chain Type	F1
660050	62
660100	112
600150	162

Nylon Type Part Numbers
Complete Set Assembled
660050 = AN660050KM
660100 = AN660100KM
600150 = AL600KM
Complete Set Unassembled
660050 = AN660050K
660100 = AN660100K
600150 = AL600K

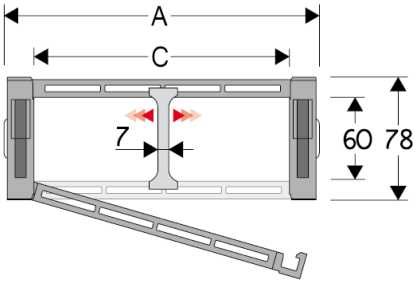
□□□ Inner width (C)

SILVYN® CHAIN 770A

Nylon Cable Chain with opening frames

Info

- Sliding version to be ordered with pivoting end bracket set.



Technical data

Inner Height (D)
60 mm

Pitch (P)
70 mm

Height Moving Point (W)
250 mm

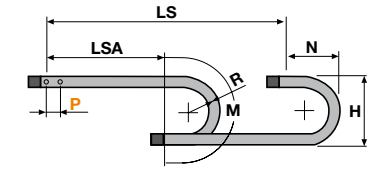
Speed
6 m/s

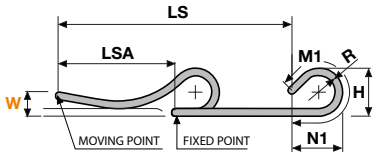
Acceleration
30 m/s²

Separator	
Unassembled	Article number S770A
Assembled	Article number S770AMC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Strong-hold separator for C > 200 mm	
Unassembled	Article number S770AH
Assembled	Article number S770AHMC
Pin	Article number PG770

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
80	78	45	60	130-150-200-250-300	2.25	770A045□□□
91	78	56	60	130-150-200-250-300	2.25	770A056□□□
105	78	70	60	130-150-200-250-300	2.31	770A070□□□
111	78	76	60	130-150-200-250-300	2.32	770A076□□□
125	78	90	60	130-150-200-250-300	2.36	770A090□□□
130	78	95	60	130-150-200-250-300	2.36	770A095□□□
137	78	102	60	130-150-200-250-300	2.38	770A102□□□
147	78	112	60	130-150-200-250-300	2.39	770A112□□□
155	78	120	60	130-150-200-250-300	2.43	770A120□□□
166	78	131	60	130-150-200-250-300	2.46	770A131□□□
180	78	145	60	130-150-200-250-300	2.49	770A145□□□
205	78	170	60	130-150-200-250-300	2.55	770A170□□□
230	78	195	60	130-150-200-250-300	2.62	770A195□□□
241	78	206	60	130-150-200-250-300	2.65	770A206□□□
255	78	220	60	130-150-200-250-300	2.68	770A220□□□
282	78	247	60	130-150-200-250-300	2.75	770A247□□□
291	78	256	60	130-150-200-250-300	2.77	770A256□□□
342	78	307	60	130-150-200-250-300	2.88	770A307□□□
364	78	329	60	130-150-200-250-300	2.94	770A329□□□
392	78	357	60	130-150-200-250-300	3.01	770A357□□□

□□□ to be filled with Radius R

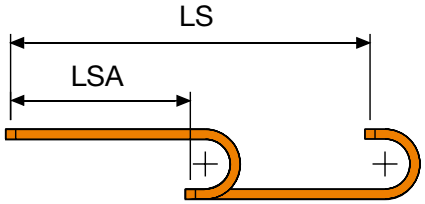


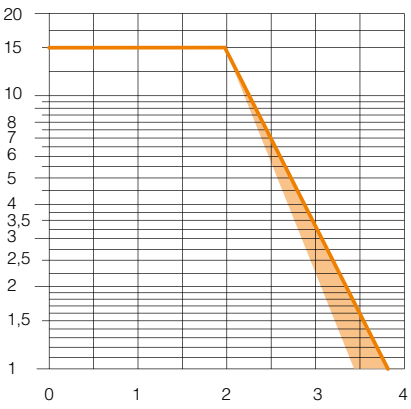


R	H	N	M	N1	M1
130	338	240	555	305	685
150	378	260	615	340	785
200	478	310	770	515	1220
250	578	365	930	690	1660
300	678	410	1085	865	2095

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

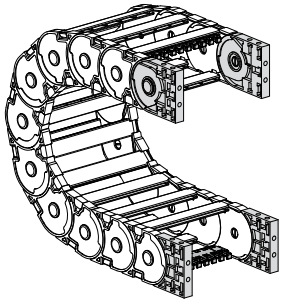
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

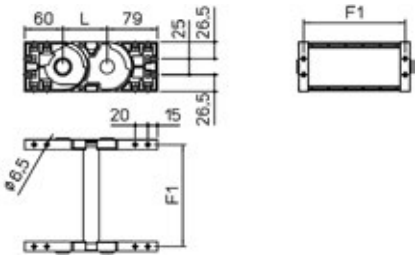
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type



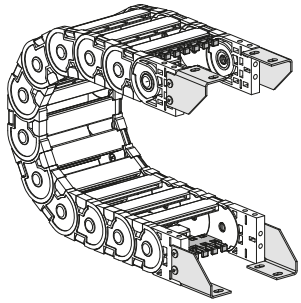


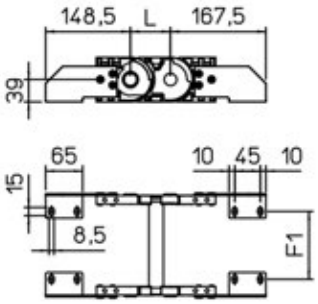
Chain Type	F1
770A045□□□	61
770A056□□□	72
770A070□□□	86
770A076□□□	92
770A090□□□	106
770A095□□□	111
770A102□□□	118
770A112□□□	128
770A120□□□	136
770A131□□□	147
770A145□□□	161
770A170□□□	186
770A195□□□	211
770A206□□□	222
770A220□□□	236
770A247□□□	263
770A256□□□	272
770A307□□□	323
770A329□□□	345
770A357□□□	373

Nylon Type Part Numbers
Complete Set Assembled
AN770AKM
Complete Set Unassembled
AN770AK
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC770A□□□KM
Complete Set Unassembled
CFC770A□□□K

□□□ Inner width (C)

Steel Type





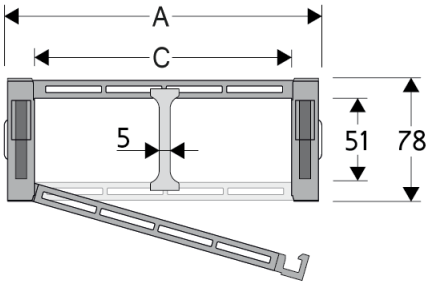
Chain Type	F1
770A045□□□	19
770A056□□□	30
770A070□□□	44
770A076□□□	50
770A090□□□	64
770A095□□□	69
770A102□□□	76
770A112□□□	86
770A120□□□	94
770A131□□□	105
770A145□□□	119
770A170□□□	144
770A195□□□	169
770A206□□□	180
770A220□□□	194
770A247□□□	221
770A256□□□	230
770A307□□□	281
770A329□□□	303
770A357□□□	331

Steel Type Part Numbers
Complete Set Assembled
A660AKM□
Complete Set Unassembled
A660AK□
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC660A□□□KM
Complete Set Unassembled
CFC660A□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 770

Nylon cable chain with openable protection frames.



Technical data

Inner Height (D)
51 mm

Pitch (P)
70 mm

Speed
6 m/s

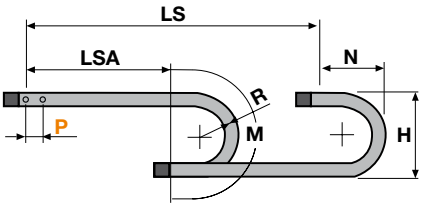
Acceleration
30 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
120	78	85	51	150-200-250-300	3.30	770085□□□
135	78	100	51	150-200-250-300	3.90	770100□□□
185	78	150	51	150-200-250-300	4.10	770150□□□
235	78	200	51	150-200-250-300	4.50	770200□□□
285	78	250	51	150-200-250-300	5.00	700250□□□

□□□ to be filled with Radius R

Separator	
Unassembled	Article number S770, S700
Assembled	Article number S770 MC, S700MC

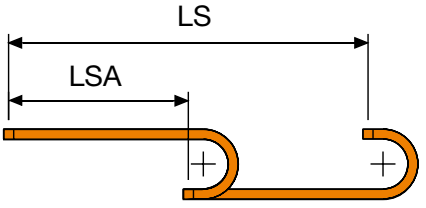
MCI: chain opening outer radius
MCE: chain opening inner radius

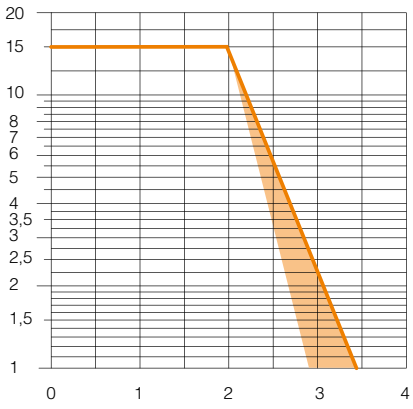


R	H	N	M
150	378	260	615
200	478	310	770
250	578	365	930
300	678	410	1085

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram
The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

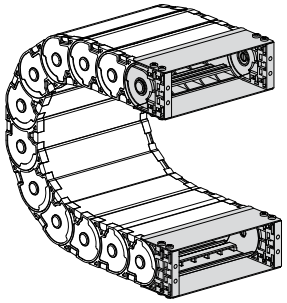
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

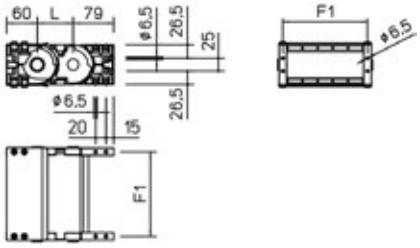
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type





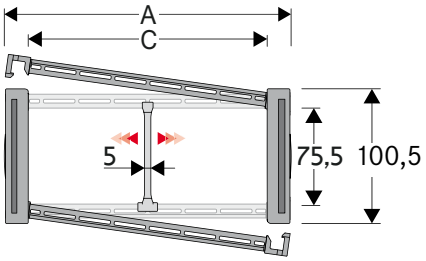
Chain Type	F1
770085	100
770100	115
770150	165
770200	215
70025	265

Nylon Type Part Numbers
Complete Set Assembled
770□□□ = AN770□□□KM
700250 = AL700KM
Complete Set Unassembled
770□□□ = AN770□□□K
700250 = AL700K

□□□ Inner width (C)

SILVYN® CHAIN 475MU

Nylon Cable Chain with opening frames



Technical data

Inner Height (D)
75,5 mm

Pitch (P)
105 mm

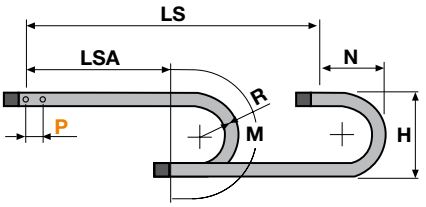
Speed
8 m/s

Acceleration
40 m/s²

Separator	
Unassembled	Article number S309S/3178
Assembled	Article number S309SMCI, S309SMCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Strong-hold separator for C > 200 mm	
Unassembled	Article number S309HOFL
Assembled	Article number S309HOFLMC
Pin	Article number PG475

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
112	100.5	74	75.5	150-180-200-250-300-350-400	3.70	475MU074□□□
132	100.5	94	75.5	150-180-200-250-300-350-400	3.80	475MU094□□□
157	100.5	119	75.5	150-180-200-250-300-350-400	3.85	475MU119□□□
164	100.5	126	75.5	150-180-200-250-300-350-400	3.90	475MU126□□□
187	100.5	149	75.5	150-180-200-250-300-350-400	3.95	475MU149□□□
227	100.5	189	75.5	150-180-200-250-300-350-400	4.05	475MU189□□□
262	100.5	224	75.5	150-180-200-250-300-350-400	4.15	475MU224□□□
288	100.5	250	75.5	150-180-200-250-300-350-400	4.25	475MU250□□□
312	100.5	274	75.5	150-180-200-250-300-350-400	4.30	475MU274□□□
338	100.5	300	75.5	150-180-200-250-300-350-400	4.37	475MU300□□□
362	100.5	324	75.5	150-180-200-250-300-350-400	4.45	475MU324□□□
388	100.5	350	75.5	150-180-200-250-300-350-400	4.55	475MU350□□□
412	100.5	374	75.5	150-180-200-250-300-350-400	4.60	475MU374□□□
467	100.5	429	75.5	150-180-200-250-300-350-400	4.80	475MU429□□□
536	100.5	498	75.5	150-180-200-250-300-350-400	5.00	475MU498□□□

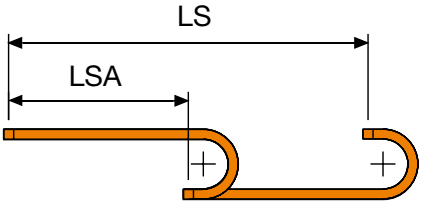
□□□ to be filled with Radius R

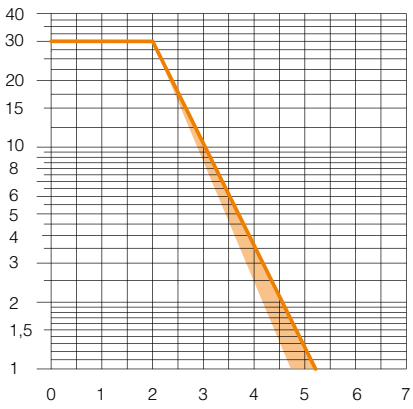


R	H	N	M
150	400.5	310	690
180	460.5	335	775
200	500.5	355	840
250	600.5	405	995
300	700.5	460	1155
350	800.5	505	1310
400	900.5	560	1470

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

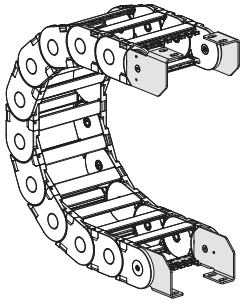
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

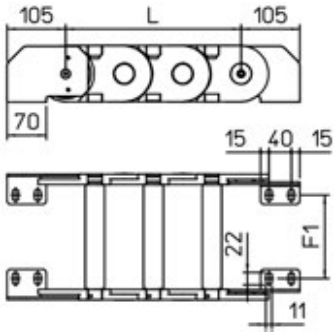
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type





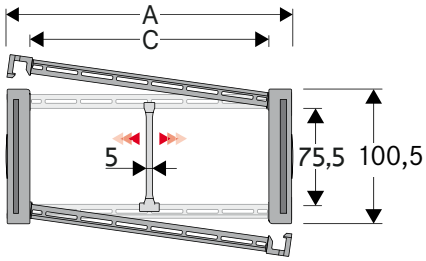
Chain Type	F1
475MU074□□□	35
475MU094□□□	55
475MU119□□□	80
475MU126□□□	87
475MU149□□□	110
475MU189□□□	150
475MU224□□□	185
475MU250□□□	211
475MU274□□□	235
475MU300□□□	261
475MU324□□□	285
475MU350□□□	311
475MU374□□□	335
475MU429□□□	390
475MU498□□□	459

Steel Type Part Numbers
Complete Set Assembled
A475M□□□KM□
Complete Set Unassembled
A475M□□□K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC475M□□□KM
Complete Set Unassembled
CFC475M□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 475PU

Nylon cable chain with openable protection frames.



Technical data

Inner Height (D)
75,5 mm

Pitch (P)
105 mm

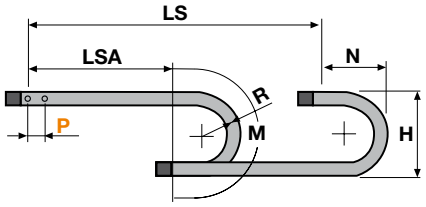
Speed
8 m/s

Acceleration
40 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
112	100.5	74	75.5	180-200-250-300-350-400	4.60	475PU074□□□
132	100.5	94	75.5	180-200-250-300-350-400	4.80	475PU094□□□
157	100.5	119	75.5	180-200-250-300-350-400	5.10	475PU119□□□
164	100.5	126	75.5	180-200-250-300-350-400	5.15	475PU126□□□
187	100.5	149	75.5	180-200-250-300-350-400	5.40	475PU149□□□
227	100.5	189	75.5	180-200-250-300-350-400	5.80	475PU189□□□
262	100.5	224	75.5	180-200-250-300-350-400	6.20	475PU224□□□
288	100.5	250	75.5	180-200-250-300-350-400	6.50	475PU250□□□
312	100.5	274	75.5	180-200-250-300-350-400	6.75	475PU274□□□
338	100.5	300	75.5	180-200-250-300-350-400	7.05	475PU300□□□
362	100.5	324	75.5	180-200-250-300-350-400	7.30	475PU324□□□
388	100.5	350	75.5	180-200-250-300-350-400	7.55	475PU350□□□
412	100.5	374	75.5	180-200-250-300-350-400	7.85	475PU374□□□
467	100.5	429	75.5	180-200-250-300-350-400	8.50	475PU429□□□
536	100.5	498	75.5	180-200-250-300-350-400	9.20	475PU498□□□

□□□ to be filled with Radius R

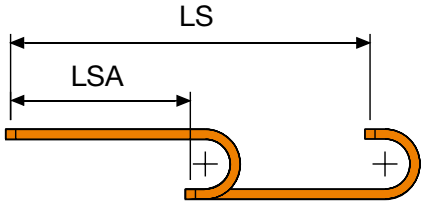
Separator	
Unassembled	Article number S309S
Assembled	Article number S309SMCI, S309SMCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG475

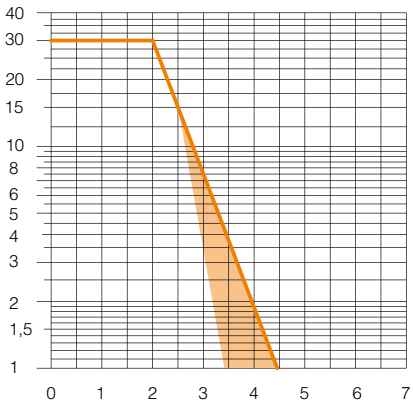


R	H	N	M
180	460.5	335	775
200	500.5	355	840
250	600.5	405	995
300	700.5	460	1155
350	800.5	505	1310
400	900.5	560	1470

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

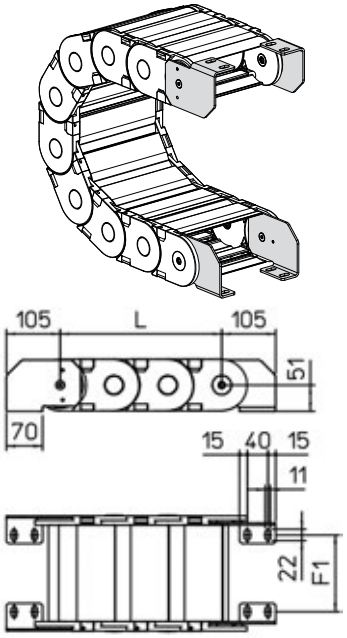
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type



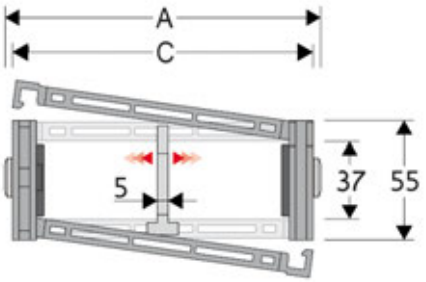
Chain Type	F1
475PU074□□□	35
475PU094□□□	55
475PU119□□□	80
475PU126□□□	87
475PU149□□□	110
475PU189□□□	150
475PU224□□□	185
475PU250□□□	211
475PU274□□□	235
475PU300□□□	261
475PU324□□□	285
475PU350□□□	311
475PU374□□□	335
475PU429□□□	390
475PU498□□□	459

Steel Type Part Numbers
Complete Set Assembled
A475P□□□KM□
Complete Set Unassembled
A475P□□□K□

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 306SU

Nylon Cable Chain with opening frames



Technical data

Inner Height (D)
37 mm

Pitch (P)
65 mm

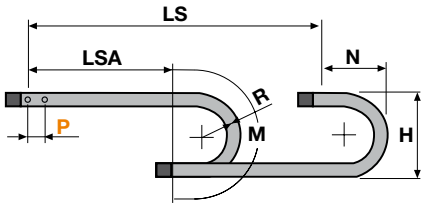
Speed
8 m/s

Acceleration
40 m/s²

Separator	
Unassembled	Article number S660A
Assembled	Article number S660AMCI, S660AMCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Strong-hold separator for C > 200 mm	
Unassembled	Article number S660AH
Assembled	Article number S660AHMCI, S660AHMCE
Pin	Article number PG307

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
79	55	43	37	075-107-150-200-250-300	1.61	306SU043□□□
90	55	54	37	075-107-150-200-250-300	1.61	306SU054□□□
104	55	68	37	075-107-150-200-250-300	1.68	306SU068□□□
110	55	74	37	075-107-150-200-250-300	1.70	306SU074□□□
124	55	88	37	075-107-150-200-250-300	1.74	306SU088□□□
129	55	93	37	075-107-150-200-250-300	1.74	306SU093□□□
136	55	100	37	075-107-150-200-250-300	1.76	306SU100□□□
146	55	110	37	075-107-150-200-250-300	1.77	306SU110□□□
154	55	118	37	075-107-150-200-250-300	1.82	306SU118□□□
165	55	129	37	075-107-150-200-250-300	1.85	306SU129□□□
179	55	143	37	075-107-150-200-250-300	1.89	306SU143□□□
204	55	168	37	075-107-150-200-250-300	1.96	306SU168□□□
229	55	193	37	075-107-150-200-250-300	2.04	306SU193□□□
240	55	204	37	075-107-150-200-250-300	2.07	306SU204□□□
254	55	218	37	075-107-150-200-250-300	2.11	306SU218□□□
281	55	245	37	075-107-150-200-250-300	2.19	306SU245□□□
290	55	254	37	075-107-150-200-250-300	2.22	306SU254□□□
341	55	305	37	075-107-150-200-250-300	2.34	306SU305□□□
363	55	327	37	075-107-150-200-250-300	2.41	306SU327□□□
391	55	355	37	075-107-150-200-250-300	2.49	306SU355□□□

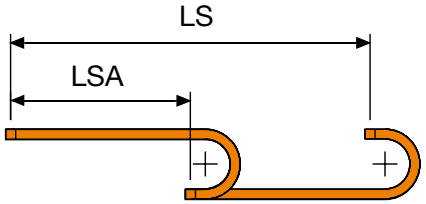
□□□ to be filled with Radius R

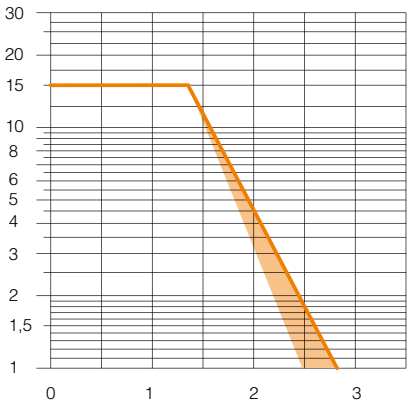


R	H	N	M
075	208	170	370
107	272	205	470
150	358	245	605
200	458	295	760
250	558	345	920
300	658	395	1075

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

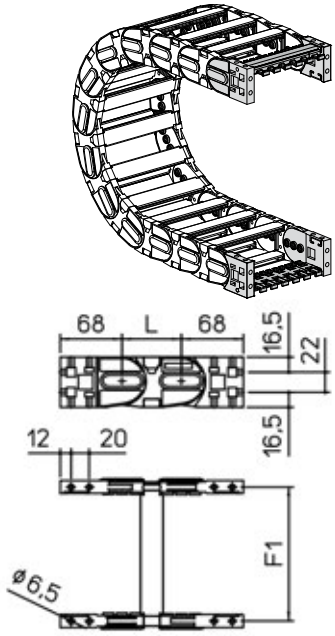
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type

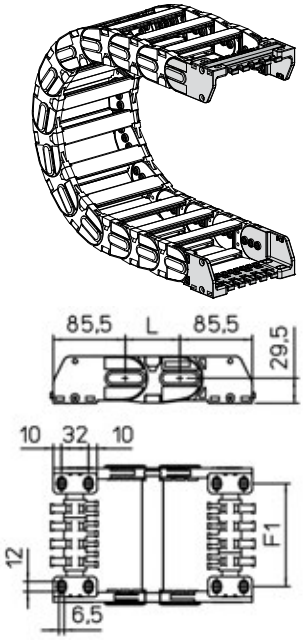


Chain Type	F1
306SU043	61
306SU054	72
306SU068	86
306SU074	92
306SU078	96
306SU088	106
306SU093	111
306SU100	118
306SU110	128
306SU118	136
306SU129	147
306SU143	161
306SU168	186
306SU193	211
306SU204	222
306SU218	236
306SU245	263
306SU254	272
306SU305	323
306SU327	345
306SU355	373

Nylon Type Part Numbers
Complete Set Assembled
AN306KM
Complete Set Unassembled
AN306K
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC306S□□□KM
Complete Set Unassembled
CFC306S□□□K

□□□ Inner width (C)

Nylon Type

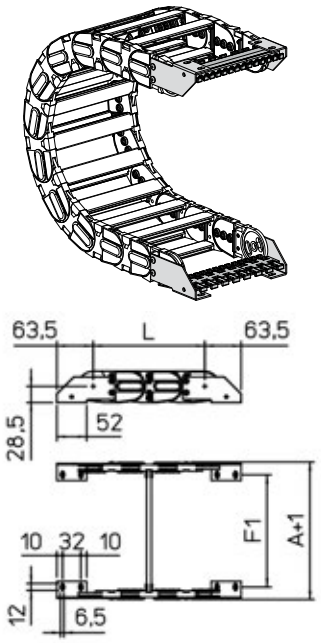


Chain Type	F1
306SU043	36
306SU054	47
306SU068	61
306SU074	67
306SU078	71
306SU088	81
306SU093	86
306SU100	93
306SU110	103
306SU118	111
306SU129	122
306SU143	136
306SU168	161
306SU193	186
306SU204	197
306SU218	211
306SU245	238
306SU254	247
306SU305	298
306SU327	320
306SU355	348

Nylon Type Part Numbers
Complete Set Assembled
ANL306KM□
Complete Set Unassembled
ANL306K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCTL306S□□□KM
Complete Set Unassembled
SFCTL306S□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

Steel Type



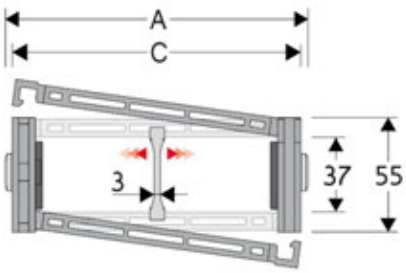
Chain Type	F1
306SU	F1=A-43

Steel Type Part Numbers
Complete Set Assembled
A306SKM□
Complete Set Unassembled
AN306SK□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCT306S□□□KM
Complete Set Unassembled
SFCT306S□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 306CU

Nylon Protection Cable Chain with opening aluminium covers



Technical data

Inner Height (D)
37 mm

Pitch (P)
65 mm

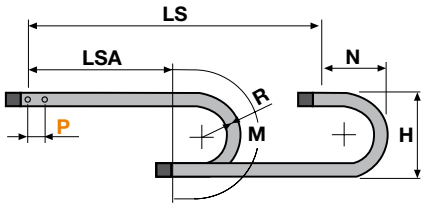
Speed
8 m/s

Acceleration
40 m/s²

Separator	
Unassembled	Article number S306SM
Assembled	Article number S306SMMC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG307

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
79	55	43	37	107-150-200-250-300	1.85	306CU043□□□
90	55	54	37	107-150-200-250-300	1.90	306CU054□□□
104	55	68	37	107-150-200-250-300	2.04	306CU068□□□
110	55	74	37	107-150-200-250-300	2.09	306CU074□□□
124	55	88	37	107-150-200-250-300	2.20	306CU088□□□
129	55	93	37	107-150-200-250-300	2.22	306CU093□□□
136	55	100	37	107-150-200-250-300	2.27	306CU100□□□
146	55	110	37	107-150-200-250-300	2.33	306CU110□□□
154	55	118	37	107-150-200-250-300	2.42	306CU118□□□
165	55	129	37	107-150-200-250-300	2.50	306CU129□□□
179	55	143	37	107-150-200-250-300	2.61	306CU143□□□
204	55	168	37	107-150-200-250-300	2.80	306CU168□□□
229	55	193	37	107-150-200-250-300	3.00	306CU193□□□
240	55	204	37	107-150-200-250-300	3.08	306CU204□□□
254	55	218	37	107-150-200-250-300	3.19	306CU218□□□
281	55	245	37	107-150-200-250-300	3.40	306CU245□□□
290	55	254	37	107-150-200-250-300	3.47	306CU254□□□
341	55	305	37	107-150-200-250-300	3.84	306CU305□□□
363	55	327	37	107-150-200-250-300	4.01	306CU327□□□
391	55	355	37	107-150-200-250-300	4.22	306CU355□□□

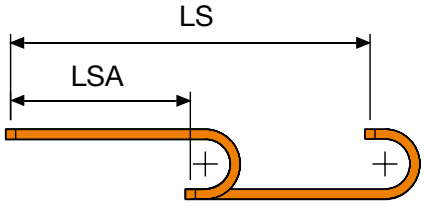
□□□ to be filled with Radius R

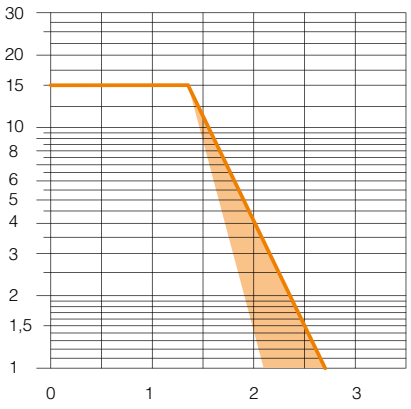


R	H	N	M
107	272	205	470
150	358	245	605
200	458	295	760
250	558	345	920
300	658	395	1075

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram
The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

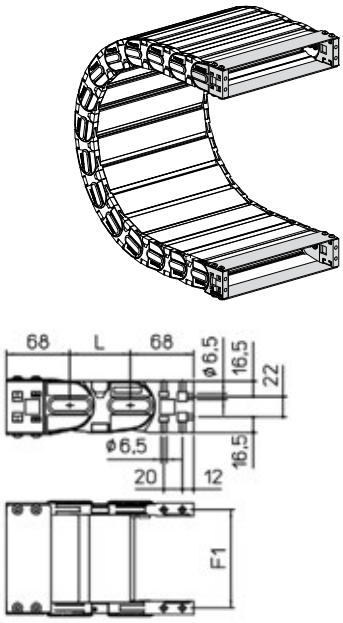
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type

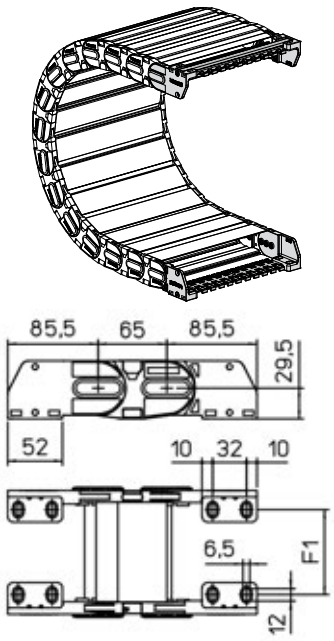


Chain Type	F1
306CU043	61
306CU054	72
306CU068	86
306CU074	92
306CU078	96
306CU088	106
306CU093	111
306CU100	118
306CU110	128
306CU118	136
306CU129	147
306CU143	161
306CU168	186
306CU193	211
306CU204	222
306CU218	236
306CU245	263
306CU254	272
306CU305	323
306CU327	345
306CU355	373

Nylon Type Part Numbers
Complete Set Assembled
AN306C□□□KM
Complete Set Unassembled
AN306C□□□K

□□□ Inner width (C)

Nylon Type

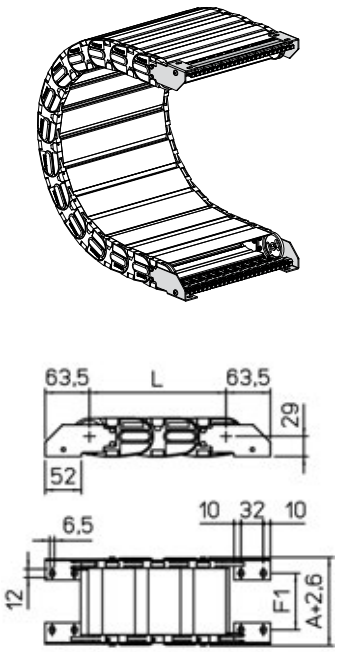


Chain Type	F1
306CU043	36
306CU054	47
306CU068	61
306CU074	67
306CU078	71
306CU088	81
306CU093	86
306CU100	93
306CU110	103
306CU118	111
306CU129	122
306CU143	136
306CU168	161
306CU193	186
306CU204	197
306CU218	211
306CU245	238
306CU254	247
306CU305	298
306CU327	320
306CU355	348

Nylon Type Part Numbers
Complete Set Assembled
ANL306KM□
Complete Set Unassembled
ANL306K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCTL306S□□□KM
Complete Set Unassembled
SFCTL306S□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

Steel Type



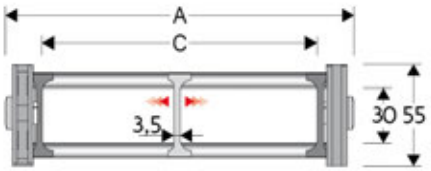
Chain Type	F1
306CU	F1=A-43

Steel Type Part Numbers
Complete Set Assembled
A306CU□□□KM□
Complete Set Unassembled
A306CU□□□K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCT306CU□□□KM
Complete Set Unassembled
SFCT306CU□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 306B

Nylon Cable Chain with un-screwable aluminium rods



Technical data

Inner Height (D)
30 mm

Pitch (P)
65 mm

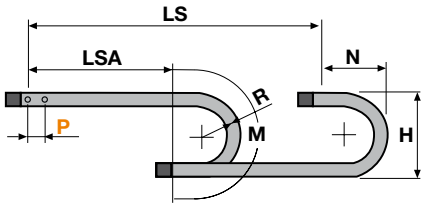
Speed
8 m/s

Acceleration
40 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
115	55	75	30	075-107-150-200-250-300	1.60	306B075□□□
140	55	100	30	075-107-150-200-250-300	1.65	306B100□□□
190	55	150	30	075-107-150-200-250-300	1.80	306B150□□□
240	55	200	30	075-107-150-200-250-300	1.90	306B200□□□
290	55	250	30	075-107-150-200-250-300	2.00	306B250□□□
340	55	300	30	075-107-150-200-250-300	2.15	306B300□□□
C+40	55	...	30	075-107-150-200-250-300	...	306B□□□□□□

□□□ to be filled with Radius R

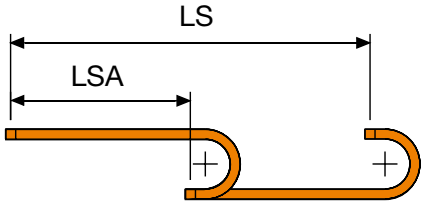
Separator	
Unassembled	Article number S2000F
Assembled	Article number S2000FMC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG307

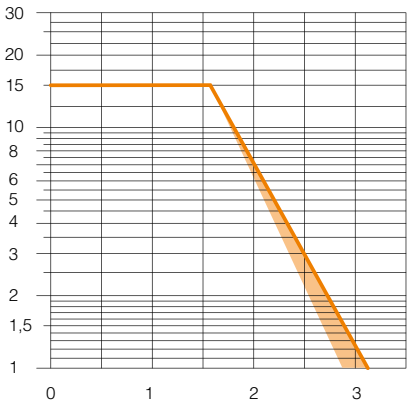


R	H	N	M
075	208	170	370
107	272	205	470
150	358	245	605
200	458	295	760
250	558	345	920
300	658	395	1075

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

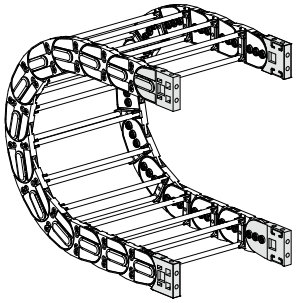
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

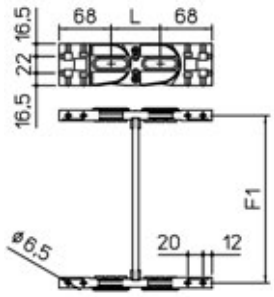
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type



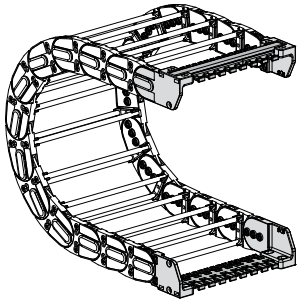


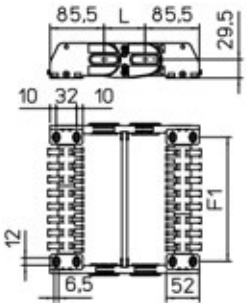
Chain Type	F1
306B075	96
306B100	121
306B150	171
306B200	221
306B250	271
306B300	321
306B□□□	F=A-19

Nylon Type Part Numbers
Complete Set Assembled
AN306KM
Complete Set Unassembled
AN306K
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC306S□□□KM
Complete Set Unassembled
CFC306S□□□K

□□□ Inner width (C)

Nylon Type



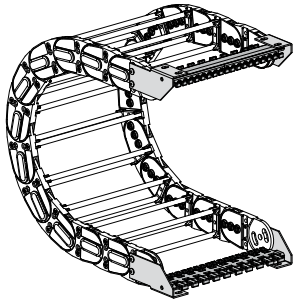


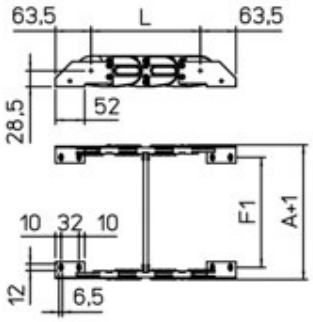
Chain Type	F1
306B075	71
306B100	96
306B150	146
306B200	196
306B250	246
306B300	296
306B□□□	F=A-44

Nylon Type Part Numbers
Complete Set Assembled
ANL306KM□
Complete Set Unassembled
ANL306K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCTL306B□□□KM
Complete Set Unassembled
SFCTL306B□□□K

□□□ Inner width (C)

Steel Type





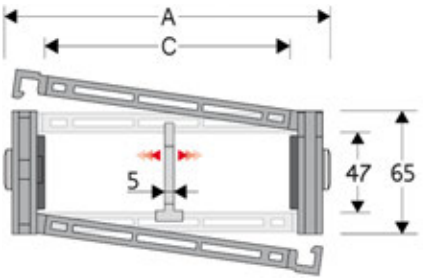
Chain Type	F1
306B□□□	F=A-44

Nylon Type Part Numbers
Complete Set Assembled
A306KM□
Complete Set Unassembled
AN306K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCT306B□□□KM
Complete Set Unassembled
SFCT306B□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 307SU

Nylon Cable Chain with opening frames



Technical data

Inner Height (D)
47 mm

Pitch (P)
70 mm

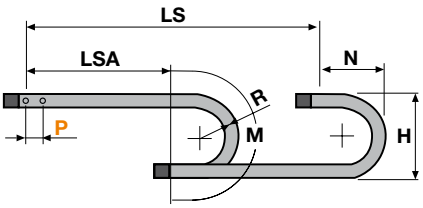
Speed
8 m/s

Acceleration
40 m/s²

Separator	
Unassembled	Article number S307S
Assembled	Article number S307SMCI; S307SMCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Strong-hold separator for C > 200 mm	
Unassembled	Article number S307SH
Assembled	Article number S307SHMCI; S307SHMCE
Pin	Article number PG307

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
80	65	42	47	075-090-120-140-200-250	1.86	307SU042□□□
91	65	53	47	075-090-120-140-200-250	1.86	307SU053□□□
105	65	67	47	075-090-120-140-200-250	1.92	307SU067□□□
111	65	73	47	075-090-120-140-200-250	1.94	307SU073□□□
125	65	87	47	075-090-120-140-200-250	1.97	307SU087□□□
130	65	92	47	075-090-120-140-200-250	1.97	307SU092□□□
137	65	99	47	075-090-120-140-200-250	1.99	307SU099□□□
147	65	109	47	075-090-120-140-200-250	2.00	307SU109□□□
155	65	117	47	075-090-120-140-200-250	2.05	307SU117□□□
166	65	128	47	075-090-120-140-200-250	2.07	307SU128□□□
180	65	142	47	075-090-120-140-200-250	2.10	307SU142□□□
205	65	167	47	075-090-120-140-200-250	2.16	307SU167□□□
230	65	192	47	075-090-120-140-200-250	2.23	307SU192□□□
241	65	203	47	075-090-120-140-200-250	2.26	307SU203□□□
255	65	217	47	075-090-120-140-200-250	2.30	307SU217□□□
282	65	244	47	075-090-120-140-200-250	2.37	307SU244□□□
291	65	253	47	075-090-120-140-200-250	2.39	307SU253□□□
342	65	304	47	075-090-120-140-200-250	2.50	307SU304□□□
364	65	326	47	075-090-120-140-200-250	2.56	307SU326□□□
392	65	354	47	075-090-120-140-200-250	2.63	307SU354□□□

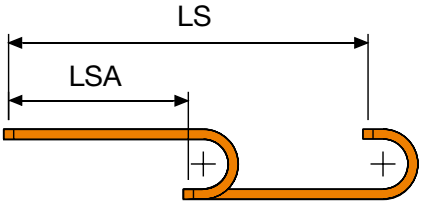
□□□ to be filled with Radius R

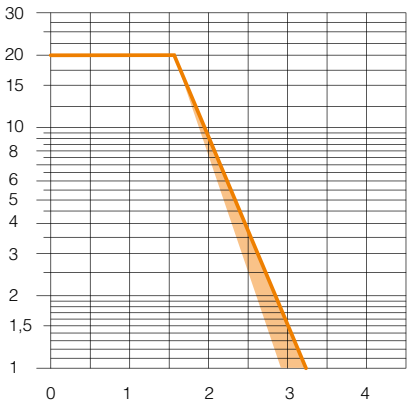


R	H	N	M
075	219	180	375
090	249	195	425
120	309	225	520
140	349	245	580
200	469	305	770
250	569	355	925

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

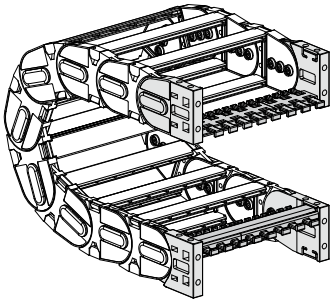
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

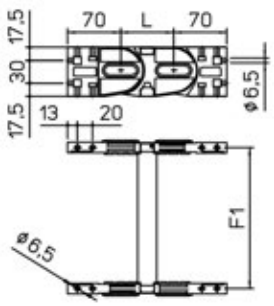
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type



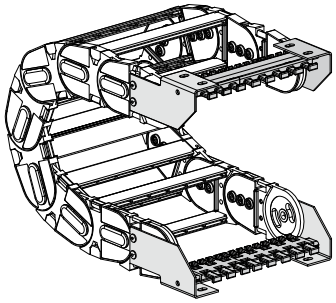


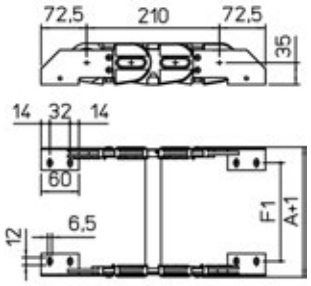
Chain Type	F1
307SU042	61
307SU053	72
307SU067	86
307SU073	92
307SU081	100
307SU087	106
307SU092	111
307SU099	118
307SU109	128
307SU117	136
307SU128	147
307SU142	161
307SU167	186
307SU192	211
307SU203	222
307SU217	236
307SU244	263
307SU253	272
307SU304	323
307SU326	345
307SU354	373

Nylon Type Part Numbers
Complete Set Assembled
AN307KM
Complete Set Unassembled
AN307K
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC307S□□□KM
Complete Set Unassembled
CFC307S□□□K

□□□ Inner width (C)

Steel Type





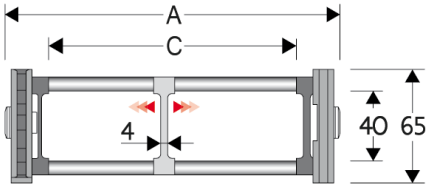
Chain Type	F1
307SU042	31
307SU053	42
307SU067	56
307SU073	62
307SU081	70
307SU087	76
307SU092	81
307SU099	88
307SU109	98
307SU117	106
307SU128	117
307SU142	131
307SU167	156
307SU192	181
307SU203	192
307SU217	206
307SU244	233
307SU253	242
307SU304	293
307SU326	315
307SU354	343

Steel Type Part Numbers
Complete Set Assembled
A307SKM□
Complete Set Unassembled
A307SK□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCT307S□□□KM
Complete Set Unassembled
SFCT307S□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 307B

Nylon Cable Chain with un-screwable aluminium rods



Technical data

Inner Height (D)
40 mm

Pitch (P)
70 mm

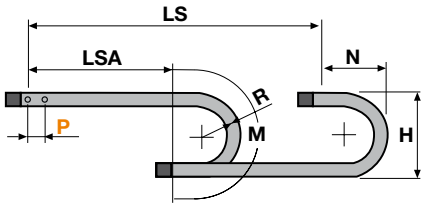
Speed
8 m/s

Acceleration
40 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
117	65	75	40	075-090-120-140-200-250	1.80	307B075□□□
142	65	100	40	075-090-120-140-200-250	1.85	307B100□□□
192	65	150	40	075-090-120-140-200-250	1.95	307B150□□□
242	65	200	40	075-090-120-140-200-250	2.05	307B200□□□
292	65	250	40	075-090-120-140-200-250	2.15	307B250□□□
342	65	300	40	075-090-120-140-200-250	2.25	307B300□□□
C+42	65	...	40	075-090-120-140-200-250	...	307B□□□□□□

□□□ to be filled with Radius R

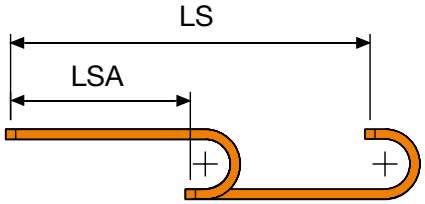
Separator	
Unassembled	Article number S307
Assembled	Article number S307MC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG307

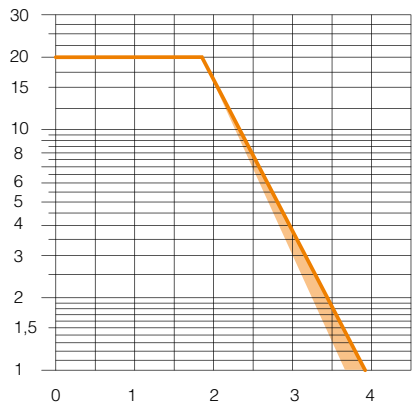


R	H	N	M
075	219	180	375
090	249	195	425
120	309	225	520
140	349	245	580
200	469	305	770
250	569	355	925

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

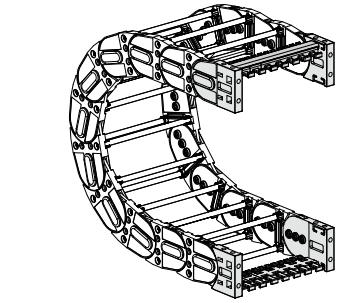
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

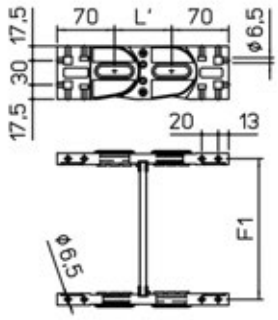
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type



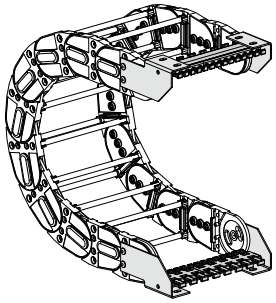


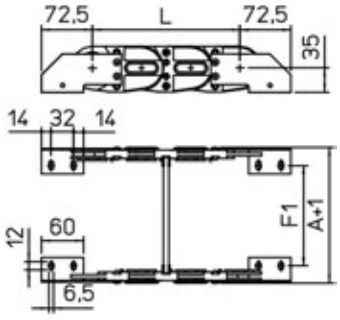
Chain Type	F1
307B075□	98
307B100□	123
307B150□	173
307B200□	223
307B250□	273
307B300□	323
307B□□□□	F=A-19

Nylon Type Part Numbers
Complete Set Assembled
AN307KM
Complete Set Unassembled
AN307K
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC307S□□□KM
Complete Set Unassembled
CFC307S□□□K

□□□ Inner width (C)

Steel Type





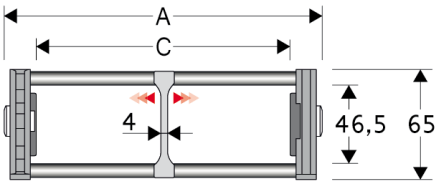
Chain Type	F ^mm
307B075□	68
307B100□	93
307B150□	143
307B200□	193
307B250□	243
307B300□	293
307B□□□□	F=A-49

Steel Type Part Numbers
Complete Set Assembled
A307KM□
Complete Set Unassembled
A307K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCT307B□□□KM
Complete Set Unassembled
SFCT307B□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 307E

Nylon cable chain with un-screwable aluminium rods.



Technical data

Inner Height (D)
46,5 mm

Pitch (P)
70 mm

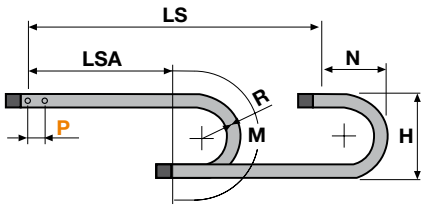
Speed
8 m/s

Acceleration
40 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
113	65	75	46.5	075-090-120-140-170-200-250	1.80	307E075□□□
138	65	100	46.5	075-090-120-140-170-200-250	1.85	307E100□□□
188	65	150	46.5	075-090-120-140-170-200-250	1.95	307E150□□□
238	65	200	46.5	075-090-120-140-170-200-250	2.05	307E200□□□
288	65	250	46.5	075-090-120-140-170-200-250	2.15	307E250□□□
338	65	300	46.5	075-090-120-140-170-200-250	2.25	307E300□□□
C+38	65	...	46.5	075-090-120-140-170-200-250	...	307E□□□□□□

□□□ to be filled with Radius R

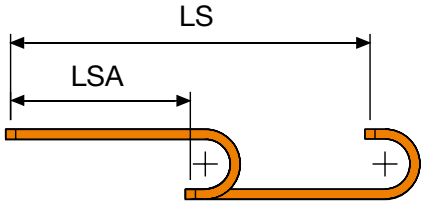
Separator	
Unassembled	Article number S307EF
Assembled	Article number S307EFMC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG307

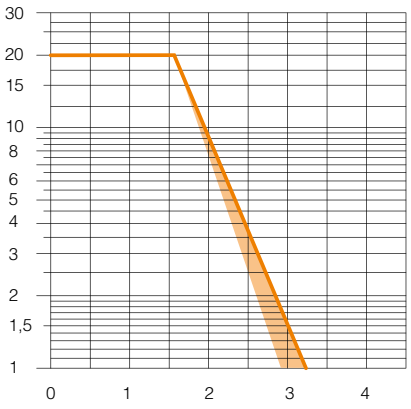


R	H	N	M
075	219	180	375
090	249	195	425
120	309	225	520
140	349	245	580
170	409	305	770
200	469	305	770
250	569	355	925

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

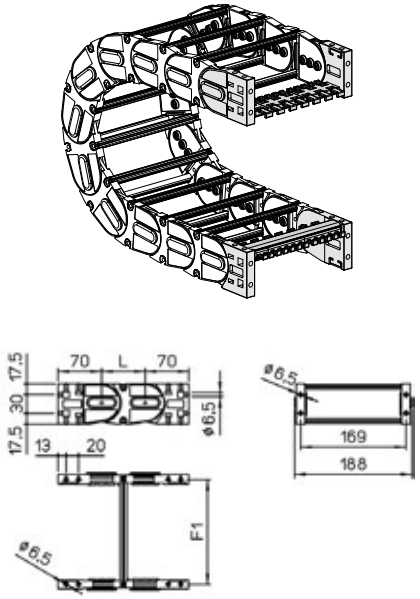
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type

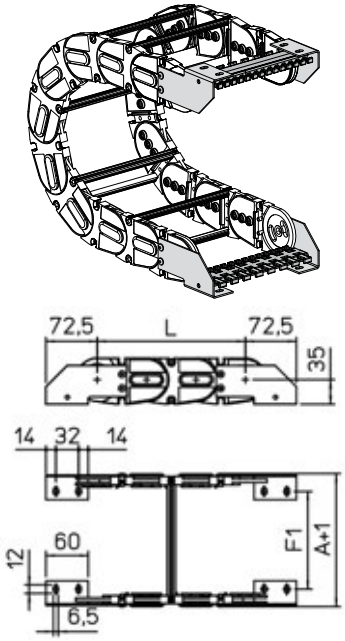


Chain Type	F1
307E075	94
307E100	119
307E150	169
307E200	219
307E250	269
307E300	319
307□□□	F=A-19

Nylon Type Part Numbers
Complete Set Assembled
AN307KM
Complete Set Unassembled
AN307K
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC307S□□□KM
Complete Set Unassembled
CFC307S□□□K

□□□ Inner width (C)

Steel Type



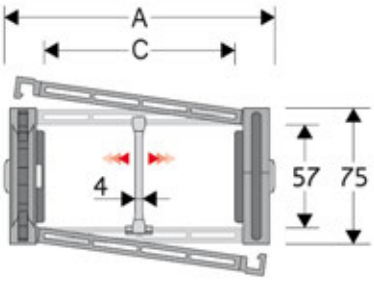
Chain Type	F1
307E075	94
307E100	119
307E150	169
307E200	219
307E250	269
307E300	319
307□□□	F=A-19

Steel Type Part Numbers
Complete Set Assembled
A307EKM□
Complete Set Unassembled
A307EK□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCT307E□□□KM
Complete Set Unassembled
SFCT307E□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 308SU

Nylon Cable Chain with opening frames



Technical data

Inner Height (D)
57 mm

Pitch (P)
80 mm

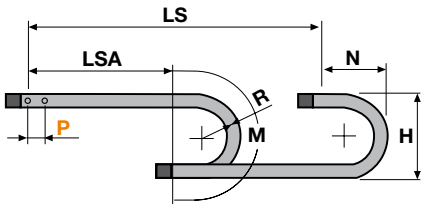
Speed
8 m/s

Acceleration
40 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
82	75	38	57	135-150-180-200-230-280-300-400	2.46	308SU038□□□
93	75	49	57	135-150-180-200-230-280-300-400	2.46	308SU049□□□
107	75	63	57	135-150-180-200-230-280-300-400	2.51	308SU063□□□
113	75	69	57	135-150-180-200-230-280-300-400	2.53	308SU069□□□
127	75	83	57	135-150-180-200-230-280-300-400	2.56	308SU083□□□
132	75	88	57	135-150-180-200-230-280-300-400	2.56	308SU088□□□
139	75	95	57	135-150-180-200-230-280-300-400	2.58	308SU095□□□
149	75	105	57	135-150-180-200-230-280-300-400	2.59	308SU105□□□
157	75	113	57	135-150-180-200-230-280-300-400	2.62	308SU113□□□
168	75	124	57	135-150-180-200-230-280-300-400	2.65	308SU124□□□
182	75	138	57	135-150-180-200-230-280-300-400	2.67	308SU138□□□
207	75	163	57	135-150-180-200-230-280-300-400	2.73	308SU163□□□
232	75	188	57	135-150-180-200-230-280-300-400	2.79	308SU188□□□
243	75	199	57	135-150-180-200-230-280-300-400	2.81	308SU199□□□
257	75	213	57	135-150-180-200-230-280-300-400	2.84	308SU213□□□
284	75	240	57	135-150-180-200-230-280-300-400	2.90	308SU240□□□
293	75	249	57	135-150-180-200-230-280-300-400	2.92	308SU249□□□
344	75	300	57	135-150-180-200-230-280-300-400	3.02	308SU300□□□
366	75	322	57	135-150-180-200-230-280-300-400	3.07	308SU322□□□
394	75	350	57	135-150-180-200-230-280-300-400	3.13	308SU350□□□

□□□ to be filled with Radius R

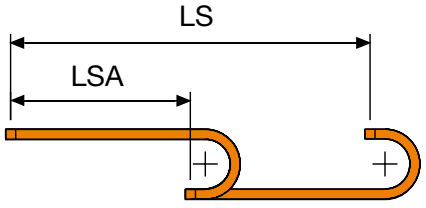
Separator	
Unassembled	Article number S308C
Assembled	Article number S308CMCI, S308CMCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Strong-hold separator for C > 200 mm	
Unassembled	Article number S308SHF
Assembled	Article number S308SHFMCI, S308SHFMCE
Pin	Article number PG308

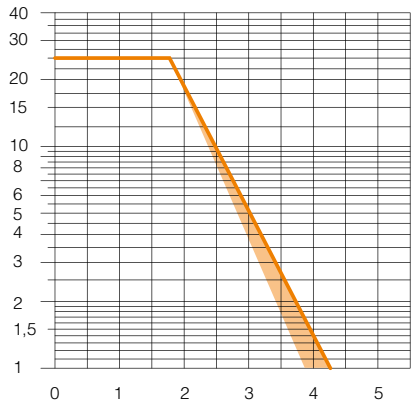


R	H	N	M
135	345	255	585
150	375	270	635
180	435	300	725
200	475	320	790
230	535	350	885
280	635	400	1040
300	675	420	1105
400	875	520	1420

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

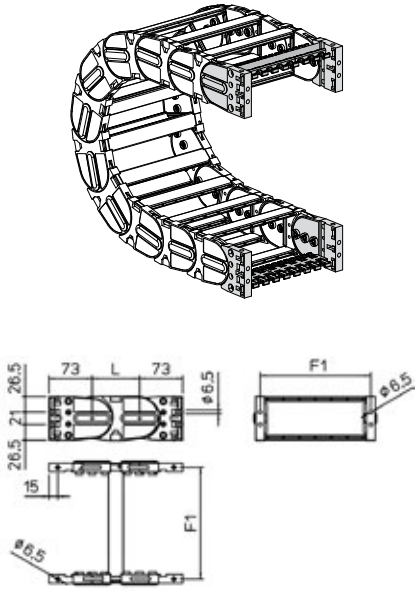
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type

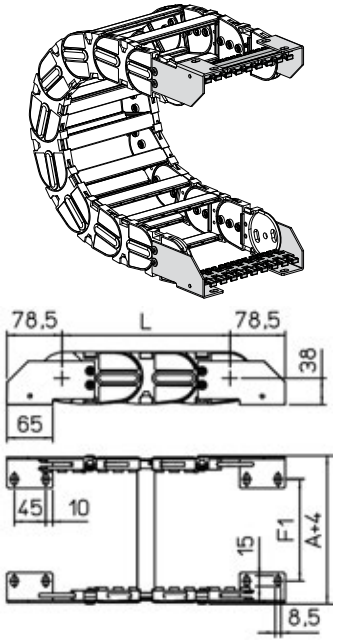


Chain Type	F1
308SU038□□□	62
308SU049□□□	73
308SU063□□□	87
308SU069□□□	93
308SU083□□□	107
308SU088□□□	112
308SU095□□□	119
308SU105□□□	129
308SU113□□□	137
308SU124□□□	148
308SU138□□□	162
308SU163□□□	187
308SU188□□□	212
308SU199□□□	223
308SU213□□□	237
308SU240□□□	264
308SU249□□□	273
308SU300□□□	324
308SU322□□□	346
308SU350□□□	374

Nylon Type Part Numbers
Complete Set Assembled
AN308SKM
Complete Set Unassembled
AN308SK
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC308S□□□KM
Complete Set Unassembled
CFC308S□□□K

□□□ Inner width (C)

Steel Type



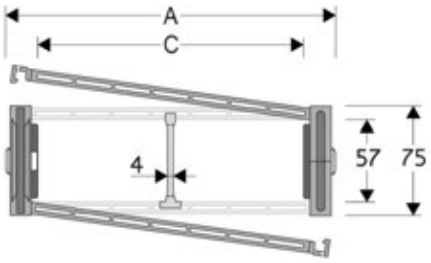
Chain Type	F1
308SU038□□□	20
308SU049□□□	31
308SU063□□□	45
308SU069□□□	51
308SU083□□□	65
308SU088□□□	70
308SU095□□□	77
308SU105□□□	87
308SU113□□□	95
308SU124□□□	106
308SU138□□□	120
308SU163□□□	145
308SU188□□□	170
308SU199□□□	181
308SU213□□□	195
308SU240□□□	222
308SU249□□□	231
308SU300□□□	282
308SU322□□□	304
308SU350□□□	332

Steel Type Part Numbers
Complete Set Assembled
A308SKM□
Complete Set Unassembled
A308SK□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCT308S□□□KM
Complete Set Unassembled
SFCT308S□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 308CU

Nylon Protection cable chain with openable aluminium covers.



Technical data

Inner Height (D)
57 mm

Pitch (P)
80 mm

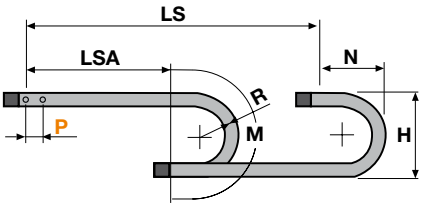
Speed
8 m/s

Acceleration
40 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
82	75	38	57	150-180-200-230-280-300-400	2.90	308CU038□□□
93	75	49	57	150-180-200-230-280-300-400	3.01	308CU049□□□
107	75	63	57	150-180-200-230-280-300-400	3.19	308CU063□□□
113	75	69	57	150-180-200-230-280-300-400	3.27	308CU069□□□
127	75	83	57	150-180-200-230-280-300-400	3.43	308CU083□□□
132	75	88	57	150-180-200-230-280-300-400	3.48	308CU088□□□
139	75	95	57	150-180-200-230-280-300-400	3.56	308CU095□□□
149	75	105	57	150-180-200-230-280-300-400	3.67	308CU105□□□
157	75	113	57	150-180-200-230-280-300-400	3.77	308CU113□□□
168	75	124	57	150-180-200-230-280-300-400	3.91	308CU124□□□
182	75	138	57	150-180-200-230-280-300-400	4.06	308CU138□□□
207	75	163	57	150-180-200-230-280-300-400	4.36	308CU163□□□
232	75	188	57	150-180-200-230-280-300-400	4.65	308CU188□□□
243	75	199	57	150-180-200-230-280-300-400	4.78	308CU199□□□
257	75	213	57	150-180-200-230-280-300-400	4.94	308CU213□□□
284	75	240	57	150-180-200-230-280-300-400	5.25	308CU240□□□
293	75	249	57	150-180-200-230-280-300-400	5.37	308CU249□□□
344	75	300	57	150-180-200-230-280-300-400	5.95	308CU300□□□
366	75	322	57	150-180-200-230-280-300-400	6.20	308CU322□□□
394	75	350	57	150-180-200-230-280-300-400	6.11	308CU350□□□

□□□ to be filled with Radius R

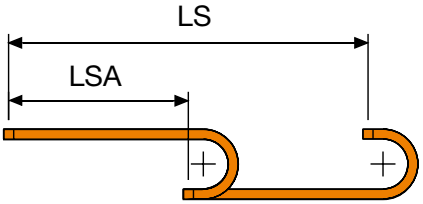
Separator	
Unassembled	Article number S308C
Assembled	Article number S308CMCI, S308CMCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG308

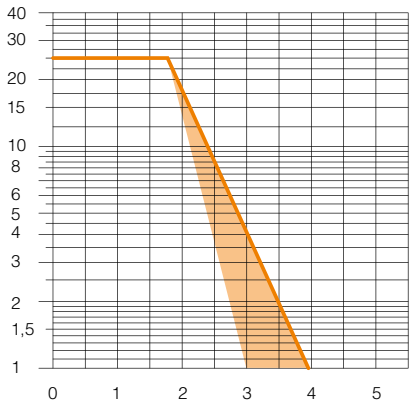


R	H	N	M
150	375	270	635
180	435	300	725
200	475	320	790
230	535	350	885
280	635	400	1040
300	675	420	1105
400	875	520	1420

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

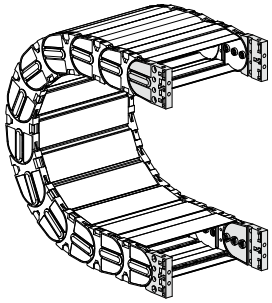
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

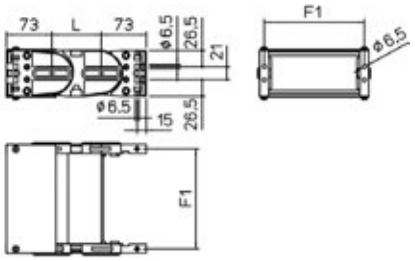
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type



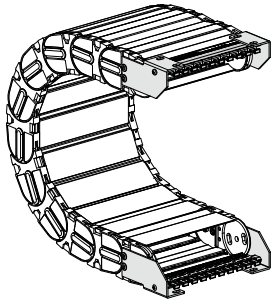


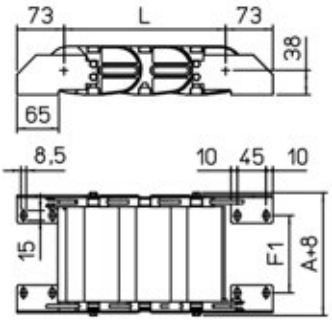
Chain Type	F1
308CU038□□□	62
308CU049□□□	73
308CU063□□□	87
308CU069□□□	93
308CU083□□□	107
308CU088□□□	112
308CU095□□□	119
308CU105□□□	129
308CU113□□□	137
308CU124□□□	148
308CU138□□□	162
308CU163□□□	187
308CU188□□□	212
308CU199□□□	223
308CU213□□□	237
308CU240□□□	264
308CU249□□□	273
308CU300□□□	324
308CU322□□□	346
308CU350□□□	374

Nylon Type Part Numbers
Complete Set Assembled
AN308C□□□KM
Complete Set Unassembled
AN308C□□□K

□□□ Inner width (C)

Steel Type





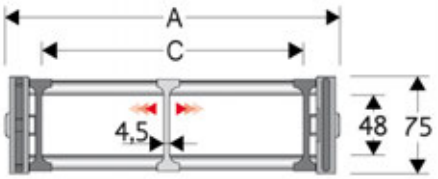
Chain Type	F1
308CU038□□□	20
308CU049□□□	31
308CU063□□□	45
308CU069□□□	51
308CU083□□□	65
308CU088□□□	70
308CU095□□□	77
308CU105□□□	87
308CU113□□□	95
308CU124□□□	106
308CU138□□□	120
308CU163□□□	145
308CU188□□□	170
308CU199□□□	181
308CU213□□□	195
308CU240□□□	222
308CU249□□□	231
308CU300□□□	282
308CU322□□□	304
308CU350□□□	332

Steel Type Part Numbers
Complete Set Assembled
A308CU□□□KM□
Complete Set Unassembled
A308CU□□□K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC445M□□□KM
Complete Set Unassembled
CFC445M□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 308B

Nylon Cable Chain with un-screwable aluminium rods



Technical data

Inner Height (D)
48 mm

Pitch (P)
80 m/s

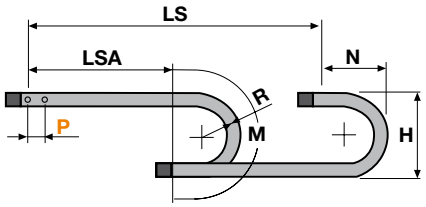
Speed
8 m/s

Acceleration
40 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
156	75	100	48	150-180-200-230-280-400	2.85	308B100□□□
206	75	150	48	150-180-200-230-280-400	3.00	308B150□□□
256	75	200	48	150-180-200-230-280-400	3.15	308B200□□□
306	75	250	48	150-180-200-230-280-400	3.30	308B250□□□
356	75	300	48	150-180-200-230-280-400	3.45	308B300□□□
C+56	75	...	48	150-180-200-230-280-400	...	308B□□□□□□

□□□ to be filled with Radius R

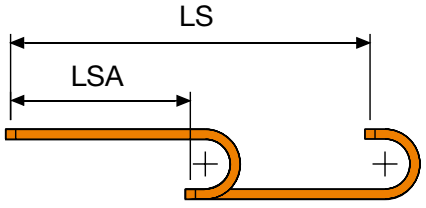
Separator	
Unassembled	Article number S3000F
Assembled	Article number S3000FMC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG308

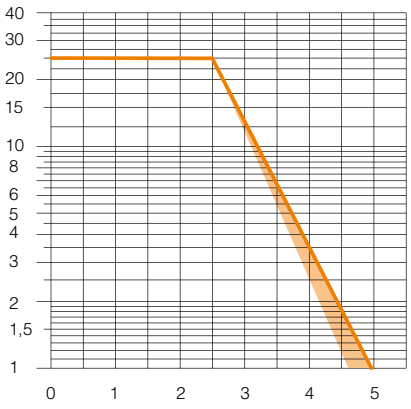


R	H	N	M
150	374	270	635
180	434	300	725
200	474	320	790
230	534	350	885
280	634	400	1040
400	874	520	1420

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

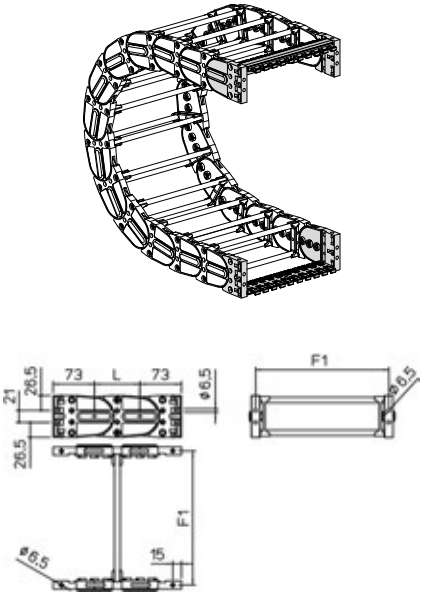
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type

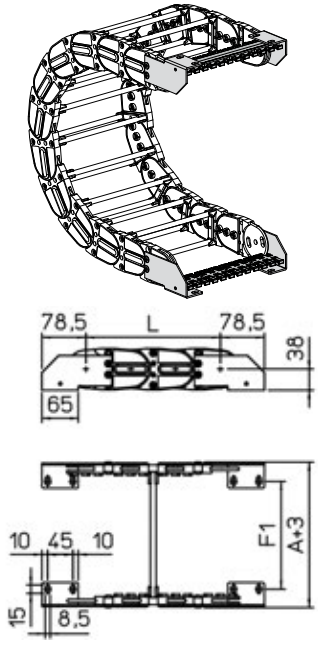


Chain Type	F1
308B100□	135
308B150□	185
308B200□	235
308B250□	285
308B300□	335
308B□□□□	F=A-21

Nylon Type Part Numbers
Complete Set Assembled
AN308KM
Complete Set Unassembled
AN308K
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC308S□□□KM
Complete Set Unassembled
CFC308S□□□K

□□□ Inner width (C)

Steel Type



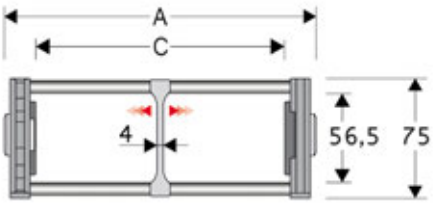
Chain Type	F1
308B100□	93
308B150□	143
308B200□	193
308B250□	243
308B300□	293
308B□□□□	F=A-63

Steel Type Part Numbers
Complete Set Assembled
A308KM□
Complete Set Unassembled
A308K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCT308B□□□KM
Complete Set Unassembled
SFCT308B□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 308E

Nylon cable chain with un-screwable aluminium rods.



Technical data

Inner Height (D)
56,5 mm

Pitch (P)
80 mm

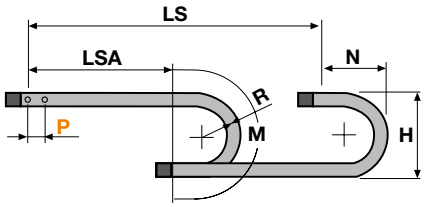
Speed
8 m/s

Acceleration
40 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
144	75	100	56.5	135-150-180-200-230-280-300-400	2.85	308E100□□□
194	75	150	56.5	135-150-180-200-230-280-300-400	2.95	308E150□□□
244	75	200	56.5	135-150-180-200-230-280-300-400	3.05	308E200□□□
294	75	250	56.5	135-150-180-200-230-280-300-400	3.15	308E250□□□
344	75	300	56.5	135-150-180-200-230-280-300-400	3.25	308E300□□□
C+44	75	...	56.5	135-150-180-200-230-280-300-400	...	308E□□□□□□

□□□ to be filled with Radius R

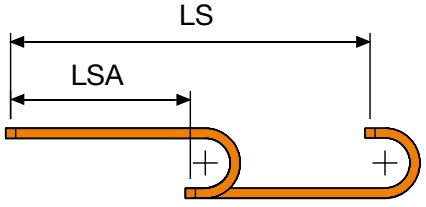
Separator	
Unassembled	Article number S308EF
Assembled	Article number S308EFMC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG308

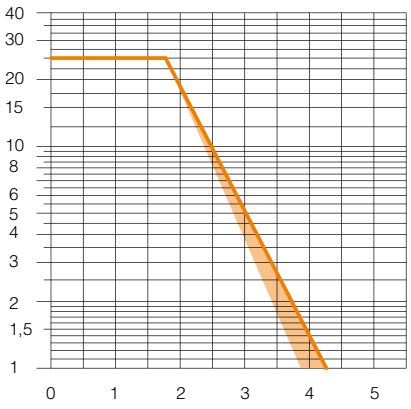


R	H	N	M
135	345	355	585
150	374	270	635
180	434	300	725
200	474	320	790
230	534	350	885
280	634	400	1040
300	675	420	1105
400	874	520	1420

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram
The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

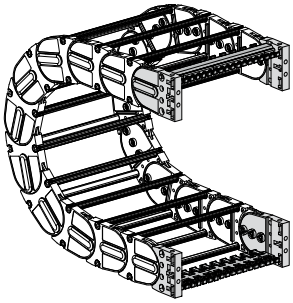
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

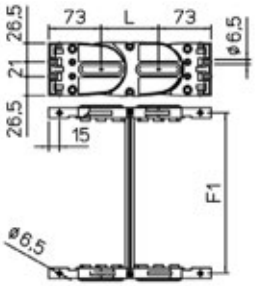
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type



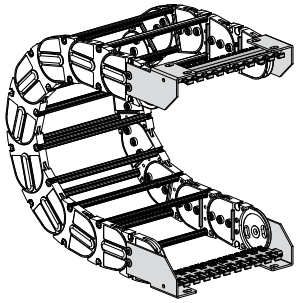


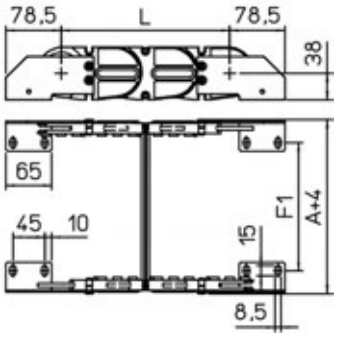
Chain Type	F1
308E100	123
308E150	173
308E200	223
308E250	273
308E300	323
308□□□	F=A-20

Nylon Type Part Numbers
Complete Set Assembled
AN308KM
Complete Set Unassembled
AN308K
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC308S□□□KM
Complete Set Unassembled
CFC308S□□□K

□□□ Inner width (C)

Steel Type





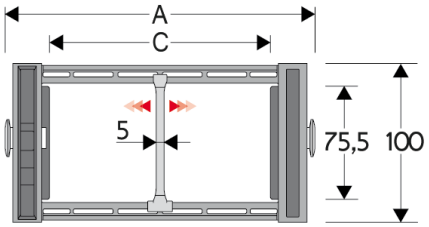
Chain Type	F1
308E100	81
308E150	131
308E200	181
308E250	231
308E300	281
308□□□	F=A-62

Steel Type Part Numbers
Complete Set Assembled
A308EKM□
Complete Set Unassembled
A308EK□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCT308E□□□KM
Complete Set Unassembled
SFCT308E□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 309SU

Nylon Cable Chain with opening frames



Technical data

Inner Height (D)
75,5 mm

Pitch (P)
100 mm

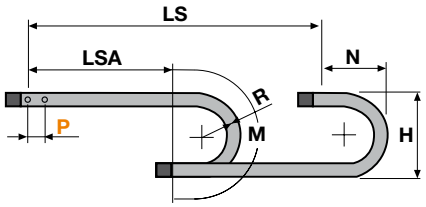
Speed
8 m/s

Acceleration
40 m/s²

Separator	
Unassembled	Article number S309S/3178
Assembled	Article number S309S/3178MCI, S309S/3178MCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Strong-hold separator for C > 200 mm	
Unassembled	Article number S309HOFL
Assembled	Article number S309HOFLMC
Pin	Article number PG309H

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
117	100	64	75.5	150-200-250-300-350-400-500-600	4.03	309SU064□□□
137	100	84	75.5	150-200-250-300-350-400-500-600	4.09	309SU084□□□
162	100	109	75.5	150-200-250-300-350-400-500-600	4.17	309SU109□□□
169	100	116	75.5	150-200-250-300-350-400-500-600	4.20	309SU116□□□
192	100	139	75.5	150-200-250-300-350-400-500-600	4.27	309SU139□□□
232	100	179	75.5	150-200-250-300-350-400-500-600	4.40	309SU179□□□
267	100	214	75.5	150-200-250-300-350-400-500-600	4.51	309SU214□□□
293	100	240	75.5	150-200-250-300-350-400-500-600	4.60	309SU240□□□
317	100	264	75.5	150-200-250-300-350-400-500-600	4.67	309SU264□□□
343	100	290	75.5	150-200-250-300-350-400-500-600	4.75	309SU290□□□
367	100	314	75.5	150-200-250-300-350-400-500-600	4.83	309SU314□□□
393	100	340	75.5	150-200-250-300-350-400-500-600	4.90	309SU340□□□
417	100	364	75.5	150-200-250-300-350-400-500-600	4.99	309SU364□□□
472	100	419	75.5	150-200-250-300-350-400-500-600	5.20	309SU419□□□
541	100	488	75.5	150-200-250-300-350-400-500-600	5.40	309SU488□□□

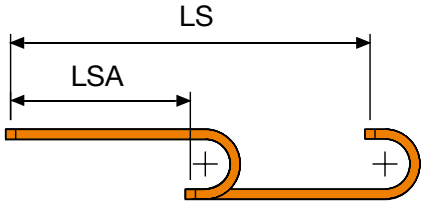
□□□ to be filled with Radius R

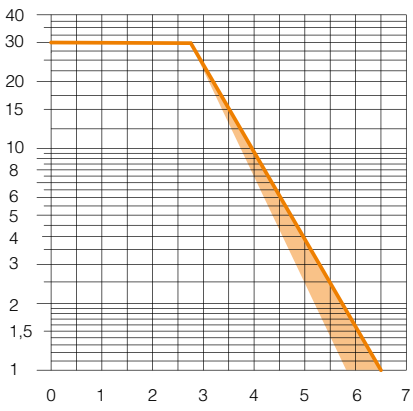


R	H	N	M
150	406	300	675
200	506	350	830
250	606	400	985
300	706	455	1145
350	806	500	1300
400	906	555	1460
500	1106	650	1770
600	1306	750	2085

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

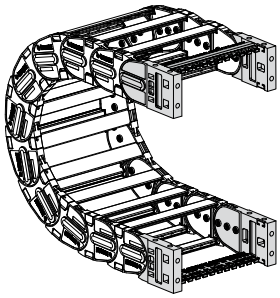
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

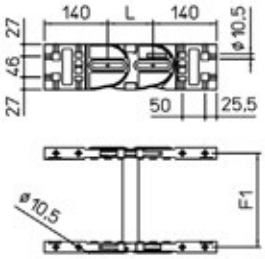
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type



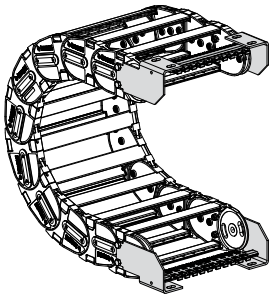


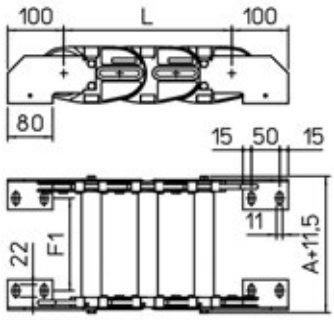
Chain Type	F1
309SU064	92
309SU084	112
309SU109	137
309SU116	144
309SU139	167
309SU179	207
309SU214	242
309SU240	268
309SU264	292
309SU290	318
309SU314	342
309SU340	368
309SU364	392
309SU419	447
309SU488	516

Nylon Type Part Numbers
Complete Set Assembled
AN309KM
Complete Set Unassembled
AN309K
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC309S□□□KM
Complete Set Unassembled
CFC309S□□□K

□□□ Inner width (C)

Steel Type





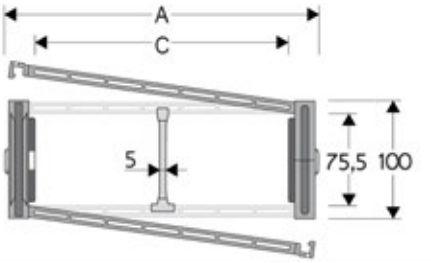
Chain Type	F1
309SU064	50
309SU084	70
309SU109	95
309SU116	102
309SU139	125
309SU179	165
309SU214	200
309SU240	226
309SU264	250
309SU290	276
309SU314	300
309SU340	326
309SU364	350
309SU419	405
309SU488	474

Steel Type Part Numbers
Complete Set Assembled
A309SKM□
Complete Set Unassembled
A309SK□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCT309S□□□KM
Complete Set Unassembled
SFCT309S□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 309CU

Nylon Protection cable chain with openable aluminium covers.



Technical data

Inner Height (D)
75,5 mm

Pitch (P)
100 mm

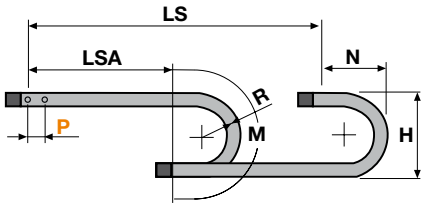
Speed
8 m/s

Acceleration
40 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
117	100	64	75.5	200-250-300-350-400-500-600	4.84	309CU064□□□
137	100	84	75.5	200-250-300-350-400-500-600	5.12	309CU084□□□
162	100	109	75.5	200-250-300-350-400-500-600	5.47	309CU109□□□
169	100	116	75.5	200-250-300-350-400-500-600	5.58	309CU116□□□
192	100	139	75.5	200-250-300-350-400-500-600	5.90	309CU139□□□
232	100	179	75.5	200-250-300-350-400-500-600	6.47	309CU179□□□
267	100	214	75.5	200-250-300-350-400-500-600	6.97	309CU214□□□
293	100	240	75.5	200-250-300-350-400-500-600	7.35	309CU240□□□
317	100	264	75.5	200-250-300-350-400-500-600	7.68	309CU264□□□
343	100	290	75.5	200-250-300-350-400-500-600	8.04	309CU290□□□
367	100	314	75.5	200-250-300-350-400-500-600	8.39	309CU314□□□
393	100	340	75.5	200-250-300-350-400-500-600	8.74	309CU340□□□
417	100	364	75.5	200-250-300-350-400-500-600	9.09	309CU364□□□
472	100	419	75.5	200-250-300-350-400-500-600	9.98	309CU419□□□
541	100	488	75.5	200-250-300-350-400-500-600	10.86	309CU488□□□

□□□ to be filled with Radius R

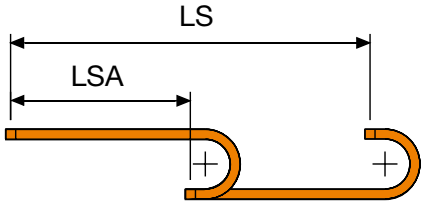
Separator	
Unassembled	Article number S309S/3178
Assembled	Article number S309SMCI, S309SMCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG309H

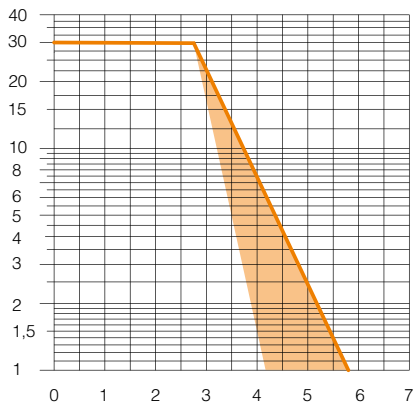


R	H	N	M
200	506	350	830
250	606	400	985
300	706	455	1145
350	806	500	1300
400	906	555	1460
500	1106	650	1770
600	1306	750	2085

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

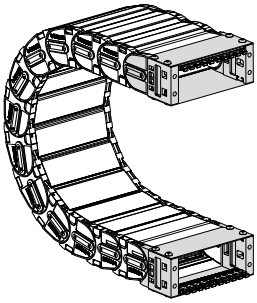
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

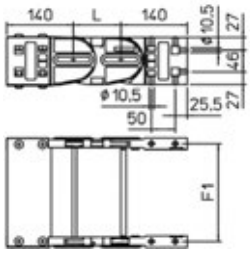
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type



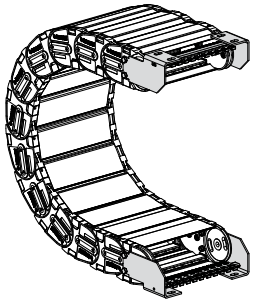


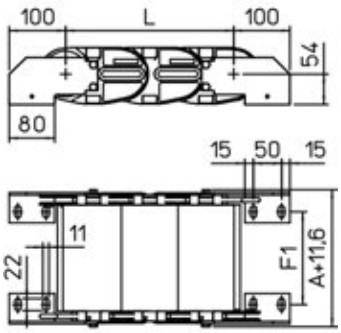
Chain Type	F1
309CU064□□□	92
309CU084□□□	112
309CU109□□□	137
309CU116□□□	144
309CU139□□□	167
309CU179□□□	207
309CU214□□□	242
309CU240□□□	268
309CU264□□□	292
309CU290□□□	318
309CU314□□□	342
309CU340□□□	368
309CU364□□□	392
309CU419□□□	447
309CU488□□□	516

Nylon Type Part Numbers
Complete Set Assembled
AN309C□□□KM
Complete Set Unassembled
AN309C□□□K

□□□ Inner width (C)

Steel Type





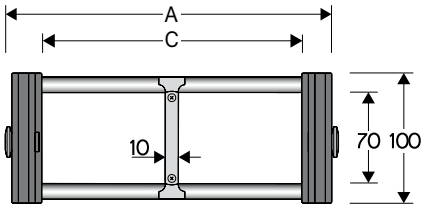
Chain Type	F1
309CU064□□□	50
309CU084□□□	70
309CU109□□□	95
309CU116□□□	102
309CU139□□□	125
309CU179□□□	165
309CU214□□□	200
309CU240□□□	226
309CU264□□□	250
309CU290□□□	276
309CU314□□□	300
309CU340□□□	326
309CU364□□□	350
309CU419□□□	405
309CU488□□□	474

Nylon Type Part Numbers
Complete Set Assembled
A309CU□□□KM□
Complete Set Unassembled
A309CU□□□K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCT309S□□□KM
Complete Set Unassembled
SFCT309S□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 309B

Nylon Cable Chain with opening frames



Technical data

Inner Height (D)
70 mm

Pitch (P)
100 mm

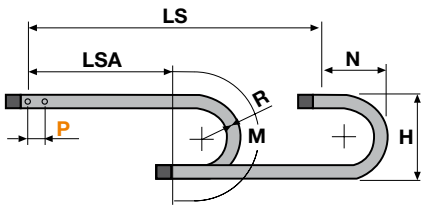
Speed
8 m/s

Acceleration
40 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
153	100	100	70	150-200-250-300-350-400-500-600	4.20	309B100□
203	100	150	70	150-200-250-300-350-400-500-600	4.40	309B150□
253	100	200	70	150-200-250-300-350-400-500-600	4.55	309B200□
303	100	250	70	150-200-250-300-350-400-500-600	4.70	309B250□
353	100	300	70	150-200-250-300-350-400-500-600	4.85	309B300□
453	100	400	70	150-200-250-300-350-400-500-600	5.20	309B400□
C+53	100	...	70	150-200-250-300-350-400-500-600	...	309B□□□□

□□□ to be filled with Radius R

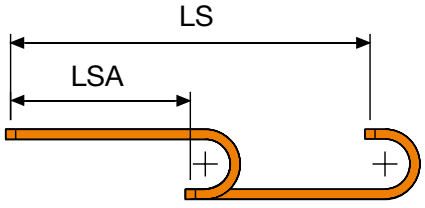
Separator	
Unassembled	Article number S309C
Assembled	Article number S309CMC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG309H

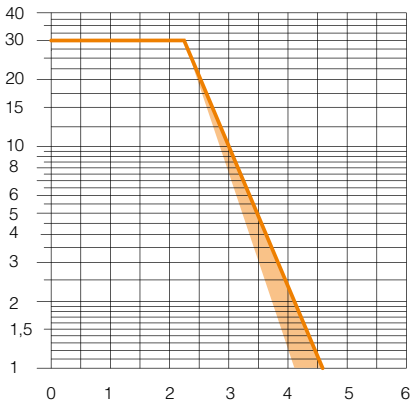


R	H	N	M
150	406	300	675
200	506	350	830
250	606	400	985
300	706	455	1145
350	806	500	1300
400	906	555	1460
500	1106	650	1770
600	1306	750	2085

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

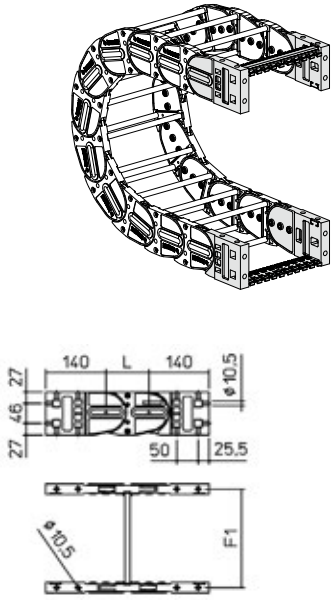
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type

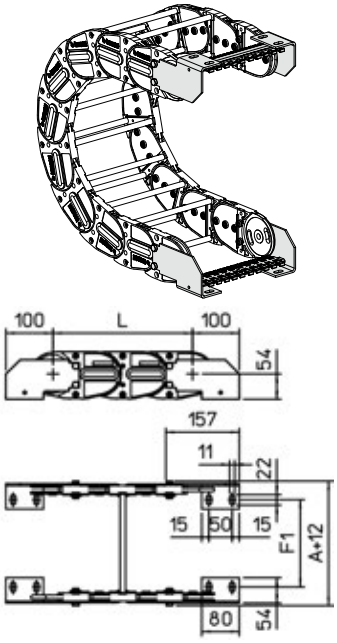


Chain Type	F1
309B100	87
309B150	137
309B200	187
309B250	237
309B300	287
309B400	387
309B□□□	F=A-66

Nylon Type Part Numbers
Complete Set Assembled
AN309KM
Complete Set Unassembled
AN309K
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC309S□□□KM
Complete Set Unassembled
CFC309S□□□K

□□□ Inner width (C)

Steel Type



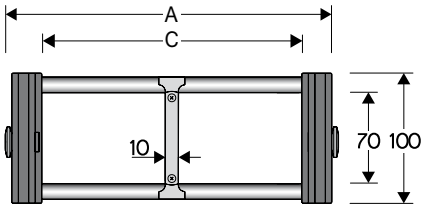
Chain Type	F1
309B100	129
309B150	179
309B200	229
309B250	279
309B300	329
309B400	429
309B□□□	F=A-24

Steel Type Part Numbers
Complete Set Assembled
A309KM□
Complete Set Unassembled
A309K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCT309B□□□KM
Complete Set Unassembled
SFCT309B□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 309T

Nylon cable chain with un-screwable aluminium rods.



Technical data

Inner Height (D)
70 mm

Pitch (P)
100 mm

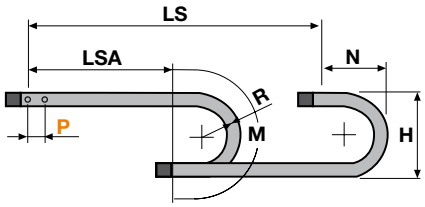
Speed
8 m/s

Acceleration
40 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
153	100	100	70	150-200-250-300-350-400-500-600	4.48	309T100□□□
203	100	150	70	150-200-250-300-350-400-500-600	4.81	309T150□□□
253	100	200	70	150-200-250-300-350-400-500-600	5.09	309T200□□□
303	100	250	70	150-200-250-300-350-400-500-600	5.37	309T250□□□
353	100	300	70	150-200-250-300-350-400-500-600	5.65	309T300□□□
453	100	400	70	150-200-250-300-350-400-500-600	6.26	309T400□□□
C+53	100	...	70	150-200-250-300-350-400-500-600	...	309T□□□□□□

□□□ to be filled with Radius R

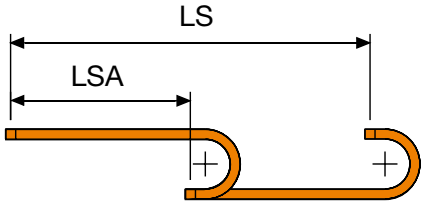
Separator	
Unassembled	Article number S309POT
Assembled	Article number S309POTMC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG309H

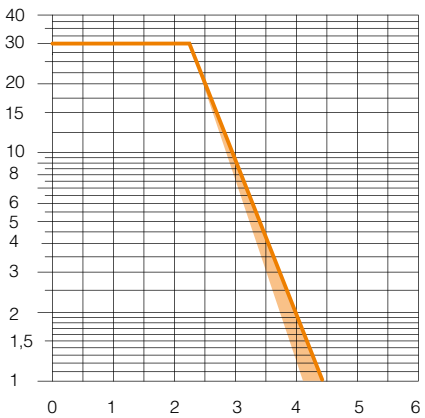


R	H	N	M
150	406	300	675
200	506	350	830
250	606	400	985
300	706	455	1145
350	806	500	1300
400	906	555	1460
500	1106	650	1770
600	1306	750	2085

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

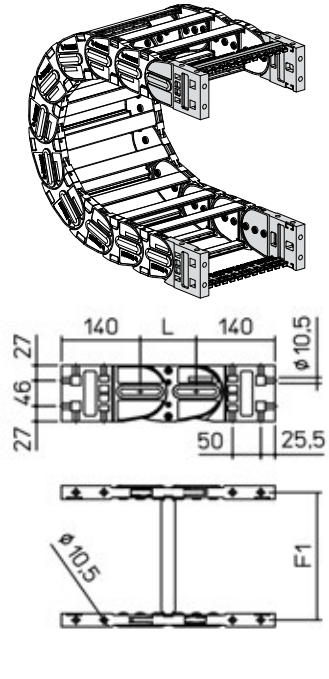
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type

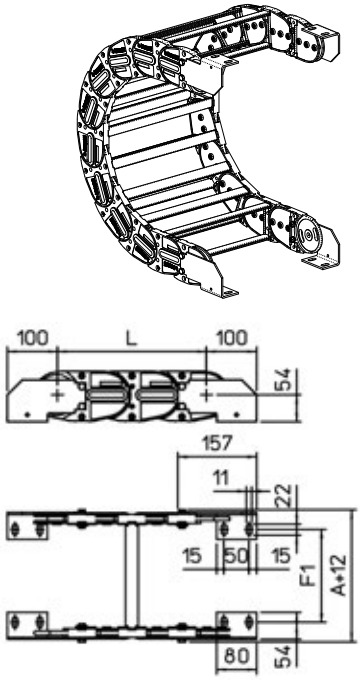


Chain Type	F1
309T100	87
309T150	137
309T200	187
309T250	237
309T300	287
309T400	387
309T□□□	F=A-66

Nylon Type Part Numbers
Complete Set Assembled
AN309KM
Complete Set Unassembled
AN309K
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC309S□□□KM
Complete Set Unassembled
CFC309S□□□K

□□□ Inner width (C)

Stahl Version



Chain Type	F1
309T100	129
309T150	179
309T200	229
309T250	279
309T300	329
309T400	429
309T□□□	F=A-24

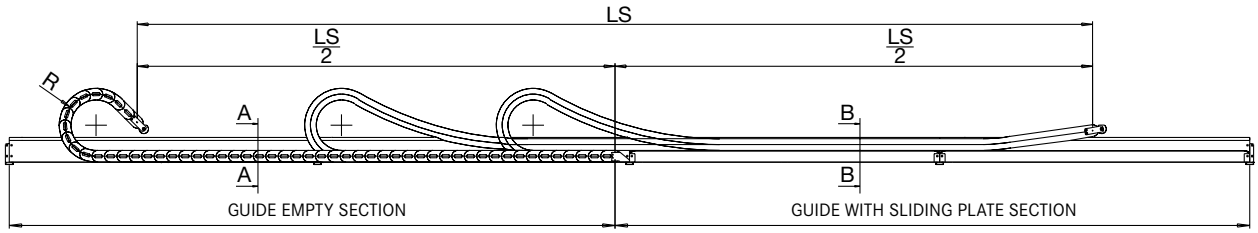
Steel Type Part Numbers
Complete Set Assembled
A309KM□
Complete Set Unassembled
A309K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCT309T□□□KM
Complete Set Unassembled
SFCT309T□□□K

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

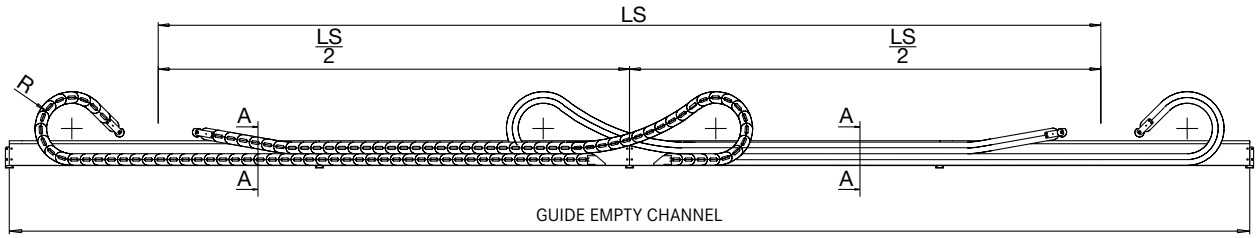
Guide Channel for
250L

Special channel guide allows the use of the chain for long travel distance.
Available in galvanised steel and, on request, in stainless steel.

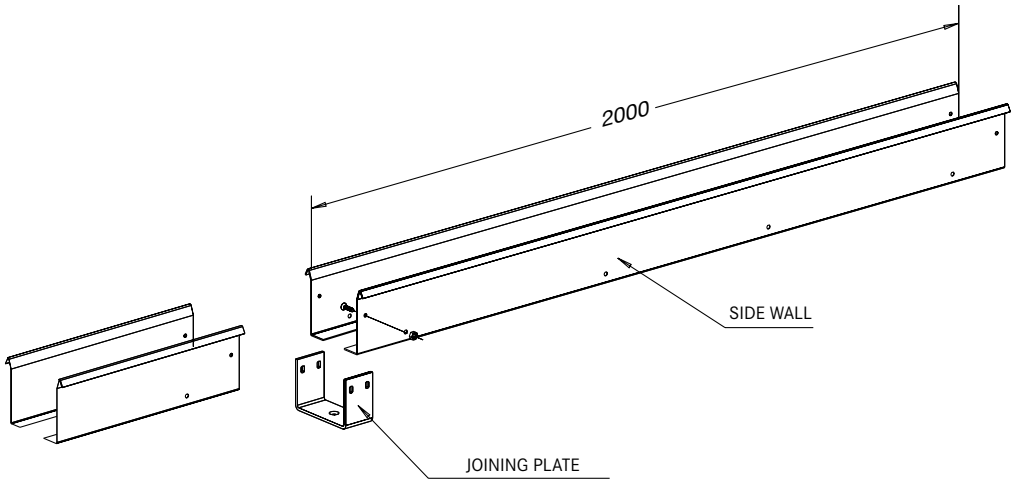
Single Chain Application



Double Chain Application

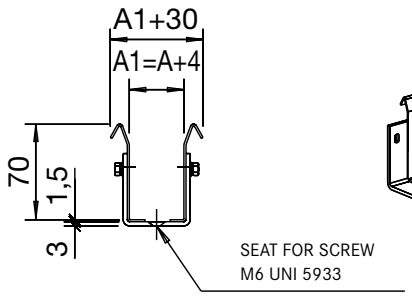


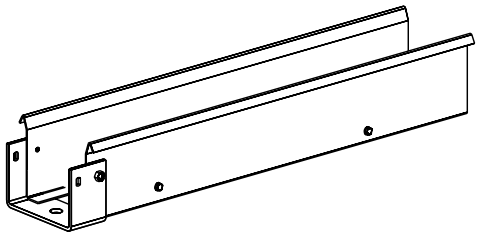
Channel guide is available in kit form composed of:
side walls 2 m standard length
joining plates
fixing screws



Guide Empty Section

Section A-A





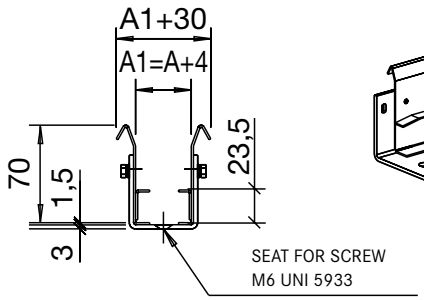
Part Number
CS...

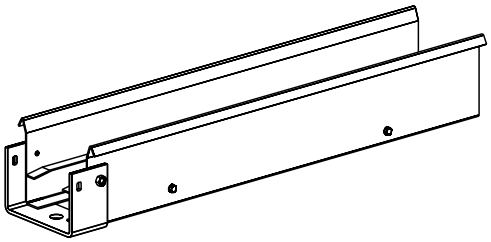
How to order

Chain part number	**250L035060**
Guide channel part number	**CS250L035**

Guide Sliding Plate Section

Section B-B





Part Number
CA...

How to order

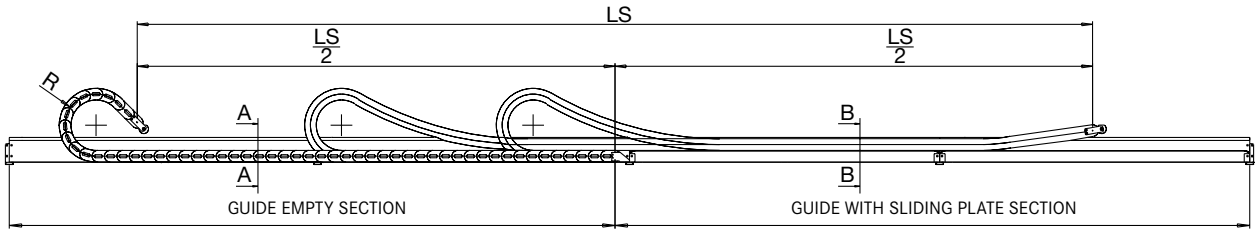
Chain part number	**250L035060**
Guide channel part number	**CA250L035**

Guide Channel for

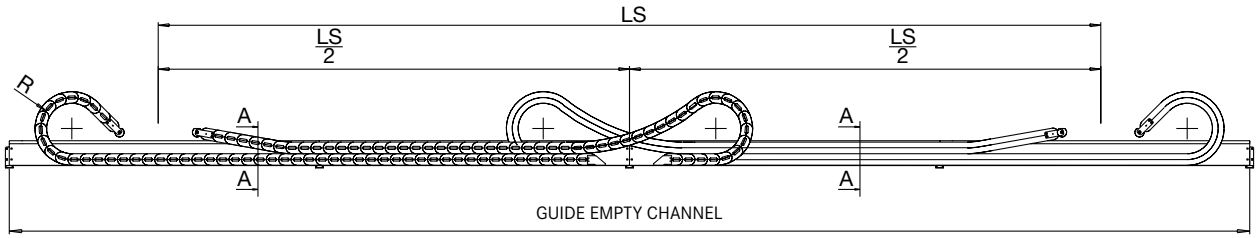
325 - 335

Special channel guide allows the use of the chain for long travel distance.
Available in galvanised steel and, on request, in stainless steel.

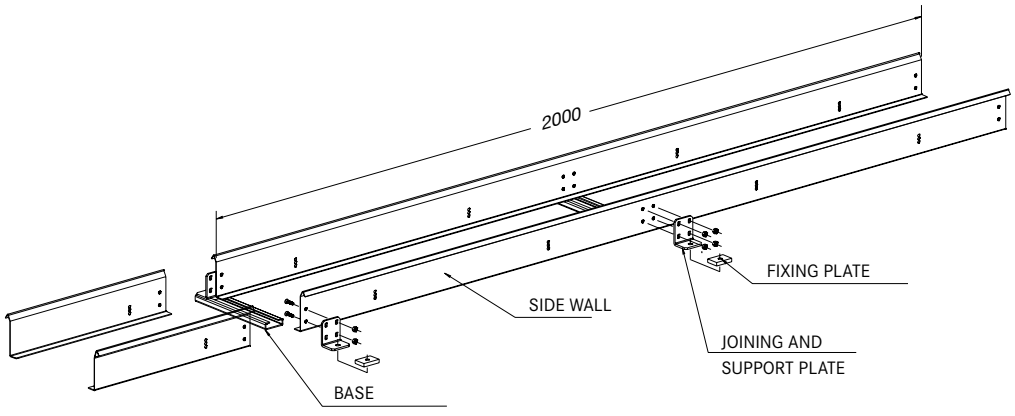
Single Chain Application



Double Chain Application

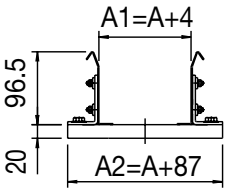


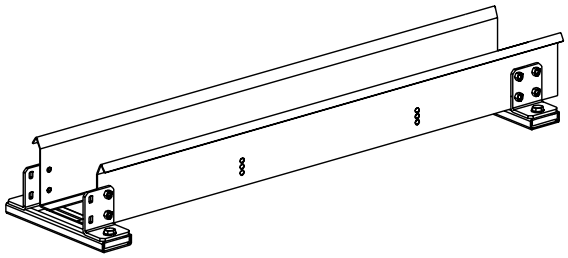
Channel guide is available in kit form composed of:
side walls 2 m standard length
joining plates
fixing screws



Guide Empty Section

Section A-A





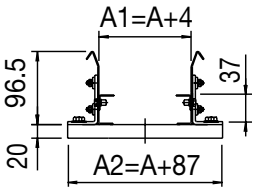
Part Number
CS...

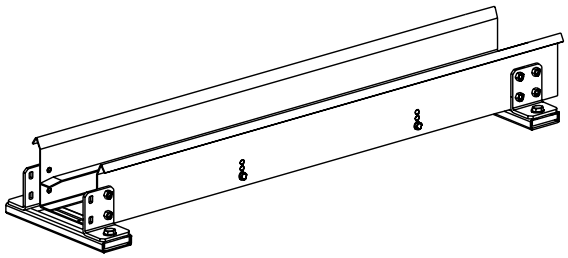
How to order

Chain part number	**325L040050**
Chain part number	**325LI040050**
Chain part number	**325LE040050**
Guide channel part number	**CS325L040**

Guide Sliding Plate Section 325...

Section B-B





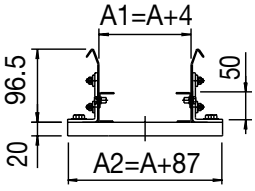
Part Number
CA...

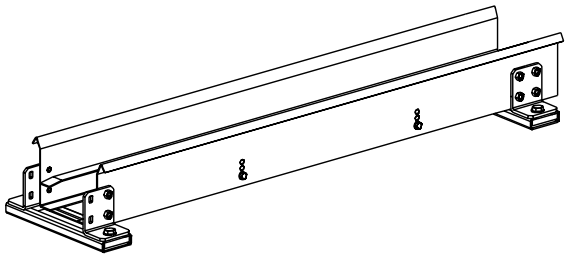
How to order

Chain part number	**325L040050**
Chain part number	**325LI040050**
Chain part number	**325LE040050**
Guide channel part number	**CA325L040**

Guide Sliding Plate Section 335

Section B-B





Part Number
CA...

How to order

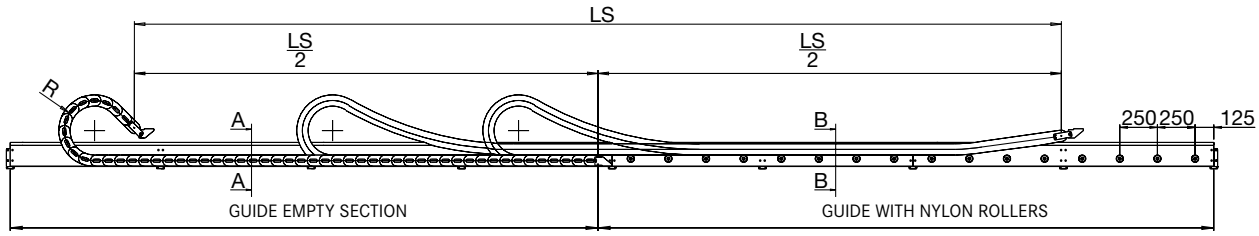
Chain part number	**335040050**
Guide channel part number	**CA335040**

Guide Channel for

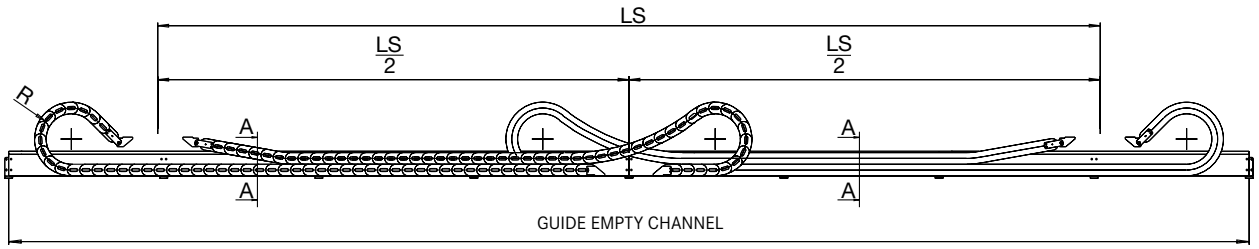
445 - 660 - 770 - H57

Special channel guide allows the use of the chain for long travel distance.
Available in galvanised steel and, on request, in stainless steel.

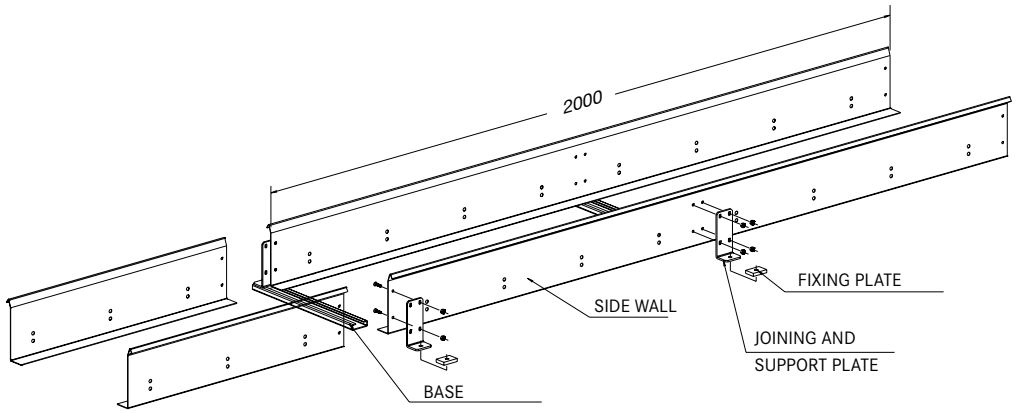
Single Chain Application



Double Chain Application

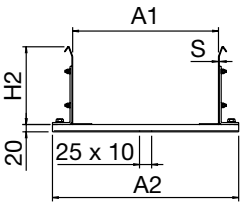


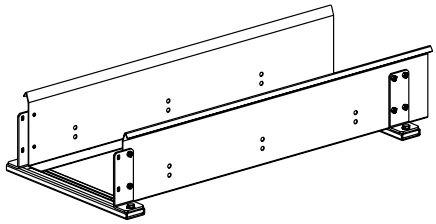
Channel guide is available in kit form composed of:
side walls 2 m standard length
joining plates
fixing screws



Empty Guide Section

Section A-A





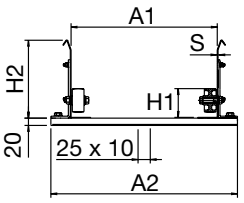
Part Number
CS...

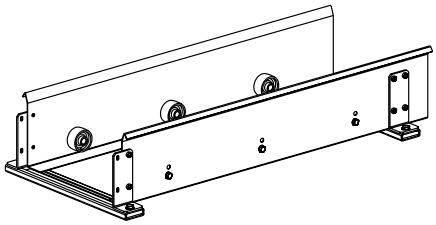
How to order

Chain part number	**445MU100150**
Guide channel part number	**CS445MU100**

Guide with Nylon Rollers

Section B-B





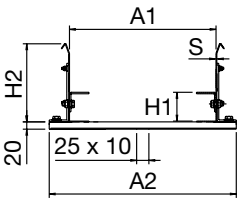
Part Number
CR...

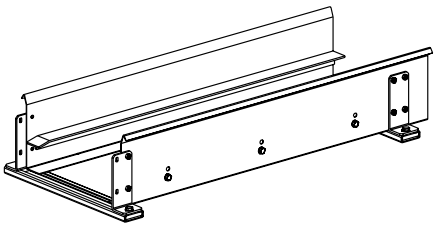
How to order

Chain part number	**445MU100150**
Guide channel part number	**CR445MU100**

Guide with Steel Sliding Plate

Section B-B





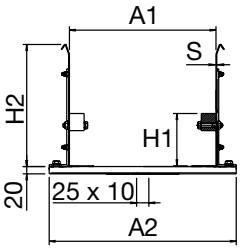
Part Number
CA...

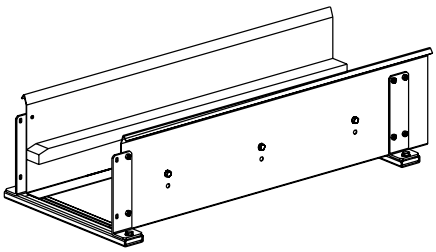
How to order

Chain part number	**445MU100150**
Guide channel part number	**CA445MU100**

Guide with Plastic Sliding Plate

Section B-B





Part Number
CP...

How to order

Chain part number	**445MU100150**
Guide channel part number	**CP445MU100**

Chain type	H1 mm	H2 mm	A1 mm	A2 mm	S mm
445	64	160	A+4	A+87	1,5
660A	59	160	A+4	A+87	1,5
770A	79	160	A+4	A+87	1,5
H57	85	190	A+4	A+87	1,5

Nylon cable chains for heavy duty applications

Product	Page
SILVYN® CHAIN H45SC	140
SILVYN® CHAIN H57SC	142
SILVYN® CHAIN H57PC/PN	144
SILVYN® CHAIN H57B	146
SILVYN® CHAIN H57T	148
SILVYN® CHAIN H80SC/SA	150
SILVYN® CHAIN H80PC/PA	152
SILVYN® CHAIN H80B	154
SILVYN® CHAIN H80T	156
SILVYN® CHAIN H110SC/SA	158
SILVYN® CHAIN H110PC/PA	160
SILVYN® CHAIN H110B	162
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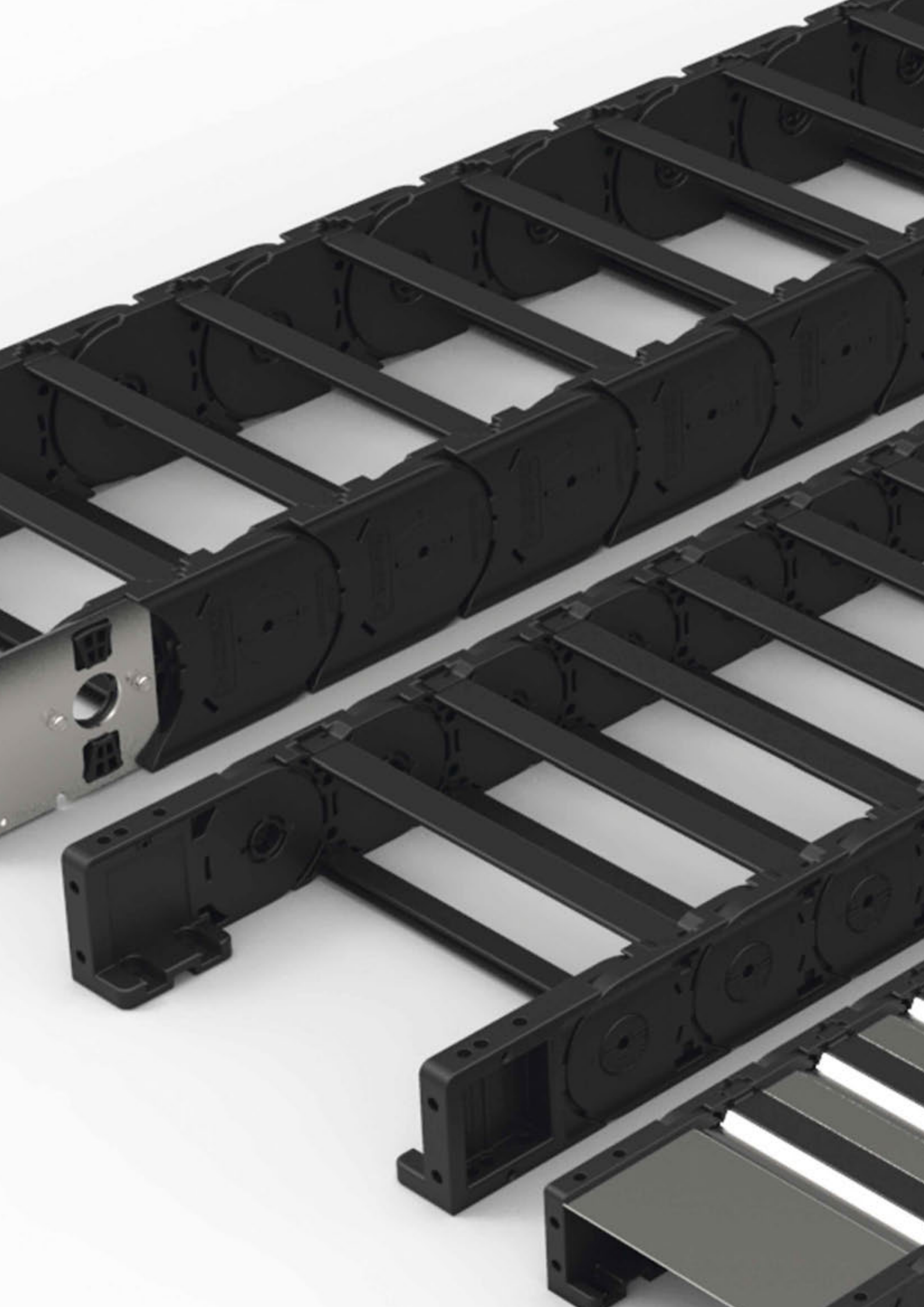
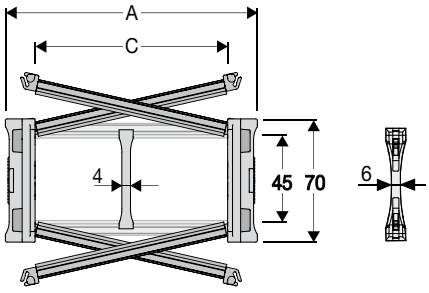
Guide Channel	166
Separation System	204
Cable Strain Relief Systems	266



SILVYN® CHAIN H45SC

Nylon Cable Chain with opening frames



Technical data

Inner Height (D)
45 mm

Pitch (P)
75 mm

Height Moving Point (W)
200 mm

Speed
8 m/s

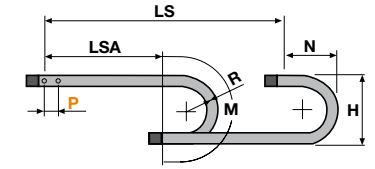
Acceleration
40 m/s²

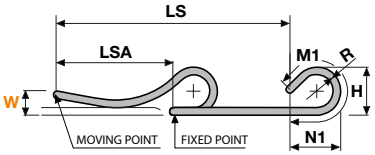
Allen wrench
8 mm

Separator	
Unassembled	Article number S45CF3
Assembled	Article number S45CF3MCI, S45CF3MCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Strong-hold separator for C > 250 mm	
Unassembled	Article number S45HOFL
Assembled	Article number S45HOFL
Pin	Article number PNH45RS

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
113	70	75	45	075-100-125-150-175-200-250-300	2.29	H45SC075□□□
138	70	100	45	075-100-125-150-175-200-250-300	2.37	H45SC100□□□
163	70	125	45	075-100-125-150-175-200-250-300	2.44	H45SC125□□□
188	70	150	45	075-100-125-150-175-200-250-300	2.52	H45SC150□□□
213	70	175	45	075-100-125-150-175-200-250-300	2.60	H45SC175□□□
238	70	200	45	075-100-125-150-175-200-250-300	2.67	H45SC200□□□
263	70	225	45	075-100-125-150-175-200-250-300	2.75	H45SC225□□□
288	70	250	45	075-100-125-150-175-200-250-300	2.83	H45SC250□□□
313	70	275	45	075-100-125-150-175-200-250-300	2.91	H45SC275□□□
338	70	300	45	075-100-125-150-175-200-250-300	2.99	H45SC300□□□
388	70	350	45	075-100-125-150-175-200-250-300	3.14	H45SC350□□□
438	70	400	45	075-100-125-150-175-200-250-300	3.30	H45SC400□□□

□□□ to be filled with Radius R

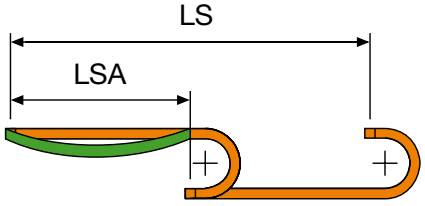


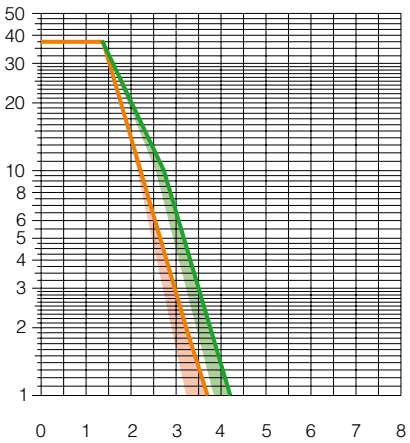


R	H	N	M	N1	M1
075	220	185	390	245	500
100	270	210	465	365	780
125	320	235	545	485	1060
150	370	260	625	600	1335
175	420	285	700	720	1615
200	470	310	780	840	1895
250	570	360	940	1075	2450
300	670	410	1095	1315	3005

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

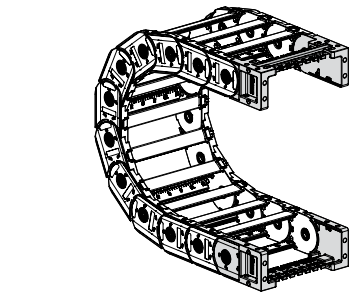
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

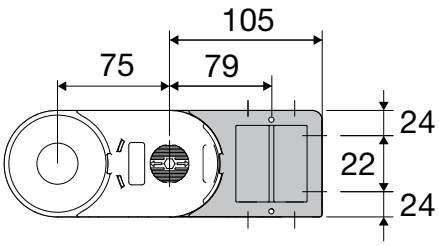
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

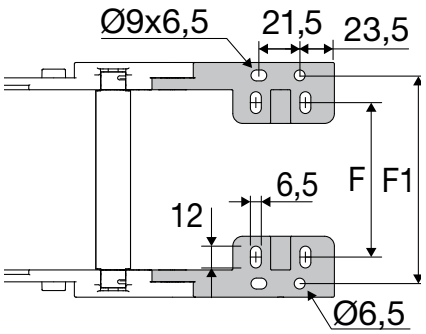
End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type







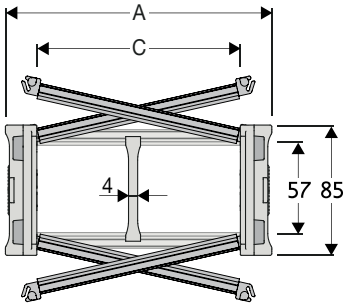
Chain Type	F	F1
H57SC075	55.5	91
H57SC100	80.5	116
H57SC125	105.5	141
H57SC150	130.5	166
H57SC175	155.5	191
H57SC200	180.5	216
H57SC225	205.5	241
H57SC250	230.5	266
H57SC275	255.5	291
H57SC300	280.5	316
H57SC350	330.5	366
H57SC400	380.5	416

Nylon Type Part Numbers
Complete Set Assembled
ANH45SC□□□KM□
Complete Set Unassembled
ANH45SC□□□K
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCTH45□□□KMA
Complete Set Unassembled
SFCTH45□□□KA

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN H57SC

Nylon Cable Chain with opening frames



Technical data

Inner Height (D)
57 mm

Pitch (P)
90 mm

Height Moving Point (W)
250 mm

Speed
8 m/s

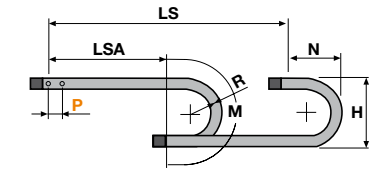
Acceleration
40 m/s²

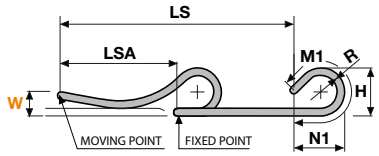
Allen wrench
8 mm

Separator	
Unassembled	Article number S57CF3
Assembled	Article number S57CF3MCI, S57CF3MCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Strong-hold separator for C > 200 mm	
Unassembled	Article number S57HOFL
Assembled	Article number S57HOFL
Pin	Article number PNH57RS

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
113	85	75	57	150-180-200-250-300-350-400	3.03	H57SC075□□□
138	85	100	57	150-180-200-250-300-350-400	3.09	H57SC100□□□
163	85	125	57	150-180-200-250-300-350-400	3.16	H57SC125□□□
188	85	150	57	150-180-200-250-300-350-400	3.22	H57SC150□□□
213	85	175	57	150-180-200-250-300-350-400	3.29	H57SC175□□□
238	85	200	57	150-180-200-250-300-350-400	3.35	H57SC200□□□
263	85	225	57	150-180-200-250-300-350-400	3.42	H57SC225□□□
288	85	250	57	150-180-200-250-300-350-400	3.48	H57SC250□□□
313	85	275	57	150-180-200-250-300-350-400	3.55	H57SC275□□□
338	85	300	57	150-180-200-250-300-350-400	3.61	H57SC300□□□
388	85	350	57	150-180-200-250-300-350-400	3.74	H57SC350□□□
438	85	400	57	150-180-200-250-300-350-400	3.88	H57SC400□□□

□□□ to be filled with Radius R

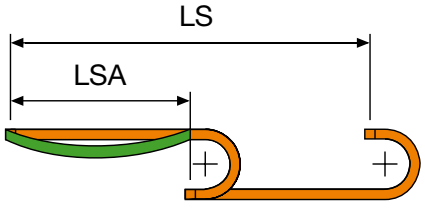


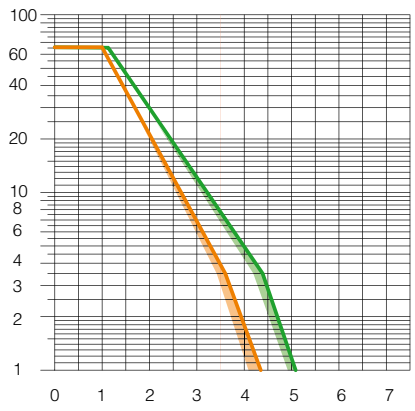


R	H	N	M	N1	M1
150	385	283	655	565	1235
180	445	313	750	705	1570
200	485	333	810	805	1605
250	585	383	970	1040	2350
300	685	433	1125	1275	2905
350	785	483	1280	1510	3460
400	885	533	1440	1750	4020

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

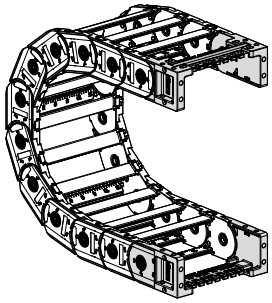
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

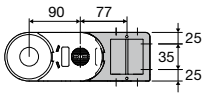
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

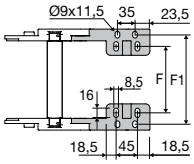
End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type







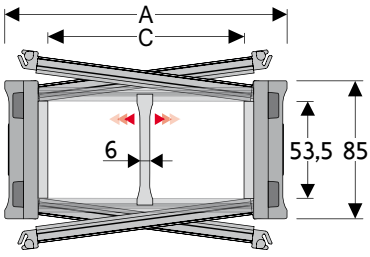
Chain Type	F	F1
H57SC075	51	98
H57SC100	76	123
H57SC125	101	148
H57SC150	126	173
H57SC175	151	198
H57SC200	176	223
H57SC225	201	248
H57SC250	226	273
H57SC275	251	298
H57SC300	276	323
H57SC350	326	373
H57SC400	376	423

Nylon Type Part Numbers
Complete Set Assembled
ANH57KM□
Complete Set Unassembled
ANH57K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCTH57□□□KMA
Complete Set Unassembled
SFCTH57□□□KA

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN H57PC / PN

Nylon cable chain with openable aluminium/nylon covers



Technical data

Inner Height (D)
53,5 mm

Pitch (P)
90 mm

Height Moving Point (W)
250 mm

Speed
8 m/s

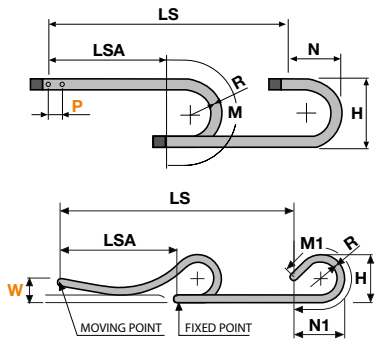
Acceleration
40 m/s²

Allen wrench
8 mm

Separator H57PC	
Unassembled	Article number S57UA
Assembled	Article number S57UAMCI, S57UAMCE
Separator H57PN	
Unassembled	Article number S57CF3
Assembled	Article number S57CF3MCI, S57CF3MCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PNH57RS

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
SILVYN® CHAIN H57PC (Aluminium)						
113	85	75	53.5	180-200-250-300-350-400	4.23	H57PC075□□□
138	85	100	53.5	180-200-250-300-350-400	4.67	H57PC100□□□
163	85	125	53.5	180-200-250-300-350-400	5.11	H57PC125□□□
188	85	150	53.5	180-200-250-300-350-400	5.56	H57PC150□□□
213	85	175	53.5	180-200-250-300-350-400	6.00	H57PC175□□□
238	85	200	53.5	180-200-250-300-350-400	6.43	H57PC200□□□
263	85	225	53.5	180-200-250-300-350-400	6.88	H57PC225□□□
288	85	250	53.5	180-200-250-300-350-400	7.32	H57PC250□□□
313	85	275	53.5	180-200-250-300-350-400	7.77	H57PC275□□□
338	85	300	53.5	180-200-250-300-350-400	8.21	H57PC300□□□
388	85	350	53.5	180-200-250-300-350-400	9.09	H57PC350□□□
438	85	400	53.5	180-200-250-300-350-400	9.98	H57PC400□□□
SILVYN® CHAIN H57PN (Nylon)						
188	85	150	57	180-200-250-300-350-400	4.45	H57PN150□□□
238	85	200	57	180-200-250-300-350-400	4.92	H57PN200□□□
288	85	250	57	180-200-250-300-350-400	5.45	H57PN250□□□

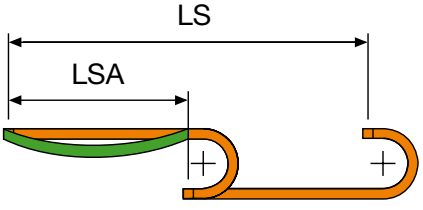
□□□ to be filled with Radius R

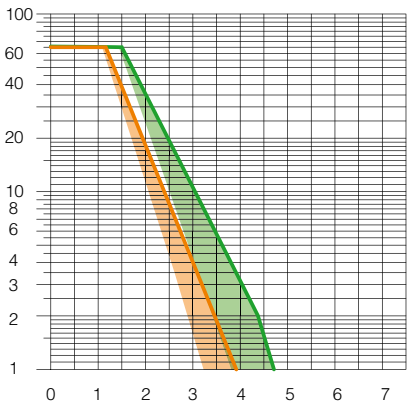


R	H	N	M	N1	M1
150	385	283	655	565	1235
180	445	313	750	705	1570
200	485	333	810	805	1605
250	585	383	970	1040	2350
300	685	433	1125	1275	2905
350	785	483	1280	1510	3460
400	885	533	1440	1750	4020

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

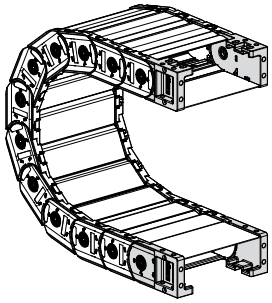
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

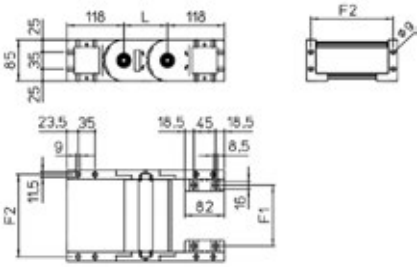
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type





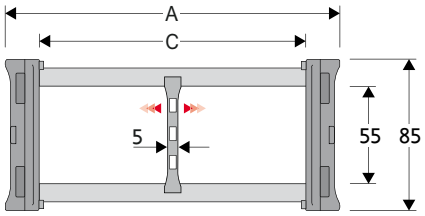
Chain Type	F	F1
H57PC075	51	98
H57PC100	76	123
H57PC125	101	148
H57PC150	126	173
H57PC175	151	198
H57PC200	176	223
H57PC225	201	248
H57PC250	226	273
H57PC275	251	298
H57PC300	276	323
H57PC350	326	373
H57PC400	376	423

Nylon Type Part Numbers
Complete Set Assembled
ANH57P□□□KM□
Complete Set Unassembled
ANH57P□□□K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCTH57□□□KMA
Complete Set Unassembled
SFCTH57□□□KA

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN H57B

Nylon Cable Chain with opening frames



Technical data

Inner Height (D)
55 mm

Pitch (P)
90 mm

Height Moving Point (W)
250 mm

Speed
8 m/s

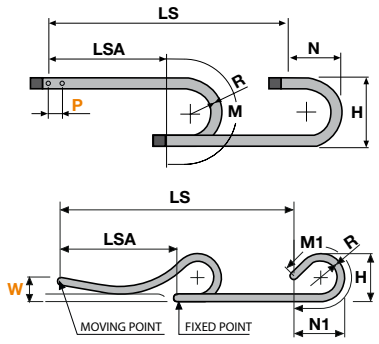
Acceleration
40 m/s²

Allen wrench
8 mm

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
113	85	75	55	150-180-200-250-300-350-400	3.03	H57B075□□□
138	85	100	55	150-180-200-250-300-350-400	3.09	H57B100□□□
163	85	125	55	150-180-200-250-300-350-400	3.16	H57B125□□□
188	85	150	55	150-180-200-250-300-350-400	3.22	H57B150□□□
213	85	175	55	150-180-200-250-300-350-400	3.29	H57B175□□□
238	85	200	55	150-180-200-250-300-350-400	3.35	H57B200□□□
263	85	225	55	150-180-200-250-300-350-400	3.42	H57B225□□□
288	85	250	55	150-180-200-250-300-350-400	3.48	H57B250□□□
313	85	275	55	150-180-200-250-300-350-400	3.55	H57B275□□□
338	85	300	55	150-180-200-250-300-350-400	3.61	H57B300□□□
388	85	350	55	150-180-200-250-300-350-400	3.74	H57B350□□□
438	85	400	55	150-180-200-250-300-350-400	3.88	H57B400□□□

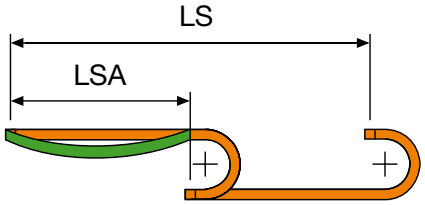
□□□ to be filled with Radius R

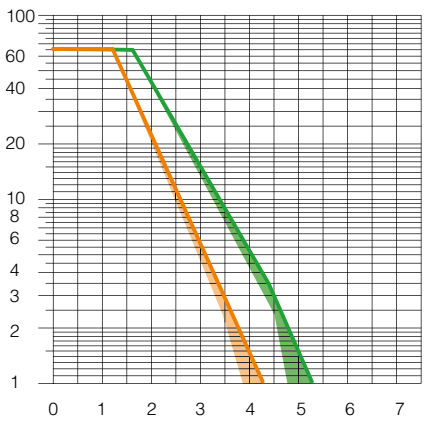
Separator	
Unassembled	Article number S57BF
Assembled	Article number S57BFMC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PNH57RS



R	H	N	M	N1	M1
150	385	283	655	565	1235
180	445	313	750	705	1570
200	485	333	810	805	1605
250	585	383	970	1040	2350
300	685	433	1125	1275	2905
350	785	483	1280	1510	3460
400	885	533	1440	1750	4020

L=LSA + M or M1
Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram
The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

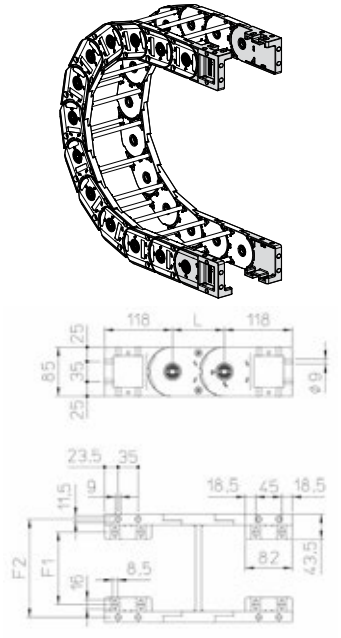
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type



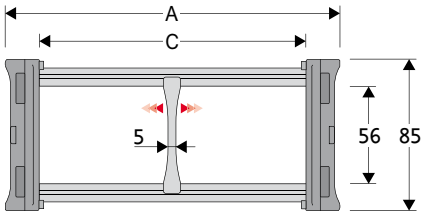
Chain Type	F	F1
H57B075	51	98
H57B100	76	123
H57B125	101	148
H57B150	126	173
H57B175	151	198
H57B200	176	223
H57B225	201	248
H57B250	226	273
H57B275	251	298
H57B300	276	323
H57B350	326	373
H57B400	376	423

Nylon Type Part Numbers
Complete Set Assembled
ANH57KM□
Complete Set Unassembled
ANH57K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCTH57□□□KMA
Complete Set Unassembled
SFCTH57□□□KA

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN H57T

Nylon cable chain with un-screwable aluminium rods.



Technical data

Inner Height (D)
56 mm

Pitch (P)
90 mm

Height Moving Point (W)
250 mm

Speed
8 m/s

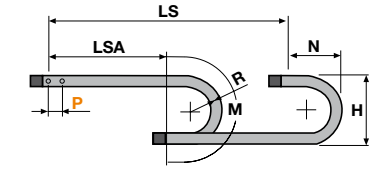
Acceleration
40 m/s²

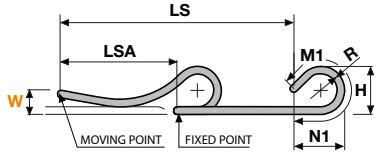
Allen wrench
8 mm

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
113	85	75	56	150-180-200-250-300-350-400	3.03	H57T075□□□
138	85	100	56	150-180-200-250-300-350-400	3.09	H57T100□□□
163	85	125	56	150-180-200-250-300-350-400	3.16	H57T125□□□
188	85	150	56	150-180-200-250-300-350-400	3.22	H57T150□□□
213	85	175	56	150-180-200-250-300-350-400	3.29	H57T175□□□
238	85	200	56	150-180-200-250-300-350-400	3.35	H57T200□□□
263	85	225	56	150-180-200-250-300-350-400	3.42	H57T225□□□
288	85	250	56	150-180-200-250-300-350-400	3.48	H57T250□□□
313	85	275	56	150-180-200-250-300-350-400	3.55	H57T275□□□
338	85	300	56	150-180-200-250-300-350-400	3.61	H57T300□□□
388	85	350	56	150-180-200-250-300-350-400	3.74	H57T350□□□
438	85	400	56	150-180-200-250-300-350-400	3.88	H57T400□□□

□□□ to be filled with Radius R

Separator	
Unassembled	Article number S57TF
Assembled	Article number S57TFMC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PNH57RS

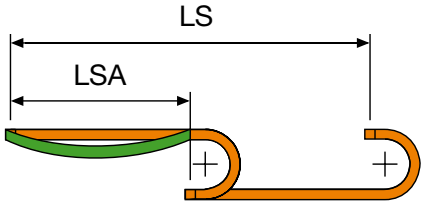


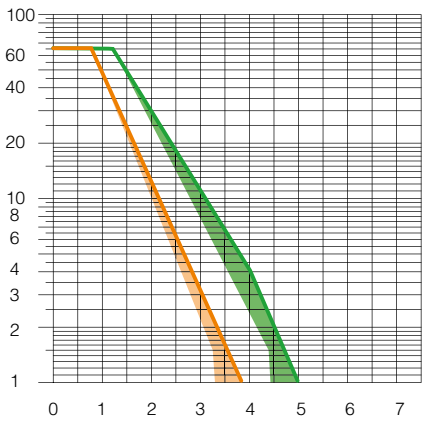


R	H	N	M	N1	M1
150	385	283	655	565	1235
180	445	313	750	705	1570
200	485	333	810	805	1605
250	585	383	970	1040	2350
300	685	433	1125	1275	2905
350	785	483	1280	1510	3460
400	885	533	1440	1750	4020

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram
The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

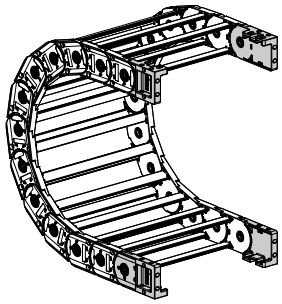
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

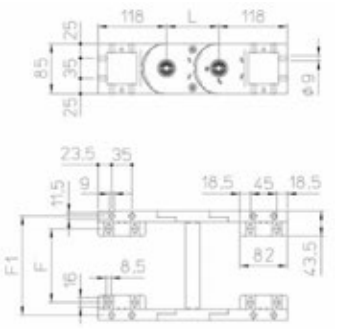
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type





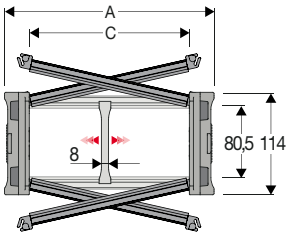
Chain type	F	F1
H57T075	51	98
H57T100	76	123
H57T125	101	148
H57T150	126	173
H57T175	151	198
H57T200	176	223
H57T225	201	248
H57T250	226	273
H57T275	251	298
H57T300	276	323
H57T350	326	373
H57T400	376	423

Nylon Type Part Numbers
Complete Set Assembled
ANH57KM□
Complete Set Unassembled
ANH57K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCTH57□□□KMA
Complete Set Unassembled
SFCTH57□□□KA

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN H80SC / SA

Nylon Cable Chain with opening frames



Technical data

Inner Height (D)
80,5 mm

Pitch (P)
120 mm

Height Moving Point (W)
300 mm

Speed
8 m/s

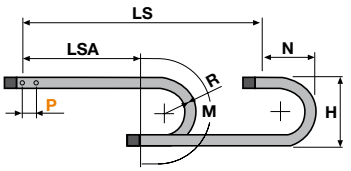
Acceleration
40 m/s²

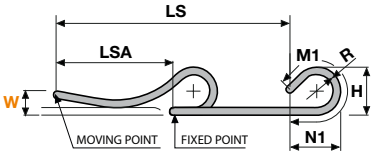
Allen wrench
10 mm

Separator H80SC	
Unassembled	Article number SH80SCF6
Assembled	Article number SH80SCF6MCI, SH80SCF6MCE
Separator H80SA	
Unassembled	Article number S80
Assembled	Article number S80MCI, S80MCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Strong-hold separator for C > 200 mm H80SC	
Unassembled	Article number SH80HOF6L
Assembled	Article number SH80HOF6LMC
Strong-hold separator for C > 200 mm H80SA	
Unassembled	Article number S80HOFL
Assembled	Article number S80HOFLMC
Pin	Article number PNH80RS

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight kg/m	Article number
SILVYN® CHAIN H80SC						
205	114	150	80.5	200-250-300-350-400-500-600	6.70	H80SC150□□□
225	114	175	80.5	200-250-300-350-400-500-600	6.87	H80SC175□□□
255	114	200	80.5	200-250-300-350-400-500-600	7.04	H80SC200□□□
280	114	225	80.5	200-250-300-350-400-500-600	7.20	H80SC225□□□
305	114	250	80.5	200-250-300-350-400-500-600	7.37	H80SC250□□□
330	114	275	80.5	200-250-300-350-400-500-600	7.52	H80SC275□□□
355	114	300	80.5	200-250-300-350-400-500-600	7.66	H80SC300□□□
380	114	325	80.5	200-250-300-350-400-500-600	7.86	H80SC325□□□
405	114	350	80.5	200-250-300-350-400-500-600	8.05	H80SC350□□□
430	114	375	80.5	200-250-300-350-400-500-600	8.23	H80SC375□□□
SILVYN® CHAIN H80SA						
129	114	74	80.5	200-250-300-350-400-500-600	5.99	H80SA074□□□
149	114	94	80.5	200-250-300-350-400-500-600	6.10	H80SA094□□□
174	114	119	80.5	200-250-300-350-400-500-600	6.22	H80SA119□□□
181	114	126	80.5	200-250-300-350-400-500-600	6.23	H80SA126□□□
484	114	429	80.5	200-250-300-350-400-500-600	8.22	H80SA429□□□
553	114	498	80.5	200-250-300-350-400-500-600	8.77	H80SA498□□□

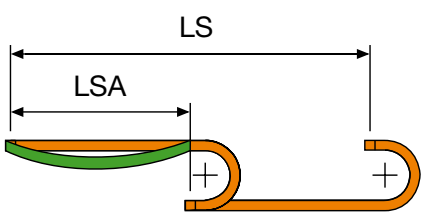
□□□ to be filled with Radius R



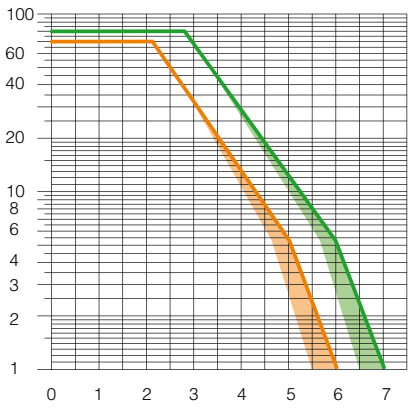


L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)



R	H	N	M	N1	M1
200	514	377	870	810	1775
250	614	427	1030	1050	2330
300	714	477	1185	1285	2885
350	814	527	1340	1525	3445
400	914	577	1340	1525	3445
500	1114	677	1815	2235	5115
600	1314	777	2125	2705	6225



Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

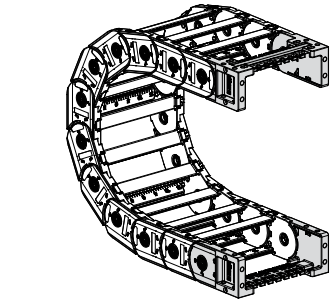
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

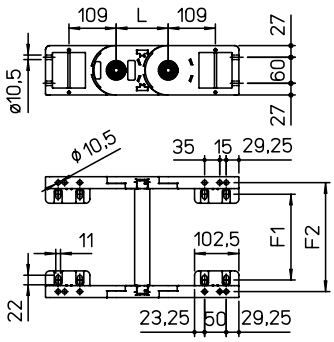
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type





Chain type	F	F1
H80SC150	124	177.5
H80SC175	149	202.5
H80SC200	174	227.5
H80SC225	199	252.5
H80SC250	224	277.5
H80SC275	249	302.5
H80SC300	274	327.5
H80SC325	299	352.5
H80SC350	324	377.5
H80SC375	349	402.5

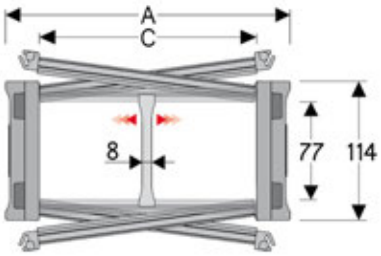
Chain type	F	F1
H80SA074	101.5	48
H80SA094	121.5	68
H80SA119	146.5	93
H80SA126	153.5	100
H80SA429	456.5	403
H80SA498	525.5	472

Nylon Type Part Numbers
Complete Set Assembled
ANH80KM□
Complete Set Unassembled
ANH80K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCTH80□□□KMA
Complete Set Unassembled
SFCTH80□□□KA

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN H80PC / PA

Nylon Protection cable chain with openable aluminium covers.



Technical data

Inner Height (D)
77 mm

Pitch (P)
120 mm

Height Moving Point (W)
300 mm

Speed
8 m/s

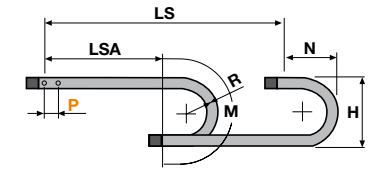
Acceleration
40 m/s²

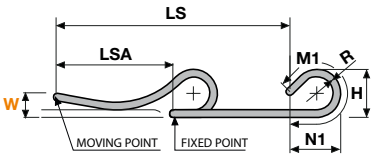
Allen wrench
10 mm

Separator H80PC	
Unassembled	Article number SH80SFC6
Assembled	Article number SH80SCF6MCI, SH80SCF6MCE
Separator H80PA	
Unassembled	Article number S80F
Assembled	Article number S80FMCI, S80FMCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PNH80RS

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
SILVYN® CHAIN H80PC H80PC (Aluminium)						
205	114	150	77	200-250-300-350-400-500-600	8,51	H80PC150□□□
225	114	175	77	200-250-300-350-400-500-600	8,98	H80PC175□□□
255	114	200	77	200-250-300-350-400-500-600	9,44	H80PC200□□□
280	114	225	77	200-250-300-350-400-500-600	9,91	H80PC225□□□
305	114	250	77	200-250-300-350-400-500-600	10,38	H80PC250□□□
330	114	275	77	200-250-300-350-400-500-600	10,83	H80PC275□□□
355	114	300	77	200-250-300-350-400-500-600	11,27	H80PC300□□□
380	114	325	77	200-250-300-350-400-500-600	11,77	H80PC325□□□
405	114	350	77	200-250-300-350-400-500-600	12,26	H80PC350□□□
430	114	375	77	200-250-300-350-400-500-600	12,74	H80PC375□□□
SILVYN® CHAIN H80PA (Nylon)						
129	114	74	77	200-250-300-350-400-500-600	6,78	H80PA074□□□
149	114	94	77	200-250-300-350-400-500-600	7,18	H80PA094□□□
174	114	119	77	200-250-300-350-400-500-600	7,61	H80PA119□□□
181	114	126	77	200-250-300-350-400-500-600	7,74	H80PA126□□□
484	114	429	77	200-250-300-350-400-500-600	13,1	H80PA429□□□
553	114	498	77	200-250-300-350-400-500-600	14,3	H80PA498□□□

□□□ to be filled with Radius R

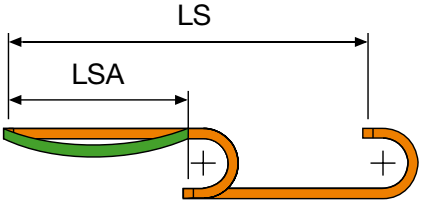


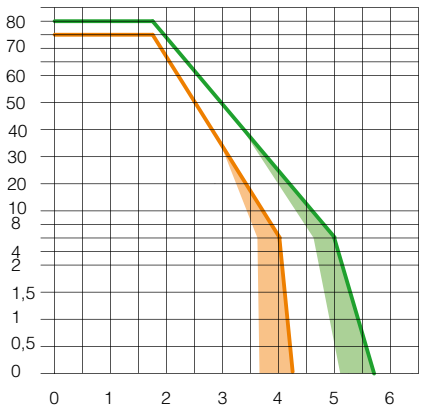


R	H	N	M	N1	M1
200	514	377	870	810	1775
250	614	427	1030	1050	2330
300	714	477	1185	1285	2885
350	814	527	1340	1525	3445
400	914	577	1500	1760	4000
500	1114	677	1815	2235	5115
600	1314	777	2125	2705	6225

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram
The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

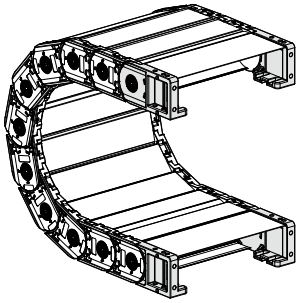
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

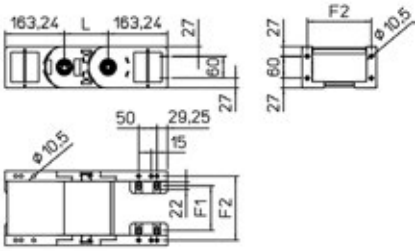
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type





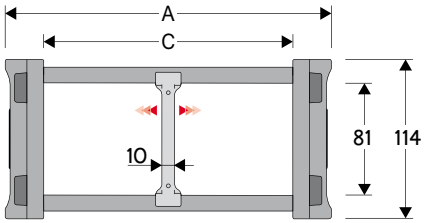
Chain type	F1	F1
H80PC150	124	177.5
H80PC175	149	202.5
H80PC200	174	227.5
H80PC225	199	252.5
H80PC250	224	277.5
H80PC275	249	302.5
H80PC300	274	327.5
H80PC325	299	352.5
H80PC350	324	377.5
H80PC375	349	402.5

Nylon Type Part Numbers
Complete Set Assembled
ANH80PA□□□KM□
Complete Set Unassembled
ANH80PA□□□K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCTH80□□□KMA
Complete Set Unassembled
SFCTH80□□□KA

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN H80B

Nylon Cable Chain with opening frames



Technical data

Inner Height (D)
81 mm

Pitch (P)
120 mm

Height Moving Point (W)
300 mm

Speed
8 m/s

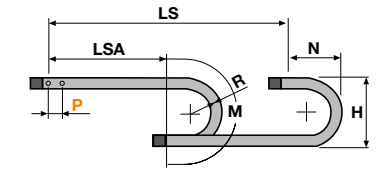
Acceleration
40 m/s²

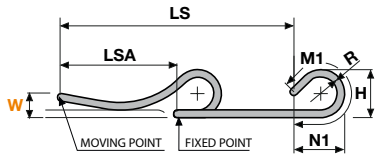
Allen wrench
10 mm

Separator	
Unassembled	Article number SH80F
Assembled	Article number SH80FMC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PNH80RS

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
205	114	150	81	200-250-300-350-400-500-600	6.70	H80B150□□□
225	114	175	81	200-250-300-350-400-500-600	6.87	H80B175□□□
255	114	200	81	200-250-300-350-400-500-600	7.04	H80B200□□□
280	114	225	81	200-250-300-350-400-500-600	7.20	H80B225□□□
305	114	250	81	200-250-300-350-400-500-600	7.37	H80B250□□□
330	114	275	81	200-250-300-350-400-500-600	7.52	H80B275□□□
355	114	300	81	200-250-300-350-400-500-600	7.66	H80B300□□□
380	114	325	81	200-250-300-350-400-500-600	7.86	H80B325□□□
405	114	350	81	200-250-300-350-400-500-600	8.05	H80B350□□□
430	114	375	81	200-250-300-350-400-500-600	8.23	H80B375□□□

□□□ to be filled with Radius R

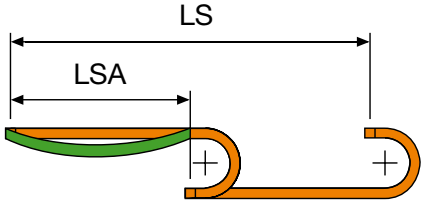


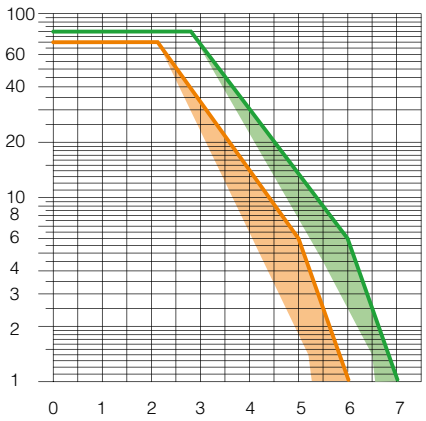


R	H	N	M	N1	M1
200	514	377	870	810	1775
250	614	427	1030	1050	2330
300	714	477	1185	1285	2885
350	814	527	1340	1525	3445
400	914	577	1340	1525	3445
500	1114	677	1815	2235	5115
600	1314	777	2125	2705	6225

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

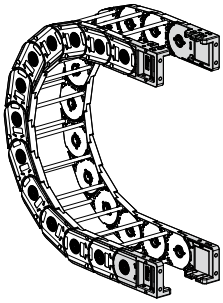
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

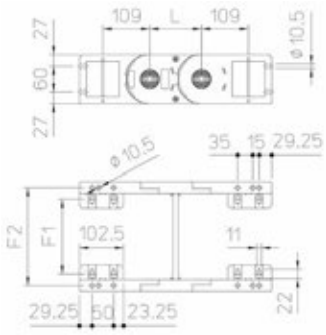
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type





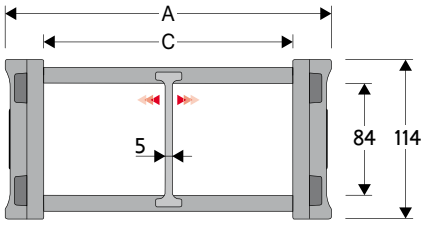
Chain type	F1	F1
H80B150	124	177.5
H80B175	149	202.5
H80B200	174	227.5
H80B225	199	252.5
H80B250	224	277.5
H80B275	249	302.5
H80B300	274	327.5
H80B325	299	352.5
H80B350	324	377.5
H80B375	349	402.5

Nylon Type Part Numbers
Complete Set Assembled
ANH80KM□
Complete Set Unassembled
ANH80K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCTH80□□□KMA
Complete Set Unassembled
SFCTH80□□□KA

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN H80T

Nylon cable chain with un-screwable aluminium rods.



Technical data

Inner Height (D)
84 mm

Pitch (P)
120 mm

Height Moving Point (W)
300 mm

Speed
8 m/s

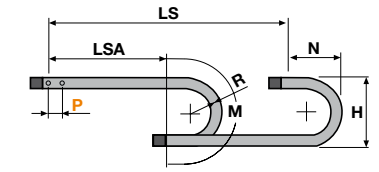
Acceleration
40 m/s²

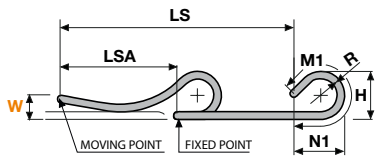
Allen wrench
10 mm

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight kg/m	Article number
205	114	150	84	200-250-300-350-400-500-600	6.70	H80T150□□□
225	114	175	84	200-250-300-350-400-500-600	6.87	H80T175□□□
255	114	200	84	200-250-300-350-400-500-600	7.04	H80T200□□□
280	114	225	84	200-250-300-350-400-500-600	7.20	H80T225□□□
305	114	250	84	200-250-300-350-400-500-600	7.37	H80T250□□□
330	114	275	84	200-250-300-350-400-500-600	7.52	H80T275□□□
355	114	300	84	200-250-300-350-400-500-600	7.66	H80T300□□□
380	114	325	84	200-250-300-350-400-500-600	7.86	H80T325□□□
405	114	350	84	200-250-300-350-400-500-600	8.05	H80T350□□□
430	114	375	84	200-250-300-350-400-500-600	8.23	H80T375□□□

□□□ to be filled with Radius R

Separator	
Unassembled	Article number SH80TF
Assembled	Article number SH80TFMC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PNH80RS

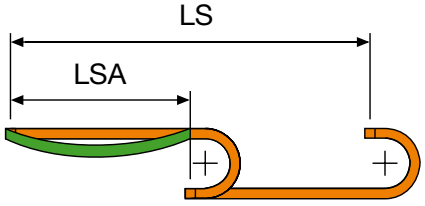


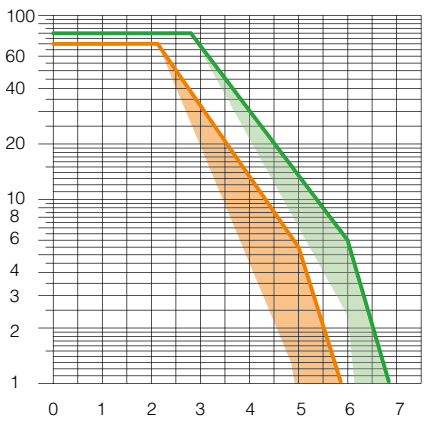


R	H	N	M	N1	M1
200	514	377	870	810	1775
250	614	427	1030	1050	2330
300	714	477	1185	1285	2885
350	814	527	1340	1525	3445
400	914	577	1340	1525	3445
500	1114	677	1815	2235	5115
600	1314	777	2125	2705	6225

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram
The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

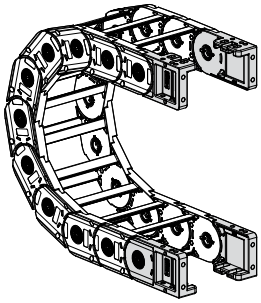
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

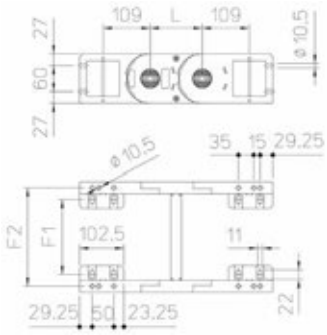
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Nylon Type





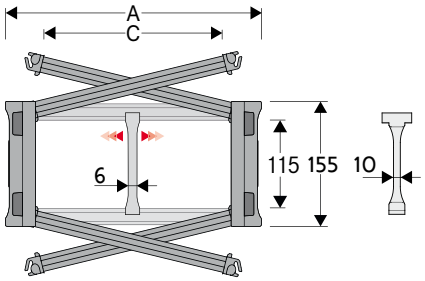
Chain type	F1	F1
H80T150	124	177.5
H80T175	149	202.5
H80T200	174	227.5
H80T225	199	252.5
H80T250	224	277.5
H80T275	249	302.5
H80T300	274	327.5
H80T325	299	352.5
H80T350	324	377.5
H80T375	349	402.5

Nylon Type Part Numbers
Complete Set Assembled
ANH80KM□
Complete Set Unassembled
ANH80K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCTH80□□□KMA
Complete Set Unassembled
SFCTH80□□□KA

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN H110SC / SA

Nylon Cable Chain with opening frames



Technical data

Inner Height (D)
115 mm

Pitch (P)
160 mm

Height Moving Point (W)
350 mm

Speed
8 m/s

Acceleration
40 m/s²

Allen wrench
10 mm

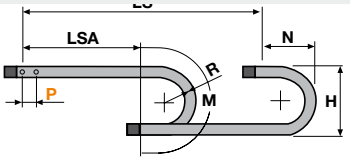
Separator H110SC	
Unassembled	Article number S110F3/8687
Assembled	Article number S110F3/8687MCI, S110F3/8687MCE
Separator H110SA	
Unassembled	Article number S110F3/8687
Assembled	Article number S110F3/8687

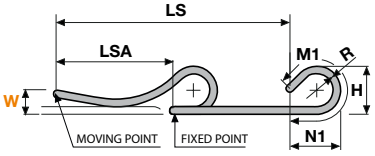
MCI: chain opening outer radius
MCE: chain opening inner radius

Strong-hold separator for C > 250 mm	
Unassembled	Article number S110HOFL
Assembled	
Pin	Article number PNH110RS

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight kg/m	Article number
SILVYN® CHAIN H110SC						
205	155	150	115	200-250-300-400-500-600-700-750	8.66	110SC150□□□
230	155	175	115	200-250-300-400-500-600-700-750	8.79	110SC175□□□
255	155	200	115	200-250-300-400-500-600-700-750	8.91	110SC200□□□
280	155	225	115	200-250-300-400-500-600-700-750	9.03	110SC225□□□
305	155	250	115	200-250-300-400-500-600-700-750	9.16	110SC250□□□
330	155	275	115	200-250-300-400-500-600-700-750	9.27	110SC275□□□
355	155	300	115	200-250-300-400-500-600-700-750	9.38	110SC300□□□
380	155	325	115	200-250-300-400-500-600-700-750	9.53	110SC325□□□
405	155	350	115	200-250-300-400-500-600-700-750	9.70	110SC350□□□
430	155	375	115	200-250-300-400-500-600-700-750	9.80	110SC375□□□
SILVYN® CHAIN H110SA						
484	155	429	115	200-250-300-400-500-600-700-750	9.85	110SA429□□□
553	155	498	115	200-250-300-400-500-600-700-750	10.2	110SA498□□□

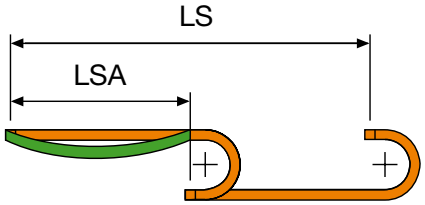
□□□ to be filled with Radius R



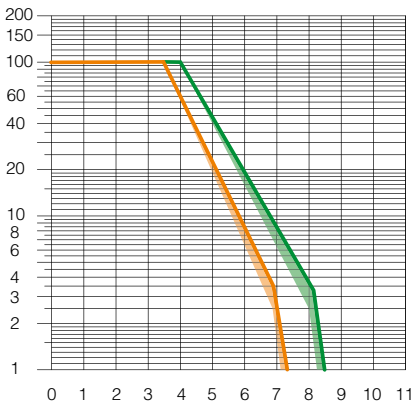


L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)



R	H	N	M	N1	M1
200	557	418	950	855	1820
250	657	468	1110	1095	2375
300	757	518	1265	1335	2935
400	957	618	1580	1805	4045
500	1157	718	1895	2280	5160
600	1357	818	2205	2750	6270
700	1557	918	2520	3225	7385
750	1657	968	2680	3460	7940



Self-Supporting Capacity Diagram
The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

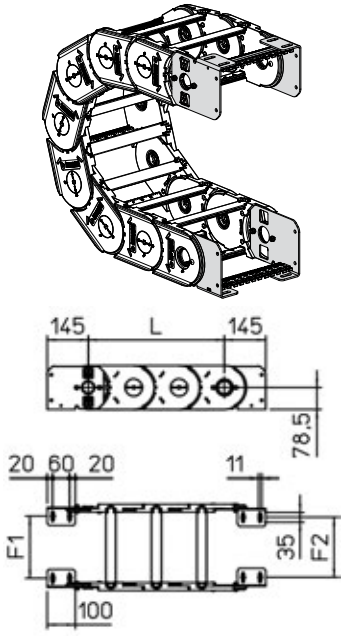
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type



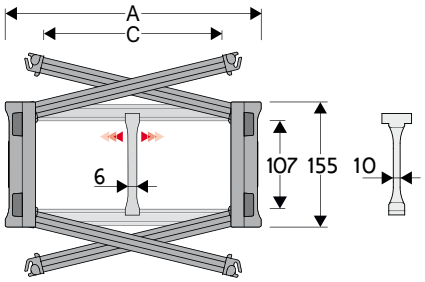
Chain Type	F1	F2
110SC150	120	112
110SC175	145	137
110SC200	170	162
110SC225	195	187
110SC250	220	212
110SC275	245	237
110SC300	270	262
110SC325	295	287
110SC350	320	312
110SC375	344	336
110SA429	399	391
110SA498	468	460

Steel Type Part Numbers
Complete Set Assembled
A110SC□□□KM□
A110SA□□□KM□
Complete Set Unassembled
A110SC□□□K□
A110SA□□□K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCT110□□□KMA
Complete Set Unassembled
SFCT110□□□KA

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN H110PC / PA

Nylon Protection cable chain with openable aluminium covers.



Technical data

Inner Height (D)
105 mm

Pitch (P)
160 mm

Height Moving Point (W)
350 mm

Speed
10 m/s

Acceleration
50 m/s²

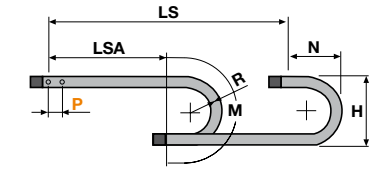
Allen wrench
10 mm

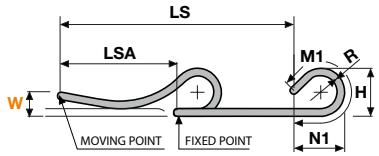
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
SILVYN® CHAIN H110PC (Aluminium)						
205	155	150	107	250-300-400-500-600-700-750	11.06	110PC150□□□
230	155	175	107	250-300-400-500-600-700-750	11.59	110PC175□□□
255	155	200	107	250-300-400-500-600-700-750	12.11	110PC200□□□
280	155	225	107	250-300-400-500-600-700-750	12.63	110PC225□□□
305	155	250	107	250-300-400-500-600-700-750	13.16	110PC250□□□
330	155	275	107	250-300-400-500-600-700-750	13.67	110PC275□□□
355	155	300	107	250-300-400-500-600-700-750	14.18	110PC300□□□
380	155	325	107	250-300-400-500-600-700-750	14.73	110PC325□□□
405	155	350	107	250-300-400-500-600-700-750	15.30	110PC350□□□
430	155	375	107	250-300-400-500-600-700-750	15.81	110PC375□□□
SILVYN® CHAIN H110PA (Nylon)						
484	155	429	107	200-250-300-400-500-600-700-750	16.90	110PA429□□□
553	155	498	107	200-250-300-400-500-600-700-750	18.27	110PA498□□□

□□□ to be filled with Radius R

Separator H110PC	
Unassembled	Article number S110F3/8687
Assembled	Article number S110F3/8687MCI, S110F3/8687MCE
Separator H110PA	
Unassembled	Article number S110F3/8687
Assembled	Article number S110F3/8687MCI, S110F3/8687MCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PNH110RS

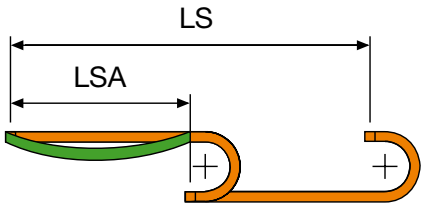
R	H	N	M	N1	M1
250	657	468	1110	1095	2375
300	757	518	1265	1335	2935
400	957	618	1580	1805	4045
500	1157	718	1895	2280	5160
600	1357	818	2205	2750	6270
700	1557	918	2520	3225	7385
750	1657	968	2680	3460	7940

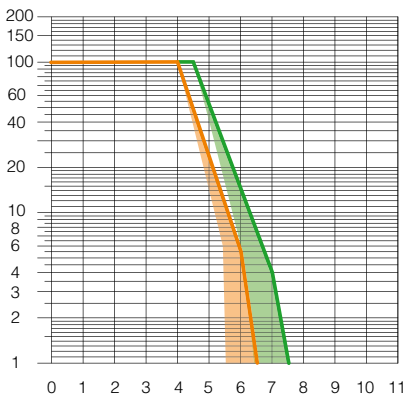




L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram
The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

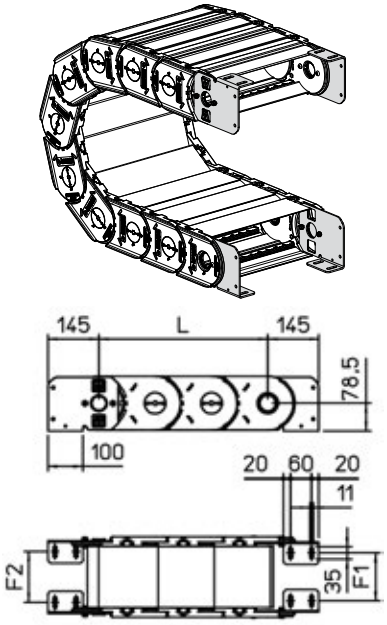
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type



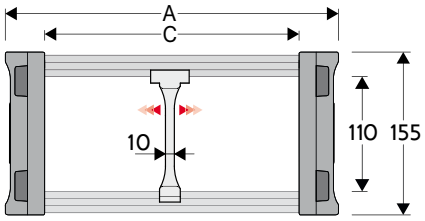
Chain type	F1	F2
110PC150	120	112
110PC175	145	137
110PC200	170	162
110PC225	195	187
110PC250	220	212
110PC275	245	237
110PC300	270	262
110PC325	295	287
110PC350	320	312
110PC375	344	336
110PA429	399	391
110PA498	468	460

Steel Type Part Numbers
Complete Set Assembled
A110PC□□□KM□
A110PA□□□KM□
Complete Set Unassembled
A110PC□□□K□
A110PA□□□K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCT110□□□KMA
Complete Set Unassembled
SFCT110□□□KA

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN H110B

Nylon Cable Chain with opening frames



Technical data

Inner Height (D)
110 mm

Pitch (P)
160 mm

Height Moving Point (W)
350 mm

Speed
4 m/s

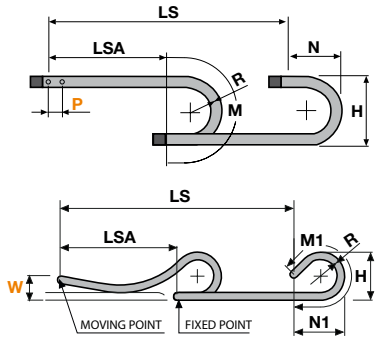
Acceleration
20 m/s²

Allen wrench
10 mm

Separator	
Unassembled	Article number S310F
Assembled	Article number S310FMC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PNH110RS

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
255	155	200	110	200-250-300-400-500-600-700-750	11.73	H110B200□□□
355	155	300	110	200-250-300-400-500-600-700-750	13.70	H110B300□□□
455	155	400	110	200-250-300-400-500-600-700-750	15.67	H110B400□□□
555	155	500	110	200-250-300-400-500-600-700-750	17.64	H110B500□□□
655	155	600	110	200-250-300-400-500-600-700-750	19.62	H110B600□□□

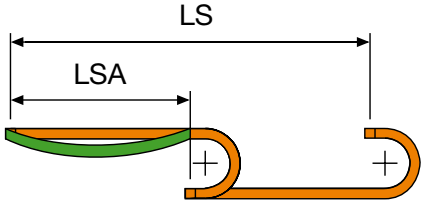
□□□ to be filled with Radius R

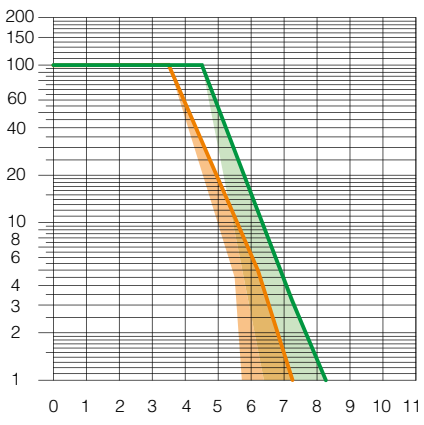


R	H	N	M	N1	M1
200	557	418	950	855	1820
250	657	468	1110	1095	2375
300	757	518	1265	1335	2935
400	957	618	1580	1805	4045
500	1157	718	1895	2280	5160
600	1357	818	2205	2750	6270
700	1557	918	2520	3225	7385
750	1657	968	2680	3460	7940

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

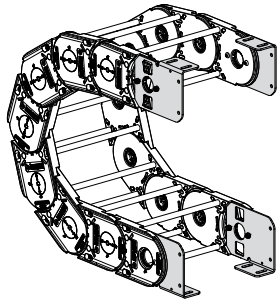
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

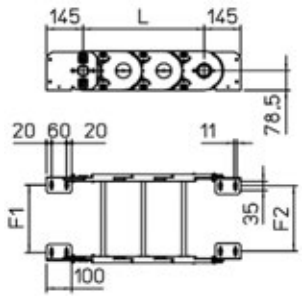
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type





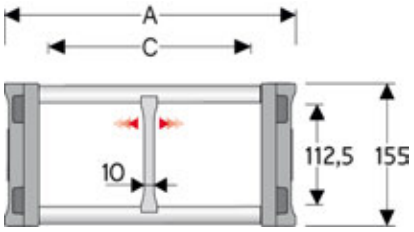
Chain Type	F1	F2
110B200	170	162
110B300	270	262
110B400	370	362
110B500	470	462
110B600	570	562
110B□□□	F=C-30	F=C-38

Steel Type Part Numbers
Complete Set Assembled
A110BKM□
Complete Set Unassembled
A110BK□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCT110□□□KMA
Complete Set Unassembled
SFCT110□□□KA

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN H110T

Nylon cable chain with un-screwable aluminium rods.



Technical data

Inner Height (D)
112,5 mm

Pitch (P)
160 mm

Height Moving Point (W)
350 mm

Speed
4 m/s

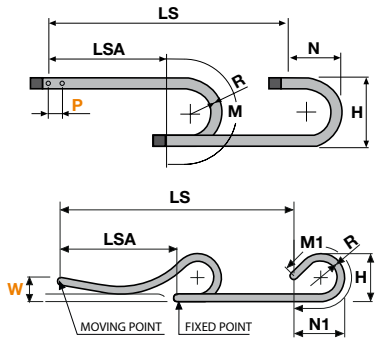
Acceleration
20 m/s²

Allen wrench
10 mm

Separator	
Unassembled	Article number S310TCF9
Assembled	Article number S310TCF9MC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PNH110RS

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
255	155	200	112.5	200-250-300-400-500-600-700-750	9.93	H110T200□□□
355	155	300	112.5	200-250-300-400-500-600-700-750	10.96	H110T300□□□
455	155	400	112.5	200-250-300-400-500-600-700-750	12.00	H110T400□□□
555	155	500	112.5	200-250-300-400-500-600-700-750	13.04	H110T500□□□
655	155	600	112.5	200-250-300-400-500-600-700-750	14.08	H110T600□□□
C+55	155	...	112.5	200-250-300-400-500-600-700-750	...	H110T□□□□□□

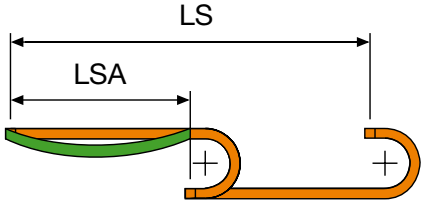
□□□ to be filled with Radius R

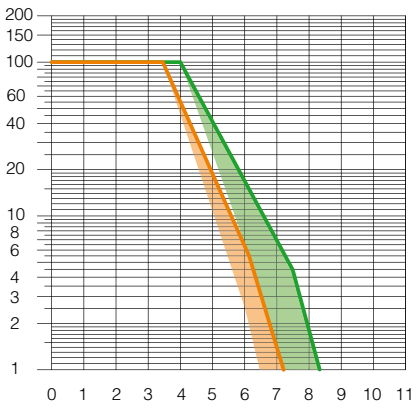


R	H	N	M	N1	M1
200	557	418	950	855	1820
250	657	468	1110	1095	2375
300	757	518	1265	1335	2935
400	957	618	1580	1805	4045
500	1157	718	1895	2280	5160
600	1357	818	2205	2750	6270
700	1557	918	2520	3225	7385
750	1657	968	2680	3460	7940

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram
The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

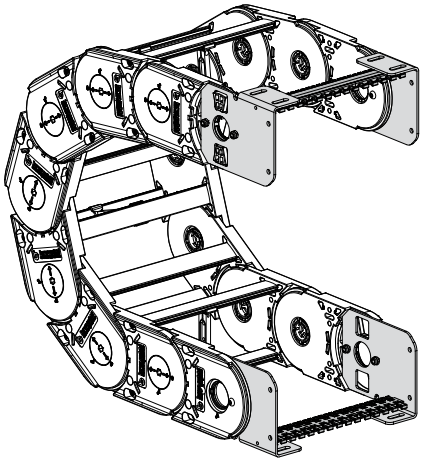
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

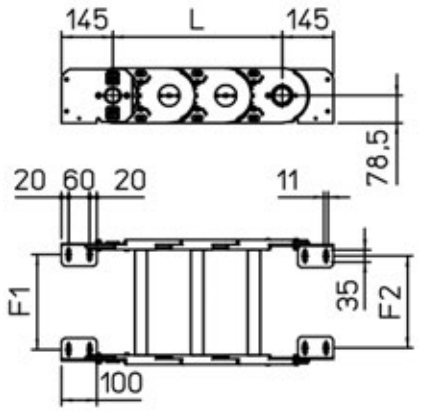
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type





Chain Type	F1	F2
110T200	170	162
110T300	270	262
110T400	370	362
110T500	470	462
110T600	570	562
110T□□□	F=C-30	F=C-38

Steel Type Part Numbers
Complete Set Assembled
AH110TKM□
Complete Set Unassembled
AH110TK□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCT110□□□KMA
Complete Set Unassembled
SFCT110□□□KA

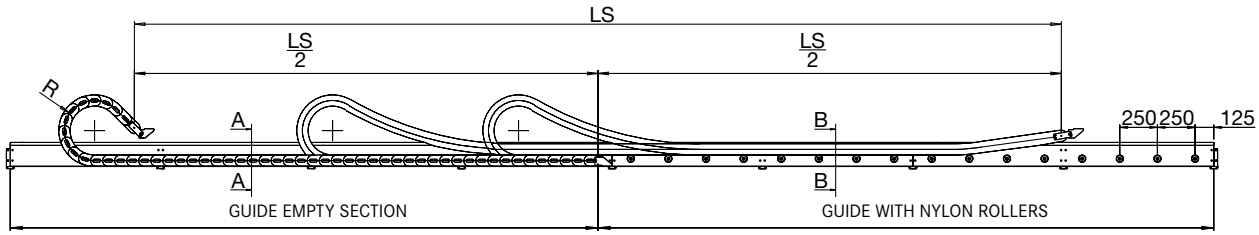
□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

Guide Channel for

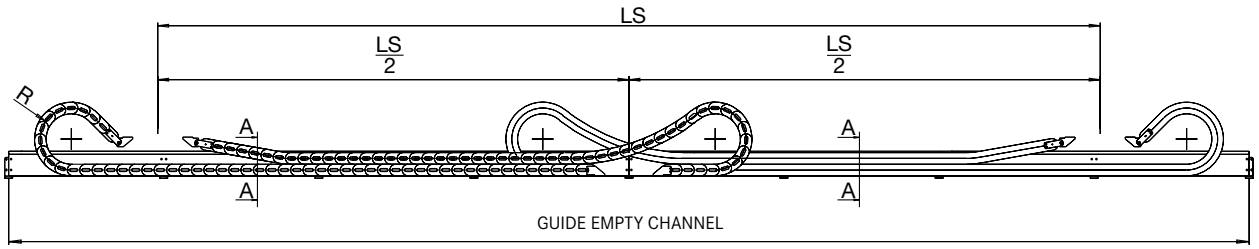
H45 - H57

Special channel guide allows the use of the chain for long travel distance.
Available in galvanised steel and, on request, in stainless steel.

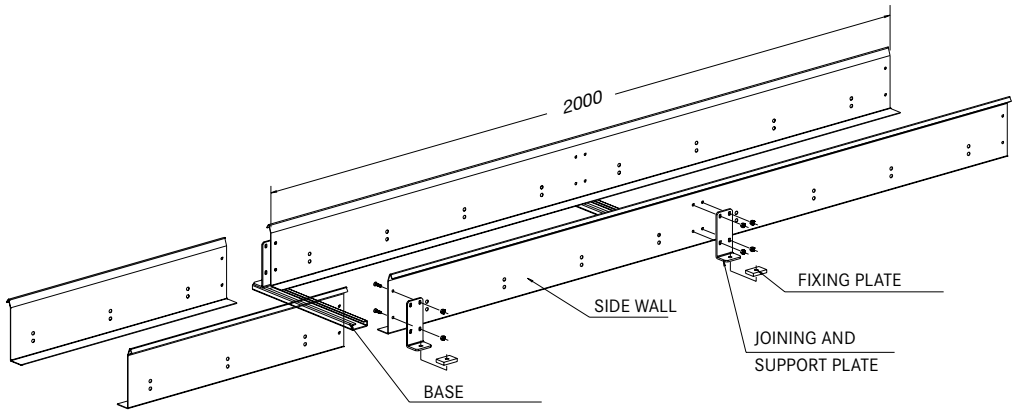
Single Chain Application



Double Chain Application

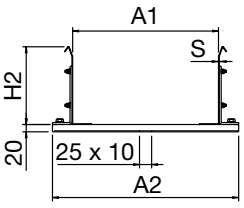


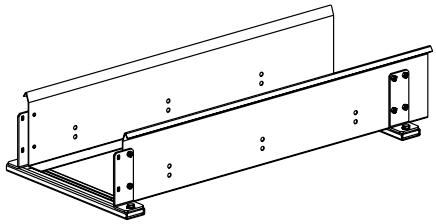
Channel guide is available in kit form composed of:
side walls 2 m standard length
joining plates
fixing screws



Empty Guide Section

Section A-A



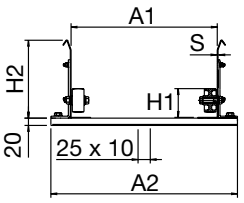


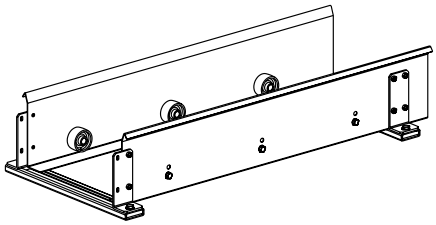
Part Number
CS...

How to order	
Chain part number	**H57100150**
Guide channel part number	**CSH57100**

Guide with Nylon Rollers

Section B-B



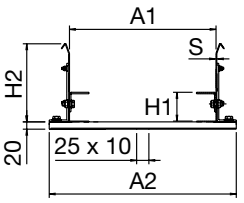


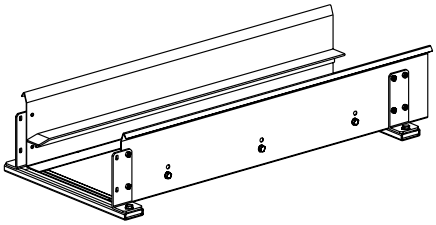
Part Number
CR...

How to order	
Chain part number	**H57100150**
Guide channel part number	**CRH57100**

Guide with Steel Sliding Plate

Section B-B



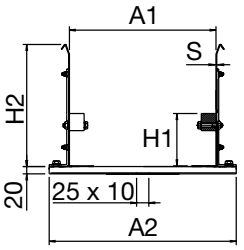


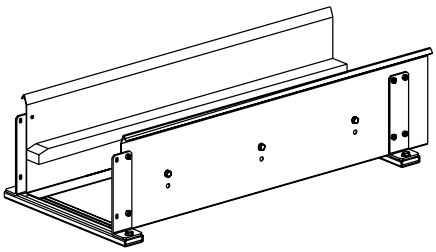
Part Number
CA...

How to order	
Chain part number	**H57100150**
Guide channel part number	**CAH57100**

Guide with Plastic Sliding Plate

Section B-B





Part Number
CP...

How to order	
Chain part number	**H57100150**
Guide channel part number	**CPH57100**

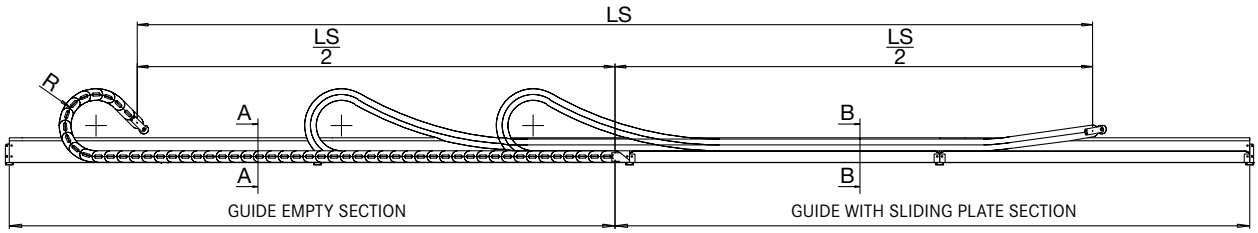
Chain type	H1 mm	H2 mm	A1 mm	A2 mm	S mm
H45	79	160	A+4	A+87	1.5
H57	85	190	A+4	A+87	1.5

Aluminium Guide Channel for

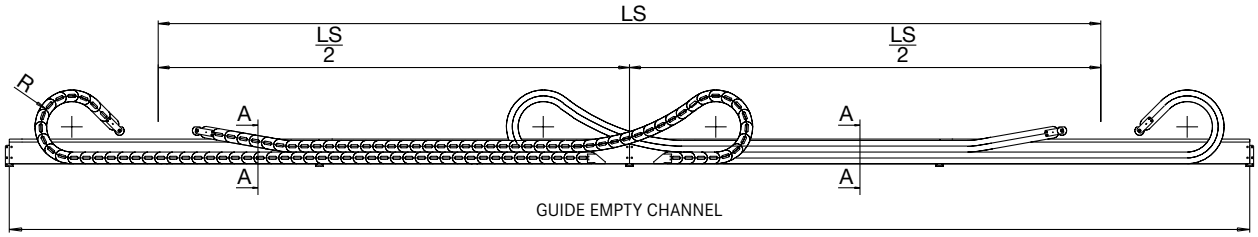
H57

Special channel guide allows the use of the chain for long travel distance.
Available in galvanised steel and, on request, in stainless steel.

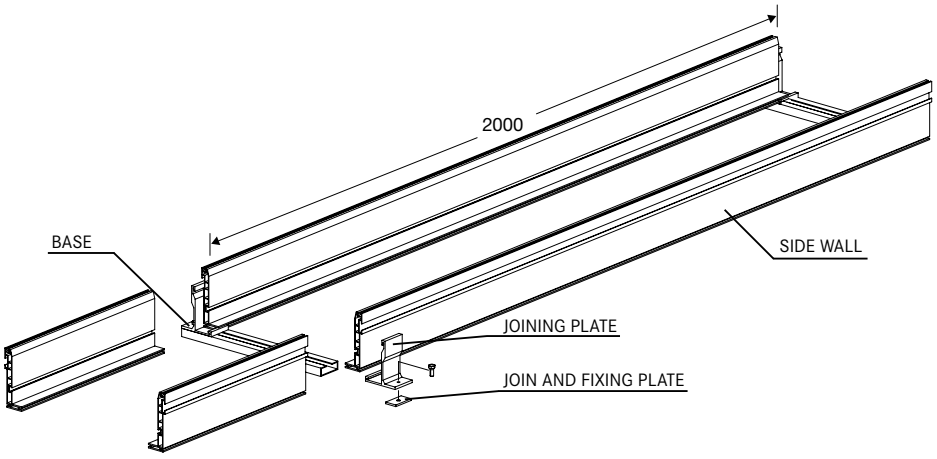
Single Chain Application



Double Chain Application

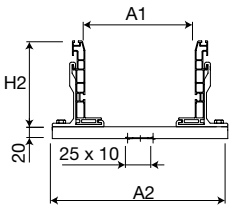


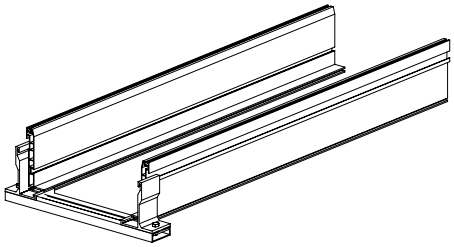
Channel guide is available in kit form composed of:
side walls 2 m standard length
joining plates
fixing screws



Empty Guide Section

Section A-A



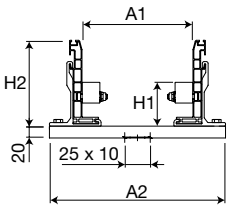


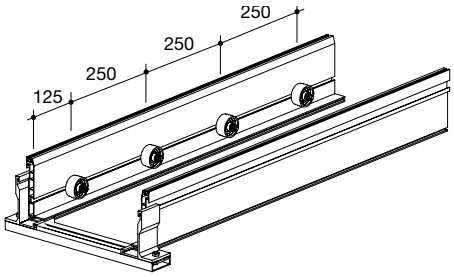
Part Number
CSAH57..

How to order	
Chain part number	**H57100150**
Guide channel part number	**CSAH57100**

Guide with Nylon Rollers

Section B-B



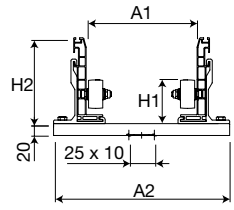


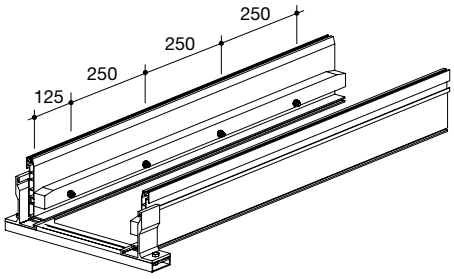
Part Number
CRAH57...

How to order	
Chain part number	**H57100150**
Guide channel part number	**CRAH57100**

Guide with Plastic Sliding Plate

Section B-B





Part Number
CPAH57...

How to order	
Chain part number	**H57100150**
Guide channel part number	**CPAH57100**

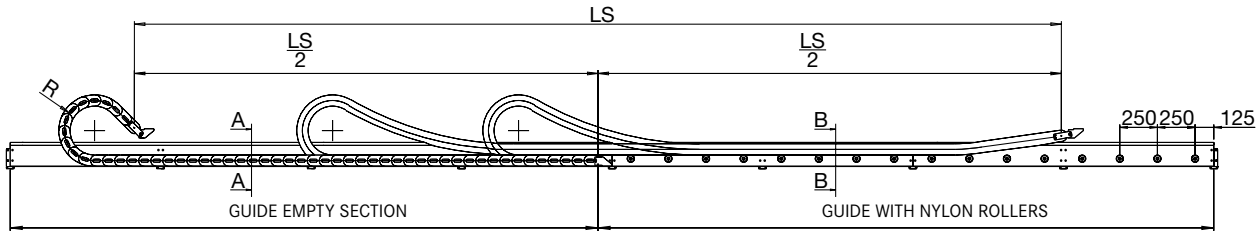
Chain type	H1 mm	H2 mm	A1 mm	A2 mm	S mm
H57	96	200	A+4	A+87	1.5

Guide Channel for

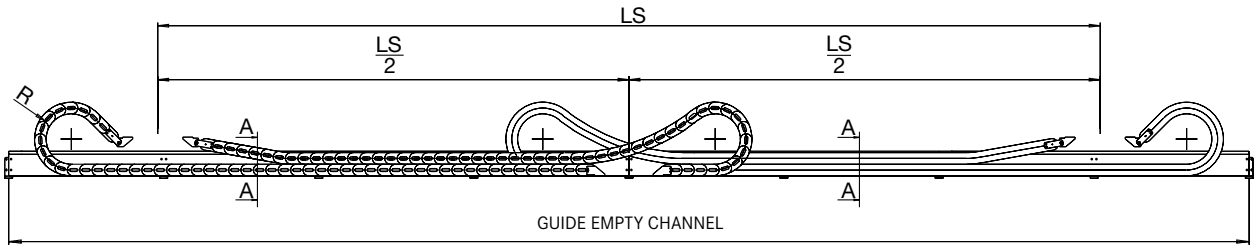
H80 - H110

Special channel guide allows the use of the chain for long travel distance.
Available in galvanised steel and, on request, in stainless steel.

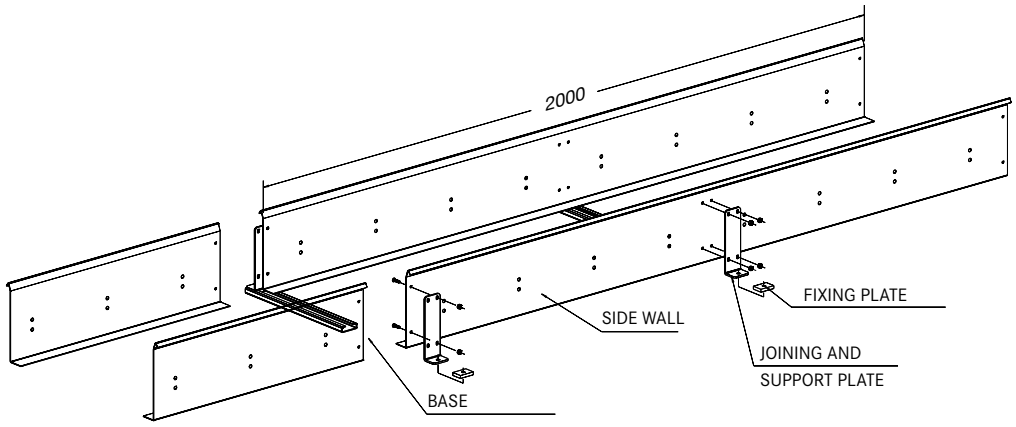
Single Chain Application



Double Chain Application

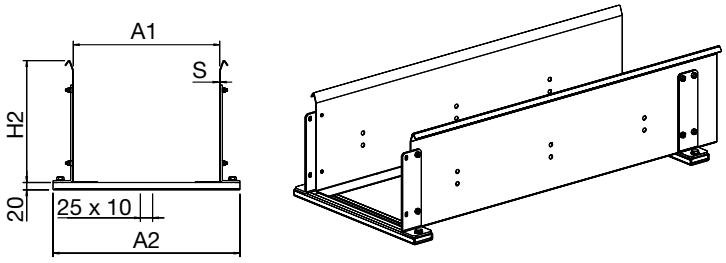


Channel guide is available in kit form composed of:
side walls 2 m standard length
joining plates
fixing screws



Empty Guide Section

Section A-A



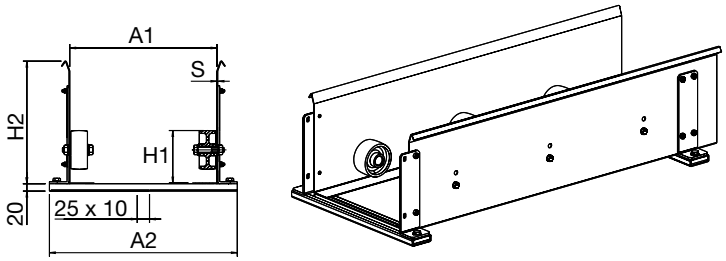
Part Number
CS...

How to order

Chain part number	**H80150200**
Guide channel part number	**CSH80150**

Guide with Nylon Rollers

Section B-B



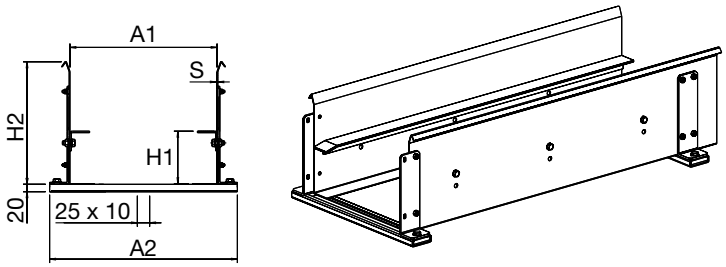
Part Number
CR...

How to order

Chain part number	**H80150200**
Guide channel part number	**CRH80150**

Guide with Steel Sliding Plate

Section B-B



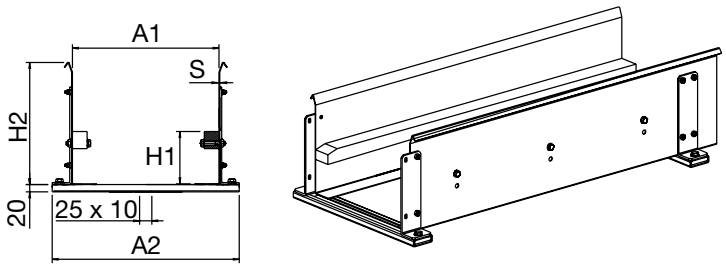
Part Number
CA...

How to order

Chain part number	**H80150200**
Guide channel part number	**CAH80150**

Guide with Plastic Sliding Plate

Section B-B



Part Number
CP...

How to order

Chain part number	**H80150200**
Guide channel part number	**CPH80150**

Chain type	H1 mm	H2 mm	A1 mm	A2 mm	S mm
H80	117	250	A+8	A+92	2
H110	155	324	A+8	A+93	2,5

Nylon cable chains for sliding applications

Product	Page
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SILVYN® CHAIN 328B	180
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Accessories	Page
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Separation System	202
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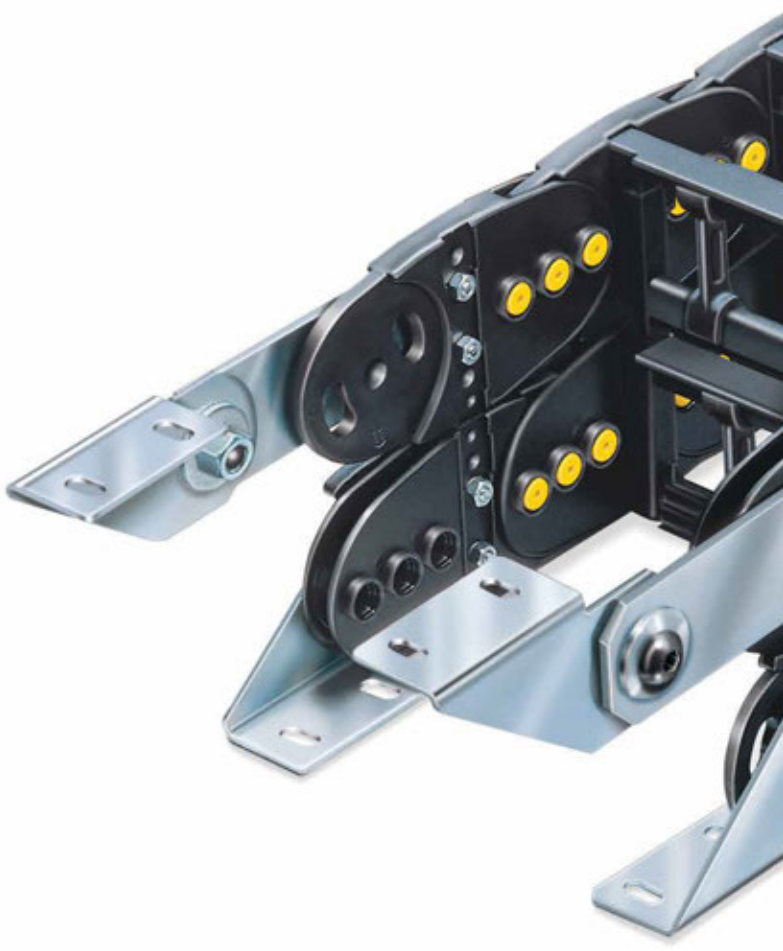
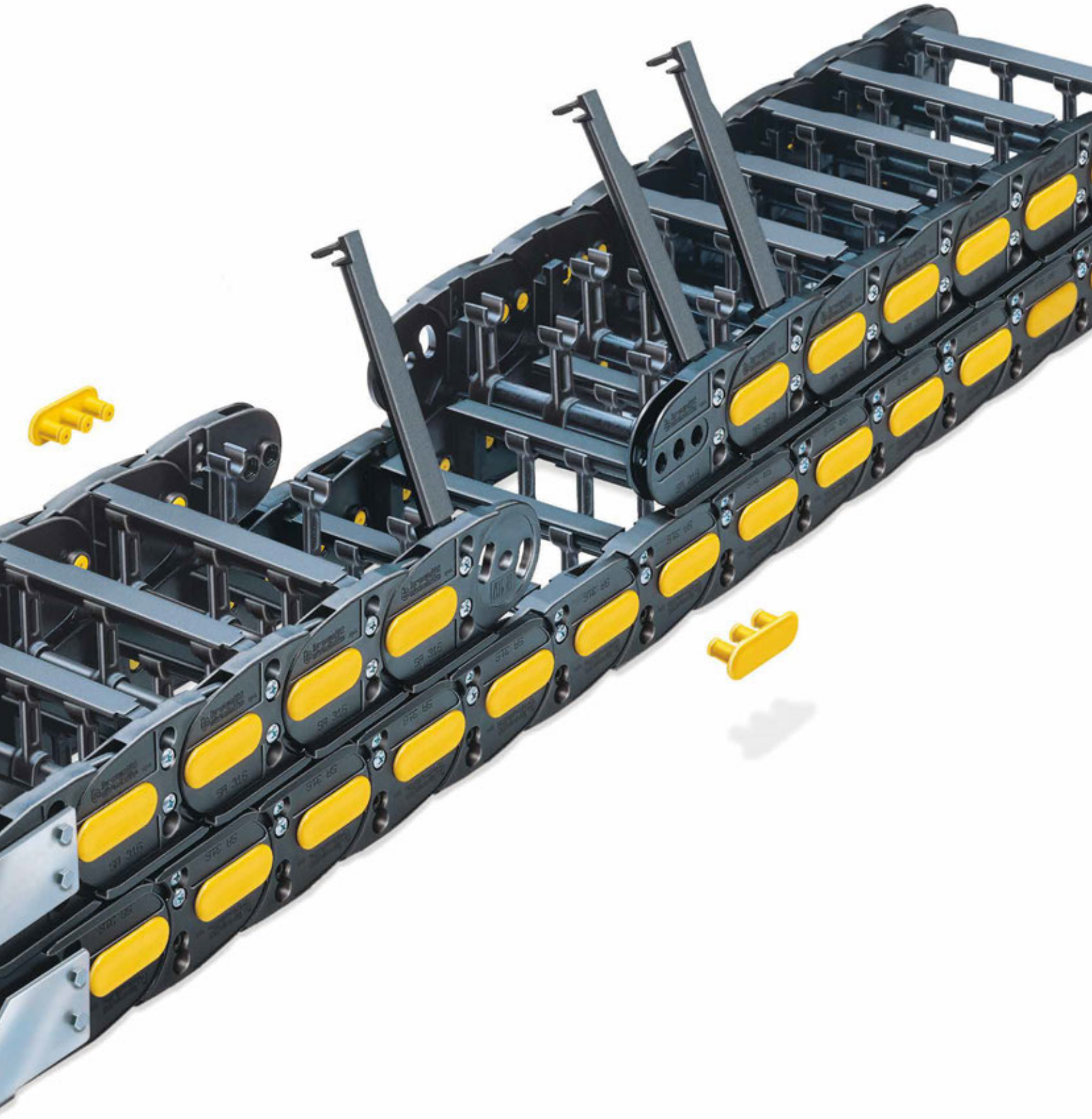
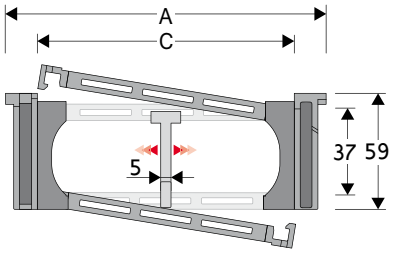




SILVYN® CHAIN 326SU

Nylon Cable Chain with opening frames



Technical data

Inner Height (D)
37 mm

Pitch (P)
65 mm

Height Moving Point (W)
200 mm

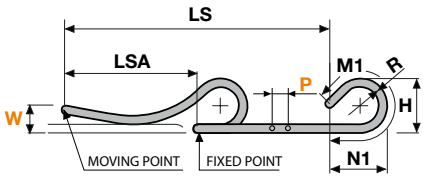
Speed
2 m/s

Acceleration
4 m/s²

Separator	
Unassembled	Article number S306SM
Assembled	Article number S306SMMCI, S306SMMCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Strong-hold separator for C > 200 mm	
Unassembled	Article number S660AH
Assembled	Article number S660AHMC
Pin	Article number PG307

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
106	59	61	37	107-150-200-250-300	1.33	326SU061□□□
117	59	72	37	107-150-200-250-300	1.33	326SU072□□□
131	59	86	37	107-150-200-250-300	1.40	326SU086□□□
137	59	92	37	107-150-200-250-300	1.41	326SU092□□□
151	59	106	37	107-150-200-250-300	1.46	326SU106□□□
156	59	111	37	107-150-200-250-300	1.46	326SU111□□□
163	59	118	37	107-150-200-250-300	1.48	326SU118□□□
173	59	128	37	107-150-200-250-300	1.49	326SU128□□□
181	59	136	37	107-150-200-250-300	1.54	326SU136□□□
192	59	147	37	107-150-200-250-300	1.57	326SU147□□□
206	59	161	37	107-150-200-250-300	1.61	326SU161□□□
231	59	186	37	107-150-200-250-300	1.68	326SU186□□□
256	59	211	37	107-150-200-250-300	1.75	326SU211□□□
267	59	222	37	107-150-200-250-300	1.79	326SU222□□□
281	59	236	37	107-150-200-250-300	1.83	326SU236□□□
308	59	263	37	107-150-200-250-300	1.91	326SU263□□□
317	59	272	37	107-150-200-250-300	1.93	326SU272□□□
368	59	323	37	107-150-200-250-300	2.06	326SU323□□□
390	59	345	37	107-150-200-250-300	2.10	326SU345□□□
418	59	373	37	107-150-200-250-300	2.21	326SU373□□□

□□□ to be filled with Radius R



R	H	N1	M1
107	272	280	625
150	358	430	1000
200	458	605	1440
250	558	775	1875
300	658	945	2315

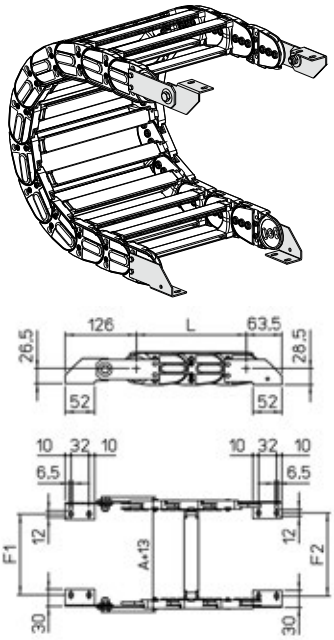
L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type



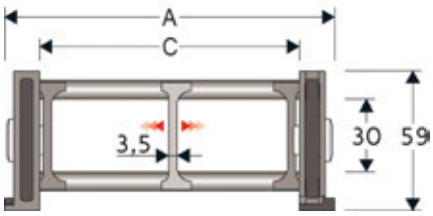
Chain Type	F1
326SU061	58
326SU072	69
326SU086	83
326SU092	89
326SU096	93
326SU106	103
326SU111	108
326SU118	115
326SU128	125
326SU136	133
326SU147	144
326SU161	158
326SU186	183
326SU211	208
326SU222	219
326SU236	233
326SU263	260
326SU272	269
326SU323	320
326SU345	342
326SU373	370

Steel Type Part Numbers
Complete Set Assembled
A326KM
Complete Set Unassembled
A326K

□□□ Inner width (C)

SILVYN® CHAIN 326B

Nylon cable chain with un-screwable aluminium rods.



Technical data

Inner Height (D)
30 mm

Pitch (P)
65 mm

Height Moving Point (W)
200 mm

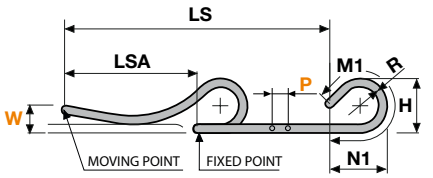
Speed
2 m/s

Acceleration
4 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
115	59	75	30	107-150-200-250-300	1.75	326B075□□□
140	59	100	30	107-150-200-250-300	1.80	326B100□□□
190	59	150	30	107-150-200-250-300	1.90	326B150□□□
240	59	200	30	107-150-200-250-300	2.05	326B200□□□
290	59	250	30	107-150-200-250-300	2.15	326B250□□□
340	59	300	30	107-150-200-250-300	2.25	326B300□□□
C+40	59	...	30	107-150-200-250-300	....	326B□□□□□□

□□□ to be filled with Radius R

Separator	
Unassembled	Article number S2000F
Assembled	Article number S2000FMC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG307



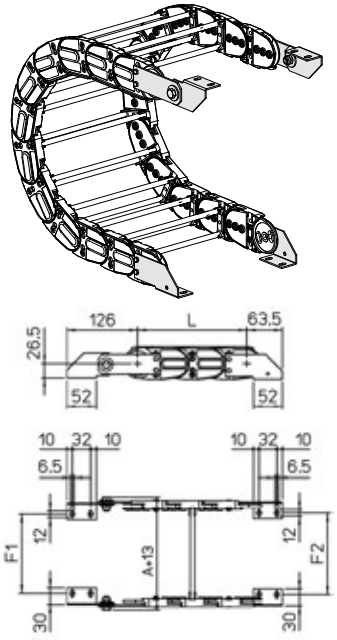
R	H	N1	M1
107	272	280	625
150	358	430	1000
200	458	605	1440
250	558	775	1875
300	658	945	2315

L=LSA + M or M1
Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type



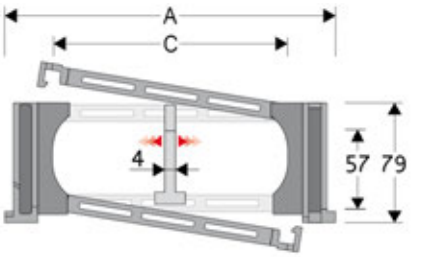
Chain Type	F1
326B075□□□	67
326B100□□□	92
326B150□□□	142
326B200□□□	192
326B250□□□	242
326B300□□□	292
326B□□□□□□	F=A-48

Steel Type Part Numbers
Complete Set Assembled
A326KM
Complete Set Unassembled
A326K

□□□ Inner width (C)

SILVYN® CHAIN 328SU

Nylon Cable Chain with opening frames



Technical data

Inner Height (D)
57 mm

Pitch (P)
80 mm

Height Moving Point (W)
250 mm

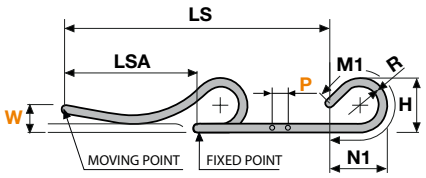
Speed
3,5 m/s

Acceleration
8 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
119	79	61	57	150-180-200-230-280-400	2.70	328SU061□□□
130	79	72	57	150-180-200-230-280-400	2.73	328SU072□□□
144	79	86	57	150-180-200-230-280-400	2.76	328SU086□□□
150	79	92	57	150-180-200-230-280-400	2.78	328SU092□□□
164	79	106	57	150-180-200-230-280-400	2.82	328SU106□□□
169	79	111	57	150-180-200-230-280-400	2.82	328SU111□□□
176	79	118	57	150-180-200-230-280-400	2.82	328SU118□□□
186	79	128	57	150-180-200-230-280-400	2.86	328SU128□□□
194	79	136	57	150-180-200-230-280-400	2.89	328SU136□□□
205	79	147	57	150-180-200-230-280-400	2.89	328SU147□□□
219	79	161	57	150-180-200-230-280-400	2.94	328SU161□□□
244	79	186	57	150-180-200-230-280-400	3.01	328SU186□□□
269	79	211	57	150-180-200-230-280-400	3.06	328SU211□□□
280	79	222	57	150-180-200-230-280-400	3.08	328SU222□□□
294	79	236	57	150-180-200-230-280-400	3.14	328SU236□□□
321	79	263	57	150-180-200-230-280-400	3.20	328SU263□□□
330	79	272	57	150-180-200-230-280-400	3.20	328SU272□□□
381	79	323	57	150-180-200-230-280-400	3.31	328SU323□□□
403	79	345	57	150-180-200-230-280-400	3.36	328SU345□□□
431	79	373	57	150-180-200-230-280-400	3.49	328SU373□□□

□□□ to be filled with Radius R

Separator	
Unassembled	Article number S308C
Assembled	Article number S308CMC, S308CMCI, S308CMCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Strong-hold separator for C > 200 mm	
Unassembled	Article number S308SHF
Assembled	Article number S308SHMC
Pin	Article number PG328TP



R	H	N1	M1
150	379	425	955
180	439	530	1220
200	479	600	1395
230	539	700	1655
280	639	875	2095
400	879	1285	3145

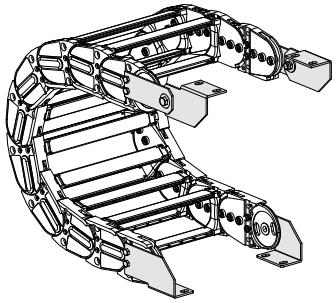
L=LSA + M or M1

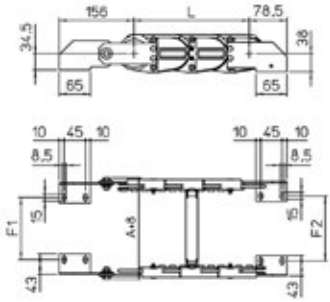
Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type





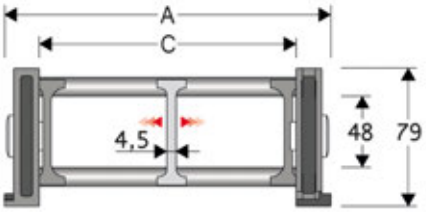
Chain type	F1
328SU061	44
328SU072	55
328SU086	69
328SU092	75
328SU096	79
328SU106	89
328SU111	94
328SU118	101
328SU128	111
328SU136	119
328SU147	130
328SU161	144
328SU186	169
328SU211	194
328SU222	205
328SU236	219
328SU263	246
328SU272	255
328SU323	306
328SU345	328
328SU373	356

Steel Type Part Numbers
Complete Set Assembled
A328KM
Complete Set Unassembled
A328K

□□□ Inner width (C)

SILVYN® CHAIN 328B

Nylon cable chain with un-screwable aluminium rods.



Technical data

Inner Height (D)
48 mm

Pitch (P)
80 mm

Height Moving Point (W)
250 mm

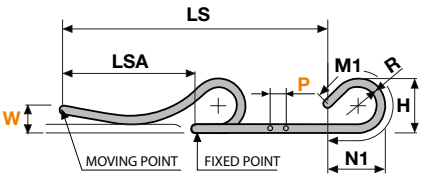
Speed
3,5 m/s

Acceleration
8 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
162	79	100	48	150-180-200-230-280-400	2.50	328B100□□□
212	79	150	48	150-180-200-230-280-400	2.60	328B150□□□
262	79	200	48	150-180-200-230-280-400	2.75	328B200□□□
312	79	250	48	150-180-200-230-280-400	2.90	328B250□□□
362	79	300	48	150-180-200-230-280-400	3.00	328B300□□□
C+62	79	...	48	150-180-200-230-280-400	...	328B□□□□□□

□□□ to be filled with Radius R

Separator	
Unassembled	Article number S3000F
Assembled	Article number S3000FMC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG328TP



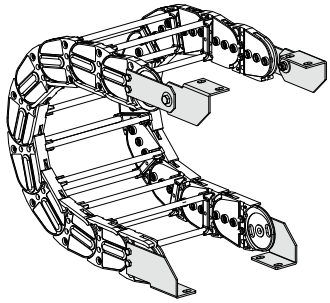
R	H	N1	M1
150	379	425	955
180	439	530	1220
200	479	600	1395
230	539	700	1655
280	639	875	2095
400	879	1285	3145

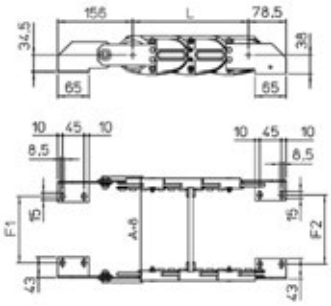
L=LSA + M or M1
Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type





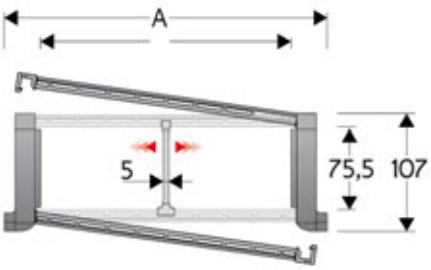
Chain Type	F1
328B100□□□	93
328B150□□□	143
328B200□□□	193
328B250□□□	243
328B300□□□	293
328B□□□□□□	F=A-75

Steel Type Part Numbers
Complete Set Assembled
A328KM
Complete Set Unassembled
A328K

□□□ Inner width (C)

SILVYN® CHAIN 329SU

Nylon Cable Chain with opening frames



Technical data

Inner Height (D)
75,5 mm

Pitch (P)
100 mm

Height Moving Point (W)
300 mm

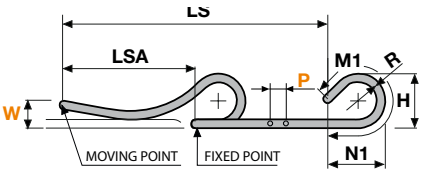
Speed
3 m/s

Acceleration
13 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
128	107	64	75.5	150-200-250-300-350-400-500-600	4.19	329SU064□□□
148	107	84	75.5	150-200-250-300-350-400-500-600	4.25	329SU084□□□
173	107	109	75.5	150-200-250-300-350-400-500-600	4.33	329SU109□□□
180	107	116	75.5	150-200-250-300-350-400-500-600	4.36	329SU116□□□
203	107	139	75.5	150-200-250-300-350-400-500-600	4.43	329SU139□□□
243	107	179	75.5	150-200-250-300-350-400-500-600	4.56	329SU179□□□
278	107	214	75.5	150-200-250-300-350-400-500-600	4.67	329SU214□□□
304	107	240	75.5	150-200-250-300-350-400-500-600	4.76	329SU240□□□
328	107	264	75.5	150-200-250-300-350-400-500-600	4.83	329SU264□□□
354	107	290	75.5	150-200-250-300-350-400-500-600	4.91	329SU290□□□
378	107	314	75.5	150-200-250-300-350-400-500-600	4.99	329SU314□□□
404	107	340	75.5	150-200-250-300-350-400-500-600	5.06	329SU340□□□
428	107	364	75.5	150-200-250-300-350-400-500-600	5.15	329SU364□□□
483	107	419	75.5	150-200-250-300-350-400-500-600	5.36	329SU419□□□
552	107	488	75.5	150-200-250-300-350-400-500-600	5.57	329SU488□□□

□□□ to be filled with Radius R

Separator	
Unassembled	Article number S309S/3178
Assembled	Article number S309S/3178MCI, S309S/3178MCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Strong-hold separator for C > 200 mm	
Unassembled	Article number S309HOFL
Assembled	Article number S309HOFLMC
Pin	Article number PG329

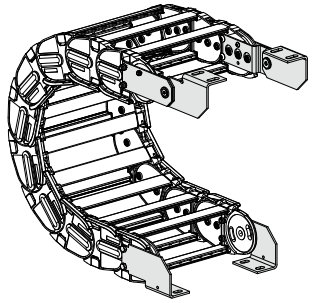


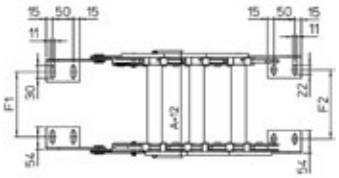
R	H	N1	M1
150	406	415	905
200	506	595	1345
250	606	765	1780
300	706	940	2220
350	806	1110	2655
400	906	1280	3095
500	1106	1625	3970
600	1306	1965	4845

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type





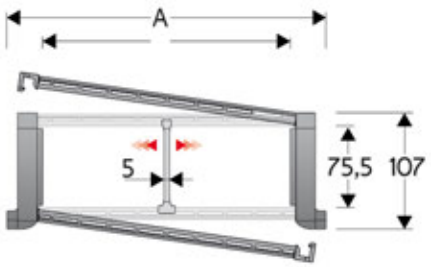
Chain Type	F1	F2
329SU084	60	71
329SU109	85	96
329SU116	92	103
329SU139	115	126
329SU179	155	166
329SU214	190	201
329SU240	216	227
329SU264	240	251
329SU290	266	277
329SU314	290	301
329SU340	316	327
329SU364	340	351
329SU419	395	406
329SU488	464	475

Steel Type Part Numbers
Complete Set Assembled
A329SU□□□KM
Complete Set Unassembled
A329SU□□□K

□□□ Inner width (C)

SILVYN® CHAIN 329CD

Nylon Protection cable chain with openable aluminium covers.



Technical data

Inner Height (D)
75,5 mm

Pitch (P)
100 mm

Height Moving Point (W)
300 mm

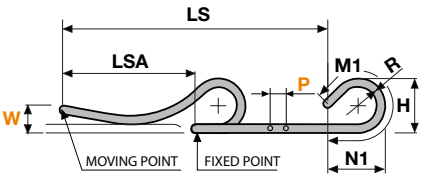
Speed
3 m/s

Acceleration
13 m/s²

Separator	
Unassembled	Article number S309S/3178
Assembled	Article number S309S/3178MCI, S309S/3178MCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG329

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
128	107	64	75.5	200-250-300-350-400-500-600	4.19	329CD064□□□
148	107	84	75.5	200-250-300-350-400-500-600	4.25	329CD084□□□
173	107	109	75.5	200-250-300-350-400-500-600	4.33	329CD109□□□
180	107	116	75.5	200-250-300-350-400-500-600	4.36	329CD116□□□
203	107	139	75.5	200-250-300-350-400-500-600	4.43	329CD139□□□
243	107	179	75.5	200-250-300-350-400-500-600	4.56	329CD179□□□
278	107	214	75.5	200-250-300-350-400-500-600	4.67	329CD214□□□
304	107	240	75.5	200-250-300-350-400-500-600	4.76	329CD240□□□
328	107	264	75.5	200-250-300-350-400-500-600	4.83	329CD264□□□
354	107	290	75.5	200-250-300-350-400-500-600	4.91	329CD290□□□
378	107	314	75.5	200-250-300-350-400-500-600	4.99	329CD314□□□
404	107	340	75.5	200-250-300-350-400-500-600	5.06	329CD340□□□
428	107	364	75.5	200-250-300-350-400-500-600	5.15	329CU364□□□
483	107	419	75.5	200-250-300-350-400-500-600	5.36	329CU419□□□
552	107	488	75.5	200-250-300-350-400-500-600	5.57	329CU488□□□

□□□ to be filled with Radius R



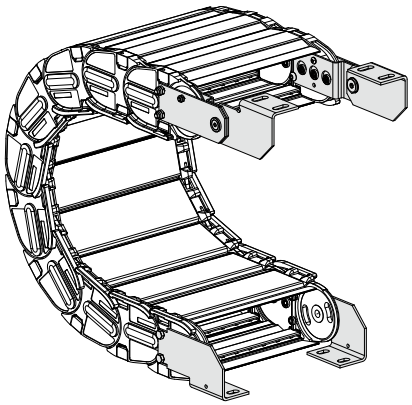
R	H	N1	M1
200	506	595	1345
250	606	765	1780
300	706	940	2220
350	806	1110	2655
400	906	1280	3095
500	1106	1625	3970
600	1306	1965	4845

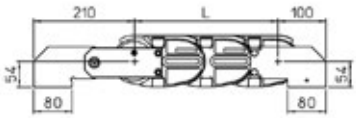
L=LSA + M or M1
Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

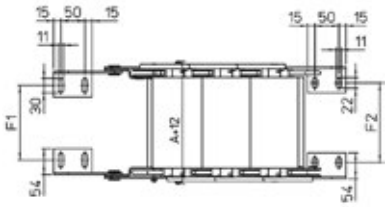
End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type







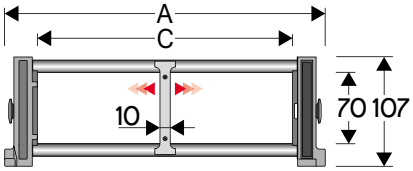
Chain type	F1	F2
329CD084	60	71
329CD109	85	96
329CD116	92	103
329CD139	115	126
329CD179	155	166
329CD214	190	201
329CD240	216	227
329CD264	240	251
329CD290	266	277
329CD314	290	301
329CD340	316	327
329CD364	340	351
329CD419	395	406
329CD488	464	475

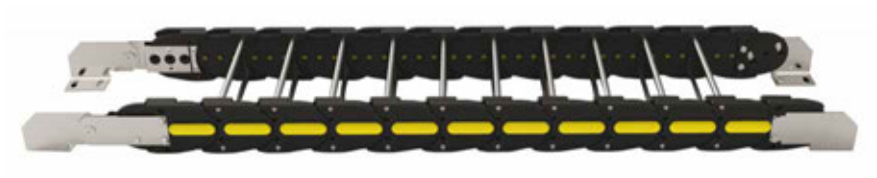
Steel Type Part Numbers
Complete Set Assembled
A329CD□□□KM
Complete Set Unassembled
A329CD□□□K

□□□ Inner width (C)

SILVYN® CHAIN 329B

Nylon cable chain with un-screwable aluminium rods.





Technical data

Inner Height (D)
70 mm

Pitch (P)
100 mm

Height Moving Point (W)
300 mm

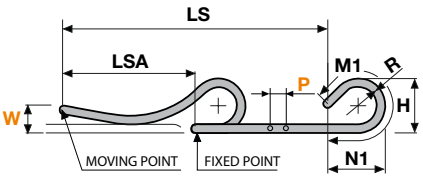
Speed
3 m/s

Acceleration
13 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
164	107	100	70	150-200-250-300-350-400-500-600	4.25	329B100□□□
214	107	150	70	150-200-250-300-350-400-500-600	4.45	329B150□□□
264	107	200	70	150-200-250-300-350-400-500-600	4.60	329B200□□□
314	107	250	70	150-200-250-300-350-400-500-600	4.75	329B250□□□
364	107	300	70	150-200-250-300-350-400-500-600	4.90	329B300□□□
464	107	400	70	150-200-250-300-350-400-500-600	5.25	329B400□□□
C+64	107	...	70	150-200-250-300-350-400-500-600	...	329B□□□□□□

□□□ to be filled with Radius R

Separator	
Unassembled	Article number S309C
Assembled	Article number S309CMC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG329



R	H	N1	M1
150	406	415	905
200	506	595	1345
250	606	765	1780
300	706	940	2220
350	806	1110	2655
400	906	1280	3095
500	1106	1625	3970
600	1306	1965	4845

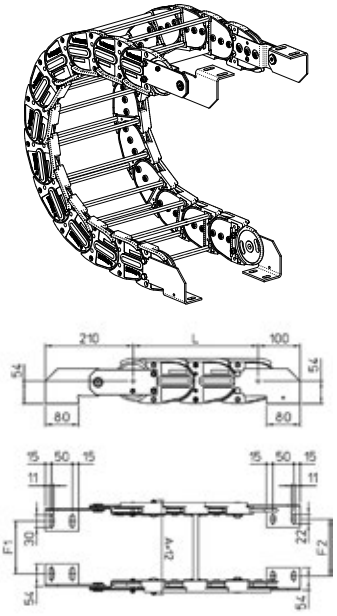
L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type



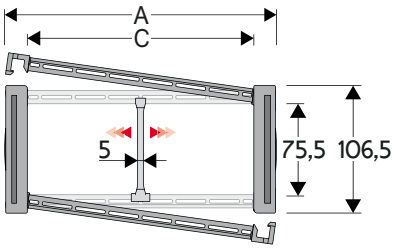
Chain type	F1	F2
329B100	76	87
329B150	126	137
329B200	176	187
329B250	226	237
329B300	276	287
329B400	376	387
329B□□□	F=A-88	F=A-77

Steel Type Part Numbers
Complete Set Assembled
A329BKM
Complete Set Unassembled
A329BK

□□□ Inner width (C)

SILVYN® CHAIN 478MU

Nylon Cable Chain with opening frames



Technical data

Inner Height (D)
75,5 mm

Pitch (P)
105 mm

Height Moving Point (W)
300 mm

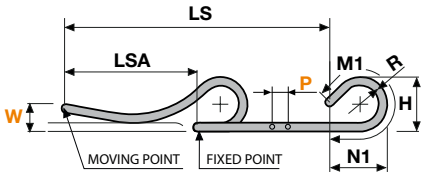
Speed
3 m/s

Acceleration
8 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
110.5	106.5	74	75.5	180-200-250-300-350-400	3.70	478MU074□□□
130.5	106.5	94	75.5	180-200-250-300-350-400	3.80	478MU094□□□
155.5	106.5	119	75.5	180-200-250-300-350-400	3.85	478MU119□□□
162.5	106.5	126	75.5	180-200-250-300-350-400	3.90	478MU126□□□
185.5	106.5	149	75.5	180-200-250-300-350-400	3.95	478MU149□□□
225.5	106.5	189	75.5	180-200-250-300-350-400	4.05	478MU189□□□
260.5	106.5	224	75.5	180-200-250-300-350-400	4.15	478MU224□□□
286.5	106.5	250	75.5	180-200-250-300-350-400	4.25	478MU250□□□
310.5	106.5	274	75.5	180-200-250-300-350-400	4.30	478MU274□□□
336.5	106.5	300	75.5	180-200-250-300-350-400	4.37	478MU300□□□
360.5	106.5	324	75.5	180-200-250-300-350-400	4.45	478MU324□□□
386.5	106.5	350	75.5	180-200-250-300-350-400	4.55	478MU350□□□
410.5	106.5	374	75.5	180-200-250-300-350-400	4.60	478MU374□□□
465.5	106.5	429	75.5	180-200-250-300-350-400	4.80	478MU429□□□
534.5	106.5	498	75.5	180-200-250-300-350-400	5.00	478MU498□□□

□□□ to be filled with Radius R

Separator	
Unassembled	Article number S309S/3178
Assembled	Article number S309S/3178MCI, S309S/3178MCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Strong-hold separator for C > 200 mm	
Unassembled	Article number S309HOFL
Assembled	Article number S309HOFLMC
Pin	Article number PG475



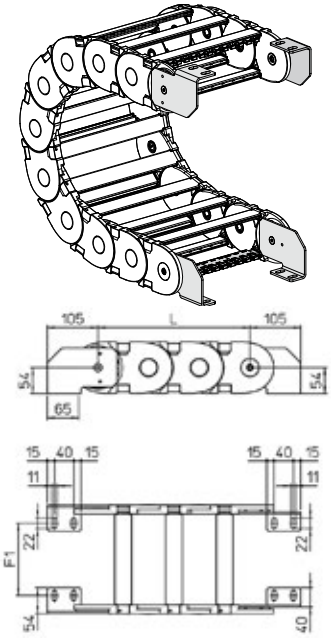
R	H	N1	M1
180	466.5	495	1155
200	506.5	570	1330
250	606.5	745	1765
300	706.5	920	2205
350	806.5	1090	2640
400	906.5	1265	3080

L=LSA + M or M1
Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type



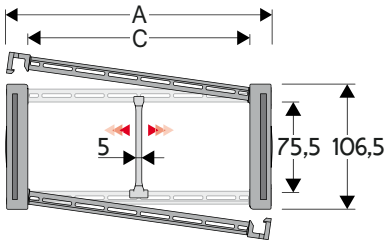
Chain Type	F1
478MU074□□□	33.5
478MU094□□□	53.5
478MU119□□□	78.5
478MU126□□□	85.5
478MU149□□□	108.5
478MU189□□□	148.5
478MU224□□□	183.5
478MU250□□□	209.5
478MU274□□□	233.5
478MU300□□□	259.5
478MU324□□□	283.5
478MU350□□□	309.5
478MU374□□□	333.5
478MU429□□□	388.5
478MU498□□□	457.5

Steel Type Part Numbers
Complete Set Assembled
A478M□□□KM
Complete Set Unassembled
A478M□□□K
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC478M□□□KM
Complete Set Unassembled
CFC478M□□□K

□□□ Inner width (C)

SILVYN® CHAIN 478PU

Nylon cable chain with openable protection frames.



Technical data

Inner Height (D)
75,5 mm

Pitch (P)
105 mm

Height Moving Point (W)
300 mm

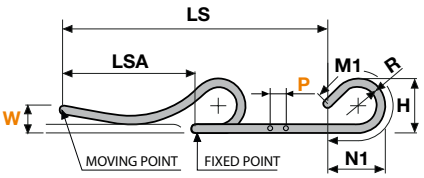
Speed
3 m/s

Acceleration
8 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
112	106.5	74	75.5	180-200-250-300-350-400	4.60	478PU074□□□
132	106.5	94	75.5	180-200-250-300-350-400	4.80	478PU094□□□
157	106.5	119	75.5	180-200-250-300-350-400	5.10	478PU119□□□
164	106.5	126	75.5	180-200-250-300-350-400	5.15	478PU126□□□
187	106.5	149	75.5	180-200-250-300-350-400	5.40	478PU149□□□
227	106.5	189	75.5	180-200-250-300-350-400	5.80	478PU189□□□
262	106.5	224	75.5	180-200-250-300-350-400	6.20	478PU224□□□
288	106.5	250	75.5	180-200-250-300-350-400	6.50	478PU250□□□
312	106.5	274	75.5	180-200-250-300-350-400	6.75	478PU274□□□
338	106.5	300	75.5	180-200-250-300-350-400	7.05	478PU300□□□
362	106.5	324	75.5	180-200-250-300-350-400	7.30	478PU324□□□
388	106.5	350	75.5	180-200-250-300-350-400	7.55	478PU350□□□
412	106.5	374	75.5	180-200-250-300-350-400	7.85	478PU374□□□
467	106.5	429	75.5	180-200-250-300-350-400	8.50	478PU429□□□
536	106.5	498	75.5	180-200-250-300-350-400	9.20	478PU498□□□

□□□ to be filled with Radius R

Separator	
Unassembled	Article number S309S/3178
Assembled	Article number S309S/3178MCI, S309S/3178MCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG475



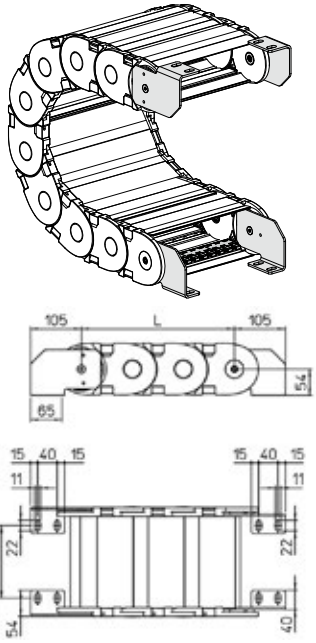
R	H	N1	M1
180	466.5	495	1155
200	506.5	570	1330
250	606.5	745	1765
300	706.5	920	2205
350	806.5	1090	2640
400	906.5	1265	3080

L=LSA + M or M1
Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type



Chain Type	F1
478PU074□□□	35
478PU094□□□	55
478PU119□□□	80
478PU126□□□	87
478PU149□□□	110
478PU189□□□	150
478PU224□□□	185
478PU250□□□	211
478PU274□□□	235
478PU300□□□	261
478PU324□□□	285
478PU350□□□	311
478PU374□□□	335
478PU429□□□	390
478PU498□□□	459

Steel Type Part Numbers
Complete Set Assembled
A478P□□□KM
Complete Set Unassembled
A478P□□□K
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC478M□□□KM
Complete Set Unassembled
CFC478M□□□K

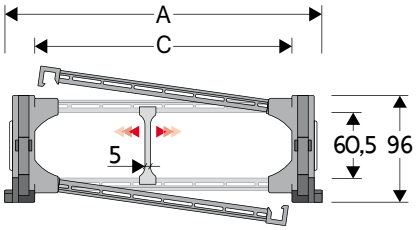
□□□ Inner width (C)

SILVYN® CHAIN 60PU

Nylon Cable Chain with opening frames

Info

- Integrated sliding shoes



Technical data

Inner Height (D)
60,5 mm

Pitch (P)
90 mm

Height Moving Point (W)
250 mm

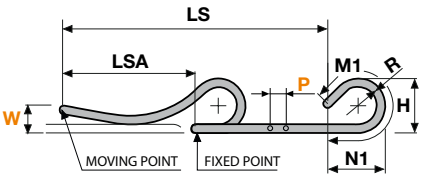
Speed
5 m/s

Acceleration
13 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
169	90	115	60.5	200-250-300-400	5.37	60PU115□□□
189	90	135	60.5	200-250-300-400	5.46	60PU135□□□
214	90	160	60.5	200-250-300-400	5.52	60PU160□□□
221	90	167	60.5	200-250-300-400	5.54	60PU167□□□
244	90	190	60.5	200-250-300-400	5.61	60PU190□□□
284	90	230	60.5	200-250-300-400	5.77	60PU230□□□
319	90	265	60.5	200-250-300-400	5.91	60PU265□□□
345	90	291	60.5	200-250-300-400	5.99	60PU291□□□
369	90	315	60.5	200-250-300-400	6.07	60PU315□□□
395	90	341	60.5	200-250-300-400	6.17	60PU341□□□
419	90	365	60.5	200-250-300-400	6.26	60PU365□□□
445	90	391	60.5	200-250-300-400	6.34	60PU391□□□
469	90	415	60.5	200-250-300-400	6.43	60PU415□□□
524	90	470	60.5	200-250-300-400	6.75	60PU470□□□
593	90	539	60.5	200-250-300-400	7.08	60PU539□□□

□□□ to be filled with Radius R

Separator	
Unassembled	Article number S60SMF
Assembled	Article number S60SMFMC
Strong-hold separator for C > 200 mm	
Unassembled	Article number S60HOFL
Assembled	Article number S60HOFLMC
Pin	Article number PNE60-PNI60



R	H	N1	M1
200	490	715	1625
250	590	925	2130
300	690	1130	2635
400	890	1550	3645

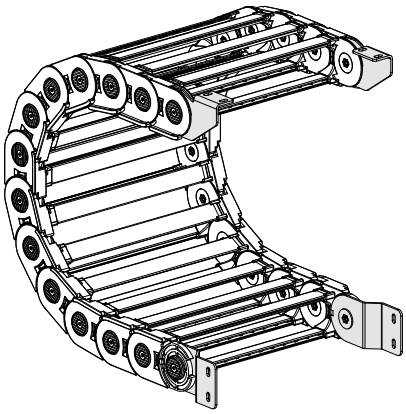
L=LSA + M or M1

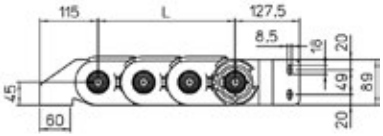
Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

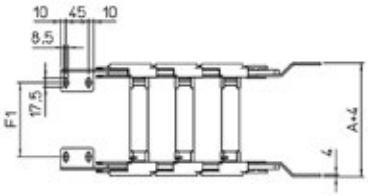
End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type







Chain Type	F1
60PU115	95
60PU135	115
60PU160	140
60PU167	147
60PU190	170
60PU230	210
60PU265	245
60PU291	271
60PU315	295
60PU341	321
60PU365	345
60PU391	371
60PU415	395
60PU470	450
60PU539	519

Steel Type Part Numbers
Complete Set Assembled
A60PKM
Complete Set Unassembled
A60PK

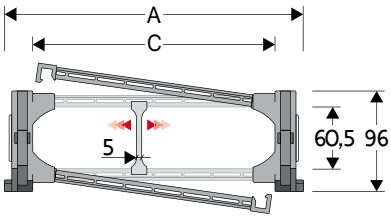
□□□ Inner width (C)

SILVYN® CHAIN 60VU

Nylon Cable Chain with opening frames

Info

- Removable sliding shoes



Technical data

Inner Height (D)
60,5 mm

Pitch (P)
90 mm

Height Moving Point (W)
250 mm

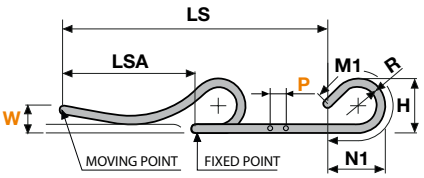
Speed
5 m/s

Acceleration
13 m/s²

Separator	
Unassembled	Article number S60SMF
Assembled	Article number S60SMFMC
Strong-hold separator for C > 200 mm	
Unassembled	Article number S60HOFL
Assembled	Article number S60HOFLMC
Pin	Article number PNE60-PNI60
Sliding shoe	Article number PAT60

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
169	96	115	60.5	200-250-300-400	5.37	60VU115□□□
189	96	135	60.5	200-250-300-400	5.46	60VU135□□□
214	96	160	60.5	200-250-300-400	5.52	60VU160□□□
221	96	167	60.5	200-250-300-400	5.54	60VU167□□□
244	96	190	60.5	200-250-300-400	5.61	60VU190□□□
284	96	230	60.5	200-250-300-400	5.77	60VU230□□□
319	96	265	60.5	200-250-300-400	5.91	60VU265□□□
345	96	291	60.5	200-250-300-400	5.99	60VU291□□□
369	96	315	60.5	200-250-300-400	6.07	60VU315□□□
395	96	341	60.5	200-250-300-400	6.17	60VU341□□□
419	96	365	60.5	200-250-300-400	6.26	60VU365□□□
445	96	391	60.5	200-250-300-400	6.34	60VU391□□□
469	96	415	60.5	200-250-300-400	6.43	60VU415□□□
524	96	470	60.5	200-250-300-400	6.75	60VU470□□□
593	96	539	60.5	200-250-300-400	7.08	60VU539□□□

□□□ to be filled with Radius R



R	H	N1	M1
200	490	715	1625
250	590	925	2130
300	690	1130	2635
400	890	1550	3645

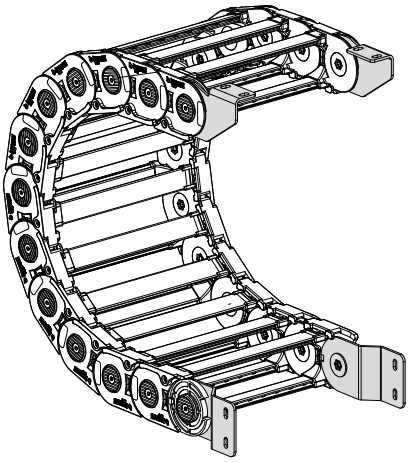
L=LSA + M or M1

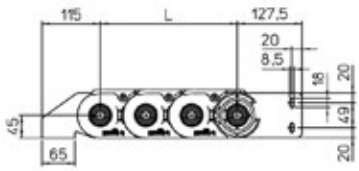
Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

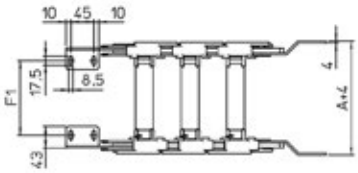
End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type







Chain Type	F1
60VU115	95
60VU135	115
60VU160	140
60VU167	147
60VU190	170
60VU230	210
60VU265	245
60VU291	271
60VU315	295
60VU341	321
60VU365	345
60VU391	371
60VU415	395
60VU470	450
60VU539	519

Steel Type Part Numbers
Complete Set Assembled
A60PKM
Complete Set Unassembled
A60PK

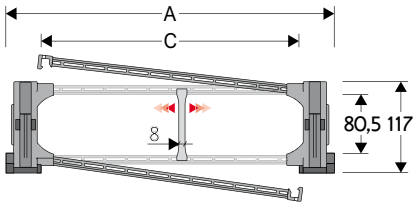
□□□ Inner width (C)

SILVYN® CHAIN 80PU

Nylon Cable Chain with opening frames

Info

- Removable sliding shoes



Technical data

Inner Height (D)
80,5 mm

Pitch (P)
110 mm

Height Moving Point (W)
300 mm

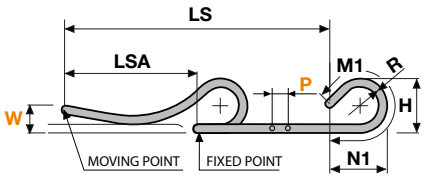
Speed
5 m/s

Acceleration
13 m/s²

Separator	
Unassembled	Article number S80F
Assembled	Article number S80FMCI, S80FMCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Strong-hold separator for C > 200 mm	
Unassembled	Article number S80HOF6L
Assembled	Article number S80HOF6LMC
Pin	Article number PNE80-PNI80
Sliding shoe	Article number PAT80

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
195	117	115	80.5	200-250-300-400-500-700	8.60	80PU115□□□
215	117	135	80.5	200-250-300-400-500-700	8.67	80PU135□□□
240	117	160	80.5	200-250-300-400-500-700	8.73	80PU160□□□
247	117	167	80.5	200-250-300-400-500-700	8.75	80PU167□□□
270	117	190	80.5	200-250-300-400-500-700	8.80	80PU190□□□
310	117	230	80.5	200-250-300-400-500-700	8.93	80PU230□□□
345	117	265	80.5	200-250-300-400-500-700	9.05	80PU265□□□
371	117	291	80.5	200-250-300-400-500-700	9.11	80PU291□□□
395	117	315	80.5	200-250-300-400-500-700	9.17	80PU315□□□
421	117	341	80.5	200-250-300-400-500-700	9.25	80PU341□□□
445	117	365	80.5	200-250-300-400-500-700	9.33	80PU365□□□
471	117	391	80.5	200-250-300-400-500-700	9.40	80PU391□□□
495	117	415	80.5	200-250-300-400-500-700	9.47	80PU415□□□
550	117	470	80.5	200-250-300-400-500-700	9.75	80PU470□□□
619	117	539	80.5	200-250-300-400-500-700	10	80PU539□□□

□□□ to be filled with Radius R



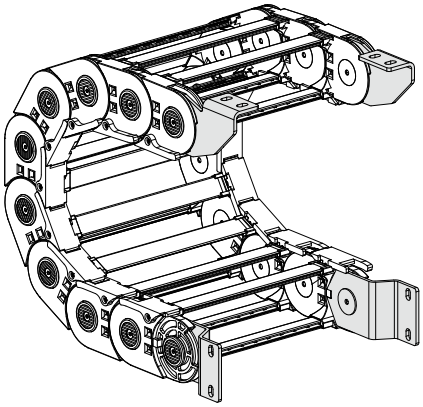
R	H	N1	M1
200	510	695	1555
250	610	905	2060
300	710	1115	2565
400	910	1530	3575
500	1110	1945	4580
700	1510	2785	6600

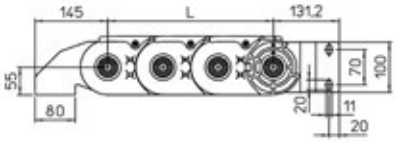
L=LSA + M or M1 Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

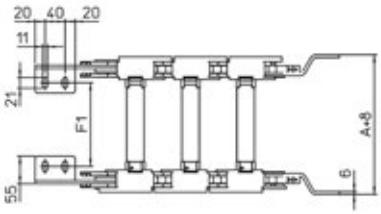
End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type







Chain Type	F1
80PU115	92
80PU135	112
80PU160	137
80PU167	144
80PU190	167
80PU230	207
80PU265	242
80PU291	268
80PU315	292
80PU341	318
80PU365	342
80PU391	368
80PU415	392
80PU470	447
80PU539	516

Steel Type Part Numbers
Complete Set Assembled
A80PKM
Complete Set Unassembled
A80PK

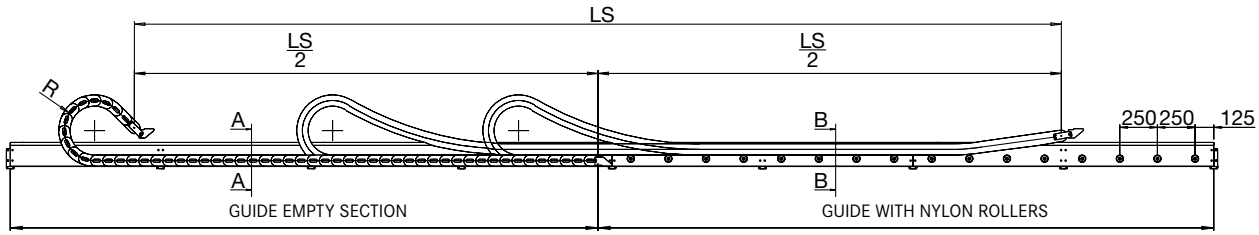
□□□ Inner width (C)

Guide Channel for

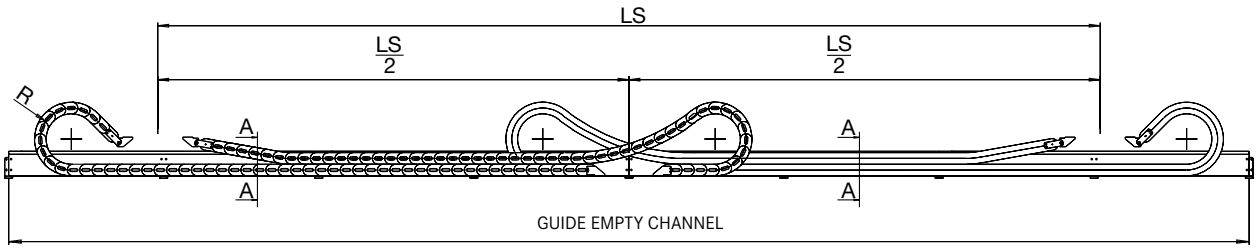
326 - 328 - 60

Special channel guide allows the use of the chain for long travel distance.
Available in galvanised steel and, on request, in stainless steel.

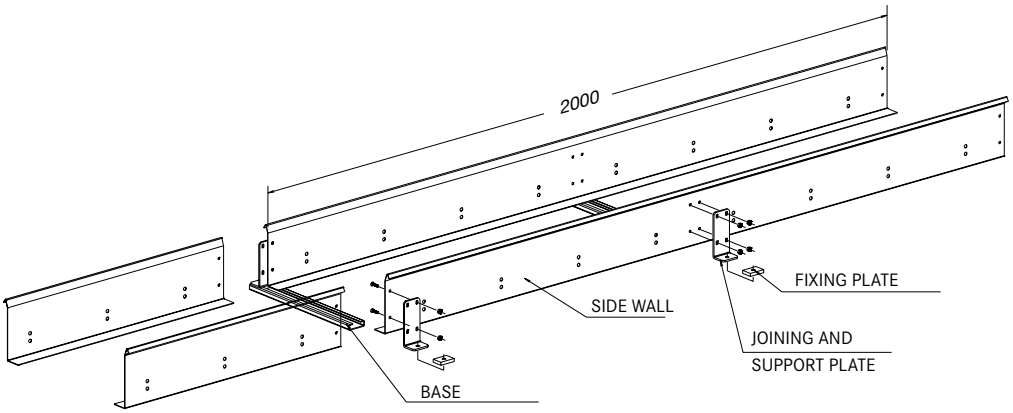
Single Chain Application



Double Chain Application

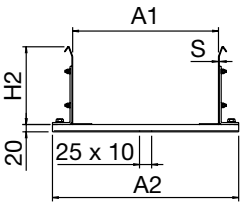


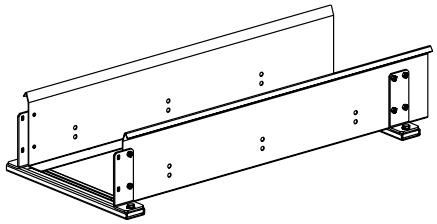
Channel guide is available in kit form composed of:
side walls 2 m standard length
joining plates
fixing screws



Empty Guide Section

Section A-A



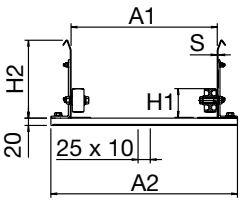


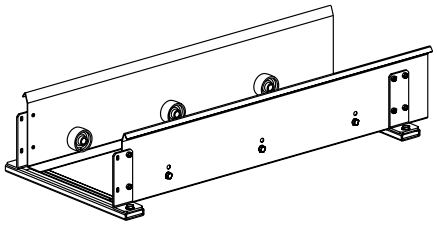
Part Number
CS...

How to order	
Chain part number	**326B100150**
Guide channel part number	**CS326B100**

Guide with Nylon Rollers

Section B-B



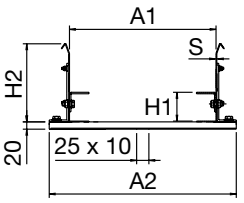


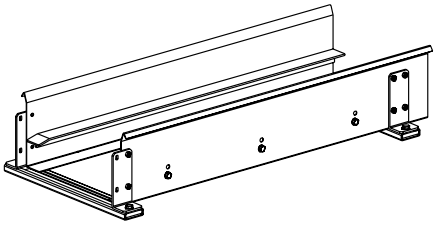
Part Number
CR...

How to order	
Chain part number	**326B100150**
Guide channel part number	**CR326B100**

Guide with Steel Sliding Plate

Section B-B



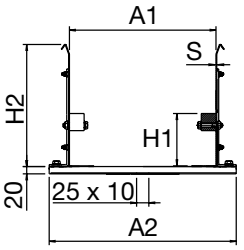


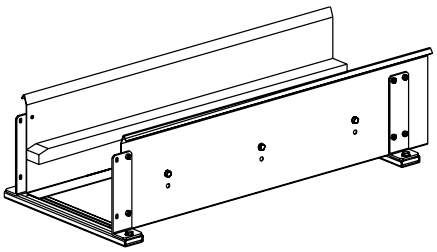
Part Number
CA...

How to order	
Chain part number	**326B100150**
Guide channel part number	**CA326B100**

Guide with Plastic Sliding Plate

Section B-B





Part Number
CP...

How to order	
Chain part number	**326B100150**
Guide channel part number	**CP326B100**

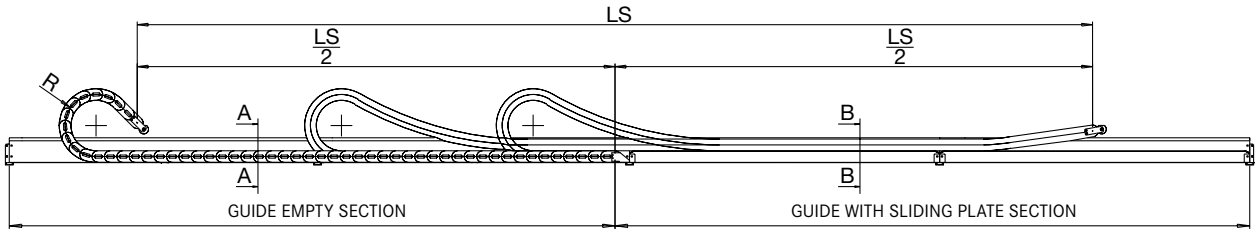
Chain type	H1 mm	H2 mm	A1 mm	A2 mm	S mm
326	59	160	A+4	A+87	1,5
328	79	160	A+4	A+87	1,5
60	96	190	A+4	A+87	1,5

Aluminium Guide Channel for

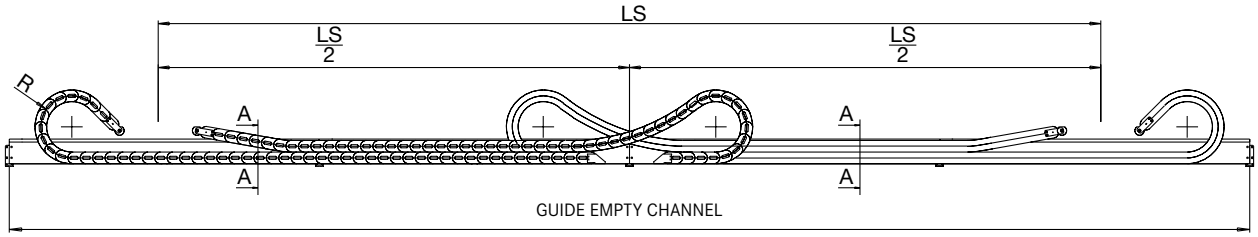
326 - 328 - 60

Special channel guide allows the use of the chain for long travel distance.
Available in galvanised steel and, on request, in stainless steel.

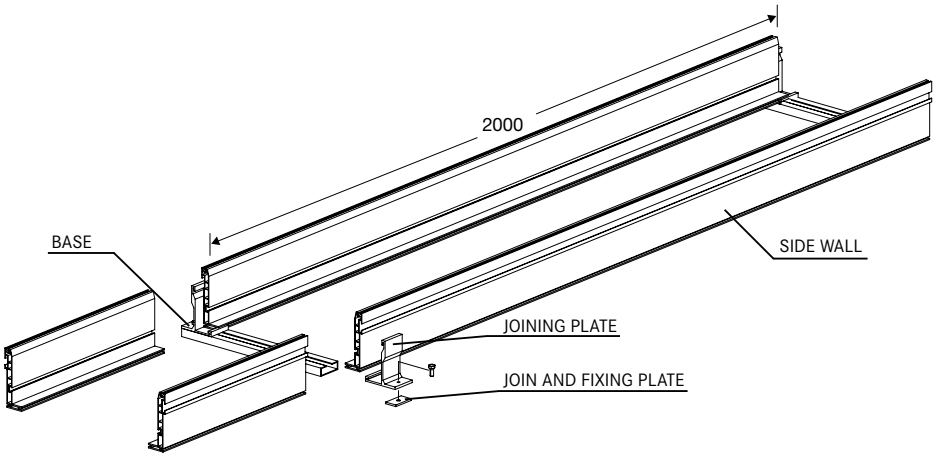
Single Chain Application



Double Chain Application

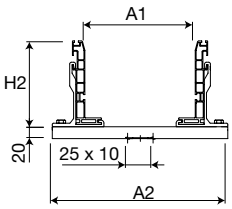


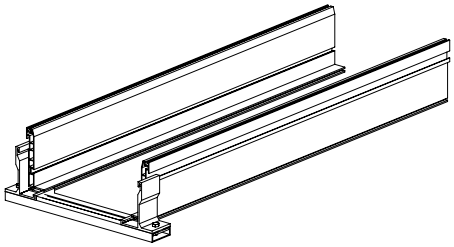
Channel guide is available in kit form composed of:
side walls 2 m standard length
joining plates
fixing screws



Empty Guide Section

Section A-A





Part Number
CSA...

How to order

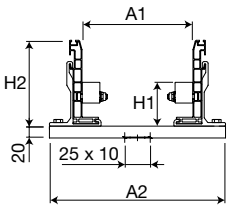
Chain part number	**326B100150**
Guide channel part number	**CSA326B100**

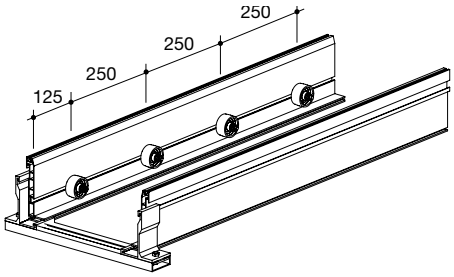
CSA...

Chain part number	**60PU391250**
Guide channel part number	**CSA60-391**

Guide with Nylon Rollers

Section B-B





Part Number
CRA...

How to order

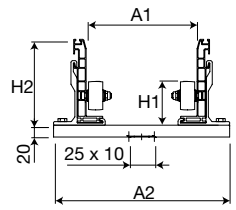
Chain part number	**326B100150**
Guide channel part number	**CRA326B100**

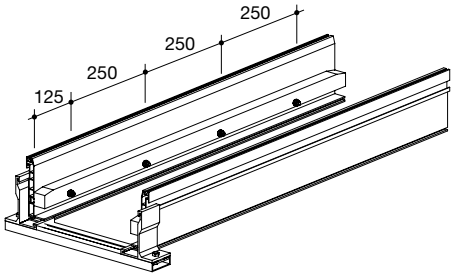
CRA...

Chain part number	**60PU391250**
Guide channel part number	**CRA60-391**

Guide with Plastic Sliding Plate

Section B-B





Part Number
CPA...

How to order

Chain part number	**326B100150**
Guide channel part number	**CPA326B100**

CPA...

Chain part number	**60PU391250**
Guide channel part number	**CPA60-391**

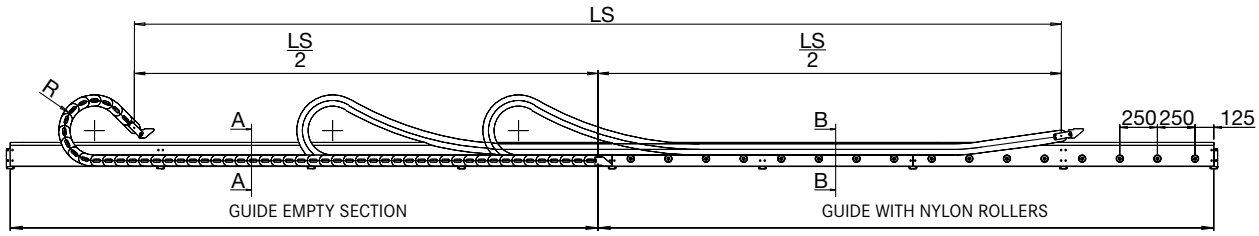
Chain type	H1 mm	H2 mm	A1 mm	A2 mm	S mm
326	59	145	A+4	A+114	1,5
328	79	200	A+4	A+114	1,5
60	96	200	A+4	A+114	1,5

Guide Channel for

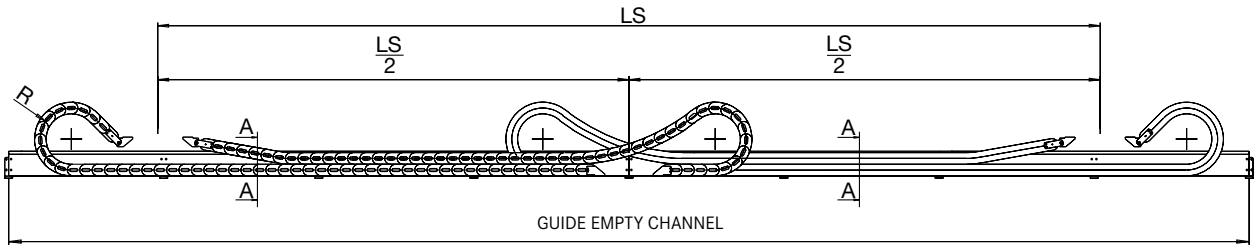
329 - 478 - 80

Special channel guide allows the use of the chain for long travel distance.
Available in galvanised steel and, on request, in stainless steel.

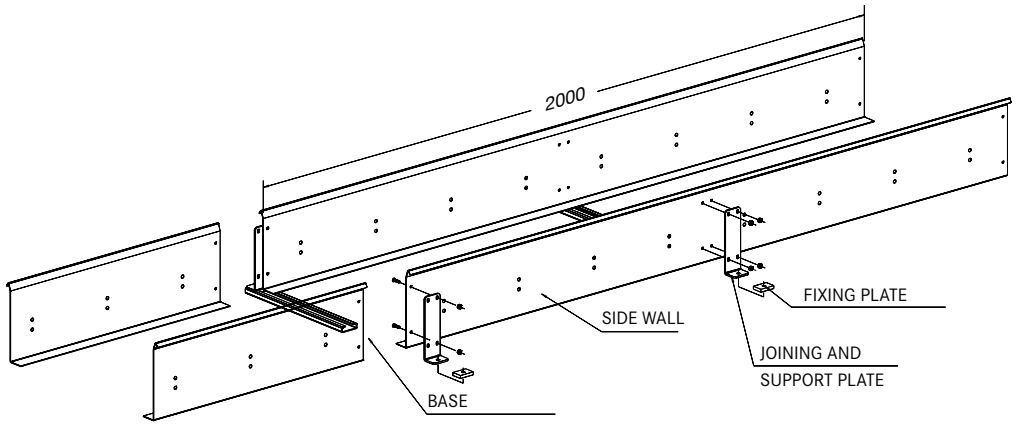
Single Chain Application



Double Chain Application

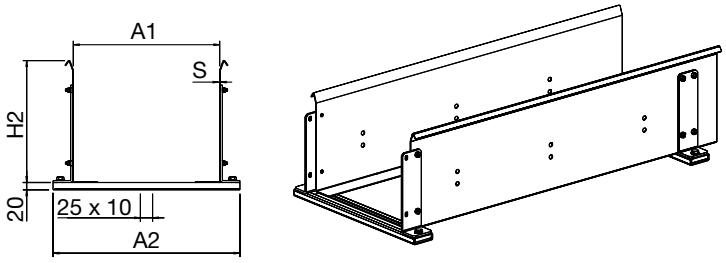


Channel guide is available in kit form composed of:
side walls 2 m standard length
joining plates
fixing screws



Empty Guide Section

Section A-A



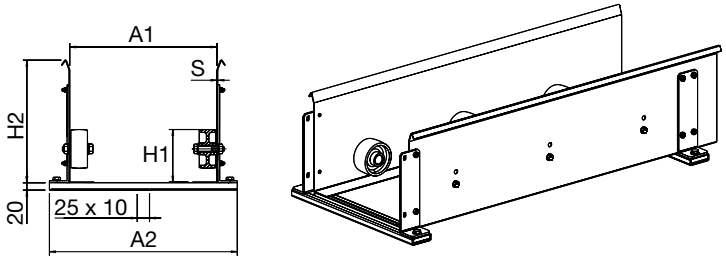
Part Number
CS329...

How to order

Chain part number	**329B109200**
Guide channel part number	**CS329B109**

Guide with Nylon Rollers

Section B-B



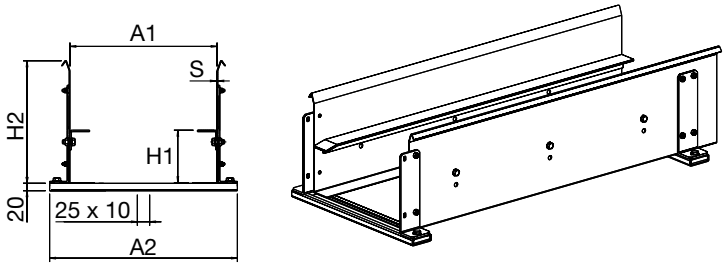
Part Number
CR329...

How to order

Chain part number	**329B109200**
Guide channel part number	**CR329B109**

Guide with Steel Sliding Plate

Section B-B



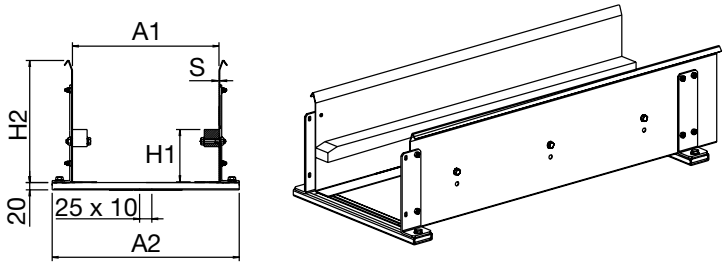
Part Number
CA329...

How to order

Chain part number	**329B109200**
Guide channel part number	**CA329B109**

Guide with Plastic Sliding Plate

Section B-B



Part Number
CP329...

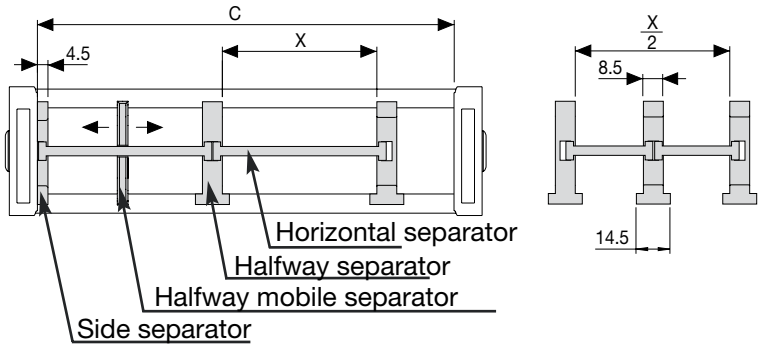
How to order

Chain part number	**329B109200**
Guide channel part number	**CP329B109**

Chain type	H1 mm	H2 mm	A1 mm	A2 mm	S mm
329	107	250	A+8	A+91	1,5
478	107	250	A+8	A+91	1,5
80PU	117	250	A+8	A+92	2

Separation System

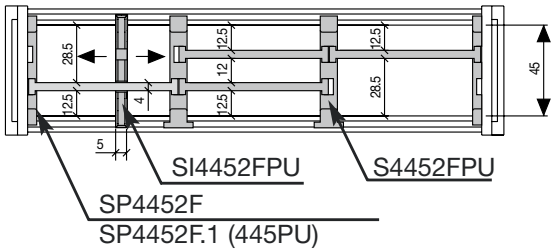
The Separation System guarantees the perfect disposal of cables inside the chain and allows an easy opening of the frame also when the chain is already harnessed. A wide range of horizontal separators is available in order to obtain many different arrangements.

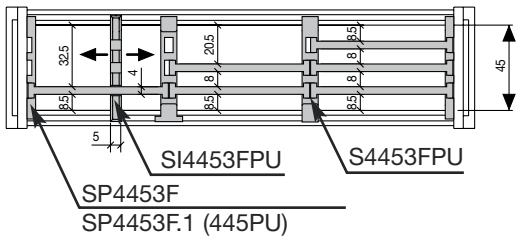


Horizontal Separator Part Number	X mm	X / 2
SO01016	16	
SO01025	25	
SO01029	29	
SO01035	35	
SO01041	41	SO01016 + S... + SO01016
SO01050	50	SO01016 + S... + SO01025
SO01059	59	SO01025 + S... + SO01025
SO01066	66	SO01029 + S... + SO01029
SO01074	74	SO01025 + S... + SO01041
SO01091	91	SO01041 + S... + SO01041
SO01108	108	SO01059 + S... + SO01041
SO01120	120	
SO01140	140	SO01091 + S... + SO01041

445MU/PU/AU

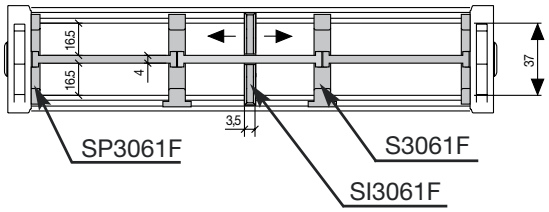
Side separator. Halfway separator. Halfway mobile separator. Horizontal separator.
Up to 4 horizontal separations.





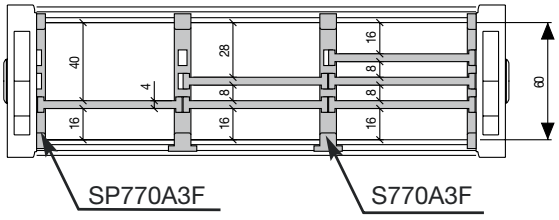
660A - 306SU/CU - 326SU

Side separator. Halfway separator. Halfway mobile separator.
Horizontal separator. Up to 2 horizontal separations.



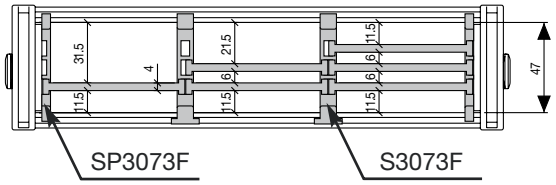
770A

Side separator. Halfway separator. Horizontal separator.
Up to 4 horizontal separations.



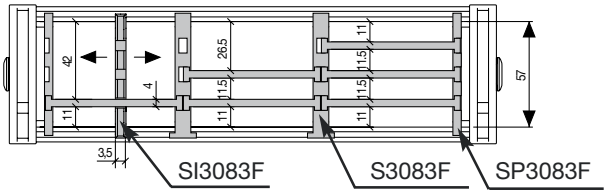
307SU

Side separator. Halfway separator. Horizontal separator. Up to 4 horizontal separations.



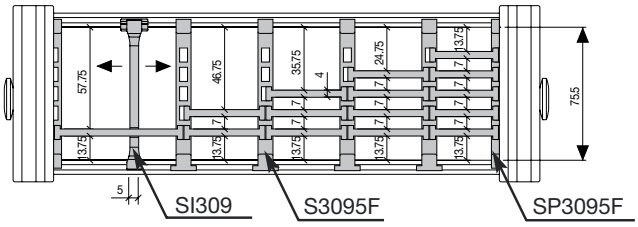
308SU/CU - 328SU

Side separator. Halfway separator. Halfway mobile separator.
Horizontal separator. Up to 4 horizontal separations.



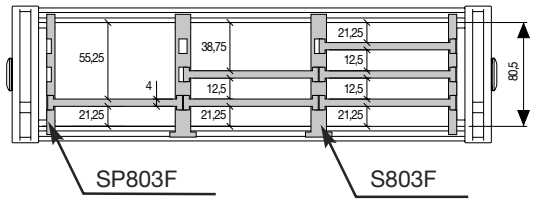
309SU/CU - 329SU/CD - 475MU/PU - 478MU/PU

Side separator. Halfway separator. Halfway mobile separator. Horizontal separator. Up to 6 horizontal separations.



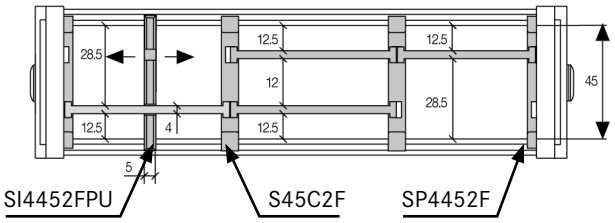
80PU

Side separator. Halfway separator. Halfway mobile separator. Horizontal separator. Up to 6 horizontal separations.



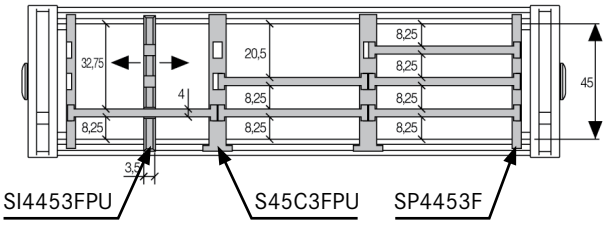
H45SC

Side separator. Halfway separator. Halfway mobile separator. Horizontal separator. Up to 4 horizontal separations.



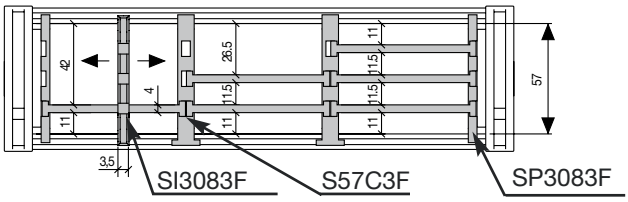
H45SC

Side separator. Halfway separator. Halfway mobile separator. Horizontal separator. Up to 4 horizontal separations.



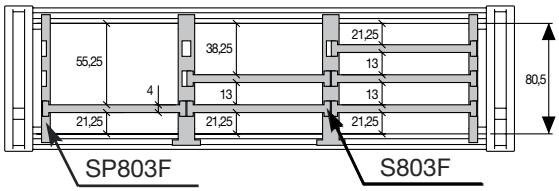
H57SC - H57PN

Side separator. Halfway separator. Halfway mobile separator. Horizontal separator. Up to 4 horizontal separations.



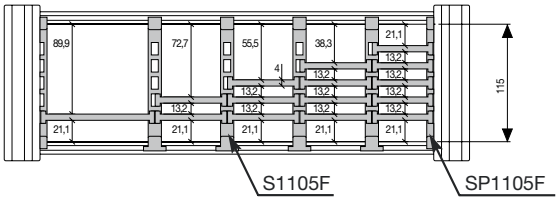
H80SC/SA - H80PC/PA

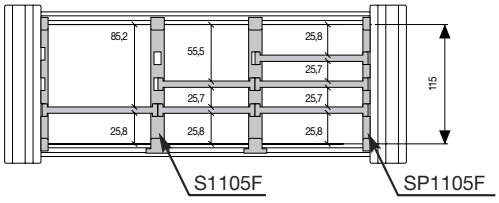
Side separator. Halfway separator. Halfway mobile separator. Horizontal separator. Up to 4 horizontal separations.



H110SC/SA - H110PC/PA

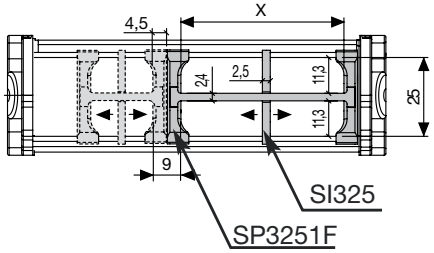
Side Separator. Halfway Separator. Horizontal Separator. Up to 4 horizontal separations.
S1105F designed to having a side of 5 slots and other side of 3 slots for many separations.





325LI/LE/PI

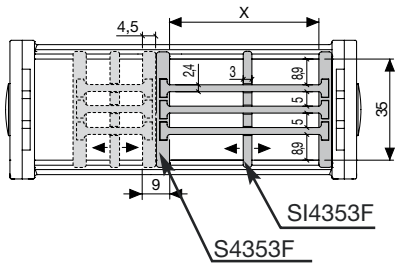
Side separator. Halfway separator. Halfway mobile separator. Horizontal separator. Up to 2 horizontal separations.



Horizontal Separator Part Number	X mm
SO11031	31
SO11052	52
SO11068	68

335LI/LE

Side separator. Halfway separator. Halfway mobile separator. Horizontal separator. Up to 4 horizontal separations.

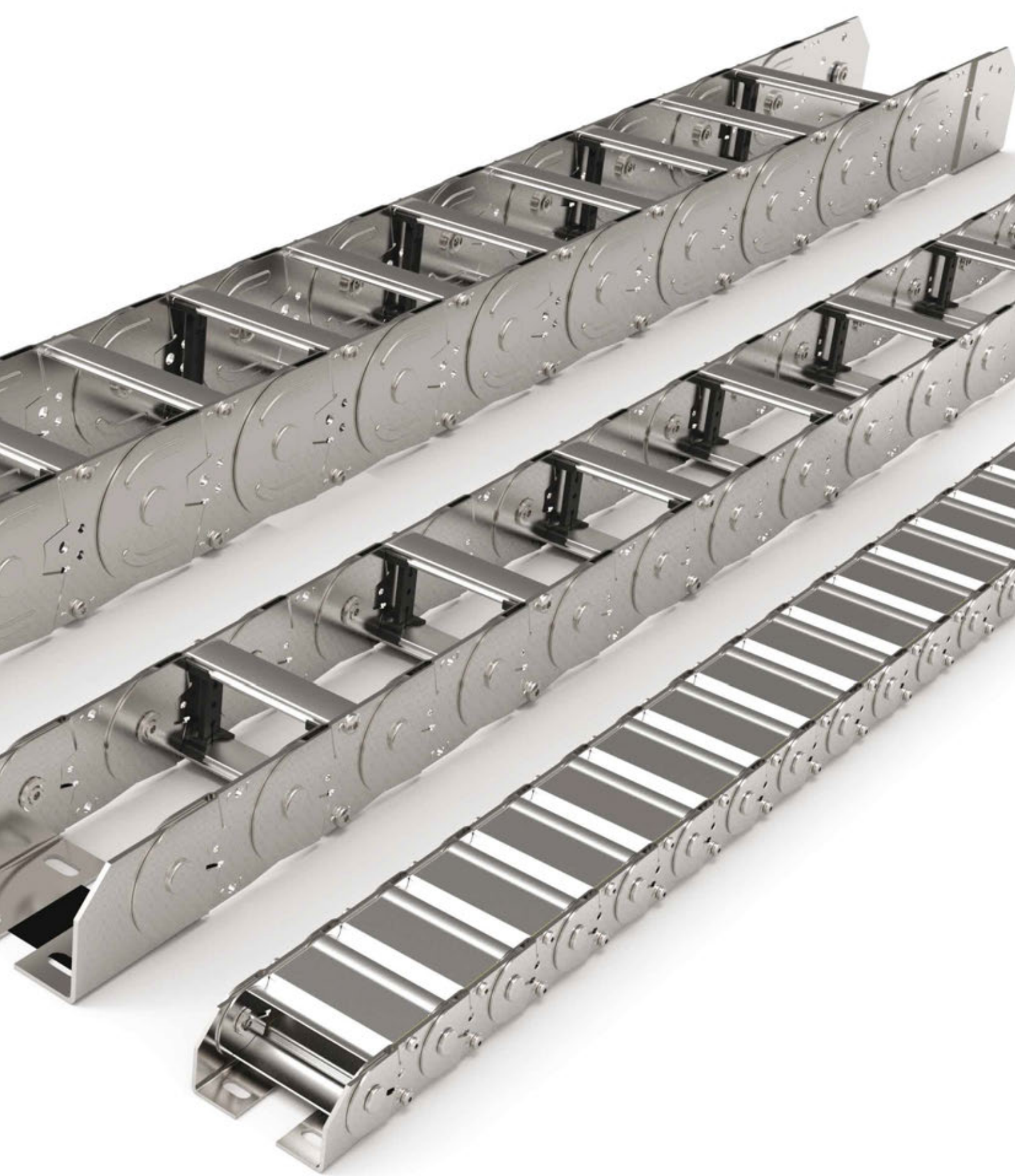


Horizontal Separator Part Number	X mm
SO11031	31
SO11052	52
SO11068	68

Steel cable chains for multiple applications

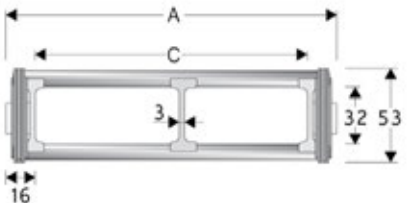
Product	Page
SILVYN® CHAIN 20LT	208
SILVYN® CHAIN 20LC	210
SILVYN® CHAIN 30LT	212
SILVYN® CHAIN 30LC	214
SILVYN® CHAIN 35LT	216
SILVYN® CHAIN 35LC	218
SILVYN® CHAIN 40LT	220
SILVYN® CHAIN 40LC	222
SILVYN® CHAIN 42LT	224
SILVYN® CHAIN 45T	226

Accessories	Page
Cable Strain Relief Systems	266



SILVYN® CHAIN 20LT

Steel cable chain with aluminium frame.



Technical data

Inner Height (D)
32 mm

Pitch (P)
75 mm

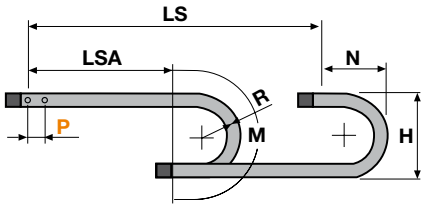
Speed
0,5 m/s

Acceleration
2 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
111	53	79	32	075-115-150-205-250-305	4.41	20LT079□□□
136	53	104	32	075-115-150-205-250-305	4.56	20LT104□□□
186	53	154	32	075-115-150-205-250-305	4.86	20LT154□□□
236	53	204	32	075-115-150-205-250-305	5.15	20LT204□□□
286	53	254	32	075-115-150-205-250-305	5.45	20LT254□□□
336	53	304	32	075-115-150-205-250-305	5.75	20LT304□□□
C+32	53	...	32	075-115-150-205-250-305	...	20LT□□□□□□

□□□ to be filled with Radius R

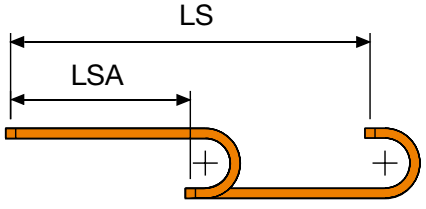
Separator	
Unassembled	Article number S20LTF
Assembled	Article number S20LTFMC

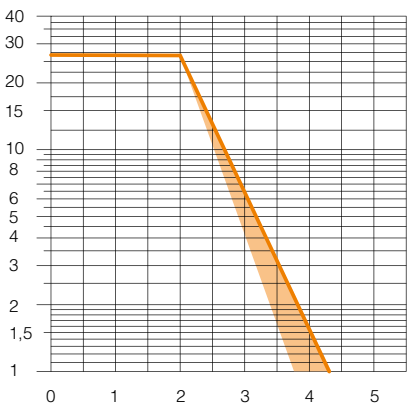


R	H	N	M	N1	M1
075	216	180	390	0	0
115	296	220	515	500	1080
150	364	255	625	675	1485
205	474	310	795	885	2005
250	564	360	940	1030	2385
305	674	410	1110	1190	2825

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

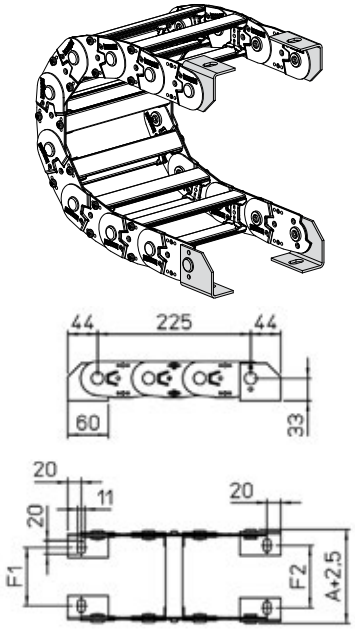
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type



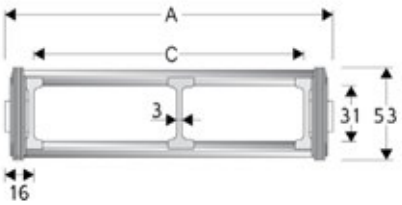
Chain Type	F1mm	F2
20LT079□□□	61	67
20LT104□□□	86	92
20LT154□□□	136	142
20LT204□□□	186	192
20LT254□□□	236	242
20LT304□□□	286	292
20LT□□□□□□	F=A-50	F=A-44

Steel Type Part Numbers
Complete Set Assembled
A20LKM□
Complete Set Unassembled
A20LK□

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 20LC

Steel cable chain with aluminium covers.



Technical data

Inner Height (D)
31 mm

Pitch (P)
75 mm

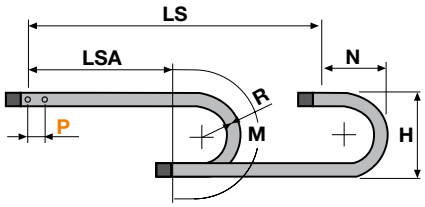
Speed
0,5 m/s

Acceleration
2 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
111	53	79	32	115-150-205-250-305	5.73	20LC079□□□
136	53	104	32	115-150-205-250-305	6.21	20LC104□□□
186	53	154	32	115-150-205-250-305	7.18	20LC154□□□
236	53	204	32	115-150-205-250-305	8.15	20LC204□□□
286	53	254	32	115-150-205-250-305	9.12	20LC254□□□
336	53	304	32	115-150-205-250-305	10.09	20LC304□□□
C+32	53	...	32	115-150-205-250-305	...	20LC□□□□□□

□□□ to be filled with Radius R

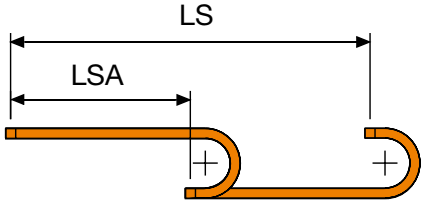
Separator	
Unassembled	Article number S20LTF
Assembled	Article number S20LTFMC

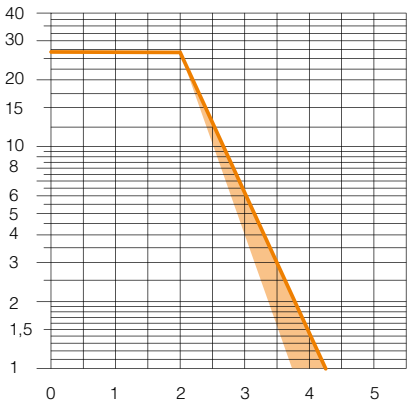


R	H	N	M	N1	M1
115	296	220	515	500	1080
150	366	255	625	675	1485
205	476	310	795	885	2005
250	566	360	940	1030	2385
305	676	410	1110	1190	2825

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

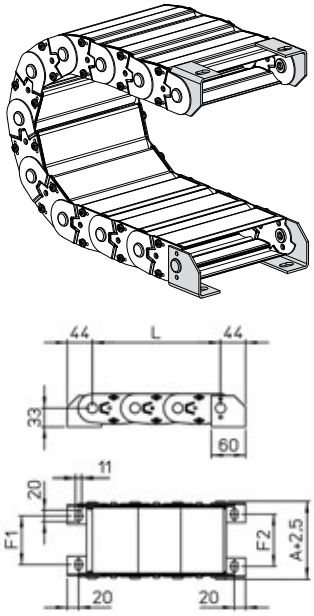
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type



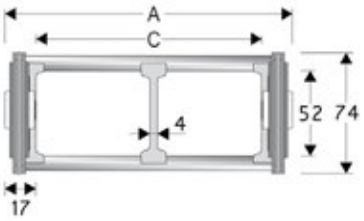
Chain Type	F1mm	F2
20LC079□□□	61	67
20LC104□□□	86	92
20LC154□□□	136	142
20LC204□□□	186	192
20LC254□□□	236	242
20LC304□□□	286	292
20LC□□□□□□	F=A-50	F=A-44

Steel Type Part Numbers
Complete Set Assembled
A20LCKM□
Complete Set Unassembled
A20LCK□

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 30LT

Steel cable chain with aluminium frame.



Technical data

Inner Height (D)
52 mm

Pitch (P)
95 mm

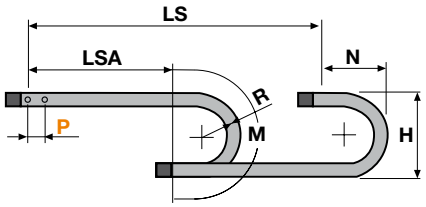
Speed
0,5 m/s

Acceleration
2 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
140	74	106	52	150-220-250-305-400-535	6.20	30LT106□□□
190	74	156	52	150-220-250-305-400-535	6.44	30LT156□□□
240	74	206	52	150-220-250-305-400-535	6.68	30LT206□□□
290	74	256	52	150-220-250-305-400-535	6.92	30LT256□□□
340	74	306	52	150-220-250-305-400-535	7.16	30LT306□□□
390	74	356	52	150-220-250-305-400-535	7.40	30LT356□□□
440	74	406	52	150-220-250-305-400-535	7.65	30LT406□□□
490	74	456	52	150-220-250-305-400-535	7.89	30LT456□□□
540	74	506	52	150-220-250-305-400-535	8.13	30LT506□□□
C+34	74	...	52	150-220-250-305-400-535	...	30LT□□□□□□

□□□ to be filled with Radius R

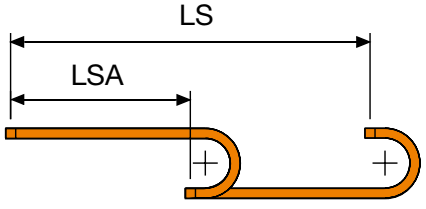
Separator	
Unassembled	Article number S308CO
Assembled	Article number S308COMC

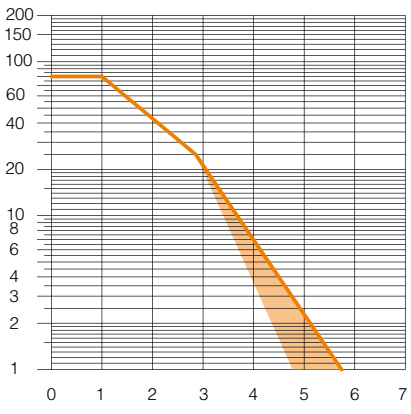


R	H	N	M	N1	M1
150	388	290	670	830	1770
220	528	360	890	1145	2515
250	588	385	980	1255	2800
305	698	440	1150	1450	3285
400	888	540	1450	1740	4065
535	1158	675	1880	2110	5105

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

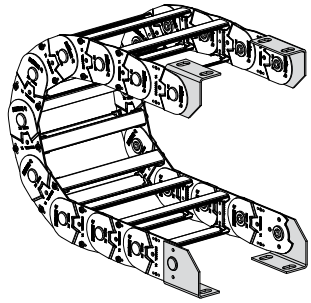
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

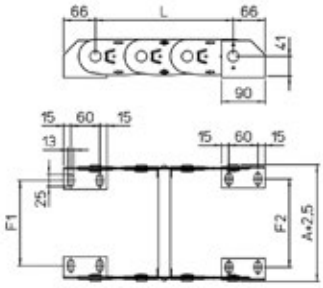
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type





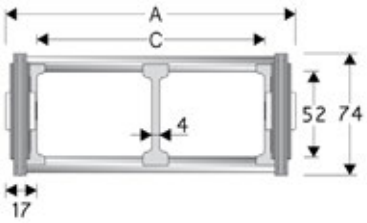
Chain Type	F1	F2mm
30LT106□□□	77	83
30LT156□□□	127	133
30LT206□□□	177	183
30LT256□□□	227	233
30LT306□□□	277	283
30LT356□□□	327	333
30LT406□□□	377	383
30LT456□□□	427	433
30LT506□□□	477	483
30LT□□□□□□	F=A-63	F=A-57

Steel Type Part Numbers
Complete Set Assembled
A30LKM□
Complete Set Unassembled
A30LK□

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 30LC

Steel cable chain with aluminium covers.



Technical data

Inner Height (D)
52 mm

Pitch (P)
95 mm

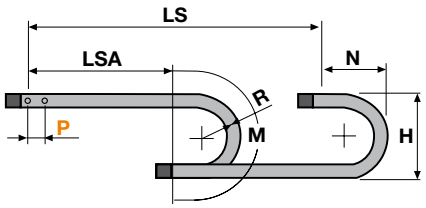
Speed
0,5 m/s

Acceleration
2 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
140	74	106	52	150-220-250-305-400-535	7.96	30LC106□□□
190	74	156	52	150-220-250-305-400-535	8.87	30LC156□□□
240	74	206	52	150-220-250-305-400-535	9.79	30LC206□□□
290	74	256	52	150-220-250-305-400-535	10.70	30LC256□□□
340	74	306	52	150-220-250-305-400-535	11.61	30LC306□□□
390	74	356	52	150-220-250-305-400-535	12.53	30LC356□□□
440	74	406	52	150-220-250-305-400-535	13.44	30LC406□□□
490	74	456	52	150-220-250-305-400-535	14.36	30LC456□□□
540	74	506	52	150-220-250-305-400-535	15.27	30LC506□□□
C+34	74	...	52	150-220-250-305-400-535	...	30LC□□□□□□

□□□ to be filled with Radius R

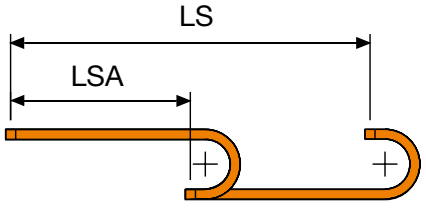
Separator	
Unassembled	Article number S308CO
Assembled	Article number S308COMC

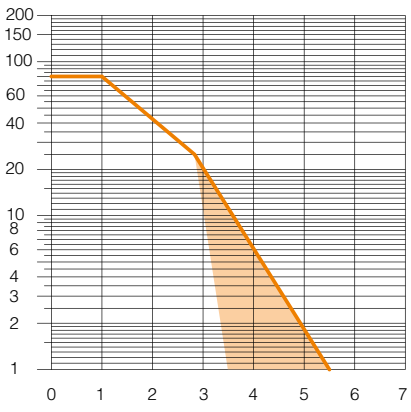


R	H	N	M	N1	M1
150	388	290	670	830	1770
220	528	360	890	1145	2515
250	588	385	980	1255	2800
305	698	440	1150	1450	3285
400	888	540	1450	1740	4065
535	1158	675	1880	2110	5105

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

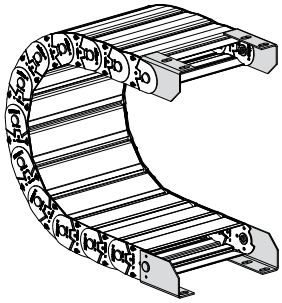
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

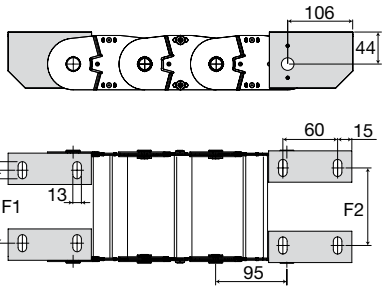
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type





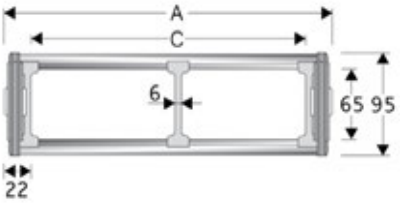
Chain Type	F1	F2mm
30LC106□□□	77	83
30LC156□□□	127	133
30LC206□□□	177	183
30LC256□□□	227	233
30LC306□□□	277	283
30LC356□□□	327	333
30LC406□□□	377	383
30LC456□□□	427	433
30LC506□□□	477	483
30LC□□□□□□	F=A-63	F=A-57

Steel Type Part Numbers
Complete Set Assembled
A30LCKM□
Complete Set Unassembled
A30LCK□

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 35LT

Steel cable chain with aluminium frame.



Technical data

Inner Height (D)
65 mm

Pitch (P)
125 mm

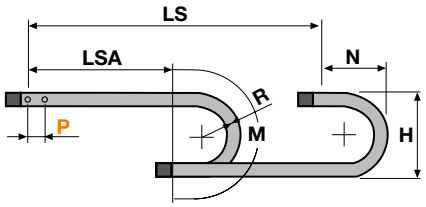
Speed
0,5 m/s

Acceleration
2 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
148	95	104	65	200-250-300-350-400-450-500-600	10.30	35LT104□□□
198	95	154	65	200-250-300-350-400-450-500-600	10.67	35LT154□□□
248	95	204	65	200-250-300-350-400-450-500-600	11.04	35LT204□□□
298	95	254	65	200-250-300-350-400-450-500-600	11.41	35LT254□□□
348	95	304	65	200-250-300-350-400-450-500-600	11.78	35LT304□□□
398	95	354	65	200-250-300-350-400-450-500-600	12.15	35LT354□□□
448	95	404	65	200-250-300-350-400-450-500-600	12.52	35LT404□□□
498	95	454	65	200-250-300-350-400-450-500-600	12.89	35LT454□□□
548	95	504	65	200-250-300-350-400-450-500-600	13.26	35LT504□□□
C+45	95	...	65	200-250-300-350-400-450-500-600	...	35LT□□□□□□

□□□ to be filled with Radius R

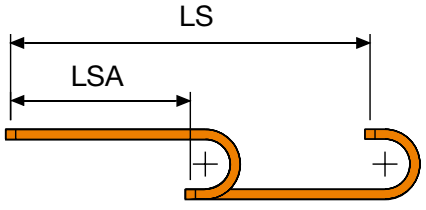
Separator	
Unassembled	Article number ST3500F
Assembled	Article number ST3500FMC

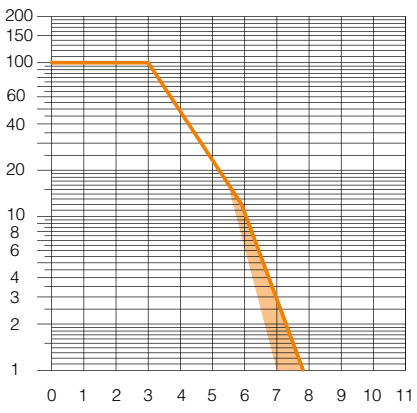


R	H	N	M	N1	M1
200	512	375	880	1100	2360
250	612	425	1040	1310	2870
300	712	480	1200	1495	3335
350	812	525	1350	1670	3775
400	912	575	1510	1825	4190
450	1012	625	1670	1975	4595
500	1112	675	1825	2120	4985
600	1312	775	2140	2390	5750

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

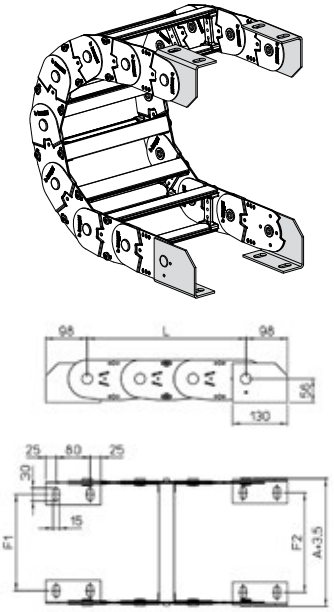
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type



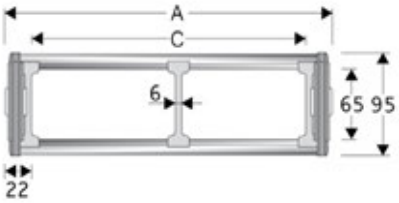
Chain Type	F1	F2
35LT104□□□	77.5	85.5
35LT154□□□	127.5	135.5
35LT204□□□	177.5	185.5
35LT254□□□	227.5	235.5
35LT304□□□	277.5	285.5
35LT354□□□	327.5	335.5
35LT404□□□	377.5	385.5
35LT454□□□	427.5	435.5
35LT504□□□	477.5	485.5
35LT□□□□□□	F=A-70,5	F=A-62,5

Steel Type Part Numbers
Complete Set Assembled
A35LKM□
Complete Set Unassembled
A35LK□

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 35LC

Steel cable chain with aluminium covers.



Technical data

Inner Height (D)
65 mm

Pitch (P)
125 mm

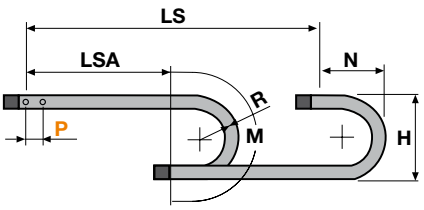
Speed
0,5 m/s

Acceleration
2 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
148	95	104	65	200-250-300-350-400-450-500-600	12.20	35LC104□□□
198	95	154	65	200-250-300-350-400-450-500-600	13.23	35LC154□□□
248	95	204	65	200-250-300-350-400-450-500-600	14.26	35LC204□□□
298	95	254	65	200-250-300-350-400-450-500-600	15.29	35LC254□□□
348	95	304	65	200-250-300-350-400-450-500-600	16.32	35LC304□□□
398	95	354	65	200-250-300-350-400-450-500-600	17.35	35LC354□□□
448	95	404	65	200-250-300-350-400-450-500-600	18.37	35LC404□□□
498	95	454	65	200-250-300-350-400-450-500-600	19.40	35LC454□□□
548	95	504	65	200-250-300-350-400-450-500-600	20.43	35LC504□□□
C+45	95	...	65	200-250-300-350-400-450-500-600	...	35LC□□□□□□

□□□ to be filled with Radius R

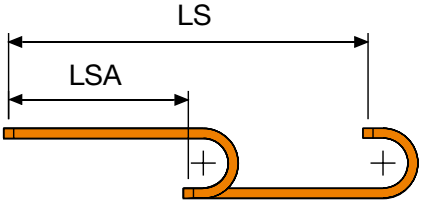
Separator	
Unassembled	Article number ST3500F
Assembled	Article number ST3500FMC

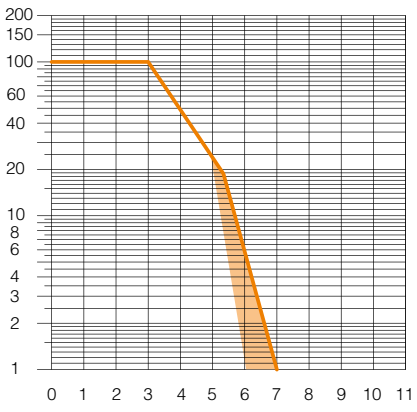


R	H	N	M	N1	M1
200	512	375	880	1100	2360
250	612	425	1040	1310	2870
300	712	480	1200	1495	3335
350	812	525	1350	1670	3775
400	912	575	1510	1825	4190
450	1012	625	1670	1975	4595
500	1112	675	1825	2120	4985
600	1312	775	2140	2390	5750

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

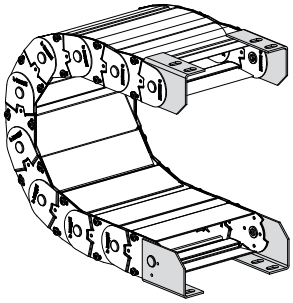
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

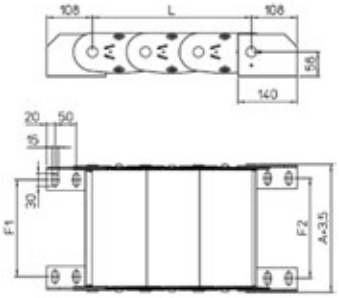
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type





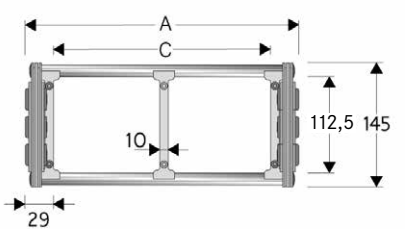
Chain Type	F1	F2
35LC104□□□	77.5	85.5
35LC154□□□	127.5	135.5
35LC204□□□	177.5	185.5
35LC254□□□	227.5	235.5
35LC304□□□	277.5	285.5
35LC354□□□	327.5	335.5
35LC404□□□	377.5	385.5
35LC454□□□	427.5	435.5
35LC504□□□	477.5	485.5
35LC□□□□□□	F=A-70,5	F=A-62,5

Steel Type Part Numbers
Complete Set Assembled
A35LCKM□
Complete Set Unassembled
A35LCK□

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 40LT

Steel cable chain with aluminium frame.



Technical data

Inner Height (D)
112,5 mm

Pitch (P)
180 mm

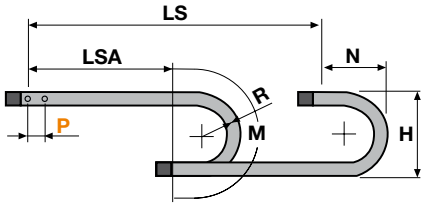
Speed
0,5 m/s

Acceleration
2 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
208	145	150	112.5	250-300-350-400-450-500-550-600-700-750-850	19.30	40LT150□□□
258	145	200	112.5	250-300-350-400-450-500-550-600-700-750-850	19.76	40LT200□□□
308	145	250	112.5	250-300-350-400-450-500-550-600-700-750-850	20.22	40LT250□□□
358	145	300	112.5	250-300-350-400-450-500-550-600-700-750-850	20.00	40LT300□□□
458	145	400	112.5	250-300-350-400-450-500-550-600-700-750-850	21.00	40LT400□□□
558	145	500	112.5	250-300-350-400-450-500-550-600-700-750-850	22.00	40LT500□□□
C+58	145	...	112.5	250-300-350-400-450-500-550-600-700-750-850	....	40LT□□□□□□

□□□ to be filled with Radius R

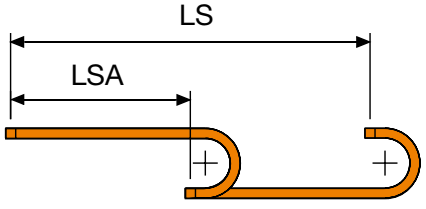
Separator	
Unassembled	Article number S310TCF9
Assembled	Article number S310TCF9MC

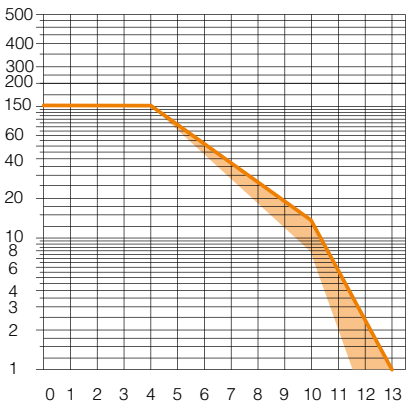


R	H	N	M	N1	M1
250	664	510	1150	1545	3285
300	764	555	1305	1755	3790
350	864	605	1460	1950	4265
400	964	655	1620	2125	4715
450	1064	710	1780	2295	5150
500	1164	755	1930	2455	5570
550	1264	805	2090	2605	5975
600	1364	855	2245	2755	6375
700	1564	955	2560	3035	7155
750	1664	1010	2720	3170	7535
850	1864	1105	3030	3430	8280

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

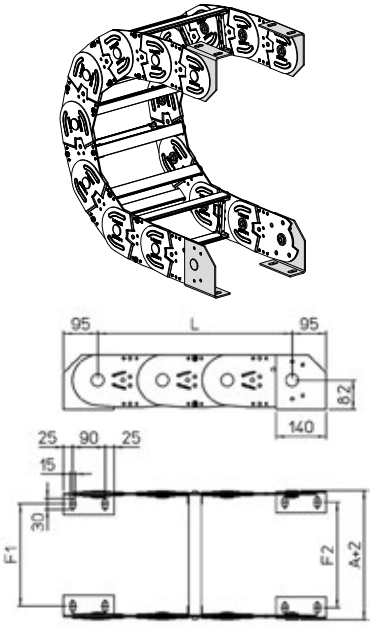
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type



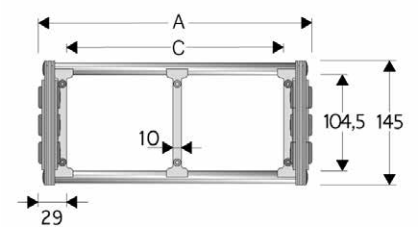
Chain Type	F1	F2
40LT150□□□	135	144
40LT200□□□	185	194
40LT250□□□	235	244
40LT300□□□	285	294
40LT400□□□	385	394
40LT500□□□	485	494
40LT□□□□□□	F=A-73	F=A-64

Steel Type Part Numbers
Complete Set Assembled
A40LKM□
Complete Set Unassembled
A40LK□

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 40LC

Steel cable chain with aluminium covers.



Technical data

Inner Height (D)
104,5 mm

Pitch (P)
180 mm

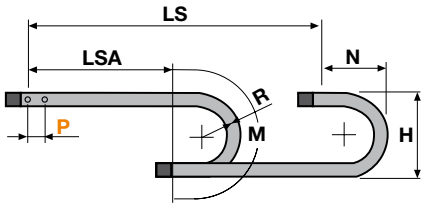
Speed
0,5 m/s

Acceleration
2 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
208	145	150	104.5	250-300-350-400-450-500-550-600-700-750-850	22.00	40LC150□□□
258	145	200	104.5	250-300-350-400-450-500-550-600-700-750-850	23.00	40LC200□□□
308	145	250	104.5	250-300-350-400-450-500-550-600-700-750-850	25.00	40LC250□□□
358	145	300	104.5	250-300-350-400-450-500-550-600-700-750-850	26.00	40LC300□□□
458	145	400	104.5	250-300-350-400-450-500-550-600-700-750-850	29.00	40LC400□□□
558	145	500	104.5	250-300-350-400-450-500-550-600-700-750-850	31.00	40LC500□□□
C+58	145	...	104.5	250-300-350-400-450-500-550-600-700-750-850	...	40LC□□□□□□

□□□ to be filled with Radius R

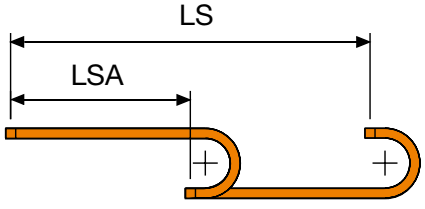
Separator	
Unassembled	Article number S310TCF9
Assembled	Article number S310TCF9MC

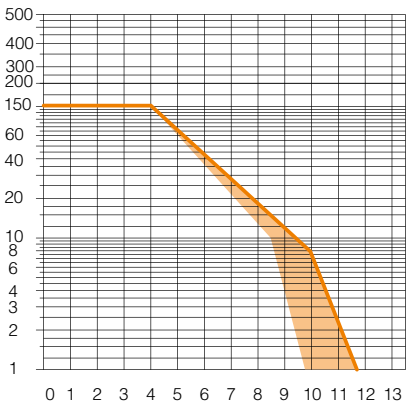


R	H	N	M	N1	M1
250	650	510	1150	1545	3285
300	750	555	1305	1755	3790
350	850	605	1460	1950	4265
400	950	655	1620	2125	4715
450	1050	710	1780	2295	5150
500	1150	755	1930	2455	5570
550	1250	805	2090	2605	5975
600	1350	855	2245	2755	6375
700	1550	955	2560	3035	7155
750	1650	1010	2720	3170	7535
850	1870	1105	3030	3430	8280

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

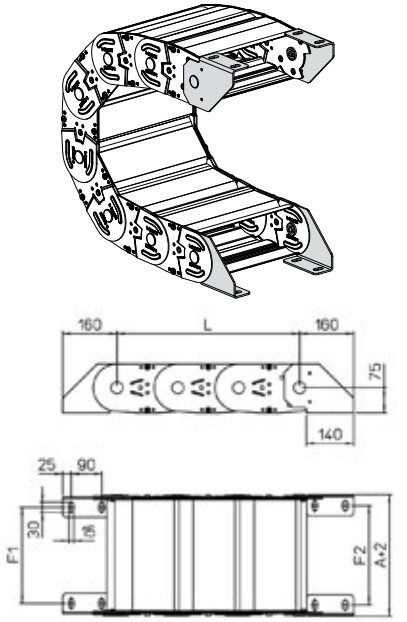
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type



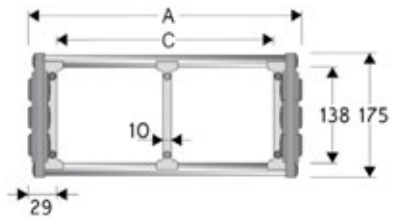
Chain Type	F1	F2
40LC150□□□	135	144
40LC200□□□	185	194
40LC250□□□	235	244
40LC300□□□	285	294
40LC400□□□	385	394
40LC500□□□	485	494
40LC□□□□□□	F=A-73	F=A-64

Steel Type Part Numbers
Complete Set Assembled
A40LCKM□
Complete Set Unassembled
A40LCK□

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 42LT

Steel cable chain with aluminium frame.



Technical data

Inner Height (D)
138 mm

Pitch (P)
180 mm

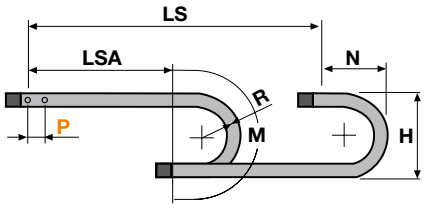
Speed
0,5 m/s

Acceleration
2 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
208	175	150	138	250-300-350-400-450-500-550-600-700-750-850	19.30	42LT150□□□
258	175	200	138	250-300-350-400-450-500-550-600-700-750-850	19.76	42LT200□□□
308	175	250	138	250-300-350-400-450-500-550-600-700-750-850	20.22	42LT250□□□
358	175	300	138	250-300-350-400-450-500-550-600-700-750-850	20.68	42LT300□□□
458	175	400	138	250-300-350-400-450-500-550-600-700-750-850	21.61	42LT400□□□
558	175	500	138	250-300-350-400-450-500-550-600-700-750-850	22.53	42LT500□□□
C+58	175	...	138	250-300-350-400-450-500-550-600-700-750-850	...	42LT□□□□□□

□□□ to be filled with Radius R

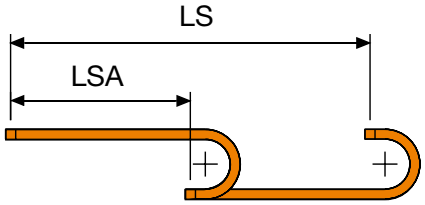
Separator	
Unassembled	Article number ST42LF9
Assembled	Article number ST42LF9MC

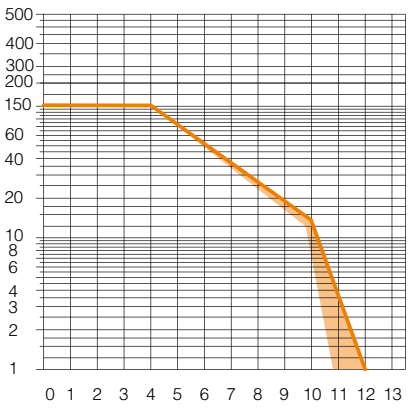


R	H	N	M	N1	M1
250	720	510	1150	1545	3285
300	820	555	1305	1755	3790
350	920	605	1460	1950	4265
400	1020	655	1620	2125	4715
450	1120	710	1780	2295	5150
500	1220	755	1930	2455	5570
550	1320	805	2090	2605	5975
600	1420	855	2245	2755	6375
700	1620	955	2560	3035	7155
750	1720	1010	2720	3170	7535
850	1920	1105	3030	3430	8280

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

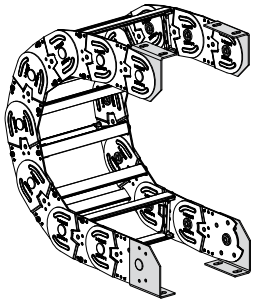
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

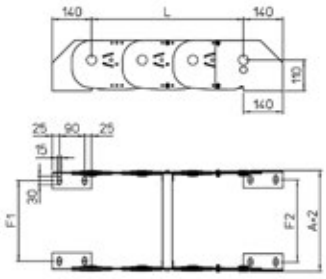
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type





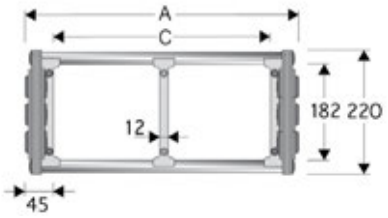
Chain Type	F1	F2
42LT150□□□	135	144
42LT200□□□	185	194
42LT250□□□	235	244
42LT300□□□	285	294
42LT400□□□	385	394
42LT500□□□	485	494
42LT□□□□□□	F=A-73	F=A-64

Steel Type Part Numbers
Complete Set Assembled
A42LKM□
Complete Set Unassembled
A42LK□

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 45T

Steel cable chain with aluminium frame.



Technical data

Inner Height (D)
182 mm

Pitch (P)
250 mm

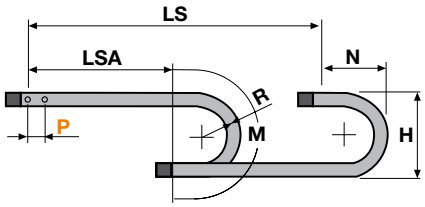
Speed
0,5 m/s

Acceleration
2 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
390	220	300	182	400-600-800-1000-1250-1500	40.97	45T300□□□
440	220	350	182	400-600-800-1000-1250-1500	41.31	45T350□□□
490	220	400	182	400-600-800-1000-1250-1500	41.64	45T400□□□
540	220	450	182	400-600-800-1000-1250-1500	41.97	45T450□□□
590	220	500	182	400-600-800-1000-1250-1500	42.30	45T500□□□
690	220	600	182	400-600-800-1000-1250-1500	42.97	45T600□□□
C+90	220	...	182	400-600-800-1000-1250-1500	...	45T□□□□□□

□□□ to be filled with Radius R

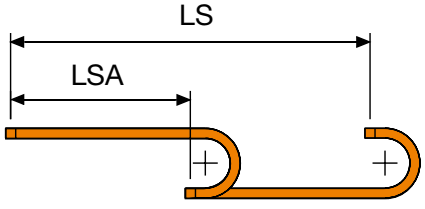
Separator	
Unassembled	Article number ST4500F1C
Assembled	Article number ST4500F1CMC

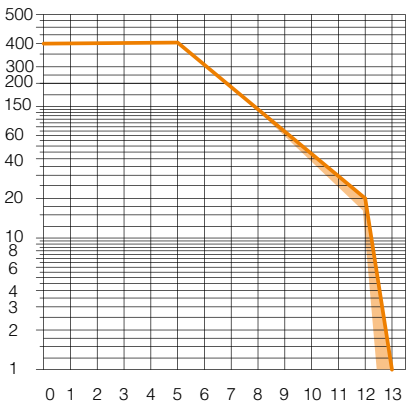


R	H	N	M
400	1060	770	1760
600	1460	970	2390
800	1860	1170	3020
1000	2260	1370	3650
1250	2760	1620	4430
1500	3260	1870	5220

L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)





Self-Supporting Capacity Diagram

The maximum length of the self-supporting capacity LSA in relationship to the weight of the cables and hoses contained per metre.

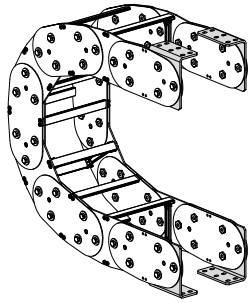
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

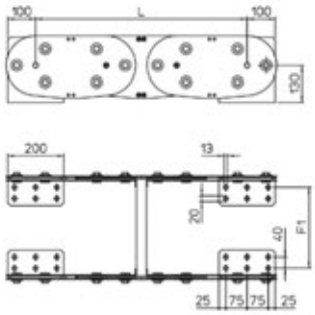
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type





Chain Type	F1
45T300□□□	285
45T350□□□	335
45T400□□□	385
45T450□□□	435
45T500□□□	485
45T600□□□	585
45T□□□□□□	F=A-105

Steel Type Part Numbers
Complete Set Assembled
A4500KM□
Complete Set Unassembled
A4500K□

□□□ Inner width (C)
□ Possible mounting positions: 1/2/3 (acc. to page 33)

Steel cable chains for sliding applications

Product	Page
SILVYN® CHAIN 20LPT	230
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SILVYN® CHAIN 30LPC	236
SILVYN® CHAIN 35LPT	238
SILVYN® CHAIN 35LPC	240
SILVYN® CHAIN 40LPT	242
SILVYN® CHAIN 40LPC	244
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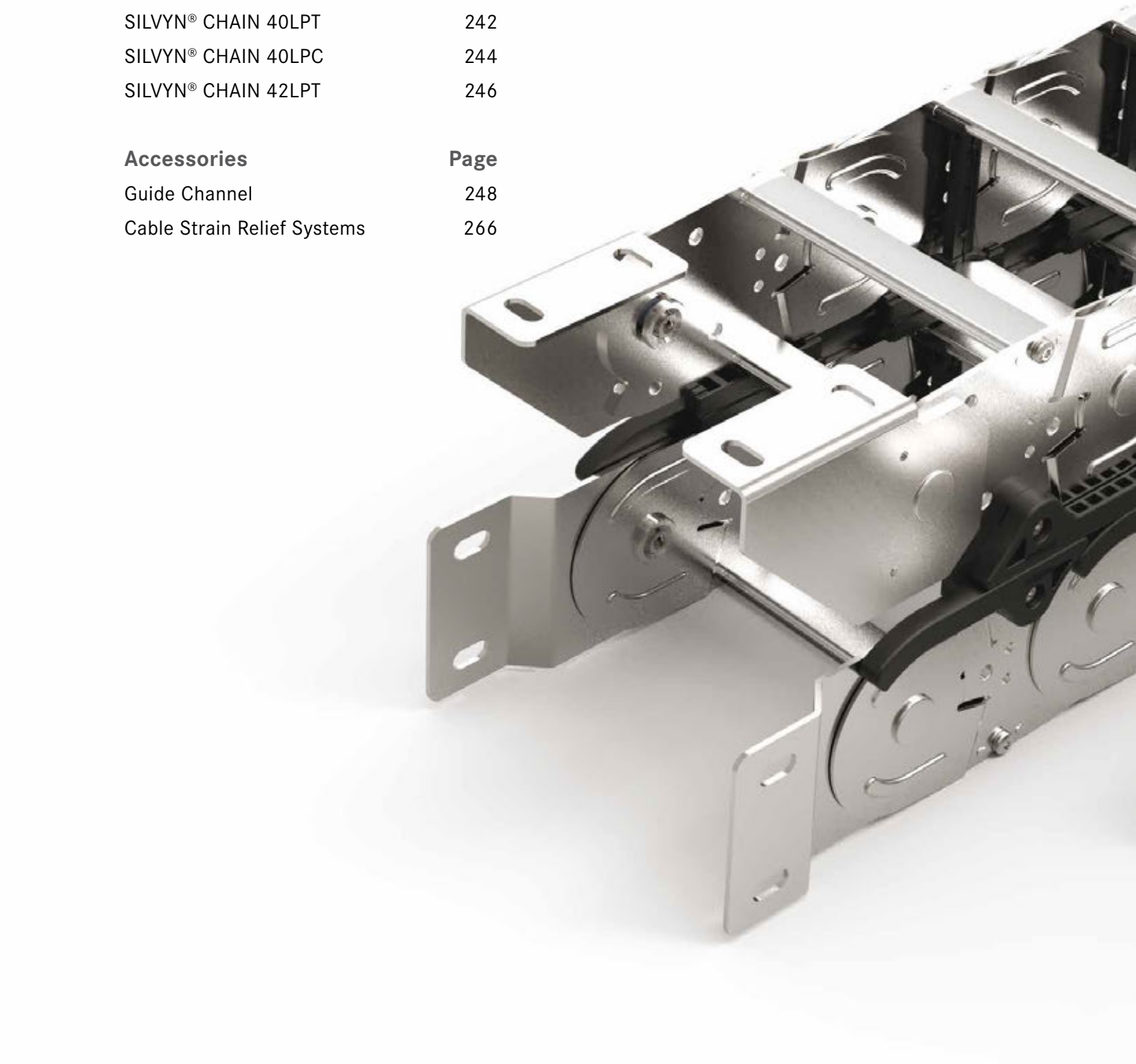
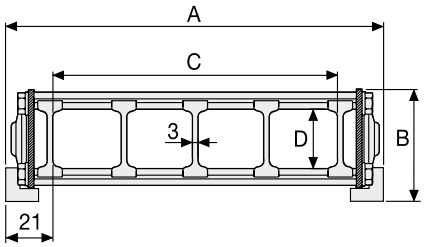


SILVYN® CHAIN 20LPT

Steel cable chain with aluminium frame.



Technical data

Inner Height (D)
32 mm

Pitch (P)
75 mm

Height Moving Point (W)
230 mm

Speed
2 m/s

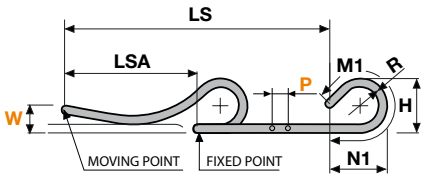
Acceleration
2 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
121	58.5	79	32	115-150-205-250-305	4.82	20LPT079□□□
146	58.5	104	32	115-150-205-250-305	4.97	20LPT104□□□
196	58.5	154	32	115-150-205-250-305	5.27	20LPT154□□□
246	58.5	204	32	115-150-205-250-305	5.57	20LPT204□□□
296	58.5	254	32	115-150-205-250-305	5.87	20LPT254□□□
346	58.5	304	32	115-150-205-250-305	6.17	20LPT304□□□

□□□ to be filled with Radius R

Separator	
Unassembled	Article number S20LTF
Assembled	Article number S20LTFMC

MCI: chain opening outer radius
MCE: chain opening inner radius



R	H	N1	M1
115	296	500	1080
150	366	675	1485
205	476	885	2005
250	566	1030	2385
305	676	1190	2825

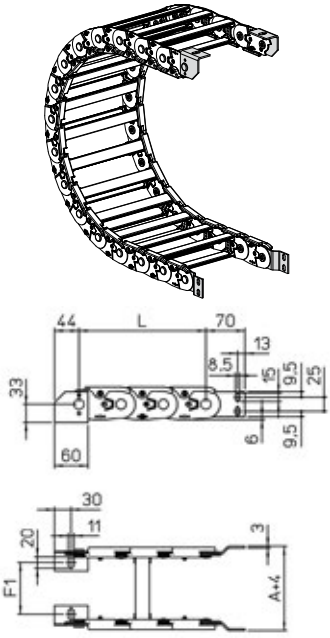
L=LSA + M or M1

Length of chain (L)=
Half travel distance LSA
plus length of curve (M)
or (M1)

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type



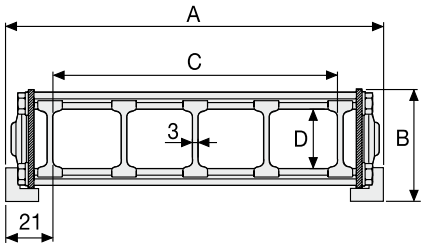
Chain Type	F1
20LPT079□□□	67
20LPT104□□□	92
20LPT154□□□	142
20LPT204□□□	192
20LPT254□□□	242
20LPT304□□□	292
20LPT□□□□□□	A-54

Steel Type Part Numbers
Complete Set Assembled
A20LPKM
Complete Set Unassembled
A20LPK

□□□ Inner width (C)

SILVYN® CHAIN 20LPC

Steel cable chain with aluminium covers.



Technical data

Inner Height (D)
31 mm

Pitch (P)
75 mm

Height Moving Point (W)
230 mm

Speed
2 m/s

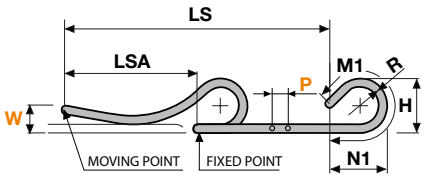
Acceleration
2 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
121	58.5	79	31	115-150-205-250-305	6.59	20LPC079□□□
146	58.5	104	31	115-150-205-250-305	7.08	20LPC104□□□
196	58.5	154	31	115-150-205-250-305	8.05	20LPC154□□□
246	58.5	204	31	115-150-205-250-305	9.02	20LPC204□□□
296	58.5	254	31	115-150-205-250-305	9.99	20LPC254□□□
346	58.5	304	31	115-150-205-250-305	10.96	20LPC304□□□

□□□ to be filled with Radius R

Separator	
Unassembled	Article number S20LTF
Assembled	Article number S20LTFMC

MCI: chain opening outer radius
MCE: chain opening inner radius



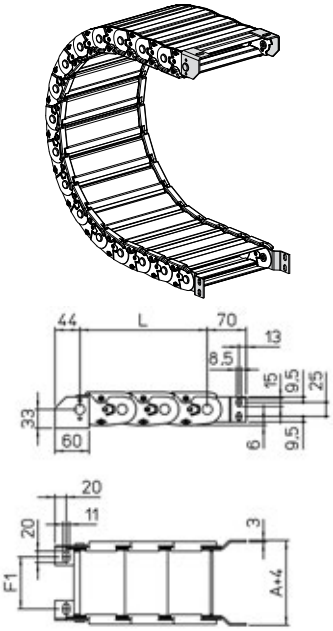
R	H	N1	M1
115	296	500	1080
150	366	675	1485
205	476	885	2005
250	566	1030	2385
305	676	1190	2825

L=LSA + M or M1
Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type



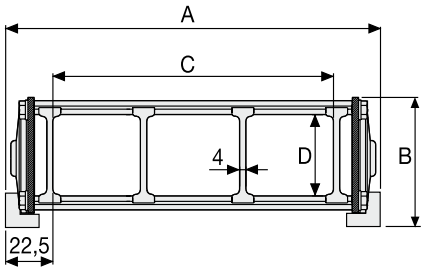
Chain Type	F1
20LPC079□□□	67
20LPC104□□□	92
20LPC154□□□	142
20LPC204□□□	192
20LPC254□□□	242
20LPC304□□□	292
20LPC□□□□□□	A-54

Steel Type Part Numbers
Complete Set Assembled
A20LPCKM
Complete Set Unassembled
A20LPCK

□□□ Inner width (C)

SILVYN® CHAIN 30LPT

Steel cable chain with aluminium frame.



Technical data

Inner Height (D)
52 mm

Pitch (P)
95 mm

Height Moving Point (W)
250 mm

Speed
2 m/s

Acceleration
2 m/s²

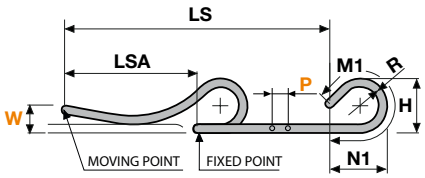
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
151	81.5	106	52	150-220-250-305-400-535	6.71	30LPT106□□□
201	81.5	156	52	150-220-250-305-400-535	6.95	30LPT156□□□
251	81.5	206	52	150-220-250-305-400-535	7.20	30LPT206□□□
301	81.5	256	52	150-220-250-305-400-535	7.44	30LPT256□□□
351	81.5	306	52	150-220-250-305-400-535	7.68	30LPT306□□□
401	81.5	356	52	150-220-250-305-400-535	7.92	30LPT356□□□
451	81.5	406	52	150-220-250-305-400-535	8.16	30LPT406□□□
501	81.5	456	52	150-220-250-305-400-535	8.41	30LPT456□□□
551	81.5	506	52	150-220-250-305-400-535	8.65	30LPT506□□□

□□□ to be filled with Radius R

Separator

Unassembled	Article number S308CO
Assembled	Article number S308COMC

MCI: chain opening outer radius
MCE: chain opening inner radius



R	H	N1	M1
150	388	830	1770
220	528	1145	2515
250	588	1255	2800
305	698	1450	3285
400	888	1740	4065
535	1158	2110	5105

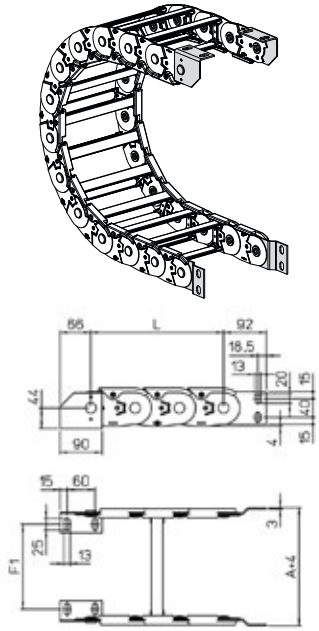
L=LSA + M or M1

Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type



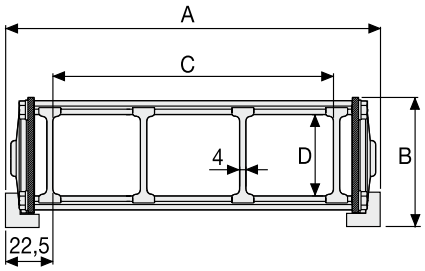
Chain Type	F1
30LPT106□□□	83
30LPT156□□□	133
30LPT206□□□	183
30LPT256□□□	233
30LPT306□□□	283
30LPT356□□□	333
30LPT406□□□	383
30LPT456□□□	433
30LPT506□□□	483
30LPT□□□□□□	A-68

Steel Type Part Numbers
Complete Set Assembled
A30LPKM
Complete Set Unassembled
A30LPK

□□□ Inner width (C)

SILVYN® CHAIN 30LPC

Steel cable chain with aluminium covers.



Technical data

Inner Height (D)
52 mm

Pitch (P)
95 mm

Height Moving Point (W)
250 mm

Speed
2 m/s

Acceleration
2 m/s²

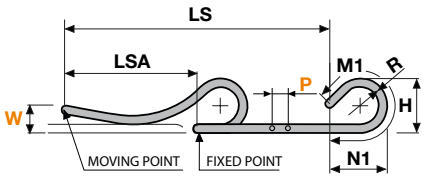
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
151	81.5	106	52	150-220-250-305-400-535	8.38	30LPC106□□□
201	81.5	156	52	150-220-250-305-400-535	9.30	30LPC156□□□
251	81.5	206	52	150-220-250-305-400-535	10.21	30LPC206□□□
301	81.5	256	52	150-220-250-305-400-535	11.13	30LPC256□□□
351	81.5	306	52	150-220-250-305-400-535	12.04	30LPC306□□□
401	81.5	356	52	150-220-250-305-400-535	12.95	30LPC356□□□
451	81.5	406	52	150-220-250-305-400-535	13.87	30LPC406□□□
501	81.5	456	52	150-220-250-305-400-535	14.79	30LPC456□□□
551	81.5	506	52	150-220-250-305-400-535	15.70	30LPC506□□□

□□□ to be filled with Radius R

Separator

Unassembled	Article number S308CO
Assembled	Article number S308COMC

MCI: chain opening outer radius
MCE: chain opening inner radius



R	H	N1	M1
150	388	830	1770
220	528	1145	2515
250	588	1255	2800
305	698	1450	3285
400	888	1740	4065
535	1158	2110	5105

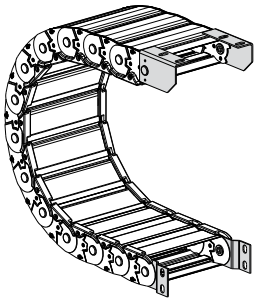
L=LSA + M or M1

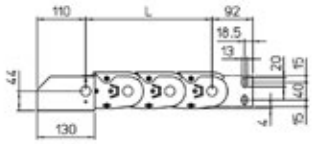
Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

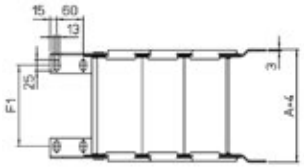
End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type







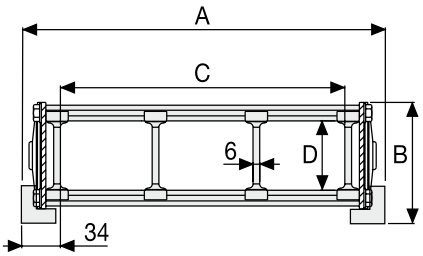
Chain Type	F1
30LPC106□□□	83
30LPC156□□□	133
30LPC206□□□	183
30LPC256□□□	233
30LPC306□□□	283
30LPC356□□□	333
30LPC406□□□	383
30LPC456□□□	433
30LPC506□□□	483
30LPC□□□□□□	A-68

Steel Type Part Numbers
Complete Set Assembled
A30LPCKM
Complete Set Unassembled
A30LPCK

□□□ Inner width (C)

SILVYN® CHAIN 35LPT

Steel cable chain with aluminium frame.



Technical data

Inner Height (D)
65 mm

Pitch (P)
125 mm

Height Moving Point (W)
300 mm

Speed
2 m/s

Acceleration
2 m/s²

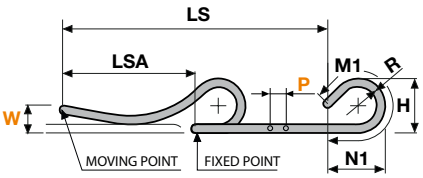
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
172	107	104	65	200-250-300-350-400-450	11.49	35LPT104□□□
222	107	154	65	200-250-300-350-400-450	11.86	35LPT154□□□
272	107	204	65	200-250-300-350-400-450	12.23	35LPT204□□□
322	107	254	65	200-250-300-350-400-450	12.60	35LPT254□□□
372	107	304	65	200-250-300-350-400-450	12.97	35LPT304□□□
422	107	354	65	200-250-300-350-400-450	13.33	35LPT354□□□
472	107	404	65	200-250-300-350-400-450	13.70	35LPT404□□□
522	107	454	65	200-250-300-350-400-450	14.07	35LPT454□□□
572	107	504	65	200-250-300-350-400-450	14.44	35LPT504□□□

□□□ to be filled with Radius R

Separator

Unassembled	Article number ST3500F
Assembled	Article number ST3500FMC

MCI: chain opening outer radius
MCE: chain opening inner radius



R	H	N1	M1
200	512	1100	2360
250	612	1310	2870
300	712	1495	3335
350	812	1670	3775
400	912	1825	4190
450	1012	1975	4595
500	1112	2120	4985
600	1312	2390	5750

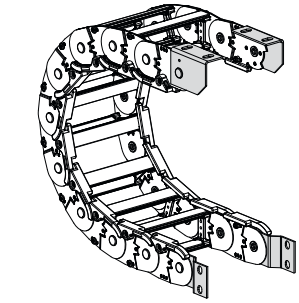
L=LSA + M or M1

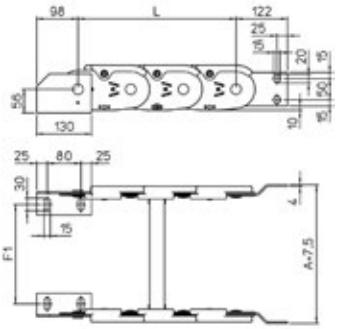
Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type





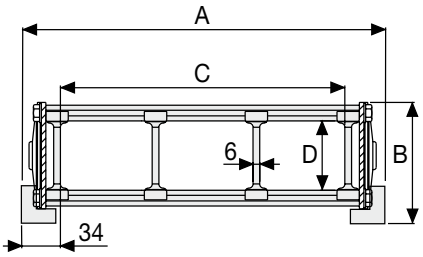
Chain Type	F1
35LPT104□□□	86
35LPT154□□□	136
35LPT204□□□	186
35LPT254□□□	236
35LPT304□□□	286
35LPT354□□□	336
35LPT404□□□	386
35LPT454□□□	436
35LPT504□□□	486
35LPT□□□□□□	A-86

Steel Type Part Numbers
Complete Set Assembled
A35LPKM
Complete Set Unassembled
A35LPK

□□□ Inner width (C)

SILVYN® CHAIN 35LPC

Steel cable chain with aluminium covers.



Technical data

Inner Height (D)
65 mm

Pitch (P)
125 mm

Height Moving Point (W)
300 mm

Speed
2 m/s

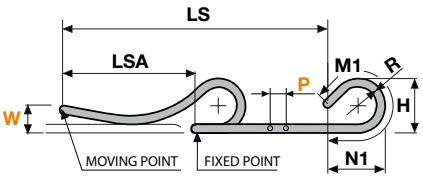
Acceleration
2 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
172	107	104	65	200-250-300-350-400-450	13.26	35LPC104□□□
222	107	154	65	200-250-300-350-400-450	14.29	35LPC154□□□
272	107	204	65	200-250-300-350-400-450	15.32	35LPC204□□□
322	107	254	65	200-250-300-350-400-450	16.35	35LPC254□□□
372	107	304	65	200-250-300-350-400-450	17.38	35LPC304□□□
422	107	354	65	200-250-300-350-400-450	18.41	35LPC354□□□
472	107	404	65	200-250-300-350-400-450	19.44	35LPC404□□□
522	107	454	65	200-250-300-350-400-450	20.46	35LPC454□□□
572	107	504	65	200-250-300-350-400-450	21.49	35LPC504□□□

□□□ to be filled with Radius R

Separator	
Unassembled	Article number ST3500F
Assembled	Article number ST3500FMC

MCI: chain opening outer radius
MCE: chain opening inner radius



R	H	N1	M1
200	512	1100	2360
250	612	1310	2870
300	712	1495	3335
350	812	1670	3775
400	912	1825	4190
450	1012	1975	4595
500	1112	2120	4985
600	1312	2390	5750

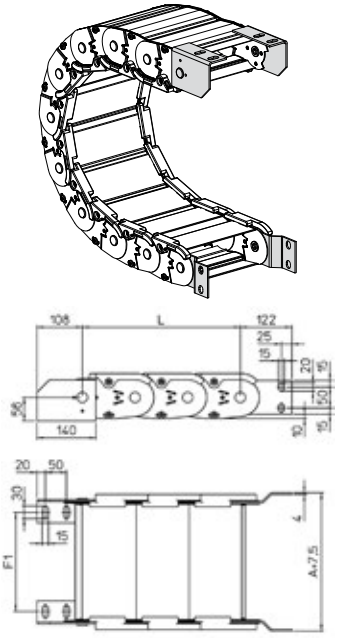
L=LSA + M or M1

Length of chain (L)=
Half travel distance LSA
plus length of curve (M)
or (M1)

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type



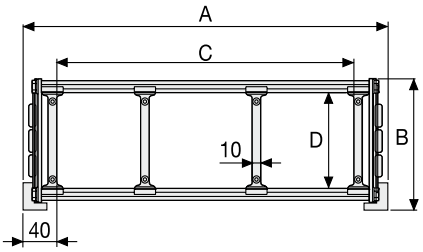
Chain Type	F1
35LPC104□□□	86
35LPC154□□□	136
35LPC204□□□	186
35LPC254□□□	236
35LPC304□□□	286
35LPC354□□□	336
35LPC404□□□	386
35LPC454□□□	436
35LPC504□□□	486
35LPC□□□□□□	A-86

Steel Type Part Numbers
Complete Set Assembled
A35LPCKM
Complete Set Unassembled
A35LPCK

□□□ Inner width (C)

SILVYN® CHAIN 40LPT

Steel cable chain with aluminium frame.



Technical data

Inner Height (D)
112,5 mm

Pitch (P)
180 mm

Height Moving Point (W)
350 mm

Speed
2 m/s

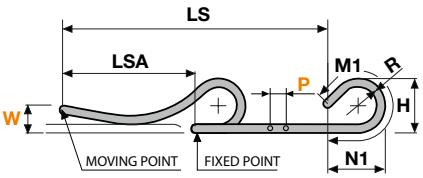
Acceleration
2 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
230	161.5	150	112.5	250-300-350-400-450-500-550-600-700-750-850	20.71	40LPT150□□□
280	161.5	200	112.5	250-300-350-400-450-500-550-600-700-750-850	21.17	40LPT200□□□
330	161.5	250	112.5	250-300-350-400-450-500-550-600-700-750-850	21.63	40LPT250□□□
380	161.5	300	112.5	250-300-350-400-450-500-550-600-700-750-850	22.09	40LPT300□□□
480	161.5	400	112.5	250-300-350-400-450-500-550-600-700-750-850	23.02	40LPT400□□□
580	161.5	500	112.5	250-300-350-400-450-500-550-600-700-750-850	23.94	40LPT500□□□

□□□ to be filled with Radius R

Separator	
Unassembled	Article number S310TCF9
Assembled	Article number S310TCF9MC

MCI: chain opening outer radius
MCE: chain opening inner radius



R	H	N1	M1
250	664	1545	3285
300	764	1755	3790
350	864	1950	4265
400	964	2125	4715
450	1064	2295	5150
500	1164	2455	5570
550	1264	2605	5975
600	1364	2755	6375
700	1564	3035	7155
750	1664	3170	7535
850	1864	3430	8280

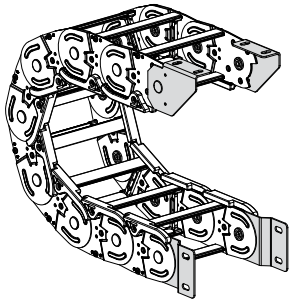
L=LSA + M or M1

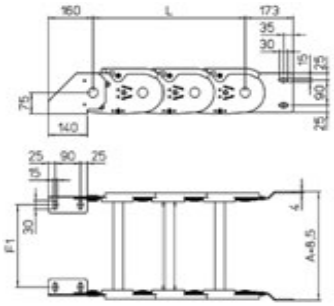
Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type





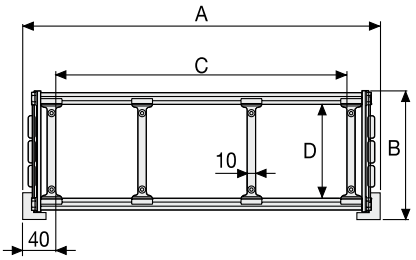
Chain Type	F1
40LPT150□□□	144
40LPT200□□□	194
40LPT250□□□	244
40LPT300□□□	294
40LPT400□□□	394
40LPT500□□□	494
40LPT□□□□□□	A-86

Steel Type Part Numbers
Complete Set Assembled
A40LPKM
Complete Set Unassembled
A40LPK

□□□ Inner width (C)

SILVYN® CHAIN 40LPC

Steel cable chain with aluminium covers.



Technical data

Inner Height (D)
104,5 mm

Pitch (P)
180 mm

Height Moving Point (W)
350 mm

Speed
2 m/s

Acceleration
2 m/s²

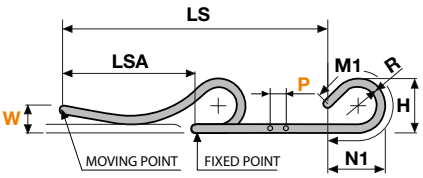
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
230	161.5	150	104	250-300-350-400-450-500-550-600-700-750-850	23.96	40LPC150□□□
280	161.5	200	104	250-300-350-400-450-500-550-600-700-750-850	25.33	40LPC200□□□
330	161.5	250	104	250-300-350-400-450-500-550-600-700-750-850	26.69	40LPC250□□□
380	161.5	300	104	250-300-350-400-450-500-550-600-700-750-850	28.05	40LPC300□□□
480	161.5	400	104	250-300-350-400-450-500-550-600-700-750-850	30.77	40LPC400□□□
580	161.5	500	104	250-300-350-400-450-500-550-600-700-750-850	33.50	40LPC500□□□

□□□ to be filled with Radius R

Separator

Unassembled	Article number S310TCF9
Assembled	Article number S310TCF9MC

MCI: chain opening outer radius
MCE: chain opening inner radius



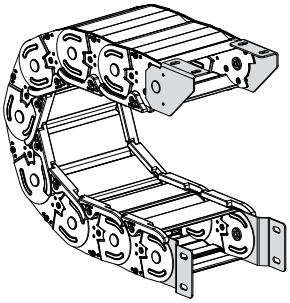
R	H	N1	M1
250	664	1545	3285
300	764	1755	3790
350	864	1950	4265
400	964	2125	4715
450	1064	2295	5150
500	1164	2455	5570
550	1264	2605	5975
600	1364	2755	6375
700	1564	3035	7155
750	1664	3170	7535
850	1864	3430	8280

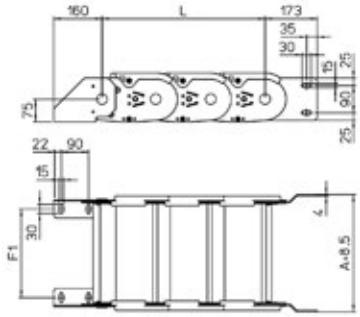
L=LSA + M or M1
Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type





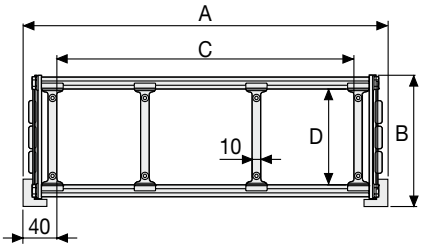
Chain Type	F1
40LPC150□□□	144
40LPC200□□□	194
40LPC250□□□	244
40LPC300□□□	294
40LPC400□□□	394
40LPC500□□□	494
40LPC□□□□□□	A-86

Steel Type Part Numbers
Complete Set Assembled
A40LPCKM
Complete Set Unassembled
A40LPCK

□□□ Inner width (C)

SILVYN® CHAIN 42LPT

Steel cable chain with aluminium frame.



Technical data

Inner Height (D)
138 mm

Pitch (P)
180 mm

Height Moving Point (W)
350 mm

Speed
2 m/s

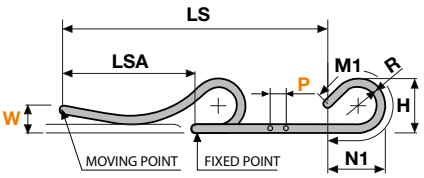
Acceleration
2 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
230	191.5	150	138	250-300-350-400-450-500-550-600-700-750-850	24.25	42LPT150□□□
280	191.5	200	138	250-300-350-400-450-500-550-600-700-750-850	24.71	42LPT200□□□
330	191.5	250	138	250-300-350-400-450-500-550-600-700-750-850	25.17	42LPT250□□□
380	191.5	300	138	250-300-350-400-450-500-550-600-700-750-850	25.63	42LPT300□□□
480	191.5	400	138	250-300-350-400-450-500-550-600-700-750-850	26.56	42LPT400□□□
580	191.5	500	138	250-300-350-400-450-500-550-600-700-750-850	27.48	42LPT500□□□

□□□ to be filled with Radius R

Separator	
Unassembled	Article number ST42LF9
Assembled	Article number ST42LF9MC

MCI: chain opening outer radius
MCE: chain opening inner radius



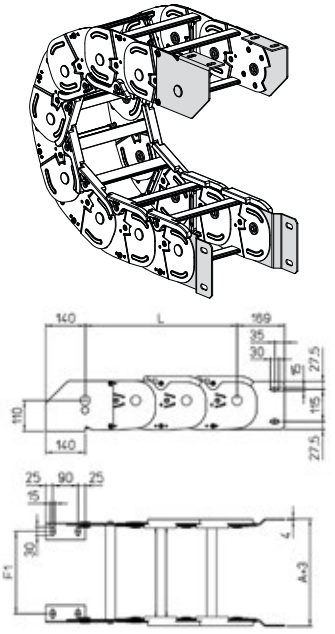
R	H	N1	M1
250	720	1545	3285
300	820	1755	3790
350	920	1950	4265
400	1020	2125	4715
450	1120	2295	5150
500	1220	2455	5570
550	1320	2605	5975
600	1420	2755	6375
700	1620	3035	7155
750	1720	3170	7535
850	1920	3430	8280

L=LSA + M or M1
Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

End brackets

The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

Steel Type



Chain Type	F1
42LPT150□□□	144
42LPT200□□□	194
42LPT250□□□	244
42LPT300□□□	294
42LPT400□□□	394
42LPT500□□□	494
42LPT□□□□□□	A-86

Steel Type Part Numbers
Complete Set Assembled
A42LPKM
Complete Set Unassembled
A42LPK

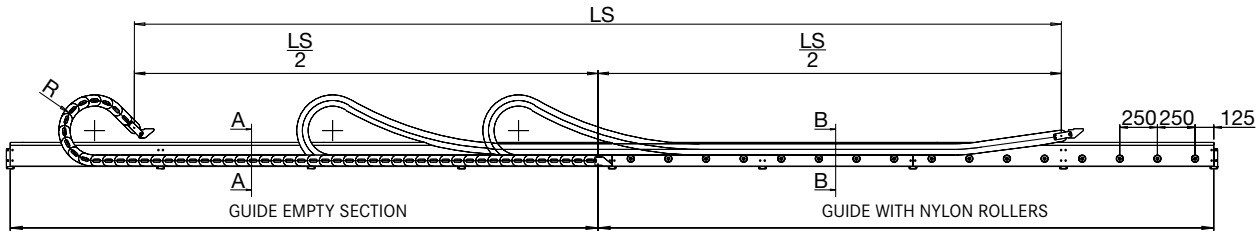
□□□ Inner width (C)

Guide Channel for

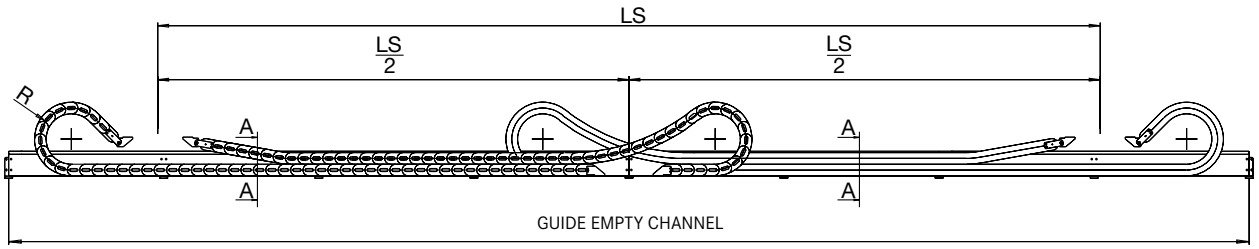
20LPT/LPC - 30LPT/LPC

Special channel guide allows the use of the chain for long travel distance.
Available in galvanised steel and, on request, in stainless steel.

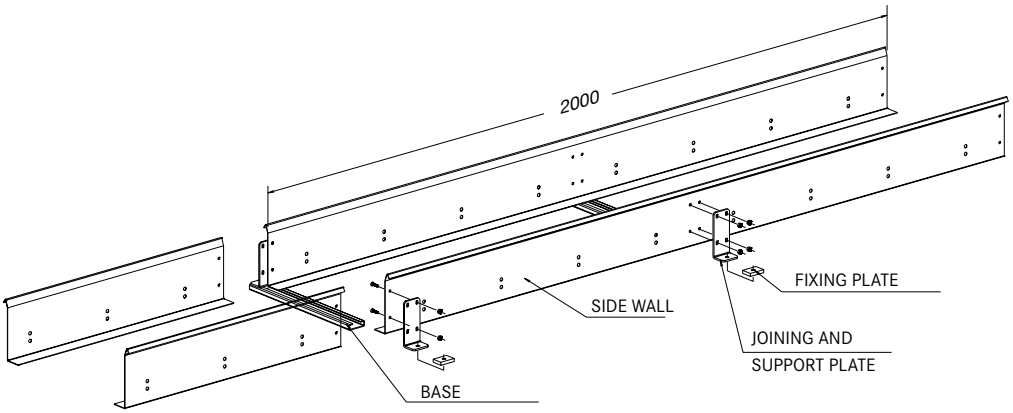
Single Chain Application



Double Chain Application

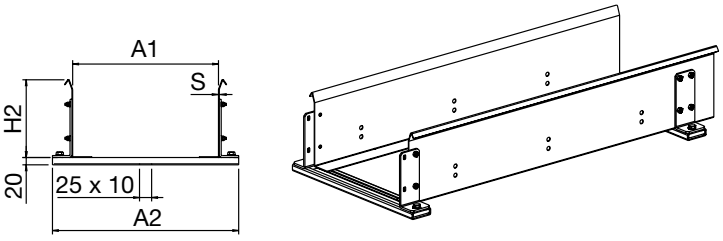


Channel guide is available in kit form composed of:
side walls 2 m standard length
joining plates
fixing screws



Empty Guide Section

Section A-A



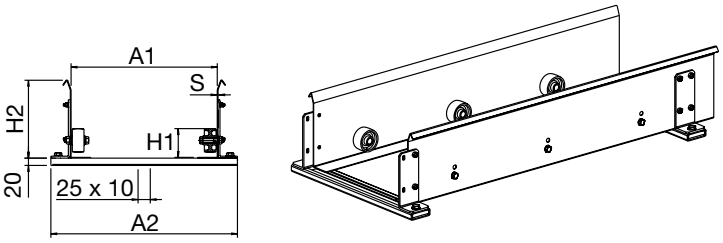
Part Number
CS...

How to order

Chain part number	**30LP100150**
Guide channel part number	**CS30LP100**

Guide with Nylon Rollers

Section B-B



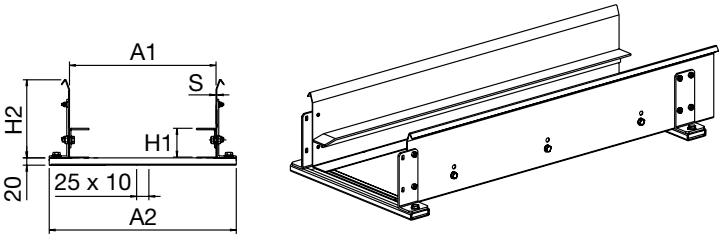
Part Number
CR...

How to order

Chain part number	**30LP100150**
Guide channel part number	**CR30LP100**

Guide with Steel Sliding Plate

Section B-B



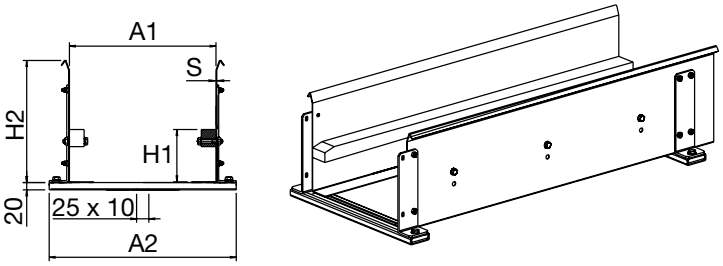
Part Number
CA...

How to order

Chain part number	**30LP100150**
Guide channel part number	**CA30LP100**

Guide with Plastic Sliding Plate

Section B-B



Part Number
CP...

How to order

Chain part number	**30LP100150**
Guide channel part number	**CP30LP100**

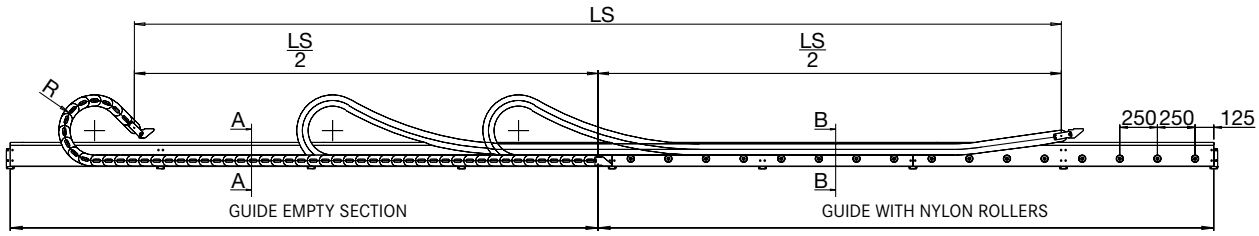
Chain type	H1 mm	H2 mm	A1 mm	A2 mm	S mm
20	59	160	A+4	A+87	1,5
30	81,5	190	A+4	A+88	2

Guide Channel for

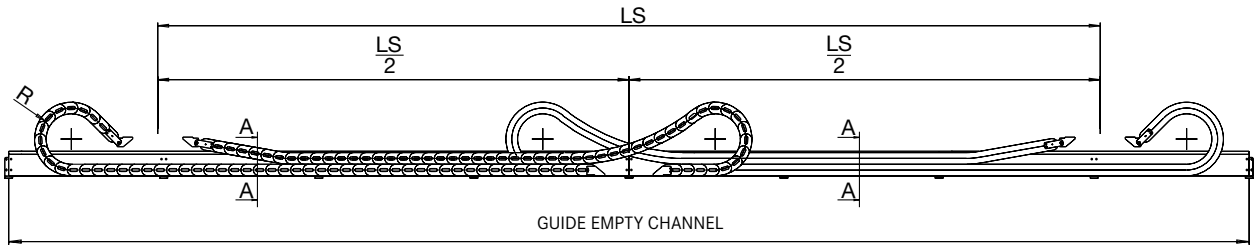
35LPT/LPC - 40LPT/LPC

Special channel guide allows the use of the chain for long travel distance.
Available in galvanised steel and, on request, in stainless steel.

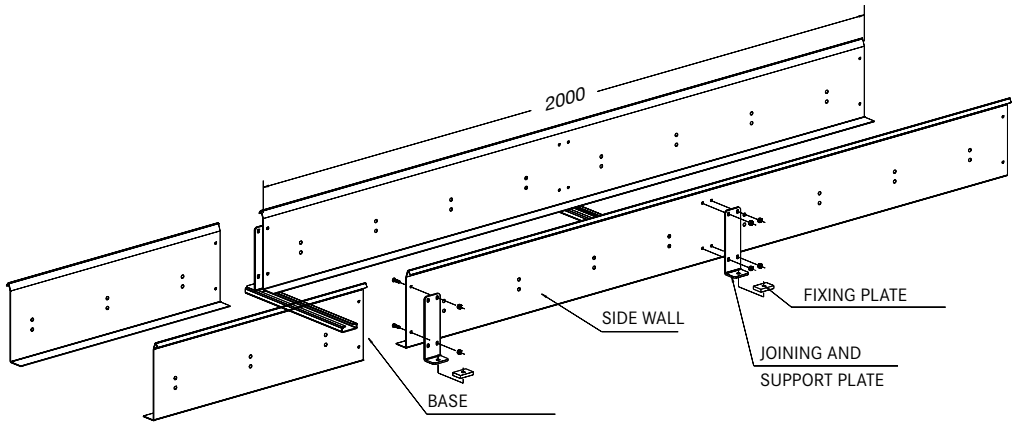
Single Chain Application



Double Chain Application

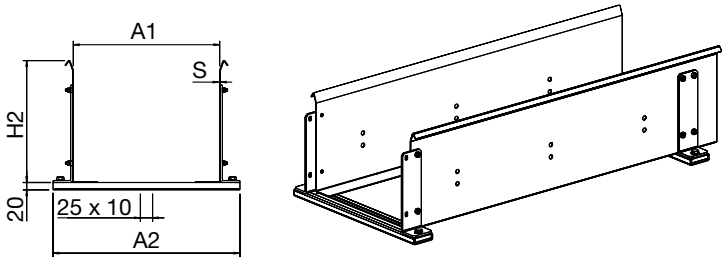


Channel guide is available in kit form composed of:
side walls 2 m standard length
joining plates
fixing screws



Empty Guide Section

Section A-A



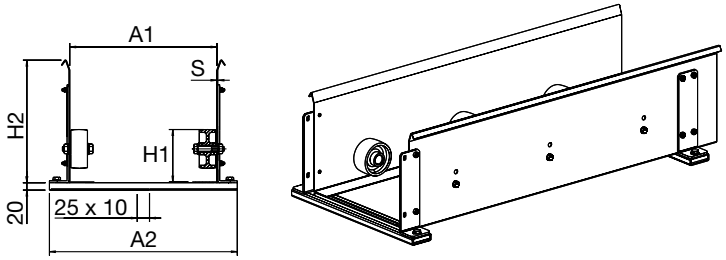
Part Number
CS35LPT...

How to order

Chain part number	**35LPT104200**
Guide channel part number	**CS35LPT104**

Guide with Nylon Rollers

Section B-B



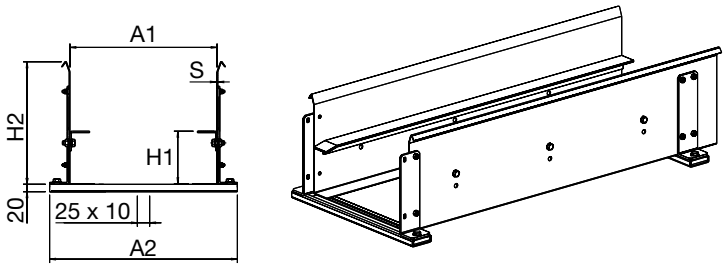
Part Number
CR35LP...

How to order

Chain part number	**35LPT104200**
Guide channel part number	**CR35LPT104**

Guide with Steel Sliding Plate

Section B-B



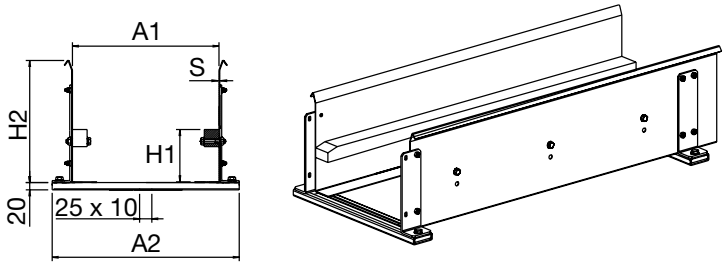
Part Number
CA35LPT...

How to order

Chain part number	**35LPT104200**
Guide channel part number	**CA35LPT104**

Guide with Plastic Sliding Plate

Section B-B



Part Number
CP35LPT...

How to order

Chain part number	**35LPT104200**
Guide channel part number	**CP35LPT104**

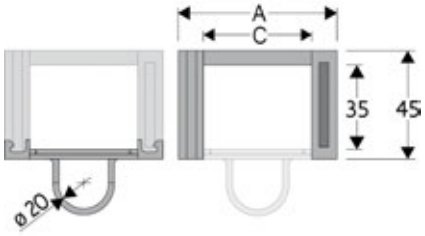
Chain type	H1 mm	H2 mm	A1 mm	A2 mm	S mm
35	107	250	A+8	A+92	2
40	161,5	325	A+8	A+94	3

Cable chains for robot applications

Product	Page
SILVYN® CHAIN 495	254
SILVYN® CHAIN 500	256
SILVYN® CHAIN 510TN/515TN	258
SILVYN® CHAIN 545	260
SILVYN® CHAIN 599	262
SILVYN® CHAIN MULTIFLEX	264

SILVYN® CHAIN 495

Circular Nylon Cable Chain with removable frames



Technical data

Inner Height (D)
35 mm

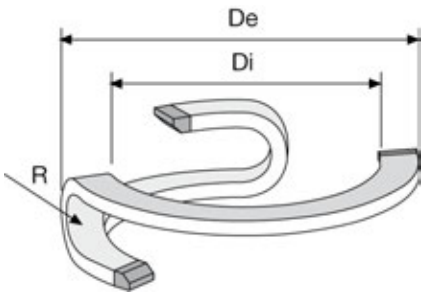
Speed
180 °/s

Acceleration
180 °/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/pitch)	Article number
69	45	45	35	100	0.10	495

Pin Article number PG305

Chain type	Rotation	Pitches
495	90	13
495	180	18
495	270	22
495	360	26

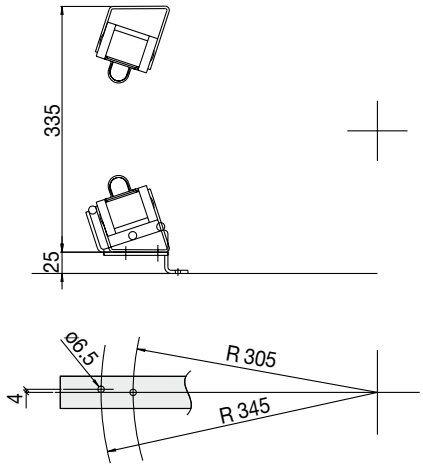


R	Di	De
100	600	755

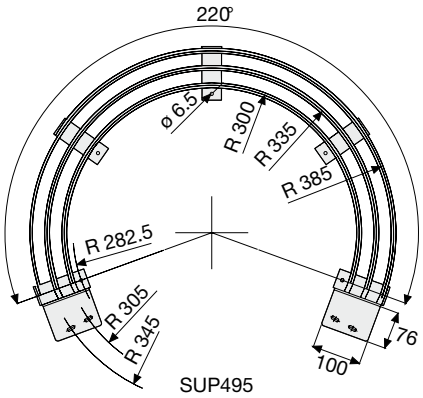
End brackets

The end brackets set, containing two steel plates screwed to the links, allows the two ends of the chain to be attached to the equipment. The end brackets are installed in one position offering the possibility of attaching the chain externally.

Steel Type



Support Guide

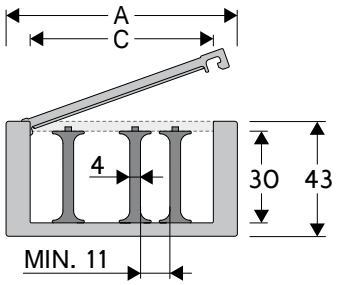


Steel Type Part Numbers
Complete Set Assembled
A495KM
Complete Set Unassembled
A495K

For correct functioning of the chain it is necessary that the installation is done in a specific position. For this reason there is a support guide available which can do this. For particular applications it is possible to create support guides with attachment plates and special dimensions.
For applications with rotations exceeding 200° it is necessary to use the appropriate accessories for supporting the cable chain.

SILVYN® CHAIN 500

Circular Nylon Cable Chain with removable frames



Technical data

Inner Height (D)
30 mm

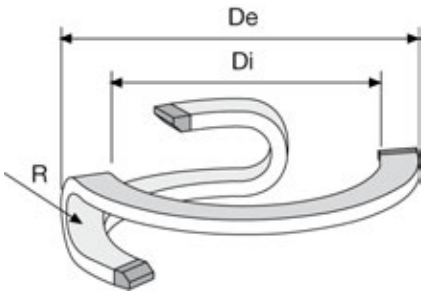
Speed
180 °/s

Acceleration
180 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/pitch)	Article number
86.5	43	68.5	30	100	0.086	50010
86.5	43	68.5	30	150	0.086	50020

Separator	
Unassembled	Article number S500
Assembled	Article number S500MC
Pin	Article number PG355

Chain type	Rotation	Pitches
50010	90	13
50010	180	17
50010	270	21
50010	360	26
50020	90	15
50020	180	19
50020	270	24
50020	360	28

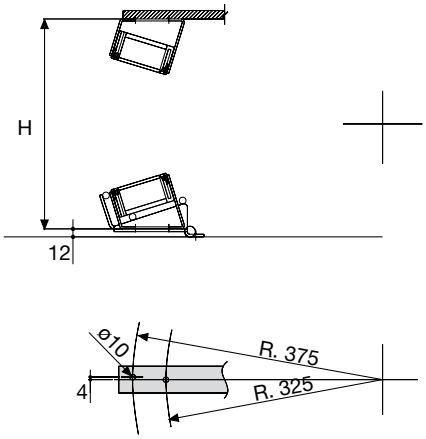


R	Di	De
100	630	830
150	630	830

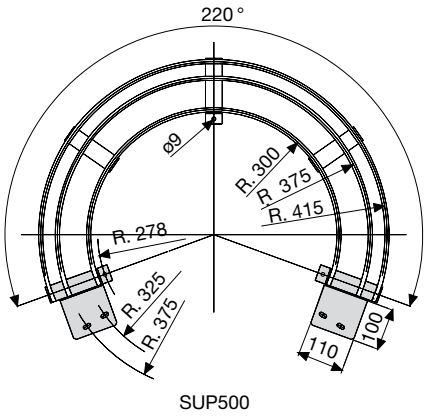
End brackets

The end brackets set, containing two steel plates screwed to the links, allows the two ends of the chain to be attached to the equipment. The end brackets are installed in one position offering the possibility of attaching the chain externally.

Steel Type



Support Guide



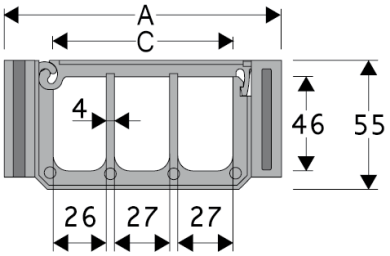
Chain Type	H
50010	330
50020	410

Steel Type Part Numbers	
Complete Set Assembled	
50010	A50010NKM
50020	A50020NKM
Complete Set Unassembled	
50010	A50010NK
50020	A50020NK

For correct functioning of the chain it is necessary that the installation is done in a specific position. For this reason there is a support guide available which can do this. For particular applications it is possible to create support guides with attachment plates and special dimensions.
For applications with rotations exceeding 200° it is necessary to use the appropriate accessories for supporting the cable chain.

SILVYN® CHAIN 510TN / 515TN

Circular Nylon Cable Chain with removable frames



Technical data

Inner Height (D)
46 mm

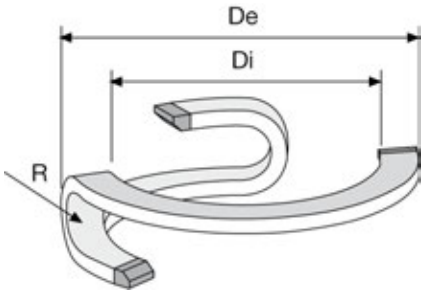
Speed
180 °/s

Acceleration
180 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/pitch)	Article number
132	55	88	46	125	0.20	510TN125
132	55	88	46	175	0.20	515TN175

Pin	
510TN	Article number PG511
515TN	Article number PG515

Chain type	Rotation	Pitches
510TN	90	13
510TN	180	17
510TN	270	22
510TN	360	27
515TN	90	17
515TN	180	23
515TN	270	29
515TN	360	35



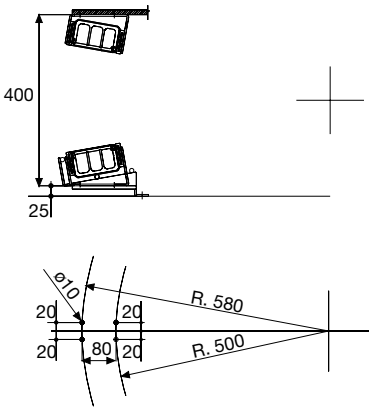
R	Di	De
125	940	1220
175	1060	1340

End brackets

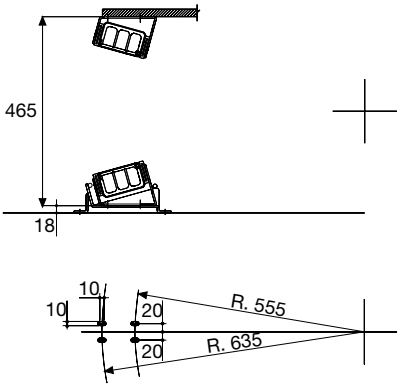
The end brackets set, containing two steel plates screwed to the links, allows the two ends of the chain to be attached to the equipment. The end brackets are installed in one position offering the possibility of attaching the chain externally.

Steel Type

510TN

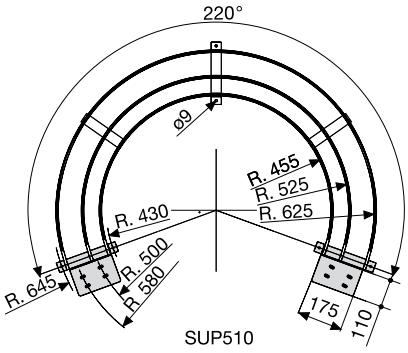


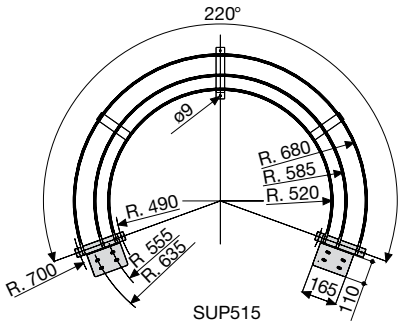
515TN



Steel Type Part Numbers
Complete Set Assembled
A510TNKM
A515TNKM
Complete Set Unassembled
A510TNK
A515TNK

Support Guide

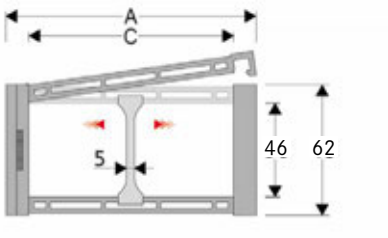




For correct functioning of the chain it is necessary that the installation is done in a specific position. For this reason there is a support guide available which can do this. For particular applications it is possible to create support guides with attachment plates and special dimensions.
For applications with rotations exceeding 200° it is necessary to use the appropriate accessories for supporting the cable chain.

SILVYN® CHAIN 545

Circular Nylon Cable Chain with removable frames



Technical data

Inner Height (D)
46 mm

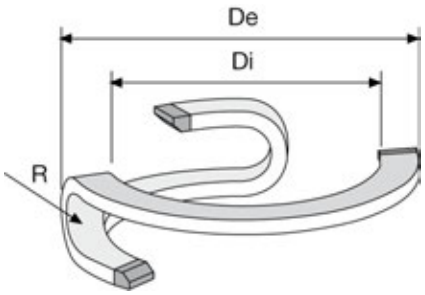
Speed
180 °/s

Acceleration
180 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/pitch)	Article number
123	62	100	46	100	0.20	545SI100100

Separator	
Unassembled	Article number S445UF
Assembled	Article number S445UFMC
Pin	Article number PG545

Chain type	Rotation	Pitches
545	90	14
545	180	18
545	270	22
545	360	27

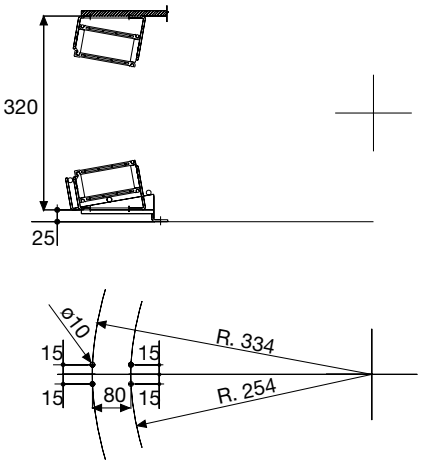


R	Di	De
100	485	760

End brackets

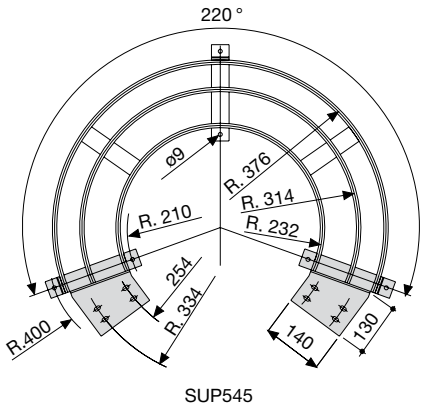
The end brackets set, containing two steel plates screwed to the links, allows the two ends of the chain to be attached to the equipment. The end brackets are installed in one position offering the possibility of attaching the chain externally.

Steel Type



Steel Type Part Numbers
Complete Set Assembled
A545KM
Complete Set Unassembled
A545K

Support Guide

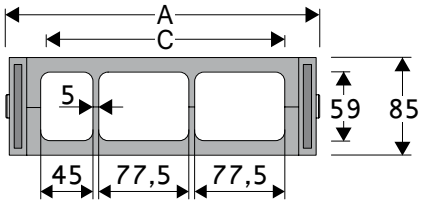


SUP545

For correct functioning of the chain it is necessary that the installation is done in a specific position. For this reason there is a support guide available which can do this. For particular applications it is possible to create support guides with attachment plates and special dimensions.
For applications with rotations exceeding 200° it is necessary to use the appropriate accessories for supporting the cable chain.

SILVYN® CHAIN 599

Circular Nylon Cable Chain with removable frames



Technical data

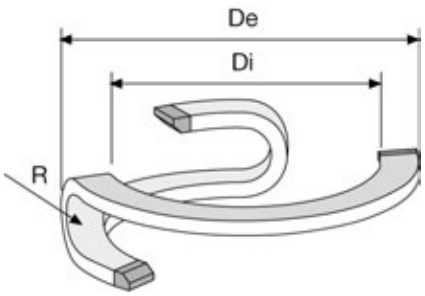
Inner Height (D)
59 mm

Speed
180 °/s

Acceleration
180 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/pitch)	Article number
272	85	210	59	220	0.90	599

Chain type	Rotation	Pitches
599	90	14
599	180	19
599	270	23
599	360	28

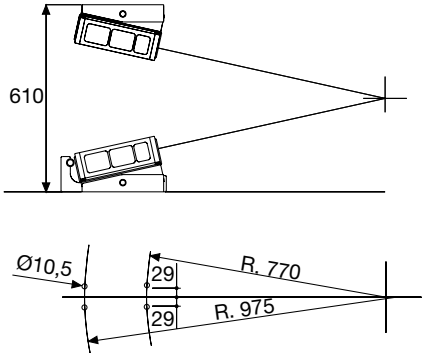


R	Di	De
220	1400	2000

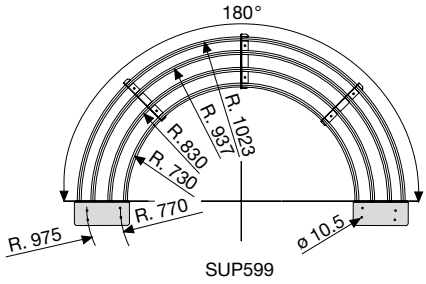
End brackets

The end brackets set, containing two steel plates screwed to the links, allows the two ends of the chain to be attached to the equipment. The end brackets are installed in one position offering the possibility of attaching the chain externally.

Steel Type



Support Guide



Steel Type Part Numbers
Complete Set Assembled
A599KM
Complete Set Unassembled
A599K

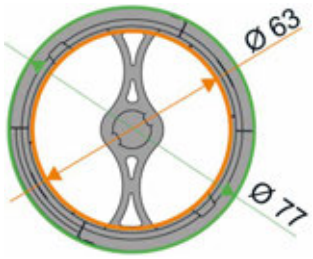
For correct functioning of the chain it is necessary that the installation is done in a specific position. For this reason there is a support guide available which can do this. For particular applications it is possible to create support guides with attachment plates and special dimensions.
For applications with rotations exceeding 200° it is necessary to use the appropriate accessories for supporting the cable chain.

SILVYN® CHAIN MULTIFLEX

Circular Nylon Cable Chain for highly flexible movements

Info

- Torsion/Pitch: 10°

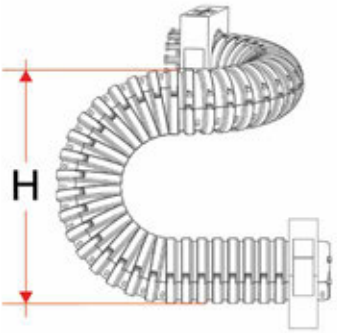


Technical data

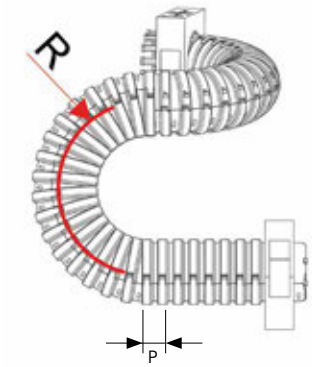
Inner Height (D)
63 mm

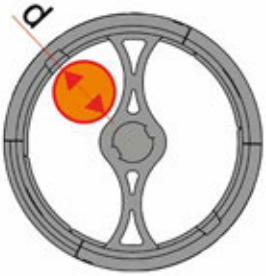
Pitch (P)
18.5 mm

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Chain length (mm)	Weight (kg/m)	Article number
-	-	-	-	100	999	1.6	61208965 - MFC65100



R	H	d
100	177	20

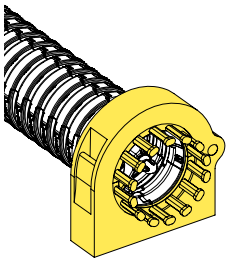


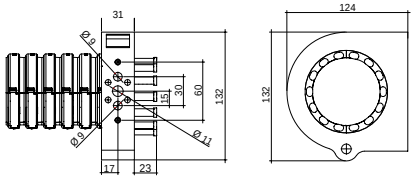


End Brackets

The end brackets allow the two ends of the chain to be attached to the equipment.

With cable strain relief

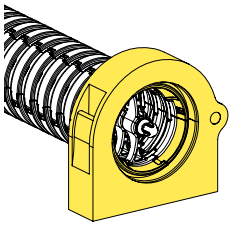


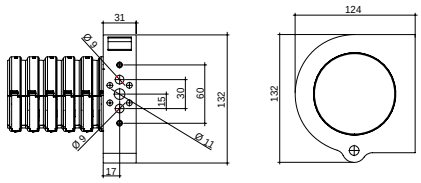


Plastic fastener
standard fastening
61208968 - AMF65K01
front fastening
61208970 - AMF65K01F

Metal fastener
standard fastening
61208969 - AMF65M01
front fastening
61208971 - AMF65M01F

Without cable strain relief

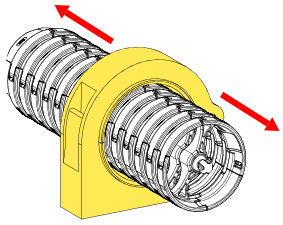


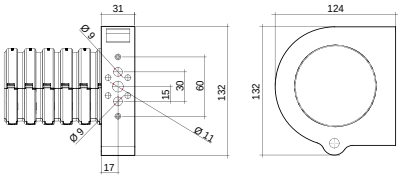


Plastic fastener
standard fastening
61208973 - AMF65K02
front fastening
61208975 - AMF65K02F

Metal fastener
standard fastening
612089674 - AMF65M02
front fastening
61208976 - AMF65M02F

With sliding clamp





Plastic fastener
standard fastening
61208977 - AMF65K03
front fastening
61208979 - AMF65K03F

Metal fastener
standard fastening
612089678 - AMF65M03
front fastening
61208980 - AMF65M03F

General cable chain accessory

Nylon Tiewrap Clamp

To allow easy fixing of the cables at the chain's end brackets, we recommend to use strong nylon tiewrap clamps.
The tiewrap is mounted onto a steel profile to assure a strong support.
This fixing system is available for different cable chain series and can be found directly on the product pages.

Steel Cable Clamps

The steel cable clamps connect the cable to the end brackets of the chain. The plastic counter pressure cradle with the integrated screw tightens and fix the cable.
The smooth surface and the design of the cradles guarantee high stability and avoid any damage to the cables.
Special versions are available on request.

A fixing set is composed by the following parts:
- steel clamps with pressure cradle
- counter pressure cradle
- doublesided cradle for double and triple clamps
- steel mounting rails

Pin Tool

Tool to safely insert and remove the yellow pins

Part No.	suitable for chain type	Pins
PZ010	660 - 770 - 445	Single
PZ036	306 - 307 - 326	Triple
PZ038	308 - 328	Triple
PZ039	309	Triple
PZ475	475	Single

Steel cable clamps

C-profile rail

Part.no	Length
6000002	Standard 1000 mm; available on request with different length

Single clamp in zinc-plated steel with 1 pressure cradle and 1 counter pressure cradle

Part.no	Diameter mm	L	H max~
6000614C	06-14	20	64
6001418C	14-18	22	73
6001822C	18-22	26	77
6002226C	22-26	30	81
6002630C	26-30	34	85
6003034C	30-34	38	90
6003438C	34-38	43	100
6003842C	38-42	47	113
6004246C	42-46	52	120
6004650C	46-50	58	130
6005054C	50-54	68	139
6005458C	54-58	75	147
6005864C	58-64	82	155
6006470C	64-70	90	163

Double clamp in zinc-plated steel set complete with 1 pressure cradle, 1 double sided cradle and 1 counter pressure cradle

Part.no	Diameter mm	L	H max~
6020608C	06-08	20	64
6020810C	08-10	20	88
6021014C	10-14	20	88
6021418C	14-18	21	94
6021822C	18-22	26	110
6022226C	22-26	30	121
6022630C	26-30	34	128
6023034C	30-34	38	134
6023438C	34-38	43	156
6023842C	38-42	47	165

Triple clamp in zinc-plated steel set complete with 1 pressure cradle, with plastic insert, 2 double sided cradles and 1 counter pressure cradle

Part.no	Diameter mm	L	H max~
6031012C	10-12	16	87
6031214C	12-14	17	97
6031416C	14-16	19	102
6031618C	16-18	22	112
6031820C	18-20	24	116
6032022C	20-22	26	129
6032224C	22-24	28	133
6032426C	24-26	31	143
6032628C	26-28	33	150
6032830C	28-30	35	158

Counter pressure cradle

Part.no	Diameter mm
6100612	06-12
6101214	12-14
6101618	14-18
6101822	18-22
6102226	22-26
6102630	26-30
6103034	30-34
6103438	34-38

Part.no	Diameter mm
6103842	38-42
6104246	42-46
6104650	46-50
6105054	50-54
6105458	54-58
6105864	58-64
6106470	64-70

Doublesided cradle

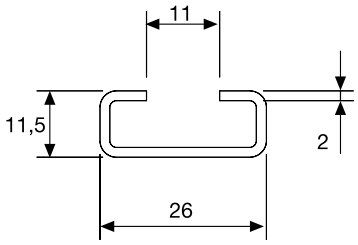
Part.no	Diameter mm
6201012	10-12
6201214	12-14
6201416	14-16
6201618	16-18
6201822	18-22

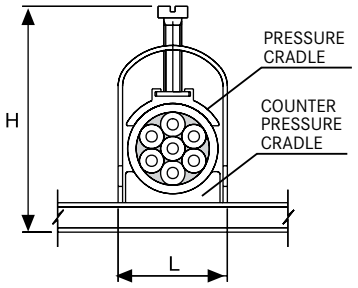
Part.no	Diameter mm
6202426	22-26
6202830	26-30
6203034	30-34
6203438	34-38
6203842	38-42

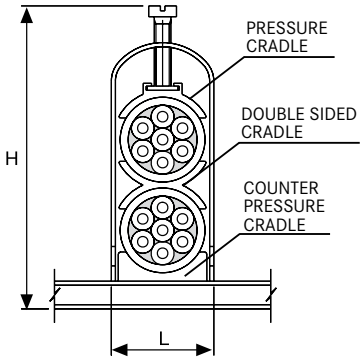
Plastic insert for triple clamp (order separately)

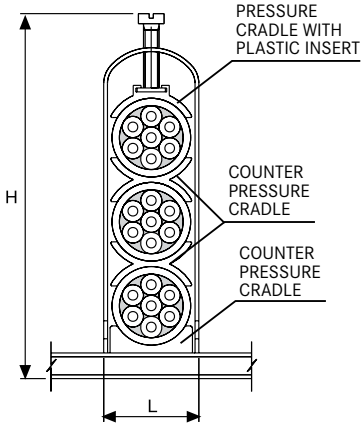
Part.no	Diameter mm
6300612X	10-12
6301214X	12-14
6301416X	14-16
6301618X	16-20

Part.no	Diameter mm
6201822X	20-24
6202226X	24-26
6202630X	26-30









1

ÖLFLEX®

Power and control cables

ÖLFLEX® has become synonymous with power and control cables. Our flexible and oil-resistant cables satisfy the highest demands and can withstand even the very toughest conditions.

Application range

- Industrial machinery, machine tools, plant and equipment engineering
- Measurement, control, heating and air conditioning systems
- Wind power and photovoltaic systems
- Public buildings, airports and stations.
- Medical technology, chemical industry, composting plants and sewage works
- Food and beverage industry
- Power drive systems
- Robot applications
- Railway applications

ÖLFLEX® SERVO FD 781 CY

Screened, low capacitive servo cable with PVC outer sheath for flexible power chain application

Info

- Core Line Performance – Medium to increased travel lengths or acceleration
- EMC-compliant

Benefits

- Well-proven and reliable
- Longer cable connection possible between frequency converter and motor due to low capacitance design
- Copper screening complies with EMC requirements and protects against electromagnetic interference

Application range

- Connecting cable between Frequency converter and motor
- In power chains or moving machine parts
- For power circuits in machine cabling
- In dry, damp or wet interiors with normal mechanical stress conditions
- Only for outdoor use within the indicated operating temperature range, with UV-protection

Product features

- Oil-resistant
- Flame retardant acc. to IEC 60332-1-2
- Low-adhesive surface

Norm references / Approvals

- Based on VDE 0250/0285
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: polypropylene (PP)
- Cores twisted in short lay lengths
- Non-woven wrapping
- Tinned-copper braiding
- PVC outer sheath, orange (RAL 2003)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

Core identification code
Black with white numbers according to VDE 0293-1

Conductor stranding
Extra-fine wire according to VDE 0295, class 6/IEC 60228, class 6

Minimum bending radius
Flexing: up from 7.5 × outer diameter
Fixed installation: 4 × outer diameter

Nominal voltage
U_0/U: 600/1000 V

Test voltage
Core/Core: 4 kV
Core/Screen: 4 kV

Protective conductor
G = with gn-ye protective conductor

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Temperature range
Flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SERVO FD 781 CY				
0036320	4 G 1.5	9.8	89	157
0036321	4 G 2.5	11.9	133.8	233
0036322	4 G 4	13.5	210.9	335
0036324	4 G 10	19.7	488.2	747
0036325	4 G 16	23.9	744.8	1109
0036327	4 G 35	33.3	1565.4	2264
0036328	4 G 50	38.3	2174.9	3090

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 × 500 m drum or 5 × 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® SERVO FD 7TCE

Highly flexible, low capacitive servo motor cable with TC-ER (UL) or c(UL)-Listing for North America

Info

- Core Line Performance – Medium to increased travel lengths or acceleration
- Wide application range (NFPA 70/NEC)/ compliance with NFPA 79 for industrial machinery
- Low-capacitance design

Benefits

- Multi-standard certification offers universal application range, reduces part varieties and saves costs
- TC-ER and Flexible Motor Supply Cable listings enable open wiring on cable trays as well as the static or highly flexible usage for industrial machines with the same cable
- Cost-saving, easy installation due to omission of closed raceways (suitable for open wiring)
- Longer cable connection possible between frequency converter and motor due to low capacitance design
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Ideal for export-oriented machinery and equipment manufacturers thanks to high normative acceptance by the North American NEC (National Electrical Code)

Application range

- Connecting cable between servo controller and motor
- In power chains or moving machine parts
- Static open wiring on and between cable tray an industrial machine acc. NEC
- Industrial machinery and machine tools
- Linear robots, automated handling equipment
- Assembly lines, production lines, in all kinds of machines

Product features

- Oil-resistant according to UL OIL RES I & II
- Flame-retardant according to CSA FT4; UL Vertical-Tray Flame Test
- -40°C Cold Bend; -25°C Cold Impact; 90°C Wet or Dry
- Sunlight Resistant
- Direct Burial (according US standard)
- Low capacitance

Norm references / Approvals

- UL TC-ER (exposed run) per UL 1277
- Flexible Motor Supply Cable per UL 2277
- Class 1 Division 2 per NEC Article 501
- C(UL) CIC/TC FT4 (18AWG – 14AWG); cRU AWM I/II A/B FT4
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire strand made of bare copper
- Core insulation: EPR compound
- Individual design depending on the item: power cores without or with one or two individually screened control core pairs twisted together in short lay lengths
- Non-woven wrapping
- Tinned-copper braiding
- Outer sheath: Specially formulated thermoplastic elastomer (TPE), orange

Technical data

Core identification code
Power cores: black with marking U/L1/C/L+; V/L2; W/L3/D /L-; GN/YE protective conductor
Optional designs with
one pair of control cores: black; white
Two pairs of control cores:
black with white numbers: 5, 6, 7, 8

Certifications
USA: UL TC-ER, Flexible Motor Supply
Canada: c(UL) CIC/TC FT4,
cRU AWM I/II A/B FT4

Conductor stranding
Extra-fine wire according to
VDE 0295, class 6/IEC 60228, class 6

Minimum bending radius
Flexing: up from 7.5 × outer diameter
Fixed installation: 5 × outer diameter

Nominal voltage
UL TC: 600 V
UL Flexible Motor Supply: 1000 V
c(UL) CIC/TC: 600 V
cRU AWM: 1000 V
IEC U_0/U: 600/1000 V

Test voltage
Core/Core: 4 kV
Core/Screen: 2 kV

Protective conductor
G = with GN-YE protective conductor

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Temperature range
Occasional flexing: -25°C to +90°C
Fixed installation: -40°C to +90°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SERVO FD 7TCE				
700750	4 G 1.5	10.2	90.8	174
700751	4 G 2.5	11.4	141.4	230
700752	4 G 4	13.1	200.9	319
700753	4 G 6	15	282.8	431
700754	4 G 1.5 + (2 × 1.5)	12.7	144.4	259
700755	4 G 2.5 + (2 × 1.5)	13.8	199.4	356
700756	4 G 4 + (2 × 1.5)	16.1	273.8	447
700757	4 G 6 + (2 × 1.5)	17.1	345.3	537
700758	4 G 1 + 2 × (2 × 1)	13.3	151.8	280
700759	4 G 1.5 + 2 × (2 × 1)	14.8	190.5	355
700760	4 G 2.5 + 2 × (2 × 1)	15.9	277.7	410
700761	4 G 4 + (2 × 1) + (2 × 1.5)	17.9	318.5	525
700762	4 G 6 + (2 × 1) + (2 × 1.5)	18.8	389.9	613

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® SERVO FD 796 P

Servo cable with PUR outer sheath for highly dynamic power chain application - certified for North America

Info

- Extended Line Performance - Long travel lengths or high acceleration
- AWM certification for USA and Canada
- VDE-tested characteristics

Benefits

- Allows much faster speed and accelerations which increases the economic efficiency of the machines
- Longer cable connection possible between frequency converter and motor due to low capacitance design
- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Wide temperature range for applications in harsh climatic environments
- Multi-standard certification reduces part varieties and saves costs

Application range

- Connecting cable between servo controller and motor
- In power chains or moving machine parts
- For use in assembling & pick-and-place machinery
- Particularly in wet areas of machine tools and transfer lines
- For indoor and outdoor use

Product features

- Flammability:
  UL/CSA: VW-1, FT1
  IEC/EN: 60332-1-2
- Halogen-free materials
- Abrasion and notch-resistant
- Oil-resistant

Norm references / Approvals

- VDE - reg - no. 8591 (≥ 4G1,5)
  UL AWM Style 20234
  cULus AWM I/II A/B, 1000V 80° FT1
  CSA AWM I/II A, 1000V 80° FT1
- UL File No. E63634
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: polypropylene (PP)
- According to P/N individual design: Power cores with one or with two control pair(s), twisted together in short lay length
- Non-woven wrapping
- PUR outer sheath, black (RAL 9005)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

Core identification code
Power cores: black with marking U/L1/C/L+; V/L2; W/L3/D /L-; GN/YE protective conductor
Single-paired versions: black; white
Double-paired versions: black with white numbers 5; 6; 7; 8
0,34 mm² pairs: WH/BN/GN/YE

Conductor stranding
Extra-fine wire according to VDE 0295, class 6/IEC 60228, class 6

Minimum bending radius
Flexing: up from 7.5 × outer diameter
Fixed installation: 4 × outer diameter

Nominal voltage
IEC U_0/U: 600/1000 V
UL & CSA: 1000 V

Test voltage
Core/Core: 4 kV
Core/Screen: 2 kV

Protective conductor
G = with GN-YE protective conductor

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Temperature range
Flexing: -40°C to +90°C
(UL/CSA: +80°C)
Fixed installation: -50°C to +90°C
(UL/CSA: +80°C)

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SERVO FD 796 P				
0025319	4 G 1.5 + (2 × 1.5)	11.7	99	217
0025320	4 G 2.5 + (2 × 1.5)	13.1	134	270
0025321	4 G 4 + (2 × 1.5)	14.2	195	333
0025322	4 G 6 +(2 × 1.5)	16	272	403
0025323	4 G 10 + (2 × 1.5)	18.4	425	581
0025324	4 G 16 + (2 × 1.5)	22.1	656	887
0025326	4 G 0.75 + 2 × (2 × 0.34)	10.9	54	143
0025327	4 G 1.5 + 2 × (2 × 0.75)	12.3	103	209
0025328	4 G 2.5 + 2 × (2 × 1)	14.3	152	306
0025312	4 G 4 + 2 × (2 × 1)	15.4	218	381
0025329	4 G 4 + (2 × 1) + (2 × 1.5)	15.6	231	388
0025330	4 G 6 + (2 × 1) + (2 × 1.5)	17.1	308	460

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® SERVO FD 796 CP

Screened servo cable with PUR outer sheath for highly dynamic power chain application - certified

Info

- Extended Line Performance - Long travel lengths or high acceleration
- Product range extension

Benefits

- Allows much faster speed and accelerations which increases the economic efficiency of the machines
- Suitable for use with servomotor product lines from leading drive manufacturers
- Longer cable connection possible between frequency converter and motor due to low capacitance design
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Wide temperature range for applications in harsh climatic environments
- Copper braiding screens the cable against electromagnetic interference

Application range

- Connecting cable between servo controller and motor
- In power chains or moving machine parts
- For use in assembling & pick-and-place machinery
- Particularly in wet areas of machine tools and transfer lines
- Assembly lines, production lines, in all kinds of machines
- For indoor and outdoor use

Product features

- Flammability:
  UL/CSA: VW-1, FT1
  IEC/EN: 60332-1-2
- Halogen-free materials
- Abrasion and notch-resistant
- Oil-resistant

Norm references / Approvals

- VDE - Reg. - No. 8591 (0027925,..926,..927,..930 pending)
  UL AWM Style 20234
  cULus AWM I/II A/B, 1000V 80° FT1
  CSA AWM I/II A, 1000V 80° FT1
- UL File No. E63634
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: polypropylene (PP)
- Individual design depending on the item: Power cores without or with one or two individually shielded control core pairs twisted together in short lay lengths; Power cores with control core triplet twisted together in short lay lengths
- Non-woven wrapping
- Tinned-copper braiding
- PUR outer sheath, orange (RAL 2003)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

Core identification code
Power cores: black with marking U/L1/C/L+; V/L2; W/L3/D /L-; GN/YE protective conductor
Single-paired versions: individual design depending on the item black; white or brown; white
Double-paired versions: black with white numbers 5; 6; 7; 8
0.34 mm² pairs: WH/BN/GN/YE
Triplet: black with white numbers 1; 2; 3

Conductor stranding
Extra-fine wire according to VDE 0295, class 6/IEC 60228 class 6

Minimum bending radius
Flexing:
up from 7.5 × outer diameter (up to 16 mm²)
up from 10 × outer diameter (from 25 mm²)
Fixed installation: 4 × outer diameter

Nominal voltage
Power cores and control cores:
IEC U_0/U: 600/1000 V
UL & CSA: 1000 V

Test voltage
Core/Core: 4 kV
Core/Screen: 2 kV

Protective conductor
G = with GN-YE protective conductor

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Temperature range
Flexing: -40°C to +90°C
(UL/CSA: +80°C)
Fixed installation: -50°C to +90°C
(UL/CSA: +80°C)

Article number	Number of cores and mm² per conductor	Outer diameter (mm approx.)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SERVO FD 796 CP				
0027950	4 G 1.5	9.1	79	140
0027951	4 G 2.5	10.6	129	197
0027952	4 G 4	11.9	186	268
0027953	4 G 6	14.5	296	397
0027954	4 G 10	17.5	449	591
0027955	4 G 16	21.6	716	955
0027956	4 G 25	25.2	1073	1337
0027957	4 G 35	28.6	1480	1769
0027958	4 G 50	33.4	2115	2468
0027930	4 G 0.75 + (2 × 0.5)	11	85.5	155
0027925	4 G 1 + (2 × 0.5)	11.5	97.4	164
0027931	4 G 1 + (2 × 1)	11.7	106.7	174
0027926	4 G 1.5 + (2 × 0.5)	12	117.2	187
0027948	4 G 1.5 + (2 × 1)	12.2	129.9	202

Article number	Number of cores and mm² per conductor	Outer diameter (mm approx.)	Copper index (kg/km)	Weight (kg/km)
0027932	4 G 1.5 + (3 ×1)	12	143.8	220
0027959	4 G 1.5 + (2 ×1.5)	11.6	135	261
0027927	4 G 2.5 + (2 ×0.5)	12.6	161.2	243
0027978	4 G 2.5 + (2 ×1)	13.5	169.2	253
0027933	4 G 2.5 + (3 ×1)	13.5	204.3	294
0027960	4 G 2.5 + (2 ×1.5)	13.4	188	318
0027981	4 G 4 + (2 ×1)	14.8	238.9	359
0027934	4 G 4 + (3 ×1)	14.7	250	361
0027961	4 G 4 + (2 ×1.5)	14.8	235	385
0027982	4 G 6 + (2 ×1)	16.8	339.5	469
0027962	4 G 6 + (2 ×1.5)	16.8	329	486
0027935	4 G 6 + (3 ×1.5)	16.5	381.4	505
0027983	4 G 10 + (2 ×1)	18.8	530.1	689
0027963	4 G 10 + (2 ×1.5)	19.4	515	701
0027936	4 G 10 + (3 ×1.5)	19.7	568.9	722
0027984	4 G 16 + (2 ×1)	22.8	786.7	985
0027964	4 G 16 + (2 ×1.5)	23.1	757	1048
0027937	4 G 16 + (3 ×1.5)	23.3	824.6	1030
0027965	4 G 25 + (2 ×1.5)	26.6	1147	1532
0027966	4 G 35 + (2 ×1.5)	30.9	1538	2097
0027967	4 G 50 + (2 ×1.5)	34	2181	2721
0027969	4 G 1.5 + 2 × (2 ×0.75)	12.2	159	313
0027970	4 G 2.5 + 2 × (2 ×1)	14.6	207	395
0027980	4 G 4 + 2 × (2 ×1)	16.1	274	466
0027971	4 G 4 + (2 ×1) + (2 ×1.5)	16.3	344	485
0027972	4 G 6 + (2 ×1) + (2 ×1.5)	18.1	436	588
0027973	4 G 10 + (2 ×1) + (2 ×1.5)	21.8	610	819
0027974	4 G 16 + 2 × (2 ×1.5)	25.5	801	1135
0027975	4 G 25 + 2 × (2 ×1.5)	28.8	1187	1559
0027976	4 G 35 + 2 × (2 ×1.5)	30.9	1588	2093

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® SERVO FD 798 CP

Screened encoder cable with PUR outer sheath for highly dynamic power chain application – certified

Info

- Extended Line Performance - Long travel lengths or high acceleration
- Fits to various encoder systems
- AWM certification for USA and Canada

Benefits

- Allows much faster speed and accelerations which increases the economic efficiency of the machines
- Suitable for use with encoders & resolvers from leading manufacturers
- Thin, optimised for weight and volume
- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Wide temperature range for applications in harsh climatic environments

Application range

- Connecting cable between servo controller and encoder/resolver
- Connecting cable between servo controller and speed generators
- In power chains or moving machine parts
- Particularly in wet areas of machine tools and transfer lines
- Assembly lines, production lines, in all kinds of machines
- For indoor and outdoor use

Product features

- Flammability:
  UL/CSA: VW-1, FT1
  IEC/EN: 60332-1-2
- Halogen-free materials
- Low-capacitance design
- Abrasion and notch-resistant
- Oil-resistant

Norm references / Approvals

- UL AWM Style 20236
- CSA AWM IA/B; IIA/B FT 1
- UL File No. E63634
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Fine-wire or extra-fine wire, tinned-copper conductor
- Core insulation: polypropylene (PP)
- Cores (or core pairs) twisted in layers or bundles
- Refer to data sheet for more details
- Non-woven wrapping
- PUR outer sheath, green (RAL 6018)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

Core identification code
Details see datasheet
ÖLFLEX® SERVO FD 798 CP

Conductor stranding
Fine wire or extra-fine wire

Minimum bending radius
Flexing: up from 7.5 × outer diameter
Fixed installation: 4 × outer diameter

Nominal voltage
IEC: 30 V
UL & CSA: 30 V

Test voltage
Core/core: 1500 V rms
Core/screen: 750 V rms

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Temperature range
Flexing: -40°C to +90°C
(UL/CSA: +80°C)
Fixed installation: -50°C to +90°C
(UL/CSA: +80°C)

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SERVO FD 798 CP				
0036910	4 × 2 × 0.34 + 4 × 0.5	8.9	79	125
0036911	3 × (2 × 0.14) + 2 × (0.5)	8.9	70	120
0036912	3 × (2 × 0.14) + 4 × 0.14 + 2 × 0.5	8.8	68	110
0036913	3 × (2 × 0.14) + 4 × 0.14 + 2 × 0.5 + 4 × 0.22	9.4	80	130
0036914	9 × 0.5	8.8	71	110
0036915	4 × 2 × 0.25 + 2 × 1	8.8	63	109
0036916	6 × 2 × 0.25 + 2 × 0.5	10.3	67	121
0036917	10 × 0.14 + 2 × 0.5	7.7	41	82
0036918	10 × 0.14 + 4 × 0.5	8.1	54	98
0036920	4 × 2 × 0.14 + 4 × 0.5	8.2	51	95
0036921	4 × 2 × 0.25	7.6	38	75
0036923	8 × 2 × 0.18	7.8	51	85
0036924	4 × 2 × 0.18	6.4	30	52
0036926	12 × 0.22	6.9	44	73
0036927	4 × 2 × 0.25 + 2 × 0.5	8.5	62	98
0036928	2 × 2 × 0.14 + 2 × (2 × 0.14) + 4 × 0.5 + (4 × 0.14)	9.1	79	135
0036929	2 × (2 × 0.25) + 2 × 0.5	8.7	46	98

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
DESINA® is a registered trademark of the German Machine Tool Builders' Association
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

Special Encoder and resolver cables

Compatible with various drive systems

Info

- Fits to various encoder systems
- PUR outer sheath
- AWM certification for USA and Canada

Benefits

- Allows much faster speed and accelerations which increases the economic efficiency of the machines
- Multi-standard certification reduces part varieties and saves costs
- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media

Application range

- Servo drives and servo assemblies
- In power chains or moving machine parts
- Plant engineering
- Particularly in wet areas of machine tools and transfer lines
- Assembly lines, production lines, in all kinds of machines

Product features

- Abrasion and notch-resistant
- Oil-resistant
- Flame-retardant according to IEC 60332-1-2 & CSA FT1

Norm references / Approvals

- UL/CSA AWM Styles please refer to data sheet
- UL File No. E63634
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Design according to specific OEM standard
- Refer to data sheet for more details
- PUR outer sheath
- Outer sheath colour: see part table

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

General
More technical information of the abovementioned servo cables are available upon request.

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Colour	Copper index (kg/km)	Weight (kg/km)
Suitable for Heidenhain					
70388718	4 × 2 × 0.14 + 4 × 0.5	8.5	black	48	92
70388719	3 × (2 × 0.14) + 2 × (0.5)	8.3	black	64	100
70388720	3 × (2 × 0.14) + 2 × (1)	9.1	black	64	115
70388721	4 × 2 × 0.14 + 4 × 0.5 + (4 × 0.14)	8.3	black	56	102
Suitable for ELAU					
70388722	3 × 2 × 0.25 + 2 × 0.5	8.4	green	44	95
Suitable for KEB					
70388724	3 × (2 × 0.14) + 2 × (0.5)	8.1	green	64	100
Suitable for Berger Lahr					
70388726	5 × 2 × 0.25 + 2 × 0.5	9.5	green	56	120
Suitable for B & R					
70388727	3 × 2 × 24AWG	6.5	green	28	60
70388728	5 × 2 × 0.14 + 2 × 0.5	7.8	green	40	80
Suitable for FANUC					
70388730	5 × 0.5 + 2 × 2 × 0.18	7.6	green	94	169
70388731	2 × 0.5 + 4 × 2 × 0.22	7.6	green	72	120
70388732	3 × 2 × 0.18 + 6 × 0.5	8.7	green	105	189
70388733	3 × 2 × 0.18 + 6 × 1	8.7	green	140	252
70388734	5 × 2 × 0.18 + 6 × 0.5	8.7	green	114	205
70388735	10 × 2 × 24 AWG	9	green	60	121

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 × 500 m drum or 5 × 100 m coils).
The drive systems (Heidenhain, Elau, KEB, Controles Techniques, Berger Lahr, B & R, Fanuc) are registered trademarks that are listed for comparison purposes only.
DESINA® is a registered trademark of the German Machine Tool Builders' Association.
Cables for power chain use should only be handled on drums prior to installation.
Article numbers refer to genuine Lapp products.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® SERVO FD 7DSL

Low capacitive hybrid servo cable with PUR outer sheath for highly dynamic power chain application - certified

Info

- Suitable for SCS open link and ACURO®link
- Suitable for Hiperface DSL® motor-feedback systems
- Extended Line Performance - Long travel lengths or high acceleration

Benefits

- Allows much faster speed and accelerations which increases the economic efficiency of the machines
- Only one connection line between drive and motor-feedback system. Instead of the encoder cable an integrated DSL pair takes over the signalling.
- Less cables and reduced connection costs
- Space and weight savings thanks to hybrid cable design
- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media

Application range

- Power drive systems in automation engineering
- Connecting cable between servo controller and motor
- In power chains or moving machine parts
- For use in assembling & pick-and-place machinery
- Particularly in wet areas of machine tools and transfer lines

Product features

- Maximum DSL transmission length: 100 m
- Flammability:
  UL/CSA: VW-1, FT1
  IEC/EN: 60332-1-2
- Halogen-free materials
- Low-capacitance design
- Oil-resistant

Norm references / Approvals

- UL AWM Style 21223
  cRU AWM I/II A/B FT1
- UL File No. E63634
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine-wire, bare copper conductor (power cores and control pair) and 19-wire, tinned copper conductor (signal pair)
- Core insulation: polypropylene (PP)
- Individual design depending on the item: power cores without or with one screened control pair and one DSL signal pair twisted together
- Non-woven wrapping
- Tinned-copper braiding
- PUR outer sheath, orange (RAL 2003)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

Core identification code
Power cores: black with marking U/L1/C/L+; V/L2; W/L3/D /L-; GN/YE protective conductor
Signal pair: white, blue
Control pair (optional): black with white numbers 5 + 6

Conductor stranding
Extra-fine wire according to VDE 0295, class 6/IEC 60228, class 6
DSL pair: 19-wired

Minimum bending radius
Flexing: up from 7.5 × outer diameter
Fixed installation: 5 × outer diameter

Nominal voltage
Power and control:
IEC: U_0/U: 600/1000 V
UL: 1000 V
Signal pair: 300 V

Test voltage
Power and control: 4 kV
Signal pair: 1kV

Protective conductor
G = with GN-YE protective conductor

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Temperature range
Flexing: -40°C to +90°C
(UL: +80°C)
Fixed installation: -50°C to +90°C
(UL: +80°C)

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
Hybrid cables for power chain applications				
1023275	4 G 1.5 + (2 × 22AWG)	11.2	115	198
1023276	4 G 2.5 + (2 × 22AWG)	12.6	160	269
1023277	4 G 4 + (2 × 22AWG)	14	218	343
1023274	4 G 1 + (2 × 0.75) + (2 × 22AWG)	11.8	133	202
1023278	4 G 1.5 + (2 × 1) + (2 × 22AWG)	13.2	152	256
1023279	4 G 2.5 + (2 × 1) + (2 × 22AWG)	14	195	313
1023280	4 G 4 + (2 × 1) + (2 × 22AWG)	15.8	268	407

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
HIPERFACE DSL® is a registered trademark of SICK AG, ACURO®link and SCS open link are registered trademarks of Hengstler GmbH
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® CLASSIC FD 810

Highly flexible control cable with PVC core insulation and PVC sheath

Info

- Core Line Performance - Medium to increased travel lengths or acceleration
- The classic for multi-functional use
- Further dimensions/colours on request

Benefits

- Well-proven and reliable
- For various applications
- Good combination of quality and price
- Low particle emission at moved chain application

Application range

- In power chains or moving machine parts
- Suitable for use in measuring, control and regulating circuits
- Assembly lines, production lines, in all kinds of machines
- In damp or wet interiors
- Only for outdoor use within the indicated operating temperature range, with UV-protection

Product features

- Flame-retardant according IEC 60332-1-2
- Low-adhesive surface

Norm references / Approvals

- Core and outer sheath based on VDE 0245/0285
- Clean room classification for individual items on request
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: PVC
- Cores twisted in layers in short lay lengths
- Non-woven wrapping
- PVC outer sheath, grey (similar RAL 7001)

Technical data

Core identification code
Black with white numbers acc. to VDE 0293-1

Conductor stranding
Extra-fine wire according to VDE 0295, class 6/IEC 60228 class 6

Minimum bending radius
Flexing: up from 7.5 × outer diameter
Fixed installation: 4 × outer diameter

Nominal voltage
U0/U: 300/500 V

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Test voltage
4000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Flexing: 0°C to +70°C
Fixed installation: -40°C to +80°C

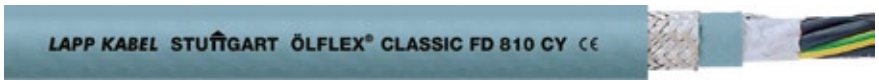
Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC FD 810				
0026100	2 X 0.5	5.3	10	40
0026101	3 G 0.5	5.7	15	48
0026102	4 G 0.5	6.3	19.2	58
0026103	5 G 0.5	6.8	24	67
0026104	7 G 0.5	8	34	88
0026105	12 G 0.5	9.5	58	136
0026106	18 G 0.5	11.4	86.4	195
0026107	25 G 0.5	13.7	120	274
0026108	30 G 0.5	14.3	144	312
0026109	34 G 0.5	15.6	164	359
0026110	50 G 0.5	18.5	240	515
0026119	2 X 0.75	5.7	15	49
0026120	3 G 0.75	6.2	22	60
0026121	4 G 0.75	6.8	29	73
0026122	5 G 0.75	7.4	37	86
0026123	7 G 0.75	8.9	51	117
0026124	12 G 0.75	10.6	87	181
0026125	16 G 0.75	12	116	234
0026126	18 G 0.75	12.7	130	259
0026127	25 G 0.75	15.2	181	363
0026130	2 X 1	6.1	19	58
0026131	3 G 1	6.6	29	72
0026132	4 G 1	7.3	39	88
0026133	5 G 1	8	48	104
0026134	7 G 1	9.6	67	142
0026135	12 G 1	11.4	115	221
0026136	14 G 1	12.3	134.4	258
0026137	16 G 1	13	153	287
0026138	18 G 1.	13.9	173	324
0026139	25 G 1	16.4	240	445
0026140	26 G 1	16.4	249.6	459

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0026141	34 G 1	18.9	326.4	595
0026142	41 G 1	20.6	394	712
0026143	50 G 1	22.3	480	854
0026144	65 G 1	25.4	624	1097
0026149	2 X 1.5	6.8	29	74
0026150	3 G 1.5	7.4	43.2	93
0026151	4 G 1.5	8.1	58	114
0026152	5 G 1.5	9.1	72	139
0026153	7 G 1.5	10.9	101	189
0026154	12 G 1.5	12.9	173	295
0026156	18 G 1.5	15.6	259	429
0026157	25 G 1.5	18.6	360	597
0026158	26 G 1.5	18.6	374.4	615
0026159	34 G 1.5	21.1	489.6	783
0026160	41 G 1.5	23	613	936
0026161	42 G 1.5	23	629	954
0026162	50 G 1.5	25	720	1134
0026170	3 G 2.5	9	72	145
0026171	4 G 2.5	10	96	179
0026172	5 G 2.5	11.2	120	218
0026173	7 G 2.5	13.6	168	303
0026174	12 G 2.5	16	288	473
0026175	14 G 2.5	17.2	336	548
0026180	3 G 4	10.6	120	214
0026181	4 G 4	11.7	160	266
0026182	5 G 4	13.1	200	325
0026183	4 G 6	13.9	230.4	396
0026184	5 G 6	15.5	288	484
0026185	4 G 10	17.6	384	644
0026186	5 G 10	19.6	480	785
0026187	4 G 16	21	615	922
0026188	5 G 16	23.6	768	1133

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® CLASSIC FD 810 CY

Highly flexible, screened control cable with PVC core insulation and PVC inner and outer sheath



Info

- Core Line Performance - Medium to increased travel lengths or acceleration
- The classic for multi-functional use
- EMC-compliant

Benefits

- Well-proven and reliable
- For various applications
- Good combination of quality and price
- Additional robustness thanks to inner sheath
- Copper screening complies with EMC requirements and protects against electromagnetic interference

Application range

- In power chains or moving machine parts
- Suitable for use in measuring, control and regulating circuits
- Power circuits for electrical equipments used in automation engineering
- Assembly lines, production lines, in all kinds of machines
- Only for outdoor use within the indicated operating temperature range, with UV-protection

Product features

- Flame-retardant according IEC 60332-1-2
- Low-adhesive surface
- EMC-compliant

Norm references / Approvals

- Core and outer sheath based on VDE 0245/0285
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: PVC
- Cores twisted in layers in short lay lengths
- PVC inner sheath, grey
- Tinned-copper braiding
- Non-woven wrapping
- PVC outer sheath, grey (similar RAL 7001)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

Core identification code
Black with white numbers according to VDE 0293-1

Conductor stranding
Extra-fine wire according to VDE 0295, class 6/IEC 60228, class 6

Minimum bending radius
Flexing: up from 7.5 × outer diameter
Fixed installation: 4 × outer diameter

Nominal voltage
U0/U: 300/500 V

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Test voltage
4000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Flexing: 0°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC FD 810 CY				
0026200	2 X 0.5	6.9	33	74
0026201	3 G 0.5	7.3	39	84
0026202	4 G 0.5	7.9	46	98
0026203	5 G 0.5	8.4	54	110
0026204	7 G 0.5	9.8	70	143
0026205	12 G 0.5	11.3	100	201
0026206	18 G 0.5	13.4	153	287
0026207	25 G 0.5	15.9	202	394
0026208	30 G 0.5	16.5	228	432
0026219	2 X 0.75	7.3	39	85
0026220	3 G 0.75	7.8	48	99
0026221	4 G 0.75	8.4	59	116
0026222	5 G 0.75	9	69	133
0026223	7 G 0.75	10.7	90	178
0026224	12 G 0.75	12.4	129	253
0026226	18 G 0.75	14.9	205	368
0026227	25 G 0.75	17.4	271	496
0026229	30 G 0.75	18	320	549
0026230	2 X 1.0	7.7	46	97
0026231	3 G 1.0	8.2	57	114
0026232	4 G 1.0	8.9	70	134
0026233	5 G 1.0	9.8	81	159
0026234	7 G 1.0	11.4	110	207
0026235	12 G 1.0	13.4	182	314

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0026238	18 G 1.0	16.1	254	443
0026239	25 G 1.0	18.8	365	612
0026240	26 G 1.0	18.8	374	625
0026241	34 G 1.0	21.5	463	787
0026242	41 G 1.0	23.2	542	918
0026243	50 G 1.0	25.3	640	1120
0026249	2 X 1.5	8.4	58	117
0026250	3 G 1.5	9	75	139
0026251	4 G 1.5	9.9	91	169
0026252	5 G 1.5	10.9	112	201
0026253	7 G 1.5	12.7	145	262
0026254	12 G 1.5	15.1	247	404
0026255	16 G 1.5	16.8	314	503
0026256	18 G 1.5	17.8	348	560
0026257	25 G 1.5	21.2	498	793
0026259	34 G 1.5	23.9	700	1005
0026270	3 G 2.5	10.8	119	207
0026271	4 G 2.5	11.8	161	247
0026272	5 G 2.5	13.2	194	307
0026273	7 G 2.5	15.8	262	418
0026281	4 G 4.0	13.7	238	360
0026282	5 G 4.0	15.3	280	436
0026283	4 G 6.0	16.1	318	514
0026285	4 G 10.0	20.2	521	824
0026287	4 G 16.0	23.6	780	1207

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® CHAIN 809 SC

Highly flexible, single core cable with PVC insulation and PVC sheath - certified for North America

Info

- Basic Line Performance - Moderate travel lengths or acceleration
- Rated voltage 0,6/1 kV
- AWM certification for USA and Canada

Benefits

- Multi-standard certification reduces part varieties and saves costs
- Multifunctional application possibilities
- Under consideration of the temperature range also suitable for flexible outdoor use
- Certified for the USA and Canada for export-oriented machine, appliance and apparatus manufacturers

Application range

- In power chains or moving machine parts
- For internal wiring of electric and electronic equipment in switch cabinets
- Specially designed for power circuits of servomotors driven by frequency converters
- This cable can substitute multi-core power cables where space requirements or minimum bending radii cause problems
- Test systems in the automotive industry, vehicles and stationary fuel cell systems

Product features

- Flammability:
  UL/CSA: VW-1, FT1
  IEC/EN: 60332-1-2
- Oil-resistant according to DIN EN 50290-2-22 (TM54)
- Low-adhesive surface

Norm references / Approvals

- Based on VDE 0250 / 0285
- UL-AWM-Style 10107
  cRU AWM II A/B FT1
- UL File No. E63634
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Fine-wire, bare copper conductor
- Core insulation: PVC
- PVC outer sheath, black (similar RAL 9005)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000057
ETIM 5.0/6.0 Class-Description: Low voltage power cable

Core identification code
Black or green-yellow, other colours available on request

Conductor stranding
Fine wire according to VDE 0295, Class 5/IEC 60228, Class 5

Torsion movement in WTG
TW-0 & TW-1, refer to Appendix T0

Minimum bending radius
Flexing: up from 10 × outer diameter
Fixed installation: 4 × outer diameter

Nominal voltage
IEC: U_0/U 600/1000 V
UL & CSA: 600 V

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Test voltage
4000 V

Temperature range
Flexing: 0°C to +70°C (UL: +90°C)
Fixed installation: -40°C to +70°C (UL: +90°C)

Article number	Conductor cross-section (mm²)	Outer diameter (mm)	Core colour	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CHAIN 809 SC					
1062900	6	7.4	green-yellow	57.6	101
1062901	6	7.4	black	57.6	101
1062902	10	9	green-yellow	96	158
1062903	10	9	black	96	158
1062904	16	9.9	green-yellow	153.6	217
1062905	16	9.9	black	153.6	217
1062906	25	11.3	green-yellow	240	307
1062907	25	11.3	black	240	307
1062908	35	13.1	green-yellow	336	427
1062909	35	13.1	black	336	427
1062910	50	15.9	green-yellow	480	611
1062911	50	15.9	black	480	611
1062912	70	17.6	green-yellow	672	778
1062913	70	17.6	black	672	778
1062914	95	19.8	green-yellow	912	1015
1062915	95	19.8	black	912	1015
1062916	120	23	green-yellow	1152	1296
1062917	120	23	black	1152	1296
1062918	150	24.8	green-yellow	1440	1597
1062919	150	24.8	black	1440	1597
1062920	185	27.1	green-yellow	1776	1971
1062921	185	27.1	black	1776	1971
1062922	240	30.6	green-yellow	2304	2419

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® CHAIN 809 SC CY

Highly flexible, screened single core cable with PVC insulation and PVC sheath - certified for North America

Info

- Basic Line Performance - Moderate travel lengths or acceleration
- AWM certification for USA and Canada
- EMC compliant copper screening

Benefits

- Multi-standard certification reduces part varieties and saves costs
- Multifunctional application possibilities
- Under consideration of the temperature range also suitable for flexible outdoor use
- Copper braiding screens the cable against electromagnetic interference
- Certified for the USA and Canada for export-oriented machine, appliance and apparatus manufacturers

Application range

- In power chains or moving machine parts
- For internal wiring of electric and electronic equipment in switch cabinets
- Specially designed for power circuits of servomotors driven by frequency converters
- This cable can substitute screened multi-core motor cables where space requirements or minimum bending radii cause problems
- Test systems in the automotive industry, vehicles and stationary fuel cell systems

Product features

- Flammability:
  UL/CSA: VW-1, FT1
  IEC/EN: 60332-1-2
- Oil-resistant according to DIN EN 50290-2-22 (TM54)
- Low-adhesive surface
- EMC-compliant

Norm references / Approvals

- Based on VDE 0250 / 0285
- UL-AWM-Style 10107
  cRU AWM II A/B FT1
- UL File No. E63634
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Fine-wire, bare copper conductor
- Core insulation: PVC
- Non-woven wrapping
- Tinned-copper braiding
- Non-woven wrapping
- PVC outer sheath,
  black (similar RAL 9005)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000057
ETIM 5.0/6.0 Class-Description:
Low voltage power cable

Core identification code
Black, other colours are available upon request

Conductor stranding
Fine wire according to
VDE 0295, Class 5/IEC 60228, Class 5

Minimum bending radius
Flexing: up from 10 × outer diameter
Fixed installation: 4 × outer diameter

Nominal voltage
IEC: U_0/U 600/1000 V
UL & CSA: 600 V

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Test voltage
4000 V

Temperature range
Flexing: 0°C to +70°C (UL: +90°C)
Fixed installation: -40°C to +70°C (UL: +90°C)

Article number	Conductor cross-section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CHAIN 809 SC CY				
1062940	6	8.1	76	126
1062941	10	9.7	122	190
1062942	16	10.6	180	250
1062943	25	12	268	351
1062944	35	14.8	392	519
1062945	50	16.8	544	686
1062946	70	18.5	766	885
1062947	95	20.9	1020	1135
1062948	120	24.1	1272	1443
1062949	150	26.1	1593	1788
1062950	185	28.4	1941	2177
1062951	240	31.9	2518	2671

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® FD 90

Highly flexible, single core cable with PVC insulation and PVC sheath - certified for North America

Info

- Core Line Performance - Medium to increased travel lengths or acceleration
- Well-proven and reliable
- AWM certification for USA and Canada

Benefits

- Multi-standard certification reduces part varieties and saves costs
- Multifunctional application possibilities
- Under consideration of the temperature range also suitable for flexible outdoor use
- Also suitable for fixed installation where space is limited
- Certified for the USA and Canada for export-oriented machine, appliance and apparatus manufacturers

Application range

- In power chains or moving machine parts
- For internal wiring of electric and electronic equipment in switch cabinets
- Specially designed for power circuits of servomotors driven by frequency converters
- This cable can substitute multi-core power cables where space requirements or minimum bending radii cause problems
- Test systems in the automotive industry, vehicles and stationary fuel cell systems

Product features

- Flame-retardant according to IEC 60332-1-2 & CSA FT1
- High oil-resistance
- Low-adhesive surface

Norm references / Approvals

- Based on VDE 0250 / 0285
- UL-AWM-Style 10107, cRU AWM II A/B FT1 ≥150mm²
- CSA AWM IA/B IIA/B FT 1 ≤ 120 mm²
- UL File No. E63634
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire strand made of bare copper wires (class 6)
- Non-woven wrapping
- Core insulation: PVC
- PVC outer sheath, black (similar RAL 9005)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000057
ETIM 5.0/6.0 Class-Description: Low voltage power cable

Core identification code
Black or green-yellow, other colours available on request

Conductor stranding
Extra-fine wire according to VDE 0295, class 6/IEC 60228, class 6

Minimum bending radius
Flexing: up from 7.5 × outer diameter
Fixed installation: 3 × outer diameter

Nominal voltage
IEC: U_0/U 600/1000 V
UL & CSA: 600 V

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Test voltage
4000 V

Temperature range
Flexing: -5°C to +70°C (UL: +90°C)
Fixed installation: -40°C to +70°C (UL: +90°C)

Article number	Conductor cross-section (mm²)	Outer diameter (mm)	Core colour	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® FD 90					
0026600	10	9	green-yellow	96	176
0026601	10	9	black	96	176
0026603	16	10.5	green-yellow	153.6	240
0026604	16	10.5	black	153.6	240
0026607	25	11.8	green-yellow	240	361
0026608	25	11.8	black	240	361
0026610	35	14.2	green-yellow	336	482
0026611	35	14.2	black	336	482
0026613	50	16.2	green-yellow	480	660
0026614	50	16.2	black	480	660
0026616	70	18.3	green-yellow	672	898
0026617	70	18.3	black	672	898
0026619	95	19.8	green-yellow	912	1179
0026620	95	19.8	black	912	1179
0026622	120	23.4	green-yellow	1152	1521
0026623	120	23.4	black	1152	1521
0026625	150	25.1	green-yellow	1440	1739
0026626	150	25.1	black	1440	1739
0026628	185	28.1	green-yellow	1776	2305
0026629	185	28.1	black	1776	2305
0026634	240	31.6	green-yellow	2304	2944
0026635	240	31.6	black	2304	2944
0026640	300	33.5	green-yellow	2880	3545

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® FD 90 CY

Highly flexible, screened single core cable with PVC insulation and PVC sheath - certified for North America

Info

- Core Line Performance - Medium to increased travel lengths or acceleration
- AWM certification for USA and Canada
- EMC compliant copper screening

Benefits

- Multi-standard certification reduces part varieties and saves costs
- For various applications
- Also suitable for fixed installation where space is limited
- Copper screening complies with EMC requirements and protects against electromagnetic interference
- Certified for the USA and Canada for export-oriented machine, appliance and apparatus manufacturers

Application range

- In power chains or moving machine parts
- For internal wiring of electric and electronic equipment in switch cabinets
- Specially designed for power circuits of servomotors driven by frequency converters
- This cable can substitute screened multi-core motor cables where space requirements or minimum bending radii cause problems
- Test systems in the automotive industry, vehicles and stationary fuel cell systems

Product features

- Flame-retardant according to IEC 60332-1-2 & CSA FT1
- High oil-resistance
- Low-adhesive surface
- EMC-compliant

Norm references / Approvals

- Based on VDE 0250 / 0285
- UL-AWM-Style 10107, cRU AWM II A/B FT1 ≥150mm²
- CSA AWM IA/B IIA/B FT 1 ≤ 120 mm²
- UL File No. E63634
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire strand made of bare copper wires (class 6)
- Non-woven wrapping
- Core insulation: PVC
- Tinned-copper braiding
- PVC outer sheath, orange (similar RAL 2003)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000057
ETIM 5.0/6.0 Class-Description: Low voltage power cable

Core identification code
Black, other colours are available upon request

Conductor stranding
Extra-fine wire according to VDE 0295, class 6/IEC 60228, class 6

Minimum bending radius
Flexing: up from 7.5 × outer diameter
Fixed installation: 3 × outer diameter

Nominal voltage
IEC: U_0/U 600/1000 V
UL & CSA: 600 V

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Test voltage
4000 V

Temperature range
Flexing: -5°C to +70°C (UL: +90°C)
Fixed installation: -40°C to +70°C (UL: +90°C)

Article number	Conductor cross-section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® FD 90 CY				
0026651	10	9.7	127.6	227
0026653	16	11.2	186.2	297
0026655	25	12.5	257.8	410
0026657	35	15.1	400.7	607
0026659	50	17.1	554.8	808
0026661	70	19.4	775.6	1081
0026663	95	20.9	1028.1	1382
0026665	120	24.5	1282.4	1752
0026667	150	26.2	1578	1924
0026669	185	29.2	1935	2611
0026671	240	32.9	2526	3372
0026673	300	34.8	3128.8	4105

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
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Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® CHAIN 809

Highly flexible control cable with PVC core insulation and PVC sheath - certified for North America

Info

- Basic Line Performance - Moderate travel lengths or acceleration
- AWM certification for USA and Canada
- Further dimensions/colours on request

Benefits

- Good combination of quality and price
- Multi-standard certification reduces part varieties and saves costs
- Certified for the USA and Canada for export-oriented machine, appliance and apparatus manufacturers

Application range

- In power chains or moving machine parts
- Suitable for use in measuring, control and regulating circuits
- Wiring of machines, tools, devices, appliances and control cabinets
- Assembly lines, production lines, in all kinds of machines

Product features

- Suitable for torsional applications which are typical for the loop in wind turbine generators (WTG)
- Flammability:
  UL/CSA: VW-1, FT1
  IEC/EN: 60332-1-2
- Low-adhesive surface

Norm references / Approvals

- UL AWM Style 20886
- CUL AWM II A/B FT1
- UL File No. E63634
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Fine-wire, bare copper strand
- Core insulation: PVC
- Cores twisted in layers
- Non-woven wrapping
- PVC outer sheath, grey (similar RAL 7001)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

Core identification code
Black with white numbers according to VDE 0293-1

Conductor stranding
Fine wire according to VDE 0295, Class 5/IEC 60228, Class 5

Torsion movement in WTG
TW-0 & TW-1, refer to Appendix T0

Minimum bending radius
Flexing: up from 10 × outer diameter
Fixed installation: 4 × outer diameter

Nominal voltage
VDE: U_0/U: 300/500 V
UL & CSA: 1000 V

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Test voltage
4000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Flexing: 0°C to +70°C
(UL/CSA: +80°C)
Fixed installation: -40°C to +70°C
(UL/CSA +80°C)

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CHAIN 809				
1026700	2 X 0.5	5.2	10	40
1026701	3 G 0.5	5.5	15	48
1026702	4 G 0.5	6	20	58
1026703	5 G 0.5	6.5	24	67
1026704	7 G 0.5	7.7	34	88
1026705	12 G 0.5	9.2	58	136
1026706	18 G 0.5	11	87	195
1026707	25 G 0.5	13.3	120	274
1026708	2 X 0.75	5.6	15	49
1026709	3 G 0.75	6	22	60
1026710	4 G 0.75	6.5	29	73
1026711	5 G 0.75	7.1	37	86
1026712	7 G 0.75	8.5	51	117
1026713	12 G 0.75	10.3	87	181
1026714	18 G 0.75	12.2	130	259
1026715	25 G 0.75	14.8	181	363
1026716	2 X 1	5.9	19	58
1026717	3 G 1	6.3	29	72

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1026718	4 G 1	6.9	39	88
1026719	5 G 1	7.5	48	104
1026720	7 G 1	9	67	142
1026721	12 G 1	10.9	115	221
1026722	18 G 1	13.2	173	324
1026723	25 G 1	15.7	240	445
1026724	2 X 1.5	6.5	29	74
1026725	3 G 1.5	6.9	43.2	93
1026726	4 G 1.5	7.6	58	114
1026727	5 G 1.5	8.5	72	139
1026728	7 G 1.5	10.3	101	189
1026729	12 G 1.5	12.3	173	295
1026730	18 G 1.5	14.9	259	429
1026731	25 G 1.5	17.9	360	597
1026732	3 G 2.5	8.4	72	145
1026733	4 G 2.5	9.3	96	179
1026734	7 G 2.5	12.7	168	218
1026737	4 G 4	11.1	160	266

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: Coil 100 m; Drum (500; 1000) m
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® CHAIN 809 CY

Highly flexible, screened control cable with PVC core insulation and PVC sheath - certified for North America

Info

- Basic Line Performance - Moderate travel lengths or acceleration
- AWM certification for USA and Canada
- EMC compliant copper screening

Benefits

- Good combination of quality and price
- Thin and light, without inner sheath
- Multi-standard certification reduces part varieties and saves costs
- Certified for the USA and Canada for export-oriented machine, appliance and apparatus manufacturers
- Copper screening complies with EMC requirements and protects against electromagnetic interference

Application range

- In power chains or moving machine parts
- In EMC-sensitive environments
- Suitable for use in measuring, control and regulating circuits
- Wiring of machines, tools, devices, appliances and control cabinets
- Assembly and production lines

Product features

- Suitable for torsional applications which are typical for the loop in wind turbine generators (WTG)
- Flammability:
  UL/CSA: VW-1, FT1
  IEC/EN: 60332-1-2
- EMC-compliant
- Low-adhesive surface

Norm references / Approvals

- UL AWM Style 20886
- CUL AWM II A/B FT1
- UL File No. E63634
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Fine-wire, bare copper strand
- Core insulation: PVC
- Cores twisted in layers
- Non-woven wrapping
- Tinned-copper braiding
- PVC outer sheath, grey (similar RAL 7001)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

Core identification code
Black with white numbers according to VDE 0293-1

Conductor stranding
Fine wire according to VDE 0295, Class 5/IEC 60228, Class 5

Torsion movement in WTG
TW-0 & TW-1, refer to Appendix T0

Minimum bending radius
Flexing: up from 10 × outer diameter
Fixed installation: 4 × outer diameter

Nominal voltage
VDE: U0/U: 300/500 V
UL & CSA: 1000 V

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Test voltage
Core/core: 4000 V
Core/screen: 2000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Flexing: 0°C to +70°C (UL/CSA: +80°C)
Fixed installation: -40°C to +70°C (UL/CSA +80°C)

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CHAIN 809 CY				
1026751	2 X 0.5	5.8	36	45
1026752	3 G 0.5	6.1	43	59
1026753	4 G 0.5	6.6	49	83
1026754	5 G 0.5	7.1	57	96
1026755	7 G 0.5	8.5	69	136
1026756	12 G 0.5	10	104	200
1026757	18 G 0.5	11.8	141	275
1026758	25 G 0.5	14.1	211	350
1026759	2 X 0.75	6.2	43	56
1026760	3 G 0.75	6.6	52	70
1026761	4 G 0.75	7.1	61	95
1026762	5 G 0.75	7.7	72	130
1026763	7 G 0.75	9.1	89	168
1026764	12 G 0.75	10.9	138	232
1026765	18 G 0.75	13	211	315
1026766	25 G 0.75	15.6	280	435
1026767	2 X 1	6.5	51	84
1026768	3 G 1	6.9	62	110

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1026769	4 G 1	7.5	74	130
1026770	5 G 1	8.3	88	156
1026771	7 G 1	9.8	112	192
1026772	12 G 1	11.7	185	285
1026773	18 G 1	14	268	395
1026774	25 G 1	16.7	354	486
1026775	2 X 1.5	7.1	65	97
1026776	3 G 1.5	7.5	82	125
1026777	4 G 1.5	8.4	100	165
1026778	5 G 1.5	9.1	119	193
1026779	7 G 1.5	10.9	154	245
1026780	12 G 1.5	13.3	268	365
1026781	18 G 1.5	15.7	373	553
1026782	25 G 1.5	18.7	530	734
1026783	3 G 2.5	9	118	188
1026784	4 G 2.5	10.1	147	236
1026785	7 G 2.5	13.5	253	340
1026788	4 G 4	11.9	248	305

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: Coil 100 m; Drum (500; 1000) m
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

NEW

ÖLFLEX® CHAIN PN

Highly flexible, PROFINET-compliant power cable - certified for North America

Info

- PROFINET-compliant design
- Basic Line for light & ordinary duty in power chain applications
- AWM certification for USA and Canada

Benefits

- Compact design
- Multi-standard certification reduces part varieties and saves costs
- Certified for the USA and Canada for export-oriented machine, appliance and apparatus manufacturers

Application range

- In power chains or moving machine parts
- In dry, damp or wet interiors
- Suitable for use in measuring, control and regulating circuits
- Wiring of machines, tools, devices, appliances and control cabinets
- Only for outdoor use within the indicated operating temperature range, with UV-protection

Product features

- Designed for 2 million alternating bending cycles and travel distances up to 10 meter
- Suitable for torsional applications which are typical for the loop in wind turbine generators (WTG)
- Flammability:
  UL/CSA: VW-1, FT1
  IEC/EN: 60332-1-2
- Oil-resistant according to DIN EN 50290-2-22 (TM54)
- Low-adhesive surface

Norm references / Approvals

- UL AWM Style 20886
- CUL AWM II A/B FT1
- UL File No. E63634
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Fine-wire, bare copper strand
- Core insulation: PVC
- Cores twisted in layers
- Non-woven wrapping
- Outer sheath: PVC, heat-resistant
- Sheath colour:
  4 cores: black (RAL 9005)
  5 cores: grey (RAL 7001)

Technical data

Core identification code
brown (L1), blue (N1), black (L2), white (N2)
5 cores: additionally grey (PE)

Conductor stranding
Fine wire according to VDE 0295, Class 5/IEC 60228, Class 5

Torsion movement in WTG
TW-0 & TW-1, refer to Appendix T0

Minimum bending radius
For flexible use:
Chains in self-supporting non-gliding arrangements: 10 × outer diameter
In chains in gliding arrangements: 12 × outer diameter
Fixed installation: 4 × outer diameter

Nominal voltage
VDE: U_0/U: 300 V
UL & CSA: 1000 V

Test voltage
1500 V

Protective conductor
G = with protective conductor grey
X = without protective conductor

Bending cycles & operation parameters
2 mio. cycles

Temperature range
Flexible: VDE 0°C to +90°C;
UL: up to +90°C
Fixed installation: VDE -40°C to +90°C;
UL/CSA: up to +90°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CHAIN PN				
1026791	4 X 0.75	6.5	29	73
1026792	5 G 0.75	7.1	37	86
1026793	4 X 1.5	7.6	58	114
1026794	5 G 1.5	8.5	72	139
1026795	4 X 2.5	9.3	96	179
1026796	5 G 2.5	10.4	120	214

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: Coil 100 m; Drum (500; 1000) m
PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® FD 891

Highly flexible control cable with PVC core insulation and PVC sheath - certified for North America

Info

- Core Line Performance - Medium to increased travel lengths or acceleration
- AWM certification for USA and Canada

Benefits

- Multi-standard certification reduces part varieties and saves costs
- Certified for the USA and Canada for export-oriented machine, appliance and apparatus manufacturers
- Under consideration of the temperature range also suitable for flexible outdoor use

Application range

- In power chains or moving machine parts
- Suitable for use in measuring, control and regulating circuits
- Assembly lines, production lines, in all kinds of machines
- Machine tools
- Plant engineering

Product features

- Flame-retardant according to IEC 60332-1-2 & CSA FT1
- Oil-resistant
- Low-adhesive surface

Norm references / Approvals

- UL AWM Style 21098
- CSA AWM IA/B; IIA/B FT 1
- UL File No. E63634
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: PVC
- Cores twisted in layers in short lay lengths
- Non-woven wrapping
- PVC outer sheath, black (similar RAL 9005)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

Core identification code
Black with white numbers according to VDE 0293-1

Conductor stranding
Extra-fine wire according to VDE 0295, class 6/IEC 60228, class 6

Minimum bending radius
Flexing: up from 7.5 × outer diameter
Fixed installation: 4 × outer diameter

Nominal voltage
IEC: U_0/U 300/500 V
UL/CSA: 600 V

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Test voltage
4000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Flexing: -5°C to +70°C (UL: +90°C)
Fixed installation: -40°C to +70°C (UL: +90°C)

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® FD 891				
1026012	12 G 0.5	10.8	57.6	162
1026103	3 G 0.75	6.6	21.6	63
1026104	4 G 0.75	7.3	28.8	75
1026105	5 G 0.75	8	36	90
1026107	7 G 0.75	9.6	50.4	132
1026112	12 G 0.75	11.6	86.5	201
1026118	18 G 0.75	13.9	129.6	300
1026125	25 G 0.75	16.6	180	415
1026127	3 G 1	7.1	28.8	65
1026129	4 G 1	7.8	39	82
1026130	5 G 1	8.8	48	105
1026128	7 G 1	10.5	67.2	149
1026131	12 G 1	12.5	116	225
1026132	18 G 1	15	173	331
1026133	25 G 1	17.9	240	484
1026303	3 G 1.5	7.7	43.2	93
1026304	4 G 1.5	8.8	57.6	122
1026305	5 G 1.5	9.6	72	147

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1026307	7 G 1.5	11.6	100.8	219
1026312	12 G 1.5	13.9	172.8	322
1026318	18 G 1.5	16.9	259.2	478
1026325	25 G 1.5	20.1	360	670
1026334	34 G 1.5	23.6	489.6	897
1026403	3 G 2.5	8.8	72	129
1026404	4 G 2.5	9.8	96	167
1026405	5 G 2.5	11	120	212
1026407	7 G 2.5	13.4	168	304
1026412	12 G 2.5	15.8	288	452
1026504	4 G 4	11.8	153.6	263
1026505	5 G 4	13.2	192	325
1026507	7 G 4	16.1	268.8	469
1026604	4 G 6	13.7	230.4	368
1026614	4 G 10	17.9	384	588
1026624	4 G 16	24.1	614.4	1031
1026634	4 G 25	27.9	960	1530
1026644	4 G 35	31.1	1344	1959

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
DESINA® is a registered trademark of the German Machine Tool Builders' Association
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® FD 891 CY

Highly flexible, screened control cable with PVC insulation and PVC inner and outer sheath - certified

Info

- Core Line Performance - Medium to increased travel lengths or acceleration
- AWM certification for USA and Canada
- EMC compliant copper screening

Benefits

- Multi-standard certification reduces part varieties and saves costs
- Certified for the USA and Canada for export-oriented machine, appliance and apparatus manufacturers
- Under consideration of the temperature range also suitable for flexible outdoor use
- Copper screening complies with EMC requirements and protects against electromagnetic interference

Application range

- In power chains or moving machine parts
- Suitable for use in measuring, control and regulating circuits
- Assembly lines, production lines, in all kinds of machines
- Machine tools
- Plant engineering

Product features

- Flame-retardant according to IEC 60332-1-2 & CSA FT1
- Oil-resistant
- Low-adhesive surface
- EMC-compliant

Norm references / Approvals

- UL AWM Style 21098
- CSA AWM IA/B; IIA/B FT 1
- UL File No. E63634
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: PVC
- Cores twisted in layers in short lay lengths
- Non-woven wrapping
- Tinned-copper braiding
- PVC outer sheath, black (similar RAL 9005)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

Core identification code
Black with white numbers according to VDE 0293-1

Conductor stranding
Extra-fine wire according to VDE 0295, class 6/IEC 60228, class 6

Minimum bending radius
Flexing: up from 7.5 × outer diameter
Fixed installation: 4 × outer diameter

Nominal voltage
IEC: U_0/U 300/500 V
UL/CSA: 600 V

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Test voltage
4000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Flexing: -5°C to +70°C (UL: +90°C)
Fixed installation: -40°C to +70°C (UL: +90°C)

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® FD 891 CY				
1027003	3 G 0.5	7.9	38.9	89
1027004	4 G 0.5	8.5	47.3	102
1027005	5 G 0.5	9.2	55.3	127
1027007	7 G 0.5	10.9	81.1	177
1027012	12 G 0.5	12.6	99.9	234
1027018	18 G 0.5	15.5	160.1	381
1027025	25 G 0.5	17.7	203.9	472
1027103	3 G 0.75	8.2	49.2	105
1027104	4 G 0.75	8.9	59.9	123
1027105	5 G 0.75	10	68.6	155
1027107	7 G 0.75	11.6	91.7	206
1027112	12 G 0.75	13.8	152.1	304
1027118	18 G 0.75	16.3	204.4	425
1027292	3 G 1	8.7	56	124
1027301	4 G 1	9.8	70.2	155
1027293	5 G 1	10.6	84	182
1027294	7 G 1	12.3	108	237
1027295	12 G 1	14.7	178	352
1027302	18 G 1	17.3	255	497

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1027296	25 G 1	20.5	352	702
1027303	3 G 1.5	9.7	74.8	152
1027304	4 G 1.5	10.6	94.2	187
1027305	5 G 1.5	11.4	101.1	187
1027307	7 G 1.5	13.8	165.6	320
1027312	12 G 1.5	16.3	246.5	460
1027318	18 G 1.5	19.5	374.7	677
1027325	25 G 1.5	23.6	489.4	926
1027403	3 G 2.5	10.6	103.9	194
1027404	4 G 2.5	11.8	161.8	235
1027405	5 G 2.5	13	184.6	306
1027407	7 G 2.5	15.8	242.1	428
1027412	12 G 2.5	18.2	403.5	590
1027503	3 G 4	12.4	157.5	275
1027504	4 G 4	14	218.1	365
1027507	7 G 4	18.3	373.2	629
1027604	4 G 6	16.1	304.7	500
1027624	4 G 16	27.1	803.6	1357
1027634	4 G 25	31.3	1180.4	1879
1027644	4 G 35	34.3	1593.7	2360

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
DESINA® is a registered trademark of the German Machine Tool Builders' Association
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ÖLFLEX® CHAIN TM

Highly flexible control cable with TC-ER, MTW, WTTC or CIC/TC listing acc. (UL) or c(UL) for North America

Info

- Core Line Performance - Medium to increased travel lengths or acceleration
- The normative multi-talent according NEC and NFPA 79
- Problem-free use in cable trays, industrial machines or wind turbines

Benefits

- Multi-standard certification offers universal application range, reduces part varieties and saves costs
- TC-ER and MTW listings enable open wiring on cable trays as well as the usage for industrial machines with only one cable
- Resistant to contact with many mineral oil-based lubricants and other chemical media
- Ideal for export-oriented machinery and equipment manufacturers thanks to high normative acceptance by the North American NEC (National Electrical Code)
- Under consideration of the temperature range also suitable for flexible outdoor use

Application range

- In power chains or moving machine parts
- Static open wiring on and between cable tray an industrial machine acc. NEC
- Industrial machinery and machine tools
- Wind turbine engineering
- Linear robots, automated handling equipment

Product features

- High oil-resistance, according to UL OIL RES I and UL OIL RES II
- Flame-retardant according to CSA FT4; UL Vertical-Tray Flame Test
- Sunlight Resistant; Direct Burial
- Water-resistant, UL 75°C WET rating

Norm references / Approvals

- Certifications USA (UL) & UL AWM:
  TC-ER Tray Cable-Exposed Run
  MTW Machine Tool Wire
  WTTC Wind Turbine Tray Cable
  PLTC-ER Power Limited Tray Cable
  ITC Instrumentation Tray Cable
  DP-1 Data Processing Cable
  AWM Style 20886
- Certifications Canada c(UL) & CSA AWM:
  CIC/TC Control Instrumentation Cable/ Tray Cable FT4, AWM I/II A/B FT4
- Class 1 Division 2 per NEC Article 501
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire strand made of bare copper
- Core insulation: PVC with nylon skin
- Cores twisted in layers in short lay lengths
- Non-woven wrapping
- Outer jacket: Specially formulated thermoplastic polymer
- Sheath colour: black (similar RAL 9005)

Technical data

Core identification code
Black with white numbers

Conductor stranding
Extra-fine wire according to VDE 0295, class 6/IEC 60228, class 6

Torsion movement in WTG
TW-0 & TW-2, refer to Appendix T0

Minimum bending radius
Flexing: up from 7.5 × outer diameter
Fixed installation: 4 × outer diameter

Nominal voltage
UL/CSA: 600 V (TC, MTW, CIC), 1000 V (WTTC, AWM)
IEC: U_0/U 300/500 V

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Test voltage
2000 V

Protective conductor
G = with GN-YE protective conductor

Temperature range
Fixed installation:
-40°C (-25°C UL TC) to +90°C
(UL TC, MTW, according AWM +105°C)
Flexing:
-25°C to +90°C (according UL MTW)

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CHAIN TM				
8718030	3 G 1	7.8	29.8	66
8718040	4 G 1	8.6	38.7	82
8718050	5 G 1	9.3	49.11	95
8718070	7 G 1	10.7	68.452	125
8718120	12 G 1	12.3	117.56	210
8718180	18 G 1	15.4	175.595	308
8718250	25 G 1	17.8	244.048	414
8716030	3 G 1.5	8.6	43.155	92
8716040	4 G 1.5	9.5	58.036	112

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
8716050	5 G 1.5	10.3	72.917	134
8716070	7 G 1.5	12	101.19	180
8716120	12 G 1.5	14.7	166.667	311
8716180	18 G 1.5	17.2	260.417	443
8716250	25 G 1.5	20	360.119	621
8714040	4 G 2.5	10.6	96.73	180
8714070	7 G 2.5	14.5	168.155	286
8712040	4 G 4	12.4	154.762	295
8710040	4 G 6	15.2	230.65	397

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

NEW

ÖLFLEX® CHAIN TM CY

Highly flexible, screened control cable with TC-ER, MTW, WTTC or CIC/TC listing acc. (UL) or c(UL) for North America

Info

- Core Line Performance - Medium to increased travel lengths or acceleration
- The normative multi-talent according NEC and NFPA 79
- Problem-free use in cable trays, industrial machines or wind turbines

Benefits

- Multi-standard certification offers universal application range, reduces part varieties and saves costs
- TC-ER and MTW listings enable open wiring on cable trays as well as the usage for industrial machines with only one cable
- Resistant to contact with many mineral oil-based lubricants and other chemical media
- Ideal for export-oriented machinery and equipment manufacturers thanks to high normative acceptance by the North American NEC (National Electrical Code)
- Under consideration of the temperature range also suitable for flexible outdoor use

Application range

- In power chains or moving machine parts
- Static open wiring on and between cable tray an industrial machine acc. NEC
- Industrial machinery and machine tools
- Wind turbine engineering
- Linear robots, automated handling equipment

Product features

- High oil-resistance, according to UL OIL RES I and UL OIL RES II
- Flame-retardant according to CSA FT4 UL Vertical-Tray Flame Test
- Sunlight Resistant; Direct Burial
- Water-resistant, UL 75°C WET rating
- EMC-compliant

Norm references / Approvals

- Certifications USA (UL) & UL AWM:
  TC-ER Tray Cable-Exposed Run
  MTW Machine Tool Wire
  WTTC Wind Turbine Tray Cable
  PLTC-ER Power Limited Tray Cable
  ITC Instrumentation Tray Cable
  DP-1 Data Processing Cable
  AWM Style 20886
- Certifications Canada c(UL) & CSA AWM:
  CIC/TC Control Instrumentation Cable/ Tray Cable FT4, AWM I/II A/B FT4
- Class 1 Division 2 per NEC Articles 336, 501
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire strand made of bare copper
- Core insulation: PVC with nylon skin
- Cores twisted in layers in short lay lengths
- Non-woven wrapping
- Tinned-copper braiding
- Outer jacket: Specially formulated thermoplastic polymer
- Sheath colour: black (similar RAL 9005)

Technical data

Core identification code
Black with white numbers

Conductor stranding
Extra-fine wire according to VDE 0295, class 6/IEC 60228, class 6

Torsion movement in WTG
TW-0 & TW-2, refer to Appendix T0

Minimum bending radius
Flexing: up from 10 × outer diameter
Fixed installation: 4 × outer diameter

Nominal voltage
UL/CSA: 600 V (TC, MTW, CIC), WTTC 1000 V

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Test voltage
2000 V

Protective conductor
G = with GN-YE protective conductor

Temperature range
Fixed installation:
-40°C (-25°C UL TC) to +90°C
(UL TC, MTW, according AWM +105°C)
Flexing:
-25°C to +90°C (according UL MTW)

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CHAIN TM CY				
8718030S	3 G 1	8.4	59.524	122
8718040S	4 G 1	9.1	71.429	158
8718050S	5 G 1	10	84.821	183
8718070S	7 G 1	11.4	139.881	207
8718120S	12 G 1	13.9	227.679	341
8718180S	18 G 1	16.1	321.429	472
8718250S	25 G 1	18.6	336.31	649
8716030S	3 G 1.5	9.2	77.381	170
8716040S	4 G 1.5	10.2	98.214	190

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
8716050S	5 G 1.5	11	113.095	223
8716070S	7 G 1.5	12.7	145.833	269
8716120S	12 G 1.5	15.4	248.512	463
8716180S	18 G 1.5	18.1	349.702	679
8716250S	25 G 1.5	22.1	465.774	951
8714040S	4 G 2.5	11.4	138.393	269
8714070S	7 G 2.5	15.2	218.75	420
8712040S	4 G 4	13.1	229.17	463
8710040S	4 G 6	16.1	309.524	574

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® CLASSIC FD 810 P

Highly flexible control cable with PVC core insulation and abrasion and oil resistant PUR sheath

Info

- Core Line Performance - Medium to increased travel lengths or acceleration
- Good oil resistance
- Further dimensions/colours on request

Benefits

- Well-proven and reliable
- Various applications
- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media

Application range

- In power chains or moving machine parts
- Particularly in wet areas of machine tools and transfer lines
- Power circuits for electrical equipments used in automation engineering
- Suitable for use in measuring, control and regulating circuits
- Assembly lines, production lines, in all kinds of machines
- In dry, damp or wet interiors with normal mechanical stress conditions

Product features

- Flame-retardant according IEC 60332-1-2
- High oil-resistance
- Abrasion and notch-resistant
- Low-adhesive surface

Norm references / Approvals

- Core and outer sheath based on VDE 0245/0285
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: PVC
- Cores twisted in short lay lengths
- Non-woven wrapping
- PUR outer sheath, grey (similar RAL 7001)

Technical data

Core identification code
Black with white numbers acc. to VDE 0293-1

Conductor stranding
Extra-fine wire according to VDE 0295, class 6/IEC 60228 class 6

Minimum bending radius
Flexing: up from 7.5 × outer diameter
Fixed installation: 4 × outer diameter

Nominal voltage
U0/U: 300/500 V

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Test voltage
4000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC FD 810 P				
0026300	2 X 0.5	5.3	10	36
0026301	3 G 0.5	5.7	15	44
0026302	4 G 0.5	6.3	19	53
0026303	5 G 0.5	6.8	24	62
0026304	7 G 0.5	8	34	82
0026305	12 G 0.5	9.5	58	129
0026306	18 G 0.5	11.4	86.4	185
0026319	2 X 0.75	5.7	15	44
0026320	3 G 0.75	6.2	22	55
0026321	4 G 0.75	6.8	29	67
0026322	5 G 0.75	7.4	37	80
0026323	7 G 0.75	8.9	51	109
0026324	12 G 0.75	10.6	87	172
0026326	18 G 0.75	12.7	130	247
0026327	25 G 0.75	15.2	181	346
0026330	2 X 1	6.1	20	52
0026331	3 G 1	6.6	29	66
0026332	4 G 1	7.3	39	82
0026333	5 G 1	8	48	97
0026334	7 G 1	9.6	67	117
0026335	12 G 1	11.4	115	211
0026338	18 G 1	13.9	173	310
0026339	25 G 1	16.4	240	426
0026341	34 G 1	18.9	326.4	571
0026342	41 G 1	20.6	394	684
0026343	50 G 1	22.3	480	822
0026344	65 G 1	25.4	624	1058

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0026349	2 X 1.5	6.8	29	68
0026350	3 G 1.5	7.4	43.2	86
0026351	4 G 1.5	8.1	58	106
0026352	5 G 1.5	9.1	72	131
0026353	7 G 1.5	10.9	101	178
0026354	12 G 1.5	12.9	173	281
0026355	16 G 1.5	14.6	230	365
0026356	18 G 1.5	15.6	259	411
0026357	25 G 1.5	18.6	360	571
0026359	34 G 1.5	21.1	489.6	753
0026361	42 G 1.5	23	629	919
0026362	50 G 1.5	25	720	1093
0026370	3 G 2.5	9	72	135
0026371	4 G 2.5	10	96	168
0026372	5 G 2.5	11.2	120	206
0026373	7 G 2.5	13.6	168	286
0026374	12 G 2.5	16	288	453
0026375	14 G 2.5	17.2	336	525
0026381	4 G 4	11.7	160	252
0026382	5 G 4	13.1	200	309
0029200	1 G 6	6.4	60	84
0026383	4 G 6	13.9	230	377
0029210	1 G 10	7.7	100	141
0026385	4 G 10	17.6	384	614
0026386	5 G 10	19.6	480	751
0029220	1 G 16	9.2	160	198
0026387	4 G 16	21	615	851

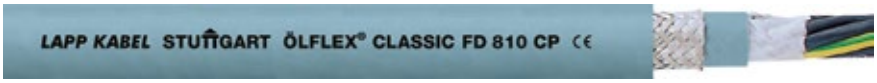
Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® CLASSIC FD 810 CP

Highly flexible, screened control cable with PVC insulation, inner sheath and abrasion and oil resistant PUR jacket

Info

- Core Line Performance - Medium to increased travel lengths or acceleration
- Good oil resistance
- EMC compliant copper screening



Benefits

- Well-proven and reliable
- Various applications
- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Additional robustness thanks to inner sheath
- Copper braiding screens the cable against electromagnetic interference

Application range

- In power chains or moving machine parts
- Particularly in wet areas of machine tools and transfer lines
- Power circuits for electrical equipments used in automation engineering
- Suitable for use in measuring, control and regulating circuits
- In dry, damp or wet interiors with normal mechanical stress conditions

Product features

- Flame-retardant according to IEC 60332.1.2
- High oil-resistance
- Abrasion and notch-resistant
- EMC-compliant
- Low-adhesive surface

Norm references / Approvals

- Core and outer sheath based on VDE 0245/0285
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: PVC
- Cores twisted in short lay lengths
- Non-woven wrapping
- PVC inner sheath
- Tinned-copper braiding
- PUR outer sheath, grey (similar RAL 7001)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

Core identification code
Black with white numbers acc. to VDE 0293-1

Conductor stranding
Extra-fine wire acc. to VDE 0295, class 6/ IEC 60228, class 6

Minimum bending radius
Flexing: up from 7.5 × outer diameter
Fixed installation: 4 × outer diameter

Nominal voltage
U0/U: 300/500 V

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Test voltage
4000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CLASSIC FD 810 CP				
0026400	2 X 0,5	6,9	33	70
0026401	3 G 0,5	7,3	39	80
0026402	4 G 0,5	7,9	46	94
0026403	5 G 0,5	8,4	54	106
0026404	7 G 0,5	9,8	70	138
0026405	12 G 0,5	11,3	100	194
0026419	2 X 0,75	7,3	39	81
0026420	3 G 0,75	7,8	48	95
0026421	4 G 0,75	8,4	59	111
0026422	5 G 0,75	9	69	128
0026423	7 G 0,75	10,7	90	171
0026424	12 G 0,75	12,4	129	244
0026425	16 G 0,75	14,2	186	328
0026426	18 G 0,75	14,9	205	356
0026427	25 G 0,75	17,4	271	479
0026430	2 X 1	7,7	46	93
0026431	3 G 1	8,2	57	109
0026432	4 G 1	8,9	70	129
0026433	5 G 1	9,8	81	154
0026434	7 G 1	11,4	110	200
0026435	12 G 1	13,4	182	304

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0026438	18 G 1	16,1	254	429
0026439	25 G 1	18,8	365	593
0026449	2 X 1,5	8,4	58	112
0026450	3 G 1,5	9	75	133
0026451	4 G 1,5	9,9	91	163
0026452	5 G 1,5	10,9	112	193
0026453	7 G 1,5	12,7	145	252
0026454	12 G 1,5	15,1	247	391
0026456	18 G 1,5	17,8	348	542
0026457	25 G 1,5	21,2	498	767
0026470	3 G 2,5	10,8	119	199
0026471	4 G 2,5	11,8	161	238
0026472	5 G 2,5	13,2	194	297
0026473	7 G 2,5	15,8	262	403
0026474	12 G 2,5	18,2	410	589
0026475	14 G 2,5	19,8	490	702
0026481	4 G 4	13,7	238	349
0026483	4 G 6	16,1	318	499
0026484	5 G 6	17,7	410	596
0026485	4 G 10	20,2	521	842
0026487	4 G 16	23,6	780	1173

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® ROBUST FD

Highly flexible, all-weather control cable with TPE sheath - resistant to a wide range of chemical media

Info

- New dimensions available !
- Extended Line Performance - Long travel lengths or high acceleration
- Good chemical resistance

Benefits

- Outstanding weather, ozone and UV resistance together with the wide temperature range enable versatile use for indoor and outdoor applications
- Resistant to contact with organic oils and the related emulsions as well as a multitude of plant, animal or synthetic-based greases and waxes
- Good resistance to ammonia compounds and bio-gases
- Good resistance to cold and hot water as well as water-soluble cleaning and cooling agents
- Well-suited to steam cleaning
- Low particle emission at moved chain application

Application range

- In power chains or moving machine parts
- Machine tool building, medical technology, laundries, car washing equipment, chemical industry, composting plants, sewage works
- Food and beverage industry, especially for production and processing equipment of milk and meat products
- For indoor and outdoor use

Product features

- Highly resistant to oil and chemicals
- Ozone, UV and weather-resistant according to EN 50396 and HD 605 S2
- Hydrolysis-resistant to warm and hot water
- Good chemical resistance to ester-based hydraulic fluids
- Flexible down to -40°C

Norm references / Approvals

- Based on VDE 0250 / 0285
- Certified resistance to disinfection and cleaning solutions used in food and beverage industry
- Clean room classification for individual items on request
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire, tinned copper strands
- Core insulation: TPE
- Cores twisted together in extremely short lay lengths
- Non-woven wrapping
- Robust outer sheath made of special halogen-free TPE, black (similar RAL 9005)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

Core identification code
Black cores with printed white numbers (VDE 0293-1)

Conductor stranding
Extra-fine wire according to VDE 0295, class 6/IEC 60228, class 6

Minimum bending radius
Flexing:
up from 7.5 × outer diameter (at temperatures < 70 °C)
up from 10 × outer diameter (at max. temperature of 105 °C)
Fixed installation: 4 × outer diameter

Nominal voltage
U_0/U: 300/500 V

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Test voltage
4000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Flexing: -40°C to +105°C
Fixed installation: -50°C to +105°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® ROBUST FD				
0026536	2 X 0.5	6.1	9.6	34
0026537	3 G 0.5	6.6	14.4	45
0026538	4 G 0.5	7.3	19.2	55
0026539	5 G 0.5	8	24	67
0026540	7 G 0.5	9.6	33.6	93
0026544	12 G 0.5	11.6	57.6	142
0026545	18 G 0.5	13.9	86.4	208
0026546	25 G 0.5	17.3	120	298
0026547	2 X 0.75	6.4	14.4	41
0026501	3 G 0.75	6.9	21.6	51
0026502	4 G 0.75	7.7	28.8	69
0026503	5 G 0.75	8.6	36	87
0026504	7 G 0.75	10.4	50.4	127
0026505	12 G 0.75	12.2	86.4	182
0026506	18 G 0.75	14.9	129.6	277
0026507	25 G 0.75	18.5	180	421
0026508	2 X 1	6.8	28.8	49
0026509	3 G 1	7.4	28.8	63
0026510	4 G 1	8.2	38.4	82
0026511	5 G 1	9.2	48	105

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0026516	7 G 1	11.1	67.2	157
0026517	12 G 1	13.3	115.2	226
0026518	18 G 1	15.9	172.8	345
0026519	25 G 1	19.8	240	547
0026548	2 X 1.5	8	28.8	73
0026521	3 G 1.5	8.9	43.2	90
0026522	4 G 1.5	9.9	57.6	118
0026523	5 G 1.5	11	72	149
0026524	7 G 1.5	13.4	100.8	233
0026525	12 G 1.5	15.8	172.8	322
0026526	18 G 1.5	18.9	259.2	494
0026527	25 G 1.5	23.5	360	695
0026531	4 G 2.5	11.8	96	181
0026532	5 G 2.5	12.9	120	228
0026533	7 G 2.5	15.7	168	329
0026534	12 G 2.5	18.7	288	491
0026541	4 G 4	13.8	153.6	261
0026551	4 G 6	14.8	230.4	356
0026561	4 G 10	20.1	384	596
0026571	4 G 16	23.8	614.4	910

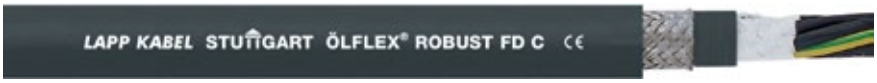
Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® ROBUST FD C

Highly flexible, screened all-weather control cable with TPE sheath - resistant to a wide range of chemical media

Info

- New dimensions available !
- Extended Line Performance - Long travel lengths or high acceleration
- Good chemical resistance



Benefits

- Outstanding weather, ozone and UV resistance together with the wide temperature range enable versatile use for indoor and outdoor applications
- Resistant to contact with organic oils and the related emulsions as well as a multitude of plant, animal or synthetic-based greases and waxes
- Good resistance to ammonia compounds and bio-gases
- Good resistance to cold and hot water as well as water-soluble cleaning and cooling agents
- Well-suited to steam cleaning
- Copper screening complies with EMC requirements and protects against electromagnetic interference

Application range

- In power chains or moving machine parts
- Machine tool building, medical technology, laundries, car washing equipment, chemical industry, composting plants, sewage works
- Food and beverage industry, especially for production and processing equipment of milk and meat products
- Assembly lines, production lines, in all kinds of machines
- For indoor and outdoor use

Product features

- Ozone, UV and weather-resistant according to EN 50396 and HD 605 S2
- Highly resistant to oil and chemicals
- Hydrolysis-resistant to warm and hot water
- Good chemical resistance to ester-based hydraulic fluids
- Flexible down to -40°C

Norm references / Approvals

- Based on VDE 0250 / 0285
- Certified resistance to disinfection and cleaning solutions used in food and beverage industry
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire, tinned copper strands
- Core insulation: TPE
- Cores twisted together in extremely short lay lengths
- Non-woven wrapping
- Inner sheath made of TPE
- Tinned-copper braiding
- Robust outer sheath made of special halogen-free TPE, black (similar RAL 9005)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

Core identification code
Black cores with printed white numbers (VDE 0293-1)

Conductor stranding
Extra-fine wire acc. to VDE 0295, class 6/IEC 60228, class 6

Minimum bending radius
Flexing:
up from 7.5 × outer diameter (at temperatures < 70 °C)
up from 10 × outer diameter (at max. temperature of 105 °C)
Fixed installation: 4 × Outer diameter

Nominal voltage
U_0/U: 300/500 V

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Test voltage
4000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Flexing: -40 °C to +105 °C
Fixed installation: -50 °C to +105 °C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® ROBUST FD C				
0026736	2 X 0.5	8.3	33.6	77
0026737	3 G 0.5	8.8	41.8	92
0026738	4 G 0.5	9.5	49.9	108
0026739	5 G 0.5	10.4	57.9	127
0026740	7 G 0.5	12	74.1	165
0026744	12 G 0.5	14.4	120.5	248
0026745	18 G 0.5	16.7	158	330
0026746	25 G 0.5	20.3	230.8	471
0026747	2 X 0.75	8.6	41.4	87
0026701	3 G 0.75	9.1	49.6	110
0026702	4 G 0.75	10.1	60.9	137
0026703	5 G 0.75	10.8	72.8	160
0026704	7 G 0.75	12.6	107.2	238
0026705	12 G 0.75	15	151.5	312
0026706	18 G 0.75	17.7	205.5	448
0026707	25 G 0.75	21.7	299.1	657
0026708	2 X 1	9	47.2	105
0026709	3 G 1	9.8	61.1	125
0026710	4 G 1	10.6	74.8	157
0026711	5 G 1	12.1	86.2	198

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0026716	7 G 1	13.9	132.3	278
0026717	12 G 1	16.1	189.1	370
0026718	18 G 1	18.7	277.5	549
0026719	25 G 1	23	369.6	784
0026748	2 X 1.5	10.2	59.4	127
0026721	3 G 1.5	10.9	79.8	163
0026722	4 G 1.5	12.1	99.2	210
0026723	5 G 1.5	13.6	129.7	264
0026724	7 G 1.5	15.8	175.2	370
0026725	12 G 1.5	18.4	257.1	498
0026726	18 G 1.5	22.1	378.9	749
0026727	25 G 1.5	27.1	555.5	1042
0026731	4 G 2.5	14.4	161.5	307
0026732	5 G 2.5	15.5	188.3	361
0026733	7 G 2.5	18.3	252.6	512
0026734	12 G 2.5	21.9	406.5	730
0026741	4 G 4	16.2	227.3	412
0026751	4 G 6	17.2	306.7	519
0026761	4 G 10	23.3	513.6	853
0026771	4 G 16	27.2	809.6	1273

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® CHAIN 90 P

Highly flexible single core power cable with abrasion and oil resistant PUR sheath - certified for North America

Info

- Extended Line Performance - Long travel lengths or high acceleration
- Allrounder for indoor and outdoor use
- Improved characteristics in the event of a fire

Benefits

- Allows much faster speed and accelerations which increases the economic efficiency of the machines
- Multi-standard certification reduces part varieties and saves costs
- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Wide temperature range for applications in harsh climatic environments
- Longer cable installation lengths thanks to low mutual capacitance cable design

Application range

- In power chains or moving machine parts
- For internal wiring of electric and electronic equipment in switch cabinets
- Specially designed for power circuits of servomotors driven by frequency converters
- This cable can substitute multi-core power cables where space requirements or minimum bending radii cause problems
- Test systems in the automotive industry, vehicles and stationary fuel cell systems
- For indoor and outdoor use

Product features

- Flammability:
  - Halogen-free acc. to VDE 0472-815
  - Flame retardant acc. to IEC 60332-1-2 or UL/cUL VW-1, FT1
  - No flame propagation acc. to IEC 60332-3-24 Cat. C or /-25 Cat. D
- Good weather, UV and oil resistance
- Abrasion and notch-resistant
- Flexible at low temperatures
- Low-capacitance design

Norm references / Approvals

- USA: UL AWM Style 11624, VW-1
  Canada: cUL AWM I/II A, FT1
- UL File No. E63634
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: TPE compound
- PUR outer sheath, black (similar RAL 9005)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000057
ETIM 5.0/6.0 Class-Description: Low voltage power cable

Core identification code
Black or green-yellow, other colours available on request

Conductor stranding
Extra-fine wire according to VDE 0295, class 6/IEC 60228, class 6

Torsion movement in WTG
TW-0 & TW-2, refer to Appendix T0

Minimum bending radius
Flexing: up from 7.5 × outer diameter
Fixed installation: 3 × outer diameter

Nominal voltage
IEC: U_0/U 600/1000 V
UL & CSA: 1000 V

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Test voltage
4000 V

Temperature range
Flexing: -35°C to +80°C
Fixed installation: -50°C to +80°C

Article number	Conductor cross-section (mm²)	Outer diameter (mm)	Core colour	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CHAIN 90 P					
1026513	1.5	6.3	green-yellow	14.4	48
1026514	1.5	6.3	black	14.4	48
1026515	2.5	6.9	green-yellow	24	63
1026516	2.5	6.9	black	24	63
1026517	4	7.2	green-yellow	38.4	77
1026518	4	7.2	black	38.4	77
1026519	6	7.7	green-yellow	57.6	95
1026520	6	7.7	black	57.6	95
1026521	10	9.1	green-yellow	96	145
1026522	10	9.1	black	96	145
1026523	16	10.6	green-yellow	153.6	205
1026524	16	10.6	black	153.6	205
1026525	25	12.3	green-yellow	240	290
1026526	25	12.3	black	240	290
1026527	35	13.3	green-yellow	336	413

Article number	Conductor cross-section (mm²)	Outer diameter (mm)	Core colour	Copper index (kg/km)	Weight (kg/km)
1026528	35	13.3	black	336	413
1026529	50	15.9	green-yellow	480	535
1026530	50	15.9	black	480	535
1026531	70	18	green-yellow	672	776
1026533	95	19.9	green-yellow	912	998
1026534	95	19.9	black	912	998
1026535	120	22.5	green-yellow	1152	1249
1026536	120	22.5	black	1152	1249
1026537	150	24.6	green-yellow	1440	1486
1026538	150	24.6	black	1440	1486
1026539	185	27.2	green-yellow	1776	1788
1026540	185	27.2	black	1776	1788
1026541	240	32.1	green-yellow	2304	2381
1026542	240	32.1	black	2304	2381
1026543	300	34	green-yellow	2880	2964
1026544	300	34	black	2880	2964

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

NEW

ÖLFLEX® CHAIN 90 CP

Highly flexible, screened single core power cable with abrasion and oil resistant PUR sheath - certified for North America

Info

- Extended Line Performance - Long travel lengths or high acceleration
- Allrounder for indoor and outdoor use
- Improved characteristics in the event of a fire

Benefits

- Allows much faster speed and accelerations which increases the economic efficiency of the machines
- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Wide temperature range for applications in harsh climatic environments
- Longer cable installation lengths thanks to low mutual capacitance cable design
- Copper screening complies with EMC requirements and protects against electromagnetic interference

Application range

- In power chains or moving machine parts
- For internal wiring of electric and electronic equipment in switch cabinets
- Specially designed for power circuits of servomotors driven by frequency converters
- This cable can substitute screened multi-core motor cables where space requirements or minimum bending radii cause problems
- Test systems in the automotive industry, vehicles and stationary fuel cell systems
- For indoor and outdoor use

Product features

- Flammability:
  - Halogen-free acc. to VDE 0472-815
  - Flame retardant acc. to IEC 60332-1-2 or UL/cUL VW-1, FT1
  - No flame propagation acc. to IEC 60332-3-24 Cat. C or /-25 Cat. D
- Good weather, UV and oil resistance
- Flexible at low temperatures
- Low-capacitance design
- EMC-compliant

Norm references / Approvals

- USA: UL AWM Style 11624, VW-1
  Canada: cUL AWM I/II A, FT1
- UL File No. E63634
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: TPE compound
- Non-woven wrapping
- Tinned-copper braiding
- PUR outer sheath, black (similar RAL 9005)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000057
ETIM 5.0/6.0 Class-Description: Low voltage power cable

Core identification code
Black, other colours are available upon request

Conductor stranding
Extra-fine wire according to VDE 0295, class 6/IEC 60228, class 6

Minimum bending radius
Flexing: up from 7.5 × outer diameter
Fixed installation: 3 × outer diameter

Nominal voltage
IEC: U_0/U 600/1000 V
UL & CSA: 1000 V

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Test voltage
4000 V

Temperature range
Flexing: -35°C to +80°C
Fixed installation: -50°C to +80°C

Article number	Conductor cross-section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CHAIN 90 CP				
1026547	1,5	7	23,8	60
1026548	2,5	7,6	41	90
1026549	4	7,9	58,8	100
1026550	6	8,4	81,3	120
1026551	10	9,8	123	180
1026553	16	11,3	187,7	240
1026555	25	13	280,6	340
1026557	35	14,2	398,9	480

Article number	Conductor cross-section (mm²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1026559	50	16,8	551,7	610
1026561	70	19,1	773,2	880
1026563	95	21,6	1036,6	1160
1026565	120	23,6	1277,7	1380
1026567	150	25,9	1618	1670
1026569	185	28,5	1957,3	1980
1026571	240	33,4	2511,7	2600
1026573	300	35,3	3117	3210

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® CHAIN 819 P

Highly flexible control cable with PVC core insulation and robust, oil resistant outer sheath - certified

Info

- Basic Line Performance - Moderate travel lengths or acceleration
- High oil resistance
- UL/cUL certified for North America

Benefits

- Good combination of quality and price
- Durable thanks to robust sheath material
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Multi-standard certification reduces part varieties and saves costs
- Certified for the USA and Canada for export-oriented machine, appliance and apparatus manufacturers

Application range

- In power chains or moving machine parts
- Very suitable for oily wet areas within machinery and production lines
- Suitable for use in measuring, control and regulating circuits
- Assembly lines, production lines, in all kinds of machines
- Indoor applications

Product features

- High oil-resistance
- Flammability:
  IEC/EN: 60332-1-2
  UL/CSA: Horizontal Flame, FT2
- Mechanically robust
- Low-adhesive surface

Norm references / Approvals

- USA: UL AWM Style 21576
  Canada: cUL AWM Style I/II A FT2
- UL File No. E63634
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Fine-wire, bare copper conductor
- Core insulation: PVC
- Cores twisted in layers
- Non-woven wrapping
- Outer sheath of Lapp-PU-Special Blend, black (similar RAL 9005)

Technical data

Core identification code
Black with white numbers acc. to VDE 0293-1

Conductor stranding
Fine wire according to VDE 0295, Class 5/IEC 60228, Class 5

Torsion movement in WTG
TW-0 & TW-1, refer to Appendix T0

Minimum bending radius
Flexing: up from 10 × outer diameter
Fixed installation: 4 × outer diameter

Nominal voltage
IEC U_0/U: 300/500 V
UL: 1000 V

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Test voltage
Core/core: 4000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Flexing: -5°C to +70°C (UL: +80°C)
Fixed installation: -40°C to +70°C (UL: +80°C)

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CHAIN 819 P				
1027800	2 X 0.5	5.2	9.6	30.7
1027801	3 G 0.5	5.5	14.4	39.2
1027802	4 G 0.5	6	19.2	48.5
1027803	5 G 0.5	6.5	24	58
1027804	7 G 0.5	7.7	33.6	79
1027805	12 G 0.5	9.2	57.6	121.1
1027806	18 G 0.5	11	86.4	177.9
1027807	25 G 0.5	13.3	120	250
1027810	2 X 0.75	5.6	14.4	37.9
1027811	3 G 0.75	6	21.6	49.4
1027812	4 G 0.75	6.5	28.8	61.5
1027813	5 G 0.75	7.1	36	74.5
1027814	7 G 0.75	8.5	50.4	105.6
1027815	12 G 0.75	10.3	86.4	163.3
1027816	18 G 0.75	12.2	129.6	239
1027817	25 G 0.75	14.8	180	334.8
1027820	2 X 1	5.9	19.2	43.1
1027821	3 G 1	6.3	28.8	56.5
1027822	4 G 1	6.9	39	71.3
1027823	5 G 1	7.5	48	86.2

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1027824	7 G 1	9	67	122.3
1027825	12 G 1	10.9	115.2	190.3
1027826	18 G 1.	13.2	172.8	285.4
1027827	25 G 1	15.7	240	391.2
1027830	2 X 1.5	6.5	28.8	55.6
1027831	3 G 1.5	6.9	43.2	74.5
1027832	4 G 1.5	7.6	58	94.7
1027833	5 G 1.5	8.5	72	119.3
1027834	7 G 1.5	10.3	100.8	169.5
1027835	12 G 1.5	12.3	172.8	263.9
1027836	18 G 1.5	14.9	259.2	395.1
1027837	25 G 1.5	17.9	360	549.4
1027840	3 G 2.5	8.4	72	115.6
1027841	4 G 2.5	9.3	96	148.2
1027844	5 G 2.5	10.4	120	186
1027842	7 G 2.5	12.7	168	268.9
1027843	12 G 2.5	15.2	288	420.2
1027850	4 G 4	11.1	153.6	222.1
1027852	4 G 10	17.2	384	541
1027855	4 G 16	20.1	614.4	804.6
1027857	4 G 25	24.9	960	1259.5

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

NEW

ÖLFLEX® CHAIN 819 CP

Highly flexible, screened control cable with PVC core insulation and robust, oil resistant outer sheath - certified

Info

- Basic Line Performance - Moderate travel lengths or acceleration
- High oil resistance
- UL/cUL certified for North America

Benefits

- Good combination of quality and price
- Durable thanks to robust sheath material
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Multi-standard certification reduces part varieties and saves costs
- Certified for the USA and Canada for export-oriented machine, appliance and apparatus manufacturers
- Copper braiding screens the cable against electromagnetic interference

Application range

- In power chains or moving machine parts
- In EMC-sensitive environments
- Very suitable for oily wet areas within machinery and production lines
- Assembly lines, production lines, in all kinds of machines
- Suitable for use in measuring, control and regulating circuits
- Indoor applications

Product features

- High oil-resistance
- Flammability:
  IEC/EN: 60332-1-2
  UL/CSA: Horizontal Flame, FT2
- Mechanically robust
- Low-adhesive surface
- EMC-compliant

Norm references / Approvals

- USA: UL AWM Style 21576
  Canada: cUL AWM Style I/II A FT2
- UL File No. E63634
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Fine-wire, bare copper conductor
- Core insulation: PVC
- Cores twisted in layers
- Non-woven wrapping
- Tinned-copper braiding
- Outer sheath of Lapp-PU-Special Blend, black (similar RAL 9005)

Technical data

Core identification code
Black with white numbers acc. to VDE 0293-1

Conductor stranding
Fine wire according to VDE 0295, Class 5/IEC 60228, Class 5

Torsion movement in WTG
TW-0 & TW-1, refer to Appendix T0

Minimum bending radius
Flexing: up from 10 × outer diameter
Fixed installation: 4 × outer diameter

Nominal voltage
IEC U0/U: 300/500 V
UL: 1000 V

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Test voltage
Core/core: 4000 V
Core/screen: 2000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Flexing: -5°C to +70°C (UL: +80°C)
Fixed installation: -40°C to +70°C (UL: +80°C)

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CHAIN 819 CP				
1027900	2 X 0.5	5.8	22.5	42.9
1027901	3 G 0.5	6.1	27.1	50.6
1027902	4 G 0.5	6.6	35.1	62.6
1027903	5 G 0.5	7.1	43.1	74.7
1027904	7 G 0.5	8.5	55.8	101
1027905	12 G 0.5	10	83.1	144.5
1027906	18 G 0.5	11.8	120	207.1
1027907	25 G 0.5	14.1	171	288.6
1027910	2 X 0.75	6.2	30.4	52.7
1027911	3 G 0.75	6.6	37.5	63.4
1027912	4 G 0.75	7.1	47.9	78
1027913	5 G 0.75	7.7	55.2	90.4
1027914	7 G 0.75	9.1	75.9	126.1
1027915	12 G 0.75	10.9	115.3	183.6
1027916	18 G 0.75	13	168	269.8
1027917	25 G 0.75	15.6	239.6	377
1027920	2 X 1	6.5	35.3	58.5
1027921	3 G 1	6.9	44.7	71.6
1027922	4 G 1	7.5	57.7	89.4
1027923	5 G 1	8.3	70.3	110.2

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1027924	7 G 1	9.8	92.7	149.2
1027925	12 G 1	11.7	148.7	224.4
1027926	18 G 1	14	224.1	331.3
1027927	25 G 1	16.7	299.5	449.2
1027930	2 X 1.5	7.1	47.9	73.8
1027931	3 G 1.5	7.5	62.5	92.6
1027932	4 G 1.5	8.4	80	118.9
1027933	5 G 1.5	9.1	97.5	142.7
1027934	7 G 1.5	10.9	129.7	194.9
1027935	12 G 1.5	13.3	211	301.9
1027936	18 G 1.5	15.7	319	447.8
1027937	25 G 1.5	18.7	428.1	606.5
1027940	3 G 2.5	9	97.4	138.9
1027941	4 G 2.5	10.1	124.8	178.2
1027944	5 G 2.5	11.2	148.7	215.4
1027942	7 G 2.5	13.5	206.5	301.6
1027943	12 G 2.5	16.2	347.5	478.5
1027950	4 G 4	11.9	187	256.1
1027952	4 G 10	18.2	452.1	606.5
1027955	4 G 16	21.3	699.5	884.2
1027957	4 G 25	26.3	1062.1	1349.7

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® FD 855 P

Halogen-free, highly flexible control cable with abrasion and oil resistant PUR sheath - certified

Info

- Extended Line Performance - Long travel lengths or high acceleration
- All-rounder with small bending radii
- UL/cUL certified for North America

Benefits

- Allows much faster speed and accelerations which increases the economic efficiency of the machines
- Multi-standard certification reduces part varieties and saves costs
- Low particle emission at moved chain application
- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Wide temperature range for applications in harsh climatic environments

Application range

- In power chains or moving machine parts
- Particularly in wet areas of machine tools and transfer lines
- Assembly lines, production lines, in all kinds of machines
- For use in assembling & pick-and-place machinery
- For highly dynamic applications
- For indoor and outdoor use

Product features

- Halogen-free and flame-retardant (IEC 60332-1-2)
- Resistant to oil and drilling fluids according to IEC 61892-4, Appendix D
- Flexible down to -40°C
- Abrasion and notch-resistant
- Low-adhesive surface

Norm references / Approvals

- Based on VDE 0250 / 0285
- USA: UL AWM Style 21576
  Canada: cUL AWM Style I/II A FT2
- UL File No. E63634
- Clean room classification for individual items on request
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: TPE
- Cores twisted together in extremely short lay lengths
- Non-woven wrapping
- PUR outer sheath, grey (similar RAL 7001)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

Core identification code
Black with white numbers acc. to VDE 0293-1

Conductor stranding
Extra-fine wire according to VDE 0295, class 6/IEC 60228, class 6

Minimum bending radius
Flexing: up from 5 × outer diameter
Fixed installation: 3 × outer diameter

Nominal voltage
IEC U0/U: 300/500 V
UL: 1000 V

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Test voltage
3000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Flexing: -40°C to +80°C
Fixed installation: -50°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® FD 855 P				
0027530	2 X 0.5	5.1	10	34
0027531	3 G 0.5	5.5	14	40
0027532	5 G 0.5	6.6	24	55
0027533	6 G 0.5	7.1	29	63
0027534	7 G 0.5	7.7	34	76
0027535	12 G 0.5	9.1	58	114
0027536	18 G 0.5	10.9	86	165
0027537	20 G 0.5	11.5	96	180
0027538	25 G 0.5	13.4	120	219
0027540	30 G 0.5	13.6	144	251
0027541	36 G 0.5	14.7	173	290
0027545	2 X 0.75	5.6	14	42
0027546	3 G 0.75	6	22	50
0027547	4 G 0.75	6.7	29	60
0027548	5 G 0.75	7.3	36	71
0027549	7 G 0.75	8.8	50	99
0027550	12 G 0.75	10.3	86	158
0027551	18 G 0.75	12.4	130	219
0027552	20 G 0.75	13.3	144	240
0027553	25 G 0.75	15.5	180	309
0027555	36 G 0.75	16.9	259	411
0027560	2 X 1	6	19	50
0027561	3 G 1	6.5	29	61
0027562	4 G 1	7.2	38	70
0027563	5 G 1	7.8	48	93

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0027564	7 G 1	9.5	67	122
0027565	12 G 1	11.2	115	196
0027566	18 G 1	13.7	173	274
0027567	20 G 1	14.4	192	300
0027568	25 G 1	16.8	240	385
0027570	30 G 1	17	288	444
0027571	36 G 1	18.6	346	516
0027575	2 X 1.5	6.7	29	68
0027576	3 G 1.5	7.3	43	83
0027586	4 G 1.5	8	58	100
0027577	5 G 1.5	9	72	128
0027578	7 G 1.5	10.7	101	177
0027579	12 G 1.5	12.7	173	275
0027580	18 G 1.5	15.2	259	405
0027582	25 G 1.5	18.8	360	565
0027584	30 G 1.5	18.8	432	652
0027585	36 G 1.5	20.6	518	759
0027587	41 G 1.5	22.4	614	978
0027370	3 G 2.5	8.9	72	121
0027371	4 G 2.5	9.9	96	163
0027372	5 G 2.5	11	120	196
0027373	7 G 2.5	13.4	168	266
0027374	12 G 2.5	15.8	288	446
0027375	18 G 2.5	18.9	432	665
0027376	25 G 2.5	23.5	600	929

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® FD 855 CP

Halogen-free, highly flexible and screened control cable with abrasion and oil resistant PUR sheath - certified

Info

- Extended Line Performance - Long travel lengths or high acceleration
- EMC compliant copper screening
- UL/cUL certified for North America

Benefits

- Allows much faster speed and accelerations which increases the economic efficiency of the machines
- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Wide temperature range for applications in harsh climatic environments
- Multi-standard certification reduces part varieties and saves costs
- Copper screening complies with EMC requirements and protects against electromagnetic interference

Application range

- In power chains or moving machine parts
- Particularly in wet areas of machine tools and transfer lines
- For use in assembling & pick-and-place machinery
- Assembly lines, production lines, in all kinds of machines
- In EMC-sensitive environments
- For indoor and outdoor use

Product features

- Good mechanical, abrasion and notch-resistance
- Halogen-free and flame-retardant (IEC 60332-1-2)
- Resistant to oil and drilling fluids according to IEC 61892-4, Appendix D
- Flexible down to -40°C
- Low-adhesive surface
- EMC-compliant

Norm references / Approvals

- Based on VDE 0250 / 0285
- USA: UL AWM Style 21576 with add. VW-1 Canada: cUL AWM Style I/II A/B FT1
- UL File No. E63634
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: TPE
- Cores twisted together in extremely short lay lengths
- Non-woven wrapping
- Inner sheath made of TPE
- Tinned-copper braiding
- PUR outer sheath, grey (similar RAL 7001)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

Core identification code
Black with white numbers acc. to VDE 0293-1

Conductor stranding
Extra-fine wire acc. to VDE 0295, class 6/IEC 60228, class 6

Minimum bending radius
Flexing: up from 7.5 × outer diameter
Fixed installation: 4 × outer diameter

Nominal voltage
IEC U_0/U: 300/500 V
UL: 1000 V

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Test voltage
3000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Flexing: -40°C to +80°C
Fixed installation: -50°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® FD 855 CP				
0027605	2 X 0.5	6.7	32	67
0027606	3 G 0.5	7.1	40	79
0027607	5 G 0.5	8.2	53	107
0027608	6 G 0.5	8.7	59	121
0027609	7 G 0.5	9.5	67	132
0027610	12 G 0.5	10.9	97	190
0027611	18 G 0.5	12.9	131	245
0027612	20 G 0.5	13.5	156	281
0027613	25 G 0.5	15.6	190	367
0027615	30 G 0.5	15.8	222	408
0027616	36 G 0.5	16.9	251	459
0027620	2 X 0.75	7.2	40	79
0027621	3 G 0.75	7.6	47	96
0027622	4 G 0.75	8.3	58	112
0027623	5 G 0.75	8.9	65	126
0027624	7 G 0.75	10.6	85	165
0027625	12 G 0.75	12.1	127	231
0027626	18 G 0.75	14.6	198	330
0027628	25 G 0.75	17.7	259	459
0027630	36 G 0.75	19.5	348	605
0027635	2 X 1	7.6	45	93
0027636	3 G 1	8.1	55	109

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0027637	4 G 1	8.8	68	126
0027638	5 G 1	9.6	81	147
0027639	7 G 1	11.3	106	196
0027640	12 G 1	13.2	175	292
0027641	18 G 1	15.9	242	418
0027643	25 G 1	19.5	329	575
0027645	30 G 1	19.6	377	635
0027646	36 G 1	21.2	467	758
0027649	2 X 1.5	8.3	58	115
0027650	3 G 1.5	8.9	76	139
0027661	4 G 1.5	9.8	91	156
0027651	5 G 1.5	10.8	111	198
0027652	7 G 1.5	12.5	145	254
0027653	12 G 1.5	14.9	242	416
0027654	18 G 1.5	17.4	346	564
0027656	25 G 1.5	21.4	486	811
0027659	36 G 1.5	23.4	655	1066
0027380	3 G 2.5	10.7	110	194
0027381	4 G 2.5	11.7	136	234
0027382	5 G 2.5	12.8	180	293
0027383	7 G 2.5	15.6	246	418
0027384	12 G 2.5	18	377	629
0027385	18 G 2.5	21.5	569	912

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® PETRO FD 865 CP

Halogen-free, highly flexible and screened control cable with abrasion and MUD-resistant PUR sheath - certified

Info

- Extended Line Performance - Long travel lengths or high acceleration
- Resistant to oil and drilling fluids acc. to NEK TS 606:2016 (Oil & Mud)
- EMC compliant copper screening

Benefits

- Suitable for contact with oil- and ester-based drilling muds as well as calcium bromide solutions
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Suitable for long horizontal drag chain travel distances
- Additional robustness thanks to inner sheath
- Wide temperature range for applications in harsh climatic environments
- Copper braiding screens the cable against electromagnetic interference

Application range

- Permanently moved power chains or machine parts in harsh environment
- Onshore and offshore applications
- In wet areas within machinery and production or assembly lines
- For use in assembling & pick-and-place machinery
- For indoor and outdoor use

Product features

- Salt water-resistant according to UL 1309
- Halogen-free and flame-retardant (IEC 60332-1-2)
- Good weather, ozone, UV and oil resistance
- Good notch and abrasion resistance
- Flexible at low temperatures
- EMC-compliant

Norm references / Approvals

- DNV Det Norske Veritas certified
- Resistant to oil and drilling fluids according to NEK TS 606:2016 and IEC 61892-4
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire strand made of bare copper
- Core insulation: TPE
- Cores twisted in short lay lengths
- Non-woven wrapping
- Inner sheath made of TPE
- Tinned copper screen braiding
- Outer sheath made of robust special polymer, colour black

Technical data

Core identification code
Black with white numbers acc. to VDE 0293-1

Conductor stranding
Extra-fine wire acc. to VDE 0295, class 6/IEC 60228, class 6

Minimum bending radius
Flexing: up from 7.5 × outer diameter
Fixed installation: 4 × outer diameter

Nominal voltage
U0/U: 300/500 V

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Test voltage
3000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Flexing: -50°C to +80°C
Fixed installation: -60°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® PETRO FD 865 CP				
0023300	2 X 0.5	6.7	32	67
0023301	3 G 0.5	7.1	40	79
0023302	4 G 0.5	7.6	47	84
0023303	5 G 0.5	8.2	53	107
0023304	7 G 0.5	9.5	67	132
0023305	12 G 0.5	10.9	97	190
0023306	18 G 0.5	12.9	131	245
0023307	20 G 0.5	13.5	156	281
0023308	25 G 0.5	15.6	190	367
0023309	30 G 0.5	15.8	222	408
0023310	36 G 0.5	16.9	251	459
0023311	2 X 0.75	7.2	40	79
0023312	3 G 0.75	7.6	47	96
0023313	4 G 0.75	8.3	58	112
0023314	5 G 0.75	8.9	65	126
0023315	7 G 0.75	10.6	85	165
0023316	12 G 0.75	12.1	127	231
0023317	18 G 0.75	14.6	198	330
0023318	20 G 0.75	15.5	213	354
0023319	25 G 0.75	17.7	259	459
0023320	30 G 0.75	17.7	296	480
0023321	36 G 0.75	19.5	348	605
0023322	2 X 1	7.6	45	93
0023323	3 G 1	8.1	55	109
0023324	4 G 1	8.8	68	126
0023325	5 G 1	9.6	81	147
0023326	7 G 1	11.3	106	196
0023327	12 G 1	13.2	175	292
0023328	18 G 1	15.9	242	418

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0023329	20 G 1	16.6	269	427
0023330	25 G 1	19.2	329	575
0023331	30 G 1	19.6	377	635
0023332	36 G 1	21.2	467	758
0023333	2 X 1.5	8.3	58	115
0023334	3 G 1.5	8.9	76	139
0023335	4 G 1.5	9.8	91	156
0023336	5 G 1.5	10.8	111	198
0023337	7 G 1.5	12.5	145	254
0023338	12 G 1.5	14.9	242	416
0023339	18 G 1.5	17.4	346	564
0023340	20 G 1.5	18.3	377	562
0023341	25 G 1.5	21.4	486	811
0023342	30 G 1.5	21.4	568	821
0023343	36 G 1.5	23.4	655	1066
0023344	2 X 2.5	9.8	73	129
0023345	3 G 2.5	10.7	110	194
0023346	4 G 2.5	11.7	136	234
0023347	5 G 2.5	12.8	180	293
0023348	7 G 2.5	15.6	246	418
0023349	12 G 2.5	18	377	629
0023350	18 G 2.5	21.5	569	912
0023351	20 G 2.5	22.7	582	850
0023352	25 G 2.5	26.5	765	1266
0023353	4 G 4	13.9	205	311
0023354	5 G 4	15.4	250	381
0023355	4 G 6	16.2	289	423
0023356	5 G 6	17.8	354	512
0023357	4 G 10	20.4	475	672
0023358	5 G 10	22.3	582	814

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® FD 891 P

Highly flexible control cable with PVC core insulation and abrasion and oil resistant PUR sheath - certified

Info

- Core Line Performance - Medium to increased travel lengths or acceleration
- Good oil resistance
- AWM certification for USA and Canada

Benefits

- Multi-standard certification reduces part varieties and saves costs
- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Certified for the USA and Canada for export-oriented machine, appliance and apparatus manufacturers

Application range

- In power chains or moving machine parts
- Particularly in wet areas of machine tools and transfer lines
- Suitable for use in measuring, control and regulating circuits
- Plant engineering
- In dry, damp or wet interiors with normal mechanical stress conditions

Product features

- Flame-retardant according to IEC 60332-1-2 & CSA FT1
- High oil-resistance
- Abrasion and notch-resistant
- Low-adhesive surface

Norm references / Approvals

- UL rec. AWM Style 20234
- CRU AWM II A/B FT 1
- UL File No. E63634
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: PVC
- Cores twisted in layers in short lay lengths
- Non-woven wrapping
- PUR outer sheath, black (similar RAL 9005)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

Core identification code
Black with white numbers acc. to VDE 0293-1

Conductor stranding
Extra-fine wire according to VDE 0295, class 6/IEC 60228, class 6

Minimum bending radius
Flexing: up from 7.5 × outer diameter
Fixed installation: 4 × outer diameter

Nominal voltage
IEC: U_0/U 300/500 V
UL/CSA: 600 V

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Test voltage
4000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Flexing: -5°C to +70°C (UL: +80°C)
Fixed installation: -40°C to +70°C (UL: +80°C)

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® FD 891 P				
1028752	2 X 0.5	6.5	9.6	46
1028007	7 G 0.5	9.6	33.6	118
1028103	3 G 0.75	7.3	21.6	66
1028104	4 G 0.75	8	28.8	82
1028105	5 G 0.75	8.7	36	101
1028107	7 G 0.75	10.7	50.4	142
1028112	12 G 0.75	11.7	86.4	196
1028118	18 G 0.75	13.9	129.6	282
1028125	25 G 0.75	16.6	180	404
1028134	34 G 0.75	18.9	244.8	541
1028150	50 G 0.75	22.5	360	738
1028303	3 G 1.5	8.4	43.2	98
1028304	4 G 1.5	9.3	57.6	125
1028305	5 G 1.5	10.1	72	155
1028307	7 G 1.5	11.9	100.8	221
1028312	12 G 1.5	13.9	172.8	318

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1028318	18 G 1.5	16.9	259.2	484
1028325	25 G 1.5	20.1	360	671
1028334	34 G 1.5	23.1	489.6	910
1028952	2 X 2.5	8.9	48	102
1028403	3 G 2.5	9.3	72	134
1028404	4 G 2.5	10.3	96	173
1028405	5 G 2.5	11.3	120	217
1028407	7 G 2.5	13.4	168	312
1028412	12 G 2.5	15.8	288	460
1028503	3 G 4	10.9	115.2	197
1028504	4 G 4	12.1	153.6	257
1028507	7 G 4	16.1	268.8	471
1028604	4 G 6	13.7	230.4	363
1028614	4 G 10	17.9	384	605
1028624	4 G 16	23.4	614.4	973
1028634	4 G 25	27.6	960	1437

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® CHAIN 896 P

Highly flexible, halogen-free power cable with low capacitive insulation and oil resistant PUR sheath - certified

Info

- Extended Line Performance - Long travel lengths or high acceleration
- Good oil resistance
- Rated voltage 0,6/1 kV

Benefits

- Allows much faster speed and accelerations which increases the economic efficiency of the machines
- Multi-standard certification reduces part varieties and saves costs
- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Longer cable installation lengths thanks to low mutual capacitance cable design
- Wide temperature range for applications in harsh climatic environments

Application range

- In power chains or moving machine parts
- Applications in automation engineering
- Power circuits in industrial machines
- For use in assembling & pick-and-place machinery
- Particularly in wet areas of machine tools and transfer lines
- For indoor and outdoor use

Product features

- Flammability:
  UL/CSA: VW-1, FT1
  IEC/EN: 60332-1-2
- Halogen-free materials
- High oil-resistance
- Low-capacitance design
- Flexible down to -40°C

Norm references / Approvals

- VDE - reg - no. 8661
  UL AWM Style 20234
  cULus AWM I/II A/B, 1000V 80° FT1
  CSA AWM I/II A, 1000V 80° FT1
- UL File No. E63634
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire strand made of bare copper wires (class 6)
- Core insulation: polypropylene (PP)
- Non-woven wrapping
- PUR outer sheath,
  black (similar RAL 9005)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

Core identification code
Black with white numbers acc. to VDE 0293-1

Conductor stranding
Extra-fine wire according to VDE 0295, class 6/IEC 60228, class 6

Minimum bending radius
Flexing:
up from 7.5 × outer diameter (up to 16 mm²)
up from 10 × outer diameter (from 25 mm²)
Fixed installation: 4 × outer diameter

Nominal voltage
IEC U_0/U: 600/1000 V
UL & CSA: 1000 V

Bending cycles & operation parameters
See Selection Table A2-1 in the appendix of our online catalogue

Test voltage
4000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Flexing: -40°C to +90°C
(UL/CSA: +80°C)
Fixed installation: -50°C to +90°C
(UL/CSA: +80°C)

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CHAIN 896 P				
1023229	4 G 1.5	9.6	58	120
1023230	5 G 1.5	10	72	143
1023238	4 G 2.5	11	96	174
1023239	5 G 2.5	12	120	210
1023245	4 G 4	12.5	154	242
1023246	5 G 4	13.7	192	316
1023248	4 G 6	14.3	231	335
1023249	5 G 6	15.7	288	439
1023250	4 G 10	17	384	503
1023251	5 G 10	18.9	480	663
1023252	4 G 16	21.2	615	810
1023253	5 G 16	23.8	768	1065
1023254	4 G 25	25.9	960	1254

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® ROBOT 900 P

Abrasion- and oil-resistant PUR robot cable for dynamic bending and torsion motions

Info

- Simultaneous bending and torsion
- Torsion angle up to +/- 360 °/m

Benefits

- Space-saving installation due to small cable diameters
- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Wide temperature range for applications in harsh climatic environments

Application range

- Industrial machinery and machine tools
- Automated handling equipment
- Automotive industry
- In power chains or moving machine parts
- Inside of dresspacks of buckling arm robots and for use for gantry robots

Product features

- Abrasion and notch-resistant
- Flame-retardant
- High oil-resistance
- Flexible at low temperatures
- Low-adhesive surface

Norm references / Approvals

- Designed for up to 5 million torsion cycles
- For use in power chains: Please comply with assembly guideline Appendix T3
- For travel distances up to 10 m.

Product Make-up

- Fine or extra-fine strands made of bare copper wire
- Core insulation: TPE
- Cores twisted in layers
- Versions with additional center pair: 2 cores twisted to a pair, PTFE foil wrapping, layer of tinned copper wires
- Wrapping of PTFE tape
- PUR outer sheath, black (similar RAL 9005)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

Core identification code
Up to 0.34 mm²: DIN 47100 cores
From 0.5 mm²: black cores with white numbers, cores of screened pair (2 × 1) are marked with no. 1 + 2

Mutual capacitance
C/C approx. 100 nF/km
C/S approx. 120 nF/km

Inductivity
approx. 0.7 mH/km

Conductor stranding
Fine wire or extra-fine wire

Torsion
Torsion load max. ± 360 °/m

Minimum bending radius
For flexible use: 15 × outer diameter
Fixed installation: 4 × outer diameter

Nominal voltage
Up to 0,34 mm²: 48 V AC
From 0.5 mm² U_0/U: 300/500 V

Test voltage
Up to 0.34 mm²: 1500 V
From 0.5 mm²: 3000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Flexing: -40°C to +80°C
Fixed installation: -50°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® ROBOT 900 P				
Core colours according to DIN 47100				
0028110	7 X 0.25	6.2	16.8	48
0028116	25 X 0.25	10.2	60	141
0028188	2 X 0.34	5	7	27
Numbered Cores				
0028145	18 G 0.5	11.2	86.4	120
0028146	25 G 0.5	13.3	120	254
0028160	4 G 0.75	6.6	28.8	63
0028164	14 G 0.75	11.2	100.8	199
0028170	2 X 1	6.2	19.2	47
0028171	3 G 1	6.5	29	61
0028172	4 G 1	7	38.4	76
0028174	7 G 1	9.3	67.2	131

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0028176	12 G 1	11.5	115.2	216
0028185	16 G 1 + (2 × 1)	16	195	376
0028178	18 G 1	13.2	172.8	287
0028186	23 G 1 + (2 × 1)	17.3	262	470
0028180	25 G 1	16.4	240	433
0028190	34 G 1	19.9	326.4	571
0028191	41 G 1	22.3	393.6	705
0028198	18 G 1.5	15.8	259.2	446
0028181	3 G 2.5	9.3	72	136
0028182	4 G 2.5	10.1	96	171
0028400	3 G 16	21.4	460.8	721
0028187	3 G 25	26.2	720	1178
0028189	3 G 35	28.8	1008	1559

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® ROBOT 900 DP

Shielded, abrasion- and oil-resistant PUR robot cable for dynamic bending and torsion motions

Info

- Simultaneous bending and torsion
- Torsion angle up to +/- 180 °/m
- Copper screening

Benefits

- Space-saving installation due to small cable diameters
- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Wide temperature range for applications in harsh climatic environments
- Copper shielding protects against electromagnetic interference

Application range

- Industrial machinery and machine tools
- Automated handling equipment
- Automotive industry
- In power chains or moving machine parts
- Inside of dresspacks of buckling arm robots and for use for gantry robots

Product features

- Abrasion and notch-resistant
- Flame-retardant
- High oil-resistance
- Flexible at low temperatures
- Low-adhesive surface

Norm references / Approvals

- Designed for up to 5 million torsion cycles
- For use in power chains: Please comply with assembly guideline Appendix T3
- For travel distances up to 10 m.

Product Make-up

- Fine or extra-fine strands made of bare copper wire
- Core insulation: TPE
- Cores twisted in layers
- Wrapping of PTFE tape
- Spiral shield made of tinned copper wires
- PUR outer sheath, black (similar RAL 9005)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

Core identification code
Up to 0.34 mm²: DIN 47100 cores
From 0.5 mm²: black cores with white numbers

Mutual capacitance
C/C approx. 100 nF/km
C/S approx. 120 nF/km

Inductivity
approx. 0.7 mH/km

Conductor stranding
Fine wire or extra-fine wire

Torsion
Torsion load max. ± 180 °/m

Minimum bending radius
Flexing: 15 × outer diameter
Fixed installation: 4 × outer diameter

Nominal voltage
Up to 0,34 mm²: 48 V AC
From 0.5 mm² U_0/U: 300/500 V

Test voltage
Up to 0.34 mm²: 1500 V
From 0.5 mm²: 3000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Flexing: -40°C to +80°C
Fixed installation: -50°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® ROBOT 900 DP				
Core colours according to DIN 47100				
0028100	12 × 0.14	6.7	42.5	69
0028105	3 × 2 × 0.14	6.2	17	44
0028126	25 × 0.25	11.1	103.5	183
0028135	4 × 0.34	5.7	21.3	46
0028136	5 × 2 × 0.34	9.1	64.4	114
Numbered Cores				
0028195	12 G 1.5	14	259	395

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® ROBOT F1

Abrasion- and oil resistant PUR robot cable for high dynamic bending and torsion motions, UL/cUL AWM certified

Info

- Simultaneous bending and torsion
- Torsion angle up to +/- 360 °/m
- AWM certification for USA and Canada

Benefits

- Allows much faster speed and accelerations which increases the economic efficiency of the machines
- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Wide temperature range for applications in harsh climatic environments
- Certified for the USA and Canada for export-oriented machine, appliance and apparatus manufacturers

Application range

- Industrial machinery and machine tools
- Automated handling equipment
- Automotive industry
- In power chains or moving machine parts
- Inside of dresspacks of buckling arm robots and for use for gantry robots

Product features

- Abrasion and notch-resistant
- Flame-retardant
- High oil-resistance
- Flexible at low temperatures
- Low-adhesive surface

Norm references / Approvals

- UL AWM Style 20940
  cUL AWM I/II A/B
- UL File No. E213974
- Designed for up to 10 million torsion cycles
- For use in power chains: Please comply with assembly guideline Appendix T3
- For travel distances up to 10 m

Product Make-up

- Extra-fine strands, 0.14 - 0.5 mm²
  made of tinned copper wires, bare above
- Core insulation: TPE
- Cores (or core pairs) twisted in layers or bundles
- Wrapping of PTFE tape
- Wrapping made of tinned copper wires for versions with individually screened pairs
- PUR outer sheath, black (RAL 9005)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

Core identification code
Up to 0.34 mm²: DIN 47100 cores
From 0.5 mm²: white cores with black numbers, cores of screened pair (2 × 1) are marked with no. 1 + 2

Conductor stranding
Extra-fine wire

Torsion
Torsion load max. ± 360 °/m

Minimum bending radius
Flexible use: 10 × outer diameter
Fixed installation: 4 × outer diameter

Nominal voltage
IEC: up to 0.34 mm² 250 Vss.
0.5 - 2.5 mm² U_0/U 300/500 V
UL/CSA: up to 1.5 mm² 600 V,
from 2.5 mm² 1000 V

Test voltage
Up to 0.34 mm²: 1500 V
From 0.5 mm²: 2000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Flexing: -40°C to +80°C
Fixed installation: -50°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® ROBOT F1				
Core colours according to DIN 47100				
0029590	7 X 0.25	6.7	16.8	62
0029591	12 X 0.25	9	30	122
0029592	18 X 0.25	10.6	45	156
0029593	25 X 0.25	12.5	60	205
0029594	2 X 0.34	4.6	7	38
0029595	3 X 0.34	4.8	10	40
0029596	4 X 0.34	5.2	15	48
0029599	12 X 0.34	9.4	40	130
0029600	18 X 0.34	11.2	60	170
0029601	25 X 0.34	13.1	83	220
Numbered Cores				
0029608	18 G 0.5	12.3	84	202
0029609	25 G 0.5	15.2	120	284
0029610	2 X 1	6.3	19	60
0029611	3 G 1	6.6	28	71
0029612	4 G 1	7.2	38	87

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0029614	7 G 1	9.2	65	141
0029615	12 G 1	12.4	110	237
0029616	14 G 1	13.2	128	257
0029617	16 G 1 + (2 × 1)	15.4	190	346
0029618	18 G 1	16.1	170	349
0029619	23 G 1 + (2 × 1)	18	250	461
0029620	25 G 1	18.3	240	407
0029621	34 G 1	21.1	320	600
0029622	41 G 1	23.6	390	753
0029624	4 G 1.5	8.2	57	114
0029625	5 G 1.5	9.1	72	141
0029627	7 G 1.5	10.5	101	187
0029629	12 G 1.5	14.3	170	294
0029630	18 G 1.5	17.5	259	450
0029631	25 G 1.5	22.2	360	661
0029632	3 G 2.5	9.1	72	136
0029641	4 G 6	13.3	220	330

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® ROBOT F1 (C)

Shielded, abrasion- and oil-resistant PUR robot cable for high dynamic bending and torsion motions, UL/cUL AWM certified

Info

- Simultaneous bending and torsion
- Torsion angle up to +/- 180 °/m
- AWM certification for USA and Canada

Benefits

- Allows much faster speed and accelerations which increases the economic efficiency of the machines
- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media
- Wide temperature range for applications in harsh climatic environments
- Certified for the USA and Canada for export-oriented machine, appliance and apparatus manufacturers

Application range

- Industrial machinery and machine tools
- Automated handling equipment
- Automotive industry
- In power chains or moving machine parts
- Inside of dresspacks of buckling arm robots and for use for gantry robots

Product features

- Abrasion and notch-resistant
- Flame-retardant
- High oil-resistance
- Flexible at low temperatures
- Low-adhesive surface

Norm references / Approvals

- UL AWM Style 20940
  cUL AWM I/II A/B
- UL File No. E213974
- Designed for up to 10 million torsion cycles
- For use in power chains: Please comply with assembly guideline Appendix T3
- For travel distances up to 10 m.

Product Make-up

- Extra-fine strands, 0.14 – 0.5 mm² made of tinned copper wires, bare above
- Core insulation: TPE
- Cores (or core pairs) twisted in layers or bundles
- Wrapping made of tinned copper wires for versions with individually screened pairs
- Wrapping of PTFE tape
- Spiral shield of tinned copper wires, version 12 G 1,5 and 18 G 1,5 with screen braiding
- PUR outer sheath, black (similar RAL 9005)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

Core identification code
Up to 0.34 mm²: DIN 47100 cores
From 0.5 mm²: white cores with black numbers, cores of screened pair (2 × 1) are marked with no. 5 + 6

Conductor stranding
Extra-fine wire

Torsion
Torsion load max. ± 180 °/m

Minimum bending radius
Flexible use: 10 × outer diameter
Fixed installation: 4 × outer diameter

Nominal voltage
IEC: up to 0.34 mm² 250 Vss.
0.5 - 2.5 mm² U_0/U 300/500 V
UL/CSA: up to 1.5 mm² 600 V,
from 2.5 mm² 1000 V

Test voltage
Up to 0.34 mm²: 1500 V
From 0.5 mm²: 2000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Flexing: -40°C to +80°C
Fixed installation: -50°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® ROBOT F1 (C)				
Core colours according to DIN 47100				
0029653	3 X 2 × 0.25	8	38	100
0029654	25 X 0.25	13.8	115	280
0029655	2 X 0.34	5.2	18	54
0029656	3 X 0.34	5.4	20	56
0029657	4 X 0.34	6.6	28	72
0029658	5 X 2 × 0.34	10.2	69	158
Numbered Cores				
0029689	12 G 1.5	15.4	230	380
0029690	18 G 1.5	18.5	340	550
0029664	4 G 1.5	8.8	75.1	120
0029665	4 G 2.5	10.3	116	200
0029691	4 G 1.5 + (2 × 1)	11	116	213
0029692	4 G 2.5 + (2 × 1)	12	150	270

Unless specified otherwise, the shown product values are nominal values at room temperature. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® CRANE

Highly flexible and weather-proof rubber cables with support element

Info

- Suitable for outdoor use
- Integrated supporting element
- Also suitable for power chains and cable trolley systems

Benefits

- Weather-resistant for harsh environmental conditions
- Very flexible due to extra-fine wire conductor design
- Cables up to a max. 24 cores can also be used in power chains

Application range

- Machinery and equipment that are permanently exposed to the weather; conveying and hoisting equipment; construction machinery; shipyard machinery
- Suitable for use in special conditions, such as not more than 2 weeks without interruption of submersion in industrial or sea water
- The application profiles for ÖLFLEX® CRANE and ÖLFLEX® LIFT cables can be found in the appendix, selection table A3
- The assembly and handling guidelines for ÖLFLEX® CRANE cables can be found in the catalogue appendix, technical table T4; for ÖLFLEX® LIFT cables please see the catalogue appendix, technical table T5
- For highly flexible applications, please follow the assembly guidelines for ÖLFLEX® FD cables in power chains; see appendix T3

Product features

- Flame-retardant according IEC 60332-1-2
- Not suitable for use on guide pulleys or drums under tensile load
- Refer to the article table for the tensile strength of the support element
- The cable should be installed in a way that the supporting element can absorb the tensile forces
- The mobility of the cores must not be affected by the clamps

Norm references / Approvals

- Based on VDE 0250

Product Make-up

- Conductor made of bare copper wires
- Core insulation: rubber compound
- Special supporting element as strain relief
- Outer sheath: rubber compound, type EM2

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001578
ETIM 5.0/6.0 Class-Description: Flexible cable

Core identification code
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers

Conductor stranding
0.15 mm wire diameter at 1 mm²
0.2 mm wire diameter from 1.5 mm²

Minimum bending radius
Flexible use: 12.5 × outer diameter
Fixed installation: 6 × outer diameter

Nominal voltage
U_0/U: 300/500 V

Test voltage
3000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Temperature range
Flexible use: -25°C to +80°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Tensile strength (N)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CRANE					
0039001	2 X 1	7.4	300	19.2	89
0039002	3 G 1	8.3	300	28.8	106
00390033	4 G 1	8.9	300	38.4	127
00390043	5 G 1	10.4	300	48	149
0039107	7 G 1	12.9	300	67.2	206
0039109	9 G 1	14.4	300	86.4	281
0039054	12 G 1	18.5	360	115.2	422
0039055	18 G 1	19.2	540	172.8	451
0039056	24 G 1	22.1	720	230.4	646
0039057	36 G 1	26.1	1080	345.6	863
0039017	2 X 1.5	8	300	28.8	108
0039018	3 G 1.5	8.7	300	43.2	128
00390193	4 G 1.5	9.9	300	57.6	158
00390203	5 G 1.5	10.9	300	72	188
0039061	7 G 1.5	14	315	100.8	260
0039208	8 G 1.5	15.2	360	115.2	300
0039209	9 G 1.5	15.9	405	129.6	375
0039210	10 G 1.5	17	450	144	427
0039058	12 G 1.5	19.9	540	172.8	557

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Tensile strength (N)	Copper index (kg/km)	Weight (kg/km)
0039059	18 G 1.5	20.9	810	259.2	608
0039060	24 G 1.5	23.4	1080	345.6	825
0039034	2 X 2.5	9.7	300	48	145
0039035	3 G 2.5	10.2	300	72	173
00390363	4 G 2.5	11.6	300	96	219
00390373	5 G 2.5	12.4	375	120	259
0039307	7 G 2.5	16.6	525	168	378
0039309	9 G 2.5	18.9	675	216	518
0039312	12 G 2.5	23.3	900	288	770
0039316	16 G 2.5	22.8	1200	384	749
0039318	18 G 2.5	24.4	1350	432	837
0039324	24 G 2.5	28.5	1800	576	1184
00390463	4 G 4	15.2	480	153.6	307
00390473	5 G 4	16.8	600	192	394
00390483	4 G 6	16.8	720	230.4	409
00390493	5 G 6	19.2	900	288	528
00390503	4 G 10	21.8	1200	384	698
00390513	5 G 10	24.6	1500	480	853
00390523	4 G 16	25.4	1920	614.4	974
00390533	5 G 16	28	2400	768	1226

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® CRANE NSHTÖU

Reelable cables for low and medium mechanical stress

Info

- Robust and efficient
- Suitable for outdoor use
- Integrated sheath supporting braid

Benefits

- Can be used as hawser, drum and towing cable as well as for energy supply chains
- Integrated supporting braid prevents undesirable cable twists, and the formation of so-called corkscrew effects

Application range

- For use in hoists, transport and conveyor systems
- Reeling/unreeling during operation without fixing
- In dry or damp interiors, outdoors, or not more than 2 weeks without interruption in industrial water
- The application profiles for ÖLFLEX® CRANE and ÖLFLEX® LIFT cables can be found in the appendix, selection table A3
- The assembly and handling guidelines for ÖLFLEX® CRANE cables can be found in the catalogue appendix, technical table T4; for ÖLFLEX® LIFT cables please see the catalogue appendix, technical table T5

Product features

- Flame-retardant according IEC 60332-1-2
- Oil-resistant according to EN 60811-404
- Good chemical, thermal and mechanical-resistance
- UV-resistant

Norm references / Approvals

- <VDE> NSHTÖU cable type certification acc. VDE 0250-814

Product Make-up

- Strands of tinned-copper wires
- Core insulation: rubber compound, type 3GI3
- Support braid integrated in the outer sheath
- Outer sheath: rubber compound, type 5GM3

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000057
ETIM 5.0/6.0 Class-Description:
Low voltage power cable

Core identification code
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers

Conductor stranding
Fine wire according to VDE 0295, Class 5/IEC 60228, Class 5

Minimum bending radius
Flexible use:
Cables with outer diameter < 21,5 mm: 5 × outer diameter
Cables with outer diameter > 21,5 mm: 6,25 × outer diameter

Nominal voltage
U_0/U: 600/1000 V

Test voltage
4000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Current rating
VDE 0298 Part 4

Temperature range
Flexible use: -25°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CRANE NSHTÖU				
0043006	3 G 1.5	14	43.2	190
00430053	4 G 1.5	14.8	57.6	220
00430073	5 G 1.5	15.7	72	260
0043008	7 G 1.5	18.2	100.8	380
0043009	12 G 1.5	23.9	172.8	720
0043010	18 G 1.5	23.9	259.2	770
0043011	24 G 1.5	27.1	345.6	1000
0043012	30 G 1.5	30.2	432	1320
0043013	3 G 2.5	15.5	72	250
00430303	4 G 2.5	16.9	96	330
00430143	5 G 2.5	18	120	390
0043015	7 G 2.5	20.6	168	510
0043016	12 G 2.5	27.4	288	970
0043017	18 G 2.5	27.4	432	1100

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0043018	24 G 2.5	31.6	576	1450
0043019	30 G 2.5	36.3	720	1950
00430203	4 G 4	18.4	153.6	440
00430333	5 G 4	19.6	192	520
00430213	4 G 6	19.8	230.4	530
00430343	5 G 6	21.7	288	690
00430223	4 G 10	23.4	384	830
00430003	5 G 10	25.2	480	1000
00430233	4 G 16	25.5	614.4	1170
00430323	5 G 16	27.5	768	1400
00430243	4 G 25	32.6	960	1830
00430253	4 G 35	34.8	1344	2280
00430263	4 G 50	40.6	1920	3220
00430283	4 G 70	44.8	2688	4200
00430293	4 G 95	51.2	3648	5530

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® CRANE VS (N)SHTÖU

Reelable cables for medium to high mechanical stress

Info

- Reinforced outer sheath design
- Central and tear-resistant supporting element
- Suitable for extreme tensile stress

Benefits

- The central supporting element absorbs the tensile loads that occur, thereby allowing reeling, unreeling and deflection for free-hanging cables even over large distances
- Reeling, unreeling and guiding operations also impose tensile stresses on the cables
- Integrated supporting braid prevents undesirable cable twists, and the formation of so-called corkscrew effects

Application range

- For use in hoists, transport and conveyor systems
- Cables are reeled, unreeled, and guided by roller trains
- In dry or damp interiors, outdoors, or not more than 2 weeks without interruption in industrial water
- The application profiles for ÖLFLEX® CRANE and ÖLFLEX® LIFT cables can be found in the appendix, selection table A3
- The assembly and handling guidelines for ÖLFLEX® CRANE cables can be found in the catalogue appendix, technical table T4; for ÖLFLEX® LIFT cables please see the catalogue appendix, technical table T5

Product features

- Flame-retardant according IEC 60332-1-2
- Oil-resistant according to EN 60811-404
- Good chemical, thermal and mechanical-resistance

Norm references / Approvals

- Based on VDE 0250-814 (NSHTÖU)

Product Make-up

- Strands of tinned-copper wires
- Core insulation: rubber compound, type 3GI3
- Central supporting element
- Support braid integrated in the outer sheath
- Outer sheath: rubber compound, type 5GM5

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000057
ETIM 5.0/6.0 Class-Description: Low voltage power cable

Core identification code
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers

Conductor stranding
Fine wire according to VDE 0295, Class 5/IEC 60228, Class 5

Minimum bending radius
Flexible use: 7.5 × outer diameter

Nominal voltage
U_0/U: 600/1000 V

Test voltage
3000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Current rating
VDE 298 Part 4

Temperature range
Flexible use: -25°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Tensile strength (N)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CRANE VS (N)SHTÖU					
0044008	7 G 1.5	18.8	2000	100.8	430
0044009	12 G 1.5	25.3	2000	172.8	820
0044010	18 G 1.5	25.3	2000	259.2	930
0044011	24 G 1.5	30.1	2000	345.6	1260
0044036	36 G 1.5	34	2000	518.4	1650
0044015	7 G 2.5	21.6	2000	168	630
0044016	12 G 2.5	29.4	2000	288	1150
00440333	5 G 4	19.6	2000	192	510
00440223	4 G 10	23.4	2000	384	830
00440233	4 G 16	25.5	2000	614.4	1170
00440323	5 G 16	27.5	2400	768	1400
00440243	4 G 25	32.6	3000	960	1850
00440253	4 G 35	34.8	4000	1344	2250
00440263	4 G 50	40.6	6000	1920	3200
00440283	4 G 70	44.8	8000	2688	4200
00440293	4 G 95	51.2	11000	3648	5550

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® CRANE PUR

Reelable polyurethane cables for low, medium and high mechanical stress

Info

- Multifunctional application possibilities, flexible use down to -40°C
- Lightweight due to minimised diameters
- Halogen-free

Benefits

- Designed with a smaller outer diameter to save space and weight
- Cost-saving due to the use of smaller drums, guide rollers, as well as drive engines when possible
- Reeling, unreeling and guiding operations also impose tensile stresses on the cables
- The central supporting element absorbs the tensile loads that occur, thereby allowing reeling, unreeling and deflection for free-hanging cables even over large distances
- Integrated supporting braid prevents undesirable cable twists, and the formation of so-called corkscrew effects

Application range

- For use in hoists, transport and conveyor systems
- Cables are reeled, unreeled, and guided by roller trains
- In dry or damp interiors, outdoors, or not more than 2 weeks without interruption in industrial water
- The application profiles for ÖLFLEX® CRANE and ÖLFLEX® LIFT cables can be found in the appendix, selection table A3
- The assembly and handling guidelines for ÖLFLEX® CRANE cables can be found in the catalogue appendix, technical table T4; for ÖLFLEX® LIFT cables please see the catalogue appendix, technical table T5

Product features

- Halogen-free and flame-retardant (IEC 60332-1-2)
- Oil-resistant according to EN 60811-404
- Good chemical, thermal and mechanical-resistance

Product Make-up

- Conductor made of bare copper wires
- Core insulation: TPE compound
- Central supporting element
- Support braid integrated in the outer sheath
- Outer sheath: PUR compound, halogen-free

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000057
ETIM 5.0/6.0 Class-Description: Low voltage power cable

Core identification code
Up to 5 cores: colour-coded according to VDE 0293-308, refer to Appendix T9
From 6 cores: black with white numbers

Conductor stranding
Extra-fine wire according to VDE 0295, class 6/IEC 60228 class 6

Minimum bending radius
Flexible use: 7.5 × outer diameter

Nominal voltage
U_0/U: 600/1000 V

Test voltage
4000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Current rating
VDE 298 Part 4

Temperature range
Flexible use: -40°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Tensile strength (N)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® CRANE PUR					
0045207	4 G 1.5	10.9	500	57.6	169
0045209	5 G 1.5	11.6	1000	72	197
0045210	7 G 1.5	12.9	2500	100.8	239
0045211	12 G 1.5	17.6	2500	172.8	401
0045212	18 G 1.5	17.5	2500	259.2	507
0045213	24 G 1.5	20.7	2500	345.6	673
0045215	30 G 1.5	28.9	3000	432	1100
0045214	36 G 1.5	31.4	3000	518.4	1350
0045216	4 G 2.5	12.2	500	96	227
0045218	5 G 2.5	13.2	2000	120	274
0045220	7 G 2.5	15.4	3000	168	358
0045221	12 G 2.5	21.6	3000	288	619
0045222	18 G 2.5	21.5	3000	432	793
0045223	24 G 2.5	25.5	3000	576	1123
0045224	30 G 2.5	34.7	3000	720	1641

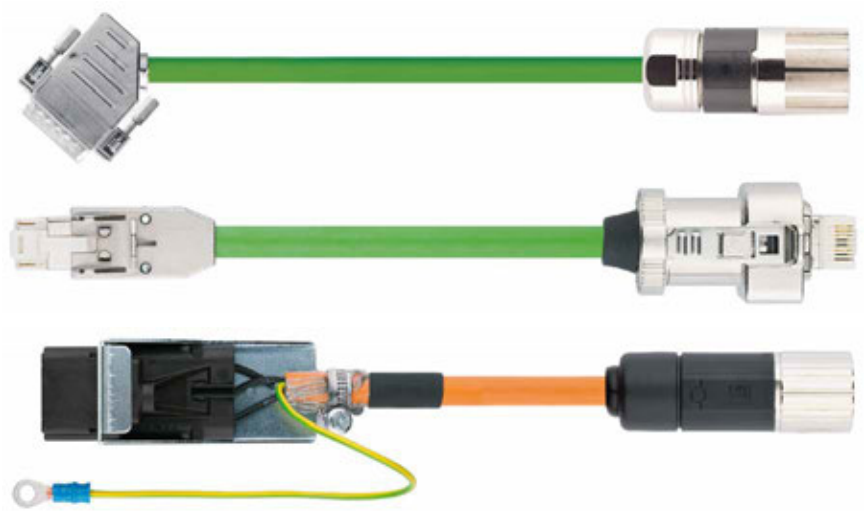
Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Tensile strength (N)	Copper index (kg/km)	Weight (kg/km)
0045225	4 G 4	14.3	1000	153.6	341
0045227	5 G 4	15.5	2000	192	411
0045228	4 G 6	16.6	1500	230.4	457
0045229	5 G 6	17.7	2000	288	538
0045235	7 G 6	21.5	2500	403	750
0045230	4 G 10	19.2	2000	384	674
0045237	5 G 10	21.6	2500	480	825
0045231	4 G 16	22.2	2500	614.4	966
0045238	5 G 16	25.6	3500	768	1222
0045232	4 G 25	27.6	3500	960	1506
0045233	4 G 35	31	4500	1344	2004
0045234	4 G 50	36.1	6000	1920	2838
0045240	3 × 25 + 3 G 6	25.7	2000	892.8	1380
0045241	3 × 35 + 3 G 6	27.6	2500	1180.8	1695
0045242	3 × 50 + 3 G 10	32.1	3500	1728	2307

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ÖLFLEX® CONNECT SERVO Basic Line according to Siemens 6FX5002 (PVC)

Info

- Connector with novel, safe screen connection
- For static applications
- Other versions and lengths available upon request



Benefits

- Regional manufactured worldwide available
- LAPP quality standards
- Semi-automated production process ensures higher reliability and accordingly a globally standardised quality standard

Application range

- Food production and packaging machinery
- Woodworking Machinery

Product features

- PVC servo cable, shielded
- Basic Line for static and slowly moving applications with resistant PVC outer mantle
- Innovative connnector concept

Norm references / Approvals

- Design according to SIEMENS® standard 6FX5002
- Flame-retardant according to IEC 60332-1-2, VW-1, FT1

Product Make-up

- Full range of types
- Brake wire with 1.5mm² wire gauge

Technical data

Core identification code
Power cores: black with marking U/L1/C/L+; V/L2; W/L3/D /L-; GN/YE protective conductor
Single-paired versions: black; white
Double-paired versions: black with white numbers 5; 6; 7; 8
0,34mm² pairs: WH/BN/GN/YE

Conductor stranding
Fine wire according to IEC 60228/VDE 0295, Class 5

Minimum bending radius
Occasional flexing: 15 x outer diameter
Fixed installation: 6 x outer diameter

Nominal voltage
Power cores and control cores:
IEC U0/U: 600/1000 V
UL & CSA: 1000 V

Test voltage
Core/Core: 4 kV
Core/Screen: 4 kV

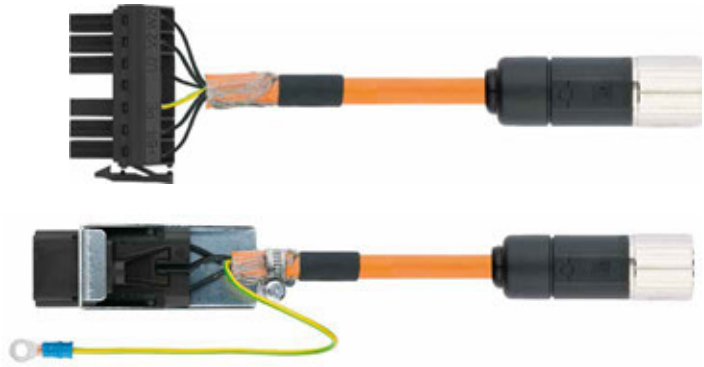
Protective conductor
G = with GN-YE protective conductor

Temperature range
Occasional flexing: -5 °C to +70 °C (UL/CSA: +80° C)
Fixed installation: -30 °C to +80 °C (UL/CSA: +80 °C)

Article number	Length (m)	Article designation	OD in mm	Quality of cable	Number of cores and mm² per conductor	Copper index (kg/km)
ÖLFLEX® CONNECT SERVO Basic Line according to Siemens 6FX5002 (PVC)						
5480002690	10	2DC10	7	PVC	2x(2x0.15)+2x0.38 mm²	37
5480002715	10	2DC20	7	PVC	2x(2x0.15)+2x0.38 mm²	37
5480002990	10	5CN05	8	PVC	4 G 1.5 mm²	88
5480003015	10	5CN11	9.6	PVC	4 G 2.5 mm²	132
5480003240	10	5CQ28	8	PVC	4 G 1.5 mm²	88
5480003365	10	5CS01	8	PVC	4 G 1.5 mm²	88
5480003565	10	5CS31	9.6	PVC	4 G 2.5 mm²	132
5480004290	10	5DQ28	10.4	PVC	4 G 1.5+(2x1.5) mm²	167
5480004415	10	5DS01	10.4	PVC	4 G 1.5+(2x1.5) mm²	167
5480004515	10	5DS31	12	PVC	4 G 2.5+(2x1.5) mm²	194

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the defi nition and calculation of copper-related surcharges.
Siemens part designations (6FX5002/5008, 6FX7002/7008, 6FX8002/8008) are registered trademarks of Siemens AG, and are listed for comparison purposes only
Other lengths and cable terminations are available upon request.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.
Further Article and length online https://servoconfigurator.lappgroup.com/

ÖLFLEX® CONNECT SERVO Core Line for Siemens 6FX5002 (PVC)



Info

- Connector with novel, safe screen connection
- Other versions and lengths available upon request

Benefits

- Regional manufactured worldwide available
- LAPP quality standards
- Semi-automated production process ensures higher reliability and accordingly a globally standardised quality standard
- Improved EMC shielding (6dB) through new connector design (size 1/M23)
- Tamper proof (connector cannot be opened)
- Vibration-proof
- IP67
- For medium dynamic applications: for travel distance up to 10 m and up to 5 mio. bending cycles

Application range

- Food production and packaging machinery
- Woodworking Machinery
- For static applications

Product features

- Core Line PVC for light duty power chain applications
- New PVC servo cable, shielded
- Innovative connnector concept

Norm references / Approvals

- Design according to SIEMENS® standard 6FX-5002

Product Make-up

- Brake wire with 1.5 mm² wire gauge

Technical data

Core identification code
Supply cores: colored with white printing, Brown with white printing: V / L2, Black with white printing: U/L1/C/L +
Gray with white printing: W/L3/D/L-GN/GE protective conductorcontrol wires: WS; SW

Conductor stranding
Fine wire according to VDE 0295, Class 5/ IEC 60228, Class 5

Minimum bending radius
Chain application:7,5 x cable diameter
Fixed installation: 4 x cable diameter

Nominal voltage
Power cores and control cores:
IEC U0/U: 600/1000 V
UL & CSA: 1000 V

Test voltage
Core/Core: 4 kV
Core/Screen: 4 kV

Protective conductor
G = with GN-YE protective conductor

Alternating bending cycles
5 mio. cycles

Temperature range
Occasional flexing: -5 °C to +70 °C (UL/CSA: +80° C)
Fixed installation: -40 °C to +70 °C (UL/CSA: +80 °C)

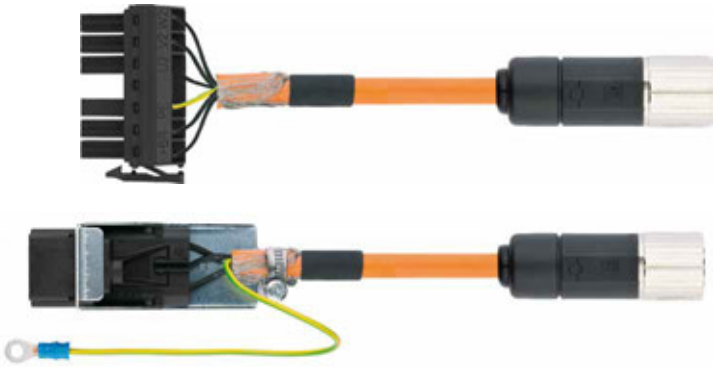
Article number	Length (m)	Article designation	OD in mm	Quality of cable	Number of cores and mm² per conductor	Copper index (kg/km)
ÖLFLEX® CONNECT SERVO Core Line for Siemens 6FX5002 (PVC)						
5480007020	10	5CA05	9.4	PVC	4 G 1.5 mm²	81
5480007090	10	5CA15	11.1	PVC	4 G 2.5 mm²	120
5480007510	10	5CN01	9.4	PVC	4 G 1.5 mm²	81
5480007650	10	5CN11	11.1	PVC	4 G 2.5 mm²	120
5480007720	10	5CN21	9.4	PVC	4 G 1.5 mm²	81
5480007790	10	5CN31	11.1	PVC	4 G 2.5 mm²	120
5480008210	10	5CQ15	11.1	PVC	4 G 2.5 mm²	120
5480008630	10	5CS01	9.4	PVC	4 G 1.5 mm²	81

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the defi nition and calculation of copper-related surcharges.
Siemens part designations (6FX5002/5008, 6FX7002/7008, 6FX8002/8008) are registered trademarks of Siemens AG, and are listed for comparison purposes only
Other lengths and cable terminations are available upon request.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.
Further Article and length online https://servoconfigurator.lappgroup.com/

ÖLFLEX® CONNECT SERVO Core Line for Siemens 6FX8002 (PUR)

Info

- Connector with novel, safe screen connection
- Other versions and lengths available upon request



Benefits

- Regional manufactured worldwide available
- LAPP quality standards
- Semi-automated production process ensures higher reliability and accordingly a globally standardised quality standard
- Improved EMC shielding (6dB) through new connector design (size 1/M23)
- Tamper proof (connector cannot be opened)
- Vibration-proof
- IP67

Application range

- Specifically for machine tool building
- Assembly and assembly machinesproduction lines
- For highly dynamic applications: for travel distance up to 10 m and up to 10 mio. bending cycles
- Chain application

Product features

- New PUR servo cable, halogen-free & shielded
- Innovative connnector concept
- Core Line PUR for highly dynamic power chain application

Norm references / Approvals

- Design according to SIEMENS® standard 6FX-8002

Product Make-up

- Brake wire with 1.5 mm² wire gauge

Technical data

Core identification code
Supply cores: colored with white printing, Brown with white printing: V / L2, Black with white printing: U/L1/C/L +
Gray with white printing: W/L3/D/L-GN/GE protective conductorcontrol wires: WS; SW

Conductor stranding
Fine wire according to IEC 60228/ VDE 0295, Class 5

Minimum bending radius
Chain application:7,5 x cable diameter
Fixed installation: 4 x cable diameter

Nominal voltage
Power cores and control cores:
IEC U0/U: 600/1000 V
UL & CSA: 1000 V

Test voltage
Core/Core: 4 kV
Core/Screen: 4 kV

Protective conductor
G = with GN-YE protective conductor

Alternating bending cycles
10 mio. cycles

Temperature range
Flexing: -40°C to +90°C
(UL/CSA: +80°C)
Fixed installation: -50°C to +90°C
(UL/CSA: +80°C)

Article number	Length (m)	Article designation	OD in mm	Quality of cable	Number of cores and mm² per conductor	Copper index (kg/km)
ÖLFLEX® CONNECT SERVO Core Line for Siemens 6FX8002 (PUR)						
5480005390	10	5CS31	11.5	PUR	4 G 2.5 mm²	120
5480000665	10	5CN01	10	PUR	4 G 1.5 mm²	81
5480000715	10	5CN11	11.5	PUR	4 G 2.5 mm²	120
5480000765	10	5CN31	11.5	PUR	4 G 2.5 mm²	120
5480001065	10	5CS01	10	PUR	4 G 1.5 mm²	81
5480048200	10	5CS06	10	PUR	4 G 1.5 mm²	81
5480001115	10	5CS11	11.5	PUR	4 G 2.5 mm²	120
5480001215	10	5CS21	10	PUR	4 G 1.5 mm²	81
5480001765	10	5DN11	14.4	PUR	4 G 2.5+(2x1.5) mm²	202.8
5480001840	10	5DN41	16.3	PUR	4 G 4.0+(2x1.5) mm²	270.2
5480002115	10	5DS01	12.8	PUR	4 G 1.5+(2x1.5) mm²	143
5480049200	10	5CS06	10	PUR	4 G 1.5 mm²	81
5480002215	10	5DS31	14.4	PUR	4 G 2.5+(2x1.5) mm²	202.8

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the defi nition and calculation of copper-related surcharges.
Siemens part designations (6FX5002/5008, 6FX7002/7008, 6FX8002/8008) are registered trademarks of Siemens AG, and are listed for comparison purposes only
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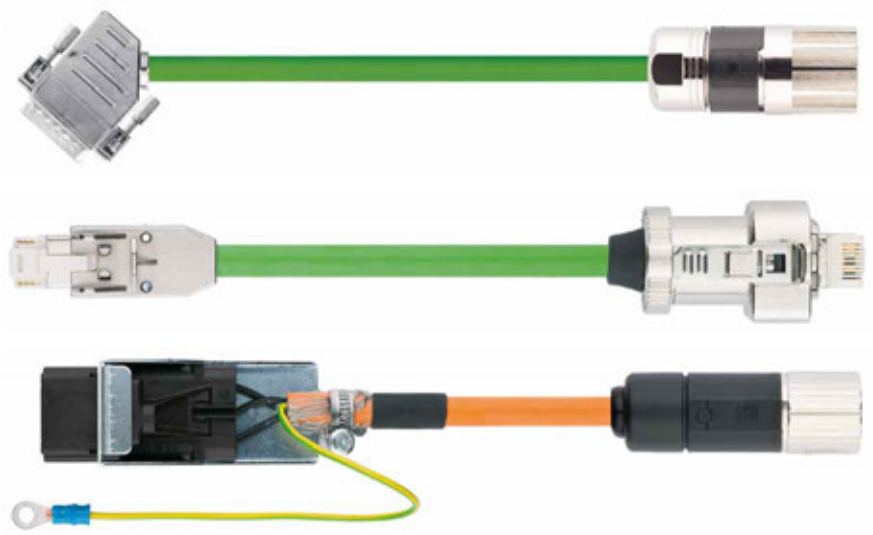
ÖLFLEX® CONNECT SERVO Extended Line according to Siemens 6FX8002 (PUR)



Info

- Classical production and assembly
- Connector with novel, safe screen connection
- For the most demanding mechanical requirements
- Other versions and lengths available upon request

Benefits

- Regional manufactured worldwide available
- LAPP quality standards
- Semi-automated production process ensures higher reliability and accordingly a globally standardised quality standard

Application range

- Specifically for machine tool building
- Designed for power chain use: for travel distances up to 100 m (horizontal)
- For very high dynamic motion sequences

Product features

- Extended Line for high mechanical stress in Power chains
- Proven for hightes dynamic stresses and long distances

Norm references / Approvals

- Design according to SIEMENS® standard 6FX 8002
- Flame-retardant according to IEC 60332-1-2, VW-1, FT1

Product Make-up

- Full range of types
- Brake wire with 1.5mm² wire gauge

Technical data

Core identification code
Power cores: black with marking U/L1/C/L+; V/L2; W/L3/D /L-; GN/YE protective conductor
Optional designs with one pair of control cores: black; white
Two pairs of control cores: black with white numbers: 5, 6, 7, 8

Conductor stranding
Extra-fine wire according to VDE 0295, class 6/IEC 60228 class 6

Minimum bending radius
For flexible use:
7.5 x outer diameter (1.5-16 mm²)
10 x outer diameter (25-50 mm²)
Fixed installation: 4 x outer diameter

Nominal voltage
Power cores and control cores:
IEC U0/U: 600/1000 V
UL & CSA: 1000 V

Test voltage
Core/Core: 4 kV
Core/Screen: 4 kV

Protective conductor
G = with GN-YE protective conductor

Alternating bending cycles
10 mio. cycles

Temperature range
Flexing: -40°C to +90°C
(UL/CSA: +80°C)
Fixed installation: -50°C to +90°C
(UL/CSA: +80°C)

Article number	Length (m)	Article designation	OD in mm	Quality of cable	Number of cores and mm² per conductor	Copper index (kg/km)
ÖLFLEX® CONNECT SERVO Extended Line according to Siemens 6FX8002 (PUR)						
5480000015	10	2AD00	8.9	PUR	3x2x0.14 mm²+4x0.14 mm²+2x0.5 mm²	68
5480000065	10	2AH00	8.8	PUR	4x2x0.34 mm²+4x0.5 mm²	79
5480000165	10	2CA31	8.9	PUR	3x2x0.14 mm²+4x0.14 mm²+4x0.22 mm²+2x0.5 mm²	80
5480000290	10	2CH00	8.9	PUR	3x2x0.14 mm²+4x0.14 mm²+2x0.5 mm²	68
5480000390	10	2DC10	7.2	PUR	2x(2x0.15)+2x0.38 mm²	38
5480000415	10	2DC20	7.2	PUR	2x(2x0.15)+2x0.38 mm²	38
5480000440	10	2EQ10	8.9	PUR	3x2x0.14 mm²+4x0.14 mm²+4x0.22 mm²+2x0.5 mm²	80
5480004940	10	5CN51	14.4	PUR	4 G 6 mm²	296
5480005290	10	5CS13	17.6	PUR	4 G 10 mm²	449
5480005440	10	5CS51	14.4	PUR	4 G 6 mm²	296
5480005990	10	5DN51	17	PUR	4 G 6 mm²+(2x1.5) mm²	329

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the defi nition and calculation of copper-related surcharges.
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Other lengths and cable terminations are available upon request.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.
Further Article and length online https://servoconfigurator.lappgroup.com/

ÖLFLEX® CONNECT SERVO Extended Line acc. Bosch Rexroth / Indramat (PUR)

Benefits
- Regional manufactured worldwide available
- LAPP quality standards

Application range
- Specifically for machine tool building
- For highly dynamic applications
- Assembly and assembly machinesproduction lines
- Chain application

Product features
- New PUR servo cable, halogen-free & shielded
- Innovative connnector concept

Note
- Please comply with the assembly guidelines for cables in power chain systems
- Maximum cable length must comply with the specifications set by the manufacturer of the respective servo drives
- The technical data correspond to the cables used

Product Make-up
- Other versions and lengths can be delivered upon request

Technical data

Core identification code
Supply cores: colored with white printing, Brown with white printing: V / L2, Black with white printing: U/L1/C/L +
Gray with white printing: W/L3/D/L-GN/GE protective conductorcontrol wires: WS; SW

Conductor stranding
Fine wire according to VDE 0295 Class 5/ IEC 60228, Class 5

Minimum bending radius
Chain application:7,5 x cable diameter
Fixed installation: 4 x cable diameter

Nominal voltageXD
Power cores and control cores:
IEC U0/U: 600/1000 V
UL & CSA: 1000 V

Test voltage
Core/Core: 4 kV
Core/Screen: 4 kV

Protective conductor
G = with GN-YE protective conductor

Temperature range
Flexing: -40°C to +90°C
(UL/CSA: +80°C)
Fixed installation: -50°C to +90°C
(UL/CSA: +80°C)

Article number	Length (m)	Article designation	OD in mm	Quality of cable	Number of cores and mm² per conductor	Copper index (kg/km)
ÖLFLEX® CONNECT SERVO Extended Line acc. Bosch Rexroth / Indramat (PUR)						
5460000023	10	IKS4042	8.5	PUR	4x2x0.25+2x0.5	53
5460000024	10	IKS4038	9.7	PUR	4x1+4x2x0.14+4x0.14	81
5460000025	10	IKS4012	9.7	PUR	4x1+4x2x0.14+4x0.14	81
5460000026	10	IKS0204	8.5	PUR	4x2x0.25+2x0.5	53
5460000016	10	RKL4303	11.5	PUR	4 G 1.0+2x(2x0.75)	159
5460000017	10	RKL4308	15.1	PUR	4 G 2.5+2x(2x1)	212
5460000018	10	RKL4300	12.2	PUR	4 G 1.5+2x(2x0.75)	159
5460000019	10	RKL4304	12.2	PUR	4 G 1.5+2x(2x0.75)	159
5460000020	10	IKG4115	12.2	PUR	4 G 1.5+2x(2x0.75)	159
5460000021	10	IKG4139	15.1	PUR	4 G 2.5+2x(2x1)	212
5460000022	10	IKG4177	16	PUR	4 G 4+(2x1)+(2x1.5)	306

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Indramat part designations (IKG, IKS, INK, INS, RKL and RKG) are registered trademarks of Bosch Rexroth AG, and are listed for comparison purposes only.
Article numbers refer to genuine LAPP products.
Other designs and lengths are available upon request.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.
Further Article and length online https://servoconfigurator.lappgroup.com/

ÖLFLEX® CONNECT SERVO Core Line acc. Lenze (PVC)

Benefits

- Regional manufactured worldwide available
- LAPP quality standards
- Semi-automated production process ensures higher reliability and accordingly a globally standardised quality standard
- Improved EMC shielding (6dB) through new connector design (size 1/M23)
- Tamper proof (connector cannot be opened)
- Vibration-proof
- IP67

Application range

- Food production and packaging machinery
- Woodworking Machinery
- For static applications
- For medium dynamic applications

Product features

- Core Line PVC for light duty power chain applications
- New PVC servo cable, shielded
- Innovative connnector concept
- Design according to Lenze® standard
- Other versions and lengths available upon request

Technical data

Core identification code
Supply cores: colored with white printing, Brown with white printing: V / L2, Black with white printing: U/L1/C/L +
Gray with white printing: W/L3/D/L-GN/GE protective conductorcontrol wires: WS; SW

Conductor stranding
Fine wire according to VDE 0295 Class 5/ IEC 60228, Class 5

Minimum bending radius
Chain application:7,5 x cable diameter
Fixed installation: 4 x cable diameter

Nominal voltage
Power cores and control cores:
IEC U0/U: 600/1000 V
UL & CSA: 1000 V

Test voltage
Core/Core: 4 kV
Core/Screen: 4 kV

Protective conductor
G = with GN-YE protective conductor

Alternating bending cycles
5 mio. cycles

Temperature range
Occasional flexing: -5 °C to +70 °C (UL/CSA: +80° C)
Fixed installation: -40 °C to +70 °C (UL/CSA: +80 °C)

Article number	Length (m)	OD in mm	Quality of cable	Outer dimensions (mm)	Article designation	Cable cross section	Copper index (kg/km)
ÖLFLEX® CONNECT SERVO Core Line acc. Lenze (PVC)							
5450000268	10	12.2	PVC	12.2	EYP-0003-A-1000-M04-A00	4 G1.5+(2x1)	138
5450000269	10	12.2	PVC	12.2	EYP-0004-A-1000-M04-A00	4 G 1.5+(2x1)	138
5450000270	10	13.7	PVC	13.7	EYP-0005-A-1000-M04-A00	4 G 2.5+(2x1)	181
5450000271	10	12.2	PVC	12.2	EYP-0003-A-1000-M01-A00	4 G 1.5+(2x1)	138

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Lenze® part designations (EWLM_, EWLR_, EWLE_, EWLL_, EYL and EYP) are registered trademarks of Lenze® AG, and are listed for comparison purposes only. DESINA® is a registered trademark of the German Machine Tool Builders' Association.
Article numbers refer to genuine LAPP products.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.
Further Article and length online https://servoconfigurator.lappgroup.com/
Bendingradius: Resolvercable 15x Outerdiameter

ÖLFLEX® CONNECT SERVO Core Line acc. Lenze (PUR)

Benefits

- Regional manufactured worldwide available
- LAPP quality standards
- Semi-automated production process ensures higher reliability and accordingly a globally standardised quality standard
- Improved EMC shielding (6dB) through new connector design (size 1/M23)
- Tamper proof (connector cannot be opened)
- Vibration-proof
- IP67

Application range

- Specifically for machine tool building
- Assembly and assembly machines production lines
- For highly dynamic applications: for travel distance up to 10 m and up to 10 mio. bending cycles
- Chain application

Product features

- New PUR servo cable, halogen-free & shielded
- Innovative connnector concept
- Core Line PUR for highly dynamic power chain application
- Design according to Lenze® standard
- Other versions and lengths available upon request

Technical data

Core identification code
Supply cores: colored with white printing, Brown with white printing: V / L2, Black with white printing: U/L1/C/L +
Gray with white printing: W/L3/D/L-GN/GE protective conductorcontrol wires: WS; SW

Conductor stranding
Fine wire according to IEC 60228/ VDE 0295, Class 5

Minimum bending radius
Chain application:7,5 x cable diameter
Fixed installation: 4 x cable diameter

Nominal voltage
Power cores and control cores:
IEC U0/U: 600/1000 V
UL & CSA: 1000 V

Test voltage
Core/Core: 4 kV
Core/Screen: 4 kV

Protective conductor
G = with GN-YE protective conductor

Alternating bending cycles
10 mio. cycles

Temperature range
Flexing: -40°C to +90°C
(UL/CSA: +80°C)
Fixed installation: -50°C to +90°C
(UL/CSA: +80°C)

Article number	Length (m)	Article designation	OD in mm	Quality of cable	Number of cores and mm² per conductor	Copper index (kg/km)
ÖLFLEX® CONNECT SERVO Core Line acc. Lenze (PUR)						
5450000118	10	EYF-0020-A-1000-F01-A00	9.2	PUR	3x(2x0.14)+3x0.14	40
5450000122	10	EYF-0019-A-1000-A00-W04	11.5	PUR	4x(2x0.14)+(2x1)	65
5450000123	10	EYF-0019-A-1000-A00-S03	11.5	PUR	4x(2x0.14)+(2x1)	65
5450000124	10	EYF-0019-A-1000-F06-W04	11.5	PUR	4x(2x0.14)+(2x1)	65
5440000125	10	EYF-0019-A-1000-F06-S03	11.5	PUR	4x(2x0.14)+(2x1)	65
5450000242	10	EYP-0010-A-1000-M04-A00	12.3	PUR	4 G 1.5+(2x1)	138
5450000243	10	EYP-0011-A-1000-M04-A00	12.3	PUR	4 G 1.5+(2x1)	138
5450000244	10	EYP-0012-A-1000-M04-A00	13.8	PUR	4 G 2.5+(2x1)	181
5450000245	10	EYP-0010-A-1000-M01-A00	12.3	PUR	4 G 1.5+(2x1)	138

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
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Article numbers refer to genuine LAPP products.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.
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ÖLFLEX® CONNECT SERVO Core Line acc. SEW (PVC)

Benefits

- Regional manufactured worldwide available
- LAPP quality standards
- Semi-automated production process ensures higher reliability and accordingly a globally standardised quality standard
- Improved EMC shielding (6dB) through new connector design (size 1/M23)
- Tamper proof (connector cannot be opened)
- Vibration-proof
- IP67

Application range

- Food production and packaging machinery
- Woodworking Machinery
- For static applications
- For medium dynamic applications

Product features

- Core Line PVC for light duty power chain applications
- New PVC servo cable, shielded
- Innovative connnector concept
- Design according to SEW® standard
- Other versions and lengths available upon request

Technical data

Core identification code
Supply cores: colored with white printing, Brown with white printing: V / L2, Black with white printing: U/L1/C/L +
Gray with white printing: W/L3/D/L-GN/GE protective conductorcontrol wires: WS; SW

Conductor stranding
Fine wire according to VDE 0295 Class 5/ IEC 60228, Class 5

Minimum bending radius
Chain application: 7,5 x cable diameter
Fixed installation: 4 x cable diameter

Nominal voltage
Power cores and control cores:
IEC U0/U: 600/1000 V
UL & CSA: 1000 V

Test voltage
Core/Core: 4 kV
Core/Screen: 4 kV

Protective conductor
G = with GN-YE protective conductor

Alternating bending cycles
5 mio. cycles

Temperature range
Occasional flexing: -5 °C to +70 °C (UL/CSA: +80° C)
Fixed installation: -40 °C to +70 °C (UL/CSA: +80 °C)

Article number	Length (m)	Article designation	OD in mm	Quality of cable	Number of cores and mm² per conductor	Copper index (kg/km)
ÖLFLEX® CONNECT SERVO Core Line acc. SEW (PVC)						
5440000011	10	01994875	8.4	PVC	5x2x0.25	51.6
5440000012	10	13327429	8.4	PVC	5x2x0.25	51.6
5440000013	10	13602659	8.4	PVC	5x2x0.25	51.6
5440000014	10	13324535	9	PVC	6x2x0.25	58.5
5440000015	10	13621998	9	PVC	6x2x0.25	58.5
5440000016	10	18127843	9	PVC	6x2x0.25	58.5
5440000171	10	13324853	12.5	PVC	4 G 1.5+(3x1)	144.2
5440000172	10	13332139	13.9	PVC	4 G 2.5+(3x1)	187.2
5440000173	10	13332147	16.5	PVC	4 G 4+(3x1)	270.9

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
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Article numbers refer to genuine LAPP products.
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Further Article and length online https://servoconfigurator.lappgroup.com/
Bendingradius: Resolvercable 15x Outerdiameter

ÖLFLEX® CONNECT SERVO Core Line acc. SEW (PUR)

Benefits

- Regional manufactured worldwide available
- LAPP quality standards
- Semi-automated production process ensures higher reliability and accordingly a globally standardised quality standard
- Improved EMC shielding (6dB) through new connector design (size 1/M23)
- Tamper proof (connector cannot be opened)
- Vibration-proof
- IP67

Application range

- Specifically for machine tool building
- Assembly and assembly machinesproduction lines
- For highly dynamic applications: for travel distance up to 10 m and up to 10 mio. bending cycles
- Chain application

Product features

- New PUR servo cable, halogen-free & shielded
- Innovative connnector concept
- Core Line PUR for highly dynamic power chain application
- Design according to SEW® standard
- Other versions and lengths available upon request

Technical data

Core identification code
Supply cores: colored with white printing, Brown with white printing: V / L2, Black with white printing: U/L1/C/L +
Gray with white printing: W/L3/D/L-GN/GE protective conductorcontrol wires: WS; SW

Conductor stranding
Fine wire according to IEC 60228/VDE 0295, class 5

Minimum bending radius
Chain application:7,5 x cable diameter
Fixed installation: 4 x cable diameter

Nominal voltage
Power cores and control cores:
IEC U0/U: 600/1000 V
UL & CSA: 1000 V

Test voltage
Core/Core: 4 kV
Core/Screen: 4 kV

Protective conductor
G = with GN-YE protective conductor

Alternating bending cycles
10 mio. cycles

Temperature range
Flexing: -40°C to +90°C
(UL/CSA: +80°C)
Fixed installation: -50°C to +90°C
(UL/CSA: +80°C)

Article number	Length (m)	Article designation	OD in mm	Quality of cable	Number of cores and mm² per conductor	Copper index (kg/km)
ÖLFLEX® CONNECT SERVO Core Line nach SEW (PUR)						
5440000105	10	01993194	8.4	PUR	5x2x0.25	51.6
5440000106	10	13327437	8.4	PUR	5x2x0.25	51.6
5440000108	10	13324551	9.4	PUR	6x2x0.25	58.5
5440000174	10	13331221	12.9	PUR	4 G1 .5+(3x1)	144.2
5440000175	10	13332155	14.1	PUR	4 G 2.5+(3x1)	187.2
5440000176	10	13332163	16.3	PUR	4 G 4+(3x1)	270.9

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
SEW® is a registered trademark of SEW Eurodrive GmbH & Co KG, Ernst-Blickle Str. 42, D-76646 Bruchsal
Article numbers refer to genuine LAPP products.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.
Further Article and length online https://servoconfigurator.lappgroup.com/

ÖLFLEX® CONNECT SERVO Core Line acc. Allen Bradley / Rockwell (PVC)

Info

- Connector with novel, safe screen connection
- Other versions and lengths available upon request

Benefits

- Regional manufactured worldwide available
- LAPP quality standards
- Semi-automated production process ensures higher reliability and accordingly a globally standardised quality standard
- Improved EMC shielding (6dB) through new connector design (size 1/M23)
- Tamper proof (connector cannot be opened)
- Vibration-proof
- IP67

Application range

- Food production and packaging machinery
- Woodworking Machinery
- For static applications
- For medium dynamic applications: for travel distance up to 10 m and up to 5 mio. bending cycles

Product features

- Core Line PVC for light duty power chain applications
- New PVC servo cable, shielded
- Innovative connnector concept
- Design according to ROCKWELL® standard
- Other versions and lengths available upon request

Technical data

Core identification code
Supply cores: colored with white printing, Brown with white printing: V / L2, Black with white printing: U/L1/C/L +
Gray with white printing: W/L3/D/L-GN/GE protective conductorcontrol wires: WS; SW

Conductor stranding
Fine wire according to IEC 60228/ VDE 0295, Class 5

Minimum bending radius
Chain application:7,5 x cable diameter
Fixed installation: 4 x cable diameter

Nominal voltage
Power cores and control cores:
IEC U0/U: 600/1000 V
UL & CSA: 1000 V

Test voltage
Core/Core: 4 kV
Core/Screen: 4 kV

Protective conductor
G = with GN-YE protective conductor

Alternating bending cycles
5 mio. cycles

Temperature range
Occasional flexing: -5 °C to +70 °C (UL/CSA: +80° C)
Fixed installation: -40 °C to +70 °C (UL/CSA: +80 °C)

Article number	Length (m)	Article designation	OD in mm	Quality of cable	Number of cores and mm² per conductor	Copper index (kg/km)
ÖLFLEX® CONNECT SERVO Core Line acc. Allen Bradley / Rockwell (PVC)						
5490000061	10	2090-CPBM7E7-16AA	12.7	PVC	4 G 1.5+(2x1.5)	142.7
5490000053	10	2090-CPBM7DF-16AA	12.7	PVC	4 G 1.5+(2x1.5)	142.7
5490000057	10	2090-CPWM7DF-16AA	8	PVC	4 G 1.5	81
5490000059	10	2090-CPWM7DF-14AA	11.1	PVC	4 G 2.5	120
5490000055	10	2090-CPBM7DF-14AA	4.3	PVC	4 G 2.5+(2x1.5)	202.8

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Siemens part designations (6FX5002/5008, 6FX7002/7008, 6FX8002/8008) are registered trademarks of Siemens AG, and are listed for comparison purposes only
Other lengths and cable terminations are available upon request.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.
Bendingradius: Resolvercable 15x Outerdiameter
Resolver Corecode acc. DIN 47100
Allen Bradley / Rockwell part designations are registered trademarks of Allen Bradley / Rockwell , and are listed for comparison purposes only

ÖLFLEX® CONNECT SERVO Core Line acc. Allen Bradley / Rockwell (PUR)

Info

- Connector with novel, safe screen connection
- Other versions and lengths available upon request

Benefits

- Regional manufactured worldwide available
- LAPP quality standards
- Semi-automated production process ensures higher reliability and accordingly a globally standardised quality standard
- Improved EMC shielding (6dB) through new connector design (size 1/M23)
- Tamper proof (connector cannot be opened)
- Vibration-proof
- IP67

Application range

- Specifically for machine tool building
- For highly dynamic applications: for travel distance up to 10 m and up to 10 mio. bending cycles
- Assembly and assembly machinesproduction lines
- Chain application

Product features

- New PUR servo cable, halogen-free & shielded
- Innovative connnector concept
- Core Line PUR for highly dynamic power chain application
- Design according to ROCKWELL® standard
- Other versions and lengths available upon request

Technical data

Core identification code
Supply cores: colored with white printing, white printing:
V / L2, Black with white printing:
U/L1/C/L +
Gray with white printing:
W/L3/D/L-GN/GE protective conductorcontrol wires: WS; SW

Conductor stranding
Fine wire according to IEC 60228/ VDE 0295, class 5

Minimum bending radius
Chain application:7,5 x cable diameter
Fixed installation: 4 x cable diameter

Nominal voltage
Power cores and control cores:
IEC U0/U: 600/1000 V
UL & CSA: 1000 V

Test voltage
Core/Core: 4 kV
Core/Screen: 4 kV

Protective conductor
G = with GN-YE protective conductor

Alternating bending cycles
10 mio. cycles

Temperature range
Flexing: -40°C to +90°C
(UL/CSA: +80°C)
Fixed installation: -50°C to +90°C
(UL/CSA: +80°C)

Article number	Length (m)	Article designation	OD in mm	Quality of cable	Number of cores and mm² per conductor	Copper index (kg/km)
ÖLFLEX® CONNECT SERVO Core Line acc. Allen Bradley / Rockwell (PUR)						
5490000029	10	2090-CFBM4DD-CEAF	10.6	PUR	6x2x0.34	86.2
5490000031	10	2090-CFBM7E7-CEAF	10.6	PUR	6x2x0.34	86.2
5490000030	10	2090-CFBM4E7-CEAF	10.6	PUR	6x2x0.34	86.2
5490000054	10	2090-CPBM7DF-16AF	12.8	PUR	4 G 1.5+(2x1.5)	143
5490000056	10	2090-CPBM7DF-14AF	14.4	PUR	4 G 2.5+(2x1.5)	202.28
5490000039	10	2090-CPBM7DF-10AF	17.4	PUR	4 G 6+(2x1.5)	347.8
5490000058	10	2090-CPWM7DF-16AF	9.2	PUR	4 G 1.5	81
5490000060	10	2090-CPWM7DF-14AF	11.5	PUR	4 G 2.5	120

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the defi nition and calculation of copper-related surcharges.
Siemens part designations (6FX5002/5008, 6FX7002/7008, 6FX8002/8008) are registered trademarks of Siemens AG, and are listed for comparison purposes only
Other lengths and cable terminations are available upon request.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.
Further Article and length online https://servoconfigurator.lappgroup.com/
Resolver Corecode acc. DIN 47100
Allen Bradley / Rockwell part designations are registered trademarks of Allen Bradley / Rockwell , and are listed for comparison purposes only

2

UNITRONIC®

Data communication systems

Our high-quality UNITRONIC® data network cables and field bus components provide a forward-looking solution for all applications in industrial machinery and plant engineering. From transmission of simple control signals to field bus signals in complex network structures – we offer a dependable cabling and connection solution for almost every situation.

Application range

- Industrial machinery and plant engineering
- Sensors and actuating elements
- Appliances
- Measurement and control technology
- Automated production processes and industrial robots
- Bus systems
- Computing and communication systems

UNITRONIC® FD

Highly flexible data transmission cable with PVC outer sheath for power chain use

Benefits

- Well-proven and reliable
- Optimized cable construction for power chain use
- Cost-effective solution

Application range

- Automated production processes require data transmission cables that offer high flexibility and durability
- Suitable for use in measuring, control and regulating circuits
- Assembly lines, production lines, in all kinds of machines

Product features

- Low-adhesive surface
- Flame-retardant according IEC 60332-1-2
- Designed for 2 up to 8 million bending/ unbending cycles in power chain applications

Norm references / Approvals

- Based on VDE 0812
- For travel distances up to 10 m
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire strand made of bare copper wires
- Core insulation made of PVC
- Non-woven wrapping
- Outer sheath made of PVC
  Outer sheath colour: grey (RAL 7001)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

Core identification code
DIN 47100, refer to Appendix T9

Mutual capacitance
C/C: approx. 100 nF/km

Inductivity
approx. 0.65 mH/km

Conductor stranding
Stranded, extra-fine wire

Minimum bending radius
Flexing: 5 × outer diameter
Fixed installation: 3 × outer diameter

Test voltage
1500 V

Temperature range
Flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® FD				
0027841	3 × 0.14	3.9	4.2	26
0027842	4 × 0.14	4.2	5.6	31
0027843	5 × 0.14	4.5	7	35
0027844	7 × 0.14	5.1	9.8	50
0027845	10 × 0.14	6.1	14	63
0027846	14 × 0.14	6.2	19.6	77
0027847	18 × 0.14	6.8	25.2	91
0027848	25 × 0.14	8.3	35	125
0027855	2 × 0.25	4.3	5	27
0027856	3 × 0.25	4.5	7.5	33
0027857	4 × 0.25	4.9	10	40
0027858	5 × 0.25	5.3	12.5	45
0027859	7 × 0.25	6.1	17.5	59
0027860	10 × 0.25	7.4	25	75
0027861	14 × 0.25	7.5	35	108
0027863	18 × 0.25	8.5	45	130
0027865	25 × 0.25	10.4	62.5	178
0027870	2 × 0.34	4.7	6.8	30
0027871	3 × 0.34	5	10.2	43
0027872	4 × 0.34	5.4	13.6	57
0027873	5 × 0.34	5.9	17	65
0027874	7 × 0.34	6.8	23.8	85
0027875	10 × 0.34	8.5	34	117
0027876	14 × 0.34	8.6	47.6	151
0027877	18 × 0.34	9.7	61.2	182

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/ 100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

UNITRONIC® FD CY

Screened highly flexible data transmission cable with PVC outer sheath for power chain use

Benefits

- Well-proven and reliable
- Optimized cable construction for power chain use
- Cost-effective solution
- Overall braid minimises electrical interference

Application range

- Automated production processes require data transmission cables that offer high flexibility and durability, as well as excellent screening
- Suitable for use in measuring, control and regulating circuits
- Assembly lines, production lines, in all kinds of machines

Product features

- Low-adhesive surface
- Flame-retardant according IEC 60332-1-2
- Designed for 2 up to 8 million bending/ unbending cycles in power chain applications

Norm references / Approvals

- Based on VDE 0812
- For travel distances up to 10 m.
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire strand made of bare copper wires
- Core insulation made of PVC
- Non-woven wrapping
- Tinned-copper braiding
- Outer sheath made of PVC
  Outer sheath colour: grey (RAL 7001)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

Core identification code
DIN 47100, refer to Appendix T9

Mutual capacitance
C/C approx. 110 nF/km
C/S: approx. 110 nF/km

Inductivity
approx. 0.65 mH/km

Conductor stranding
Stranded, extra-fine wire

Minimum bending radius
Flexing: 7.5 x outer diameter
Fixed installation: 4 x Outer diameter

Test voltage
1500 V

Temperature range
Flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® FD CY				
0027411	3 × 0.14	4.5	14.1	37
0027412	4 × 0.14	4.8	15.5	42
0027413	5 × 0.14	5.1	18.3	47
0027414	7 × 0.14	5.7	27.6	55
0027416	10 × 0.14	6.7	39.3	63
0027418	14 × 0.14	6.8	45.3	96
0027420	18 × 0.14	7.4	54.1	105
0027422	25 × 0.14	8.9	68.4	163
0027425	2 × 0.25	4.9	14.9	39
0027426	3 × 0.25	5.1	18.8	46
0027427	4 × 0.25	5.5	21.3	53
0027428	5 × 0.25	5.9	31	71
0027429	7 × 0.25	6.7	39.6	75
0027431	10 × 0.25	8.2	53.9	100
0027434	14 × 0.25	8.3	64.2	120
0027436	18 × 0.25	9.1	78.4	167
0027438	25 × 0.25	11	101	221
0027440	2 × 0.34	5.3	16.1	47
0027441	3 × 0.34	5.6	28.7	55
0027442	4 × 0.34	6	35.7	76
0027443	5 × 0.34	6.5	39.1	80
0027444	7 × 0.34	7.4	52.7	104
0027446	10 × 0.34	9.1	67.4	115
0027448	14 × 0.34	9.2	85.3	132
0027450	18 × 0.34	10.3	99.7	225

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

UNITRONIC® FD Li2YCY (TP) A BE

Shielded, low-capacitance, twisted-pair PE/PVC data cable for power chain/cable carrier, UL AWM for USA+CAN

Info

- Better priced than UNITRONIC® FD CP (TP) plus
- Low capacitance, AWM by UL for USA+CAN
- UNITRONIC® FD Li2YCY (TP) A B**E**: DIN 47100, refer to Appendix T9

Benefits

- Improved transmission characteristics thanks to low-capacitance core insulation and twisted pairs
- Cable specification optimized for use in power chain/cable carrier in the USA, on the basis of NFPA 79, Section 12.9.2

Application range

- Suitable for use in measuring, control and regulating circuits
- Linear robots, automated handling equipment
- Use in drag chain/cable carrier/power track - in case of horizontal installation travel distances up to 50 m
- For use in chain/carrier: Please respect the assembly guidelines listed in Appendix T3

Product features

- Low capacitance
- EMC optimized thanks to overall copper braid shielding
- Flexibility for use inside power chain/cable carrier
- Oil-resistant according to DIN EN 50290-2-22 (TM54)
- Flame-retardant acc. to IEC 60332-1-2, UL VW-1, Cable Flame Test, CSA FT 1

Norm references / Approvals

- Based on VDE 0812
- UL AWM Style 2570 80°C 1000V (external interconnection) for USA (UL File No.: E63634) and in line with NFPA 79, Section 12.9.2
- AWM I/II A/B 80°C 1000V acc. to CSA C22.2 No. 210-15 and certified by UL (cRU) for Canada
- EU conformity and mark with regard to the European RoHS Directive

Product Make-up

- Flexible conductor made of bare copper strands
- Low-capacitance PE core insulation
- Non-woven wrapping
- Tinned-copper braiding
- Outer sheath made of PVC Outer sheath colour: black (similar to RAL 9005)

Technical data

Core identification code
UNITRONIC® FD Li2YCY (TP) A BE:
DIN 47100, refer to Appendix T9

Mutual capacitance
Up to 0.5 mm²: 60 nF/km
Up to 1.0 mm²: 70 nF/km

Inductivity
approx. 0.65 mH/km

Conductor stranding
Fine wire
From 0.5 mm²: Finest wire/Conductor class 6 acc. to IEC 60228

Minimum bending radius
Flexing: 7.5 × outer diameter
Fixed installation: 4 × outer diameter

Loop resistance
Ohmic (DC) and loop/bidirectional @ 20 °C
0.14 mm² (26 AWG): 276.0 Ω/km;
0.25 mm² (24 AWG): 158.0 Ω/km;
0.34 mm² (22 AWG): 110.8 Ω/km;
0.5 mm² (21 AWG): 78.0 Ω/km;
0.75 mm² (19 AWG): 52.0 Ω/km;
1 mm² (18 AWG): 39.0 Ω/km

Temperature range
Flexing:
VDE: -5 °C to 70 °C
UL AWM: -5 °C to 80 °C
Stationary use:
VDE: -40 °C to 70 °C
UL AWM: -5 °C to 80 °C

Article number	Dimension and cross section in mm²	Outer diameter (mm)	Weight (kg/km)
UNITRONIC® FD Li2YCY (TP) A BE			
0031377	1 × 2 × 0.14	4.3	23
0031378	2 × 2 × 0.14	5.9	42
0031379	3 × 2 × 0.14	6.2	47
0031380	4 × 2 × 0.14	6.7	57
0031381	5 × 2 × 0.14	7.3	68
0031382	6 × 2 × 0.14	7.5	86
0031383	8 × 2 × 0.14	8.8	109
0031384	10 × 2 × 0.14	10.1	120
0031385	12 × 2 × 0.14	9.8	150
0031386	1 × 2 × 0.25	4.7	27
0031387	2 × 2 × 0.25	6.6	57
0031388	3 × 2 × 0.25	7	72
0031389	4 × 2 × 0.25	7.6	85
0031390	5 × 2 × 0.25	8.5	92
0031391	6 × 2 × 0.25	8.8	114
0031392	8 × 2 × 0.25	10.3	145
0031393	10 × 2 × 0.25	11.8	182
0031394	14 × 2 × 0.25	12	213
0031395	25 × 2 × 0.25	16.3	310
0031396	1 × 2 × 0.34	5.1	36
0031397	2 × 2 × 0.34	7.3	69
0031398	3 × 2 × 0.34	8	93
0031399	4 × 2 × 0.34	8.7	106
0031400	5 × 2 × 0.34	9.7	136
0031401	6 × 2 × 0.34	10	165

Article number	Dimension and cross section in mm²	Outer diameter (mm)	Weight (kg/km)
0031402	8 × 2 × 0.34	11.8	221
0031403	10 × 2 × 0.34	13.7	274
0031404	1 × 2 × 0.50	5.5	47
0031405	2 × 2 × 0.50	8.3	99
0031406	3 × 2 × 0.50	8.8	120
0031407	4 × 2 × 0.50	9.8	130
0031408	5 × 2 × 0.50	10.7	164
0031409	6 × 2 × 0.50	11.3	182
0031410	8 × 2 × 0.50	13.2	278
0031411	10 × 2 × 0.50	15.2	325
0031412	14 × 2 × 0.50	15.5	401
0031413	1 × 2 × 0.75	5.9	61
0031414	2 × 2 × 0.75	9	104
0031415	3 × 2 × 0.75	9.8	148
0031416	4 × 2 × 0.75	10.7	167
0031417	5 × 2 × 0.75	11.9	202
0031418	6 × 2 × 0.75	12.3	233
0031419	8 × 2 × 0.75	14.7	330
0031420	10 × 2 × 0.75	16.7	390
0031421	14 × 2 × 0.75	17	515
0031422	1 × 2 × 1.00	6.3	71
0031423	2 × 2 × 1.00	9.9	126
0031424	3 × 2 × 1.00	10.5	167
0031425	4 × 2 × 1.00	11.8	213
0031426	5 × 2 × 1.00	13.1	247

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

UNITRONIC® FD Li2YCY (TP) A BA

Shielded, low-capacitance, twisted-pair PE/PVC data cable for power chain/cable carrier, UL AWM for USA+CAN

Info

- Better priced than UNITRONIC® FD CP (TP) plus
- Low capacitance, AWM by UL for USA+CAN
- UNITRONIC® FD Li2YCY (TP) A BA: North-American Core Identification Colors

Benefits

- Improved transmission characteristics thanks to low-capacitance core insulation and twisted pairs
- Cable specification optimized for use in power chain/cable carrier in the USA, on the basis of NFPA 79, Section 12.9.2

Application range

- Suitable for use in measuring, control and regulating circuits
- Linear robots, automated handling equipment
- Use in drag chain/cable carrier/power track - in case of horizontal installation travel distances up to 50 m
- For use in chain/carrier: Please respect the assembly guidelines listed in Appendix T3

Product features

- Low capacitance
- EMC optimized thanks to overall copper braid shielding
- Flexibility for use inside power chain/cable carrier
- Oil-resistant according to DIN EN 50290-2-22 (TM54)
- Flame-retardant acc. to IEC 60332-1-2, UL VW-1, Cable Flame Test, CSA FT 1

Norm references / Approvals

- Based on VDE 0812
- UL AWM Style 2570 80°C 1000V (external interconnection) for USA (UL File No.: E63634) and in line with NFPA 79, Section 12.9.2
- AWM I/II A/B 80°C 1000V acc. to CSA C22.2 No. 210-15 and certified by UL (cRU) for Canada
- EU conformity and mark with regard to the European RoHS Directive

Product Make-up

- Flexible conductor made of bare copper strands
- Low-capacitance PE core insulation
- Non-woven wrapping
- Tinned-copper braiding
- Outer sheath made of PVC Outer sheath colour: black (similar to RAL 9005)

Article number	Dimension and cross section (in mm²)	Outer diameter (mm)	Weight (kg/km)
UNITRONIC® FD Li2YCY (TP) A BA			
0031427	1 × 2 × 0.14	4.3	23
0031428	2 × 2 × 0.14	5.9	42
0031429	3 × 2 × 0.14	6.2	47
0031430	4 × 2 × 0.14	6.7	57
0031431	5 × 2 × 0.14	7.3	68
0031432	6 × 2 × 0.14	7.5	86
0031433	8 × 2 × 0.14	8.8	109
0031434	10 × 2 × 0.14	10.1	120
0031435	12 × 2 × 0.14	9.8	150
0031436	1 × 2 × 0.25	4.7	27
0031437	2 × 2 × 0.25	6.6	57
0031438	3 × 2 × 0.25	7	72
0031439	4 × 2 × 0.25	7.6	85
0031440	5 × 2 × 0.25	8.5	92
0031441	6 × 2 × 0.25	8.8	114
0031442	8 × 2 × 0.25	10.3	145
0031443	10 × 2 × 0.25	11.8	182
0031444	14 × 2 × 0.25	12	213
0031445	25 × 2 × 0.25	16.3	310
0031446	1 × 2 × 0.34	5.1	36
0031447	2 × 2 × 0.34	7.3	69
0031448	3 × 2 × 0.34	8	93
0031449	4 × 2 × 0.34	8.7	106
0031450	5 × 2 × 0.34	9.7	136
0031451	6 × 2 × 0.34	10	165
0031452	8 × 2 × 0.34	11.8	221
0031453	10 × 2 × 0.34	13.7	274
0031454	1 × 2 × 0.50	5.5	47
0031455	2 × 2 × 0.50	8.3	99
0031456	3 × 2 × 0.50	8.8	120
0031457	4 × 2 × 0.50	9.8	130
0031458	5 × 2 × 0.50	10.7	164
0031459	6 × 2 × 0.50	11.3	182
0031460	8 × 2 × 0.50	13.2	278
0031461	10 × 2 × 0.50	15.2	325
0031462	14 × 2 × 0.50	15.5	401
0031463	1 × 2 × 0.75	5.9	61
0031464	2 × 2 × 0.75	9	104
0031465	3 × 2 × 0.75	9.8	148
0031466	4 × 2 × 0.75	10.7	167
0031467	5 × 2 × 0.75	11.9	202
0031468	6 × 2 × 0.75	12.3	233

Technical data

Core identification code
UNITRONIC® FD Li2YCY (TP) A BA
- Pair 01: Black, Red;
- Pair 02: Black, White;
- Pair 03: Black, Green;
- Pair 04: Black, Blue;
- Pair 05: Black, Yellow;
- Pair 06: Black, Brown;
- Pair 07: Black, Orange;
- Pair 08: Red, White;
- Pair 09: Red, Green;
- Pair 10: Red, Blue;
- Pair 11: Red, Yellow;
- Pair 12: Red, Brown;
- Pair 13: Red, Orange;
- Pair 14: Green, White;
- Pair 15: Green, Blue;
- Pair 16: Green, Yellow;
- Pair 17: Green, Brown;
- Pair 18: Green, Orange;
- Pair 19: White, Blue;
- Pair 20: White, Yellow;
- Pair 21: White, Brown;
- Pair 22: White, Orange;
- Pair 23: Blue, Yellow;
- Pair 24: Blue, Brown;
- Pair 25: Blue, Orange;
- Exception Single-paired/24 - 22 AWG: Black, White

Mutual capacitance
Up to 0.5 mm²: 60 nF/km
Up to 1.0 mm²: 70 nF/km

Inductivity
approx. 0.65 mH/km

Conductor stranding
Fine wire
From 0.5 mm²: Finest wire/Conductor class 6 acc. to IEC 60228

Minimum bending radius
Flexing: 7.5 x outer diameter
Fixed installation: 4 x outer diameter

Loop resistance
Ohmic (DC) and loop/bidirectional @ 20 °C
0.14 mm² (26 AWG): 276.0 Ω/km;
0.25 mm² (24 AWG): 158.0 Ω/km;
0.34 mm² (22 AWG): 110.8 Ω/km;
0.5 mm² (21 AWG): 78.0 Ω/km;
0.75 mm² (19 AWG): 52.0 Ω/km;
1 mm² (18 AWG): 39.0 Ω/km

Temperature range
Flexing:
VDE: -5 °C to 70 °C
UL AWM: -5 °C to 80 °C
Stationary use:
VDE: -40 °C to 70 °C
UL AWM: -5 °C to 80 °C

Article number	Dimension and cross section (in mm²)	Outer diameter (mm)	Weight (kg/km)
0031469	8 × 2 × 0.75	14.7	330
0031470	10 × 2 × 0.75	16.7	390
0031471	14 × 2 × 0.75	17	515
0031472	1 × 2 × 1.00	6.3	71
0031473	2 × 2 × 1.00	9.9	126
0031474	3 × 2 × 1.00	10.5	167
0031475	4 × 2 × 1.00	11.8	213
0031476	5 × 2 × 1.00	13.1	247

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

UNITRONIC® FD P plus

Highly flexible data cable with PUR jacket and AWM certification for US & Canadian use

Info

- Flexible at low temperatures
- Low capacitance
- Halogen-free

Benefits

- Well-proven and reliable
- Wide temperature range for applications in harsh climatic environments
- UL AWM voltage rating 1000V in case of internal wiring allows for internal laying next to power cables with applied UL rating of 1kV
- In the USA inside of industrial machines, per NFPA 79, 2015 Ed., 12.9.2 (condition 3 under 12.9.2: Through 1 mm² and <16 AWG)

Application range

- Highly flexible data cable with PUR outer sheath, meets the highest service life requirements, even under harsh climatic conditions
- Suitable for use in measuring, control and regulating circuits
- Drag chain use – in case of horizontal installation travel distances up to 100 m
- For use in chain/carrier: Please respect the assembly guidelines listed in Appendix T3

Product features

- PUR outer sheath, tear and notch-resistant, resistant to mineral oils and abrasion when used in power chains
- Flame retardance ratings: IEC 60332-1-2, FT2 (Horizontal flame test)
- Halogen-free, has low capacitance and is flexible down to -40°C
- Oil-resistant
- Low-adhesive surface, resistant to hydrolysis and microbes, oil resistant

Norm references / Approvals

- Based on VDE 0812
- CRUus AWM certified by UL (UL: E63634): UL AWM Style 21576 and AWM A/B I/II

Product Make-up

- Extra-fine wire strand made of bare copper wires
- Core insulation: Based on Polyolefin
- Non-woven wrapping
- Outer sheath made of special PUR compound Outer sheath colour: grey (RAL 7001)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description: Data cable

Core identification code
DIN 47100, refer to Appendix T9

Mutual capacitance
C/C approx. 60 nF/km

Inductivity
approx. 0.65 mH/km

Conductor stranding
Stranded, extra-fine wire

Minimum bending radius
Flexing: 5 × outer diameter
Fixed installation: 3 × outer diameter

Test voltage
1500 V

Temperature range
Flexing: -40°C to +80°C
Fixed installation: -40°C to +80°C
cRUus AWM: max. +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® FD P plus				
0028647	2 × 0.14	3.7	2.8	20
0028650	3 × 0.14	3.9	4.1	25
0028651	4 × 0.14	4.2	5.6	30
0028652	5 × 0.14	4.5	7	34
0028677	6 × 0.14	4.8	8.4	42
0028653	7 × 0.14	5.1	9.8	48
0028654	10 × 0.14	6.1	14	60
0028678	12 × 0.14	5.9	16.8	67
0028656	18 × 0.14	6.8	25.2	87
0028657	25 × 0.14	8.3	35	120
0028658	2 × 0.25	4.1	5	27
0028659	3 × 0.25	4.3	7.5	32
0028660	4 × 0.25	4.7	10	35
0028661	5 × 0.25	5	12.5	49

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0028679	6 × 0.25	5.4	15	55
0028662	7 × 0.25	5.8	17.5	43
0028663	10 × 0.25	7	25	72
0028680	12 × 0.25	6.7	30	87
0028664	14 × 0.25	7.1	35	73
0028665	18 × 0.25	8	45	104
0028666	25 × 0.25	9.8	62.5	133
0028667	2 × 0.34	4.5	6.8	33
0028668	3 × 0.34	4.8	10.2	39
0028669	4 × 0.34	5.2	13.6	41
0028670	5 × 0.34	5.6	17	44
0028671	7 × 0.34	6.5	23.8	55
0028672	10 × 0.34	8	34	85
0028673	14 × 0.34	8.2	47.6	94
0028674	18 × 0.34	9	61.2	131

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

UNITRONIC® FD CP plus

Screened highly flexible data transmission cable with PUR outer sheath - UL/CSA-listed

Info

- Flexible at low temperatures
- Low capacitance
- Halogen-free

Benefits

- Wide temperature range for applications in harsh climatic environments
- Overall braid minimises electrical interference
- UL AWM voltage rating 1000V in case of internal wiring allows for internal laying next to power cables with applied UL rating of 1kV
- In the USA inside of industrial machines, per NFPA 79, 2015 Ed., 12.9.2 (condition 3 under 12.9.2: Through 1 mm² and <16 AWG)

Application range

- Suitable for use in measuring, control and regulating circuits
- Drag chain use - in case of horizontal installation travel distances up to 100 m
- For use in chain/carrier: Please respect the assembly guidelines listed in Appendix T3
- Suitable for torsional applications which are typical for the loop in wind turbine generators (WTG)

Product features

- Halogen-free, has low capacitance and is flexible down to -40°C
- PUR outer sheath, tear and notch-resistant, resistant to mineral oils and abrasion when used in power chains
- Low-adhesive surface, resistant to hydrolysis and microbes, oil resistant
- Flame retardance: IEC 60332-1-2, VW-1, FT2
- Designed for 5 up to 10 million bending/unbending cycles (constant flex) in drag chains

Norm references / Approvals

- CULus CMX certified by UL (UL: E236660)
- CRUus AWM certified by UL (UL: E63634): UL AWM Style 21576 and AWM A/B I/II

Product Make-up

- Extra-fine wire strand made of bare copper wires
- Core insulation: Based on Polyolefin
- Non-woven wrapping
- Tinned-copper braiding
- Outer sheath made of special PUR compound
  Outer sheath colour: grey (RAL 7001)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

Core identification code
DIN 47100, refer to Appendix T9

Mutual capacitance
C/C approx. 60 nF/km

Inductivity
approx. 0.65 mH/km

Conductor stranding
Stranded, extra-fine wire

Torsion movement in WTG
TW-0 & TW-2, refer to Appendix T0

Minimum bending radius
Flexing: 7.5 × outer diameter
Fixed installation: 4 × outer diameter

Test voltage
Core/core: 1500 V rms
Core/screen: 500 V

Temperature range
Flexing: -40°C to +80°C
Fixed installation: -40°C to +80°C
cULus CMX: max. +75°C
cRUus AWM: max. +80°C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® FD CP plus				
0028880	2 × 0.14	4.3	11.2	33
0028881	3 × 0.14	4.5	14.1	36
0028882	4 × 0.14	4.8	15.5	40
0028883	5 × 0.14	5.1	18.3	45
0028884	7 × 0.14	5.7	27.8	51
0028885	10 × 0.14	6.7	39.3	59
0028886	14 × 0.14	6.8	45.3	62
0028887	18 × 0.14	7.4	54.1	118
0028888	25 × 0.14	8.9	68.4	157
0028889	2 × 0.25	4.7	14.9	38
0028890	3 × 0.25	4.9	18.8	45
0028891	4 × 0.25	5.3	21.3	52
0028892	5 × 0.25	5.6	31	69
0028893	7 × 0.25	6.4	39.6	76
0028894	10 × 0.25	7.6	53.9	98
0028895	14 × 0.25	7.9	64.2	120
0028896	18 × 0.25	8.6	78.4	142
0028897	25 × 0.25	10.4	101	213
0028898	2 × 0.34	5.1	18.1	40
0028899	3 × 0.34	5.4	28.7	50
0028900	4 × 0.34	5.8	35.7	60
0028901	5 × 0.34	6.2	39.1	70
0028902	7 × 0.34	7.1	52.7	109
0028903	10 × 0.34	8.6	67.4	147
0028904	14 × 0.34	8.8	85.8	166
0028905	18 × 0.34	9.8	99.7	190

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

UNITRONIC® FD CP (TP) plus

Screened highly flexible data transmission cable with PUR outer sheath and twisted pairs - UL/CSA-listed

Info

- Flexible at low temperatures
- Low capacitance
- Halogen-free

Benefits

- Wide temperature range for applications in harsh climatic environments
- Decoupling of circuits by means of twisted-pair (TP) design (crosstalk effects)
- UL AWM voltage rating 1000V in case of internal wiring allows for internal laying next to power cables with applied UL rating of 1kV
- In the USA inside of industrial machines, per NFPA 79, 2015 Ed., 12.9.2 (condition 3 under 12.9.2: Through 1 mm² and <16 AWG)

Application range

- Suitable for use in measuring, control and regulating circuits
- Linear robots, automated handling equipment
- Drag chain use - in case of horizontal installation travel distances up to 100 m
- For use in chain/carrier: Please respect the assembly guidelines listed in Appendix T3
- Suitable for torsional applications which are typical for the loop in wind turbine generators (WTG)

Product features

- Halogen-free, has low capacitance and is flexible down to -40°C
- PUR outer sheath, tear and notch-resistant, resistant to mineral oils and abrasion when used in power chains
- Low-adhesive surface, resistant to hydrolysis and microbes, oil resistant
- Flame retardance: IEC 60332-1-2, VW-1, FT2
- Designed for 10 million alternating bending cycles and horizontal travel distances up to 100 meter

Norm references / Approvals

- CULus CMX certified by UL (UL: E236660)
- CRUus AWM certified by UL (UL: E63634): UL AWM Style 21576 and AWM A/B I/II

Product Make-up

- Extra-fine wire strand made of bare copper wires
- Core insulation: Based on Polyolefin TP structure
- Non-woven wrapping
- Tinned-copper braiding
- Outer sheath made of special PUR compound Outer sheath colour: grey (RAL 7001)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable

Core identification code
DIN 47100, refer to Appendix T9

Mutual capacitance
Up to 0.5 mm²: 60 nF/km
Up to 1.0 mm²: 70 nF/km

Inductivity
approx. 0.65 mH/km

Conductor stranding
Stranded, extra-fine wire
From 0.5 mm²: extra-fine wire according to IEC 60228 class 6

Torsion movement in WTG
TW-0 & TW-2, refer to Appendix T0

Minimum bending radius
Flexing: 7.5 × outer diameter
Fixed installation: 4 × outer diameter

Test voltage
Core/core: 1500 V rms
Core/screen: 500 V

Temperature range
Flexing: -40°C to +80°C
Fixed installation: -40°C to +80°C
cULus CMX: max. +75°C
cRUus AWM: max. +80°C

Article number	Number of pairs and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® FD CP (TP) plus				
0030910	2 × 2 × 0.14	5.9	19.4	42
0030911	3 × 2 × 0.14	6.2	23.4	47
0030912	4 × 2 × 0.14	6.7	27.1	59
0030913	5 × 2 × 0.14	7.3	37.4	68
0030914	6 × 2 × 0.14	7.5	49.4	91
0030915	8 × 2 × 0.14	8.8	54.8	109
0030916	10 × 2 × 0.14	10.1	60.1	120
0030962	1 × 2 × 0.25	4.7	14	27
0030919	2 × 2 × 0.25	6.6	32	60
0030920	3 × 2 × 0.25	7	38.4	72
0030921	4 × 2 × 0.25	7.6	43.2	85
0030922	5 × 2 × 0.25	8.5	51.5	92
0030923	6 × 2 × 0.25	8.8	71.8	114
0030924	8 × 2 × 0.25	10.3	74.4	155
0030925	10 × 2 × 0.25	11.8	90	186
0030926	14 × 2 × 0.25	12	111.2	219
0030963	1 × 2 × 0.34	5.1	20	36
0030928	2 × 2 × 0.34	7.3	41	69
0030929	3 × 2 × 0.34	8	52	101
0030930	4 × 2 × 0.34	8.7	59	106
0030932	6 × 2 × 0.34	10	86.2	165
0030934	10 × 2 × 0.34	13.7	131.1	274
0030964	1 × 2 × 0.5	5.5	22	47
0030937	2 × 2 × 0.5	8.3	50	99
0030938	3 × 2 × 0.5	8.8	71.8	130
0030939	4 × 2 × 0.5	9.8	74.4	148
0030940	5 × 2 × 0.5	10.7	84.5	168
0030941	6 × 2 × 0.5	11.3	99.6	194
0030942	8 × 2 × 0.5	13.2	144.3	284

Article number	Number of pairs and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0030943	10 × 2 × 0.5	15.2	176	343
0030944	14 × 2 × 0.5	15.5	215.4	401
0030965	1 × 2 × 0.75	5.9	34	61
0030946	2 × 2 × 0.75	9	60	112
0030947	3 × 2 × 0.75	9.8	85.7	157
0030948	4 × 2 × 0.75	10.7	93.6	172
0030950	6 × 2 × 0.75	12.3	130.4	231
0030951	8 × 2 × 0.75	14.7	192.2	342
0030952	10 × 2 × 0.75	16.7	258	390
0030953	14 × 2 × 0.75	17	316.6	545
0030955	1 × 2 × 1.0	6.3	42	71
0030956	2 × 2 × 1.0	9.9	73	129
0030957	3 × 2 × 1.0	10.5	93.6	169
0030958	4 × 2 × 1.0	11.8	117.8	204

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

UNITRONIC® BUS LD FD P

Highly flexible buscable with PUR outer sheath, for use in different bussystems

Info

- LD is a LAPP abbreviation for long distance

Benefits

- Suitable for multiple Bus systems based on RS485/RS422
- PUR outer sheath, tear and notch-resistant, resistant to mineral oils and abrasion when used in power chains
- Under consideration of the temperature range also suitable for outdoor use

Application range

- For highly flexible applications (power chains, moving machine parts)
- Bus cables for bus systems such as e.g. Modbus, SUCOnet P, Modulink P, VariNet-P)

Product features

- The stated bit rates result in the following cable lengths (maximum) of one bus segment:
- 9.6-93.75 kbit/s = 1200m
- 187.5 kbit/s = max. 1,000 m
- 500 kbit/s = max. 400 m
- UV-resistant (but colour may change after some time)

Norm references / Approvals

- UNITRONIC® BUS LD FD P A: UL versions with certification: UL/CSA type CMX acc. to UL 444 and CSA C22.2 no. 214-02
- Flame-retardant according IEC 60332-1-2

Product Make-up

- Extra-fine wire strand made of bare copper
- Colour code DIN 47100
- Core insulation: PE
- Overall screening of braided tinned-copper strands
- Outer sheath: PUR, violet (RAL 4001)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description: Data cable

Mutual capacitance
(800 Hz) max. 60 nF/km

Peak operating voltage
(not for power applications) 250 V

Conductor resistance
(loop): max. 159.8 ohm/km

Minimum bending radius
Fixed installation: 6 × core diameter
One bend at end of core:
3 × cable diameter
Flexing: 15 × outer diameter

Test voltage
Core/core: 1500 V rms

Characteristic impedance
100 – 120 Ohm

Temperature range
Fixed installation: -40°C to +80°C
Flexing: -30°C to +70°C

Article number	Article designation	Number of pairs and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
For highly flexible applications					
2170213	UNITRONIC® BUS LD FD P	1 × 2 × 0,25	6	18	39
2170214	UNITRONIC® BUS LD FD P	2 × 2 × 0,25	7.9	33	65
2170215	UNITRONIC® BUS LD FD P	3 × 2 × 0,25	8	39	77

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Modubus is owned by the Modbus-IDA Organisation. SUCOnet P is a registered trademark of the Moeller Group.
Modulink P is a registered trademark of Weidmüller GmbH & Co. VariNet is a registered trademark of Pepperl+Fuchs GmbH.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

UNITRONIC® BUS LD FD P

Highly flexible buscable with PUR outer sheath, for use in different bussystems

Info

- LD is a LAPP abbreviation for long distance

Benefits

- Suitable for multiple Bus systems based on RS485 / RS422
- PUR outer sheath, tear and notch-resistant, resistant to mineral oils and abrasion when used in power chains
- Under consideration of the temperature range also suitable for outdoor use

Application range

- For highly flexible applications (power chains, moving machine parts)
- Bus cables for bus systems such as e.g. Modbus, SUCOnet P, Modulink P, VariNet-P)

Product features

- The stated bit rates result in the following cable lengths (maximum) of one bus segment:
- 9.6-93.75 kbit/s = 1200m
- 187.5 kbit/s = max. 1,000 m
- 500 kbit/s = max. 400 m
- UV-resistant (but colour may change after some time)

Norm references / Approvals

- UNITRONIC® BUS LD FD P A:
  UL versions with certification:
  UL/CSA type CMX acc. to UL 444
  and CSA C22.2 no. 214-02
- Flame-retardant according IEC 60332-1-2

Product Make-up

- Extra-fine wire strand made of bare copper
- Colour code DIN 47100
- Core insulation: PE
- Overall screening of braided tinned-copper strands
- Outer sheath: PUR, violet (RAL 4001)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description: Data cable

Mutual capacitance
(800 Hz) max. 60 nF/km

Peak operating voltage
(not for power applications) 250 V

Conductor resistance
(loop): max. 159.8 ohm/km

Minimum bending radius
Fixed installation: 6 x core diameter
One bend at end of core:
3 x cable diameter
Flexing: 15 x outer diameter

Test voltage
Core/core: 1500 V rms

Characteristic impedance
100 - 120 Ohm

Temperature range
Fixed installation: -40°C to +80°C
Flexing: -30°C to +70°C

Article number	Article designation	Number of pairs and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
For highly flexible applications - with UL/CSA CMX certification					
2170813	UNITRONIC® BUS LD FD P A	1 × 2 × 0,25	6.2	18	39
2170814	UNITRONIC® BUS LD FD P A	2 × 2 × 0,25	8.3	33	65
2170815	UNITRONIC® BUS LD FD P A	3 × 2 × 0,25	8.4	39	77

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Modubus is owned by the Modbus-IDA Organisation. SUCOnet P is a registered trademark of the Moeller Group.
Modulink P is a registered trademark of Weidmüller GmbH & Co. VariNet is a registered trademark of Pepperl+Fuchs GmbH.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

UNITRONIC® BUS ASI FD

High flexible AS-INTERFACE cables for networking systems in the field

Info

- “FD” = suitable for power chains
- “LD” = Long Distance

Benefits

- The new BUS ASI LD 2 x 2.5 (Long Distance) allows even modules located further away to be connected.
  AS-I power supplies can be reduced.
  The BUS ASI LD is downwards-compatible with version 1.5.
- For highly flexible applications (power chains, moving machine parts)
- High oil-resistance

Application range

- Communication at sensor/actuator level
- Sensor-/actuator wiring

Product features

- PUR versions are halogen-free according to IEC 60754-1
- Flame-retardant according to IEC 60332-1-2, UL FT-2 flame test
- Data and power are transmitted via an unscreened, geometrically coded two-core flat cable (protection against polarity reversal).
- The conductor is contacted by “piercing technology” within the ASI modules.
- The sensors are connected to the ASI modules (coupling modules) using round cables (connection cables).

Norm references / Approvals

- ASI is standardised Europe-wide in EN 50295 and internationally in IEC 62026-2.
- TPE variant: UL AWM Style 2103
  CSA AWM II A/B
- PUR versions: UL AWM Style 20549

Product Make-up

- Extra-fine wire, tinned copper strands
- Core insulation: halogen-free compound
- Outer sheath:
  TPE
  PUR
- Outer sheath: yellow (RAL 1023), black (RAL 9005)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description: Data cable

Peak operating voltage
300 V (not for power applications)

Conductor resistance
1.5 mm²: max. 13.7 Ohm/km
2.5 mm²: max. 8.21 Ohm/km

Minimum bending radius
Fixed installation: 12 mm
Flexing without fixing: 24 mm
Flexing with fixing: 60 mm (15 x D)

Test voltage
Core/core: 2000 V

Temperature range
Fixed installation:
-40°C to +80°C (TPE +105°C)
Flexing without fixing:
-30 °C to +70 °C (TPE +105 °C)

Article number	Article designation	Outer sheath colour	Application	Number of cores and mm² per conductor	Copper index (kg/km)	Weight (kg/km)
For highly flexible applications (power chains, moving machine parts)						
2170357	UNITRONIC® BUS ASI FD P FRNC	yellow	Data and power transmission	2 × 1,5	29	64
2170358	UNITRONIC® BUS ASI FD P FRNC	black	Transmission of 30 V DC auxiliary power	2 × 1,5	29	64

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
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UNITRONIC® BUS ASI FD

High flexible AS-INTERFACE cables for networking systems in the field

Info

- “FD” = suitable for power chains
- “LD” = Long Distance

Benefits

- The new BUS ASI LD 2 × 2.5 (Long Distance) allows even modules located further away to be connected.
  AS-I power supplies can be reduced.
  The BUS ASI LD is downwards-compatible with version 1.5.
- For highly flexible applications (power chains, moving machine parts)
- High oil-resistance

Application range

- Communication at sensor/actuator level
- Sensor-/actuator wiring

Product features

- PUR versions are halogen-free according to IEC 60754-1
- Flame-retardant according to IEC 60332-1-2, UL FT-2 flame test
- Data and power are transmitted via an unscreened, geometrically coded two-core flat cable (protection against polarity reversal).
- The conductor is contacted by “piercing technology” within the ASI modules.
- The sensors are connected to the ASI modules (coupling modules) using round cables (connection cables).

Norm references / Approvals

- ASI is standardised Europe-wide in EN 50295 and internationally in IEC 62026-2.
- TPE variant: UL AWM Style 2103
  CSA AWM II A/B
- PUR versions: UL AWM Style 20549

Product Make-up

- Extra-fine wire, tinned copper strands
- Core insulation: halogen-free compound
- Outer sheath:
  TPE
  PUR
- Outer sheath: yellow (RAL 1023), black (RAL 9005)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description: Data cable

Peak operating voltage
300 V (not for power applications)

Conductor resistance
1.5 mm²: max. 13.7 Ohm/km
2.5 mm²: max. 8.21 Ohm/km

Minimum bending radius
Fixed installation: 12 mm
Flexing without fixing: 24 mm
Flexing with fixing: 60 mm (15 × D)

Test voltage
Core/core: 2000 V

Temperature range
Fixed installation:
-40°C to +80°C (TPE +105°C)
Flexing without fixing:
-30 °C to +70 °C (TPE +105 °C)

Article number	Article designation	Outer sheath colour	Application	Number of cores and mm² per conductor	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® BUS ASI FD						
2170317	UNITRONIC® BUS ASI LD FD P	yellow	Data and power transmission	2 × 2,5	48	74
2170318	UNITRONIC® BUS ASI LD FD P	black	Transmission of 30 V DC auxiliary power	2 × 2,5	48	74

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
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UNITRONIC® BUS ASI FD

High flexible AS-INTERFACE cables for networking systems in the field

Info

- "FD" = suitable for power chains
- "LD" = Long Distance

Benefits

- The new BUS ASI LD 2 x 2.5 (Long Distance) allows even modules located further away to be connected.
  AS-I power supplies can be reduced. The BUS ASI LD is downwards-compatible with version 1.5.
- For highly flexible applications (power chains, moving machine parts)
- High oil-resistance

Application range

- Communication at sensor/actuator level
- Sensor-/actuator wiring

Product features

- PUR versions are halogen-free according to IEC 60754-1
- Flame-retardant according to IEC 60332-1-2, UL FT-2 flame test
- Data and power are transmitted via an unscreened, geometrically coded two-core flat cable (protection against polarity reversal).
- The conductor is contacted by "piercing technology" within the ASI modules.
- The sensors are connected to the ASI modules (coupling modules) using round cables (connection cables).

Norm references / Approvals

- ASI is standardised Europe-wide in EN 50295 and internationally in IEC 62026-2.
- TPE variant: UL AWM Style 2103
  CSA AWM II A/B
- PUR versions: UL AWM Style 20549

Product Make-up

- Extra-fine wire, tinned copper strands
- Core insulation: halogen-free compound
- Outer sheath:
  TPE
  PUR
- Outer sheath: yellow (RAL 1023), black (RAL 9005)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description: Data cable

Peak operating voltage
300 V (not for power applications)

Conductor resistance
1.5 mm²: max. 13.7 Ohm/km
2.5 mm²: max. 8.21 Ohm/km

Minimum bending radius
Fixed installation: 12 mm
Flexing without fixing: 24 mm
Flexing with fixing: 60 mm (15 x D)

Test voltage
Core/core: 2000 V

Temperature range
Fixed installation:
-40°C to +80°C (TPE +105°C)
Flexing without fixing:
-30 °C to +70 °C (TPE +105 °C)

Article number	Article designation	Outer sheath colour	Application	Number of cores and mm² per conductor	Copper index (kg/km)	Weight (kg/km)
For high flexible application – TPE UL/CSA (AWM)						
2170830	UNITRONIC® BUS ASI FD (TPE) A	yellow	Data and power transmission	2 × 1,5	29	64
2170831	UNITRONIC® BUS ASI FD (TPE) A	black	Transmission of 30 V DC auxiliary power	2 × 1,5	29	64

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
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UNITRONIC® BUS PB FD P

Halogenfree, highly flexible PROFIBUS cable

Benefits

- Due double screening it is suitable for installation in electromagnetically demanding areas
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP
- For use where the combination of a halogen-free outer sheath with properties similar to PUR and enhanced flame-retardance is required

Application range

- PROFIBUS DP (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).
- For highly flexible applications (power chains, moving machine parts)
- Suitable for torsional applications which are typical for the loop in wind turbine generators (WTG)

Product features

- Halogen-free
- Flame-retardant according IEC 60332-1-2
- Oil-resistant
- Based on the bit rates listed, in accordance with PNO specifications the following maximum cable lengths for a bus segment apply
  (cable type A, PROFIBUS-DP):
  93.75 kbit/s = 1200 m
  187.5 kbit/s = 1000 m
  500 kbit/s = 400 m
  1.5 Mbit/s = 200 m
  12.0 Mbit/s = 100 m

Product Make-up

- Stranded bare copper wire
- Core insulation: foam skin, (O2YS)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath: PUR, violet (RAL 4001)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description: Data cable

Mutual capacitance
(800 Hz): max. 30 nF/km

Peak operating voltage
(not for power applications) 250 V

Torsion movement in WTG (wind turbine generator)
TW-0 & TW-2, refer to Appendix T0

Minimum bending radius
65 mm

Test voltage
Core/core: 1500 V rms

Characteristic impedance
150 ± 15 Ohm

Temperature range
Flexing: -30°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
For highly flexible applications (e.g. power chains) – conventional cable assembly					
2170222	UNITRONIC® BUS PB FD P	1 × 2 × 0.64	8	30.1	64

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
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UNITRONIC® BUS PB FD P A

Halogenfree, highly flexible PROFIBUS cable - UL/CSA certified

Info

- A for Advanced
  here: UL and CSA certifications

Benefits

- For use where the combination of a halogen-free outer sheath with properties similar to PUR and enhanced flame-retardance is required
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP

Application range

- PROFIBUS DP (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP – Factory Instrumentation Protocol).
- For highly flexible applications (power chains, moving machine parts)
- Suitable for torsional applications which are typical for the loop in wind turbine generators (WTG)

Product features

- Halogen-free
- Flame-retardant according IEC 60332-1-2
- Oil-resistant
- Based on the bit rates listed, in accordance with PNO specifications the following maximum cable lengths for a bus segment apply
  (cable type A, PROFIBUS-DP):
  93.75 kbit/s = 1200 m
  187.5 kbit/s = 1000 m
  500 kbit/s = 400 m
  1.5 Mbit/s = 200 m
  12.0 Mbit/s = 100 m

Norm references / Approvals

- Certification: UL/CSA type CMX in accordance with UL 444 and CSA C22.2 no. 214

Product Make-up

- Stranded bare copper wire
- Core insulation: foam skin, (O2YS)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath: PUR, violet (RAL 4001)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description: Data cable

Mutual capacitance
(800 Hz): max. 30 nF/km

Peak operating voltage
(not for power applications) 250 V

Torsion movement in WTG (wind turbine generator)
TW-0 & TW-2, refer to Appendix T0

Minimum bending radius
65 mm

Test voltage
Core/core: 1500 V rms

Characteristic impedance
150 ± 15 Ohm

Temperature range
Flexing: -30°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
Highly flexible application					
2170822	UNITRONIC® BUS PB FD P A	1 × 2 × 0.64	8	30.1	58

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
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UNITRONIC® BUS PB FD P FC

Halogenfree, highly flexible PROFIBUS cable - with fast connect cable make up, UL/CSA certified

Benefits

- Fast Connect (FC) cable design
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP

Application range

- PROFIBUS DP (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).
- For highly flexible applications (power chains, moving machine parts)

Product features

- Flame-retardant according IEC 60332-1-2
- Oil-resistant
- Based on the bit rates listed, in accordance with PNO specifications the following maximum cable lengths for a bus segment apply
  (cable type A, PROFIBUS-DP):
  93.75 kbit/s = 1200 m
  187.5 kbit/s = 1000 m
  500 kbit/s = 400 m
  1.5 Mbit/s = 200 m
  12.0 Mbit/s = 100 m

Norm references / Approvals

- Certification: UL/CSA type CMX in accordance with UL 444 and CSA C22.2 no. 214

Product Make-up

- Stranded bare copper wire
- Core insulation: foam skin, (O2YS)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Fast connect inner sheath: PVC, nature
- Outer sheath: PUR, violet (RAL 4001)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description: Data cable

Mutual capacitance
(800 Hz): max. 30 nF/km

Peak operating voltage
(not for power applications) 250 V

Minimum bending radius
Flexing: 15 x outer diameter

Test voltage
3600 V DC (3 sec.)

Characteristic impedance
150 ± 15 Ohm

Temperature range
Flexing: -30°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
Highly flexible application					
2170322	UNITRONIC® BUS PB FD P FC	1 × 2 × 0.64	8	26	79

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
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UNITRONIC® BUS PB FD FRNC FC

Flame retardant, highly flexible PROFIBUS cable - with fast connect cable make up, UL/CSA certified

Benefits

- Fast Connect (FC) system
- For use where the combination of a halogen-free outer sheath with properties similar to PUR and enhanced flame-retardance is required
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP

Application range

- For highly flexible use in energy supply chains or permanently moving machines and linear robots
- This cable provides special advantages for use in sensitive areas where fire propagation must be avoided and the presence of toxic fumes would cause personal injury and damage to equipment.

Product features

- Halogen-free
- Oil-resistant
- High flame retardancy in accordance with IEC 60332-3 and FT4
- Based on the bit rates listed, in accordance with PNO specifications the following maximum cable lengths for a bus segment apply
  (cable type A, PROFIBUS-DP):
  93.75 kbit/s = 1200 m
  187.5 kbit/s = 1000 m
  500 kbit/s = 400 m
  1.5 Mbit/s = 200 m
  12.0 Mbit/s = 100 m

Norm references / Approvals

- The cable is UL/CSA-certified (CMG)

Product Make-up

- Stranded bare copper wire
- Core insulation: foam skin, (O2YS)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Fast connect inner sheath: PVC, nature
- Outer sheath: PUR, violet (RAL 4001)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description: Data cable

Mutual capacitance
nom. 28 nF/km

Peak operating voltage
(not for power applications) 250 V

Minimum bending radius
Fixed installation: 10 x outer diameter
Flexing: 15 x outer diameter

Test voltage
Core/core: 1500 V rms

Characteristic impedance
(3 - 20 MHz): 150 ± 15 Ohm

Temperature range
Flexing: -30°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® BUS PB FD FRNC FC					
2170854	UNITRONIC® BUS PB FD FRNC FC	1 × 2 × 0,64	8	26	75

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
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UNITRONIC® BUS PB FD P COMBI

Highly flexible, halogenfree PROFIBUS HYBRID cables

Benefits

- For use where the combination of a halogen-free outer sheath with properties similar to PUR and enhanced flame-retardance is required
- For highly flexible applications (power chains, moving machine parts)
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP

Application range

- PROFIBUS DP (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP – Factory Instrumentation Protocol).

Product features

- HYBRID: cable for data transmission + power supply
- Flame-retardant according IEC 60332-1-2

Product Make-up

UNITRONIC® BUS PB FD P COMBI

- Fine-wire, bare copper strand
- 1 × 2 × 0.64: red, green
  3 × 1.0 (AWG18): green/yellow, black, blue
- Core insulation: PE
- Tin-plated copper wire braiding
- Outer sheath: PUR, violet (RAL 4001)

UNITRONIC® BUS PB FD P HYBRID

- Fine-wire, bare copper strand
- 1 × 2 × 0.64 : red, green
  4 × 1.5 (AWG 16): black with white numbers
- Core insulation: PE
- Tin-plated copper wire braiding
- Outer sheath: PUR, violet (RAL 4001)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description: Data cable

Mutual capacitance
(800 Hz): max. 30 nF/km

Peak operating voltage
(not for power applications) 100 V

Minimum bending radius
Flexing: 15 x outer diameter

Test voltage
Core/core: 600 V

Characteristic impedance
150 ± 15 Ohm

Temperature range
Flexing: -5°C to +50°C
Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® BUS PB FD P COMBI					
2170227	UNITRONIC® BUS PB FD P COMBI	1 × 2 × 0.64 Ø + 3 × 1.0 mm²	10.1	59	125
UNITRONIC® BUS PB FD P HYBRID					
2170495	UNITRONIC® BUS PB FD P HYBRID	1 × 2 × 0.64 Ø + 4 × 1.5 mm²	11.3	89	148

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
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UNITRONIC® BUS PB FD P HYBRID

Benefits

- For use where the combination of a halogen-free outer sheath with properties similar to PUR and enhanced flame-retardance is required
- For highly flexible applications (power chains, moving machine parts)
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP

Application range

- PROFIBUS DP (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).

Product features

- HYBRID: cable for data transmission + power supply
- Flame-retardant according IEC 60332-1-2

Product Make-up

- Fine-wire, bare copper strand
- 1 × 2 × 0.64 : red, green
  4 ×1.5 (AWG16): black with white numbers
- Core insulation: PE
- Tin-plated copper wire braiding
- Outer sheath: PUR, violet (RAL 4001)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description: Data cable

Mutual capacitance
(800 Hz): max. 30 nF/km

Peak operating voltage
(not for power applications) 100 V

Minimum bending radius
Flexing: 15 x outer diameter

Test voltage
Core/core: 600 V
Core/screen: 600 V

Characteristic impedance
150 ± 15 Ohm

Temperature range
Flexing: -30°C to +60°C
Fixed installation: -40°C to +70°C

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2170495	UNITRONIC® BUS PB FD P HYBRID	1 × 2 × 0.64 Ø + 4 × 1.5 mm²	11.3	89	148

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
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UNITRONIC® BUS PB FD Y HYBRID

Highly flexible PROFIBUS HYBRID cable, UL-verified

Benefits

- For highly flexible applications (power chains, moving machine parts)
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP
- CL3 for installation on trays

Application range

- PROFIBUS DP (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).

Product features

- HYBRID: cable for data transmission + power supply

Norm references / Approvals

- With UL/CSA certification (CMG, CL3, SUN RES, Oil Res I)
- Flame-retardant according to CSA FT4 UL Vertical-Tray Flame Test
- Oil-resistant according to UL OIL RES I

Product Make-up

- Fine-wire, bare copper strand
- 1×2×0.64: red, green
  Core insulation: Foam Skin PE
  4×1.5: black with white numbers 1-4
  Core insulation: PVC
- Tin-plated copper wire braiding
- Outer sheath: PVC, violet (RAL 4001)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description: Data cable

Peak operating voltage
600 V (not for power applications)

Minimum bending radius
Fixed installation:
5 x outer diameter
Flexing: 15 x outer diameter

Test voltage
Core/core: 2000 V
Core/screen: 2000 V

Characteristic impedance
150 ± 15 Ohm

Temperature range
-5 °C to +80 °C

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
Highly flexible application					
2170875	UNITRONIC® BUS PB FD Y HYBRID	1 × 2 × 0.64 Ø + 4 × 1.5 mm²	11.3	89	155

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
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UNITRONIC® BUS PB M12-M12

PROFIBUS Cable: M12 connector on M12 socket

Info

- Other types are available at www.lappgroup.com/assemblyfinder or on request

Benefits

- Cost efficient and rational wiring for PROFIBUS installations
- Space-saving due to compact dimensions
- Fast and easy error tracking

Application range

- Mechanical and plant engineering

Product features

- 2-core PROFIBUS cable. shielded
- Connector M12. B-coded with quick locking system
- Suitable for drag chains
- Including tag carrier

Norm references / Approvals

- UL-AWM-Style 21198 (80 °C / 300 V)

Product Make-up

- Core cross section: 0.25 mm²
- Core colours: red. green
- Outer sheath: PUR halogen-free. violett
- Outer diameter: 7.8 mm
- Shielded version
- Shielding is conducted over the knurl

Suitable connectors

- EPIC® DATA PB M12
- EPIC® DATA PB M12/M12
- EPIC® DATA PB M12T
- EPIC® DATA PB Sub-D M12

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001855
ETIM 5.0/6.0 Class-Description: Sensor-actuator patch cord

Material
Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast. nickel-plated
Gripping body: TPU. flame-retardant. self-extinguishing

Protection rating
IP65/IP67

Ambient temperature (operation)
Plug/socket -25 °C to +90 °C
Fixed installation -40 °C to +80 °C
Flexing -30 °C to +80 °C
Drag chain application ≤ 70 °C

Coding
B - inverse

Rated current (A)
4 A

Article number	Article designation	Length (m)	Number of pins	Design	Rated voltage (V)	PU
Plug on socket						
22260955	AB-PB-M12MS-0.2PUR-M12FS	0.2	2	straight-straight	250	1
22260773	AB-PB-M12MS-0.3PUR-M12FS	0.3	2	straight-straight	250	1
22260774	AB-PB-M12MS-1.0PUR-M12FS	1	2	straight-straight	250	1
22260775	AB-PB-M12MS-2.0PUR-M12FS	2	2	straight-straight	250	1
22260869	AB-PB-M12MS-3.0PUR-M12FS	3	2	straight-straight	250	1
22260776	AB-PB-M12MS-5.0PUR-M12FS	5	2	straight-straight	250	1
22260777	AB-PB-M12MS-10.0PUR-M12FS	10	2	straight-straight	250	1
22260907	AB-PB-M12MS-15.0PUR-M12FS	15	2	straight-straight	250	1
22260908	AB-PB-M12MS-20.0PUR-M12FS	20	2	straight-straight	250	1
22260079	AB-PB-M12MA-5.0PUR-M12FA	5	2	angled-angled	250	1
22260904	AB-PB-M12MA-10.0PUR-M12FA	10	2	angled-angled	250	1
22260905	AB-PB-M12MA-15.0PUR-M12FA	15	2	angled-angled	250	1
Plug						
22260767	AB-PB-M12MS-2.0PUR	2	2	straight	250	1
22260768	AB-PB-M12MS-5.0PUR	5	2	straight	250	1
22260769	AB-PB-M12MS-10.0PUR	10	2	straight	250	1
22260956	AB-PB-M12MA-2.0PUR	2	2	angled	250	1
Socket						
22260770	AB-PB-2.0PUR-M12FS	2	2	straight	250	1
22260771	AB-PB-5.0PUR-M12FS	5	2	straight	250	1
22260772	AB-PB-10.0PUR-M12FS	10	2	straight	250	1

Unless specified otherwise. the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: inclusive of copper. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

DeviceNet

UNITRONIC® DeviceNet FD THICK+THIN

High flexible DeviceNet Buscable based on the CAN technology

Application range

- For highly flexible applications
- DeviceNet™ connects industrial devices e.g. limit switches, photoelectric switches, valve islands, motor starters, drives, PLCs, etc.

Product features

- Based on proven CAN (Controller Area Network) technology.
- Permissible cable lengths vary with the data rate and the cable thickness
- Refer to data sheet for more details
- PUR (P) Version: Halogene free
  PVC (Y) Version: Flame retardant (UL FT4)
- UV-resistant (but colour may change after some time)

Norm references / Approvals

- PUR: UL/CSA-certified (CMX)
- PVC: UL/CSA CMG 75°C FT4 Sun Res Oil Res, at 2170346 also PLTC

Product Make-up

- Core insulation: PE
- Outer sheath of Polyurethan (PUR) or Polyvinylchlorid (PVC)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description: Data cable

Core identification code
Data pair: light blue + white
Power supply: red + black

Mutual capacitance
(800 Hz): max. 39.8 nF/km

Peak operating voltage
300 V (not for power applications)

Conductor resistance
Thick (loop): max. 45 ohm/km
Thin (loop): max. 180 ohm/km

Minimum bending radius
Fixed installation: 7.5 x outer diameter
Flexing: 15 x outer diameter

Test voltage
Core/core: 2000 V

Characteristic impedance
120 ohm

Temperature range
PUR: -40°C to +80°C
PVC: -10°C to +80°C

Article number	Article designation	Number of pairs and AWG size	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
PUR					
2170344	UNITRONIC® BUS DN THICK FD P	1 × 2 × AWG 18 + 1 × 2 × AWG 15	12.2	94	184
2170345	UNITRONIC® BUS DN THIN FD P	1 × 2 × AWG 24 + 1 × 2 × AWG 22	6.9	33.4	67.7
PVC					
2170346	UNITRONIC® BUS DN THICK FD Y	1 × 2 × AWG 18 + 1 × 2 × AWG 15	12.2	94	195
2170347	UNITRONIC® BUS DN THIN FD Y	1 × 2 × AWG 24 + 1 × 2 × AWG 22	6.9	33.4	69.8

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
DeviceNet is a registered trademark of ODVA
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

UNITRONIC® BUS CAN M12-M12

DeviceNet/CANopen Cable: M12 connector on M12 socket

Info

- Other types are available at www.lappgroup.com/assemblyfinder or on request

Benefits

- Cost-effective, efficient wiring of fieldbus and sensor/ actuator installations
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Robust design

Application range

- Mechanical and plant engineering

Product features

- 5-core DeviceNet/CANopen cable, shielded
- M12 connector, A-coded with quick-locking system
- Suitable for drag chains
- Including tag carrier

Norm references / Approvals

- UL-AWM-Style 21198 (80 °C / 300 V)

Product Make-up

- Signal line: 2 x 0.25 mm²
  Power supply: 2 x 0.34 mm²
  Drain wire: 1 x 0.34 mm²
- Core colours: red/black, blue/white
- Outer sheath: PUR halogen-free, violett
- Outer diameter: 6.7 mm
- Shielded version

Suitable connectors

- EPIC® DATA CAN M12
- EPIC® DATA CAN M12/M122
- EPIC® DATA CAN TR M12
- EPIC® DATA CAN M12T

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001855
ETIM 5.0/6.0 Class-Description: Sensor-actuator patch cord

Material
Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing

Minimum bending radius
Flexing: 70 mm

Protection rating
IP65/IP67

Ambient temperature (operation)
Plug/socket -25 °C to +90 °C
Fixed installation -40 °C to +80 °C
Flexing -20 °C to +80 °C
Drag chain application ≤ 70 °C

Coding
A-standard

Rated current (A)
4 A

Article number	Article designation	Length (m)	Number of pins	Design	Rated voltage (V)	PU
Plug on socket						
22260795	AB-DN-M12MS-0,3PUR-M12FS	0.3	5	straight-straight	60	1
22260796	AB-DN-M12MS-1,0PUR-M12FS	1	5	straight-straight	60	1
22260797	AB-DN-M12MS-2,0PUR-M12FS	2	5	straight-straight	60	1
22260798	AB-DN-M12MS-5,0PUR-M12FS	5	5	straight-straight	60	1
22260799	AB-DN-M12MS-10,0PUR-M12FS	10	5	straight-straight	60	1
Plug						
22260789	AB-DN-M12MS-2,0PUR	2	5	straight	60	1
22260790	AB-DN-M12MS-5,0PUR	5	5	straight	60	1
22260791	AB-DN-M12MS-10,0PUR	10	5	straight	60	1
22262004	AB-DN-M12MA-2,0PUR	2	5	angled	60	1
Socket						
22260792	AB-DN-2,0PUR-M12FS	2	5	straight	60	1
22260793	AB-DN-5,0PUR-M12FS	5	5	straight	60	1
22260794	AB-DN-10,0PUR-M12FS	10	5	straight	60	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
No copper surcharge. DeviceNet is a registered trademark of ODVA.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

UNITRONIC® BUS CAN FD P

CAN Buscables for high flexible application - UL/SCA certified

Application range

- For highly flexible applications

Product features

- Halogen-free
- Maximum bit rate: 1 Mbit/s for 40 m segment length
- Larger conductor cross-section is necessary with increasing length. Refer to the table below (reference values from ISO 11898).
- ISO 11898 makes recommendations for the segment length, cable cross section and bit rate
- Flame-retardant according IEC 60332-1-2

Norm references / Approvals

- Standardised internationally in ISO 11898
- UL/CSA type CMX (UL 444)

Product Make-up

- Stranded bare conductor
- Core insulation: foam skin
- Copper braid
- Outer sheath: PUR, violet (RAL 4001)
- UV-resistant (but colour may change after some time)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description: Data cable

Mutual capacitance
(800 Hz) max. 40 nF/km

Peak operating voltage
250 V (not for power transmission)

Conductor resistance
(loop): max. 159.8 ohm/km

Minimum bending radius
Flexing: 15 x outer diameter

Test voltage
Core/core: 1500 V rms

Characteristic impedance
120 ohm

Temperature range
Fixed installation: -40°C to +80°C
Flexing: -30°C to +70°C

Article number	Article designation	Number of pairs/conductor cross section (mm²)	Outer diameter (mm)	Conductor resistance	Copper index (kg/km)	Weight (kg/km)
For highly flexible applications (power chains, moving machine parts)						
2170272	UNITRONIC® BUS CAN FD P	1 × 2 × 0,25	6.4	159.8	24	40
2170273	UNITRONIC® BUS CAN FD P	2 × 2 × 0,25	8.4	159.8	33	65
2170275	UNITRONIC® BUS CAN FD P	1 × 2 × 0,34	6.8	122	32.8	60
2170276	UNITRONIC® BUS CAN FD P	2 × 2 × 0,34	9.6	122	52.4	88
2170278	UNITRONIC® BUS CAN FD P	1 × 2 × 0,5	8	72.8	41.9	74

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

UNITRONIC® BUS CC FD P FRNC

CC-Link bus cable for high fleible applications - UL-verified

Info

- Lapp Kabel is a regular member of the user organisation CC-Link Partner Association (CLPA), Japan.

Benefits

- The CC-Link® system was developed by Mitsubishi Electric Automation, Japan.

Application range

- CC-Link® (Control & Communication Link) = field bus network, for both control as well as information data to provide efficient, integrated factory and process automation.
- For highly flexible applications (power chains, moving machine parts)

Product features

- Transmission rate in relation to the distance
- 156 kbit/s = 1.200 m
  625 kbit/s = 600 m
  2,5 Mbit/s = 200 m
  5,0 Mbit/s = 110-150 m
  10 Mbit/s = 50-100 m
- Halogen-free
- Flame-retardant according IEC 60332-1-2

Norm references / Approvals

- AWM 20233 80 °C 300V

Product Make-up

- Bare stranded copper wires
- Core insulation: PE
- Inner sheath: FRNC
- Overall screening of braided tinned-copper strands
- Outer sheath: PUR, red (RAL 3000)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description: Data cable

Certifications
UL AWM Style 20233

Peak operating voltage
300 V

Conductor resistance
11 ohm/1,000 ft. (305 m) at 20°C

Minimum bending radius
Fixed installation: 4 x outer diameter
Moved: 10 x outer diameter

Test voltage
2000 V

Characteristic impedance
110 ohm at 1 MHz

Temperature range
-40°C to +80°C

Article number	Article designation	Number of cores and AWG size	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® BUS CC FD P FRNC					
2170370	UNITRONIC® BUS CC FD P FRNC	3 × 1 × AWG20	8.5	39.9	84

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
CC-Link® is a registered trademark of CC-Link Partner Association, Japan (CLPA)
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

UNITRONIC® BUS SAFETY

SafetyBUS cables for transmission of safety-oriented datas

Benefits

- For serial transmission of safety-oriented data

Application range

- UNITRONIC® BUS SAEFTY - fixed Installation
  UNITRONIC® BUS SAEFTY FD P - highly flexible applications
- For systems such as SafetyBUS p®, based on the well-known CAN bus system

Product features

- The stated bit rates result in the following cable lengths (maximum) for a bus segment:
- 500 kbit/s = max.100 m
- 250 kbit/s = max. 250 m
- 125 kbit/s = max. 500 m
- 50 kbit/s = max. 1,000 m

Norm references / Approvals

- Flame retardant acc. to IEC 60332-1-2

Product Make-up

- Bare stranded copper wires
- Core insulation: foam skin
- Tin-plated copper wire braiding
- Outer sheath: halogen-free, flame-retardant compound
- Outer sheath: yellow

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description: Data cable

Certifications
Version UNITRONIC® BUS SAFETY FC: AWM Style 2464 (80°C 300 V)

Mutual capacitance
(800 Hz): max. 45 nF/km

Peak operating voltage
(not for power applications) 250 V

Conductor resistance
(loop): max. 52 ohm/km

Minimum bending radius
Fixed installation:
5 x outer diameter

Test voltage
Core/core: 3000 V
Core/core: 1500 V (FD- version)

Characteristic impedance
120 ohm

Temperature range
UNITRONIC BUS SAFETY:
Fixed installation: -30°C to +80°C
UNITRONIC BUS SAFETY FD P:
Fixed installation -40°C to +80°C
Moved: -30 to +80°C

Article number	Article designation	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
Highly flexible applications					
2170885	UNITRONIC® BUS SAFETY FD P	3 × 0.75	7.8	49	68

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
SafetyBUS p® is a registered trademark of Pilz GmbH & Co.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

UNITRONIC® SENSOR FD

High flexible cable for sensor/actuator cabling for use in drag chains, halogen-free

Info

- For increased mechanical stress and harsh operating conditions

Benefits

- Designs for highly flexible use
- Abrasion-resistant
- Wear-resistant
- Space-saving due to compact dimensions

Application range

- Automation technology
- Sensor/ actuator cabling
- Mechanical and plant engineering
- Assembly and production lines

Product features

- UV-resistant
- Halogen-free according to VDE 0472-815
- Flame-retardant according to IEC 60332-2-2, UL 1581 FT-2
- Suitable for drag chains
- Designed for 4 million alternating bending cycles and travel distances up to 10 m

Norm references / Approvals

- UL AWM Style 20549

Product Make-up

- Extra-fine wire strand made of bare copper wires
- Core insulation: PP
- Colour-code:
  3-pin: bn, bu, bk
  4-pin: bn, wh, bu, bk
  5-pin: bn, wh, bu, bk, gy
  8-pin: bn, wh, gn, ye, gy, pk, bu, rd
- Outer sheath: PUR, black

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001578
ETIM 5.0/6.0 Class-Description: Flexible cable

Peak operating voltage
300 V (not for power applications)

Conductor stranding
Extra-fine wire acc. to VDE 0295, class 6/ IEC 60228 class 6

Minimum bending radius
Fixed installation: 5 x outer diameter
Flexing: 10 x outer diameter

Temperature range
Occasional flexing: -25°C to +80°C
Fixed installation: -40°C to +80°C

Article number	Article designation	Dimensions (mm²)	Outer diameter (mm)	Core/outer sheath material	Colour	Copper index (kg/km)
UNITRONIC® SENSOR FD						
7038883	LiF9Y11Y	3 × 0.25	4.4	PP/PUR	black	7.5
7038867	LiF9Y11Y	5 × 0.25	4.7	PP/PUR	black	12
7038868	LiF9Y11Y	8 × 0.25	5.9	PP/PUR	black	19
7038864	LiF9Y11Y	3 × 0.34	4.6	PP/PUR	black	9.8
7038865	LiF9Y11Y	4 × 0.34	4.7	PP/PUR	black	13
7038866	LiF9Y11Y	5 × 0.34	5.1	PP/PUR	black	16
UNITRONIC® SENSOR FD - optimized						
7038889	LiF9Y11Y	3 × 0.25	3.6	PP/PUR	black	7.5
7038890	LiF9Y11Y	4 × 0.25	3.8	PP/PUR	black	10.2
7038893	LiF9Y11Y	5 × 0.34	4.5	PP/PUR	black	16
UNITRONIC® SENSOR FD screened						
7038885	LiF9YC11Y	3 × 0.34	4.3	PP/PUR	black	19.1
7038886	LiF9YC11Y	4 × 0.34	4.6	PP/PUR	black	23.5
7038887	LiF9YC11Y	5 × 0.34	5	PP/PUR	black	27.5

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/ 100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Other types of composition are available upon request.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

UNITRONIC® SENSOR M8

M8 plug/socket on free conductor end

Info

- Other types are available at www.lappgroup.com/assemblyfinder or on request

Benefits

- Cost-efficient due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Gold-plated contacts for low transfer resistance

Application range

- For increased mechanical stress and harsh operating conditions

Product features

- UV-resistant
- Good resistance to oils and chemicals
- PWIS and PVC free
- Suitable for drag chains
- Including tag carrier

Norm references / Approvals

- Halogenfree according to DIN VDE 0472
- UL File Number: E249137
- Flame-retardant according to UL 1581 FT-2

Product Make-up

- Core cross section: 0.25 mm²
- Colour-code:
  3-pin: bn (1), bu (3), bk (4)
  4-pin: bn (1), wh (2), bu (3), bk (4)
- Outer sheath: PUR, black

Suitable tools

- DATA STRIP stripping tool
- DATA STRIP stripping tool

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001855
ETIM 5.0/6.0 Class-Description: Sensor-actuator patch cord

Material
Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing

Minimum bending radius
Fixed installation: 5 x outer diameter
Flexing: 10 x outer diameter

Protection rating
IP65/IP67

Ambient temperature (operation)
Plug/socket -25°C to +90°C
Fixed installation -40°C to +80°C
Flexing -25°C to +80°C

Coding
A-standard

Rated current (A)
4 A

Article number	Article designation	Number of pins	Length (m)	Design	LED	Rated voltage (V)	PU
3-pin							
Plug							
22260204	AB-C3-M8MS-2,0PUR	3	2	straight	no	60	1
22260205	AB-C3-M8MS-5,0PUR	3	5	straight	no	60	1
22260218	AB-C3-M8MS-10,0PUR	3	10	straight	no	60	1
22260053	AB-C3-M8MA-2,0PUR	3	2	angled	no	60	1
22260987	AB-C3-M8MA-5,0PUR	3	5	angled	no	60	1
22260055	AB-C3-M8MA-10,0PUR	3	10	angled	no	60	1
Socket							
22260202	AB-C3-2,0PUR-M8FS	3	2	straight	no	60	1
22260200	AB-C3-5,0PUR-M8FS	3	5	straight	no	60	1
22260219	AB-C3-10,0PUR-M8FS	3	10	straight	no	60	1
22260203	AB-C3-2,0PUR-M8FA	3	2	angled	no	60	1
22260201	AB-C3-5,0PUR-M8FA	3	5	angled	no	60	1
22260220	AB-C3-10,0PUR-M8FA	3	10	angled	no	60	1
22260275	AB-C3-2,0PUR-M8FA-2L	3	2	angled	2 LEDs	24	1
22260276	AB-C3-5,0PUR-M8FA-2L	3	5	angled	2 LEDs	24	1
22260277	AB-C3-10,0PUR-M8FA-2L	3	10	angled	2 LEDs	24	1
4-pin							
Plug							
22260300	AB-C4-M8MS-2,0PUR	4	2	straight	no	30	1
22260308	AB-C4-M8MS-5,0PUR	4	5	straight	no	30	1
22260318	AB-C4-M8MS-10,0PUR	4	10	straight	no	30	1
22260056	AB-C4-M8MA-2,0PUR	4	2	angled	no	30	1
22260057	AB-C4-M8MA-5,0PUR	4	5	angled	no	30	1
22260058	AB-C4-M8MA-10,0PUR	4	10	angled	no	30	1
Socket							
22260309	AB-C4- 2,0PUR-M8FS	4	2	straight	no	30	1
22260310	AB-C4- 5,0PUR-M8FS	4	5	straight	no	30	1
22260317	AB-C4-10,0PUR-M8FS	4	10	straight	no	30	1
22260311	AB-C4- 2,0PUR-M8FA	4	2	angled	no	30	1
22260312	AB-C4- 5,0PUR-M8FA	4	5	angled	no	30	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.
UL certifications can be found in the data sheet.

UNITRONIC® SENSOR M8-M8

M8 plug on M8 socket

Info

- Other types are available at www.lappgroup.com/assemblyfinder or on request

Benefits

- Cost-efficient due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Gold-plated contacts for low transfer resistance

Application range

- For increased mechanical stress and harsh operating conditions

Product features

- UV-resistant
- Good resistance to oils and chemicals
- PWIS and PVC free
- Suitable for drag chains
- Including tag carrier

Norm references / Approvals

- Halogenfree according to DIN VDE 0472
- UL File Number: E249137
- Flame-retardant according to UL 1581 FT-2

Product Make-up

- Core cross section: 0.25 mm2
- Colour-code:
  3-pin: bn (1), bu (3), bk (4)
  4-pin: bn (1), wh (2), bu (3), bk (4)
- Outer sheath: PUR, black

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001855
ETIM 5.0/6.0 Class-Description: Sensor-actuator patch cord

Material
Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing

Minimum bending radius
Fixed installation: 5 x outer diameter
Flexing: 10 x outer diameter

Protection rating
IP65/IP67

Ambient temperature (operation)
Plug/socket -25°C to +90°C
Fixed installation -40°C to +80°C
Flexing -25°C to +80°C

Coding
A-standard

Rated current (A)
4 A

Article number	Article designation	Number of pins	Length (m)	Design	LED	Rated voltage (V)	PU
Plug on socket							
3-pin							
22260206	AB-C3-M8MS-0,3PUR-M8FS	3	0.3	straight-straight	no	60	1
22260207	AB-C3-M8MS-0,6PUR-M8FS	3	0.6	straight-straight	no	60	1
22260208	AB-C3-M8MS-1,0PUR-M8FS	3	1	straight-straight	no	60	1
22260209	AB-C3-M8MS-2,0PUR-M8FS	3	2	straight-straight	no	60	1
22260210	AB-C3-M8MS-0,3PUR-M8FA	3	0.3	straight-angled	no	60	1
22260211	AB-C3-M8MS-0,6PUR-M8FA	3	0.6	straight-angled	no	60	1
22260212	AB-C3-M8MS-1,0PUR-M8FA	3	1	straight-angled	no	60	1
22260213	AB-C3-M8MS-2,0PUR-M8FA	3	2	straight-angled	no	60	1
22260214	AB-C3-M8MS-0,3PUR-M8FA-2L	3	0.3	straight-angled	2 LEDs	24	1
22260215	AB-C3-M8MS-0,6PUR-M8FA-2L	3	0.6	straight-angled	2 LEDs	24	1
22260216	AB-C3-M8MS-1,0PUR-M8FA-2L	3	1	straight-angled	2 LEDs	24	1
22260217	AB-C3-M8MS-2,0PUR-M8FA-2L	3	2	straight-angled	2 LEDs	24	1
4-pin							
22260313	AB-C4-M8MS-0,3PUR-M8FS	4	0.3	straight-straight	no	30	1
22260314	AB-C4-M8MS-0,6PUR-M8FS	4	0.6	straight-straight	no	30	1
22260315	AB-C4-M8MS-1,0PUR-M8FS	4	1	straight-straight	no	30	1
22260316	AB-C4-M8MS-2,0PUR-M8FS	4	2	straight-straight	no	30	1
22260059	AB-C4-M8MS-0,3PUR-M8FA	4	0.3	straight-angled	no	30	1
22260060	AB-C4-M8MS-0,6PUR-M8FA	4	0.6	straight-angled	no	30	1
22260061	AB-C4-M8MS-1,0PUR-M8FA	4	1	straight-angled	no	30	1

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UNITRONIC® SENSOR M8-M12

M8 plug on M12 socket

Info

- Other types are available at www.lappgroup.com/assemblyfinder or on request

Benefits

- Cost-efficient due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Gold-plated contacts for low transfer resistance

Application range

- For increased mechanical stress and harsh operating conditions

Product features

- UV-resistant
- Good resistance to oils and chemicals
- PWIS and PVC free
- Suitable for drag chains
- Including tag carrier

Norm references / Approvals

- Halogenfree according to DIN VDE 0472
- UL File Number: E249137
- Flame-retardant according to UL 1581 FT-2

Product Make-up

- Core cross section: 0.25 mm2
- Colour-code:
  3-pin: bn (1), bu (3), bk (4)
- Outer sheath: PUR, black

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001855
ETIM 5.0/6.0 Class-Description:
Sensor-actuator patch cord

Material
Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing

Minimum bending radius
Fixed installation: 5 x outer diameter
Flexing: 10 x outer diameter

Protection rating
IP65/IP67

Ambient temperature (operation)
Plug/socket -25°C to +90°C
Fixed installation -40°C to +80°C
Flexing -25°C to +80°C

Coding
A-standard

Rated current (A)
4 A

Article number	Article designation	Number of pins	Length (m)	Design	LED	Rated voltage (V)	PU
3-pin							
22260241	AB-C3-M8MS-0,3PUR-M12FS	3	0.3	straight-straight	no	60	1
22260242	AB-C3-M8MS-0,6PUR-M12FS	3	0.6	straight-straight	no	60	1
22260243	AB-C3-M8MS-1,0PUR-M12FS	3	1	straight-straight	no	60	1
22260244	AB-C3-M8MS-2,0PUR-M12FS	3	2	straight-straight	no	60	1
22260245	AB-C3-M8MS-0,3PUR-M12FA	3	0.3	straight-angled	no	60	1
22260246	AB-C3-M8MS-0,6PUR-M12FA	3	0.6	straight-angled	no	60	1
22260247	AB-C3-M8MS-1,0PUR-M12FA	3	1	straight-angled	no	60	1
22260248	AB-C3-M8MS-2,0PUR-M12FA	3	2	straight-angled	no	60	1
22260271	AB-C3-M8MS-0,3PUR-M12FA-2L	3	0.3	straight-angled	2 LEDs	24	1
22260272	AB-C3-M8MS-0,6PUR-M12FA-2L	3	0.6	straight-angled	2 LEDs	24	1
22260273	AB-C3-M8MS-1,0PUR-M12FA-2L	3	1	straight-angled	2 LEDs	24	1

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UL certifications can be found in the data sheet.

UNITRONIC® SENSOR M12 open-ended Cordsets

Info

- Other types are available at www.lappgroup.com/assemblyfinder or on request

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Integrated vibration protection (mechanical lock-in)
- Gold-plated contacts for low transfer resistance

Application range

- For increased mechanical stress and harsh operating conditions

Product features

- UV-resistant
- Good resistance to oils and chemicals
- PWIS and PVC free
- Suitable for drag chains
- Including tag carrier

Norm references / Approvals

- Halogenfree according to DIN VDE 0472
- UL File Number: E249137
- Flame-retardant according to UL 1581 FT-2

Product Make-up

- Wire cross-section: 0.34mm² (8-pin: 0.25mm²)
- Colour-code:
  3-pin: bn (1), bu (3), bk (4)
  4-pin: bn (1), wh (2), bu (3), bk (4)
  5-pin: bn (1), wh (2), bu (3), bk (4), gn/ye (5)
  8-pin: wh (1), bn (2), gn (3), ye 4), gy (5), pk (6), bu (7), rd (8)
- Outer sheath: PUR, black

Suitable tools

- DATA STRIP stripping tool

Technical data

Classification
ETIM 5.0 Class-ID: EC001855
ETIM 5.0 Class-Description: Sensor-actuator patch cord

Material
Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing

Minimum bending radius
Fixed installation: 5 x outer diameter
Flexing: 10 x outer diameter

Protection rating
IP 65/IP 67

Ambient temperature (operation)
Plug/socket: -25°C to +90°C
Fixed installation: -40°C to +80°C
Flexing: -25°C to +80°C

Coding
A-standard

Rated current (A)
4 A
2 A (8-pin)

		Plug							
		3-pins		4-pins		5-pins		8-pins	
		straight	angled	straight	angled	straight	angled	straight	angled
Product	**Length**	**Article number**							
Plug, unshielded	2.0m	22260221	22260223	22260320	22260301	22260400	22260402	22260091	22260094
	5.0m	22260222	22260224	22260321	22260302	22260401	22260403	22260092	22260095
	10.0m	22260249	22260256	22260342	22260303	22260414	22260417	22260093	22260096
Socket, unshielded	2.0m	22260257	22260258	22260322	22260324	22260404	22260406	22260726	22260141
	5.0m	22260250	22260259	22260323	22260325	22260405	22260407	22260728	22260615
	10.0m	22260251	22260260	22260343	22260341	22260415	22260418	22260729	22260616
Socket with LEDs, unshielded	2.0m	22260252	22260253	22260344	22260326	On request	22260408	On request	On request
	5.0m	22260265	22260254	22260345	22260327		22260409		
	10.0m	22260266	22260255	22260346	22260340		22260416		
Plug, shielded	2.0m	22260453	On request	22260459	On request	22260465	22261004	On request	On request
	5.0m	22260454		22260460		22260466	22261005		
	10.0m	22260455		22260461		22260467	On request		
Socket, shielded	2.0m	22260450	22260074	22260456	22260074	22260462	22260946	On request	On request
	5.0m	22260451	22260675	22260457	22260675	22260463	22260714	22260863	22260859
	10.0m	22260452	22260680	22260458	22260680	22260464	22260991	22262001	On request

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UNITRONIC® SENSOR M12 Cordsets

Info

- Other types are available at www.lappgroup.com/assemblyfinder or on request

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Integrated vibration protection (mechanical lock-in)
- Gold-plated contacts for low transfer resistance

Application range

- For increased mechanical stress and harsh operating conditions

Product features

- UV-resistant
- Good resistance to oils and chemicals
- PWIS and PVC free
- Suitable for drag chains
- Including tag carrier

Norm references / Approvals

- Halogenfree according to DIN VDE 0472
- UL File Number: E249137
- Flame-retardant according to UL 1581 FT-2

Product Make-up

- Wire cross-section: 0.34mm² (8-pin: 0.25mm²)
- Colour-code:
  3-pin: bn (1), bu (3), bk (4)
  4-pin: bn (1), wh (2), bu (3), bk (4)
  5-pin: bn (1), wh (2), bu (3), bk (4), gn/ye (5)
  8-pin: wh (1), bn (2), gn (3), ye 4), gy (5), pk (6), bu (7), rd (8)
- Outer sheath: PUR, black

Technical data

Classification
ETIM 5.0 Class-ID: EC001855
ETIM 5.0 Class-Description: Sensor-actuator patch cord

Material
Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing

Minimum bending radius
Fixed installation: 5 x outer diameter
Flexing: 10 x outer diameter

Protection rating
IP 65/IP 67

Ambient temperature (operation)
Plug/socket: -25°C to +90°C
Fixed installation: -40°C to +80°C
Flexing: -25°C to +80°C

Coding
A-standard

Rated current (A)
4 A
2 A (8-pin)

		Plug							
		3-pins		4-pins		5-pins		8-pins	
		straight	angled	straight	angled	straight	angled	straight	angled
Socket	**Length**	**Article number**							
straight	0.3m	22260233	On request	22260328	22260304	22260410	On request	22260097	On request
	0.6m	22260234		22260329	22260305	22260411		22260098	
	1.0m	22260235		22260330	22260306	22260412		22260099	
	2.0m	22260236		22260331	22260307	22260413		22260042	
angled	0.3m	22260237	On request	22260332	On request	22260063	On request	22260137	On request
	0.6m	22260238		22260333		22260064		22260138	
	1.0m	22260239		22260334	22260965	22260065		22260139	
	2.0m	22260240		22260335	22260693	22260066		22260140	
angled, LEDs	0.3m	22260261	On request	22260336	On request	22260067	On request	On request	On request
	0.6m	22260262		22260337		22260068			
	1.0m	22260263		22260338		22260069			
	2.0m	22260264		22260339		22260070			

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UL certifications can be found in the data sheet.

UNITRONIC® SENSOR M12-M8

M12 plug on M8 socket

Info

- Other types are available at www.lappgroup.com/assemblyfinder or on request

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Integrated vibration protection (mechanical lock-in)
- Gold-plated contacts for low transfer resistance

Application range

- For increased mechanical stress and harsh operating conditions

Product features

- UV-resistant
- Good resistance to oils and chemicals
- PWIS and PVC free
- Suitable for drag chains
- Including tag carrier

Norm references / Approvals

- Halogenfree according to DIN VDE 0472
- UL File Number: E249137
- Flame-retardant according to UL 1581 FT-2

Product Make-up

- Core cross section: 0.25 mm2
- Colour-code:
  3-pin: bn (1), bu (3), bk (4)
  4-pin: bn (1), wh (2), bu (3), bk (4)
- Outer sheath: PUR, black

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001855
ETIM 5.0/6.0 Class-Description: Sensor-actuator patch cord

Material
Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing

Minimum bending radius
Fixed installation: 5 × outer diameter
Flexing: 10 × outer diameter

Protection rating
IP65/IP67

Ambient temperature (operation)
Wtyczka/gniazdo -25°C do +90°C
Fixed installation -40°C to +80°C
Flexing -25°C to +80°C

Coding
A-standard

Rated current (A)
4 A

Article number	Article designation	Length (m)	Design	LED	Rated voltage (V)	PU
Plug on socket						
3-pin						
22260225	AB-C3-M12MS-0,3PUR-M8FS	0.3	straight-straight	no	60	1
22260226	AB-C3-M12MS-0,6PUR-M8FS	0.6	straight-straight	no	60	1
22260227	AB-C3-M12MS-1,0PUR-M8FS	1	straight-straight	no	60	1
22260228	AB-C3-M12MS-2,0PUR-M8FS	2	straight-straight	no	60	1
22260229	AB-C3-M12MS-0,3PUR-M8FA	0.3	straight-angled	no	60	1
22260230	AB-C3-M12MS-0,6PUR-M8FA	0.6	straight-angled	no	60	1
22260231	AB-C3-M12MS-1,0PUR-M8FA	1	straight-angled	no	60	1
22260232	AB-C3-M12MS-2,0PUR-M8FA	2	straight-angled	no	60	1
22260267	AB-C3-M12MS-0,3PUR-M8FA-2L	0.3	straight-angled	2 LEDs	24	1
22260268	AB-C3-M12MS-0,6PUR-M8FA-2L	0.6	straight-angled	2 LEDs	24	1

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Copper price basis: inclusive of copper. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.
UL certifications can be found in the data sheet.

UNITRONIC® SENSOR Valve

valve connector on free conductor end

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking

Product features

- Suitable for drag chains
- With protective circuit (Z diode), PE-bridged (except type AD)
- With LED status indicator (yellow) With display switch state (2 LEDs, red/green)
- Including tag carrier
- PWIS-free

Product Make-up

- 3 or 5 × 0.5 mm²
- Core identification code: Black cores with white numbers +green/yellow
- Outer sheath: PUR halogen-free, black
- Outer diameter: 4.5 mm (3 pins) 5.3 mm (5 pins)

Suitable tools

- DATA STRIP stripping tool
- DATA STRIP stripping tool

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001855
ETIM 5.0/6.0 Class-Description: Sensor-actuator patch cord

Material
Contact: CuSn
Contact surface: Ag

Protection rating
IP65/IP67

Ambient temperature (operation)
Valve connector -20°C to +85°C
Fixed installation -40°C to +80°C
Flexing -20°C to +80°C

Coding
A-standard

Rated current (A)
4 A

Article number	Article designation	Number of pins	Length (m)	LED	Rated voltage (V)	PU
Valve connector type A (18 mm)						
22260584	AB-C3- 2,0PUR-A-1L-S	3	2	1 LED	24	1
22260576	AB-C3- 5,0PUR-A-1L-S	3	5	1 LED	24	1
22260577	AB-C3-10,0PUR-A-1L-S	3	10	1 LED	24	1
Valve connector type A (18mm) for pressure switch						
22260589	AB-C5-2,0PUR-AD-2L	5	2	2 LEDs	24	1
22260590	AB-C5-5,0PUR-AD-2L	5	5	2 LEDs	24	1
22260591	AB-C5-10,0PUR-AD-2L	5	10	2 LEDs	24	1
Valve connector type B (10 mm)						
22260585	AB-C3- 2,0PUR-B-1L-S	3	2	1 LED	24	1
22260578	AB-C3- 5,0PUR-B-1L-S	3	5	1 LED	24	1
22260579	AB-C3-10,0PUR-B-1L-S	3	10	1 LED	24	1
Valve connector type BI (11 mm)						
22260586	AB-C3- 2,0PUR-BI-1L-S	3	2	1 LED	24	1
22260580	AB-C3- 5,0PUR-BI-1L-S	3	5	1 LED	24	1
22260581	AB-C3-10,0PUR-BI-1L-S	3	10	1 LED	24	1
Valve connector type C (8 mm)						
22260587	AB-C3- 2,0PUR-C-1L-S	3	2	1 LED	24	1
22260582	AB-C3- 5,0PUR-C-1L-S	3	5	1 LED	24	1
22260583	AB-C3-10,0PUR-C-1L-S	3	10	1 LED	24	1
Valve connector type CI (9.4 mm)						
22260588	AB-C3- 2,0PUR-CI-1L-S	3	2	1 LED	24	1
22260574	AB-C3- 5,0PUR-CI-1L-S	3	5	1 LED	24	1
22260575	AB-C3-10,0PUR-CI-1L-S	3	10	1 LED	24	1

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Copper price basis: inclusive of copper. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
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UNITRONIC® SENSOR Valve-M12

valve connector on straight M12 plug

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking

Product features

- Suitable for drag chains
- With protective circuit (Z diode), PE-bridged (except type AD)
- With LED status indicator (yellow) With display switch state (2 LEDs, red/green)
- Including tag carrier
- PWIS-free

Product Make-up

- 3 or 5 × 0.5 mm²
- Core identification code: Black cores with white numbers +green/yellow
- Outer sheath: PUR halogen-free, black
- Outer diameter: 4.5 mm (3 pins) 5.3 mm (5 pins)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001855
ETIM 5.0/6.0 Class-Description: Sensor-actuator patch cord

Material
Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing

Protection rating
IP65/IP67

Ambient temperature (operation)
Valve connector -20°C to +85°C
Connector/socket -25°C to +90°C
Fixed installation -40°C to +80°C
Flexing -20°C to +80°C

Coding
A-standard

Rated current (A)
4 A

Article number	Article designation	Number of pins	Length (m)	LED	Rated voltage (V)	PU
Straight connector to valve connector type A (18 mm)						
22260550	AB-C3-M12MS-0,3PUR-A-1L-S	3	0.3	1 LED	24	1
22260551	AB-C3-M12MS-0,6PUR-A-1L-S	3	0.6	1 LED	24	1
22260552	AB-C3-M12MS-1,0PUR-A-1L-S	3	1	1 LED	24	1
22260553	AB-C3-M12MS-2,0PUR-A-1L-S	3	2	1 LED	24	1
Straight connector to valve connector type A (18mm) for pressure switch						
22260573	AB-C5-M12MS-0,3PUR-AD-2L	5	0.3	2 LEDs	24	1
22260572	AB-C5-M12MS-0,6PUR-AD-2L	5	0.6	2 LEDs	24	1
22260571	AB-C5-M12MS-1,0PUR-AD-2L	5	1	2 LEDs	24	1
22260570	AB-C5-M12MS-2,0PUR-AD-2L	5	2	2 LEDs	24	1
Straight connector to valve connector type B (10 mm)						
22260558	AB-C3-M12MS-0,3PUR-B-1L-S	3	0.3	1 LED	24	1
22260559	AB-C3-M12MS-0,6PUR-B-1L-S	3	0.6	1 LED	24	1
22260560	AB-C3-M12MS-1,0PUR-B-1L-S	3	1	1 LED	24	1
22260561	AB-C3-M12MS-2,0PUR-B-1L-S	3	2	1 LED	24	1
Straight connector to valve connector type BI (11 mm)						
22260554	AB-C3-M12MS-0,3PUR-BI-1L-S	3	0.3	1 LED	24	1
22260555	AB-C3-M12MS-0,6PUR-BI-1L-S	3	0.6	1 LED	24	1
22260556	AB-C3-M12MS-1,0PUR-BI-1L-S	3	1	1 LED	24	1
22260557	AB-C3-M12MS-2,0PUR-BI-1L-S	3	2	1 LED	24	1
Straight connector to valve connector type C (8 mm)						
22260566	AB-C3-M12MS-0,3PUR-C-1L-S	3	0.3	1 LED	24	1
22260567	AB-C3-M12MS-0,6PUR-C-1L-S	3	0.6	1 LED	24	1
22260568	AB-C3-M12MS-1,0PUR-C-1L-S	3	1	1 LED	24	1
22260569	AB-C3-M12MS-2,0PUR-C-1L-S	3	2	1 LED	24	1
Straight connector to valve connector type CI (9.4 mm)						
22260562	AB-C3-M12MS-0,3PUR-CI-1L-S	3	0.3	1 LED	24	1
22260563	AB-C3-M12MS-0,6PUR-CI-1L-S	3	0.6	1 LED	24	1
22260564	AB-C3-M12MS-1,0PUR-CI-1L-S	3	1	1 LED	24	1
22260565	AB-C3-M12MS-2,0PUR-CI-1L-S	3	2	1 LED	24	1

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Copper price basis: inclusive of copper. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
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UNITRONIC® SENSOR M12Y

M12 Y plug straight on 2x free conductor end

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions

Product features

- 4-pin M12Y plug on free conductor end
- Including tag carrier
- PWIS-free
- Suitable for drag chains

Product Make-up

- 3 × 0.34 mm²
- Core colours: bn, bu, bk
- Outer sheath: PUR halogen-free, black

Suitable tools

- DATA STRIP stripping tool
- DATA STRIP stripping tool

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001855
ETIM 5.0/6.0 Class-Description: Sensor-actuator patch cord

Material
Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing

Protection rating
IP65/IP67

Ambient temperature (operation)
Wtyczka/gniazdo -25°C do +90°C
Fixed installation -40°C to +80°C
Flexing -25°C to +80°C

Coding
A-standard

Rated current (A)
4 A

Article number	Article designation	Length (m)	LED	Rated voltage (V)	PU
Y plug to 2 x free conductor end					
22260500	AB-C3-M12Y-2,0PUR	2	no	250	1
22260513	AB-C3-M12Y-5,0PUR	5	no	250	1
22260526	AB-C3-M12Y-10,0PUR	10	no	250	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: inclusive of copper. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.
UL certifications can be found in the data sheet.

UNITRONIC® SENSOR M12Y-M8

M12 Y plug straight on 2x M8 socket

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking

Product features

- 4-pin M12Y connector on 2 × M12 socket (4-pin), Pin 2+4 bridged
- 4-pin M12Y plug on 2 × M8 socket (3-pin)
- Including tag carrier
- PWIS-free
- Suitable for drag chains

Product Make-up

- M12Y-M8: 3 × 0.25 mm²
  M12Y-M12: 3 × 0.34 mm²
- Core colours: bn, bu, bk
- Outer sheath: PUR halogen-free, black

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001855
ETIM 5.0/6.0 Class-Description: Sensor-actuator patch cord

Material
Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing

Protection rating
IP65/IP67

Ambient temperature (operation)
Wtyczka/gniazdo -25°C do +90°C
Fixed installation -40°C to +80°C
Flexing -25°C to +80°C

Coding
A-standard

Rated current (A)
4 A

Article number	Article designation	Number of pins	Length (m)	LED	Rated voltage (V)	PU
M12Y on 2x M8						
Straight socket						
22260514	AB-C3-M12Y-0,3PUR-M8FS	3	0.3	no	60	1
22260515	AB-C3-M12Y-0,6PUR-M8FS	3	0.6	no	60	1
22260516	AB-C3-M12Y-1,0PUR-M8FS	3	1	no	60	1
22260517	AB-C3-M12Y-2,0PUR-M8FS	3	2	no	60	1
Angled socket						
22260518	AB-C3-M12Y-0,3PUR-M8FA	3	0.3	no	60	1
22260519	AB-C3-M12Y-0,6PUR-M8FA	3	0.6	no	60	1
22260520	AB-C3-M12Y-1,0PUR-M8FA	3	1	no	60	1
22260521	AB-C3-M12Y-2,0PUR-M8FA	3	2	no	60	1
Angled socket with LEDs						
22260522	AB-C3-M12Y-0,3PUR-M8FA-2L	3	0.3	2 LEDs	24	1
22260523	AB-C3-M12Y-0,6PUR-M8FA-2L	3	0.6	2 LEDs	24	1
22260524	AB-C3-M12Y-1,0PUR-M8FA-2L	3	1	2 LEDs	24	1
22260525	AB-C3-M12Y-2,0PUR-M8FA-2L	3	2	2 LEDs	24	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: inclusive of copper. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.
UL certifications can be found in the data sheet.

UNITRONIC® SENSOR M12Y-M12

M12 Y plug straight on 2x M12 socket

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking

Product features

- 4-pin M12Y connector on 2 x M12 socket (4-pin), Pin 2+4 bridged
- 4-pin M12Y plug on 2 x M8 socket (3-pin)
- Including tag carrier
- PWIS-free
- Suitable for drag chains

Product Make-up

- M12Y-M8: 3 × 0.25 mm²
  M12Y-M12: 3 × 0.34 mm²
- Core colours: bn, bu, bk
- Outer sheath: PUR halogen-free, black

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001855
ETIM 5.0/6.0 Class-Description: Sensor-actuator patch cord

Material
Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing

Protection rating
IP65/IP67

Ambient temperature (operation)
Wtyczka/gniazdo -25°C do +90°C
Fixed installation -40°C to +80°C
Flexing -25°C to +80°C

Coding
A-standard

Rated current (A)
4 A

Article number	Article designation	Number of pins	Length (m)	LED	Rated voltage (V)	PU
M12Y on 2x M12						
Straight socket						
22260501	AB-C3-M12Y-0,3PUR-M12FS-B	3	0.3	no	250	1
22260502	AB-C3-M12Y-0,6PUR-M12FS-B	3	0.6	no	250	1
22260503	AB-C3-M12Y-1,0PUR-M12FS-B	3	1	no	250	1
22260504	AB-C3-M12Y-2,0PUR-M12FS-B	3	2	no	250	1
Angled socket						
22260505	AB-C3-M12Y-0,3PUR-M12FA-B	3	0.3	no	250	1
22260506	AB-C3-M12Y-0,6PUR-M12FA-B	3	0.6	no	250	1
22260507	AB-C3-M12Y-1,0PUR-M12FA-B	3	1	no	250	1
22260508	AB-C3-M12Y-2,0PUR-M12FA-B	3	2	no	250	1
Angled socket with LEDs						
22260509	AB-C3-M12Y-0,3PUR-M12FA-2L-B	3	0.3	2 LEDs	24	1
22260510	AB-C3-M12Y-0,6PUR-M12FA-2L-B	3	0.6	2 LEDs	24	1
22260511	AB-C3-M12Y-1,0PUR-M12FA-2L-B	3	1	2 LEDs	24	1
22260512	AB-C3-M12Y-2,0PUR-M12FA-2L-B	3	2	2 LEDs	24	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: inclusive of copper. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
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UL certifications can be found in the data sheet.

UNITRONIC® SENSOR M12 Power

Power cable: M12 plug/socket on free conductor

Info

- Other types are available at www.lappgroup.com/assemblyfinder or on request

Benefits

- Cost-effective, efficient wiring of fieldbus and sensor/ actuator installations
- Space-saving due to compact dimensions
- Customise assembly of the free conductor end

Product features

- 4-core power cable
- M12 connector, A-coded with quick-locking system
- Including tag carrier
- Suitable for drag chains
- PWIS-free

Product Make-up

- 4 x 0.75 mm²
- 4-pin: bn (1), wh (2), bu (3), bk (4)
- Core insulation: PVC
- Outer sheath: PUR, black
- Outer diameter: 5.9 mm

Suitable tools

- DATA STRIP stripping tool
- DATA STRIP stripping tool

Suitable connectors

- EPIC® SENSOR M12

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001855
ETIM 5.0/6.0 Class-Description: Sensor-actuator patch cord

Material
Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing

Minimum bending radius
Flexing: 10 × outer diameter

Protection rating
IP65/IP67

Ambient temperature (operation)
Plug/socket -25°C to +90°C
Fixed installation -25°C to +80°C
Flexing -5°C to +80°C

Coding
A-standard

Rated current (A)
4 A

Article number	Article designation	Number of pins	Length (m)	Design	Rated voltage (V)	PU
Straight connector						
22260778	AB-PC4-M12MS-2,0PUR	4	2	straight	250	1
22260779	AB-PC4-M12MS-5,0PUR	4	5	straight	250	1
22260780	AB-PC4-M12MS-10,0PUR	4	10	straight	250	1
Straight socket						
22260781	AB-PC4-2,0PUR-M12FS	4	2	straight	250	1
22260782	AB-PC4-5,0PUR-M12FS	4	5	straight	250	1
22260783	AB-PC4-10,0PUR-M12FS	4	10	straight	250	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: inclusive of copper. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
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3

ETHERLINE®

Data communication systems for ETHERNET technology

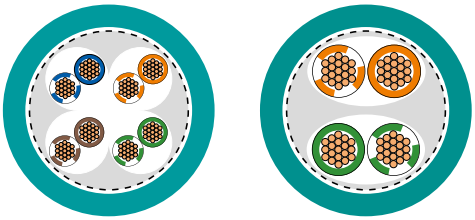
Our ETHERLINE® branded products open up a secure, fast and reliable path to the future of Ethernet applications, e. g. PROFINET®. The systems are made up of durable and robust cables and connection components for passive and active network technology, and deliver an effective solution for almost any application, particularly in an industrial environment.

Application range

- Industry and building networks
- Industrial machinery and plant engineering
- Automation technology
- Control engineering

ETHERLINE® Cat.5e FD

Ethernet cable Category 5e, Class D for use in drag chain applications – verified up to 100 MHz



Info

- Industrial Ethernet cable
- For highly flexible applications
- Only for patch cable applications (max. 60 m)

Benefits

- Seamless communication from the sensor/actuator level to the Internet
- Screened against interference
- Can be used in dry or damp rooms
- Industrial use
- Cables with PUR jacket: 1000 V UL-rating for installation next to power cables

Application range

- 2pair: 10/100 Mbit/s for Industrial Ethernet
- 4pair: 10/100/1000 Mbit/s for Industrial Ethernet
- Only for patch cable applications (max. 60 m)
- Suitable for EtherCAT and EtherNet/IP applications
- Power chain applications

Product features

- Premium screening against electromagnetic interference
- PUR outer sheath is highly resistant to mineral oils and abrasion
- Halogen-free outer sheath
- Cables with PUR jacket: 1000 V UL-rating for installation next to power cables

Norm references / Approvals

- PUR versions: UL AWM Style 21576
- Flame-retardant according IEC 60332-1-2
- Halogen-free according to IEC 60754-1 (amount of halogen acid gas) Corrosiveness of combustion gases according to IEC 60754-2 (degree of acidity)

Product Make-up

- Bare stranded copper wire, 26 AWG (19 × 0.10), (0.14 mm²)
- Inner sheath: thermoplastic elastomer, halogen-free
- 2 or 4-pair version
- Screening: wrapped with braided tinned-copper wires
- PUR outer sheath
- Colour: water blue (RAL 5021)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description: Data cable

Peak operating voltage
(not for power applications)
125 V

Minimum bending radius
Fixed installation: 8 × outer diameter
Flexing: 15 × outer diameter

Test voltage
Core/core: 1000 V
Core/screen: 500 V

Characteristic impedance
100 Ω ± 15%

Temperature range
cable with PUR jacket
Fixed installation:
VDE -30°C to +80°C;
UL/CSA -30°C to +80°C
flexing:
VDE -5°C to +50°C;
UL/CSA -5°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Core diameter (in mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2-pair version						
2170289	ETHERLINE® FD P CAT.5e	2 × 2 × AWG26/19	1	5.9	20	48
4-pair version						
2170489	ETHERLINE® FD P CAT.5e	4 × 2 × AWG26/19	1	6.3	27	54

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: Coil 100 m; Drum (500; 1000) m
Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

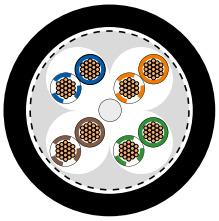
EtherNet/IP

ETHERLINE® Cat.5 FD BK

Ethernet cable Category 5e, Class D for installation in events - verified up to 100 MHz

Info

- For highly flexible industrial applications
- Cat.5e-Performance
- Only for patch cable applications (max. 60 m)



Benefits

- Additional application options thanks to suitability for outdoor use, UV-resistant
- Good flexibility - easy installation with tight space requirements
- Screened against interference
- Easy to coil for mobile use

Application range

- IEEE 802.3: 10/100/1000Base-T IEEE 802.5: ISDN; FDDI; ATM
- Suitable for the transfer of audio signals (ETHERSOUND), light control signals (DMX over Ethernet), or for computer networking
- Only for patch cable applications (max. 60 m)
- Suitable for EtherCAT and EtherNet/IP applications
- 4pair: 10/100/1000 Mbit/s for Industrial Ethernet

Product features

- CAT.5-Performance
- Specifically developed for road environments
- Suitable for outdoor use, UV-resistant
- PUR outer sheath is highly resistant to mineral oils and abrasion
- Premium screening against electromagnetic interference

Norm references / Approvals

- UL AWM Style 21576
- Flame retardant acc. to IEC 60332-1-2
- Halogen-free according to IEC 60754-1 (amount of halogen acid gas) Corrosiveness of combustion gases according to IEC 60754-2 (degree of acidity)

Product Make-up

- Bare stranded copper wire, 26 AWG (19 × 0.10), (0.14 mm²)
- Insulation: foam skin, max. core diameter 1.0 mm
- Twisting: 2 twisted-pair cores, stranding from 4 pairs
- Inner sheath: thermoplastic elastomer, halogen-free
- Screening: wrapped with braided tinned-copper wires
- Outer sheath: halogen-free PUR, black

Technical data

ETIM

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description: Data cable

Peak operating voltage
(not for power applications)
125 V

Minimum bending radius
Flexing: 15 × outer diameter
Fixed installation: 8 × outer diameter

Test voltage
Core/core: 1000 V
Core/screen: 500 V

Characteristic impedance
100 Ω ± 15%

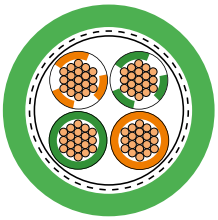
Temperature range
cable with PUR jacket
Fixed installation:
VDE -30°C to +80°C;
UL/CSA -30°C to +80°C
flexing:
VDE -5°C to +50°C;
UL/CSA -5°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Core diameter (in mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ETHERLINE® Cat.5 FD BK						
CE217489	ETHERLINE® FD P BK Cat.5	4x2xAWG26/19	1	6.3	27	54

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Standard lengths: (100; 500; 1000) m
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ETHERLINE® EC FD Cat.5e

Highly flexible application



Info

- For EtherCAT applications
- For highly flexible industrial applications
- Cat.5e-Performance

Benefits

- Can be used for Industrial Ethernet in harsh industrial environments
- Can be used in dry or damp rooms
- Lower space requirement

Application range

- Suitable for EtherCAT and EtherNet/IP applications
- For highly flexible applications (power chains, moving machine parts)
- Many applications with Industrial Ethernet, e.g. EtherCat, i.e. fixed installation, flexible and highly flexible use
- For internal wiring of electric and electronic equipment in switch cabinets
- Only for patch cable applications (max. 60 m)

Product features

- PUR outer sheath, halogen-free
- Meets the requirements according to Cat. 5e and class D
- High-quality, double screening ensures high transmission reliability in areas with electromagnetic interference

Norm references / Approvals

- UL/CSA type CMX in accordance with UL 444 and CSA C22.2 no. 214-02
- Flame-retardant according to UL VW1/CSA FT1
- Halogen-free according to VDE 0472-815

Product Make-up

- Bare stranded copper wire, 26AWG (19 × 0.10), (0.14 mm²)
- Core insulation: PE
- Insulation colour-codes: orange/white-orange; green/white-green
- Star quad
- SF/UTP: braid of tinned copper wire and plastic laminated aluminum foil as overall screening
- Outer sheath: PUR compound, halogen-free
- Colour: green (based on RAL 6018)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description: Data cable

Peak operating voltage
max. 100 V
(not for power applications)

Minimum bending radius
Fixed installation: 4 × Outer diameter
Flexing: 16 × outer diameter

Characteristic impedance
100 Ω ± 15%

Temperature range
Fixed installation: -40°C to +80°C
Flexing: -30°C to +50°C

Article number	Article designation	Number of pairs and AWG per conductor	Core diameter (in mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ETHERLINE® EC FD Cat.5e						
2170433	ETHERLINE® P EC FD Cat.5e	1 × 4 × AWG26/19	1.03	4.8	20	35

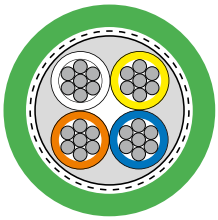
Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ETHERLINE® PN Cat.5 FD

Highly flexible application

Info

- Highly flexible application
- For PROFINET applications



Benefits

- Can be used in dry or damp rooms
- Screened against interference
- Can be used for Industrial Ethernet in harsh industrial environments
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Application range

- Power chain applications
- Wiring of machines, tools, devices, appliances and control cabinets
- Max. cable lenght für 100 Mbit/s is 85 m
- Suitable for EtherCAT and EtherNet/IP applications

Product features

- CAT.5-Performance
- PUR outer sheath is highly resistant to mineral oils and abrasion
- Flame-retardant according IEC 60332-1-2
- Optimized cable construction for power chain use
- Broad usages due to halogen-free materials

Norm references / Approvals

- UL/CSA type CMX (UL 444)

Product Make-up

- Fine-wire strand made of tinned-copper wires
- Star quad
- Colour-coded in accordance with PROFINET for Cat.5 apllications
- Inner sheath: thermoplastic copolymer (FRNC)
- Overall screening with copper braid and plastic-laminated aluminium foil
- PUR outer sheath, halogen-free
- Colour: green (based on RAL 6018)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description: Data cable

Peak operating voltage
(not for power applications)
125 V

Minimum bending radius
8 × outer diameter

Test voltage
Core/core: 700 V
Core/screen: 700 V

Characteristic impedance
100 Ω ± 15%

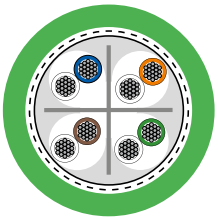
Temperature range
Fixed installation: -30°C to +70°C
Flexing: -20°C to +60°C

Article number	Article designation	Number of pairs and AWG per conductor	Core diameter (in mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ETHERLINE® PN Cat.5 FD						
2170894	ETHERLINE® FD P FC CAT.5	2 x 2 x AWG22/7	1.5	6.5	31.3	63

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)
Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ETHERLINE® CAT.6 FD

Ethernet cable Category 6, Class E for use in drag chain applications - verified up to 250 MHz



Info

- CAT.6 for drag chain!

Benefits

- Highly flexible data cable with PUR outer sheath, meets the highest service life requirements, even under harsh climatic conditions
- Premium screening against electromagnetic interference

Application range

- For use in drag chains and moving machinery parts in dry or damp rooms
- Only for patch cable applications (max. 60 m)
- Suitable for EtherCAT and EtherNet/IP applications
- Plant engineering, machinery manufacturing
- 4pair: 10/100/1000 Mbit/s for Industrial Ethernet

Product features

- Flame-retardant according IEC 60332-1-2
- PUR outer sheath is resistant to most oils and hydraulic fluids
- CAT.6 for drag chain!
- Min. 1 million bending cycles in the drag chain

Norm references / Approvals

- UL/CSA type CMX (UL 444)

Product Make-up

- Stranded conductor, tinned
- AWG 26 (19-wire)
- PP core insulation
- Inner sheath: thermoplastic copolymer (FRNC)
- SF/UTP: braid of tinned copper wire and plastic laminated aluminum foil as overall screening
- PUR outer sheath, halogen-free
- Colour: green (based on RAL 6018)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description: Data cable

Peak operating voltage
max. 100 V
(not for power applications)

Minimum bending radius
Fixed installation: 4 × outer diameter
Flexing: 7.5 × outer diameter

Test voltage
700 V

Characteristic impedance
nom. 100 Ω acc. to IEC 61156-6

Temperature range
Fixed installation: -40°C to +80°C
Flexing: -30°C to +70°C

Article number	Article designation	Number of pairs and AWG per conductor	Core diameter (in mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ETHERLINE® CAT.6 FD						
2170488	ETHERLINER CAT.6 FD	4 × 2 × AWG26/19	0.98	7.8	31.7	63

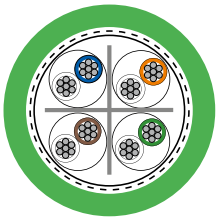
Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

ETHERLINE® FD CAT.6$_A$

Ethernet cable Category 6A, Class EA for highly flexible use with FC inner sheath - verified up to 500 MHz

Info

- CAT.6A for drag chain, qualified for 10Gbit/s
- For PROFINET applications with 4 pairs



Benefits

- For use in power chains and moving machinery parts in dry or damp rooms
- 4pair: 100Mbit/s up to 10 Gbit/s for Industrial Ethernet
- Premium screening against electromagnetic interference
- Can be used for Industrial Ethernet in harsh industrial environments

Application range

- For highly flexible applications (e.g. power chains)
- Wiring of machines, tools, devices, appliances and control cabinets
- Max. cable lenght für 100 Mbit/s is 85 m
- Max. cable lenght für 100 Mbit/s is 85 m
- Suitable for EtherCAT and EtherNet/IP applications

Product features

- PUR version is halogen-free according to IEC 60754
- Oil-resistant acc. IEC 60811-2-1
- CAT.6A for drag chain, qualified for 10Gbit/s
- Meets the requirements according to CAT.6A, ISO/IEC 11801 and EN 50173
- Min. 2.5 million bending cycles in the power chain

Norm references / Approvals

- Electrical requirements acc. to IEC 61156-6
- PUR cable is UL/CSA-certified (CMX)
- PUR versions: UL AWM Style 21576
- PVC cable is UL/CSA-certified (CM)
- Flame retardant acc. to IEC 60332-1-2

Product Make-up

- 7-wire tinned stranded copper conductor
- Core insulation: Based on Polyolefin
- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- Outer sheath: PUR, halogen-free/PVC
- Colour: green (based on RAL 6018)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description: Data cable

Minimum bending radius
Flexing: 15 × outer diameter
Fixed installation: 8 × cable diameter

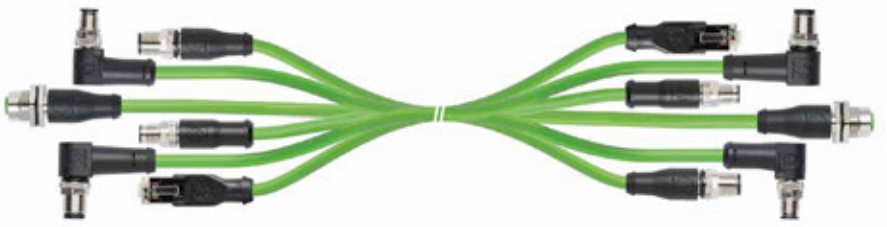
Characteristic impedance
100 Ohm

Temperature range
Cable with PUR jacket
Fixed installation: -40°C to +80°C
Flexing: -30°C to +70°C
Cable with PVC jacket
Fixed installation: -40°C to +80°C
Flexing: -10°C bis +70°C

Article number	Article designation	Number of pairs and AWG per conductor	Core diameter (in mm)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
PVC sheath						
2170485	ETHERLINE® FD CAT.6$_A$	4 × 2 × AWG24/7	1.3	8.9	44	88
PUR outer sheath, halogen-free						
2170484	ETHERLINE® FD P CAT.6$_A$	4 × 2 × AWG24/7	1.3	8.9	44	90

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)
Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.
UL certifications can be found in the data sheet.

ETHERLINE® EC FD Cat.5e Patch cables



Info

- Suitable for drag chains
- Additional variants are available at www.lappgroup.com/assemblyfinder or on request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components

Application range

- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use
- For highly flexible applications

Product features

- Meets the requirements according to Cat.5e and class D
- 2 pairs: 10/100 Mbit/s for Industrial Ethernet

Product Make-up

- Braided conductor, 2x2x AWG26/19
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PUR, 4.8mm in diameter
- Colour: green (based on RAL 6018)

Technical data

Classification
ETIM 5.0/6.0: EC002599
Description: Patch cord copper (twisted pair) industry

Minimum bending radius
Flexing: 8 x outer diameter
Fixed installation: 4 x outer diameter

Protection rating
M8: IP 67
M12: IP 67
RJ45: IP 20

Temperature range
During installation: -30°C to +50°C
Fixed installation: -40°C to +80°C

Coding
M8: A-Standard
M12: D-Standard

		RJ45	M12, plug, straight	M12, plug, angled	M12, socket, straight	M8, plug, straight	M8, plug, angled	Open end
	Length	Article number						
RJ45	1.0m	2171765	2171751	2171924	On request	2171758	On request	2171772
	2.0m	2171766	2171752	2171925		2171759		2171773
	5.0m	2171768	2171754	2171927		2171761		2171775
	10.0m	2171769	2171755	2171928		2171762		2171776
M12, plug, straight	1.0m	2171751	2171779	2171786	2171737	2171945	On request	2171793
	2.0m	2171752	2171780	2171787	2171738	2171946		2171794
	5.0m	2171754	2171782	2171789	2171740	2171948		2171796
	10.0m	2171755	2171783	2171790	2171741	2171949		2171797
M12, plug, angled	1.0m	2171924	2171786	2171907	2171744	On request	On request	2171871
	2.0m	2171925	2171787	2171908	2171745			2171872
	5.0m	2171927	2171789	2171910	2171748			2171874
	10.0m	2171928	2171790	2171911	2171749			2171875
M12, socket, straight	1.0m	On request	2171737	2171744	2171916	On request	On request	On request
	2.0m		2171738	2171745	2171917			
	5.0m		2171740	2171748	2171919			
	10.0m		2171741	2171749	2171920			
M8, plug, straight	1.0m	2171758	2171945	On request	On request	2171701	2171719	2171710
	2.0m	2171759	2171946			2171702	2171720	2171711
	5.0m	2171761	2171948			2171704	2171722	2171713
	10.0m	2171762	2171949			2171706	2171724	2171715
M8, plug, angled	1.0m	On request	On request	On request	On request	2171719	2171960	2171728
	2.0m					2171720	2171961	2171729
	5.0m					2171722	2171963	2171731
	10.0m					2171724	2171965	2171733

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Other lengths are available upon request.

ETHERLINE® PN FD Cat.5 Patch cables

Info

- For PROFINET® applications
- Additional variants are available at www.lappgroup.com/assemblyfinder or on request

Benefits

- For directly connecting two electric components
- Non-permanent connections allow for easy change of equipment

Application range

- For PROFINET® applications type C
- Continuous flexing applications
- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use

Product features

- Meets the requirements according to Cat.5e and class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Norm references / Approvals

- The cable is UL/CSA-certified (CMX)

Product Make-up

- Braided conductor, 2x2x AWG22/7
- Star quad
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PUR , 6.5mm in diameter
- Colour: green (based on RAL 6018)

Technical data

Classification
ETIM 5.0 Class-ID: EC002599
ETIM 5.0 Class-Description: Patch cord copper (twisted pair) industry

Minimum bending radius
Flexing: 8 x outer diameter
Fixed installation: 5 x outer diameter

Protection rating
M12: IP 67
RJ45: IP 20

Temperature range
Flexing: -20°C to +60°C
Fixed installation: -30°C to +70°C

Coding
M12: D-Standard

		RJ45	M12, plug, straight	M12, plug, angled	M12, socket, straight	Open end
	Length	Article number				
RJ45	0.5m	2171278	2171264	2171271	On request	2171285
	1.0m	2171279	2171265	2171272		2171286
	2.0m	2171280	2171266	2171273		2171287
	3.0m	2171281	2171267	2171274		2171288
	5.0m	2171282	2171268	2171275		2171289
	10.0m	2171283	2171269	2171276		2171290
M12, plug, straight	0.5m	2171264	2171121	2171122	2171250	2172201
	1.0m	2171265	2171049	2171061	2171251	2171055
	2.0m	2171266	2171050	2171062	2171252	2171056
	3.0m	2171267	2171051	2171063	2171253	2171057
	5.0m	2171268	2171052	2171064	2171254	2171058
	10.0m	2171269	2171053	2171065	2171255	2171059
M12, plug, angled	0.5m	2171271	2171122	On request	2171257	2172204
	1.0m	2171272	2171061		2171258	2171067
	2.0m	2171273	2171062		2171259	2171068
	3.0m	2171274	2171063		2171260	2171069
	5.0m	2171275	2171064		2171261	2171070
	10.0m	2171276	2171065		2171262	2171071
M12, socket, straight	0.5m	On request	2171250	2171257	On request	On request
	1.0m		2171251	2171258		
	2.0m		2171252	2171259		
	3.0m		2171253	2171260		
	5.0m		2171254	2171261		
	10.0m		2171255	2171262		

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Other lengths are available upon request.

EPIC® DATA RJ45

Info

- CAT.6$_A$ acc. to ISO/IEC 11801
- Colour-coded assembly aid
- Installation without tools

Product features

- Field assembly Industrial Ethernet connector, RJ45 according to IEC 60603-7-51
- Suitable for 10BASE-T/ 100BASE-T/ 1000BASE-T/ 10GBASE-T
- Housing: zinc die-casting, grey
- Suitable for stranded cores and solid conductors
- Suitable for use in industrial applications

Norm references / Approvals

- RJ45 up to 500 MHz, acc. to IEC 60603-7-51
- UL-listed (E-File E353543)

Technical data

Protection rating
IP 20

Ambient temperature (operation)
-40°C to +85°C

Article number	Design	Min. outer diameter (mm)	Max. outer diameter (mm)	Min. Core diameter (mm)	Core diameter	PU	AWG solid	AWG 7-wire	AWG 19-wire
PROFINET colour-coding (2-pairs)									
21700605	Straight, latched	5	9	1	1.6	10	24 - 22	27 - 22	22*
21700651	Straight, screwed	5.5	10	1	1.6	1	24 - 22	27 - 22	22*
21700638	Angled, screwed	5.5	10	1	1.6	1	24 - 22	27 - 22	22*
colour-coded acc. to EIA/TIA 568A									
21700600	Straight, latched	5	9	1	1.6	10	24 - 22	27 - 22	
21700652	Straight, screwed	5.5	10	1	1.6	1	24 - 22	27 - 22	
21700636	Angled, screwed	5.5	10	1	1.6	1	24 - 22	27 - 22	
colour-coded acc. to EIA/TIA 568B									
21700601	Straight, latched	5	9	1	1.6	10	24 - 22	27 - 22	
21700653	Straight, screwed	5.5	10	1	1.6	1	24 - 22	27 - 22	
21700637	Angled, screwed	5.5	10	1	1.6	1	24 - 22	27 - 22	
colour-coded acc. to EIA/TIA 568A for small wire diameters									
21700615	Straight, latched	5	9	0.85	1.1	10	26 - 24	27 - 24	26*
21700654	Straight, screwed	5.5	10	0.85	1.1	1	26 - 24	27 - 24	26*
21700639	Angled, screwed	5.5	10	0.85	1.1	1	26 - 24	27 - 24	26*
colour-coded acc. to EIA/TIA 568B for small wire diameters									
21700616	Straight, latched	5	9	0.85	1.1	10	26 - 24	27 - 24	26*
21700655	Straight, screwed	5.5	10	0.85	1.1	1	26 - 24	27 - 24	26*
21700640	Angled, screwed	5.5	10	0.85	1.1	1	26 - 24	27 - 24	26*

Photographs and graphics are not to scale and do not represent detailed images of the respective products.
An approval is necessary for 19-wire cables by Lapp Group
Approved cables: 2170289 & 2170489 ETHERLINE® Cat.5e FD; CE217489 ETHERLINE® Cat.5 FD BK; 2170488 ETHERLINE® Cat.6 FD

EPIC® DATA M12D

M12 D-coded connectors

Info

- CAT.5-Performance
- Installation without tools

Product features

- Field assembly Industrial Ethernet connector, M12 D-coded according to IEC 61076-2-101
- Suitable for use in industrial applications
- Robust and vibrations- resistant
- Toolfree installation, small and compact design

Norm references / Approvals

- Data transmission is conform to category Cat.5 acc. to ISO 11801

Technical data

Protection rating
IP 67

Ambient temperature (operation)
-25°C to +85°C

Article number	Article designation	Min. outer diameter (mm)	Max. outer diameter (mm)	PU	AWG solid	AWG 7-wire
M12 D-coded plug, straight, colour coding acc. to PROFINET						
21700647	ED-IE-AX-M12D-5-PN-67-FC	6.2	9.7	1	26-22	26-22
M12 D-coded plug, straight, colour coding acc. to TIA 568						
21700648	ED-IE-AX-M12D-5-67	5	6.1	1	26-22	26-22
M12 D-coded socket, straight, TIA 568 colour coding						
22261016	AB-C4-M12FSD-SH	4	8	1	26-22	26-22

Photographs and graphics are not to scale and do not represent detailed images of the respective products.

EPIC® DATA M12X

M12 X-coded connectors

Info

- CAT.6_A acc. to ISO/IEC 11801
- Installation without tools

Product features

- Field assembly Industrial Ethernet connector, M12 X-coded according to IEC 61076-2-109
- Qualified for 10 Gigabit/s Ethernet
- Suitable for use in industrial applications
- Robust and vibrations- resistant
- Housing: zinc die-casting, grey
- Insulation displacement contacts for conductor diameter of AWG27/7 - AWG22/7 and AWG24/1 - AWG22/1; max. outer diameter 9,7 mm
- Toolfree installation, small and compact design

Norm references / Approvals

- Acc. to standard IEC 61076-2-109
- Data transmission is conform to category Cat.6Aacc. to ISO/IEC 11801:2010

Technical data

Protection rating
IP 67

Ambient temperature (operation)
Plug/socket -40°C to +85°C

Article number	Article designation	Min. outer diameter (mm)	Max. outer diameter (mm)	Min. Core diameter in mm	Core diameter in mm	PU	AWG solid	AWG 7-wire
M12 X-coded plug, straight								
21700602	ED-IE-AX-M12X-6_A-67-FC	5	9.7	0.85	1.6	1	26-22	26-22
M12 X-coded socket, straight								
21700621	ED-IE-AX-M12XF-6_A-67-FC	5	9.7	0.85	1.6	1	26-22	26-22
M12 X-coded socket, straight for wall mounting								
21700622	ED-IE-AX-M12XF-RM-6_A-67-FC	5	9.7	0.85	1.6	1	26-22	26-22

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4

HITRONIC®

Optical transmission systems

HITRONIC® fibre optic cables make transmitting large data volumes easy: fault free, bug proof and at almost light speed. Even electromagnetic radiation does not interfere with the transmission. The HITRONIC® range includes the ideal solution for indoor or outdoor use, for demanding conditions, and even for use in power chains.

Application range

- Telecommunications and network technology
- Industrial cabling and automation level
- Industrial machinery and plant engineering
- Data transmission under harsh conditions (mining and tunnel construction, oil and gas platforms, wind power plants)

HITRONIC® POF SIMPLEX CABLE

Polymer optical fibre as simplex fibre cable version with PUR sheath for fixed or flexible application

Info

- Suitable for direct connector assembly

Benefits

- Optical data transmisson up to 70m
- Easy to handle
- No intereference by external fields
- No grounding problems
- Suitable for direct connector assembly

Application range

- For optical signal transmission in industrial applications
- As a link between moving parts
- FD cable version:
  for flexible applications (power chains)

Product features

- Resistant to abrasion, oil, microbes and hydrolysis
- Adhesion-free
- Outer sheath flame-retardant and halogen-free
- FD cable version:
  5.000.000 bending cycles

Product Make-up

- Polymer Optical Fibre (POF)
- PE buffer tube
- Aramid yarns as strain relief
- PUR outer sheath
- Colour: orange (RAL 2003)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000034
ETIM 5.0/6.0 Class-Description:
Fibre optic cable

Dimensions
Buffered fibre: 2.2 mm
Cable: see table

Fibre type
POF – P980/1000

Standard designation
J-V2Y(ZN)11Y

Optical fibre type
Core material: PMMA
Cladding material: fluoropolymers

Permissible bending radius
≥ 10 × outer diameter

Permissible tensile force
Fixed installation: 100 N
Short-term: 600 N

Temperature range
Operation: -20 °C to +70 °C
Installation: -10°C to +50°C

Article number	Article designation	Fibre type	Number of fibres	Outer diameter (mm)	Weight (kg/km)
HITRONIC® POF SIMPLEX PE-PUR					
28020001	HITRONIC® POF SIMPLEX PE-PUR	980/1000 POF	1	5.5	25
HITRONIC® POF SIMPLEX FD PE-PUR for draig chain application					
28320001	HITRONIC® POF SIMPLEX FD PE-PUR	980/1000 POF	1	6	30

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
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HITRONIC® POF DUPLEX CABLE

Polymer optical fibre as duplex fibre cable version with PUR sheath for fixed or flexible application

Info

- For direct connector assembly

Benefits

- Optical data transmisson up to 70m
- Easy to handle
- No intereference by external fields
- No grounding problems
- Suitable for direct connector assembly

Application range

- For optical signal transmission in industrial applications
- FD cable version: for flexible applications (power chains)

Product features

- Outer sheath flame-retardant and halogen-free
- Resistant to abrasion, oil, microbes and hydrolysis
- Adhesion-free
- FD cable version: 5.000.000 bending cycles

Product Make-up

- Polymer Optical Fibre (POF)
- PE buffer tube
- Fibre colour coding: black, orange
- Aramid yarns as strain relief
- PUR outer sheath, orange (RAL 2003)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000034
ETIM 5.0/6.0 Class-Description: Fibre optic cable

Dimensions
Buffered fibre: 2.2 mm
Cable: see table

Core identification code
Black, orange

Fibre type
2 × POF – P980/1000

Standard designation
J-V2Y(ZN)11Y

Optical fibre type
Core material: PMMA
Cladding material: fluoropolymers

Permissible bending radius
≥ 10 × outer diameter

Permissible tensile force
Fixed installation: 100 N (PE-PUR), 130 N (Heavy PE-PUR)
Short-term: 400 N

Temperature range
Operation: -40°C to +7 °C (FD: -20°C to +70°C)
Installation: -10°C to +50°C

Article number	Article designation	Fibre type	Number of fibres	Outer diameter (mm)	Weight (kg/km)
HITRONIC® POF DUPLEX PE-PUR					
28020002	HITRONIC® POF DUPLEX PE-PUR	980/1000 POF	2	5.5	27
HITRONIC® POF DUPLEX HEAVY PE-PUR					
28030002	HITRONIC® POF DUPLEX HEAVY PE-PUR	980/1000 POF	2	8	57
HITRONIC® POF DUPLEX FD PE-PUR for draig chain application					
28320002	HITRONIC® POF DUPLEX FD PE-PUR	980/1000 POF	2	6	30

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Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
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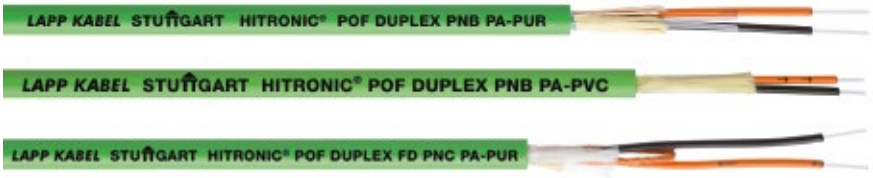
HITRONIC® POF cables for PROFINET Applications

Polymer optical fibre as duplex fibre cable version with PUR sheath for PROFINET applications type B or C

Info

- PROFINET compliant
  - Type B or Type C



Benefits

- Optical data transmisson up to 70m
- Easy to handle
- No intereference by external fields
- No grounding problems
- Suitable for direct connector assembly

Application range

- For optical signal transmission in industrial applications
- PROFINET / Industrial Ethernet
- At 100 Mbit/s: max 50 m cable length
- PROFINET type B: for fixed laying
- PROFINET type C: for flexible applications (power chains)

Product features

- Cable version with PVC outer sheath: for standard applications in industrial environments
- Cable version with PUR outer sheath: for high mechanical or chemical stress in industrial environments
- PNB - PROFINET-Type B
- PNC - PROFINET-Type C
- FD - Highly flexible (power chains)

Product Make-up

- Polymer Optical Fibre (POF)
- PA buffer tube
- Fibre colour coding: black, orange (with arrow printing)
- Aramid yarns as strain relief
- Outer sheath material PUR or PVC (see article description)
- Outer sheath colour: green (RAL 6018)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000034
ETIM 5.0/6.0 Class-Description: Fibre optic cable

Dimensions
Buffered fibre: 2.2 mm
Cable: see table

Core identification code
Black, orange (with arrow printing)

Standard designation
J-V4Y(ZN)11Y 2P980/1000
J-V4Y(ZN)Y 2P980/1000
J-V4Y(ZN)11Y 2P980/1000 flex

Optical fibre type
Core material: PMMA
Cladding material: fluoropolymers

Permissible bending radius
≥ 10 x outer diameter

Permissible tensile force
see data sheet

Temperature range
Operation: -20 °C to +70 °C
Installation: -10°C to +50°C

Article number	Article designation	Fibre type	Number of fibres	Outer diameter (mm)	Weight (kg/km)
POF DUPLEX - PROFINET TYPE B					
28051002	HITRONIC® POF DUPLEX PNB PA-PUR	980/1000 POF	2	8	56
28052002	HITRONIC® POF DUPLEX PNB PA-PVC	980/1000 POF	2	7.8	59
POF DUPLEX - PROFINET TYPE C					
28351002	HITRONIC® POF DUPLEX FD PNC PA-PUR	980/1000 POF	2	8	55

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Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Lapp Kabel is a member of the PROFIBUS user organisation (PNO)
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HITRONIC® PCF DUPLEX FD cables

Polymer Cladded Fibre as duplex fibre cable version for flexible applications, PUR outer sheath, halogen-free

Info

- Flexible PCF cable compatible with all BUS systems

Benefits

- Designed for use in power chains
- Transmission lengths up to 500 m
- Suitable for direct connector assembly
- Good resistance to oil, petrol, acids and alkalis
- EMC protection

Application range

- For highly flexible applications
- For data transmission in field bus systems, such as PROFIBUS, INTERBUS etc.
- As a link between moving parts
- Industrial environments

Product features

- Possible transmission wavelengths: 650 nm and 850 nm
- Complies with requirements for all BUS systems
- Outer sheath flame-retardant and halogen-free

Product Make-up

- Colour-coded, tight-buffered PCF sub-cable with FRNC sheath
- Sub cable outer diameter: 2.2 mm
- Aramid yarns as strain relief
- PUR outer sheath
- Colour: orange (RAL 2003)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000034
ETIM 5.0/6.0 Class-Description: Fibre optic cable

Dimensions
Buffered fibre: 0.5 mm
Single cable: 2.2 mm
Cable: 8.8 mm

Core identification code
red, green

Fibre type
PCF - K200/230
PCF - Polymer Cladded Fibre

Minimum bending radius
Static: ≥ 15 × outer diameter
Dynamic: ≥ 20 × outer diameter

Standard designation
A/J-V(ZN)H11Y

Optical fibre type
Core material: glass
Cladding material: fluoropolymers

Permissible tensile force
Fixed installation: 800 N
Short-term: 2000 N

Temperature range
Operation: -20 °C to +70 °C
Installation: -10°C to +50°C

Article number	Article designation	Fibre type	Number of fibres	Outer diameter (mm)	Weight (kg/km)
HITRONIC® PCF DUPLEX FD cables					
28320702	HITRONIC® PCF DUPLEX FD FRNC-PUR	200/230 PCF	2	8.8	63

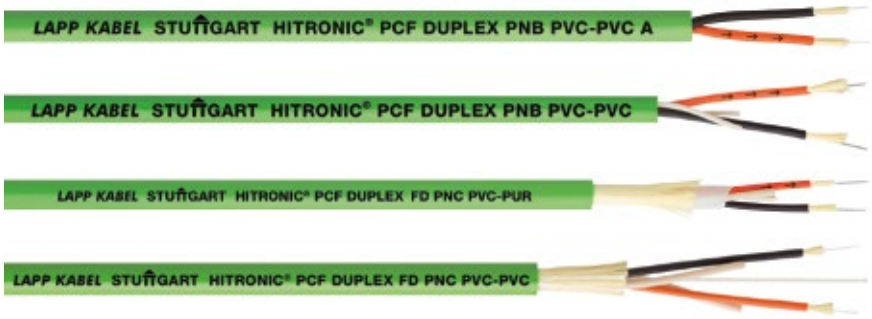
Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
The cables can also be supplied as pre-terminated fibre optic trunks.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

HITRONIC® PCF cables for PROFINET Applications

Polymer optical fibre as duplex fibre cable version with PCV or PUR sheath for PROFINET applications type B or C

Info

- PROFINET compliant
  - Type B or Type C
- For direct connector assembly



Benefits

- Optical data transmisson up to 500 m
- Easy to handle
- No intereference by external fields
- No grounding problems
- Suitable for direct connector assembly

Application range

- PCF DUPLEX cabels for optical signal transmission in industrial applications
- PROFINET/Industrial Ethernet
- At 100 Mbit/s: max 100 m cable length
- PROFINET type B: for fixed laying
- PROFINET type C: for flexible applications (power chains)

Product features

- Cable version with PVC outer sheath: for standard applications in industrial environments
- Cable version with PUR outer sheath: for high mechanical or chemical stress in industrial environments
- PNB – PROFINET-Type B
- PNC – PROFINET-Type C
- FD – Highly flexible (power chains)

Norm references / Approvals

- 28055702: with c(UL)us certification (OFNG 75°C)

Product Make-up

- Colour-coded, tight-buffered PCF sub-cable with PVC sheath
- Sub cable outer diameter: 2.2 mm
- Aramid yarns as strain relief
- Outer sheath material PUR or PVC (see article description)
- Outer sheath colour: green (RAL 6018)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000034
ETIM 5.0/6.0 Class-Description: Fibre optic cable

Dimensions
Buffered fibre: 0.5 mm
Single cable: 2.2 mm
Cable: see table

Core identification code
Black, orange (with arrow printing)

Fibre type
PCF – K200/230
PCF – Polymer Cladded Fibre

Minimum bending radius
see data sheet

Standard designation
J-V(ZN)YY 2K200/230
J-V(ZN)Y(ZN)11Y 2K200/230 flex
J-V(ZN)Y(ZN)Y 2K200/230 flex

Optical fibre type
Core material: glass
Cladding material: fluoropolymers

Permissible tensile force
see data sheet

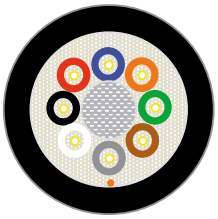
Temperature range
See data sheet

Article number	Article designation	Fibre type	Number of fibres	Outer diameter (mm)	Weight (kg/km)
PCF DUPLEX – PROFINET TYPE B					
28055702	HITRONIC® PCF DUPLEX PNB PVC-PVC A	200/230 PCF	2	7.5	59
28052702	HITRONIC® PCF DUPLEX PNB PVC-PVC	200/230 PCF	2	7.2	55
PCF DUPLEX – PROFINET TYPE C					
28351702	HITRONIC® PCF DUPLEX FD PNC PVC-PUR	200/230 PCF	2	8.8	71
28352702	HITRONIC® PCF DUPLEX FD PNC PVC-PVC	200/230 PCF	2	8.8	76

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Lapp Kabel is a member of the PROFIBUS user organisation (PNO)
The cables can also be supplied as pre-terminated fibre optic trunks.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

HITRONIC® HRM-FD Cable

flexible deivisible breakout cable designed for use in power chains



Benefits

- Designed for use in power chains
- Suitable for field assembly
- Easy to install due to the compact design, high flexibility, robust sheath and small bending radii
- Zero electromagnetic interference as the cable contains no metal (totally dielectric)

Application range

- For highly flexible industrial applications
- As a link between moving parts
- In vertical installations
- Industrial environments
- For indoor and outdoor use

Product features

- Based on military norm MIL-C-85045
- For use in power chains and moving machinery parts in dry or damp rooms
- Outer sheath flame-retardant and halogen-free
- Mechanically robust

Product Make-up

- 2.0 mm tight-buffered sub-cable with LSZH sheath
- Aramid yarns as strain relief
- Central element
- PUR outer sheath
- Colour: black (RAL 9005)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000034
ETIM 5.0/6.0 Class-Description: Fibre optic cable

Dimensions
sub-cable: 2.0 mm
Cable: see table

Core identification code
Details see datasheet

Fibre type
GOF – Glass Optical Fibre

Standard designation
A/J-V(ZN)H(ZN)11Y

Optical values
see data sheet

Optical fibre type
Core material: glass
Cladding material: glass

Permissible bending radius
Static: ≥ 15 × outer diameter
Dynamic: ≥ 20 × outer diameter

Temperature range
Fixed installation: -40°C to +70°C
Flexible use: -20°C to +60°C

Article number	Article designation	Fibre type	Number of fibres	Outer diameter (mm)	Weight (kg/km)
Multimode G 50 OM4					
26300402	HITRONIC® HRM-FD800 2G 50/125 OM4	50/125 OM4	2	7.8	50
26300404	HITRONIC® HRM-FD1000 4G 50/125 OM4	50/125 OM4	4	7.8	50
26300408	HITRONIC® HRM-FD1400 8G 50/125 OM4	50/125 OM4	8	10.4	93
26300412	HITRONIC® HRM-FD1800 12G 50/125 OM4	50/125 OM4	12	13	98
Multimode G 50 OM3					
26300302	HITRONIC® HRM-FD800 2G 50/125 OM3	50/125 OM3	2	7.8	50
26300304	HITRONIC® HRM-FD1000 4G 50/125 OM3	50/125 OM3	4	7.8	50
26300308	HITRONIC® HRM-FD1400 8G 50/125 OM3	50/125 OM3	8	10.4	93
26300312	HITRONIC® HRM-FD1800 12G 50/125 OM3	50/125 OM3	12	13	98
Multimode G 50 OM2					
26300202	HITRONIC® HRM-FD800 2G 50/125 OM2	50/125 OM2	2	7.8	50
26300204	HITRONIC® HRM-FD1000 4G 50/125 OM2	50/125 OM2	4	7.8	50
26300208	HITRONIC® HRM-FD1400 8G 50/125 OM2	50/125 OM2	8	10.4	93
26300212	HITRONIC® HRM-FD1800 12G 50/125 OM2	50/125 OM2	12	13	98
Multimode G 62.5 OM1					
26300102	HITRONIC® HRM-FD800 2G 62.5/125 OM1	62.5/125 OM1	2	7.8	50
26300104	HITRONIC® HRM-FD1000 4G 62.5/125 OM1	62.5/125 OM1	4	7.8	50
26300108	HITRONIC® HRM-FD1400 8G 62.5/125 OM1	62.5/125 OM1	8	10.4	93
26300112	HITRONIC® HRM-FD1800 12G 62.5/125 OM1	62.5/125 OM1	12	13	98
Single-mode E 9 OS2					
26300902	HITRONIC® HRM-FD800 2E 9/125 OS2	9/125 OS2	2	7.8	50
26300904	HITRONIC® HRM-FD1000 4E 9/125 OS2	9/125 OS2	4	7.8	50
26300908	HITRONIC® HRM-FD1400 8E 9/125 OS2	9/125 OS2	8	10.4	93
26300912	HITRONIC® HRM-FD1800 12E 9/125 OS2	9/125 OS2	12	13	98

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
The cables can also be supplied as pre-terminated fibre optic trunks.
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7

SILVYN®

Protective cable conduit systems and cable carrier systems

The universal range of SILVYN® protection and guidance systems protect cables effectively against dust, moisture, mechanical, thermal and chemical influences. The versatile SILVYN® CHAIN range of energy supply chains also protects and guides cables in dynamic applications.

Application range

- Industrial machinery and plant engineering
- Automotive industry
- Machine tool manufacture
- Renewable energies
- Wherever cables require additional protection or guidance

SILVYN® FPS

Benefits
- Dimensionally stable
- Crushable and extendable
- Highly oil and acid-resistant
- Liquidtight
- Corrosion-resistant

Application range
- Mechanical engineering
- In drag chains (SILVYN® CHAIN)
- Robot-building
- Moving applications
- Indoor applications

Product features
- Cadmium-free

Norm references / Approvals
- UL FILENUMBER E308201

Product Make-up
- PVC-insulated steel spring wire
- Soft PVC outer sheath

Note
- PU = 50 m (on request)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001177
ETIM 5.0/6.0 Class-Description: Protective plastic hose

Certifications
IEC EN 61386-23

Colour delivered
Grey

Material
Soft PVC with insulated spring steel wire

Temperature range
-25°C to +80°C

Article number	Nominal size	ID x OD (mm)	Bending radius (mm)	Suitable for SILVYN® USK-M/US-M	Suitable for SILVYN® LKI-M/MSK-M	Suitable for SILVYN® USK/US/LKI/EE-K	PU ring (m)
SILVYN® FPS							
61711550	10	7 × 10	8	10 × 1	12 × 1,5	7	25
61711590	14	10 × 14	10	12 × 1,5	16 × 1,5	9	25
61711630	17	12.7 × 17	13	16 × 1,5	20 × 1,5	11	25
61711670	19	14.7 × 19	15	–	–	13,5	25
61711710	21	16 × 21	17	20 × 1,5	25 × 1,5	16	25
61711750	27	21.6 × 27	20	25 × 1,5	32 × 1,5	21	25
61711790	36	29 × 36	25	32 × 1,5	40 × 1,5	29	25
61711830	45	38 × 45	36	40 × 1,5	50 × 1,5	36	25
61711910	56	48 × 56	40	50 × 1,5	63 × 1,5	48	25
SILVYN® FPS 10M							
61721690	10	7.0 × 10	8	10 × 1	12 × 1,5	7	10
61721700	14	10 × 14	10	12 × 1,5	16 × 1,5	9	10
61721710	17	12.7 × 17	13	16 × 1,5	20 × 1,5	11	10
61721720	19	14.7 × 19	15	–	–	13,5	10
61721730	21	16 × 21	17	20 × 1,5	25 × 1,5	16	10
61721740	27	21.6 × 27	20	25 × 1,5	32 × 1,5	21	10
61721750	36	29 × 36	25	32 × 1,5	40 × 1,5	29	10
61721760	45	38 × 45	36	40 × 1,5	50 × 1,5	36	10
61721780	56	48 × 56	40	50 × 1,5	63 × 1,5	48	10

Photographs and graphics are not to scale and do not represent detailed images of the respective products.

SILVYN® FPS-EDU

Info

- High flexible and mechanical protection at the same time

Benefits

- Protects against hot chips
- High-tensile
- Highly flexible
- Air-tight and impermeable
- Mechanical resistance

Application range

- Mechanical engineering
- Plant engineering
- Automation technology
- Used in areas where cables and wires could be damaged by welding sparks and hot chips
- Robotics industry

Product Make-up

- PVC-insulated steel spring wire
- Soft PVC outer sheath
- Galvanised steel wire braiding

Note

- PU = 10m (on request)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001177
ETIM 5.0/6.0 Class-Description: Protective plastic hose

Material
insulated spring steel wire with Soft PVC and galvanized steel braid

Temperature range
-25°C to +90°C

Article number	Nominal size	ID x OD (mm)	Bending radius (mm)	Suitable for SILVYN® MSK-M	Suitable for SILVYN® US-M	Suitable for SILVYN® US	PU ring (m)
SILVYN® FPS-EDU							
61802330	14	9 × 14	16	16 × 1,5	16 × 1,5	9	50
61802331	17	12 × 17	19	20 × 1,5	20 × 1,5	11	50
61802332	19	14 × 19	22	–	–	13,5	50
61802333	21	15 × 21	24	25 × 1,5	20 × 1,5	16	50
61802334	27	20 × 27	30	32 × 1,5	25 × 1,5	21	50
61802335	36	28 × 36	40	40 × 1,5	32 × 1,5	29	25
61802336	45	37 × 45	48	50 × 1,5	40 × 1,5	36	25
61802337	56	48 × 56	60	63 × 1,5	50 × 1,5	48	25

Photographs and graphics are not to scale and do not represent detailed images of the respective products.

SILVYN® FD-PU

Benefits

- Dimensionally stable
- Highly flexible at cold temperatures
- Crushable and extendable
- High resistance to oil, petrol, acids and greases
- Liquidtight

Application range

- For indoor and outdoor use
- Mechanical engineering
- In drag chains (SILVYN® CHAIN)
- Robot-building
- Moving applications

Product features

- Halogen and cadmium-free
- Abrasion and microbe-resistant
- Fire behaviour of outer sheath according to UL 94V-2

Product Make-up

- PVC-insulated steel spring wire
- PUR outer sheath

Note

- PU = 50 m (on request)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001177
ETIM 5.0/6.0 Class-Description: Protective plastic hose

Certifications
IEC EN 61386-23

Colour delivered
Metallic blue

Material
PUR with PVC-insulated spring steel wire
Fire behaviour according to UL94 V-2

Temperature range
-40°C to +80°C

Article number	Nominal size	ID x OD (mm)	Bending radius (mm)	Suitable for SILVYN® USK-M/US-M	Suitable for SILVYN® LKI-M/MSK-M	Suitable for SILVYN® USK/US/LKI/EE-K	PU ring (m)
SILVYN® FD-PU							
64453660	10	7 × 10	8	10 × 1	12 × 1,5	7	10
64453670	14	10 × 14	10	12 × 1,5	16 × 1,5	9	10
64453680	17	12.7 × 17	13	16 × 1,5	20 × 1,5	11	10
64453690	19	14.7 × 19	15	–	–	13,5	10
64453700	21	16 × 21	17	20 × 1,5	25 × 1,5	16	10
64453710	27	21.6 × 27	20	25 × 1,5	32 × 1,5	21	10
64453720	36	29 × 36	25	32 × 1,5	40 × 1,5	29	10
64453730	45	38 × 45	36	40 × 1,5	50 × 1,5	36	10
64453750	56	48 × 56	40	50 × 1,5	63 × 1,5	48	10

Photographs and graphics are not to scale and do not represent detailed images of the respective products.

PUN

Highly flexible plastic tubing for pneumatic use in cable chains

Benefits

- Very high flexibility
- Standard Outer Diameter (calibrated)
- Smooth inner and outer surface
- Diversity of variants

Application range

- For use with operating medium such as Compressed air and Vacuum
- In drag chains (SILVYN® CHAIN)

Product features

- Operating medium Compressed air in accordance with ISO 8573-1:2010[7:-:-]
- Temperature dependent operating pressure from -0,95 to +10 bar

Technical data

On request
Other sizes, lengths and colours are available upon request

Material
TPE-U (Polyurethane)
Fire behaviour according to UL 94 HB

Temperature range
-35 °C to +60 °C

Article number	ID x OD (mm)	Bending radius (mm)	Colour	PU
PUN				
61713200	2.1 × 3	9	blue	50
61713203	2.6 × 4	11	blue	50
61713206	4 × 6	16	blue	50
61713224	5.7 × 8	24	blue	50
61713212	7 × 10	28	blue	50
61713215	8 × 12	33	blue	50
61713218	9.8 × 14	45	blue	50
61713221	11 × 16	45	blue	50
61713202	2.1 × 3	9	black	50
61713205	2.6 × 4	11	black	50
61713208	4 × 6	16	black	50
61713226	5.7 × 8	24	black	50
61713214	7 × 10	28	black	50
61713217	8 × 12	33	black	50
61713220	9.8 × 14	45	black	50
61713223	11 × 16	45	black	50
61713201	2.1 × 3	9	silver	50
61713204	2.6 × 4	11	silver	50
61713207	4 × 6	16	silver	50
61713225	5.7 × 8	24	silver	50
61713213	7 × 10	28	silver	50
61713216	8 × 12	33	silver	50
61713219	9.8 × 14	45	silver	50
61713222	11 × 16	45	silver	50

* Trade product, no Lapp product
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SILVYN® RILL PA 12

Info

- Designed for continous movement

Benefits

- Dimensionally stable
- Highly flexible at cold temperatures
- Flame-retardant and self-extinguishing according to UL 94V-2
- Crush-resistant
- Highly flexible

Application range

- Mechanical engineering
- In drag chains (SILVYN® CHAIN)
- Building Automation
- Robot-building
- Outdoor application (in black)

Product features

- Halogen and cadmium-free
- Abrasion-resistant
- High resistance to oil, petrol, acids and other chemicals

Norm references / Approvals

- UL FILENUMBER E308201

Product Make-up

- Fine-profile corrugated polyamide 12 conduit

Note

- UV and weather-resistant in black

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001175
ETIM 5.0/6.0 Class-Description:
Corrugated plastic hose

Certifications
IEC EN 61386-23
UL File No. E308201
DNV, Lloyd's Register
EN 45545-2 (HL-3)

Colour delivered
Grey (RAL 7031)
Black (RAL 9011), UV-resistant

Material
PA 12
Silicone-free
Halogen-free
Fire behaviour according to UL 94V-2

Temperature range
-50°C bis +100°C
short-term +150°C

Article number	Nominal size	ID x OD (mm)	Bending radius (mm)	Suitable for SILVYN® KLICK-M/90°M	Suitable for SILVYN® KLICK PG/90°PG	Suitable for SILVYN® KLICK-GPZ-M/GPZ	PU (m)
SILVYN® RILL PA 12 grey							
61815100	10	6.5 × 10	13	10 × 1,5	7/-	12 × 1,5/7	50
61815110	13	10 × 13	15	12 × 1,5/16 × 1,5	9	16 × 1,5/9	50
61815120	16	12 × 15.8	22	16 × 1,5/20 × 1,5	11	20 × 1,5/11	50
61815180	18	14.3 × 18.5	27	–	13,5	-/13,5	50
61815130	21	16.5 × 21.2	35	20 × 1,5	16	25 × 1,5/16	50
61815140	28	23 × 28.5	45	25 × 1,5	21	32 × 1,5/21	50
61815150	34	29 × 34.5	50	32 × 1,5	29	40 × 1,5/29	25
61815160	42	36 × 42.5	80	40 × 1,5	36	50 × 1,5/36	25
61815170	54	48 × 54.5	100	50 × 1,5	48	63 × 1,5/48	25
SILVYN® RILL PA 12 black							
61815105	10	6.5 × 10	13	10 × 1,5	7/-	12 × 1,5/7	50
61815115	13	10 × 13	15	12 × 1,5/16 × 1,5	9	16 × 1,5/9	50
61815125	16	12 × 15.8	22	16 × 1,5/20 × 1,5	11	20 × 1,5/11	50
61815185	18	14.3 × 18.5	27	–	13,5	-/13,5	50
61815135	21	16.5 × 21.2	35	20 × 1,5	16	25 × 1,5/16	50
61815145	28	23 × 28.5	45	25 × 1,5	21	32 × 1,5/21	50
61815155	34	29 × 34.5	50	32 × 1,5	29	40 × 1,5/29	25
61815165	42	36 × 42.5	80	40 × 1,5	36	50 × 1,5/36	25
61815175	54	48 × 54.5	100	50 × 1,5	48	63 × 1,5/48	25

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SILVYN® UI 511

Info

- Double-interlocked Agraff profile
- For the most demanding mechanical requirements

Benefits

- Torsion-resistant and very flexible
- Corrosion-resistant
- For high mechanical stress
- Suitable for outdoor use and direct burial
- High-tensile

Application range

- Offshore applications
- Measuring technology
- Plant engineering
- Steel industry
- Applications with the highest mechanical stresses

Product features

- Stainless steel AISI 304

Product Make-up

- Spirally-wound stainless steel protective conduit with interlocked profile (AGRAFF)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001179
ETIM 5.0/6.0 Class-Description: Protective metallic hose

Note
Size 2" not stocked!

Material
Stainless steel AISI 304
DW no. 1.4301

Protection rating
IP40

Temperature range
-100 °C to +600 °C

Article number	Nominal size	ID x OD (mm)	Static/dynamic bending radius (in mm)	PU (m)
SILVYN® UI 511				
61799815	5/16”	9.5 × 12.5	50/60	30
61799816	3/8”	13 × 16	65/80	30
61799817	1/2”	17 × 21	75/100	30
61799818	3/4”	22 × 26	90/125	30
61799819	1”	26 × 30	120/160	30
61799820	1 1/4”	34 × 39	175/220	30
61799831	1 1/2”	40.3 × 44.4	230/280	15
61799822	2”	51.6 × 55.7	285/340	15

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Usage criteria	Cable designation																														
Page	107	108	109	111	112	113	115	116	117		118	119	131	132	133	134	142	140	141	120	121	122	123	124	125	127	128	139	143	135	136	137	138	129	130
	ÖLFLEX® SERVO FD 781 CY	ÖLFLEX® SERVO FD 796 P	ÖLFLEX® SERVO FD 796 CP	ÖLFLEX® SERVO FD 798 CP	ÖLFLEX® SERVO FD 7DSL	SERVO cable acc. to SIEMENS® standard 6FX 8PLUS-	SERVO cable acc. to INDRAMAT® standard INK	SERVO cable acc. to LENZE® standard	Special Encoder & Resolver cables	ÖLFLEX® CHAIN 808 P	ÖLFLEX® CHAIN 808 CP	ÖLFLEX® CLASSIC FD 810	ÖLFLEX® CLASSIC FD 810 CY	ÖLFLEX® CLASSIC FD 810 P	ÖLFLEX® CLASSIC FD 810 CP	ÖLFLEX® ROBUST FD C	ÖLFLEX® PETRO FD 865 CP	ÖLFLEX® FD 855 P	ÖLFLEX® FD 855 CP	ÖLFLEX® CHAIN 809 SC	ÖLFLEX® CHAIN 809 SC CY	ÖLFLEX® FD 90	ÖLFLEX® FD 90 CY	ÖLFLEX® CHAIN 809	ÖLFLEX® CHAIN 809 CY	ÖLFLEX® FD 891	ÖLFLEX® FD 891 CY	ÖLFLEX® FD 891 P	ÖLFLEX® CHAIN 896 P	ÖLFLEX® CHAIN 90 P	ÖLFLEX® CHAIN 90 CP	ÖLFLEX® CHAIN 819 P	ÖLFLEX® CHAIN 819 CP	ÖLFLEX® CHAIN TM	ÖLFLEX® CHAIN TM CY
Use																																			
For industrial mach. acc. to EN 60204 Part 1/VDE 0113	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
For servo drives powered by frequency converters	✔	✔	✔	✔	✔	✔	✔	✔	✔			✔		✔	✔	✔	✔		✔		✔		✔				✔	✔	✔	✔	✔				
For servo drives, low capacitance	✔		✔	✔	✔	✔		✔	✔						✔	✔	✔	✔	✔											✔	✔				
For encoders, feedback systems, sensors		✔			✔	✔	✔	✔	✔								✔	✔	✔																
For free-arm robots/torsional load																																			
For outdoor application, flexing		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔						✔	✔	✔	✔	✔	✔	✔	✔
For fieldbus systems																																			
For video transmission: RGB signal transmission																																			
For North America with UL + CSA approval		✔	✔	✔	✔		✔	✔	✔									✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
For use in oily environments, enhanced oil resistance	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		✔	✔	✔	✔	✔	✔	✔		✔	✔	✔			✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
For use in areas with drilling fluids acc. to NEK 606																	✔																		
For use in areas with bio-oils															✔	✔																			
For torsion in wind turbine generators (see catalogue page)																				✔				✔	✔					✔		✔		✔	
Temperature range																																			
+105 °C															□	□																			
+90 °C					□				□													□	□			□	□				□	□	□	□
+80 °C	▲		□				▲	□		▲	▲	▲	▲	▲			□	□	□					▲	▲			●	□	□	□			
+70 °C	●	□		□			●	●		●	●	●	●	●						□	□			●	●									
+60 °C						□																													
+5 °C												●	●											●	●									
-5 °C	●							●		●	●			●	●					●	●	●	●			●	●	●				●	●		
-10 °C																																			
-20 °C						●		□							●																			●	●
-30 °C							●		●																					●	●				
-40 °C	▲	●	●	●	●					▲	▲	▲	▲	▲	▲	●	●	●	●	▲	▲	▲	▲	▲	▲	▲	▲	●		▲	▲	▲	▲	▲
-50 °C		▲	▲	▲	▲	▲	▲		▲						▲	▲	▲	▲	▲									▲	▲	▲					
Minimum bending radius*																																			
5 x D																		✔																	
6.5 x D																																			
7.5 x D	✔	✔	✔	✔	✔	✔					✔	✔	✔	✔	✔	✔	✔		✔			✔	✔			✔	✔	✔	✔	✔	✔	✔	✔	✔	
10 x D			✔				✔	✔	✔	✔	✔									✔	✔			✔	✔										✔
12.5 x D																																			
15 x D																																			
Installation																																			
For chains with low radii	✔	✔	✔	✔	✔	✔	✔	✔	✔		✔	✔	✔	✔	✔	✔	✔	✔	✔			✔	✔			✔	✔	✔	✔	✔	✔	✔	✔	✔	
For chains with minimal space	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
For lower power/weight ratio in chain	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
For 24-hour operation with high cycle numbers	✔	✔	✔	✔	✔	✔	✔	✔	✔		✔	✔	✔	✔	✔	✔	✔	✔	✔			✔	✔			✔	✔	✔	✔	✔	✔			✔	✔
For high acceleration > 10 m/s²	✔	✔	✔	✔	✔	✔	✔	✔	✔		✔	✔	✔	✔	✔	✔	✔	✔	✔			✔	✔			✔	✔	✔	✔	✔	✔			✔	✔
For very high acceleration up to 50 m/s²		✔	✔	✔	✔	✔									✔	✔	✔	✔	✔										✔	✔	✔				
Nominal voltage																																			
350 Vss						✔	✔	✔	✔																										
30/300 V AC									✔																										
300/500 V AC										✔	✔	✔	✔	✔	✔	✔	✔	✔	✔					✔	✔	✔	✔	✔				✔	✔	✔	✔
600/1000 V AC	✔		✔	✔	✔	✔	✔	✔												✔	✔	✔	✔						✔	✔	✔				
600 V acc. to UL/CSA			✔	✔		✔	✔	✔												✔	✔	✔	✔			✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Design																																			
Fine wire, VDE class 5, stranded copper conductor								✔	✔	✔	✔									✔	✔			✔	✔							✔	✔		
Extra-fine wire, VDE class 6, stranded copper conductor	✔	✔	✔	✔	✔		✔	✔	✔		✔	✔	✔	✔	✔	✔	✔	✔	✔			✔	✔			✔	✔	✔	✔	✔	✔	✔		✔	✔
Ultra-fine wire, VDE class 6, stranded copper conductor																																			
PVC/special PVC core insulation										✔	✔	✔	✔	✔	✔							✔		✔	✔	✔	✔	✔			✔	✔	✔	✔
Elastomer core insulation																																			
PE/cellular PE/cellular PE foam skin core insulation								✔																											
Polyethylene/polypropylene core insulation	✔	✔	✔	✔	✔	✔	✔																					✔							
TPE core insulation							✔	✔	✔								✔	✔	✔											✔	✔				
Special TPE (P4/11) core insulation															✔	✔																			
Halogen-free core insulation																																			
Number printing	✔	✔	✔	✔	✔		✔	✔		✔	✔	✔	✔	✔	✔	✔		✔	✔					✔	✔	✔	✔	✔	✔		✔	✔	✔	✔
VDE colour code																	✔																		
DIN 47100 colour code/special colour code		✔				✔	✔	✔	✔											✔	✔		✔							✔	✔				
Pair screening PiCY/PiMF/STP		✔	✔	✔	✔	✔	✔	✔	✔																										
Overall screening	✔	✔	✔		✔	✔	✔	✔	✔		✔		✔		✔		✔		✔		✔				✔		✔				✔		✔		✔
Special PVC sheath	✔							✔				✔	✔							✔	✔	✔	✔			✔	✔							✔	✔
PUR sheath, abrasion-resistant, cut-resistant		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			✔	✔			✔	✔	✔									✔	✔	✔	✔	✔	✔	
Rubber sheath																																			
Special TPE (P4/11) sheath, bio-oil-resistant															✔	✔																			
Halogen-free sheath																																			

✔ Main application/design
✓ Possible application

● Flexible use
□ Fixed and flexible use
▲ Fixed installation

*for continuous flexing

Usage criteria	Cable designation																												
Page	144	145	146	169	171	305	306	310	311	312	329	329	381	327	343		385	325	421	422	435	425	444	445	436	445	444	449	481 483	484	494	494	501
	ÖLFLEX® ROBOT 900 P	ÖLFLEX® ROBOT 900 DP	ÖLFLEX® ROBOT F1	ÖLFLEX® CRANE NSHTÖU	ÖLFLEX® CRANE PUR	UNITRONIC® FD	UNITRONIC® FD CY	UNITRONIC® FD P plus	UNITRONIC® FD CP plus	UNITRONIC® FD CP (TP) plus	UNITRONIC® BUS ASI FD (TPE) A	UNITRONIC® BUS ASI FD P FRNC	UNITRONIC® BUS IBS FD P	UNITRONIC® BUS LD FD P	UNITRONIC® BUS PB FD P A	UNITRONIC® BUS DN FD P	UNITRONIC® SENSOR FD	KOAXIAL-KABEL RGB	ETHERLINE® Cat.5 FD + BK	ETHERLINE® EC FD Cat.5e	ETHERLINE® PN Cat.5 FD	ETHERLINE® Cat.6 FD	ETHERLINE® FD Cat.6$_A$	ETHERLINE® TORSION Y Cat.6$_A$	ETHERLINE® TORSION Cat.5	ETHERLINE® TORSION P Cat.6$_A$	ETHERLINE® FD P Cat.6$_A$	ETHERLINE® TORSION Cat.7	HITRONIC® POF SIMPLEX/DUPLEX FD PE-PUR	HITRONIC® POF DUPLEX FD PNC PA-PUR	HITRONIC® PCF DUPLEX FD PNC PVC-PUR	HITRONIC® PCF DUPLEX FD PNC PVC-PVC	HITRONIC® GOF HRM-FD
Use																																	
For industrial mach. acc. to EN 60204 Part 1/VDE 0113	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
For servo drives powered by frequency converters	✓		✓															✔															
For servo drives, low capacitance																																	
For encoders, feedback systems, sensors	✔	✔	✔			✓	✔	✓	✔	✔			✔	✔	✔		✔		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
For free-arm robots/torsional load	✔	✔	✔																						✔	✔	✔	✔		✔	✔	✔	✔
For outdoor application, flexing	✔	✔	✔	✔	✔			✔	✔	✔			✔	✔				✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔					
For fieldbus systems/Ethernet application	✓	✓	✓						✓	✔	✔	✔	✔	✔	✔	✔			✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✓	✔	✔	✔	
For video transmission: RGB signal transmission																		✔											✓				
For North America with UL + CSA approval			✔					✔	✔	✔	✔	✔	✔		✔	✔				✔	✔	✔	✔	✔	✔	✔	✔	✔					
For use in oily environments, enhanced oil resistance	✔	✔	✔	✔	✔			✔	✔	✔	✔	✔	✔	✔	✔	✔	✔												✔	✔	✔	✔	✔
For use in areas with bio-oils																																	
For torsion in wind turbine generators (see catalogue page)	✔	✔	✔						✔	✔					✔										✔								
Temperature range																																	
+105 °C											●																						
+90 °C																																	
+80 °C	▲	▲		□	□	▲	▲	□	□	□		▲	▲	▲	□	▲	●	□	▲	▲		□	▲	▲	□	▲	▲	▲					
+75 °C (CMX)									▲	▲																							
+70 °C	●	●				●	●					●	●	●	●			●	●		▲		●	●		●	●	●	●	●	●	●	
+60 °C																					●												●
+50 °C																				●													
+5 °C																																	
-5 °C						●	●									●		●															
-10 °C																	●	▲					●	●									
-20 °C				●											▲						●								●	●	●	●	●
-30 °C											●	●	●	●	●				●	●	▲	●				●	●	●					
-40 °C	●	●	●	▲	□	▲	▲	□	□	□	▲	▲	▲	▲	▲		▲		▲	▲		▲	▲	▲	□	▲	▲	▲					
-50 °C	▲	▲	▲																														
Minimum bending radius*																																	
5 x D				✔		✔		✔										✔				✓			✔								
6.5 x D				✔							✔	✔																					
7.5 x D					✔		✔		✔	✔					✔							✓											
8 x D																					✔												
10 x D			✔												✔														✔	✔	✔	✔	
12.5 x D																																	
15 x D	✔	✔	✔										✔	✔	✔	✔			✔	✔			✔	✔		✔	✔	✔					✔
Installation																																	
For chains with low radii					✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		✔	✔	✔	✔	✔							✔	✔	✔	✔	✔
For chains with minimal space	✔	✔	✔		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		✔	✔	✔	✔	✔	✔				✔		✔	✔	✔	✔	✔
For lower power/weight ratio in chain	✔	✔	✔		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		✔											✔	✔	✔	✔	✔
For 24-hour operation with high cycle numbers	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		✔											✔	✔	✔	✔	✔
For high acceleration > 10 m/s²	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		✔															
For very high acceleration up to 50 m/s²																																	
For travel speeds up to 5 m/s, travel lengths up to 10 m	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		✔	✔	✔	✔	✔	✔				✔		✓	✔	✔	✔	✔
For travel speeds up to 10 m/s, travel lengths up to 5 m	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		✔	✓										✓	✔	✔	✔	✔
For travel speeds up to 5 m/s, travel lengths up to 100 m				✔	✔			✔	✔	✔	✔	✔	✔	✔	✔	✔		✔															
Nominal voltage																																	
350 Vss	✔	✔																															
30/300 V AC															✔																		
300/500 V AC	✔	✔	✔																														
600/1000 V AC				✔	✔																												
600 V acc. to UL/CSA			✔																														
1000 V acc. to UL/CSA (internal wiring)								✔	✔	✔									✔						✔	✔	✔	✔					
Design																																	
Fine wire, VDE class 5, stranded copper conductor	✔	✔	✔	✔														✔			✔												
Extra-fine wire, VDE class 6, stranded copper conductor	✔	✔	✔		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			✔	✔		✔	✔										
Ultra-fine wire, VDE class 6, stranded copper conductor																																	
PVC/special PVC core insulation						✔	✔																								✔	✔	
Elastomer core insulation																													✔	✔			
PE/cellular PE/cellular PE foam skin core insulation															✔	✔		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔					
Polyethylene/polypropylene core insulation								✔	✔	✔		✔					✔																
TPE core insulation	✔	✔	✔		✔						✔		✔	✔																			
Special TPE (P4/11) core insulation																																	
Halogen-free core insulation			✔		✔			✔	✔	✔									✔	✔	✔	✔	✔	✔	✔	✔	✔		✔				
Number printing	✔	✔		✔	✔																												
VDE colour code				✔	✔																												
DIN 47100 colour code/special colour code		✔	✔			✔	✔	✔	✔	✔			✔	✔	✔	✔		✔															
Pair screening PiCY/PiMF/STP																✔							✔	✔		✔	✔	✔					
Overall screening		✔	✓				✔		✔	✔			✔	✔	✔	✔			✔	✔	✔	✔	✔	✔	✔	✔	✔	✔					
Special PVC sheath						✔	✔																✔	✔							✔		
PUR sheath, abrasion-resistant, cut-resistant	✔	✔	✔		✔			✔	✔	✔		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			✔	✔	✔	✔	✔	✔	✔	✔	✔
Rubber sheath				✔																													
Special TPE (P4/11) sheath, bio-oil-resistant																																	
Halogen-free sheath					✔							✔					✔			✔	✔	✔			✔	✔	✔	✔	✔	✔	✔		✔

✔ Main application/design
✓ Possible application

● Flexible use
□ Fixed and flexible use
▲ Fixed installation

*for continuous flexing

A2-1 Selection tables

LAPP

Cables for use in power chains – Bending cycles and operation parameters

Performance	Travel	Acceleration	Speed		Temperature range		Bending cycles at minimum bending radius/travel distance (factor x cable diameter)								
Class/Line	up to m	up to m/s²	Unsupported up to m/s	Sliding up to m/s	from °C	to °C	2 Mio.	3 Mio.		5 Mio.		7 Mio.		10 Mio.	
							< 10 m	< 10 m	> 10 m	< 10 m	> 10 m	< 10 m	> 10 m	< 10 m	> 10 m
Cable product															
ÖLFLEX® CHAIN 809 SC	Basic	10	5	3	3	0	≤ 15	12	14,5						
						> 15	≤ 50	10	12						
						> 50	70	12	14,5						
ÖLFLEX® CHAIN 809 SC CY	Basic	10	5	3	3	0	≤ 15	12	14,5						
						> 15	≤ 50	10	12						
						> 50	70	12	14,5						
ÖLFLEX® CHAIN 809	Basic	10	5	3	3	0	≤ 15	12	14,5						
						> 15	≤ 50	10	12						
						> 50	70	12	14,5						
ÖLFLEX® CHAIN 809 CY	Basic	10	5	3	3	0	≤ 15	12	14,5						
						> 15	≤ 50	10	12						
						> 50	70	12	14,5						
ÖLFLEX® CHAIN 819 P	Basic	10	5	5	3	-5	≤ 15	12,5	15		19,5				
						> 15	≤ 50	10	12		15				
						> 50	70	12	14,5		19				
ÖLFLEX® CHAIN 819 CP	Basic	10	5	5	3	-5	≤ 15	12,5	15		19,5				
						> 15	≤ 50	10	12		15				
						> 50	70	12	14,5		19				
ÖLFLEX® FD 90	Core	20	20	10	5	-5	≤ 15		9,5	12	10,5	13	13	16,5	
						> 15	≤ 50		7,5	9,5	8,5	10,5	10	12,5	
						> 50	70		9	11,5	10	12,5	12,5	15,5	
ÖLFLEX® FD 90 CY	Core	20	20	10	5	-5	≤ 15		9,5	12	10,5	13	13	16,5	
						> 15	≤ 50		7,5	9,5	8,5	10,5	10	12,5	
						> 50	70		9	11,5	10	12,5	12,5	15,5	
ÖLFLEX® CLASSIC FD 810	Core	20	20	10	5	0	≤ 15		9	11,5	10	12,5	12,5	15,5	
						> 15	≤ 50		7,5	9,5	8,5	10,5	10	12,5	
						> 50	70		9	11,5	10	12,5	12,5	15,5	
ÖLFLEX® CLASSIC FD 810 CY	Core	20	20	10	5	0	≤ 15		9	11,5	10	12,5	12,5	15,5	
						> 15	≤ 50		7,5	9,5	8,5	10,5	10	12,5	
						> 50	70		9	11,5	10	12,5	12,5	15,5	
ÖLFLEX® FD 891	Core	20	20	10	5	-5	≤ 15		9,5	12	10,5	13	13	16,5	
						> 15	≤ 50		7,5	9,5	8,5	10,5	10	12,5	
						> 50	70		9	11,5	10	12,5	12,5	15,5	
ÖLFLEX® FD 891 CY	Core	20	20	10	5	-5	≤ 15		9,5	12	10,5	13	13	16,5	
						> 15	≤ 50		7,5	9,5	8,5	10,5	10	12,5	
						> 50	70		9	11,5	10	12,5	12,5	15,5	
ÖLFLEX® CHAIN TM	Core	20	20	10	5	-25	≤ 5		10	12,5	11	13,5	13,5	17	
						> 5	≤ 50		7,5	9,5	8,5	10,5	10	12,5	
						> 50	70		9	11,5	10	12,5	12,5	15,5	
ÖLFLEX® CHAIN TM CY	Core	20	20	10	5	-25	≤ 5		13	16,5	15	19	19	23,5	
						> 5	≤ 50		10	12,5	11,5	14,5	14	17,5	
						> 50	70		12	15	14	17,5	17,5	22	
ÖLFLEX® CLASSIC FD 810 P	Core	50	30	10	5	-5	≤ 15		8,5	11	10	12	12	15	
						> 15	≤ 50		7,5	9,5	8,5	10,5	10	12,5	
						> 50	70		8,5	11	10	12	12	15	
ÖLFLEX® CLASSIC FD 810 CP	Core	50	30	10	5	-5	≤ 15		8,5	11	10	12	12	15	
						> 15	≤ 50		7,5	9,5	8,5	10,5	10	12,5	
						> 50	70		8,5	11	10	12	12	15	
ÖLFLEX® FD 891 P	Core	50	30	10	5	-5	≤ 15		8,5	11	10	12	12	15	
						> 15	≤ 50		7,5	9,5	8,5	10,5	10	12,5	
						> 50	70		8,5	11	10	12	12	15	

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Stated values for travel lengths, acceleration and speed are always meant as maximum values which must not be exhausted in the very same application.
We reserve the right for adjustments and modifications of above mentioned values.

	Performance	Travel	Acceleration	Speed		Temperature range		Bending cycles at minimum bending radius/travel distance (factor x cable diameter)									
	Class/Line	up to m	up to m/s²	Unsupported up to m/s	Sliding up to m/s	from °C	to °C	2 Mio.	3 Mio.		5 Mio.		7 Mio.		10 Mio.	
								< 10 m	< 10 m	> 10 m	< 10 m	> 10 m	< 10 m	> 10 m	< 10 m	> 10 m
Cable product																
ÖLFLEX® CHAIN 90 P	Extended	100	50	10	5	-35	≤-15				9,5	12	11	13,5	13	16
						>-15	≤60				7,5	9,5	8,5	10,5	9,5	12
						>60	80				9	11,5	10,5	13	12,5	15,5
ÖLFLEX® CHAIN 90 CP	Extended	100	50	10	5	-35	≤-15				9,5	12	11	13,5	13	16
						>-15	≤60				7,5	9,5	8,5	10,5	9,5	12
						>60	80				9	11,5	10,5	13	12,5	15,5
ÖLFLEX® FD 855 P	Extended	100	50	10	5	-40	≤-15				6,5	8,5	7,5	9,5	8,5	10,5
						>-15	≤60				5	6,5	5,5	7	6	7,5
						>60	80				6	8	7	9	8	10
ÖLFLEX® FD 855 CP	Extended	100	50	10	5	-40	≤-15				10	12,5	11,5	14	13,5	17
						>-15	≤60				7,5	9,5	8,5	10,5	9,5	12
						>60	80				9	11,5	10,5	13	12,5	15,5
ÖLFLEX® PETRO FD 865 CP	Extended	100	50	10	5	-50	≤-20				10	12,5	11,5	14	13,5	17
						>-20	≤60				7,5	9,5	8,5	10,5	9,5	12
						>60	80				9	11,5	10,5	13	12,5	15,5
ÖLFLEX® CHAIN 896 P ≤ 16 mm²	Extended	100	50	10	5	-40	≤-15				10	12,5	11,5	14	13,5	17
						>-15	≤70				7,5	9,5	8,5	10,5	9,5	12
						>70	90				9,5	12	11	13,5	13	16
ÖLFLEX® CHAIN 896 P ≥ 25 mm²	Extended	100	50	10	5	-40	≤-15				13	16,5	15	19	17	21
						>-15	≤70				10	12,5	11	14	12	15
						>70	90				12,5	15,5	14,5	18	16	20,5
ÖLFLEX® ROBUST FD	Extended	100	80	10	6	-40	≤-15				10	12,5	11,5	14	13,5	17
						>-15	≤50				7,5	9,5	8,5	10,5	9,5	12
						>50	≤70				9	11,5	10,5	13	12,5	15,5
						>70	105				10	12,5	11,5	14,5	15	18,5
ÖLFLEX® ROBUST FD C	Extended	100	80	10	6	-40	≤-15				10	12,5	11,5	14	13,5	17
						>-15	≤50				7,5	9,5	8,5	10,5	9,5	12
						>50	≤70				9	11,5	10,5	13	12,5	15,5
						>70	105				10	12,5	11,5	14,5	15	18,5
ÖLFLEX® SERVO FD 781 CY ≤ 16 mm²	Core	20	20	10	5	-5	≤ 15		9,5	12	11	13,5	13,5	17		
						> 15	≤50		7,5	9,5	8,5	10,5	10	12,5		
						>50	70		9	11,5	10,5	13	13	16,5		
ÖLFLEX® SERVO FD 781 CY ≥ 25 mm²	Core	20	20	10	5	-5	≤ 15		10	12,5	11,5	15	15	19		
						> 15	≤50		7,5	9,5	9	11,5	11	14		
						>50	70		9,5	12	11,5	14,5	14,5	18		
ÖLFLEX® SERVO FD 796 P	Extended	100	50	10	5	-40	≤-15				10	13	11,5	15	13,5	17,5
						>-15	≤70				7,5	10	8,5	11	9,5	12,5
						>70	90				9,5	12,5	11	14,5	13	17
ÖLFLEX® SERVO FD 796 CP ≤ 16 mm²	Extended	100	50	10	5	-40	≤-15				10	13	11,5	15	13,5	17,5
						>-15	≤70				7,5	10	8,5	11	9,5	12,5
						>70	90				9,5	12,5	11	14,5	13	17
ÖLFLEX® SERVO FD 796 CP ≥ 25 mm²	Extended	100	50	10	5	-40	≤-15				13	17	15	19,5	17	21,5
						>-15	≤70				10	13	11	14,5	12	15,5
						>70	90				12,5	16,5	14,5	19	16	21
ÖLFLEX® SERVO FD 798 CP	Extended	100	50	10	5	-40	≤-15				9,5	12,5	10,5	14	13	17
						>-15	≤70				7,5	10	8,5	11	9,5	12,5
						>70	90				9	12	10	13	12,5	16,5
ÖLFLEX® SERVO FD 7DSL	Extended	20	50	10	5	-40	≤-15				10	13	11,5	15	13,5	17,5
						>-15	≤70				7,5	10	8,5	11	9,5	12,5
						>70	90				9,5	12,5	11	14,5	13	17

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LAPP

LAPP HUNGÁRIA Kft.
2040 Budaörs, Neumann János u. 1
Tel. +36 23 501 250 , Fax +36 501 259
sales@lapphungaria.hu . www.lapphungaria.hu