ÖLFLEX® CONNECT CHAIN

Cable Chain Systems made by Lapp



LAPP GROUP

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 the Lapp Group. 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
- 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
- Torsion-resistant
- Torsion load
- UV-resistant
- Waterproof
- Variety of approval certifications

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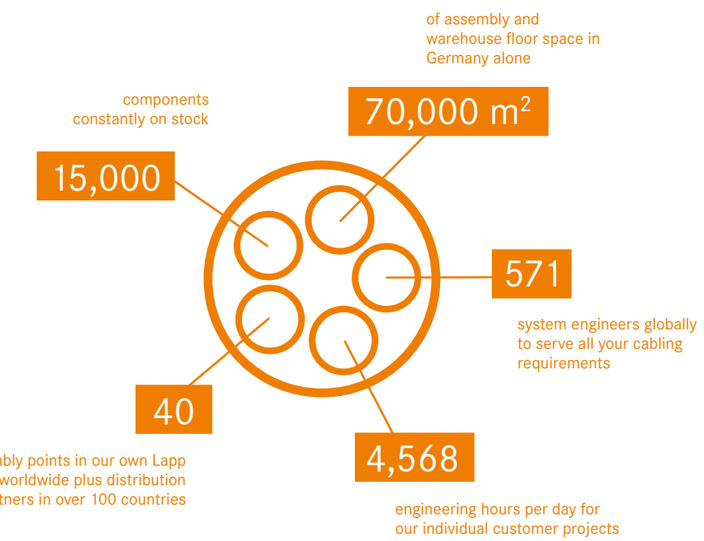


Technical table 366

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.





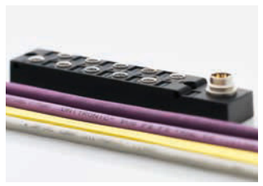
When eight high-quality brands become one strong solution: **ÖLFLEX® CONNECT.**

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



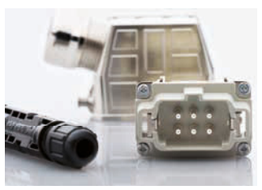
UNITRONIC®
Data communication systems



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, the Lapp Group 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



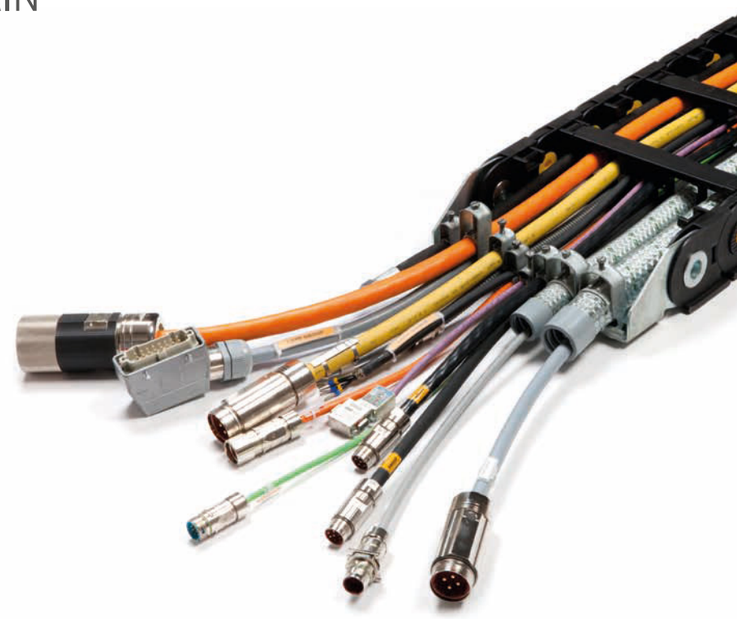
ÖLFLEX® CONNECT CHAIN

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:

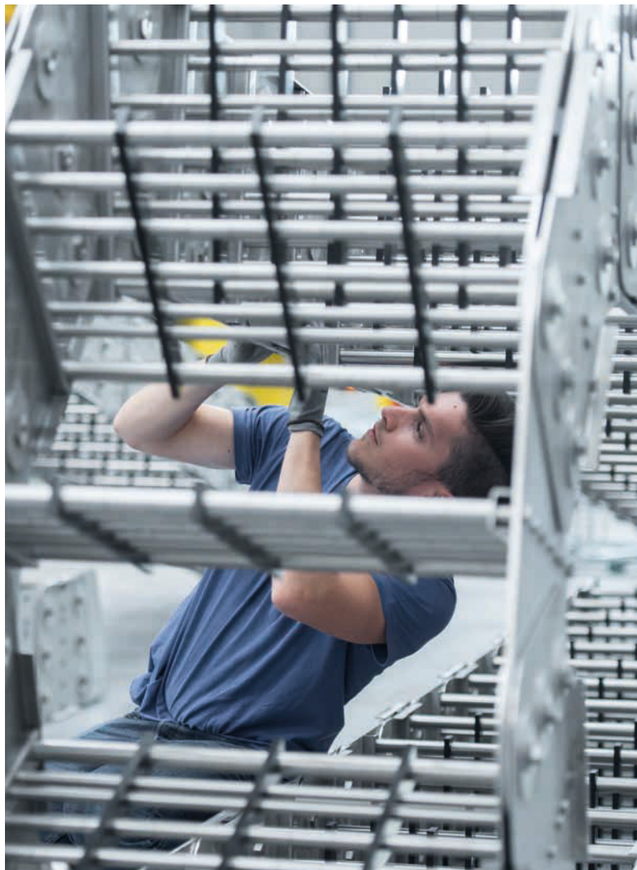
1 **Technical evaluation**
- On-the-spot meeting
- Definition of project scope
- One contact person during project phase
- Planning and timing

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





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, SIEMENS®)
- Improved quality through semi-automated assembly process
- Tamper proof (connector cannot be opened)
- Complete Lapp solution incl. new controller connector





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.

Glass-fibre assemblies

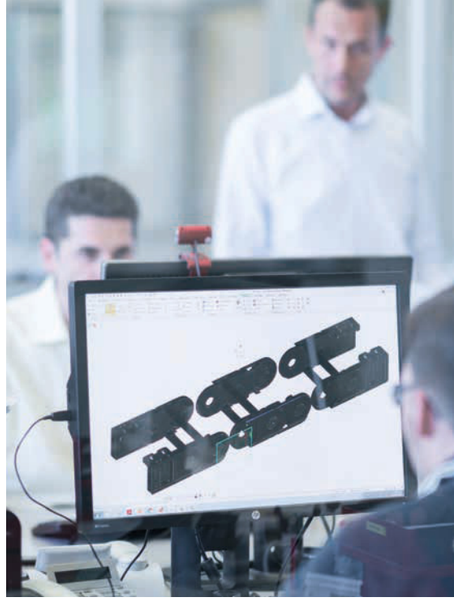
Did you know - you can also rely on us for sophisticated glass fibre assemblies. We offer glass fibre harnessings from standard lengths available in stock and manufacture, test and deliver special lengths assembled to your needs. We can even design and incorporate them into your cable chain system.

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.

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.



CAD-design of cable chain 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!



There for you worldwide

To contact your local Lapp Group 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



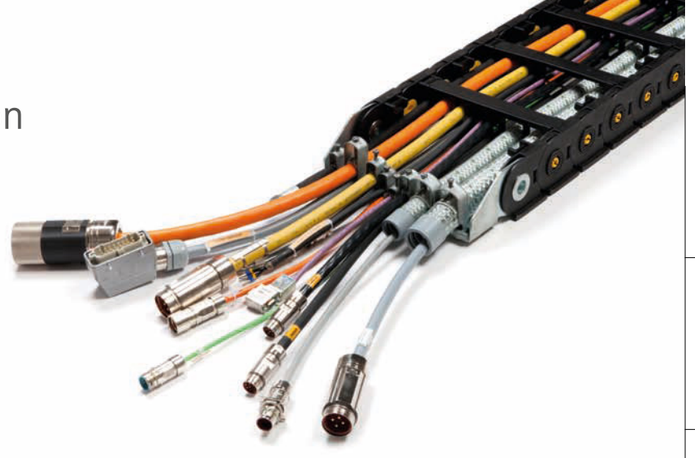
Engineering Guide
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Section 1
Introduction

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.

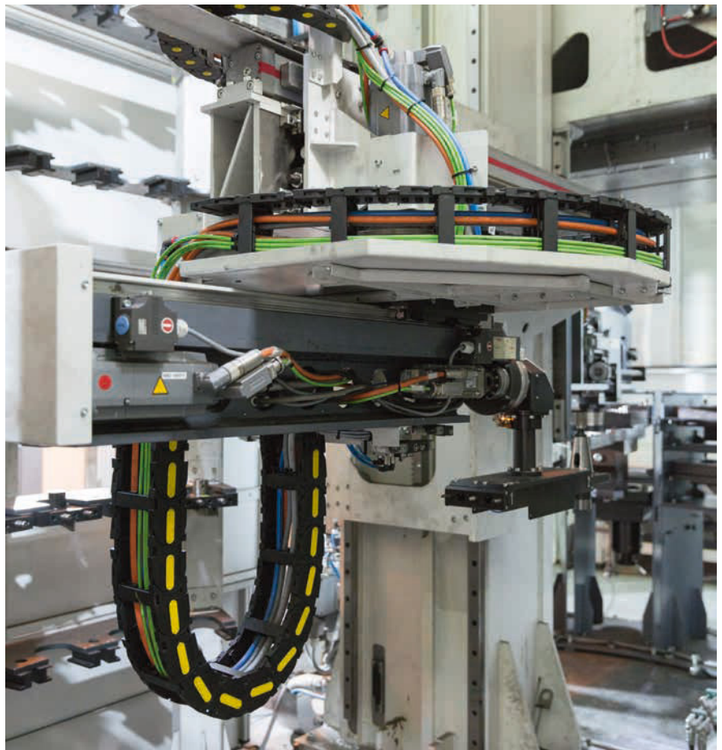
cable chain
also referred to as
"drag chain"
"cable track"
"cable carrier"
"energy chain"

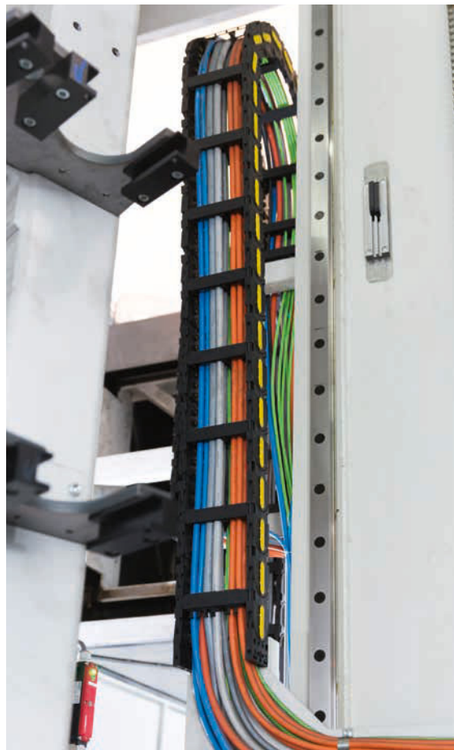
Advantages of cable chains
Competitive advantages of the cable chains as compared to the traditional systems of conductor bars and festoon systems are:

- 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





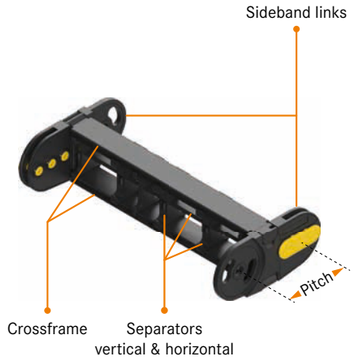
Elements of a cable chain system

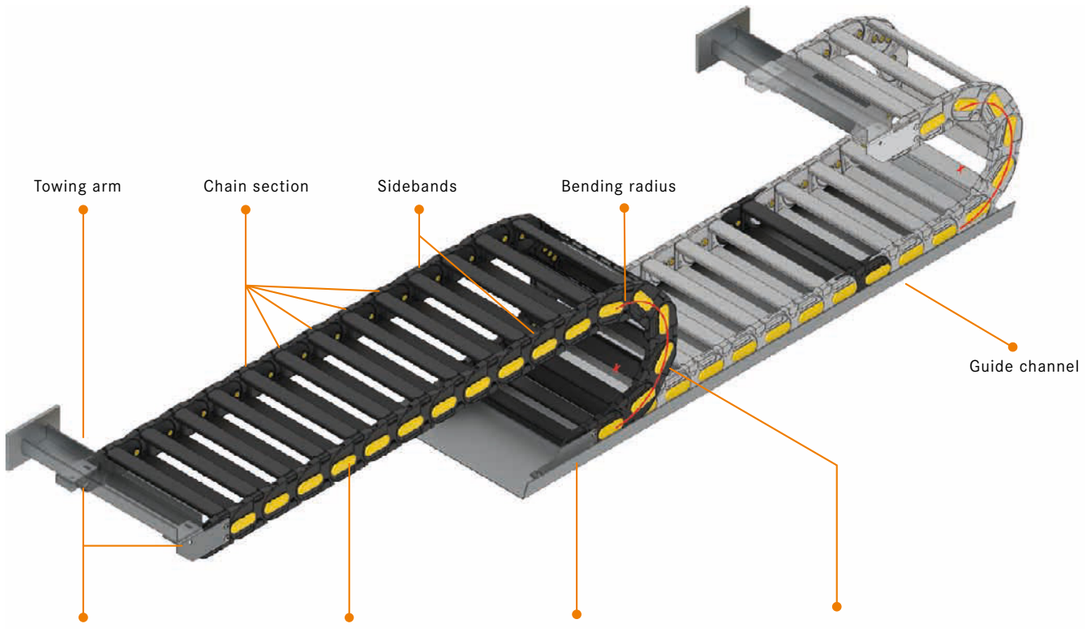
A cable chain is an assembly of interconnected chain links terminated by end brackets on both sides. A wide range of accessories such as support rollers, guiding channels, etc. extends the possibilities of cable chain use.

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

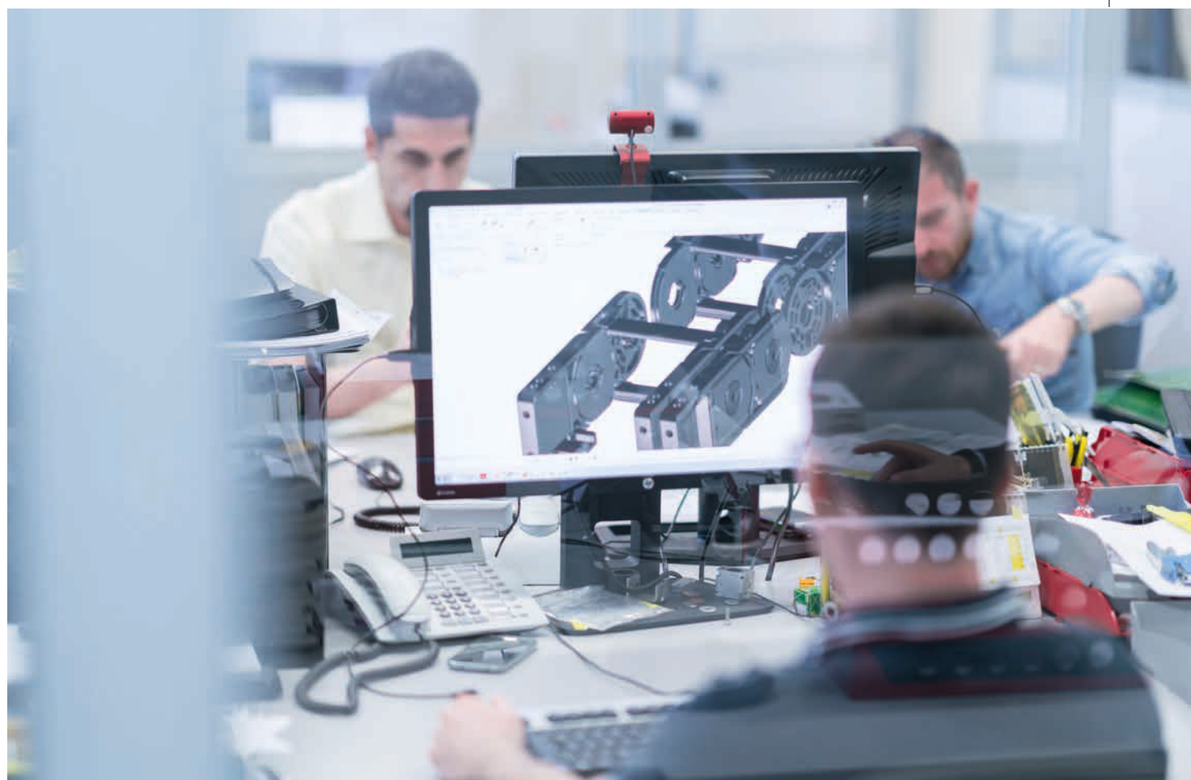
Separators

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.

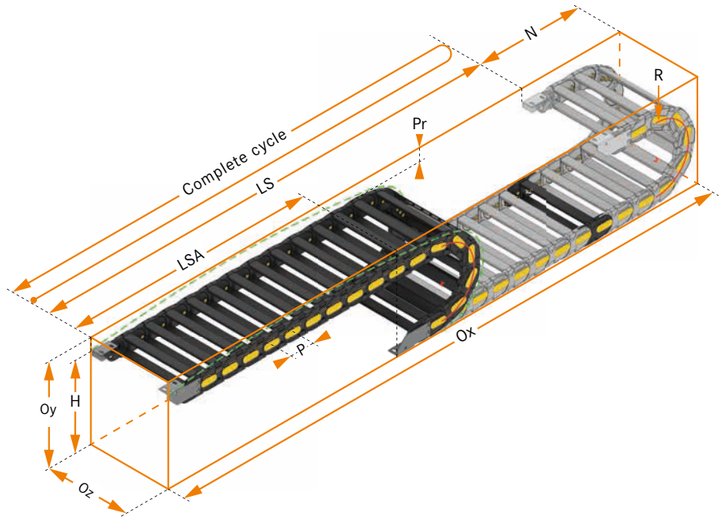


Different end bracket type examples
For further details see section “End brackets” on page 33.

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.

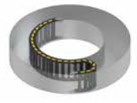
		BRYLON 6		STEEL
Chemical agents	**Concentration %**	**Amorphous**	**Crystal**	
Methyl acetate	100	+++++ 3	+++++ 2	+++++
Acetone	100	+++++ 4	+++++	+++++
Acetic acid (aqueous solution)	40	++	++	++
Acetic acid (aqueous solution)	10	++	++	++
Acetic acid		++	++	
Citric acid	10	+++ 15	++++	+++
Hydrochloric 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	Side mounted	Vertical
Single chain configuration	Upper moving  Lower moving 	Sliding 	Cable chain side mounted 	Vertical with lower radius  Vertical with curve above  Zig zag 
Multiple chains configuration	Side by side  Ring configuration  Nested cable chains configuration 	Two sliding cable chains in ring configuration 	Two cable chains in ring configuration side mounted 	Vertical two cable chains in ring configuration  Vertical nested cable chains  Vertical side by side 
Multi-axis motion	Upper moving 		Cable chain side mounted 	Radius below  Radius above 
Rotations single chain	Robot series 		Single cable chain side mounted  Single cable chain side mounted - rotating floor 	Single cable chain - horizontal axis  Robot nested 
Rotations multiple chain	Multiple Robot series cable chains 		Multiple cable chains side mounted  Multilayer up to ± 330°/layer 	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

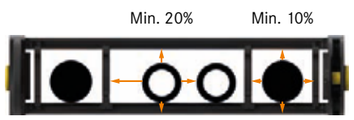


Fig. 1



Fig. 2

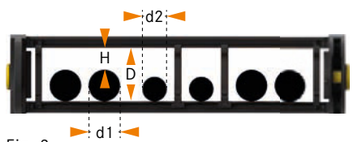


Fig. 3

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

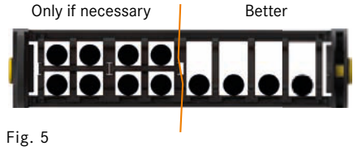


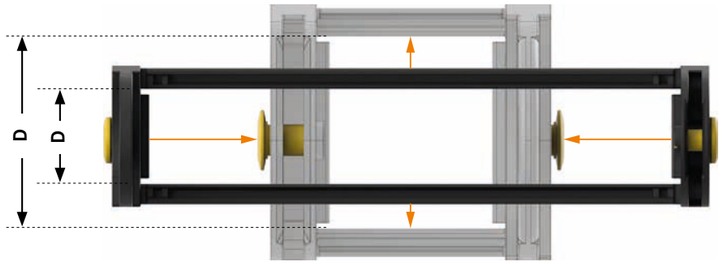
Fig. 5

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

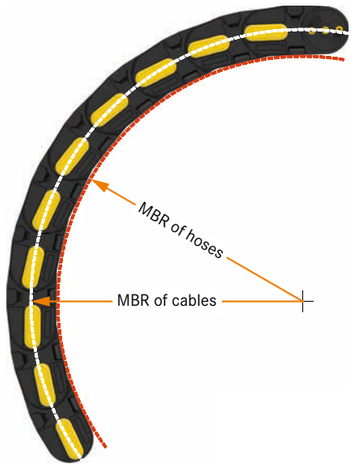


Robot Series

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

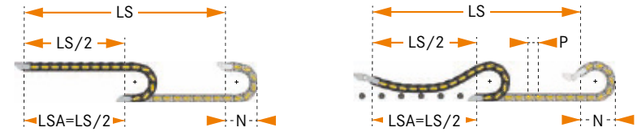
Considering the distance LSA between the feeding point and centre of travel distance LS, five different configurations are possible:

Feeding point position

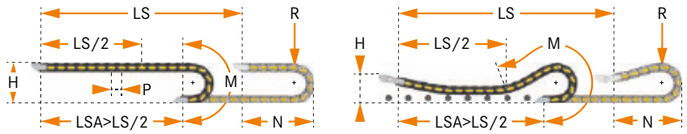
LSA=LS/2 — Centre feed

Most common type of configuration

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



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



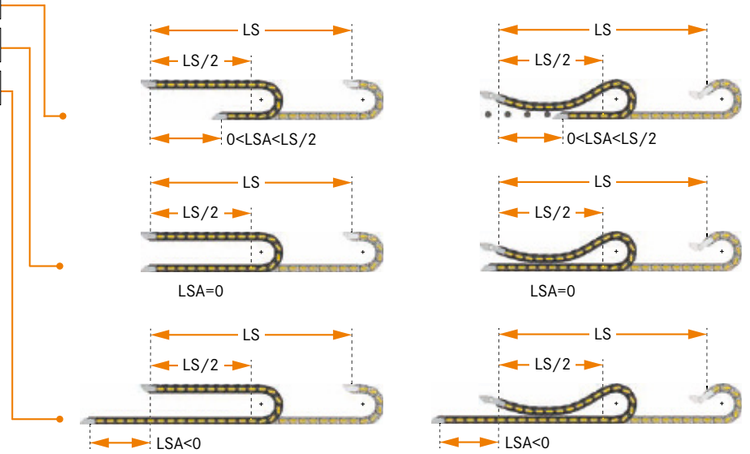
Feeding point position

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

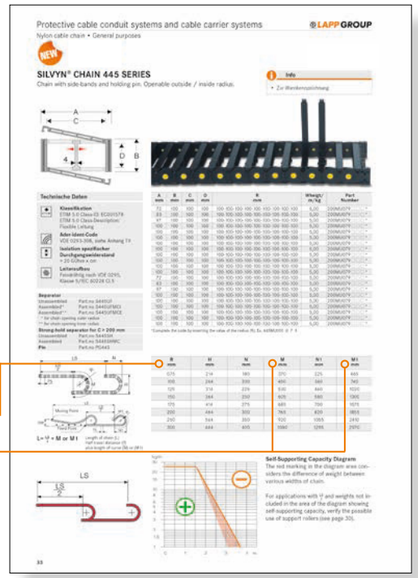


Fig. 1

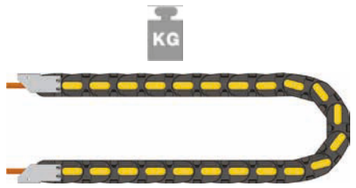
6 Self-supporting capacity calculation

Pre-set

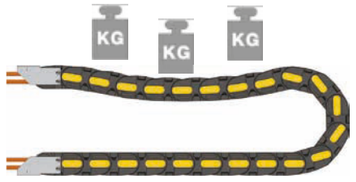
The pre-set (Pr) is a fundamental feature in cable chains. This determines the self-supporting capacity which allows the cable chain to support not only its own weight, but also the weight of the cables/hoses placed inside. Empty cable chains therefore appear to be curved upwards slightly. Each chain 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

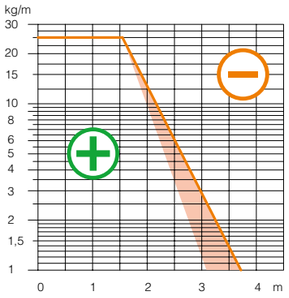


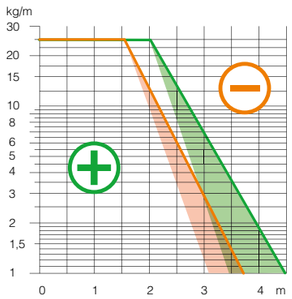
Pre-set cable chain with load



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)

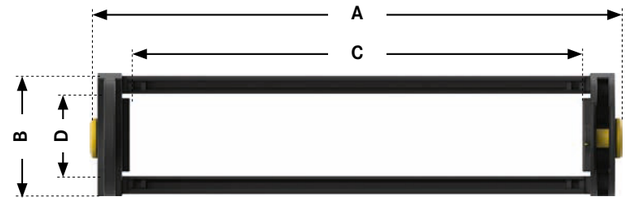


Fig. 1

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: ***



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: ****



Custom 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.

Legend



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.

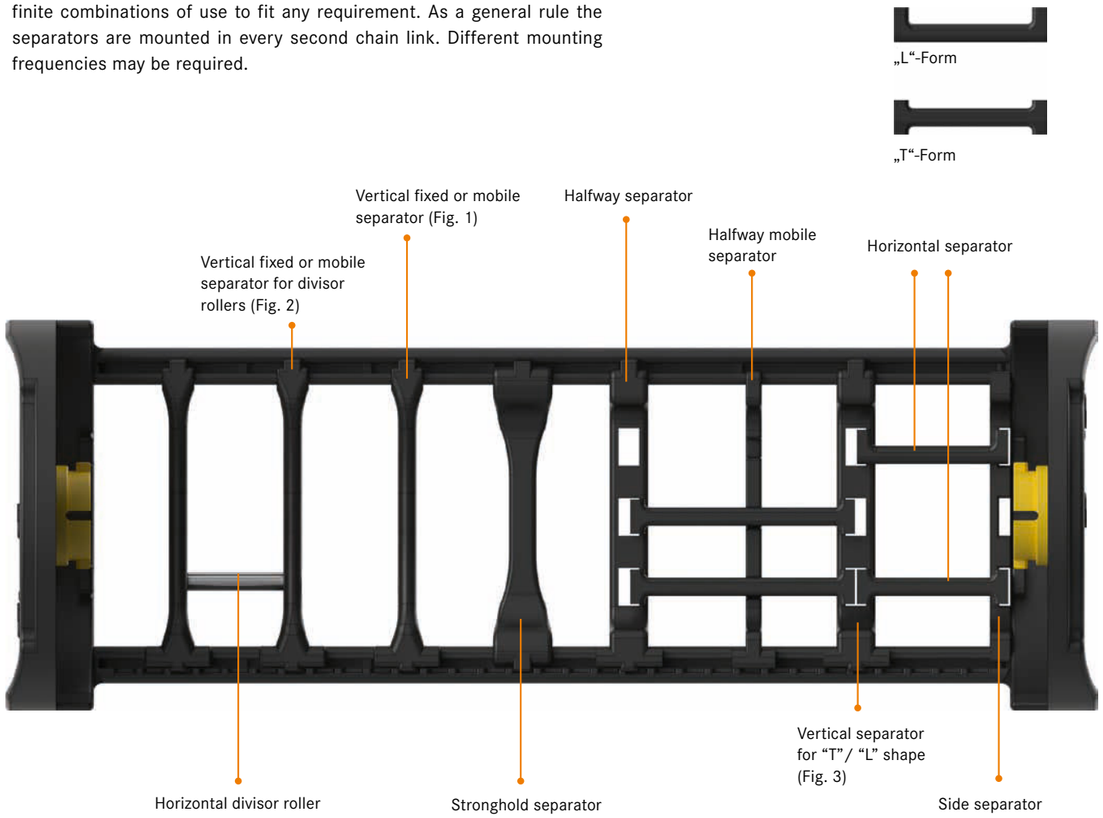


Bolted cross frames

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.

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

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)**

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).

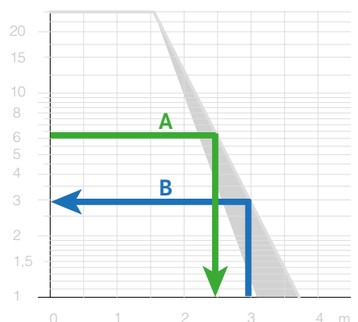


Fig. 1

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.

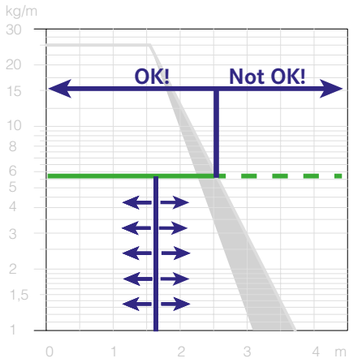


Fig. 2

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

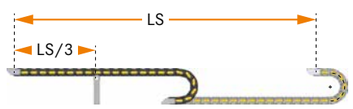


Fig. 3

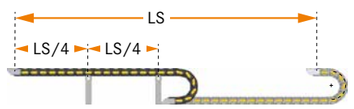


Fig. 4

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.

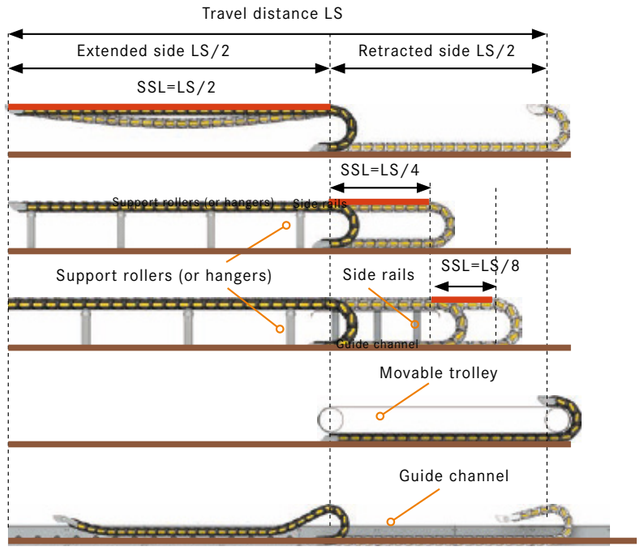
If your application results are close to the limit values, please contact our technical office for additional evaluations.

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.

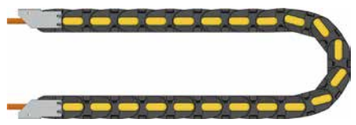
*Among the three configuration options, the sliding configuration guarantees longer travel distances and is more cost effective since no side rails and trolleys are needed.

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)

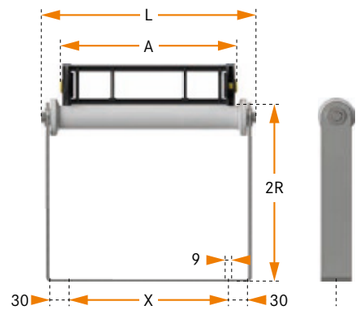
b Supported configurations

Support rollers

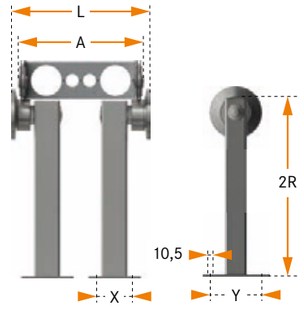
In case of supported cable chain configurations, different kinds of support rollers can be used. See dimensions of our standard rollers in the table below.

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



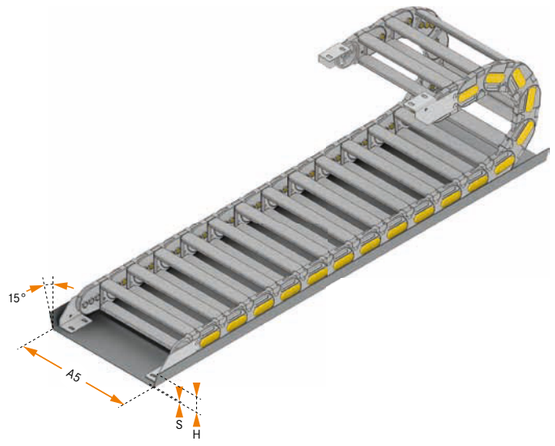
Support roller for nylon chains



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

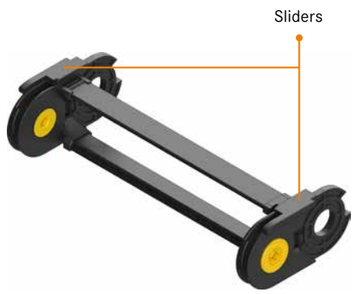
In case of sliding applications, the cable chain works in combination with other mechanical elements, so as the required performances increase (travel distance, speed, acceleration, duty cycles), the level of complexity increases.

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.

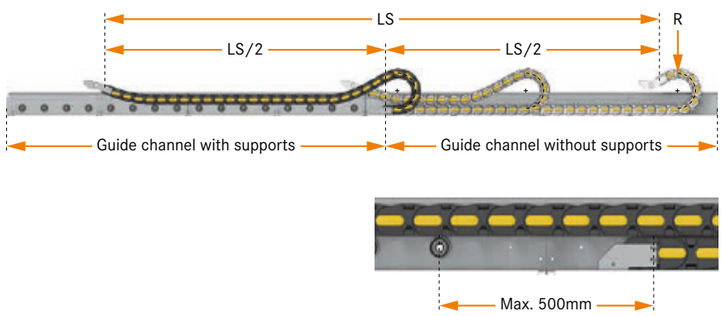
INFOBOX

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.

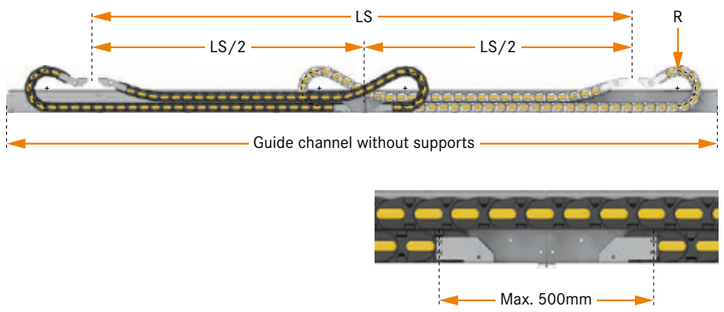
The materials available for the channels are: Zinc-plated steel, stainless steel AISI 304 or 316L, Aluminum.

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

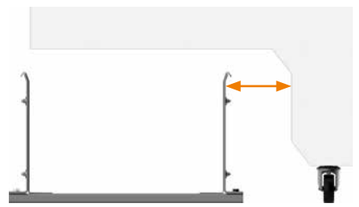


Fig. 3

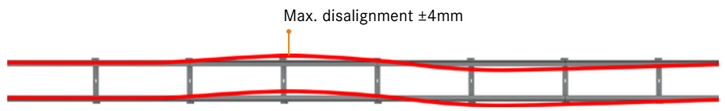
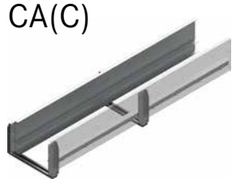
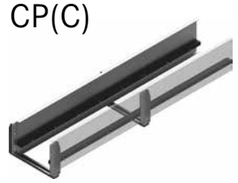
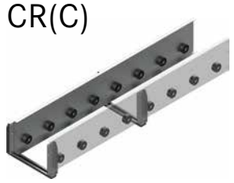


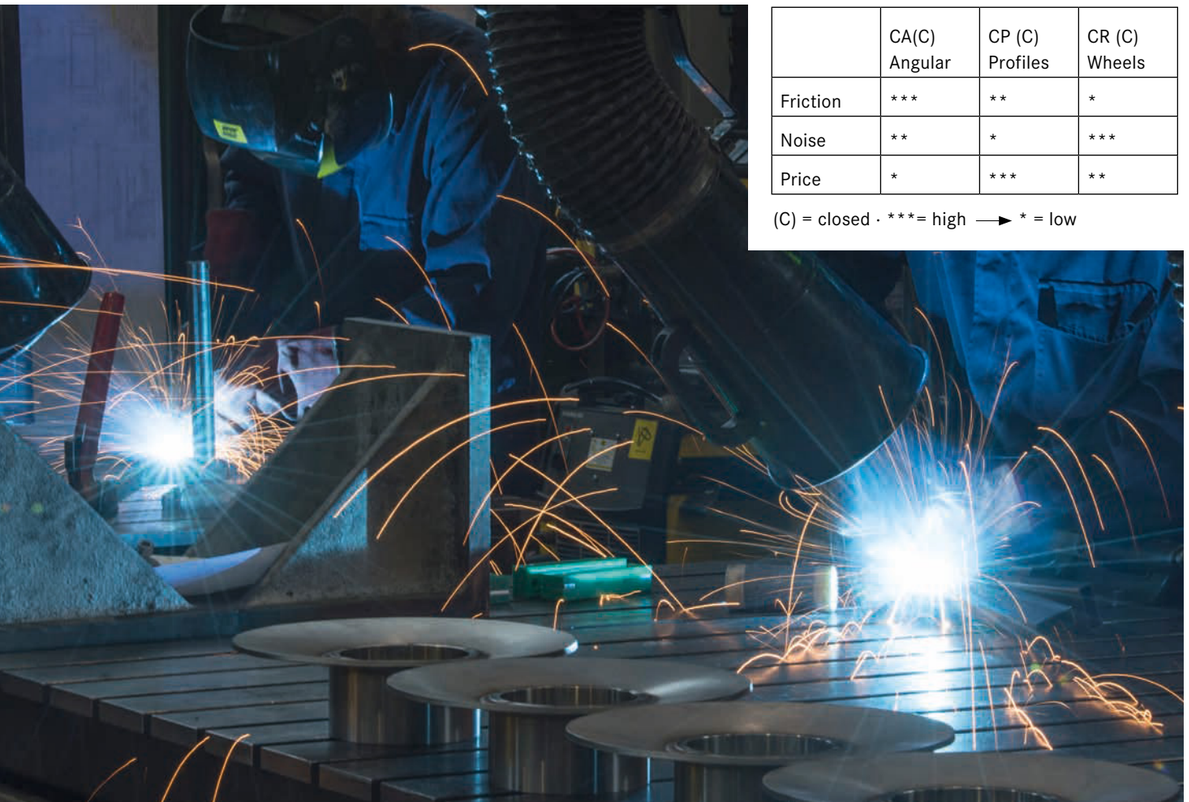
Fig. 4



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

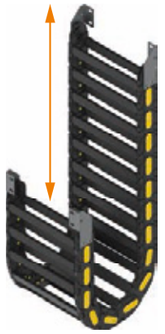


Fig. 1



Fig. 2

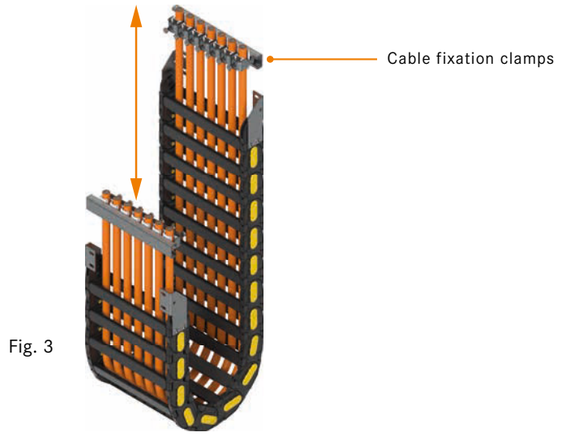


Fig. 3

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

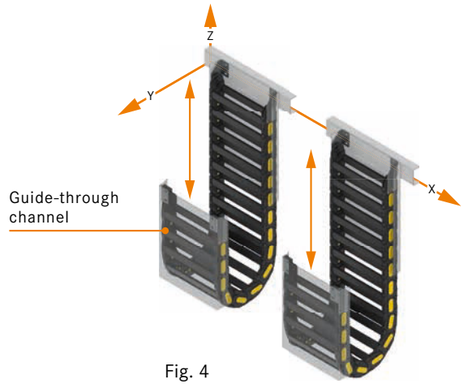


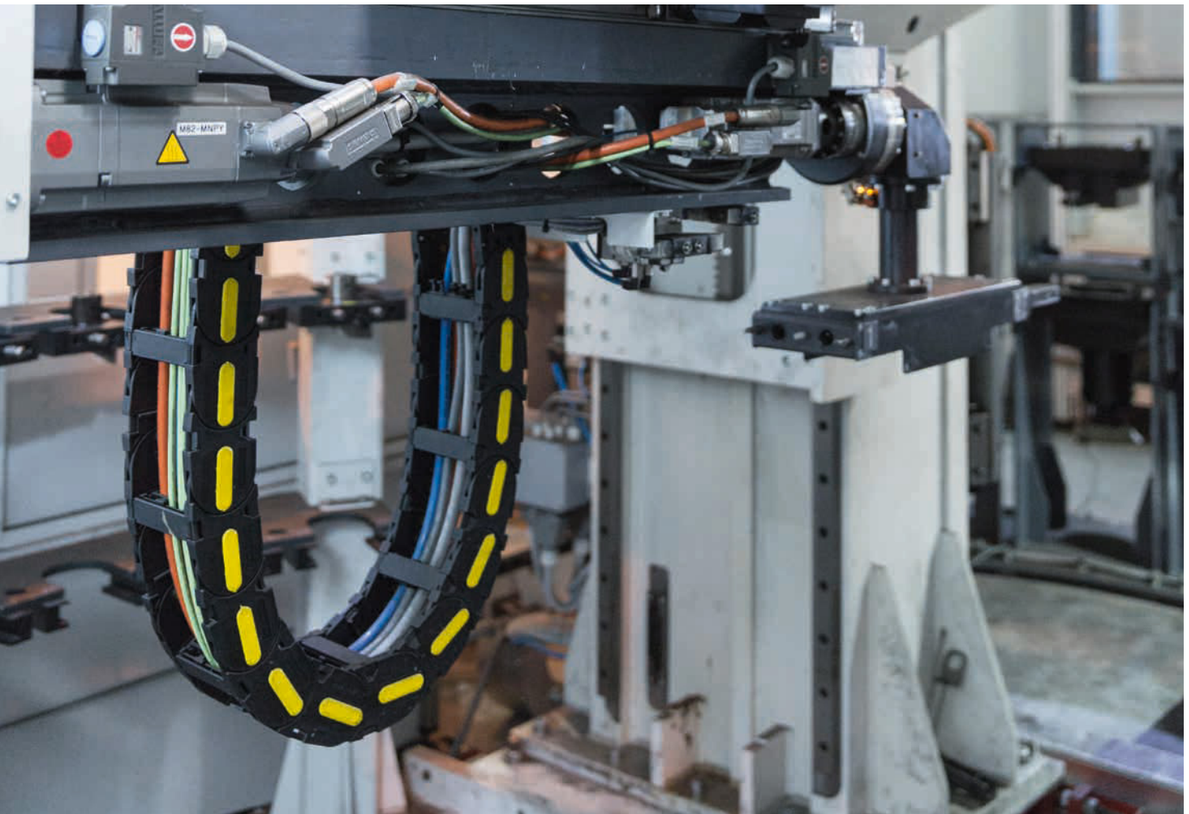
Fig. 4

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

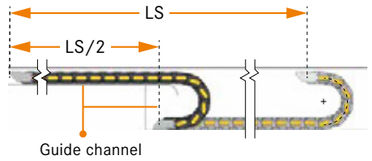


Fig. 1

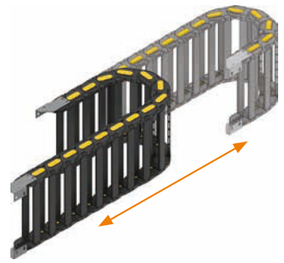

Fig. 2



Fig. 3

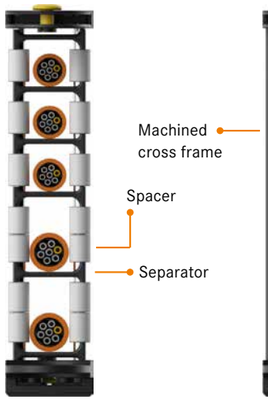


Fig. 4


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.

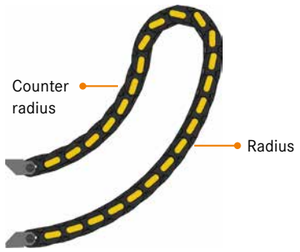


Fig. 1

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.

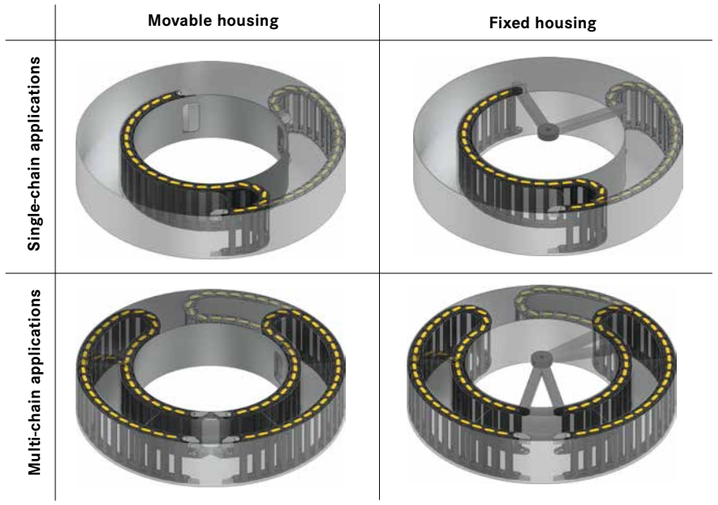


Fig. 2

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

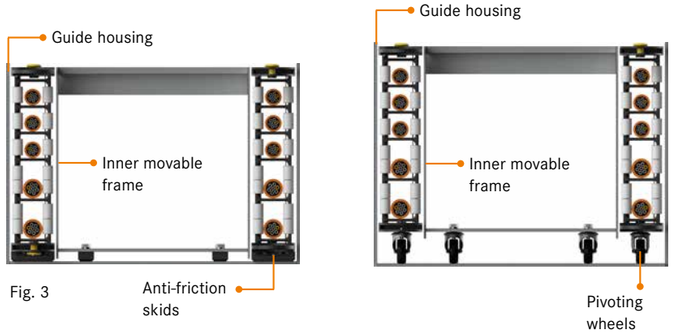


Fig. 3

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°.

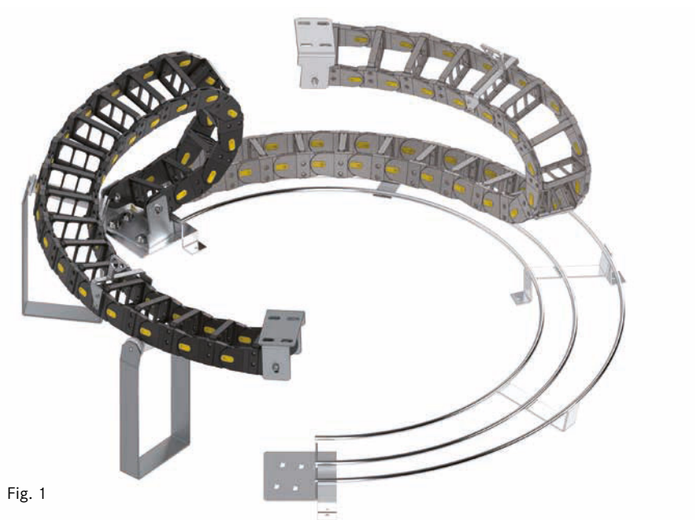
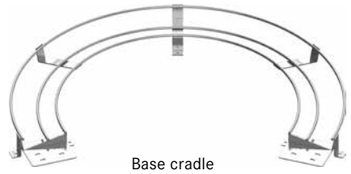


Fig. 1

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.



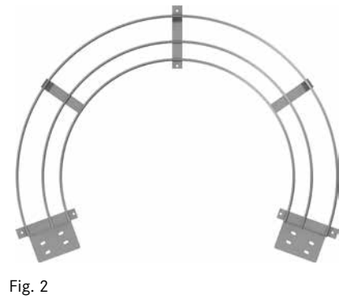


Fig. 2

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

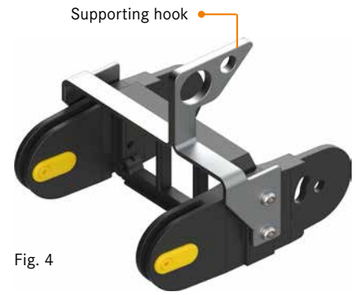


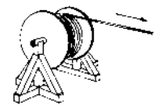
Fig. 4

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.

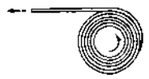
2. The cables must be unreeled from the ring or drum free of any twists (at a tangent) and must be laid out straight. This work should be carried out before starting the installation works so that the cables can relax in this time. Due to the manufacturing process, the markings on the cables run round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



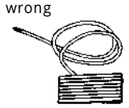
right



wrong



right

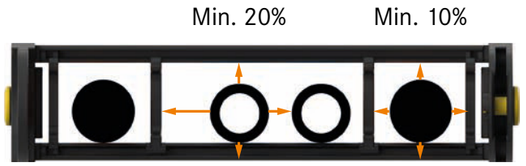


wrong

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.

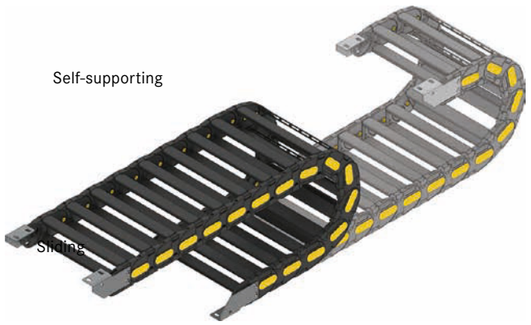
5. The cables must lie loosely next to each other in the chain chambers. They should be separated as much as possible using separators. The clearance between the cables and the cross bar, the separators or the neighbouring cables should be at least 10% of the cable diameter.

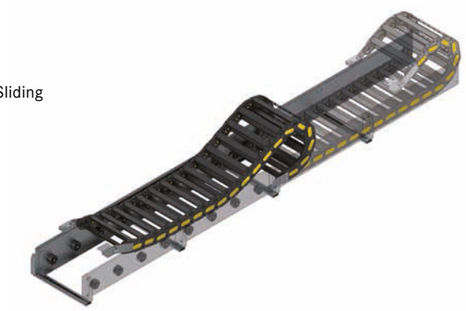


6. The cables should be installed symmetrically in terms of their weight and size; those with greater diameters and weights on the outside, those with smaller diameters and weights on the inside. They can also be placed in descending size order from inside to outside. Avoid arranging the cables above 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.

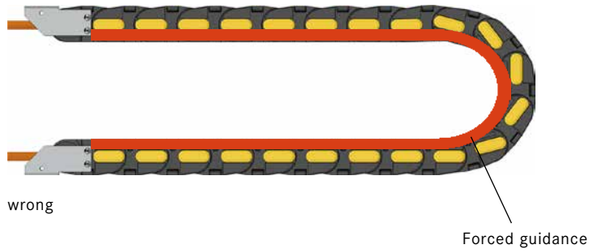




Sliding

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)



wrong

Forced guidance



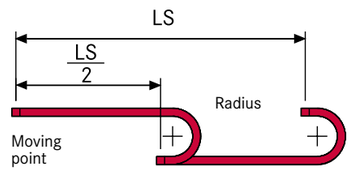
right

Neutral zone

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









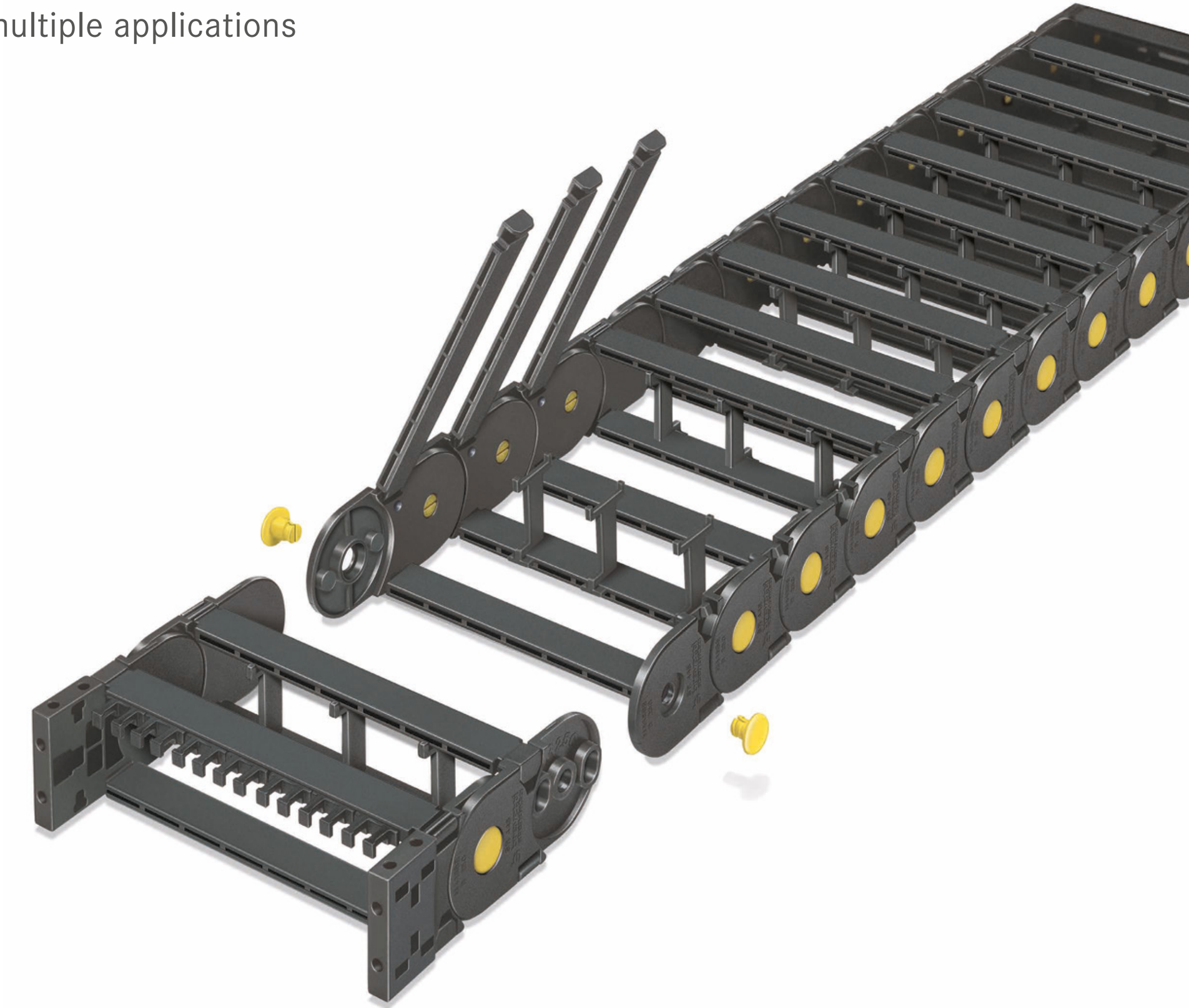


Page	Chain series	Inner width		Inner height	Outer width		Outer height
		from	to		from	to	
		mm		mm	mm		mm
56	SILVYN® CHAIN 200	12	35	12	18	41	15
58	SILVYN® CHAIN 250L/LI/LE	15	50	17	26	61	23
64	SILVYN® CHAIN 325L/LI/LE	40	103	25	57	120	38
70	SILVYN® CHAIN 325PI	10	103	25	57	120	38
72	SILVYN® CHAIN 335L/LI/LE	40	150	35	56,5	166,5	50
78	SILVYN® CHAIN 335PS	40	150	35	56,5	166,5	50
80	SILVYN® CHAIN 445MU	50	362	45	72	384	64
82	SILVYN® CHAIN 445PU	50	362	45	72	384	64
84	SILVYN® CHAIN 445AU	50	362	45	72	384	64
86	SILVYN® CHAIN 445PS	61	125	45	83	147	64
88	SILVYN® CHAIN 660A	50	362	37	75	387	55
90	SILVYN® CHAIN 660	50	150	36	79	179	55
92	SILVYN® CHAIN 770A	45	357	60	80	392	78
94	SILVYN® CHAIN 770	85	250	51	120	285	78
96	SILVYN® CHAIN 475MU	74	498	75,5	112	536	100,5
98	SILVYN® CHAIN 475PU	74	374	75,5	110	410	100,5
100	SILVYN® CHAIN 306SU	43	355	37	79	391	55
102	SILVYN® CHAIN 306CU	43	355	37	79	391	55
104	SILVYN® CHAIN 306B	75	300	30	115	340	55
106	SILVYN® CHAIN 307SU	42	354	47	80	392	65
108	SILVYN® CHAIN 307B	75	300	40	117	342	65
110	SILVYN® CHAIN 307E	75	300	46,5	113	338	65
112	SILVYN® CHAIN 308SU	38	350	57	82	394	75
114	SILVYN® CHAIN 308CU	38	350	57	82	394	75
116	SILVYN® CHAIN 308B	100	300	48	156	356	75
118	SILVYN® CHAIN 308E	100	300	56,5	144	344	75
120	SILVYN® CHAIN 309SU	64	400	75,5	120	456	100
122	SILVYN® CHAIN 309CU	64	488	75,5	120	544	100
124	SILVYN® CHAIN 309B	100	400	70	156	456	100
126	SILVYN® CHAIN 309T	100	400	73	156	456	100
130	SILVYN® CHAIN H57SC	75	500	57	113	538	85
132	SILVYN® CHAIN H57PN	150	250	53,5	188	288	85
132	SILVYN® CHAIN H57PC	75	400	53,5	113	438	85
134	SILVYN® CHAIN H57B	100	400	57	138	438	85
136	SILVYN® CHAIN H57T	100	400	57	138	438	85
138	SILVYN® CHAIN H80SA	64	400	80	120	456	100
140	SILVYN® CHAIN H80PA	74	498	77	129	553	114
142	SILVYN® CHAIN H80B	100	500	81	155	555	114
144	SILVYN® CHAIN H80T	100	500	81	155	555	114
146	SILVYN® CHAIN H110SC	200	600	112	260	660	150
148	SILVYN® CHAIN H110PC	200	498	105	255	553	155
150	SILVYN® CHAIN H110B	200	600	112	255	655	155
152	SILVYN® CHAIN H110T	200	600	112	255	655	155
166	SILVYN® CHAIN 326SU	61	373	37	89	416	59
168	SILVYN CHAIN 326B	75	300	37	115	340	59
170	SILVYN® CHAIN 328SU	61	373	57	116	428	79
172	SILVYN® CHAIN 328B	100	300	48	162	362	79
174	SILVYN® CHAIN 329SU	64	488	75,5	128	552	107
176	SILVYN® CHAIN 329CD	64	488	75,5	128	552	107
178	SILVYN® CHAIN 329B	100	400	70	164	464	107
180	SILVYN® CHAIN 478MU	74	498	75,5	112	536	106,5
182	SILVYN® CHAIN 478PU	74	498	75,5	112	536	106,5
184	SILVYN® CHAIN 60PU	115	539	60,5	165	589	90
186	SILVYN® CHAIN 60VU	115	539	60,5	165	589	90
188	SILVYN® CHAIN 80PU	115	539	80,5	195	619	117
200	SILVYN® CHAIN 20LT	79	304	32	111	336	53
202	SILVYN® CHAIN 20LC	79	304	32	111	336	53
204	SILVYN® CHAIN 30LT	106	506	52	140	540	74
206	SILVYN® CHAIN 30LC	106	506	52	140	540	74
208	SILVYN® CHAIN 35LT	104	504	65	148	548	95
210	SILVYN® CHAIN 35LC	104	504	65	148	548	95
212	SILVYN® CHAIN 40LT	150	500	112,5	208	558	145
214	SILVYN® CHAIN 40LC	150	500	112,5	208	558	145
216	SILVYN® CHAIN 42LT	150	500	138	208	558	175
218	SILVYN® CHAIN 45T	300	600	182	390	690	220
220	SILVYN® CHAIN 20LPT	79	304	32	121	346	58,5
222	SILVYN® CHAIN 20LPC	79	304	32	121	346	58,5
224	SILVYN® CHAIN 30LPT	106	506	52	151	551	81,5
226	SILVYN® CHAIN 30LPC	106	506	52	151	551	81,5
228	SILVYN® CHAIN 35LPT	104	504	65	148	548	107
230	SILVYN® CHAIN 35LPC	104	504	65	148	548	107
232	SILVYN® CHAIN 40LPT	150	500	112,5	230	580	161,5
234	SILVYN® CHAIN 40LPC	150	500	104	230	580	161,5
236	SILVYN® CHAIN 42LPT	150	500	138	230	580	191,5
246	SILVYN® CHAIN 495	45	-	35	69	-	45
248	SILVYN® CHAIN 500	65	-	30	93	-	43
250	SILVYN® CHAIN 510TN	88	-	46	132	-	55
250	SILVYN® CHAIN 515TN	88	-	46	132	-	55
252	SILVYN® CHAIN 545	62	-	46	123	-	62
254	SILVYN® CHAIN 599	210	-	59	272	-	85

Pitch	Bending radius		Self supporting capacity		Sliding application	Protection cover
	from	to				
mm	mm		max m	kg		
17	18	40	0,9	0,1		
29	28	100	1,3	0,1		
45	50	150	1,9	0,5	on request	
45	75	150	1,7	0,5		✔
52	65	200	2,2	1	on request	
52	65	200	2,0	1		✔
67	75	300	3,7	1	on request	
67	100	300	3,4	1		✔
67	100	300	3,4	1		✔
67	100	300	3,4	1	on request	✔
50	100	250	2,5	1	on request	
50	100	250	2,3	1		✔
70	150	300	3,8	1	on request	
70	150	300	3,5	1		✔
105	150	400	4,8	1	on request	
105	180	400	4,5	1		✔
65	75	300	2,7	1		
65	107	300	2,7	1		✔
65	75	300	3,1	1		
70	75	250	3,2	1		
70	75	250	3,9	1		
70	75	250	3,2	1		
80	135	400	4,2	1		
80	150	400	4,0	1		✔
80	150	400	5,0	1		
80	135	400	4,2	1		
100	150	600	6,5	1		
100	200	500	5,8	1		✔
100	150	600	4,6	1		
100	150	600	4,6	1		
90	150	400	5,0	1		
90	180	400	4,8	1		✔
90	180	400	4,8	1		✔
90	180	400	5,0	1		
90	180	400	5,0	1		
120	200	750	7,0	1		
120	200	600	6,0	1		✔
120	200	600	7,0	1		
120	200	600	7,0	1		
160	200	750	9,0	1		
160	250	750	7,8	1		✔
160	200	750	9,0	1		
160	200	750	8,0	1		
65	107	300	-	-	✔	
65	107	300	-	-	✔	
80	150	400	-	-	✔	
80	150	400	-	-	✔	
100	150	600	-	-	✔	
100	200	600	-	-	✔	✔
100	150	600	-	-	✔	
105	150	400	-	-	✔	
105	180	400	-	-	✔	✔
90	150	400	-	-	✔	
90	150	400	-	-	✔	
110	200	700	-	-	✔	
75	75	305	4,2	1		
75	115	305	4,2	1		✔
95	150	535	5,8	1		
95	150	535	5,8	1		✔
125	200	600	7,8	1		
125	200	600	7,0	1		✔
180	250	850	12,9	1		
180	250	850	11,8	1		✔
180	250	850	12,0	1		
250	400	1500	13,0	1		
75	115	305	-	-	✔	
75	115	305	-	-	✔	✔
95	150	535	-	-	✔	
95	150	535	-	-	✔	✔
125	200	600	-	-	✔	
125	200	600	-	-	✔	✔
180	250	850	-	-	✔	
180	250	850	-	-	✔	✔
180	250	850	-	-	✔	
-	100	-	-	-		
-	100	150	-	-		
-	125	-	-	-		
-	175	-	-	-		
-	100	-	-	-		
-	220	-	-	-		

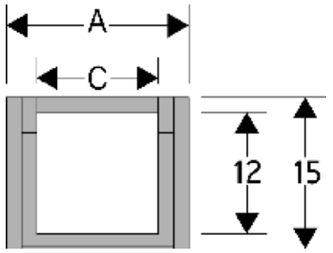
Nylon cable chains for multiple applications

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 445MU	80
SILVYN® CHAIN 445PU	82
SILVYN® CHAIN 445AU	84
SILVYN® CHAIN 445PS	86
SILVYN® CHAIN 660A	88
SILVYN® CHAIN 660	90
SILVYN® CHAIN 770A	92
SILVYN® CHAIN 770	94
SILVYN® CHAIN 475MU	96
SILVYN® CHAIN 475PU	98
SILVYN® CHAIN 306SU	100
SILVYN® CHAIN 306CU	102
SILVYN® CHAIN 306B	104
SILVYN® CHAIN 307SU	106
SILVYN® CHAIN 307B	108
SILVYN® CHAIN 307E	110
SILVYN® CHAIN 308SU	112
SILVYN® CHAIN 308CU	114
SILVYN® CHAIN 308B	116
SILVYN® CHAIN 308E	118
SILVYN® CHAIN 309SU	120
SILVYN® CHAIN 309CU	122
SILVYN® CHAIN 309B	124
SILVYN® CHAIN 309T	126



SILVYN® CHAIN 200

Nylon cable chain with non-openable frames





Technical data

Inner Height (D)
12 mm

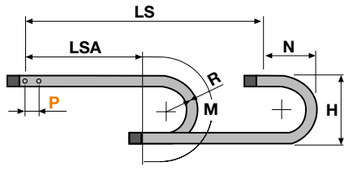
Pitch (P)
17 mm

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□□□

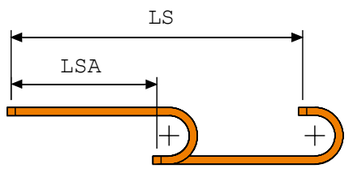
□□□ to be filled with Radius R

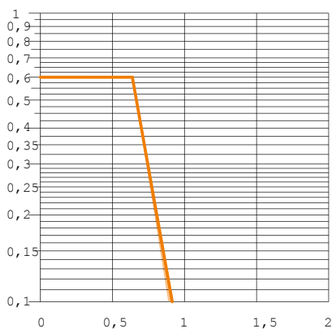


R	H	N	M
018	51	45	95
030	75	55	130
040	95	70	165

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.

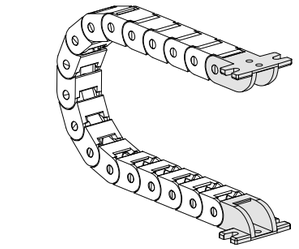
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

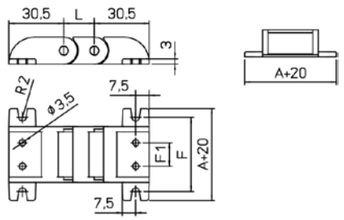
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

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





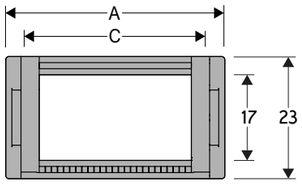
Chain Type	F1	F 1mm
20025□□□	13	41
20035□□□	23	51

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

□□ Inner width (C)

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

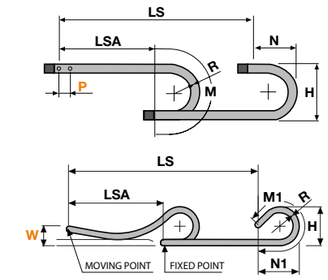
Separator

Unassembled	Article number S250L
Assembled	Article number S250LMC

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

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□□□

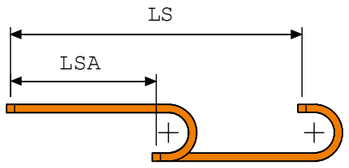
□□□ to be filled with Radius R

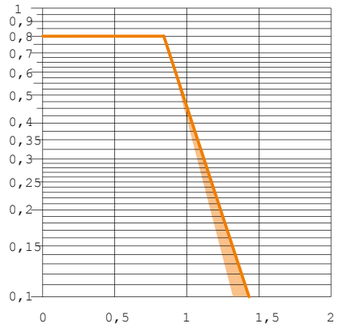


R	H	N	M	N1	M1
028	79	68,5	146	120	255
038	99	78,5	177	125	270
045	113	85,5	199	250	530
060	143	100,5	246	400	850
075	173	115,5	294	505	1085
100	223	140,5	372	650	1405

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.

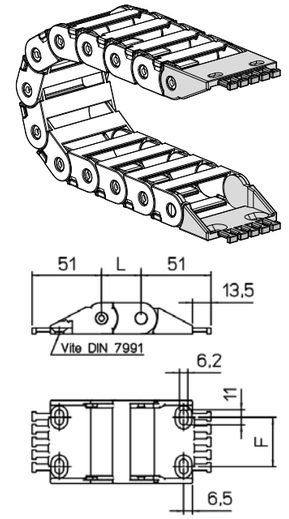
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

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



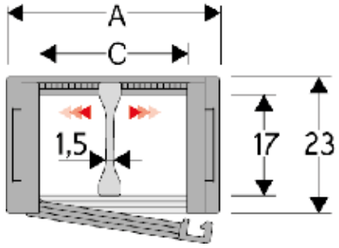
Chain Type	F1
250L35□□□	21
250L50□□□	36

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

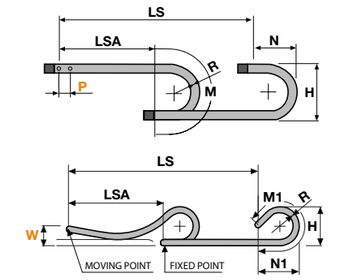
Separator

Unassembled	Article number S250L
Assembled	Article number S250LMC

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

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□□□

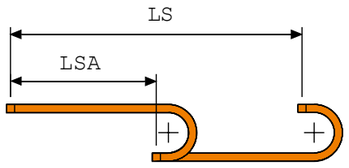
□□□ to be filled with Radius R

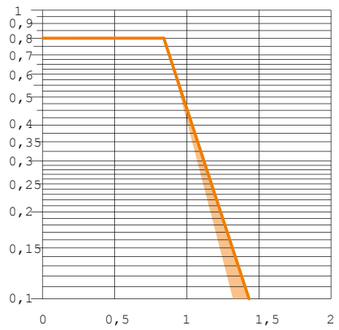


R	H	N	M	N1	M1
028	79	68,5	146	120	255
038	99	78,5	177	125	270
045	113	85,5	199	250	530
060	143	100,5	246	400	850
075	173	115,5	294	505	1085
100	223	140,5	372	650	1405

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.

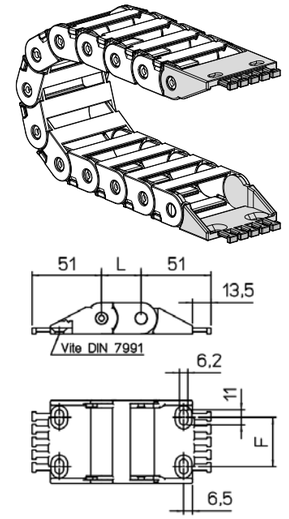
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

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



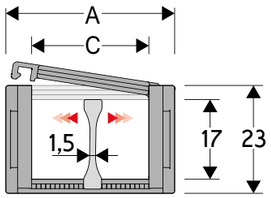
Chain Type	F1
250L35□□□	21
250L50□□□	36

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

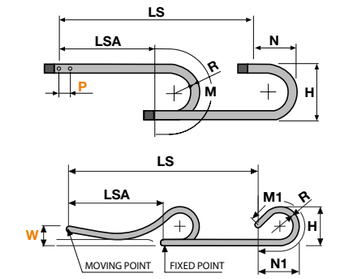
Separator

Unassembled	Article number S250L
Assembled	Article number S250LMC

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

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□□□

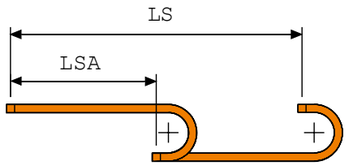
□□□ to be filled with Radius R

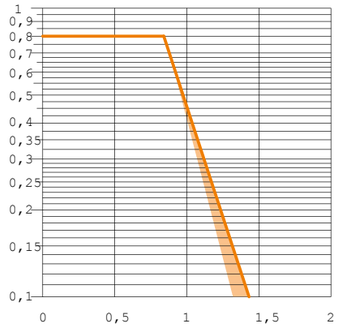


R	H	N	M	N1	M1
028	79	68,5	146	120	255
038	99	78,5	177	125	270
045	113	85,5	199	250	530
060	143	100,5	246	400	850
075	173	115,5	294	505	1085
100	223	140,5	372	650	1405

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.

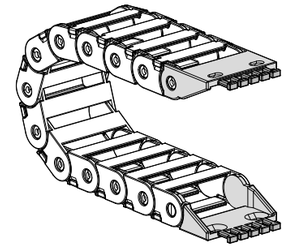
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

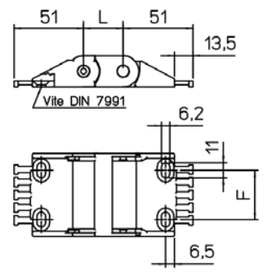
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

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





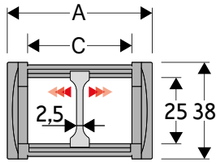
Chain Type	F1
250L35□□□	21
250L50□□□	36

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□□□

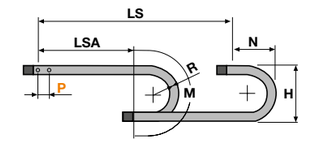
□□□ to be filled with Radius R

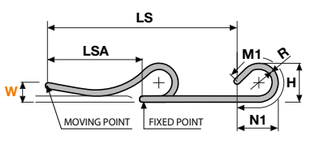
L=LSA + M or M1 Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

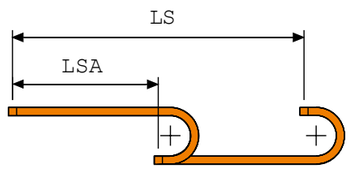
Separator

Unassembled	Article number S325L
Assembled	Article number S325LMC

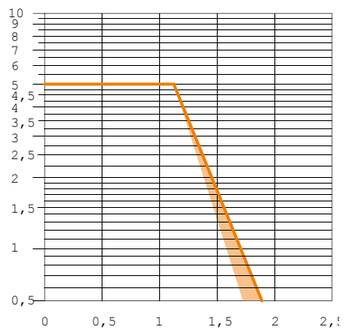
MCI: chain opening outer radius
MCE: chain opening inner radius







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



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).

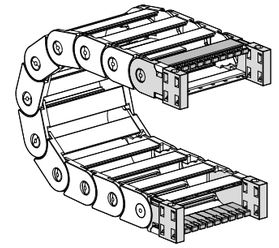
LAPP GROUP
Protective cable conduit systems and cable carrier systems
Cable chain carriers • Nylon cable chain for multiple use

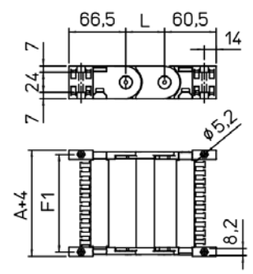
ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® SILVYN®

End brackets

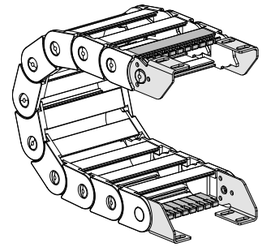
The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

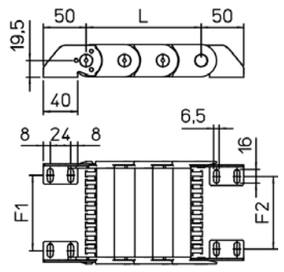
Nylon Type





Steel Type





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

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

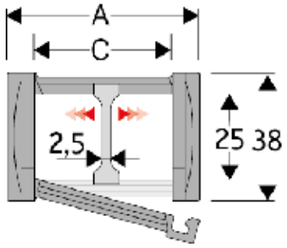
Nylon Type Part Numbers
Complete Set Assembled
AN325L□□□KM
Complete Set Unassembled
AN325L□□□K
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC325L□□□KM
Complete Set Unassembled
CFC325L□□□K

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

□□□ Inner width (C)

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

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

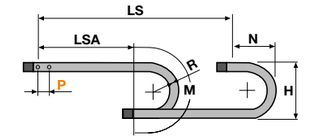
Separator

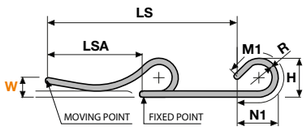
Unassembled	Article number S325L
Assembled	Article number S325LMC

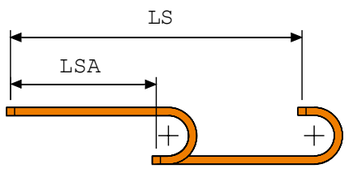
MCI: chain opening outer radius
MCE: chain opening inner radius

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□□□

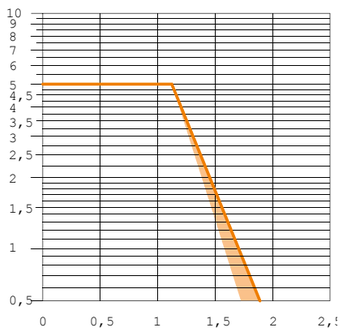
□□□ to be filled with Radius R







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



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.

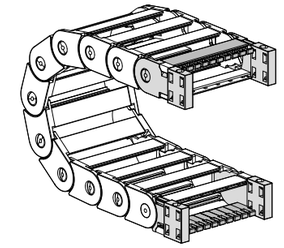
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

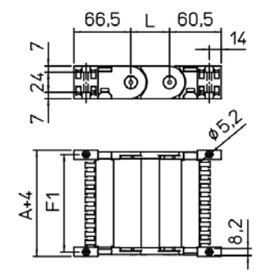
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

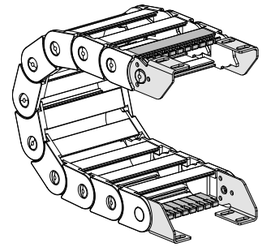
The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

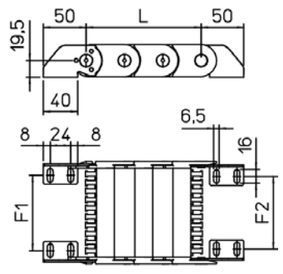
Nylon Type





Steel Type





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

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

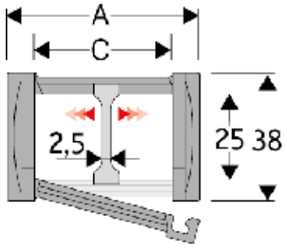
Nylon Type Part Numbers
Complete Set Assembled
AN325L□□□KM
Complete Set Unassembled
AN325L□□□K
Tiewarp Clamp Part Numbers
Complete Set Assembled
CFC325L□□□KM
Complete Set Unassembled
CFC325L□□□K

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

□□□ Inner width (C)

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

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

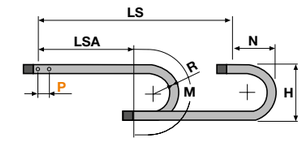
Separator

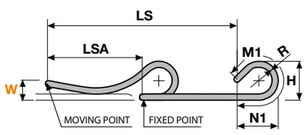
Unassembled	Article number S325L
Assembled	Article number S325LMC

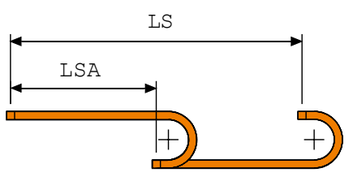
MCI: chain opening outer radius
MCE: chain opening inner radius

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□□□

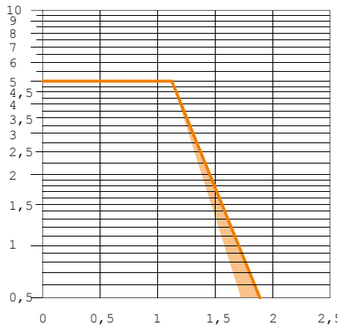
□□□ to be filled with Radius R







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



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.

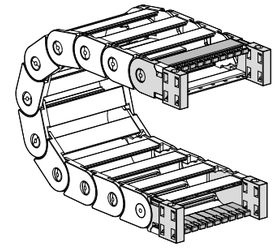
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

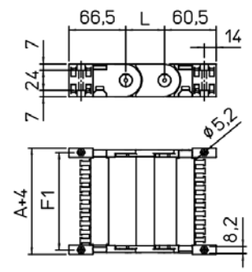
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

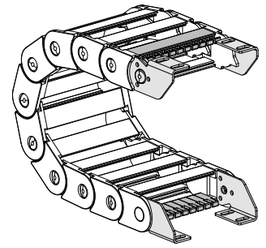
The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

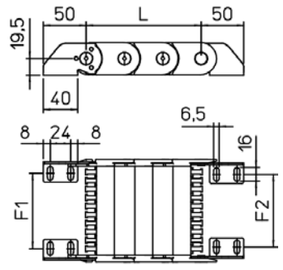
Nylon Type





Steel Type





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

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

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

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

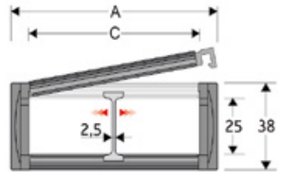
□□□ Inner width (C)

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

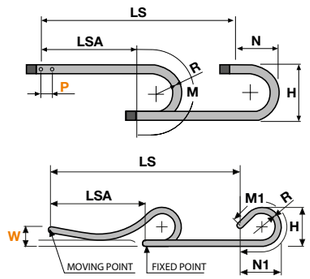
Separator

Unassembled	Article number S325L
Assembled	Article number S325LMC

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

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□□□

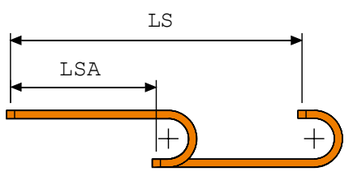
□□□ to be filled with Radius R

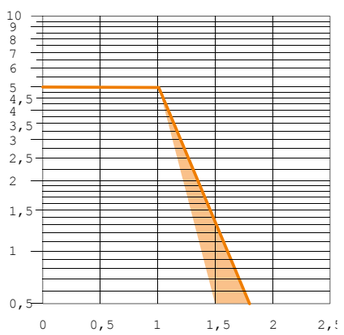


R	H	N	M	N1	M1
075	188	140	325	185	420
100	238	165	405	275	635
125	288	190	485	360	855
150	338	215	565	445	1075

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).

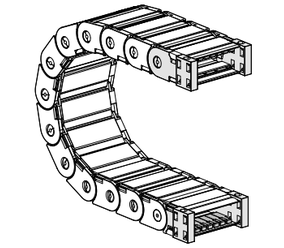
LAPP GROUP
Protective cable conduit systems and cable carrier systems
Cable chain carriers • Nylon cable chain for multiple use

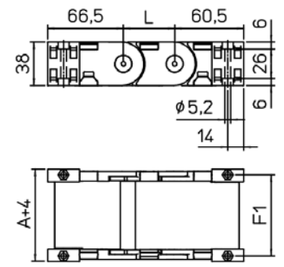
ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
SILVYN®

End brackets

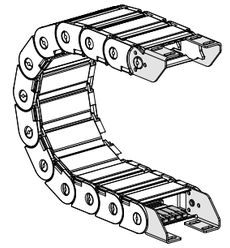
The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

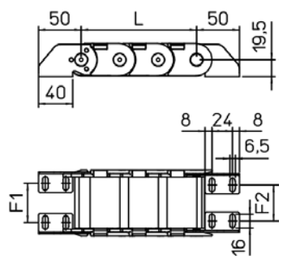
Nylon Type





Steel Type





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

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

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

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

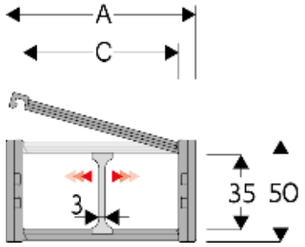
□□□ Inner width (C)

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

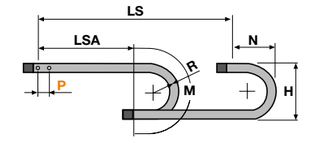
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
56.5	50	40	35	065-075-100-125-150-200	1.12	335L040□□□
66.5	50	50	35	065-075-100-125-150-200	1.15	335L050□□□
76.5	50	60	35	065-075-100-125-150-200	1.19	335L060□□□
92.5	50	76	35	065-075-100-125-150-200	1.25	335L076□□□
119.5	50	103	35	065-075-100-125-150-200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

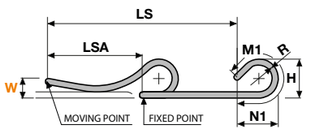
□□□ to be filled with Radius R

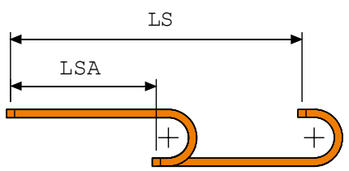
L=LSA + M or M1 Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

Separator	
Unassembled	Article number S4353
Assembled	Article number S4353MC

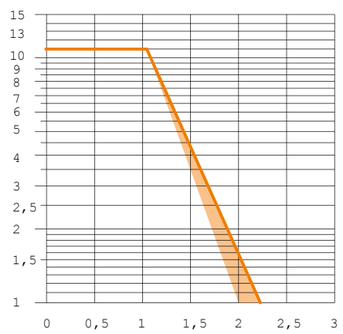
MCI: chain opening outer radius
MCE: chain opening inner radius







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



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.

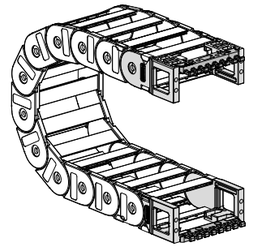
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

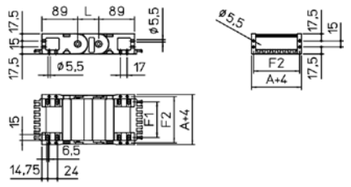
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

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





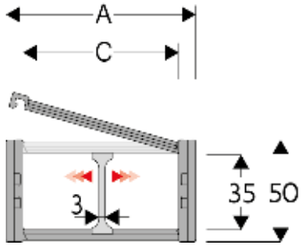
Chain Type	F1	F1
335L40□□□	25	51
335L50□□□	35	61
335L60□□□	45	71
335L76□□□	61	87
335L103□□□	88	114
335L125□□□	110	136
335L150□□□	135	161

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

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

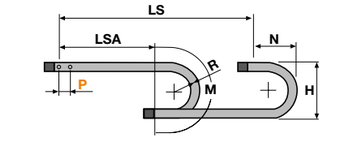
Separator

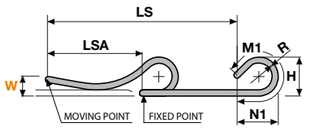
Unassembled	Article number S4353
Assembled	Article number S4353MC

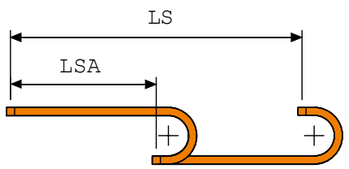
MCI: chain opening outer radius
MCE: chain opening inner radius

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□□□

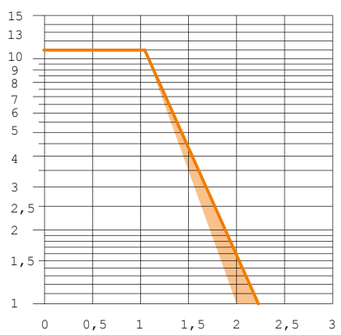
□□□ to be filled with Radius R







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



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.

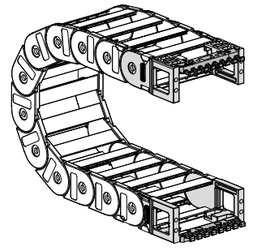
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

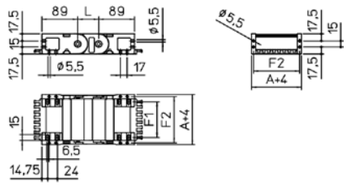
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

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





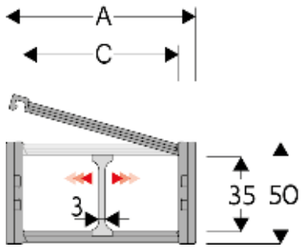
Chain Type	F1	F1
335L40□□□	25	51
335L50□□□	35	61
335L60□□□	45	71
335L76□□□	61	87
335L103□□□	88	114
335L125□□□	110	136
335L150□□□	135	161

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 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

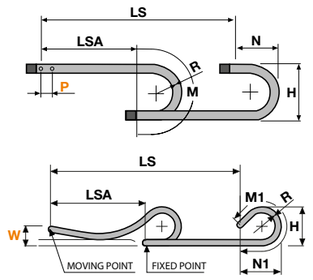
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
56.5	50	40	35	065-075-100-125-150-200	1.12	335LE040□□□
66.5	50	50	35	065-075-100-125-150-200	1.15	335LE050□□□
76.5	50	60	35	065-075-100-125-150-200	1.19	335LE060□□□
92.5	50	76	35	065-075-100-125-150-200	1.25	335LE076□□□
119.5	50	103	35	065-075-100-125-150-200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

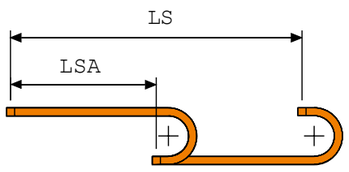
L=LSA + M or M1 Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

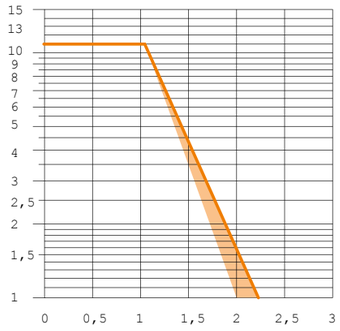
Separator	
Unassembled	Article number S4353
Assembled	Article number S4353MC

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





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.

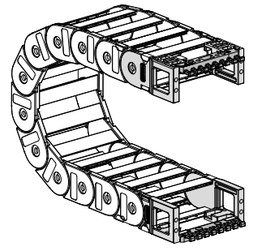
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

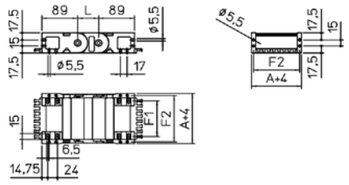
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

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□□□

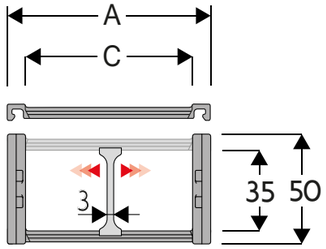
□□□ Inner width (C)
Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN 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

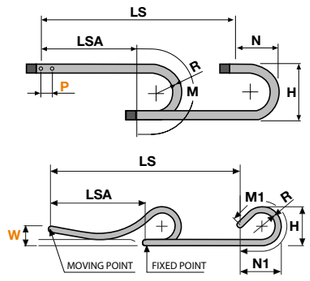
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
66.5	50	50	35	100-125-150-200	1.35	335PS050□□□
92.5	50	76	35	100-125-150-200	1.57	335PS076□□□
119.5	50	103	35	100-125-150-200	1.81	335PS103□□□
166.5	50	150	35	100-125-150-200	2.21	335PS150□□□

□□□ to be filled with Radius R

Separator

Unassembled	Article number S4353
Assembled	Article number S4353MC

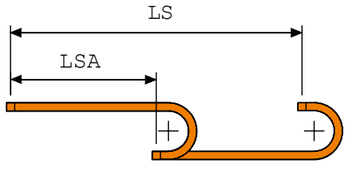
MCI: chain opening outer radius
MCE: chain opening inner radius

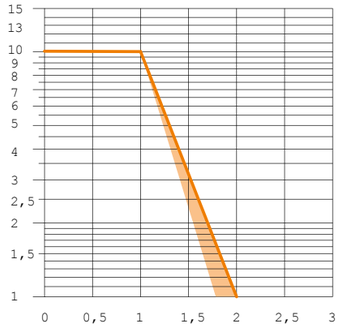


R	H	N	M	N1	M1
100	250	204	420	350	790
125	300	229	500	445	1025
150	350	254	580	540	1260
200	450	304	735	730	1725

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.

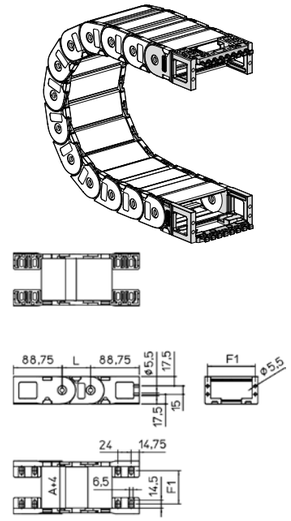
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

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



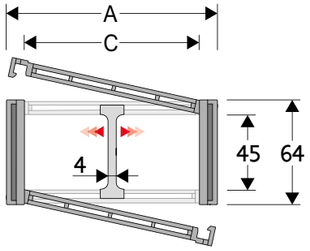
Chain Type	F1
335PS050□□□	61
335PS076□□□	87
335PS103□□□	114
335PS150□□□	161

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 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

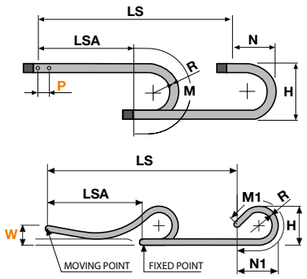
Speed
10 m/s

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□□□
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□□□

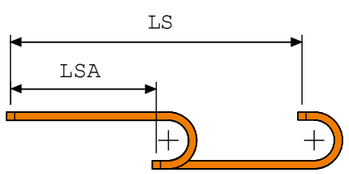
□□□ to be filled with Radius R

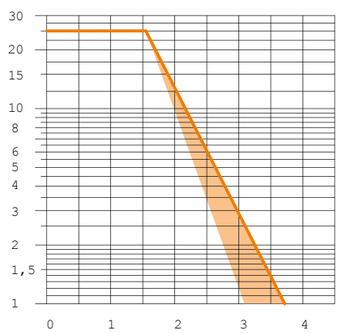


R	H	N	M	N1	M1
075	214	180	370	205	425
100	264	200	450	230	505
125	314	225	530	285	655
150	364	250	605	375	875
175	414	275	685	460	1085
200	464	300	765	550	1310
250	564	350	920	725	1750
300	664	400	1080	1295	2970

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.

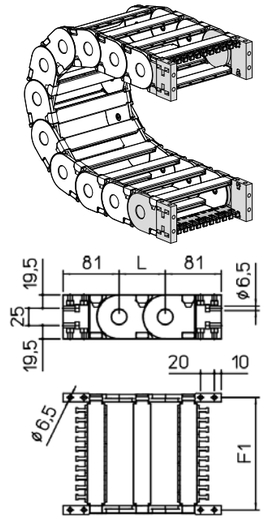
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

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

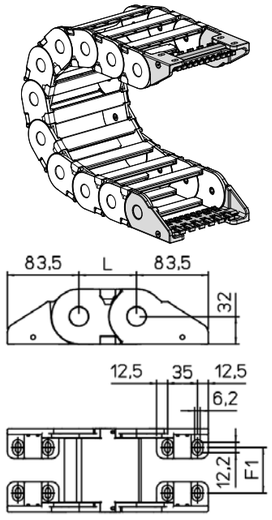


Chain Type	F1
445MU050	63
445MU061	74
445MU075	88
445MU081	94
445MU085	98
445MU095	108
445MU100	113
445MU107	120
445MU117	130
445MU125	138
445MU136	149
445MU150	163
445MU175	188
445MU200	213
445MU211	224
445MU225	238
445MU252	265
445MU261	274
445MU312	325
445MU334	347
445MU362	375

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

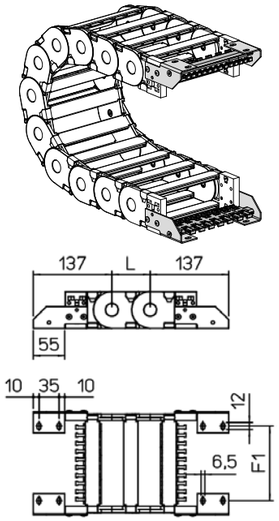


Chain Type	F1
445MU050	28
445MU061	39
445MU075	53
445MU081	59
445MU085	63
445MU095	73
445MU100	78
445MU107	85
445MU117	95
445MU125	103
445MU136	114
445MU150	128
445MU175	153
445MU200	178
445MU211	189
445MU225	203
445MU252	230
445MU261	239
445MU312	290
445MU334	312
445MU362	340

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



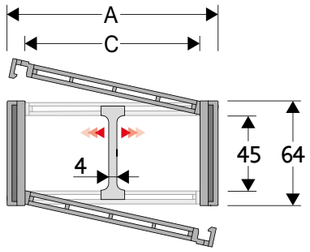
Chain Type	F1
445MU	F1=A-44

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.





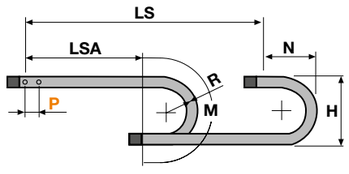
Technical data

- **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□□□
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

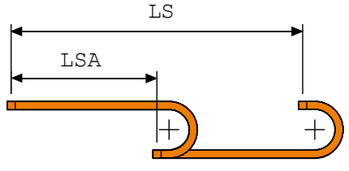
Separator	
Unassembled	Article number S445UF
Assembled	Article number S445UFMCI, S445UFMCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG445

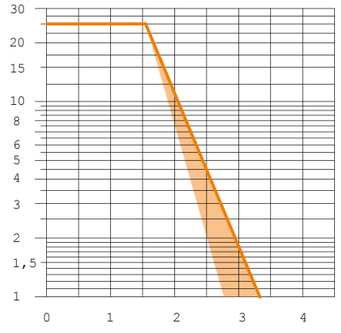


R	H	N	M
100	264	200	450
125	314	225	530
150	364	250	605
175	414	275	685
200	464	300	765
250	564	350	920
300	664	400	1080

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.

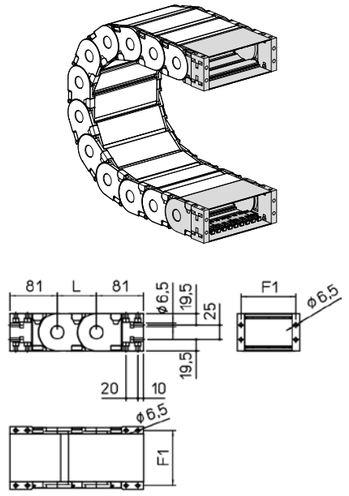
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

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

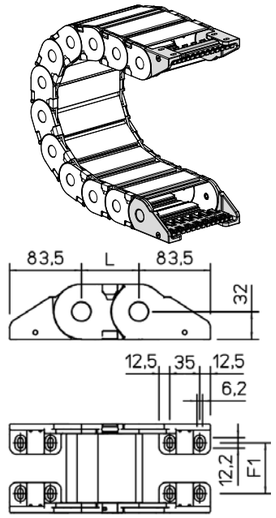


Chain Type	F1
445PU050	63
445PU061	74
445PU075	88
445PU081	94
445PU085	98
445PU095	108
445PU100	113
445PU107	120
445PU117	130
445PU125	138
445PU136	149
445PU150	163
445PU175	188
445PU200	213
445PU211	224
445PU225	238
445PU252	265
445PU261	274
445PU312	325
445PU334	347
445PU362	375

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

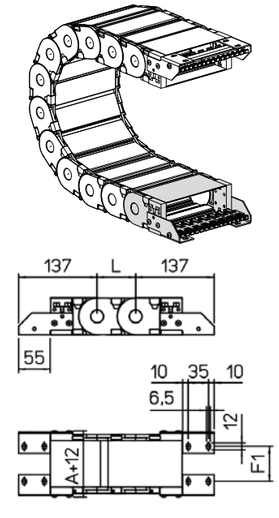


Chain Type	F1
445PU050	28
445PU061	39
445PU075	53
445PU081	59
445PU085	63
445PU095	73
445PU100	78
445PU107	85
445PU117	95
445PU125	103
445PU136	114
445PU150	128
445PU175	153
445PU200	178
445PU211	189
445PU225	203
445PU252	230
445PU261	239
445PU312	290
445PU334	312
445PU362	340

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



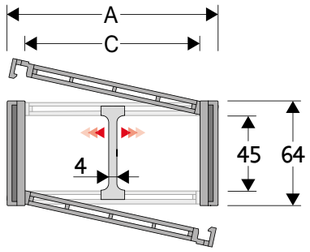
Chain Type	F1
445PU	F1=A-44

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.





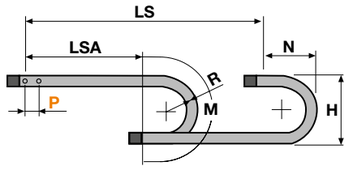
Technical data

- **Inner Height (D)** 45 mm
- **Pitch (P)** 67 mm
- **Speed** 10 m/s
- **Acceleration** 50 m/s²

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□□□
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

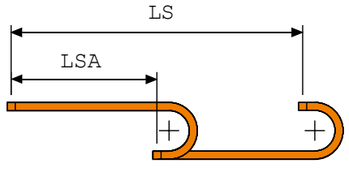
Separator	
Unassembled	Article number S445UF
Assembled	Article number S445UFMCI, S445UFMCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG445

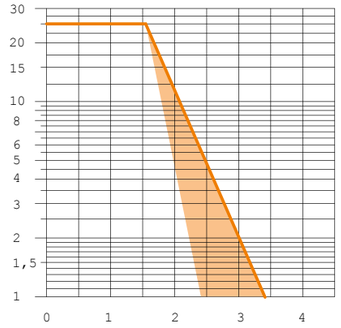


R	H	N	M
100	264	200	450
125	314	225	530
150	364	250	605
175	414	275	765
200	464	300	765
250	564	350	920
300	664	400	1080

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.

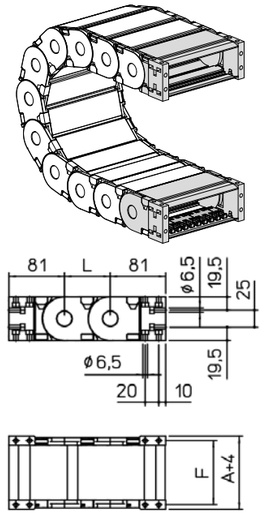
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

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

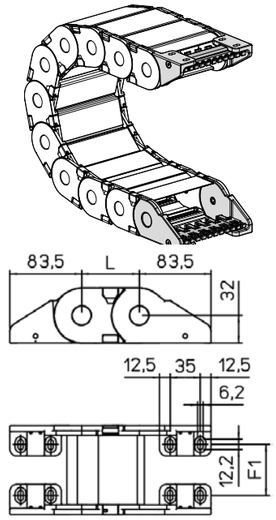


Chain Type	F1
445AU050□□□	63
445AU061□□□	74
445AU075□□□	88
445AU081□□□	94
445AU085□□□	98
445AU095□□□	108
445AU100□□□	113
445AU107□□□	120
445AU117□□□	130
445AU125□□□	138
445AU136□□□	149
445AU150□□□	163
445AU175□□□	188
445AU200□□□	213
445AU211□□□	224
445AU225□□□	238
445AU252□□□	265
445AU261□□□	274
445AU312□□□	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

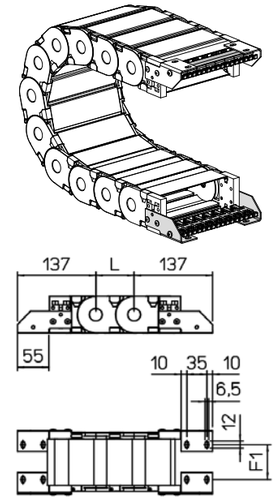


Chain Type	F1
445AU050□□□	44
445AU061□□□	55
445AU075□□□	69
445AU081□□□	75
445AU085□□□	79
445AU095□□□	89
445AU100□□□	94
445AU107□□□	101
445AU117□□□	111
445AU125□□□	119
445AU136□□□	130
445AU150□□□	144
445AU175□□□	169
445AU200□□□	194
445AU211□□□	205
445AU225□□□	219
445AU252□□□	246
445AU261□□□	255
445AU312□□□	306
445AU334□□□	328
445AU362□□□	356

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

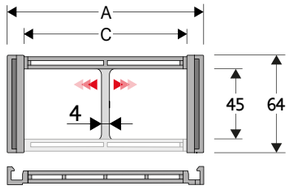
□□□ Inner width (C)
Possible mounting positions: 1/2/3 (acc. to page 33)

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

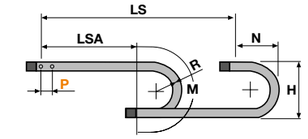
Separator	
Unassembled	Article number S445CNF
Assembled	Article number S445CNFMCI
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG445

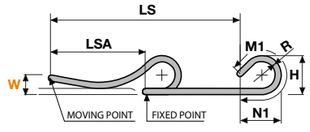
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
83	64	61	45	100-125-150-175-200-250-300	1.87	445PS061□□□
97	64	75	45	100-125-150-175-200-250-300	2.05	445PS075□□□
147	64	125	45	100-125-150-175-200-250-300	2.49	445PS125□□□

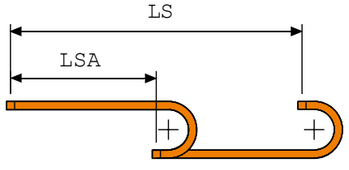
□□□ to be filled with Radius R

L=LSA + M or M1

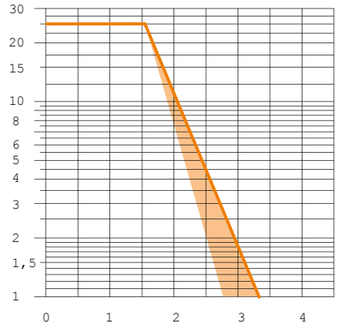
Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)







R	H	N	M	N1	M1
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



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.

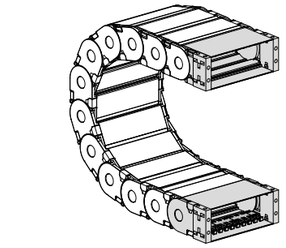
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

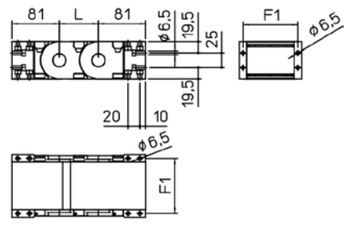
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

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



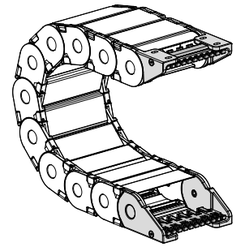


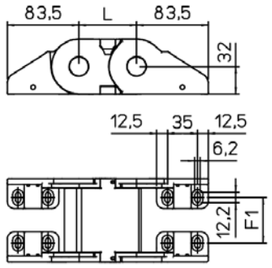
Chain Type	F1
445PS061	74
445PS075	88
445PS125	138

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

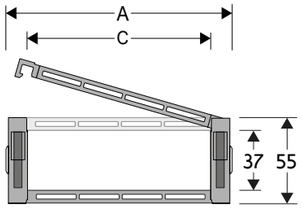
□□□ Inner width (C)
Possible mounting positions: 1/2/3/5/6 (acc. to page 33)

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

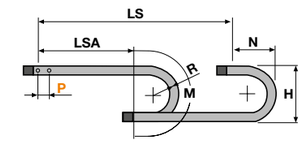
Separator	
Unassembled	Article number S660A
Assembled	Article number S660AMCI
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Strong-hold separator for C > 200 mm	
Unassembled	Article number S660AH
Assembled	Article number S660AHMC
Pin	Article number PG660

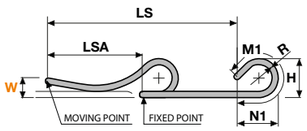
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
75	55	50	37	100-150-200-250	1.51	660A050□□□
86	55	61	37	100-150-200-250	1.51	660A061□□□
100	55	75	37	100-150-200-250	1.59	660A075□□□
106	55	81	37	100-150-200-250	1.61	660A081□□□
120	55	95	37	100-150-200-250	1.66	660A095□□□
125	55	100	37	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□□□

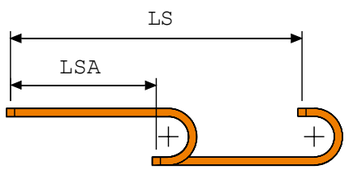
□□□ to be filled with Radius R

L=LSA + M or M1

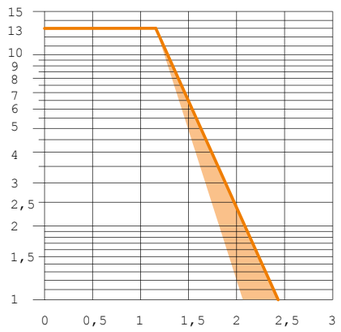
Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)







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



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.

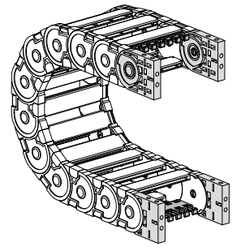
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

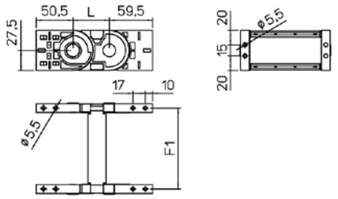
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

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



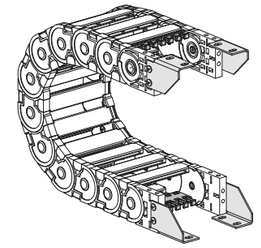


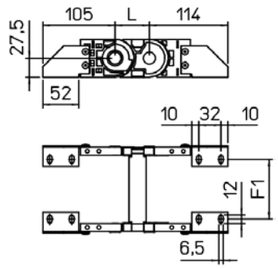
Chain Type	F1
660A050□□□	61
660A061□□□	72
660A075□□□	86
660A081□□□	92
660A095□□□	106
660A100□□□	111
660A107□□□	118
660A117□□□	128
660A125□□□	136
660A136□□□	147
660A150□□□	161
660A175□□□	186
660A200□□□	211
660A211□□□	222
660A225□□□	236
660A252□□□	263
660A261□□□	272
660A312□□□	323
660A334□□□	345
660A362□□□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





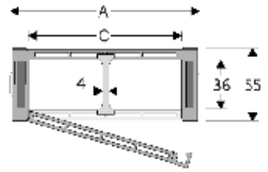
Chain Type	F1
660A050□□□	38
660A061□□□	49
660A075□□□	63
660A081□□□	69
660A095□□□	83
660A100□□□	88
660A107□□□	95
660A117□□□	105
660A125□□□	113
660A136□□□	124
660A150□□□	138
660A175□□□	163
660A200□□□	188
660A211□□□	199
660A225□□□	213
660A252□□□	240
660A261□□□	249
660A312□□□	300
660A334□□□	322
660A362□□□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

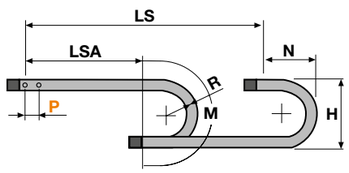
Acceleration
30 m/s²

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

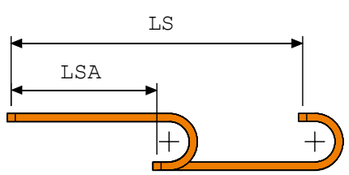
MCI: chain opening outer radius
MCE: chain opening inner radius

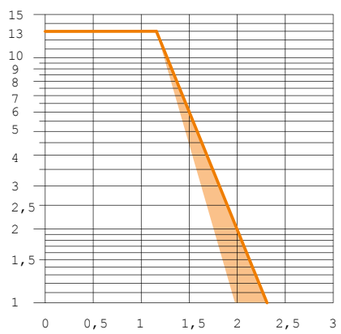


R	H	N	M
100	255	180	415
150	355	230	575
200	455	280	730
250	555	330	885

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.

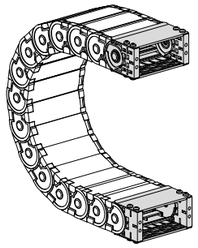
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

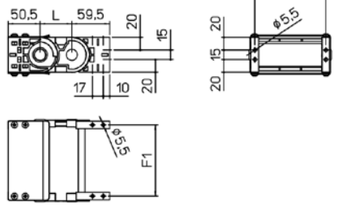
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

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





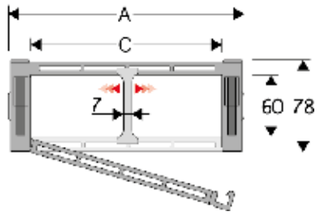
Chain Type	F1
660050	62
660100	112
600150	162

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

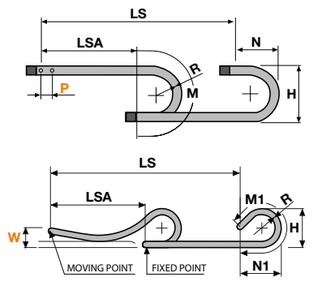
Separator	
Unassembled	Article number S770A
Assembled	Article number S770AMC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Strong-hold separator for C > 200 mm	
Unassembled	Article number S770AH
Assembled	Article number S770AHMC
Pin	Article number PG770

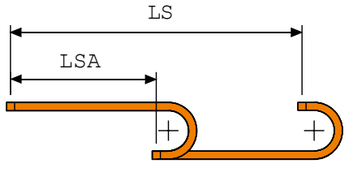
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
80	78	45	60	130-150-200-250-300	2.25	770A045□□□
91	78	56	60	130-150-200-250-300	2.25	770A056□□□
105	78	70	60	130-150-200-250-300	2.31	770A070□□□
111	78	76	60	130-150-200-250-300	2.32	770A076□□□
125	78	90	60	130-150-200-250-300	2.36	770A090□□□
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

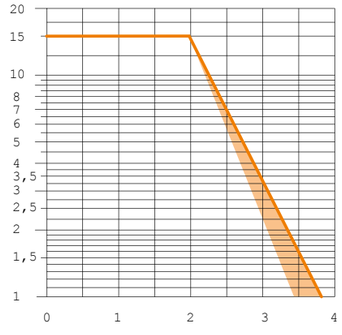
L=LSA + M or M1

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





R	H	N	M	N1	M1
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



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.

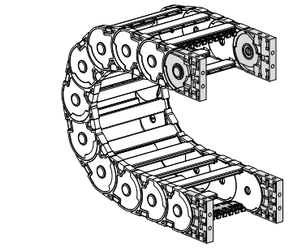
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

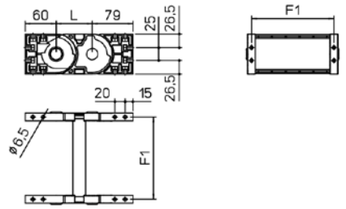
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

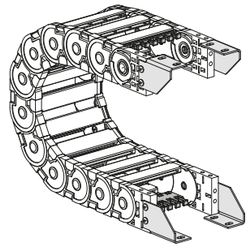
The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

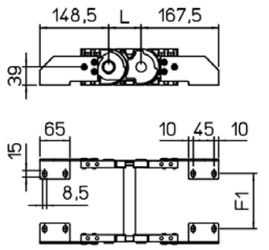
Nylon Type





Steel 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

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

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

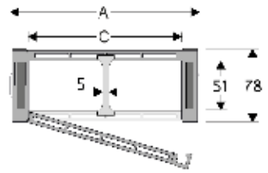
□□□ Inner width (C)

Steel Type 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

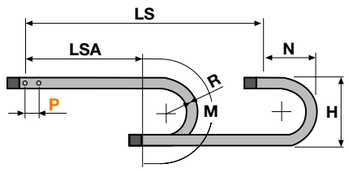
Acceleration
30 m/s²

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

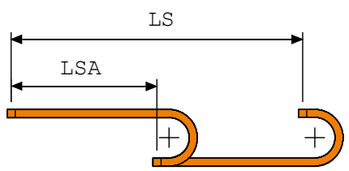
MCI: chain opening outer radius
MCE: chain opening inner radius

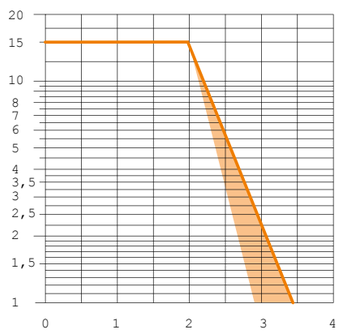


R	H	N	M
150	378	260	615
200	478	310	770
250	578	365	930
300	678	410	1085

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.

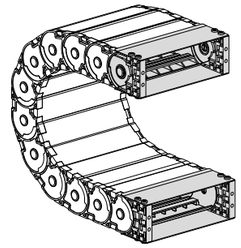
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

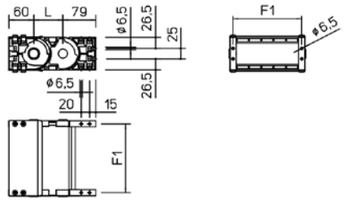
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

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
70025 = AL700KM
Complete Set Unassembled
770□□□ = AN770□□□K
70025 = AL700K

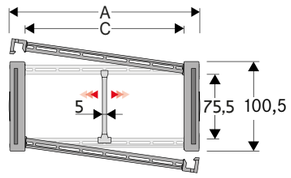
□□□ Inner width (C)

SILVYN® CHAIN 475MU

Nylon Cable Chain with opening frames

Info

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





Technical data

Inner Height (D)
75,5 mm

Pitch (P)
105 mm

Speed
8 m/s

Acceleration
40 m/s²

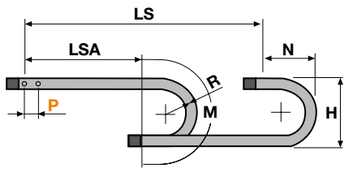
Separator	
Unassembled	Article number S309S
Assembled	Article number S309SMCI, S309SMCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Strong-hold separator for C > 200 mm	
Unassembled	Article number S309HOFL
Assembled	Article number S309HOFLMC
Pin	Article number PG475

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□□□

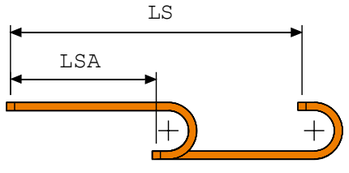
□□□ to be filled with Radius R

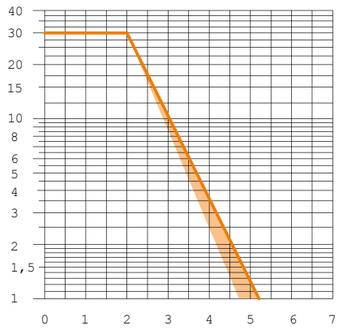
L=LSA + M or M1

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



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





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.

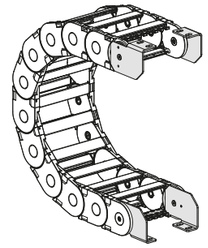
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

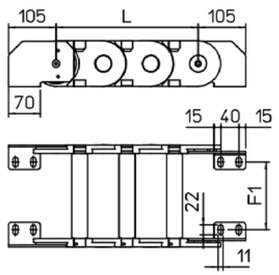
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

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





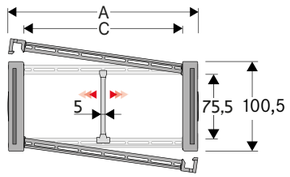
Chain Type	F1
475MU074□□□	35
475MU094□□□	55
475MU119□□□	80
475MU126□□□	87
475MU149□□□	110
475MU189□□□	150
475MU224□□□	185
475MU250□□□	211
475MU274□□□	235
475MU300□□□	261
475MU324□□□	285
475MU350□□□	311
475MU374□□□	335
475MU429□□□	390
475MU498□□□	459

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

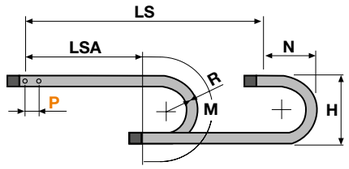
Speed
8 m/s

Acceleration
40 m/s²

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

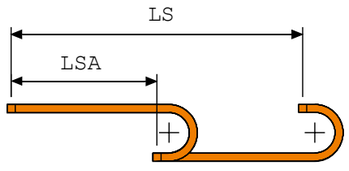
□□□ to be filled with Radius R

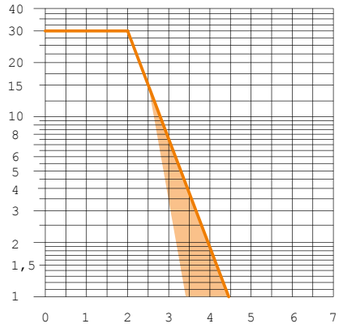


R	H	N	M
180	460.5	335	775
200	500.5	355	840
250	600.5	405	995
300	700.5	460	1155
350	800.5	505	1310
400	900.5	560	1470

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.

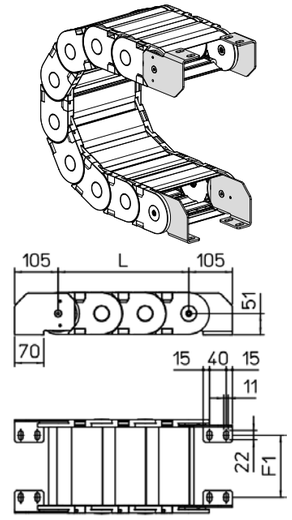
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

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



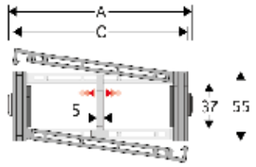
Chain Type	F1
475PU074□□□	35
475PU094□□□	55
475PU119□□□	80
475PU126□□□	87
475PU149□□□	110
475PU189□□□	150
475PU224□□□	185
475PU250□□□	211
475PU274□□□	235
475PU300□□□	261
475PU324□□□	285
475PU350□□□	311
475PU374□□□	335
475PU429□□□	390
475PU498□□□	459

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





Info

- Strong double share Sideband & Frame construction with large anti-friction triple-pin. Frames opening from inner and outer radius.

Technical data

Inner Height (D)
37 mm

Pitch (P)
65 mm

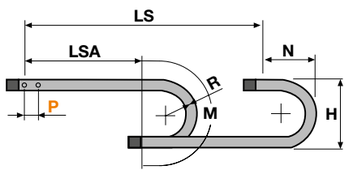
Speed
8 m/s

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□□□

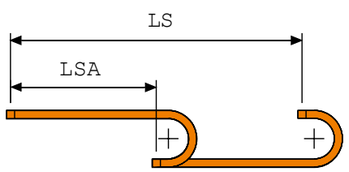
□□□ to be filled with Radius R

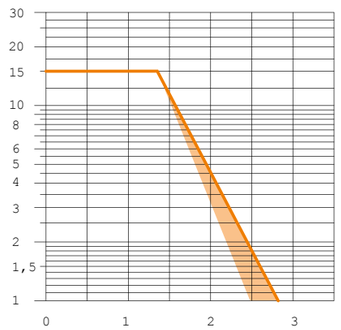


R	H	N	M
075	208	170	370
107	272	205	470
150	358	245	605
200	458	295	760
250	558	345	920
300	658	395	1075

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).

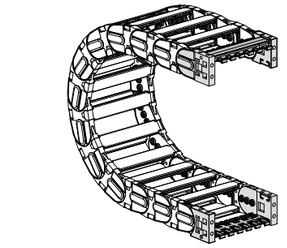
LAPP GROUP
Protective cable conduit systems and cable carrier systems
Cable chain carriers • Nylon cable chain for multiple use

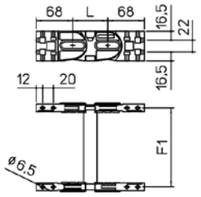
ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® SILVYN®

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



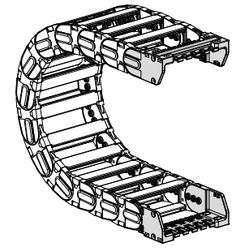


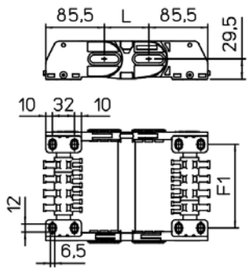
Chain Type	F1
306SU043	61
306SU054	72
306SU068	86
306SU074	92
306SU078	96
306SU088	106
306SU093	111
306SU100	118
306SU110	128
306SU118	136
306SU129	147
306SU143	161
306SU168	186
306SU193	211
306SU204	222
306SU218	236
306SU245	263
306SU254	272
306SU305	323
306SU327	345
306SU355	373

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



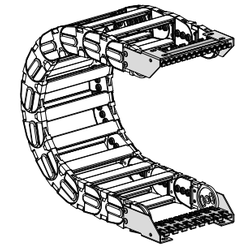


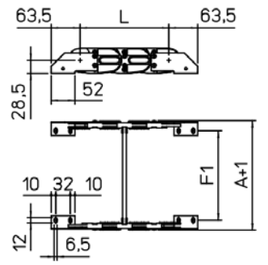
Chain Type	F1
306SU043	36
306SU054	47
306SU068	61
306SU074	67
306SU078	71
306SU088	81
306SU093	86
306SU100	93
306SU110	103
306SU118	111
306SU129	122
306SU143	136
306SU168	161
306SU193	186
306SU204	197
306SU218	211
306SU245	238
306SU254	247
306SU305	298
306SU327	320
306SU355	348

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)

Steel Type





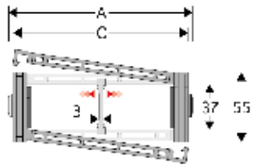
Chain Type	F1
306SU	F1=A-43

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





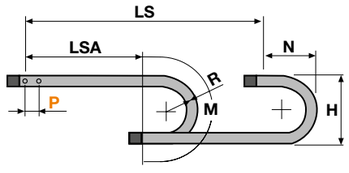
Technical data

- **Inner Height (D)** 37 mm
- **Pitch (P)** 65 mm
- **Speed** 8 m/s
- **Acceleration** 40 m/s²

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

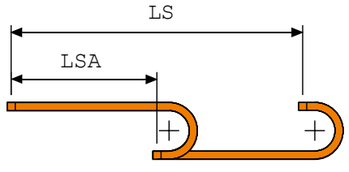
Separator	
Unassembled	Article number S306SM
Assembled	Article number S306SMMC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG307

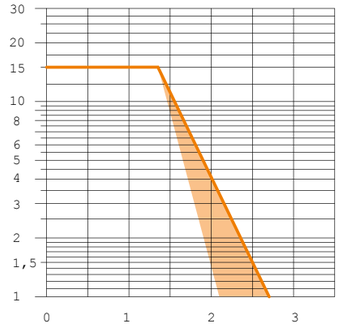


R	H	N	M
107	272	205	470
150	358	245	605
200	458	295	760
250	558	345	920
300	658	395	1075

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.

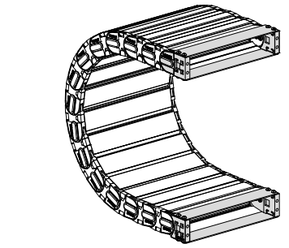
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

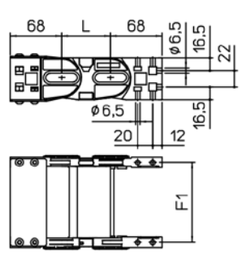
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

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



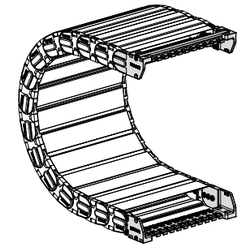


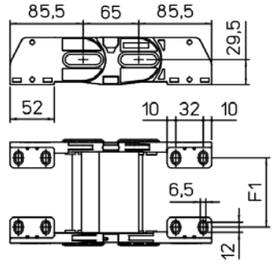
Chain Type	F1
306CU043	61
306CU054	72
306CU068	86
306CU074	92
306CU078	96
306CU088	106
306CU093	111
306CU100	118
306CU110	128
306CU118	136
306CU129	147
306CU143	161
306CU168	186
306CU193	211
306CU204	222
306CU218	236
306CU245	263
306CU254	272
306CU305	323
306CU327	345
306CU355	373

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

□□□ Inner width (C)

Nylon Type



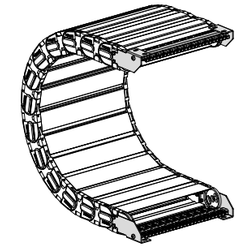


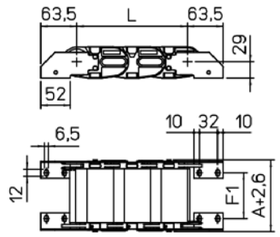
Chain Type	F1
306CU043	36
306CU054	47
306CU068	61
306CU074	67
306CU078	71
306CU088	81
306CU093	86
306CU100	93
306CU110	103
306CU118	111
306CU129	122
306CU143	136
306CU168	161
306CU193	186
306CU204	197
306CU218	211
306CU245	238
306CU254	247
306CU305	298
306CU327	320
306CU355	348

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)

Steel Type





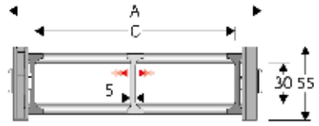
Chain Type	F1
306CU	F1=A-43

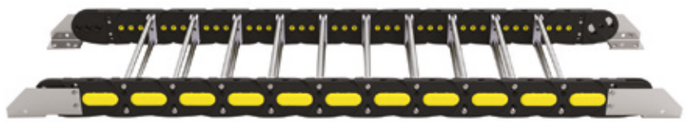
Steel Type Part Numbers
Complete Set Assembled
A306CU□□□KM□
Complete Set Unassembled
A306CU□□□K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCT306CU□□□KM
Complete Set Unassembled
SFCT306CU□□□K

□□□ 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

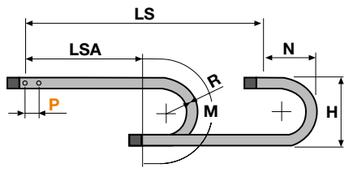
Speed
8 m/s

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

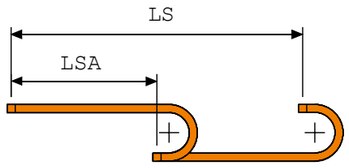
Separator	
Unassembled	Article number S2000F
Assembled	Article number S2000FMC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG307

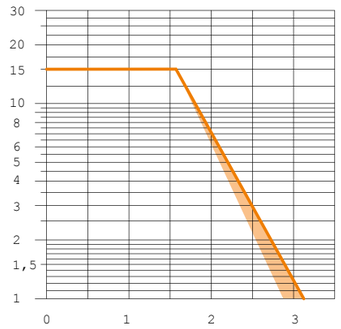


R	H	N	M
075	208	170	370
107	272	205	470
150	358	245	605
200	458	295	760
250	558	345	920
300	658	395	1075

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.

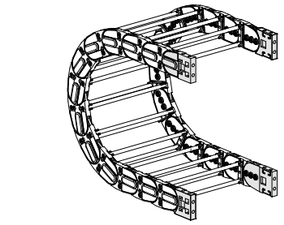
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

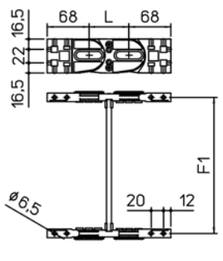
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

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



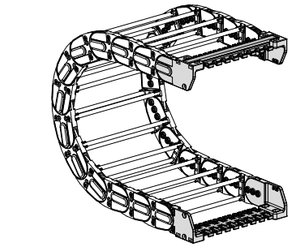


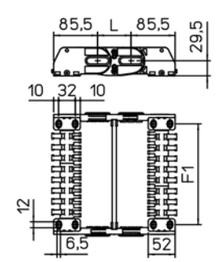
Chain Type	F1
306B075	96
306B100	121
306B150	171
306B200	221
306B250	271
306B300	321
306B□□□	F=A-19

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



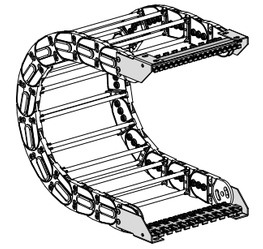


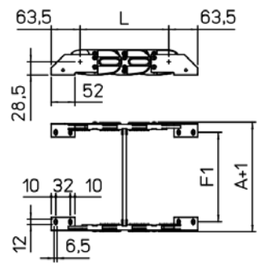
Chain Type	F1
306B075	71
306B100	96
306B150	146
306B200	196
306B250	246
306B300	296
306B□□□	F=A-44

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





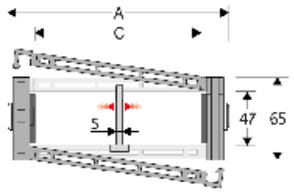
Chain Type	F1
306B□□□	F=A-44

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

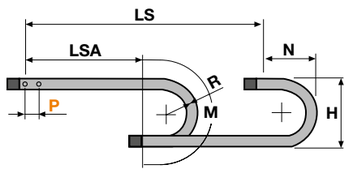
Speed
8 m/s

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□□□

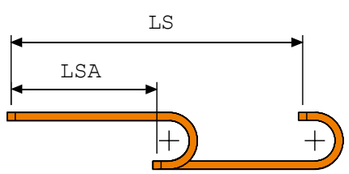
□□□ to be filled with Radius R

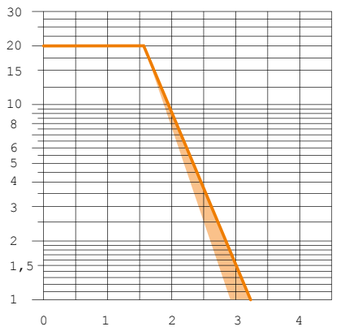


R	H	N	M
075	219	180	375
090	249	195	425
120	309	225	520
140	349	245	580
200	469	305	770
250	569	355	925

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.

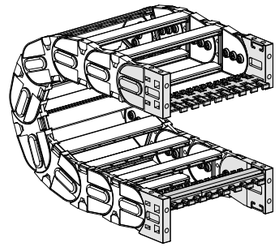
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

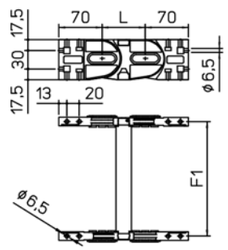
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

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



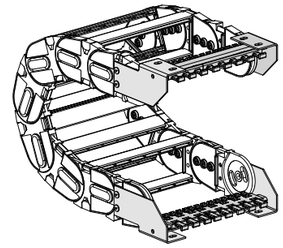


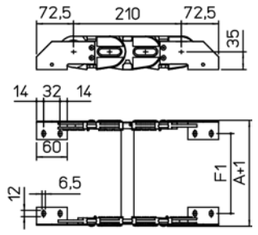
Chain Type	F1
307SU042	61
307SU053	72
307SU067	86
307SU073	92
307SU081	100
307SU087	106
307SU092	111
307SU099	118
307SU109	128
307SU117	136
307SU128	147
307SU142	161
307SU167	186
307SU192	211
307SU203	222
307SU217	236
307SU244	263
307SU253	272
307SU304	323
307SU326	345
307SU354	373

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





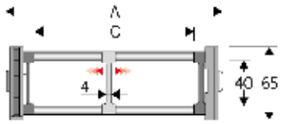
Chain Type	F1
307SU042	31
307SU053	42
307SU067	56
307SU073	62
307SU081	70
307SU087	76
307SU092	81
307SU099	88
307SU109	98
307SU117	106
307SU128	117
307SU142	131
307SU167	156
307SU192	181
307SU203	192
307SU217	206
307SU244	233
307SU253	242
307SU304	293
307SU326	315
307SU354	343

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





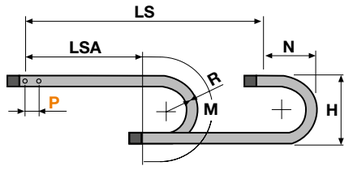
Technical data

- **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

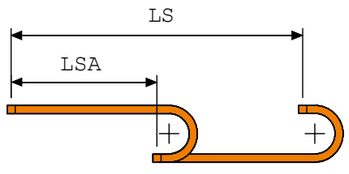
Separator	
Unassembled	Article number S307
Assembled	Article number S307MC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG307

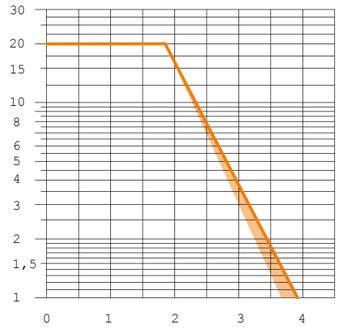


R	H	N	M
075	219	180	375
090	249	195	425
120	309	225	520
140	349	245	580
200	469	305	770
250	569	355	925

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.

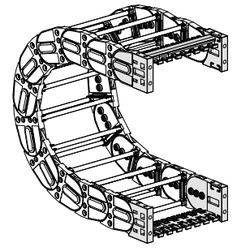
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

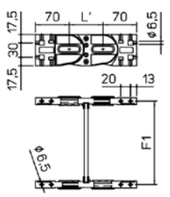
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

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



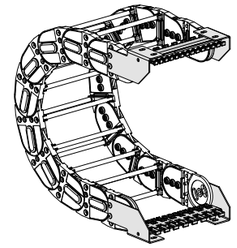


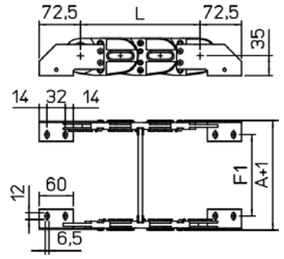
Chain Type	F1
307B075□	98
307B100□	123
307B150□	173
307B200□	223
307B250□	273
307B300□	323
307B□□□□	F=A-19

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





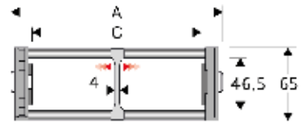
Chain Type	F ^mm
307B075□	68
307B100□	93
307B150□	143
307B200□	193
307B250□	243
307B300□	293
307B□□□□	F=A-49

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.





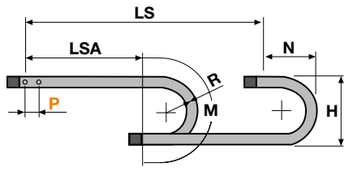
Technical data

- **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

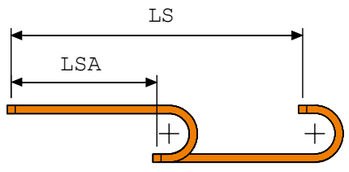
Separator	
Unassembled	Article number S307EF
Assembled	Article number S307EFMC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG307

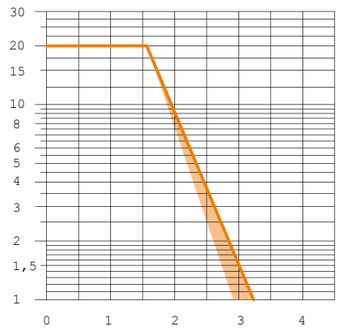


R	H	N	M
075	219	180	375
090	249	195	425
120	309	225	520
140	349	245	580
170	409	305	770
200	469	305	770
250	569	355	925

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.

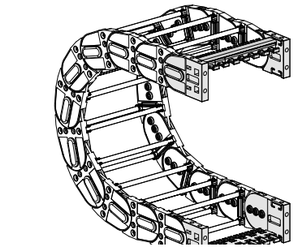
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

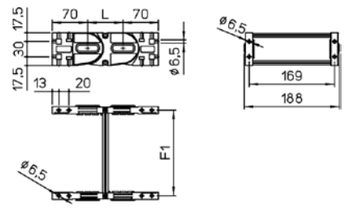
LAPP GROUP
Protective cable conduit systems and cable carrier systems
Cable chain carriers • Nylon cable chain for multiple use
ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
SILVYN®

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



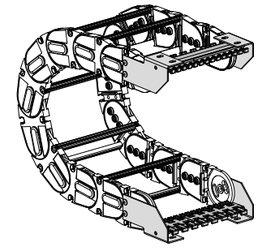


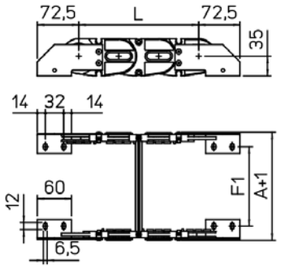
Chain Type	F1
307E075	94
307E100	119
307E150	169
307E200	219
307E250	269
307E300	319
307□□□	F=A-19

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





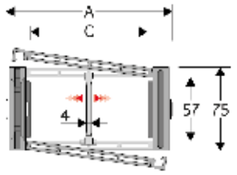
Chain Type	F1
307E075	94
307E100	119
307E150	169
307E200	219
307E250	269
307E300	319
307□□□	F=A-19

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

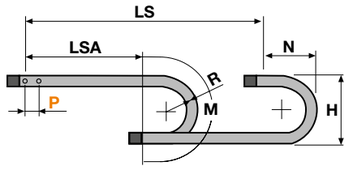
Speed
8 m/s

Acceleration
40 m/s²

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

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

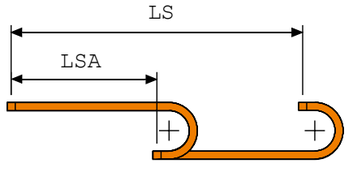
□□□ to be filled with Radius R

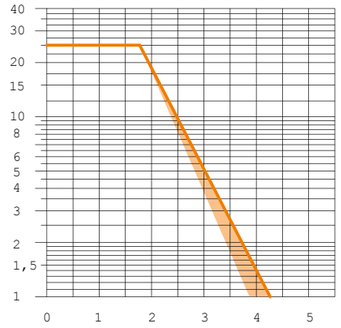


R	H	N	M
135	345	255	585
150	375	270	635
180	435	300	725
200	475	320	790
230	535	350	885
280	635	400	1040
400	875	520	1420

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.

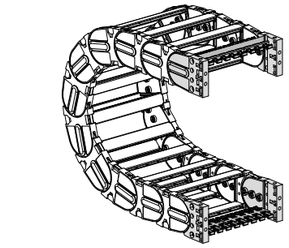
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

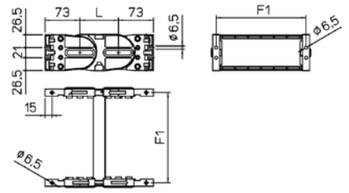
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

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



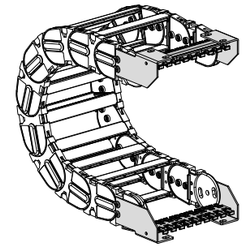


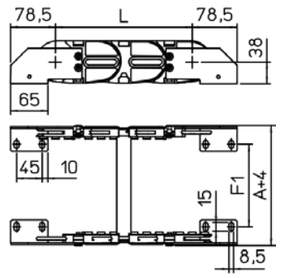
Chain Type	F1
308SU038□□□	62
308SU049□□□	73
308SU063□□□	87
308SU069□□□	93
308SU083□□□	107
308SU088□□□	112
308SU095□□□	119
308SU105□□□	129
308SU113□□□	137
308SU124□□□	148
308SU138□□□	162
308SU163□□□	187
308SU188□□□	212
308SU199□□□	223
308SU213□□□	237
308SU240□□□	264
308SU249□□□	273
308SU300□□□	324
308SU322□□□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





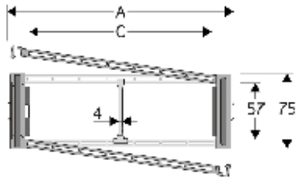
Chain Type	F1
308SU038□□□	20
308SU049□□□	31
308SU063□□□	45
308SU069□□□	51
308SU083□□□	65
308SU088□□□	70
308SU095□□□	77
308SU105□□□	87
308SU113□□□	95
308SU124□□□	106
308SU138□□□	120
308SU163□□□	145
308SU188□□□	170
308SU199□□□	181
308SU213□□□	195
308SU240□□□	222
308SU249□□□	231
308SU300□□□	282
308SU322□□□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

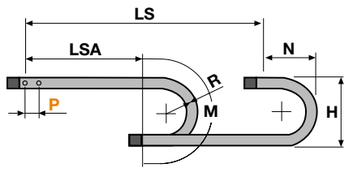
Speed
8 m/s

Acceleration
40 m/s²

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

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

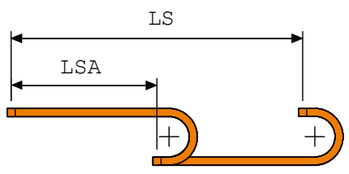
□□□ to be filled with Radius R

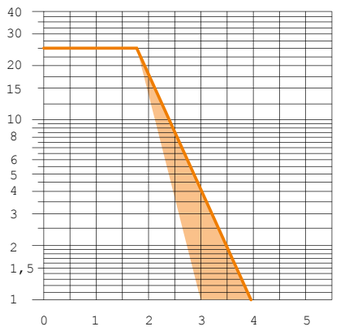


R	H	N	M
150	375	270	635
180	435	300	725
200	475	320	790
230	535	350	885
280	635	400	1040
400	875	520	1420

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.

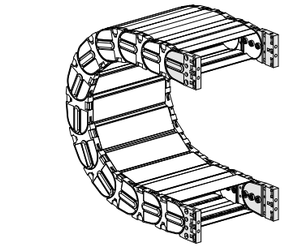
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

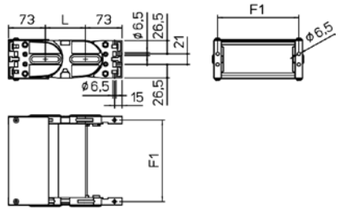
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

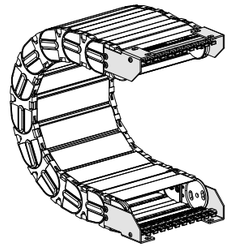
The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

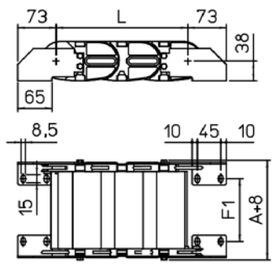
Nylon Type





Steel 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

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

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

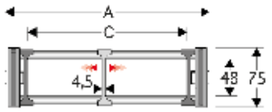
□□□ Inner width (C)

Steel Type Part Numbers
Complete Set Assembled
A308CU...KM□
Complete Set Unassembled
A308CU...K□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





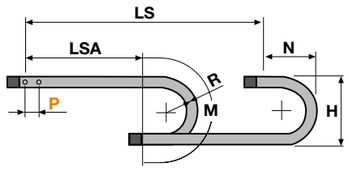
Technical data

- **Inner Height (D)** 48 mm
- **Pitch (P)** 80 mm
- **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

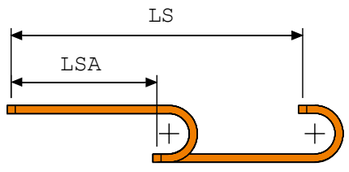
Separator	
Unassembled	Article number S3000F
Assembled	Article number S3000FMC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG308

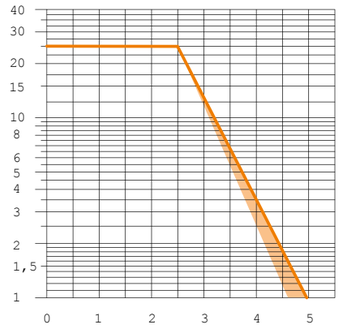


R	H	N	M
150	374	270	635
180	434	300	725
200	474	320	790
230	534	350	885
280	634	400	1040
400	874	520	1420

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.

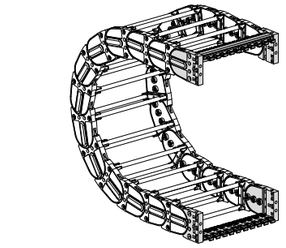
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

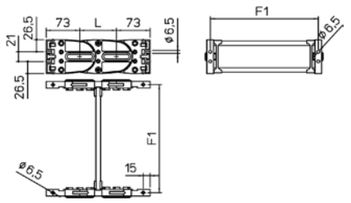
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

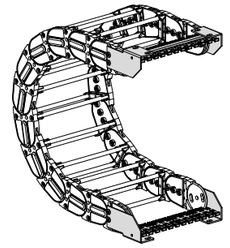
The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

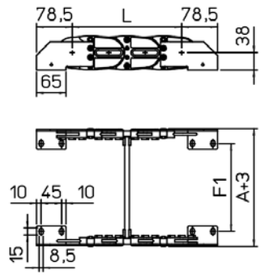
Nylon Type





Steel Type





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

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

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

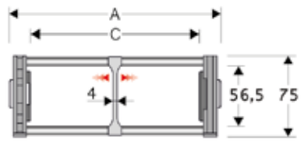
□□□ Inner width (C)

Steel Type 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

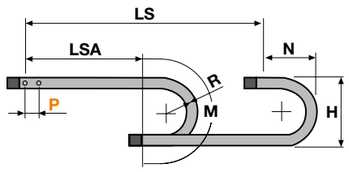
Separator	
Unassembled	Article number S308EF
Assembled	Article number S308EFMC

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

Pin	Article number PG308

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

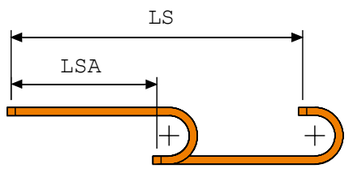
□□□ to be filled with Radius R

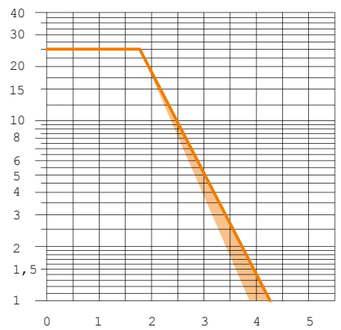


R	H	N	M
135	345	355	585
150	374	270	635
180	434	300	725
200	474	320	790
230	534	350	885
280	634	400	1040
400	874	520	1420

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.

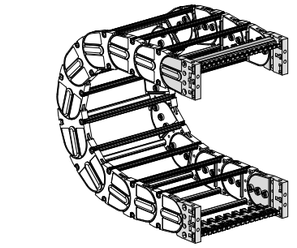
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

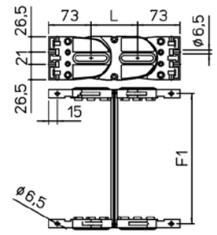
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

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



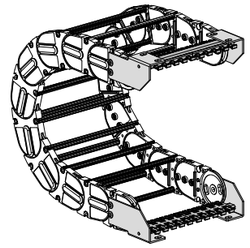


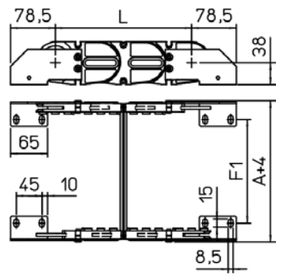
Chain Type	F1
308E100	123
308E150	173
308E200	223
308E250	273
308E300	323
308□□□	F=A-20

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





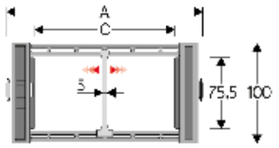
Chain Type	F1
308E100	81
308E150	131
308E200	181
308E250	231
308E300	281
308□□□	F=A-62

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

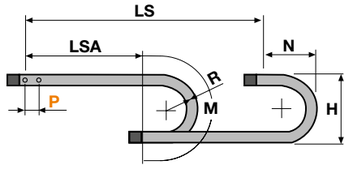
Speed
8 m/s

Acceleration
40 m/s²

Separator	
Unassembled	Article number S309S
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 PG309H

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
120	100	64	75.5	150-200-250-300-350-400-500-600	4.03	309SU064□□□
140	100	84	75.5	150-200-250-300-350-400-500-600	4.09	309SU084□□□
165	100	109	75.5	150-200-250-300-350-400-500-600	4.17	309SU109□□□
172	100	116	75.5	150-200-250-300-350-400-500-600	4.20	309SU116□□□
195	100	139	75.5	150-200-250-300-350-400-500-600	4.27	309SU139□□□
235	100	179	75.5	150-200-250-300-350-400-500-600	4.40	309SU179□□□
270	100	214	75.5	150-200-250-300-350-400-500-600	4.51	309SU214□□□
296	100	240	75.5	150-200-250-300-350-400-500-600	4.60	309SU240□□□
320	100	264	75.5	150-200-250-300-350-400-500-600	4.67	309SU264□□□
346	100	290	75.5	150-200-250-300-350-400-500-600	4.75	309SU290□□□
370	100	314	75.5	150-200-250-300-350-400-500-600	4.83	309SU314□□□
396	100	340	75.5	150-200-250-300-350-400-500-600	4.90	309SU340□□□
420	100	364	75.5	150-200-250-300-350-400-500-600	4.99	309SU364□□□
475	100	419	75.5	150-200-250-300-350-400-500-600	5.20	309SU419□□□
544	100	488	75.5	150-200-250-300-350-400-500-600	5.40	309SU488□□□

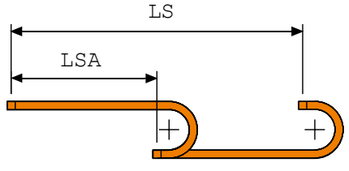
□□□ to be filled with Radius R

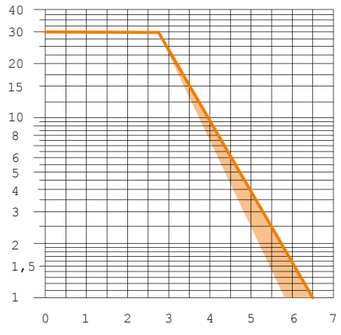


R	H	N	M
150	406	300	675
200	506	350	830
250	606	400	985
300	706	455	1145
350	806	500	1300
400	906	555	1460
500	1106	650	1770
600	1306	750	2085

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.

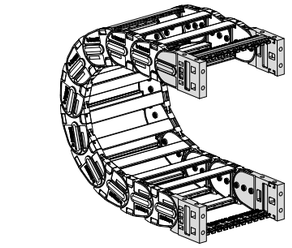
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

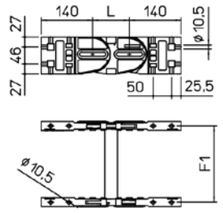
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

End brackets

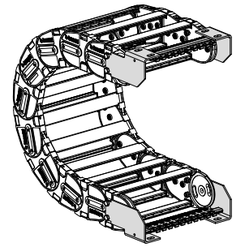
The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

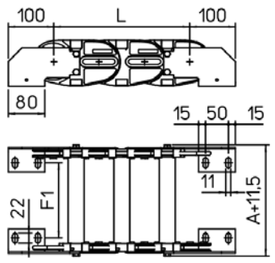
Nylon Type





Steel 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)

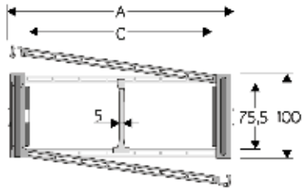
Chain Type	F1
309SU064	50
309SU084	70
309SU109	95
309SU116	102
309SU139	125
309SU179	165
309SU214	200
309SU240	226
309SU264	250
309SU290	276
309SU314	300
309SU340	326
309SU364	350
309SU419	405
309SU488	474

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.





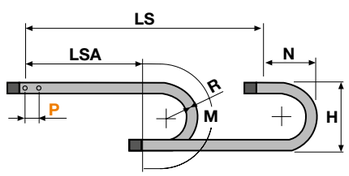
Technical data

- **Inner Height (D)** 75,5 mm
- **Pitch (P)** 100 mm
- **Speed** 8 m/s
- **Acceleration** 40 m/s²

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

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
120	100	64	75.5	200-250-300-350-400-500-600	4.84	309CU064□□□
140	100	84	75.5	200-250-300-350-400-500-600	5.12	309CU084□□□
165	100	109	75.5	200-250-300-350-400-500-600	5.47	309CU109□□□
172	100	116	75.5	200-250-300-350-400-500-600	5.58	309CU116□□□
195	100	139	75.5	200-250-300-350-400-500-600	5.90	309CU139□□□
235	100	179	75.5	200-250-300-350-400-500-600	6.47	309CU179□□□
270	100	214	75.5	200-250-300-350-400-500-600	6.97	309CU214□□□
296	100	240	75.5	200-250-300-350-400-500-600	7.35	309CU240□□□
320	100	264	75.5	200-250-300-350-400-500-600	7.68	309CU264□□□
346	100	290	75.5	200-250-300-350-400-500-600	8.04	309CU290□□□
370	100	314	75.5	200-250-300-350-400-500-600	8.39	309CU314□□□
396	100	340	75.5	200-250-300-350-400-500-600	8.74	309CU340□□□
420	100	364	75.5	200-250-300-350-400-500-600	9.09	309CU364□□□
475	100	419	75.5	200-250-300-350-400-500-600	9.98	309CU419□□□
544	100	488	75.5	200-250-300-350-400-500-600	10.86	309CU488□□□

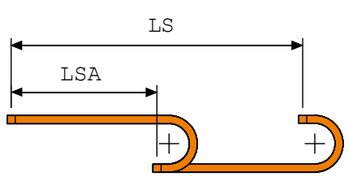
□□□ to be filled with Radius R

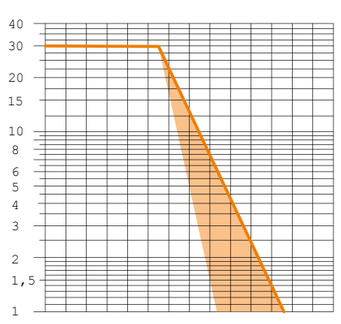


R	H	N	M
200	506	350	830
250	606	400	985
300	706	455	1145
350	806	500	1300
400	906	555	1460
500	1106	650	1770
600	1306	750	2085

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.

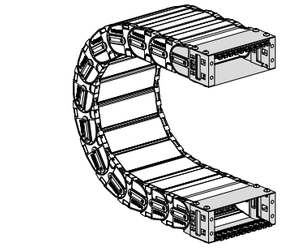
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

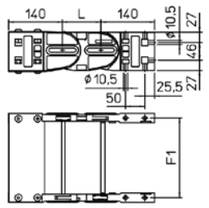
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

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



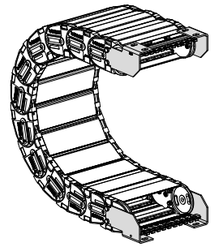


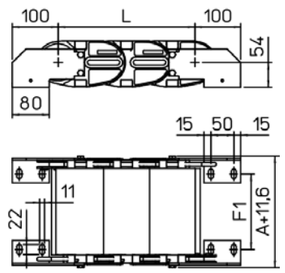
Chain Type	F1
309CU064□□□	92
309CU084□□□	112
309CU109□□□	137
309CU116□□□	144
309CU139□□□	167
309CU179□□□	207
309CU214□□□	242
309CU240□□□	268
309CU264□□□	292
309CU290□□□	318
309CU314□□□	342
309CU340□□□	368
309CU364□□□	392
309CU419□□□	447
309CU488□□□	516

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

□□□ Inner width (C)

Steel Type





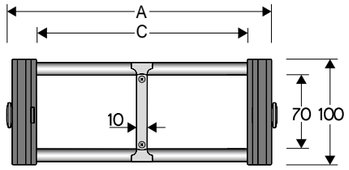
Chain Type	F1
309CU064□□□	50
309CU084□□□	70
309CU109□□□	95
309CU116□□□	102
309CU139□□□	125
309CU179□□□	165
309CU214□□□	200
309CU240□□□	226
309CU264□□□	250
309CU290□□□	276
309CU314□□□	300
309CU340□□□	326
309CU364□□□	350
309CU419□□□	405
309CU488□□□	474

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





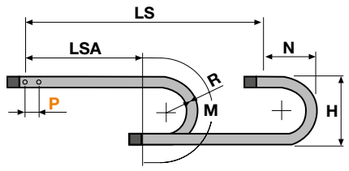
Technical data

- **Inner Height (D)** 70 mm
- **Pitch (P)** 100 mm
- **Speed** 8 m/s
- **Acceleration** 40 m/s²

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

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
156	100	100	70	150-200-250-300-350-400-500-600	4.20	309B100□
206	100	150	70	150-200-250-300-350-400-500-600	4.40	309B150□
256	100	200	70	150-200-250-300-350-400-500-600	4.55	309B200□
306	100	250	70	150-200-250-300-350-400-500-600	4.70	309B250□
356	100	300	70	150-200-250-300-350-400-500-600	4.85	309B300□
456	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□□□□

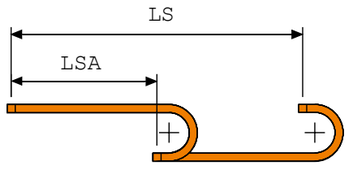
□□□ to be filled with Radius R

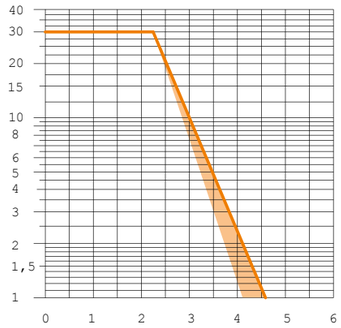


R	H	N	M
150	406	300	675
200	506	350	830
250	606	400	985
300	706	455	1145
350	806	500	1300
400	906	555	1460
500	1106	650	1770
600	1306	750	2085

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).

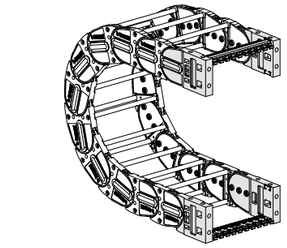
LAPP GROUP
Protective cable conduit systems and cable carrier systems
Cable chain carriers • Nylon cable chain for multiple use

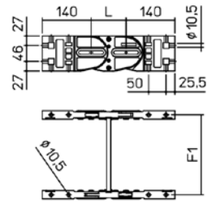
ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® SILVYN®

End brackets

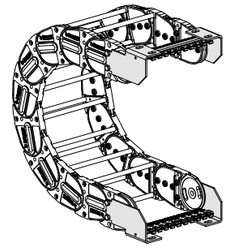
The end brackets set allows the two ends of the chain to be attached to the equipment. Set complete with tiewrap clamps available on request.

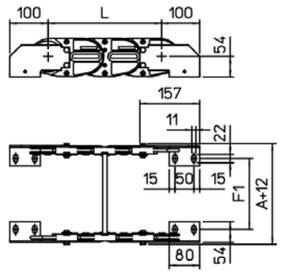
Nylon Type





Steel Type





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

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

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

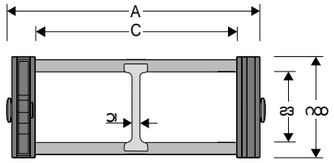
□□□ Inner width (C)

Steel Type 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

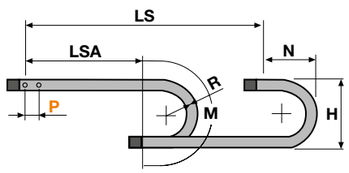
Speed
8 m/s

Acceleration
40 m/s²

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

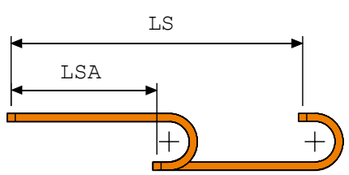
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
153	100	100	70	150-200-250-300-350-400-500-600	4.48	309T100□□□
203	100	150	70	150-200-250-300-350-400-500-600	4.81	309T150□□□
253	100	200	70	150-200-250-300-350-400-500-600	5.09	309T200□□□
303	100	250	70	150-200-250-300-350-400-500-600	5.37	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□□□□□□

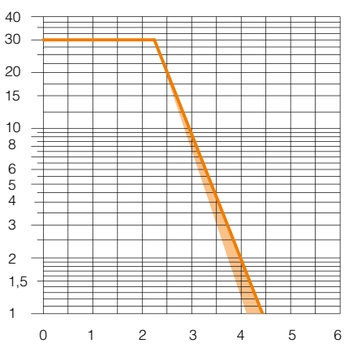
□□□ to be filled with Radius R



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.

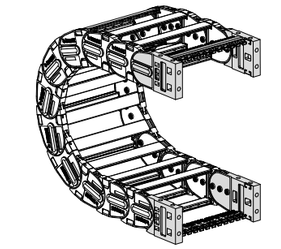
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

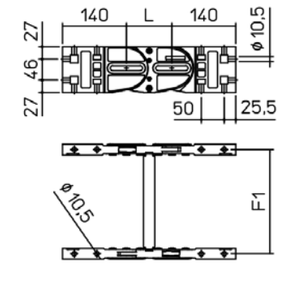
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

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



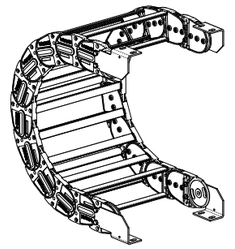


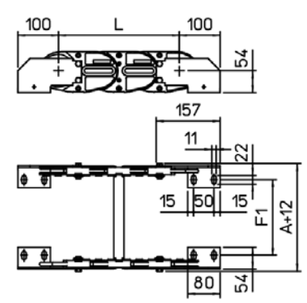
Chain Type	F1
309T100	87
309T150	137
309T200	187
309T250	237
309T300	287
309T400	387
309T□□□	F=A-66

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)

Steel Type





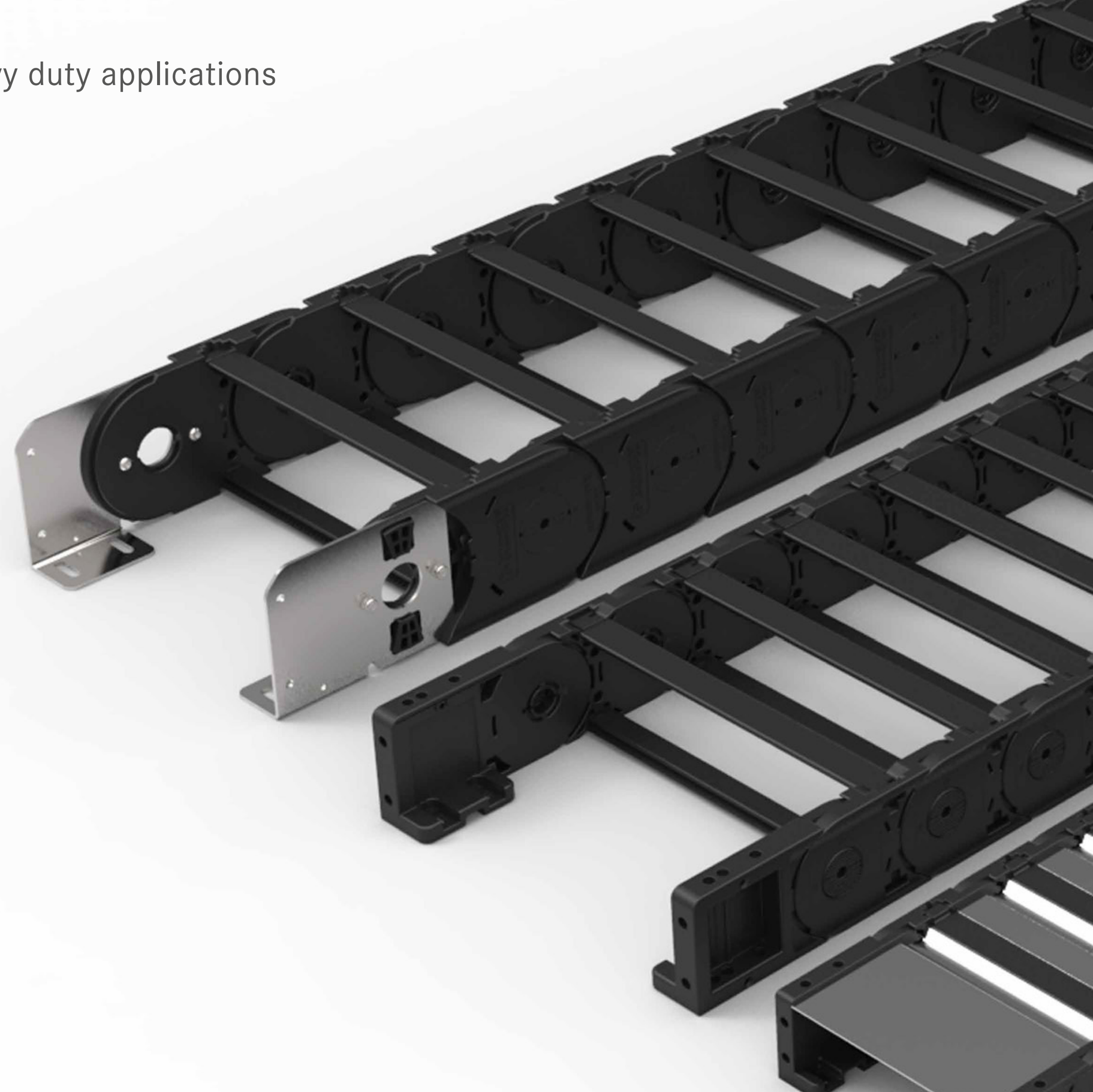
Chain Type	F1
309T100	129
309T150	179
309T200	229
309T250	279
309T300	329
309T400	429
309T□□□	F=A-24

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)

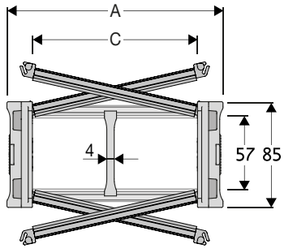
Nylon cable chains for heavy duty applications

Product	Page
SILVYN® CHAIN H57SC	130
SILVYN® CHAIN H57PC/PN	132
SILVYN® CHAIN H57B	134
SILVYN® CHAIN H57T	136
SILVYN® CHAIN H80SC/SA	138
SILVYN® CHAIN H80PC/PA	140
SILVYN® CHAIN H80B	142
SILVYN® CHAIN H80T	144
SILVYN® CHAIN H110SC/SA	146
SILVYN® CHAIN H110PC/PA	148
SILVYN® CHAIN H110B	150
SILVYN® CHAIN H110T	152



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

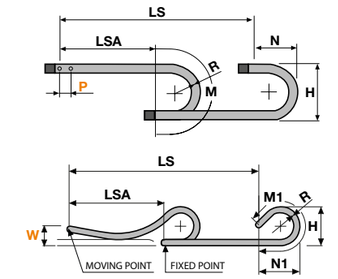
Speed
8 m/s

Acceleration
40 m/s²

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□□□

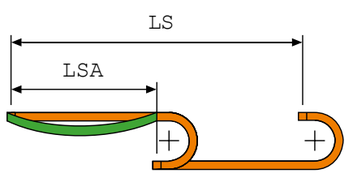
□□□ to be filled with Radius R

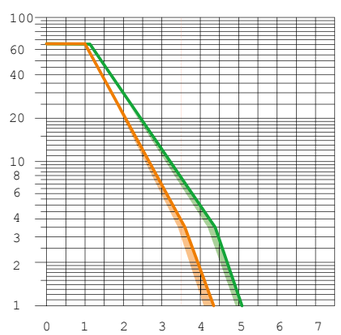


R	H	N	M	N1	M1
150	385	283	655	480	1050
180	445	313	750	620	1385
200	485	333	810	715	1605
250	585	383	970	950	2160
300	685	433	1125	1190	2720
350	785	483	1280	1425	3275
400	885	533	1440	1660	3830

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.

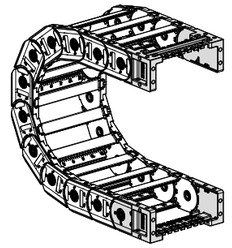
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

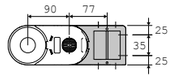
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

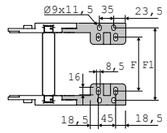
End brackets

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







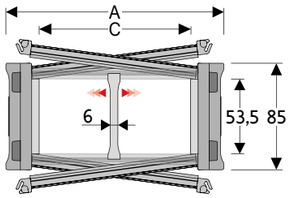
Chain Type	F	F1
H57SC075	51	98
H57SC100	76	123
H57SC125	101	148
H57SC150	126	173
H57SC175	151	198
H57SC200	176	223
H57SC225	201	248
H57SC250	226	273
H57SC275	251	298
H57SC300	276	323
H57SC350	326	373
H57SC400	376	423

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





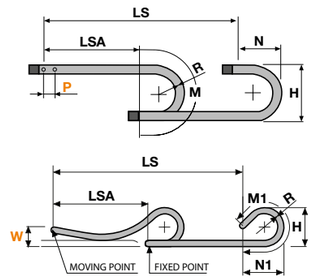
Technical data

- **Inner Height (D)** 53,5 mm
- **Pitch (P)** 90 mm
- **Height Moving Point (W)** 250 mm
- **Speed** 8 m/s
- **Acceleration** 40 m/s²

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

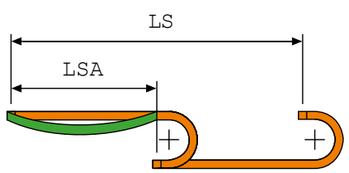
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
SILVYN® CHAIN H57PC (Aluminium)						
113	85	75	53.5	180-200-250-300-350-400	4.23	H57PC075□□□
138	85	100	53.5	180-200-250-300-350-400	4.67	H57PC100□□□
163	85	125	53.5	180-200-250-300-350-400	5.11	H57PC125□□□
188	85	150	53.5	180-200-250-300-350-400	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□□□

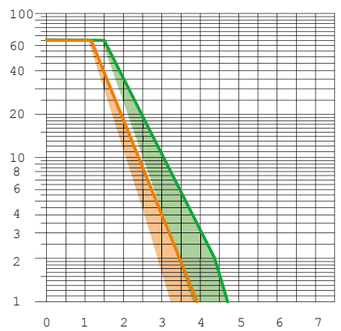
□□□ to be filled with Radius R



R	H	N	M	N1	M1
150	385	283	655	480	1050
180	445	313	750	620	1385
200	485	333	810	715	1605
250	585	383	970	950	2160
300	685	433	1125	1190	2720
350	785	483	1280	1425	3275
400	885	533	1440	1660	3830

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.

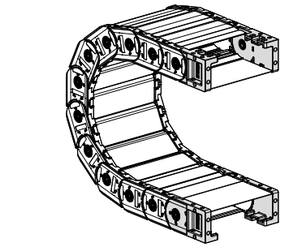
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

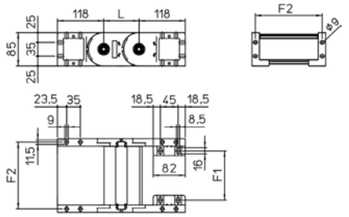
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

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





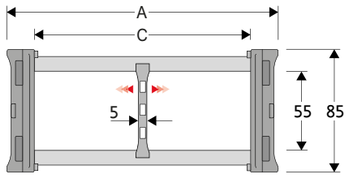
Chain Type	F	F1
H57PC075	51	98
H57PC100	76	123
H57PC125	101	148
H57PC150	126	173
H57PC175	151	198
H57PC200	176	223
H57PC225	201	248
H57PC250	226	273
H57PC275	251	298
H57PC300	276	323
H57PC350	326	373
H57PC400	376	423

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





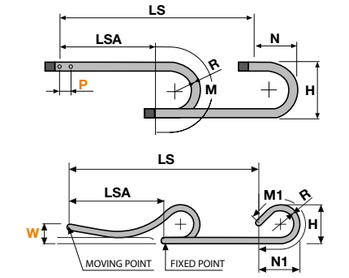
Technical data

- **Inner Height (D)** 55 mm
- **Pitch (P)** 90 mm
- **Height Moving Point (W)** 250 mm
- **Speed** 8 m/s
- **Acceleration** 40 m/s²

Separator	
Unassembled	Article number S57BF
Assembled	Article number S57BFMC
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
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□□□

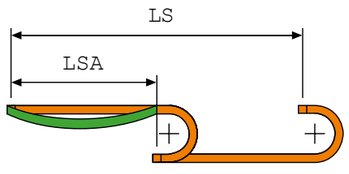
□□□ to be filled with Radius R

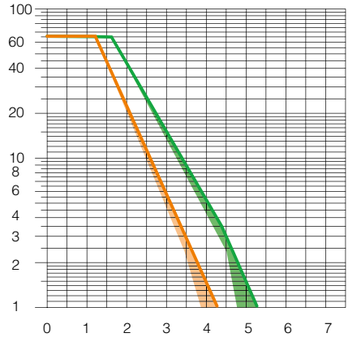


R	H	N	M	N1	M1
150	385	283	655	480	1050
180	445	313	750	620	1385
200	485	333	810	715	1605
250	585	383	970	950	2160
300	685	433	1125	1190	2720
350	785	483	1280	1425	3275
400	885	533	1440	1660	3830

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.

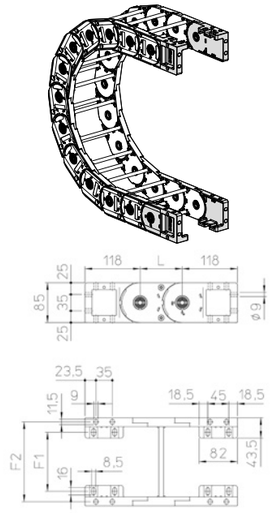
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

LAPP GROUP
Protective cable conduit systems and cable carrier systems
Cable chain carriers • Nylon cable chains for heavy duty
ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® SILVYN®

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



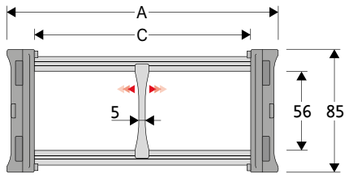
Chain Type	F	F1
H57B075	51	98
H57B100	76	123
H57B125	101	148
H57B150	126	173
H57B175	151	198
H57B200	176	223
H57B225	201	248
H57B250	226	273
H57B275	251	298
H57B300	276	323
H57B350	326	373
H57B400	376	423

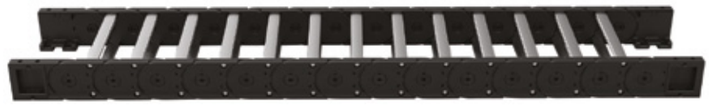
Nylon Type Part Numbers
Complete Set Assembled
ANH57KM□
Complete Set Unassembled
ANH57K□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCTH57□□□KMA
Complete Set Unassembled
SFCTH57□□□KA

□□□ Inner width (C)

SILVYN® CHAIN H57T

Nylon cable chain with un-screwable aluminium rods.





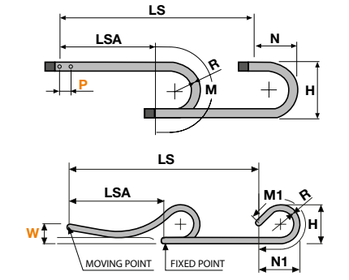
Technical data

- **Inner Height (D)** 56 mm
- **Pitch (P)** 90 mm
- **Height Moving Point (W)** 250 mm
- **Speed** 8 m/s
- **Acceleration** 40 m/s²

Separator	
Unassembled	Article number S57TF
Assembled	Article number S57TFMC
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
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□□□

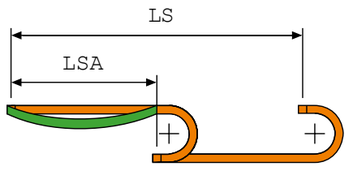
□□□ to be filled with Radius R

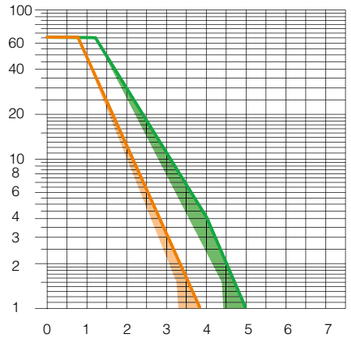


R	H	N	M	N1	M1
150	385	283	655	480	1050
180	445	313	750	620	1385
200	485	333	810	715	1605
250	585	383	970	950	2160
300	685	433	1125	1190	2720
350	785	483	1280	1425	3275
400	885	533	1440	1660	3830

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.

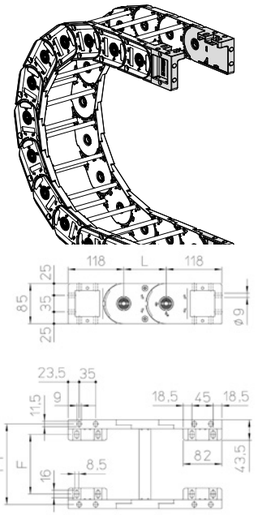
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

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

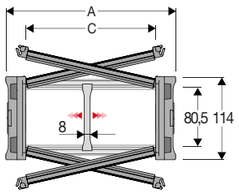
□□□ Inner width (C)

SILVYN® CHAIN H80SC / SA

Nylon Cable Chain with opening frames

Info

- Sideband construction with quickly removable pin. Covers openable from either side on both inner and outer radius.





Technical data

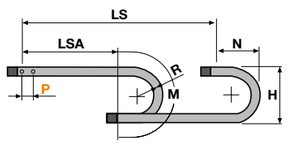
- **Inner Height (D)** 80,5 mm
- **Pitch (P)** 120 mm
- **Height Moving Point (W)** 300 mm
- **Speed** 8 m/s
- **Acceleration** 40 m/s²

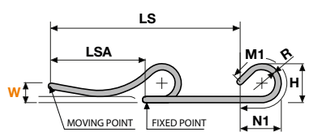
Separator H80SC	
Unassembled	Article number SH80SCF6
Assembled	Article number SH80SCF6MCI, SH80SCF6MCE
Separator H80SA	
Unassembled	Article number S80
Assembled	Article number S80MCI, S80MCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Strong-hold separator for C > 200 mm H80SC	
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

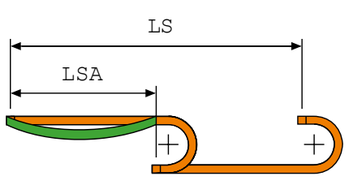
R	H	N	M	N1	M1
200	514	377	870	810	1775
250	614	427	1030	1050	2330
300	714	477	1185	1285	2885
350	814	527	1340	1525	3445
400	914	577	1340	1525	3445
500	1114	677	1815	2235	5115
600	1314	777	2125	2705	6225

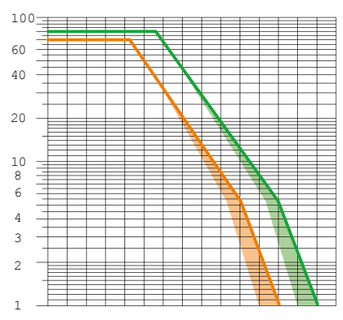




L=LSA + M or M1

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.

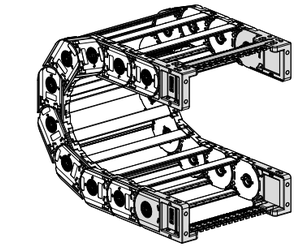
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

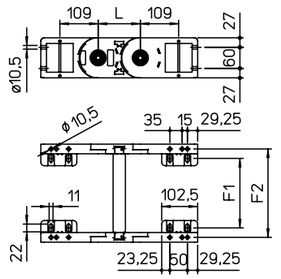
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

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	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

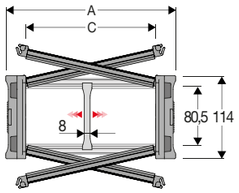
□□□ Inner width (C)
Possible mounting positions: 1/2/3 (acc. to page 33)

SILVYN® CHAIN H80PC / PA

Nylon Protection cable chain with openable aluminium covers.

Info

- Sideband construction with quickly removable pin. Covers openable from either side on both inner and outer radius.





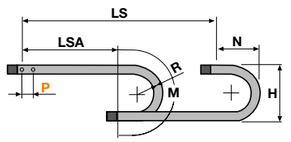
Technical data

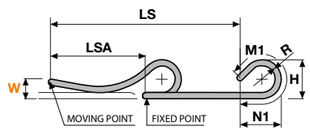
- **Inner Height (D)** 77 mm
- **Pitch (P)** 120 mm
- **Height Moving Point (W)** 300 mm
- **Speed** 8 m/s
- **Acceleration** 40 m/s²

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						
205	114	150	80,5	200-250-300-350-400-500-600	8,51	H80PC150□□□
225	114	175	80,5	200-250-300-350-400-500-600	8,98	H80PC175□□□
255	114	200	80,5	200-250-300-350-400-500-600	9,44	H80PC200□□□
280	114	225	80,5	200-250-300-350-400-500-600	9,91	H80PC225□□□
305	114	250	80,5	200-250-300-350-400-500-600	10,38	H80PC250□□□
330	114	275	80,5	200-250-300-350-400-500-600	10,83	H80PC275□□□
355	114	300	80,5	200-250-300-350-400-500-600	11,27	H80PC300□□□
380	114	325	80,5	200-250-300-350-400-500-600	11,77	H80PC325□□□
405	114	350	80,5	200-250-300-350-400-500-600	12,26	H80PC350□□□
430	114	375	80,5	200-250-300-350-400-500-600	12,74	H80PC375□□□
SILVYN® CHAIN H80PA						
129	114	74	80,5	200-250-300-350-400-500-600	6,78	H80PA074□□□
149	114	94	80,5	200-250-300-350-400-500-600	7,18	H80PA094□□□
174	114	119	80,5	200-250-300-350-400-500-600	7,61	H80PA119□□□
181	114	126	80,5	200-250-300-350-400-500-600	7,74	H80PA126□□□
484	114	429	80,5	200-250-300-350-400-500-600	13,1	H80PA429□□□
553	114	498	80,5	200-250-300-350-400-500-600	14,3	H80PA498□□□

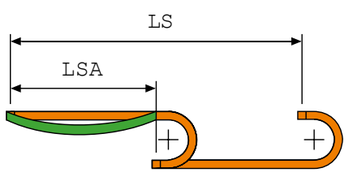
□□□ to be filled with Radius R

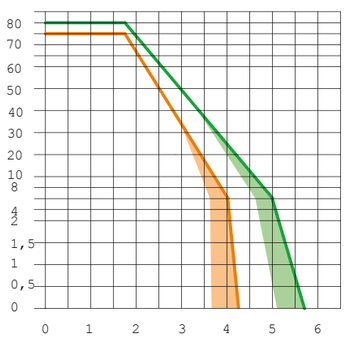




R	H	N	M	N1	M1
200	514	377	870	810	1775
250	614	427	1030	1050	2330
300	714	477	1185	1285	2885
350	814	527	1340	1525	3445
400	914	577	1500	1760	4000
500	1114	677	1815	2235	5115
600	1314	777	2125	2705	6225

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.

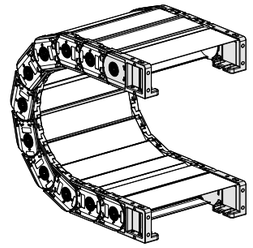
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

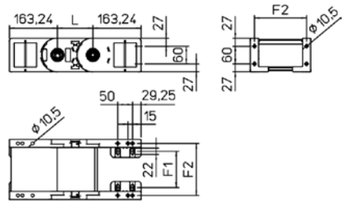
LAPP GROUP
Protective cable conduit systems and cable carrier systems
Cable chain carriers • Nylon cable chains for heavy duty
ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® SILVYN®

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





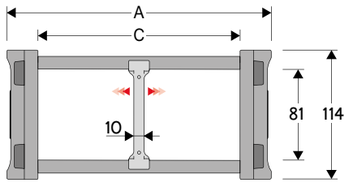
Chain Type	F1	F1
H80PC150	124	177,5
H80PC175	149	202,5
H80PC200	174	227,5
H80PC225	199	252,5
H80PC250	224	277,5
H80PC275	249	302,5
H80PC300	274	327,5
H80PC325	299	352,5
H80PC350	324	377,5
H80PC375	349	402,5

Nylon Type Part Numbers
Complete Set Assembled
ANH80P□□□KM□
Complete Set Unassembled
ANH80P□□□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

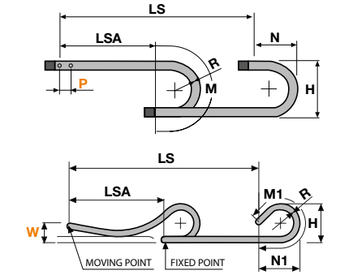
Speed
8 m/s

Acceleration
40 m/s²

Separator	
Unassembled	Article number SH80F
Assembled	Article number SH80FMC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PNH80RS

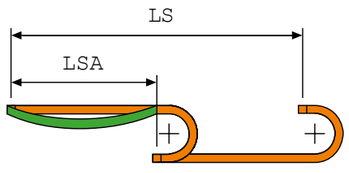
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
205	114	150	81	200-250-300-350-400-500-600	6,70	H80B150□□□
225	114	175	81	200-250-300-350-400-500-600	6,87	H80B175□□□
255	114	200	81	200-250-300-350-400-500-600	7,04	H80B200□□□
280	114	225	81	200-250-300-350-400-500-600	7,20	H80B225□□□
305	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

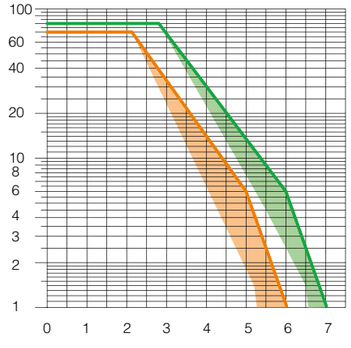


L=LSA + M or M1

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.

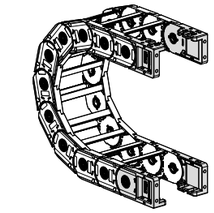
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

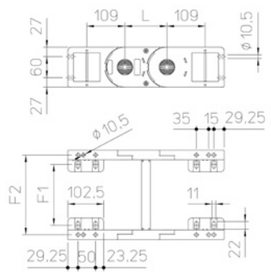
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

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





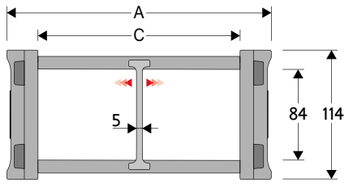
Chain type	F1	F1
H80B150	124	177,5
H80B175	149	202,5
H80B200	174	227,5
H80B225	199	252,5
H80B250	224	277,5
H80B275	249	302,5
H80B300	274	327,5
H80B325	299	352,5
H80B350	324	377,5
H80B375	349	402,5

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)

SILVYN® CHAIN H80T

Nylon cable chain with un-screwable aluminium rods.





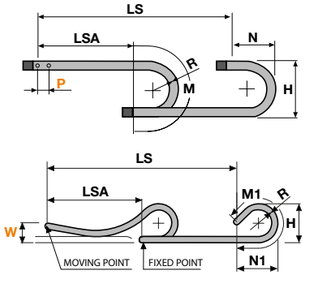
Technical data

- **Inner Height (D)** 84 mm
- **Pitch (P)** 120 mm
- **Height Moving Point (W)** 300 mm
- **Speed** 8 m/s
- **Acceleration** 40 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
155	114	100	84	200-250-300-350-400-500-600	6.17	H80T100□□□
205	114	150	84	200-250-300-350-400-500-600	6.52	H80T150□□□
255	114	200	84	200-250-300-350-400-500-600	6.87	H80T200□□□
305	114	250	84	200-250-300-350-400-500-600	7.22	H80T250□□□
355	114	300	84	200-250-300-350-400-500-600	7.57	H80T300□□□
405	114	350	84	200-250-300-350-400-500-600	7.92	H80T350□□□
455	114	400	84	200-250-300-350-400-500-600	8.28	H80T400□□□
505	114	450	84	200-250-300-350-400-500-600	8.63	H80T450□□□
555	114	500	84	200-250-300-350-400-500-600	8.98	H80T500□□□

□□□ to be filled with Radius R

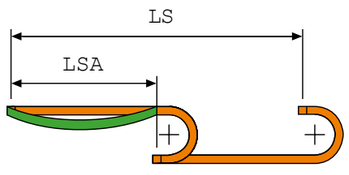
Separator	
Unassembled	Article number SH80TF
Assembled	Article number SH80TFMC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PNH80RS

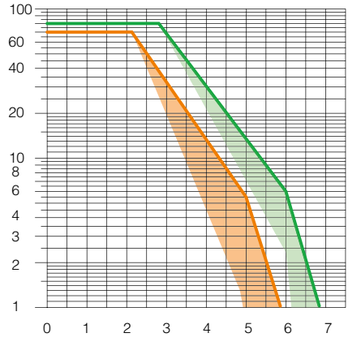


R	H	N	M	N1	M1
200	514	377	870	810	1775
250	614	427	1030	1050	2330
300	714	477	1185	1285	2885
350	814	527	1340	1525	3445
400	914	577	1340	1525	3445
500	1114	677	1815	2235	5115
600	1314	777	2125	2705	6225

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.

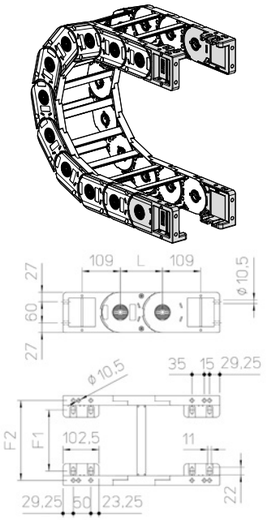
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

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



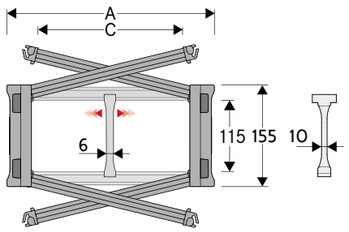
Chain type	F1	F1
H80T150	124	177,5
H80T175	149	202,5
H80T200	174	227,5
H80T225	199	252,5
H80T250	224	277,5
H80T275	249	302,5
H80T300	274	327,5
H80T325	299	352,5
H80T350	324	377,5
H80T375	349	402,5

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)

SILVYN® CHAIN H110SC / SA

Nylon Cable Chain with opening frames





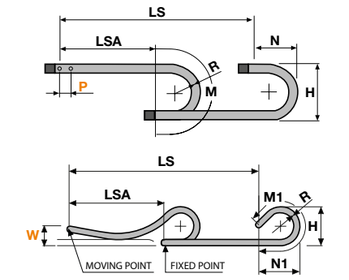
Technical data

- **Inner Height (D)** 115 mm
- **Pitch (P)** 160 mm
- **Height Moving Point (W)** 350 mm
- **Speed** 8 m/s
- **Acceleration** 40 m/s²

Separator	
Unassembled	Article number S110F3
Assembled	Article number S110F3MCI, S110F3MCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Strong-hold separator for C > 200 mm	
Unassembled	Article number S110HOFL
Assembled	Article number S110HOFLMC
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□□□

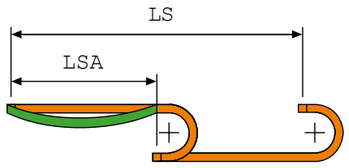
□□□ to be filled with Radius R

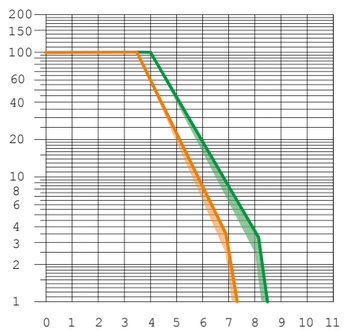


R	H	N	M	N1	M1
200	557	418	950	855	1820
250	657	468	1110	1095	2375
300	757	518	1265	1335	2935
400	957	618	1580	1805	4045
500	1157	718	1895	2280	5160
600	1357	818	2205	2750	6270
700	1557	918	2520	3225	7385
750	1657	968	2680	3460	7940

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.

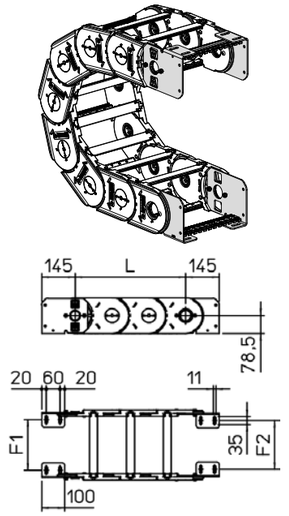
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

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



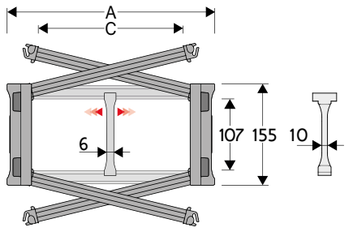
Chain Type	F1	F2
110SC150	120	112
110SC175	145	137
110SC200	170	162
110SC225	195	187
110SC250	220	212
110SC275	245	237
110SC300	270	262
110SC325	295	287
110SC350	320	312
110SC375	344	336
110SA429	399	391
110SA498	468	460

Steel Type Part Numbers
Complete Set Assembled
A110SC□□□KM□
Complete Set Unassembled
A110SC□□□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

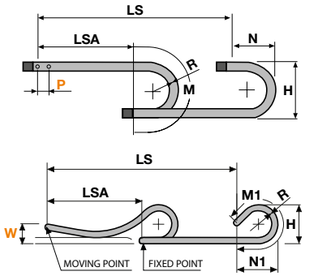
Separator	
Unassembled	Article number S110F3
Assembled	Article number S110F3MCI, S110F3MCE

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
SILVYN® CHAIN H110PC						
205	155	150	107	200-250-300-400-500-600-700-750	11,06	110PC150□□□
230	155	175	107	200-250-300-400-500-600-700-750	11,59	110PC175□□□
255	155	200	107	200-250-300-400-500-600-700-750	12,11	110PC200□□□
280	155	225	107	200-250-300-400-500-600-700-750	12,63	110PC225□□□
305	155	250	107	200-250-300-400-500-600-700-750	13,16	110PC250□□□
330	155	275	107	200-250-300-400-500-600-700-750	13,67	110SC275□□□
355	155	300	107	200-250-300-400-500-600-700-750	14,18	110SC300□□□
380	155	325	107	200-250-300-400-500-600-700-750	14,73	110PC325□□□
405	155	350	107	200-250-300-400-500-600-700-750	15,30	110PC350□□□
430	155	375	107	200-250-300-400-500-600-700-750	15,81	110PC375□□□
SILVYN® CHAIN H110PA						
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□□□

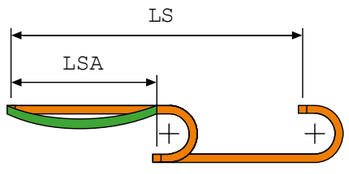
□□□ to be filled with Radius R

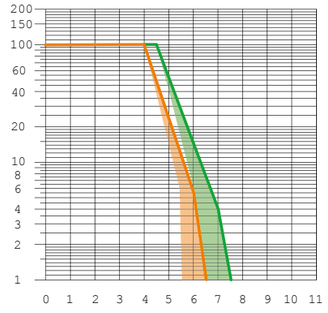


R	H	N	M	N1	M1
200	557	418	950	855	1820
250	657	468	1110	1095	2375
300	757	518	1265	1335	2935
400	957	618	1580	1805	4045
500	1157	718	1895	2280	5160
600	1357	818	2205	2750	6270
700	1557	918	2520	3225	7385
750	1657	968	2680	3460	7940

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.

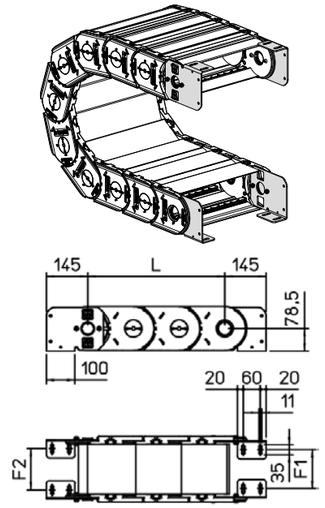
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

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



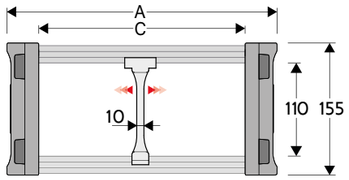
Chain type	F1	F2
110PC150	120	112
110PC175	145	137
110PC200	170	162
110PC225	195	187
110PC250	220	212
110PC275	245	237
110PC300	270	262
110PC325	295	287
110PC350	320	312
110PC375	344	336
110PA429	399	391
110PA498	468	460

Steel Type Part Numbers
Complete Set Assembled
A110PC□□□KM□
Complete Set Unassembled
A110PC□□□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





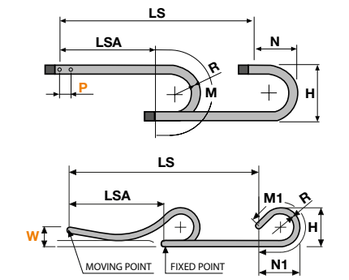
Technical data

- **Inner Height (D)** 110 mm
- **Pitch (P)** 160 mm
- **Height Moving Point (W)** 350 mm
- **Speed** 4 m/s
- **Acceleration** 20 m/s²

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□□□

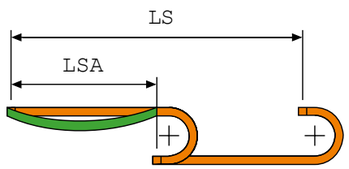
□□□ to be filled with Radius R

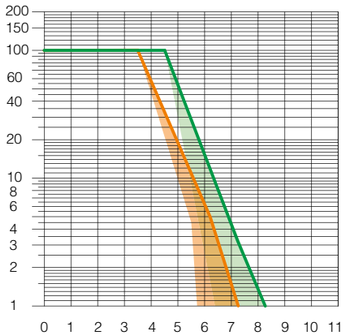


R	H	N	M	N1	M1
200	557	418	950	855	1820
250	657	468	1110	1095	2375
300	757	518	1265	1335	2935
400	957	618	1580	1805	4045
500	1157	718	1895	2280	5160
600	1357	818	2205	2750	6270
700	1557	918	2520	3225	7385
750	1657	968	2680	3460	7940

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.

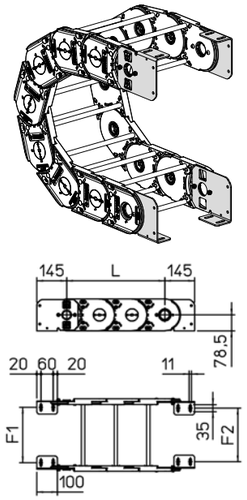
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

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



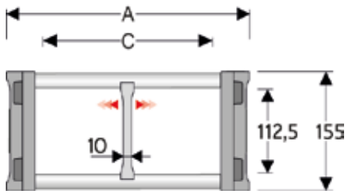
Chain Type	F1	F2
110B200	170	162
110B300	270	262
110B400	370	362
110B500	470	462
110B600	570	562
110B□□□	F=C-30	F=C-38

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.





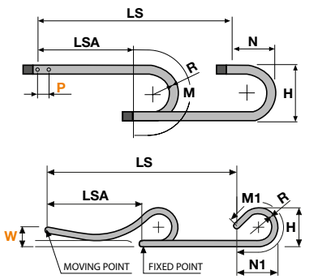
Technical data

- **Inner Height (D)** 112,5 mm
- **Pitch (P)** 160 mm
- **Height Moving Point (W)** 350 mm
- **Speed** 4 m/s
- **Acceleration** 20 m/s²

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□□□□□□

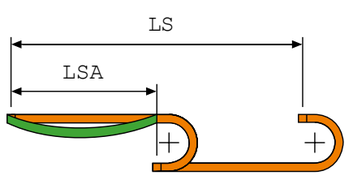
□□□ to be filled with Radius R

Separator	
Unassembled	Article number S310TCF9
Assembled	Article number S310TCF9MC
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PNH110RS

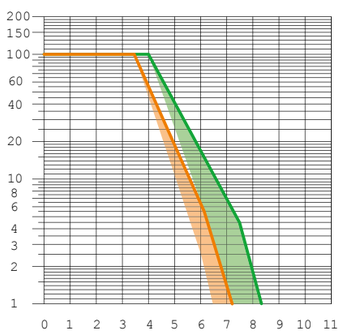


L=LSA + M or M1

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.

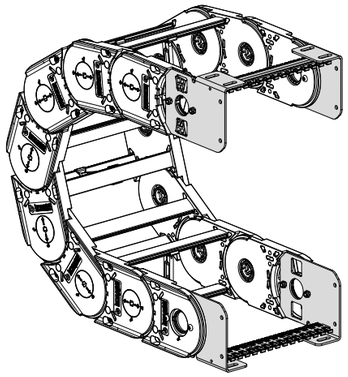
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

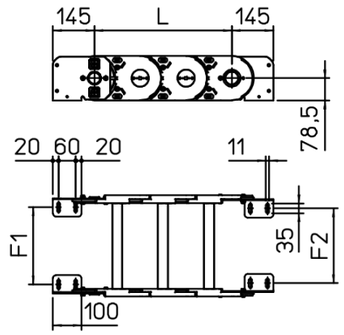
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

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
110T200	170	162
110T300	270	262
110T400	370	362
110T500	470	462
110T600	570	562
110T□□□	F=C-30	F=C-38

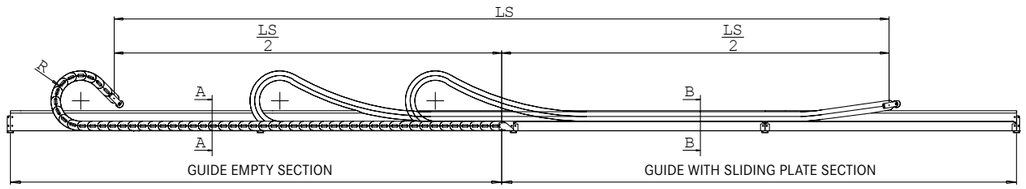
Steel Type Part Numbers
Complete Set Assembled
AH110TKM
Complete Set Unassembled
AH110TK□
Tiewarp Clamp Part Numbers
Complete Set Assembled
SFCT110□□□KMA
Complete Set Unassembled
SFCT110□□□KA

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

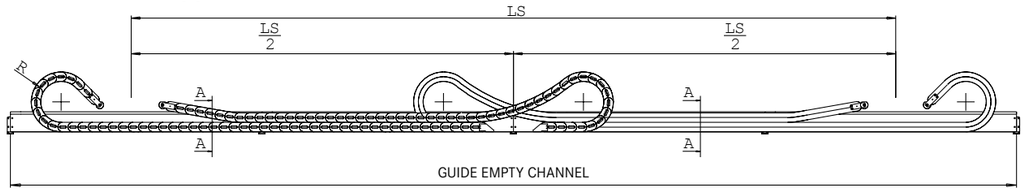
Guide Channel for
250L

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

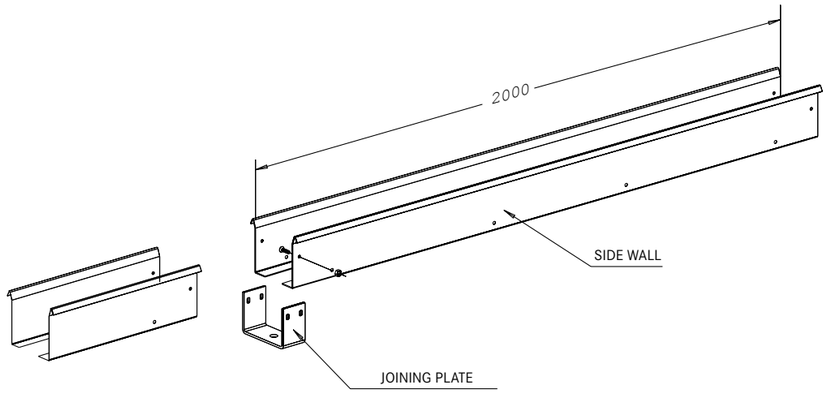
Single Chain Application



Double Chain Application



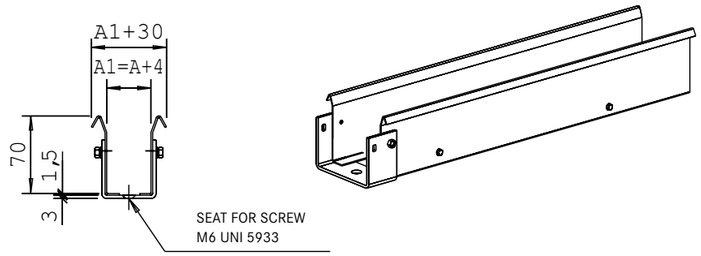
Channel guide is available in kit form composed of:
side walls 2 m standard length
joining plates
fixing screws



Nylon cable chain for multiple use

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
SILVYN®

Guide Empty Section
Section A-A

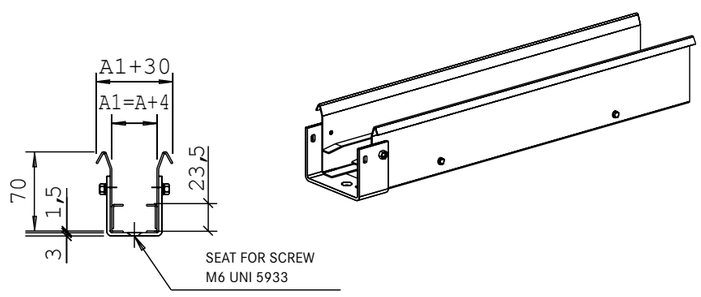


Part Number CS...

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

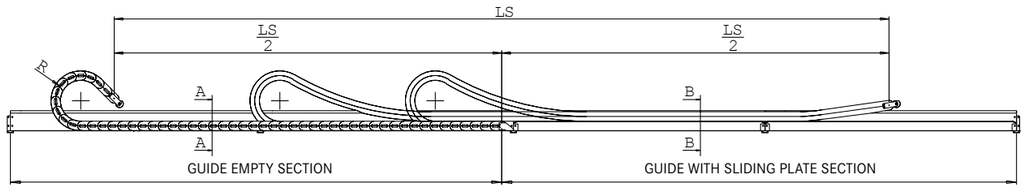
Chain part number	**250L035060**
Guide channel part number	**CA250L035**

Guide Channel for

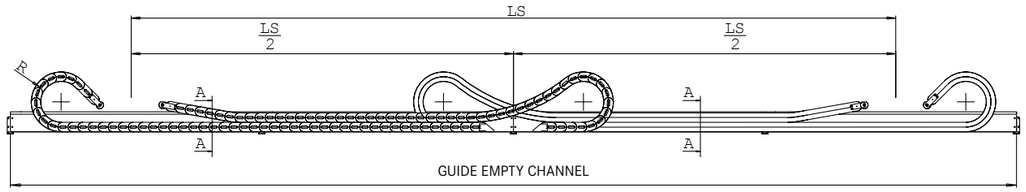
325 - 335

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

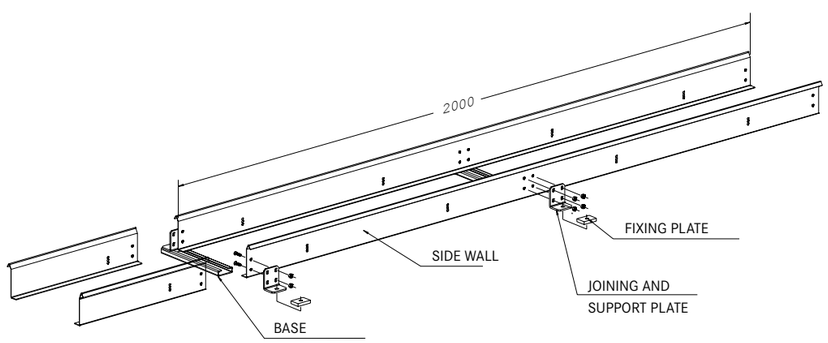
Single Chain Application



Double Chain Application

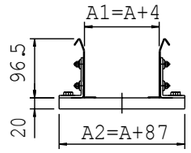


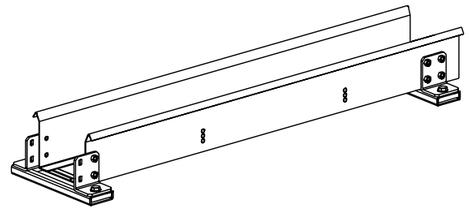
Channel guide is available in kit form composed of:
side walls 2 m standard length
joining plates
fixing screws



Guide Empty Section

Section A-A



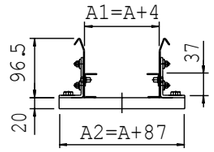


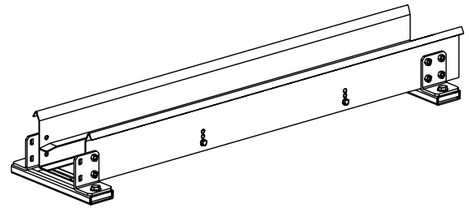
Part Number CS...

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



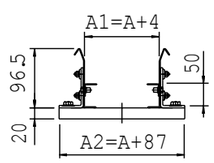


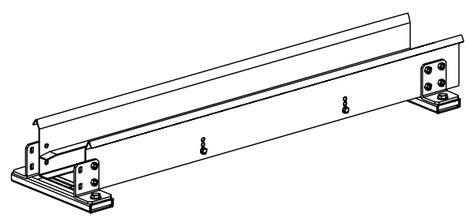
Part Number CA...

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...

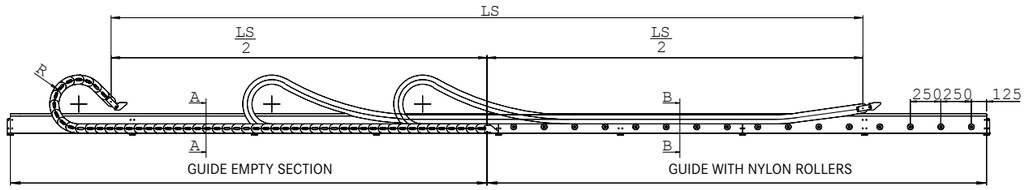
How to order	
Chain part number	**335040050**
Guide channel part number	**CA335040**

Guide Channel for

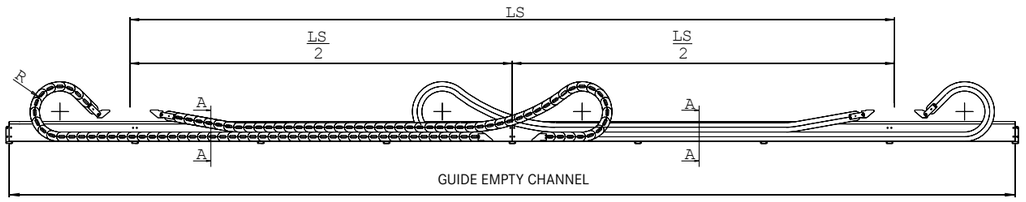
445 - 660 - 770 - H57

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

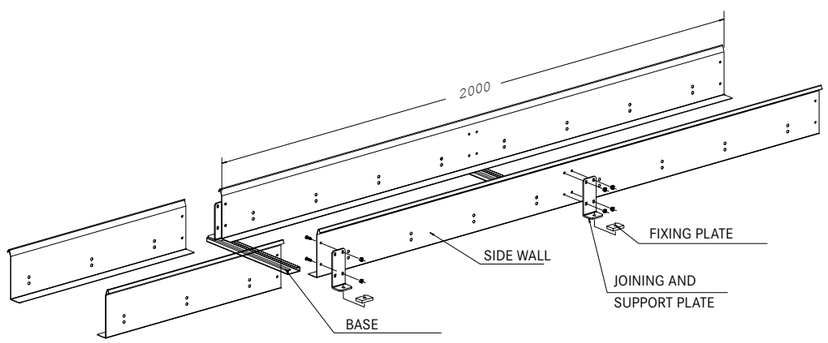
Single Chain Application



Double Chain Application

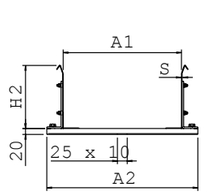


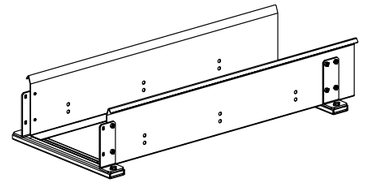
Channel guide is available in kit form composed of:
side walls 2 m standard length
joining plates
fixing screws



Empty Guide Section

Section A-A





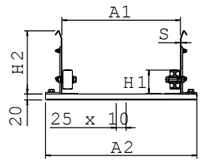
Part Number
CS...

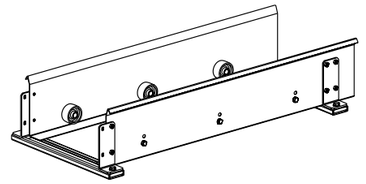
How to order

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

Guide with Nylon Rollers

Section B-B





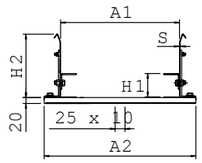
Part Number
CR...

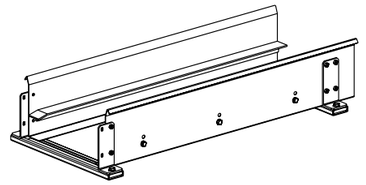
How to order

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

Guide with Steel Sliding Plate

Section B-B





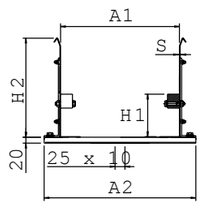
Part Number
CA...

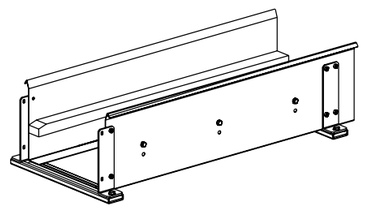
How to order

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**

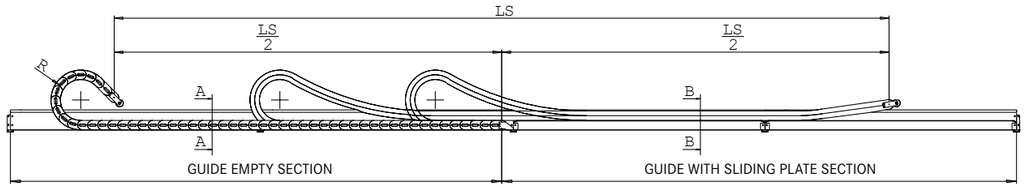
Chain type	H1 mm	H2 mm	A1 mm	A2 mm	S mm
445	64	160	A+4	A+87	1,5
660A	59	160	A+4	A+87	1,5
770A	79	160	A+4	A+87	1,5
H57	85	190	A+4	A+87	1,5

Aluminium Guide Channel for

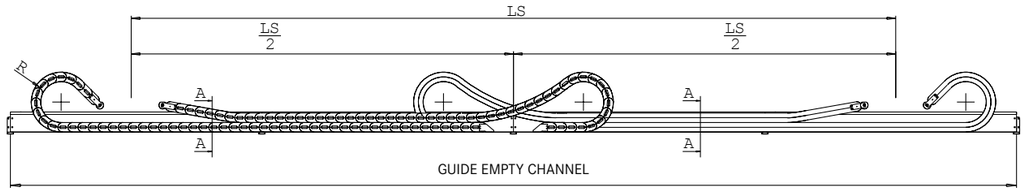
H57

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

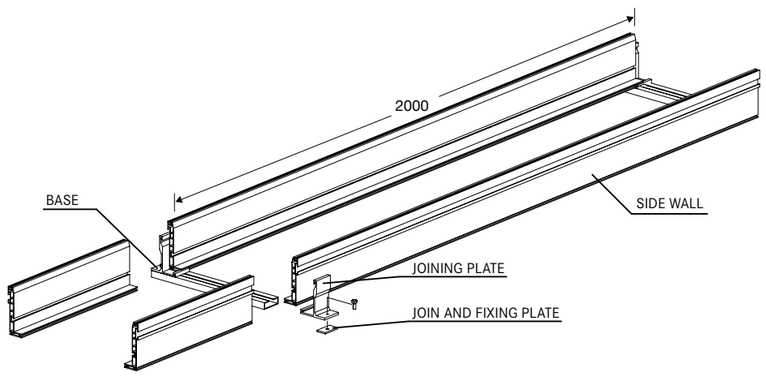
Single Chain Application



Double Chain Application

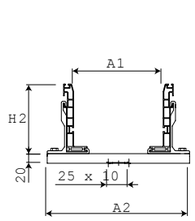


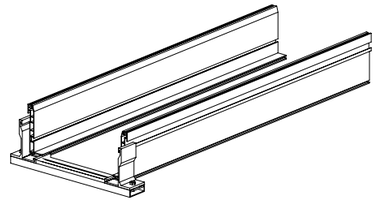
Channel guide is available in kit form composed of:
side walls 2 m standard length
joining plates
fixing screws



Empty Guide Section

Section A-A



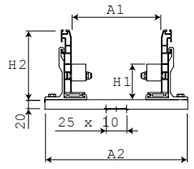


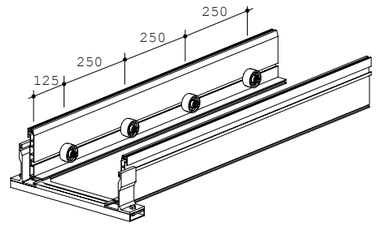
Part Number
CSAH57..

How to order	
Chain part number	**H57100150**
Guide channel part number	**CSAH57100**

Guide with Nylon Rollers

Section B-B



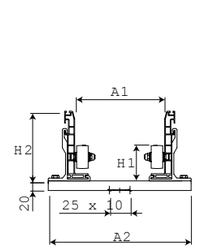


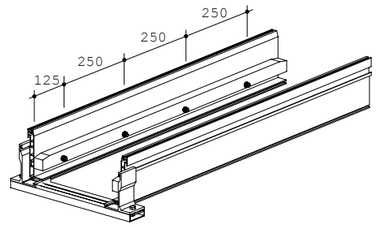
Part Number
CRAH57...

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**

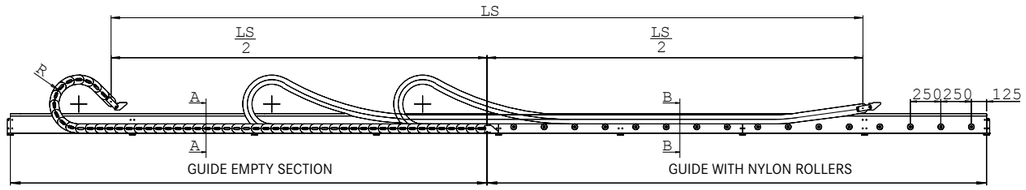
Chain type	H1 mm	H2 mm	A1 mm	A2 mm	S mm
H57	96	190	A+4	A+87	1,5

Guide Channel for

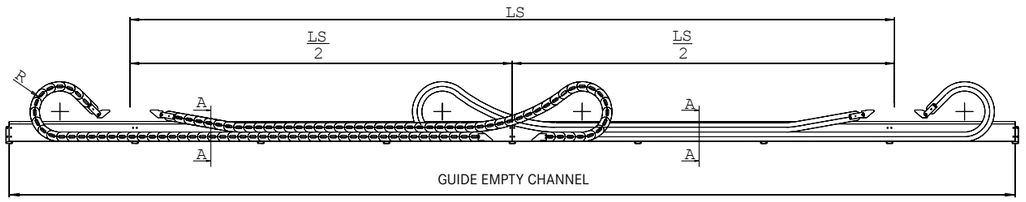
H80 - H110

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

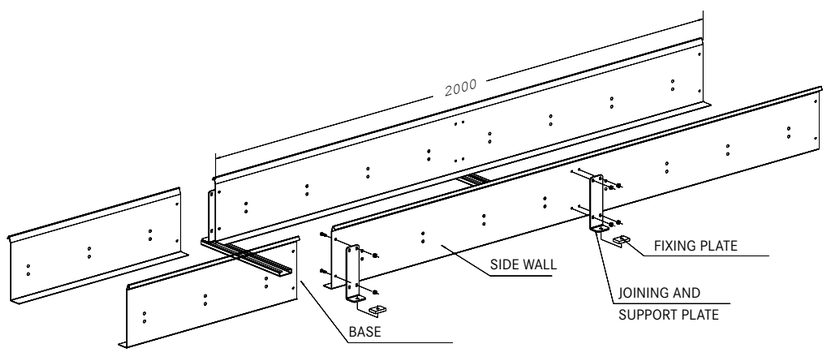
Single Chain Application



Double Chain Application

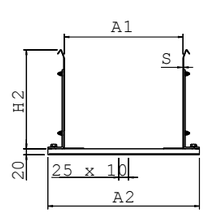


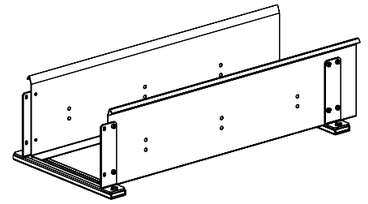
Channel guide is available in kit form composed of:
side walls 2 m standard length
joining plates
fixing screws



Empty Guide Section

Section A-A





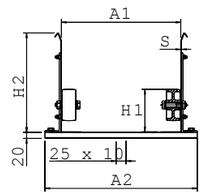
Part Number
CS...

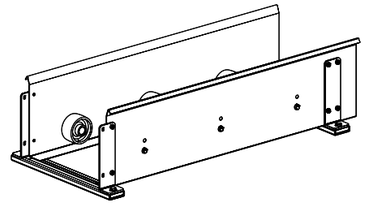
How to order

Chain part number	**H80150200**
Guide channel part number	**CSH80150**

Guide with Nylon Rollers

Section B-B





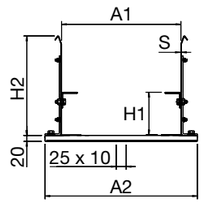
Part Number
CR...

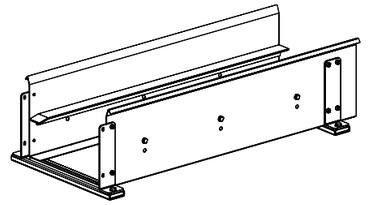
How to order

Chain part number	**H80150200**
Guide channel part number	**CRH80150**

Guide with Steel Sliding Plate

Section B-B





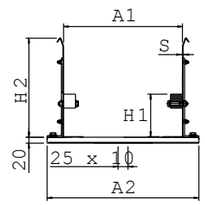
Part Number
CA...

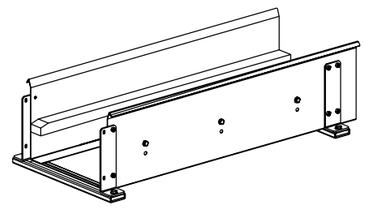
How to order

Chain part number	**H80150200**
Guide channel part number	**CAH80150**

Guide with Plastic Sliding Plate

Section B-B





Part Number
CP...

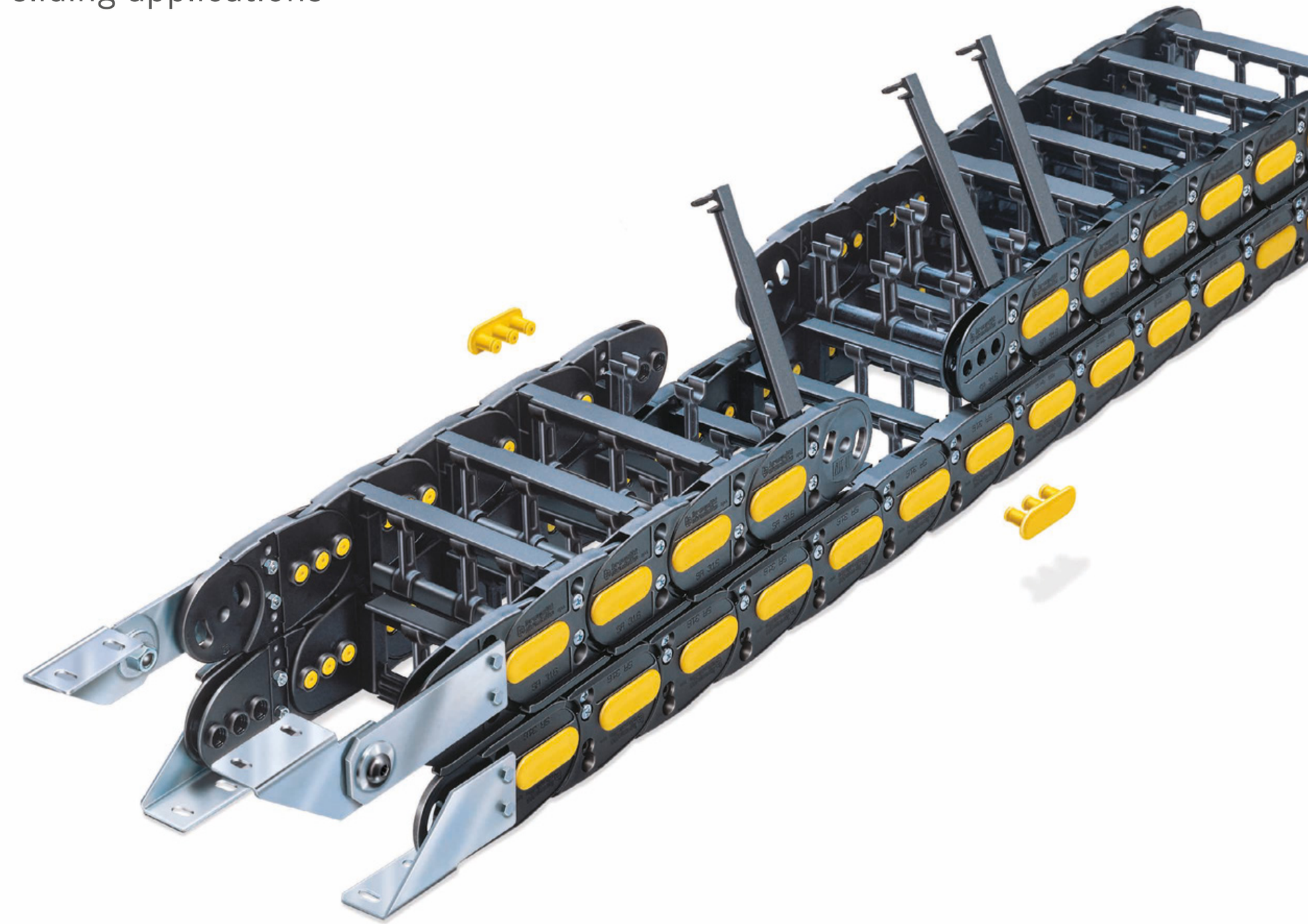
How to order

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

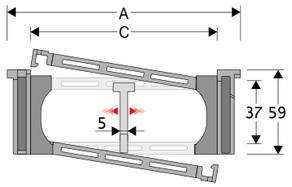
Nylon cable chains for sliding applications

Product	Page
SILVYN® CHAIN 326SU	166
SILVYN® CHAIN 326B	168
SILVYN® CHAIN 328SU	170
SILVYN® CHAIN 328B	172
SILVYN® CHAIN 329SU	174
SILVYN® CHAIN 329CD	176
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SILVYN® CHAIN 478MU	180
SILVYN® CHAIN 478PU	182
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SILVYN® CHAIN 60VU	186
SILVYN® CHAIN 80PU	188



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 S660A
Assembled	Article number S660AMC, S660AMCI, S660AMCE

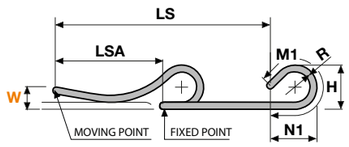
MCI: chain opening outer radius
MCE: chain opening inner radius

Strong-hold separator for C > 200 mm	
Unassembled	Article number S660AH
Assembled	Article number 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	N	M
107	272	280	625
150	358	430	1000
200	458	605	1440
250	558	775	1875
300	658	945	2315



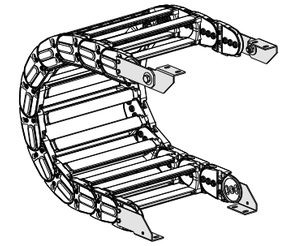
L=LSA + M or M1

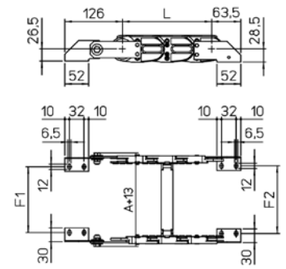
Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

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





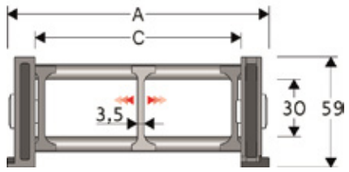
Chain Type	F1
326SU061	58
326SU072	69
326SU086	83
326SU092	89
326SU096	93
326SU106	103
326SU111	108
326SU118	115
326SU128	125
326SU136	133
326SU147	144
326SU161	158
326SU186	183
326SU211	208
326SU222	219
326SU236	233
326SU263	260
326SU272	269
326SU323	320
326SU345	342
326SU373	370

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

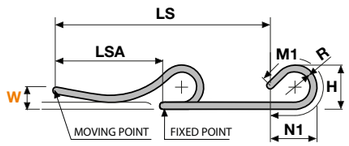
Speed
2 m/s

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	N	M
107	272	280	625
150	358	430	1000
200	458	605	1440
250	558	775	1875
300	658	945	2315

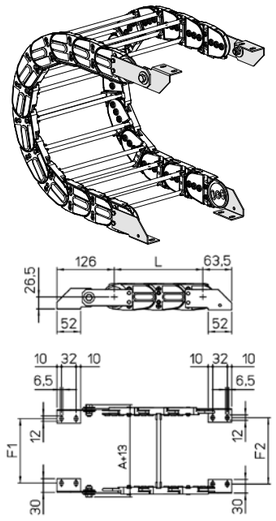
L=LSA + M or M1 Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

LAPP GROUP
Protective cable conduit systems and cable carrier systems
Cable chain carriers • Nylon cable chain for long travel distance
ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® SILVYN®

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



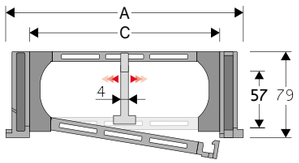
Chain Type	F1
326B075□□□	67
326B100□□□	92
326B150□□□	142
326B200□□□	192
326B250□□□	242
326B300□□□	292
326B□□□□□□	F=A-48

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

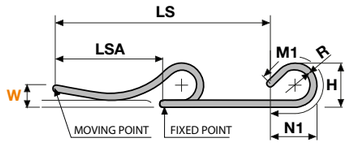
Speed
3,5 m/s

Acceleration
8 m/s²

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

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



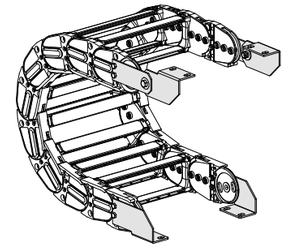
R	H	N	M
150	379	425	955
180	439	530	1220
200	479	600	1395
230	539	700	1655
280	639	875	2095
400	879	1285	3145

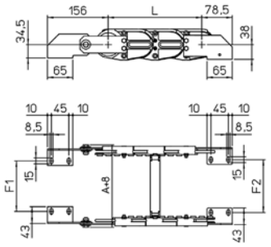
L=LSA + M or M1 Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

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





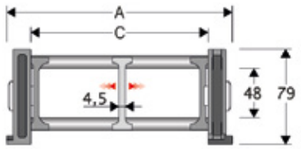
Chain type	F1
328SU061	44
328SU072	55
328SU086	69
328SU092	75
328SU096	79
328SU106	89
328SU111	94
328SU118	101
328SU128	111
328SU136	119
328SU147	130
328SU161	144
328SU186	169
328SU211	194
328SU222	205
328SU236	219
328SU263	246
328SU272	255
328SU323	306
328SU345	328
328SU373	356

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

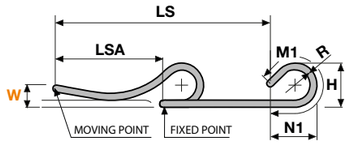
Separator	
Unassembled	Article number S3000F
Assembled	Article number S3000FMC

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

Pin	Article number PG328TP

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



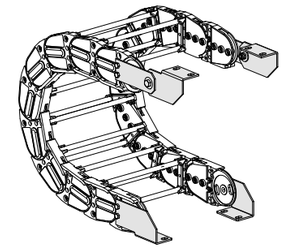
R	H	N	M
150	379	425	955
180	439	530	1220
200	479	600	1395
230	539	700	1655
280	639	875	2095
400	879	1285	3145

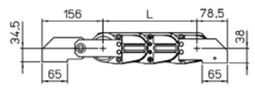
L=LSA + M or M1 Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

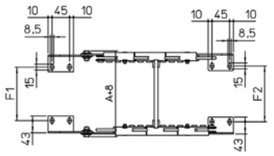
End brackets

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







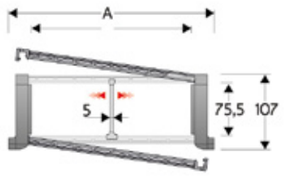
Chain Type	F1
328B100□□□	93
328B150□□□	143
328B200□□□	193
328B250□□□	243
328B300□□□	293
328B□□□□□□	F=A-75

Steel Type Part Numbers
Complete Set Assembled
A328KM
Complete Set Unassembled
A328K

□□□ Inner width (C)

SILVYN® CHAIN 329SU

Nylon Cable Chain with opening frames





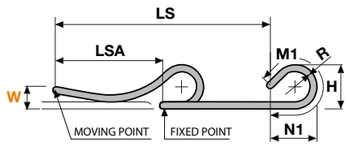
Technical data

- **Inner Height (D)** 75,5 mm
- **Pitch (P)** 100 mm
- **Height Moving Point (W)** 300 mm
- **Speed** 3 m/s
- **Acceleration** 13 m/s²

Separator	
Unassembled	Article number S309S
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 PG329

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



R	H	N	M
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

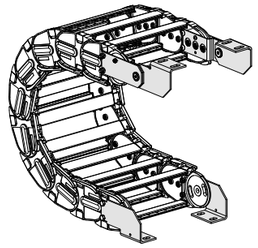
L=LSA + M or M1 Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

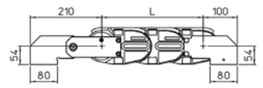
LAPP GROUP
Protective cable conduit systems and cable carrier systems
Cable chain carriers • Nylon cable chain for long travel distance
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ETHERLINE®
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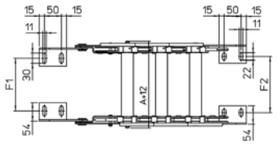
End brackets

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







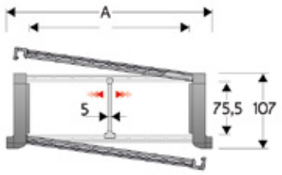
Chain Type	F1	F2
329SU084	60	71
329SU109	85	96
329SU116	92	103
329SU139	115	126
329SU179	155	166
329SU214	190	201
329SU240	216	227
329SU264	240	251
329SU290	266	277
329SU314	290	301
329SU340	316	327
329SU364	340	351
329SU419	395	406
329SU488	464	475

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

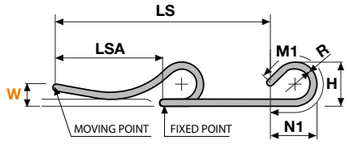
Speed
3 m/s

Acceleration
13 m/s²

Separator	
Unassembled	Article number S309S
Assembled	Article number S309SMCI, S309SMCE
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



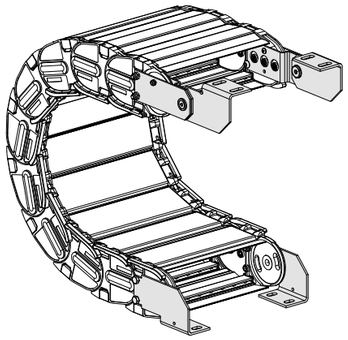
R	H	N	M
200	506	595	1345
250	606	765	1780
300	706	940	2220
350	806	1110	2655
400	906	1280	3095
500	1106	1625	3970
600	1306	1965	4845

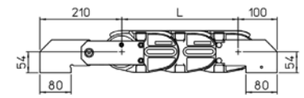
L=LSA + M or M1
Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

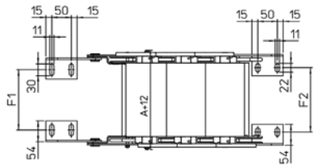
End brackets

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







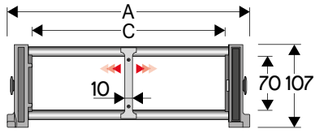
Chain type	F1	F2
329CD084	60	71
329CD109	85	96
329CD116	92	103
329CD139	115	126
329CD179	155	166
329CD214	190	201
329CD240	216	227
329CD264	240	251
329CD290	266	277
329CD314	290	301
329CD340	316	327
329CD364	340	351
329CD419	395	406
329CD488	464	475

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

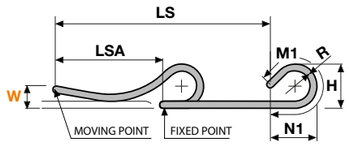
Separator	
Unassembled	Article number S309C
Assembled	Article number S309CMC

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
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



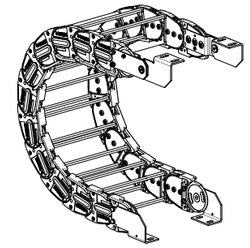
R	H	N	M
150	406	415	905
200	506	595	1345
250	606	765	1780
300	706	940	2220
350	806	1110	2655
400	906	1280	3095
500	1106	1625	3970
600	1306	1965	4845

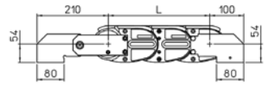
L=LSA + M or M1
Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

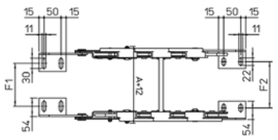
End brackets

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







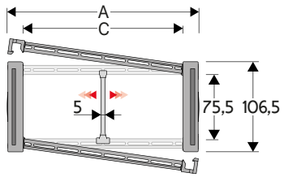
Chain type	F1	F2
329B100	76	87
329B150	126	137
329B200	176	187
329B250	226	237
329B300	276	287
329B400	376	387
329B□□□	F=A-88	F=A-77

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

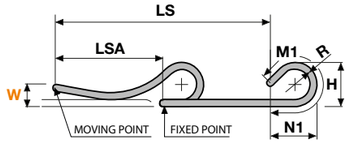
Acceleration
8 m/s²

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
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 PG329

R	H	N	M
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



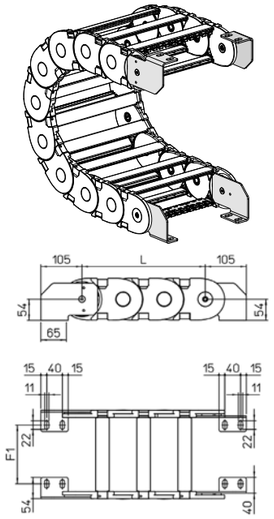
L=LSA + M or M1

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



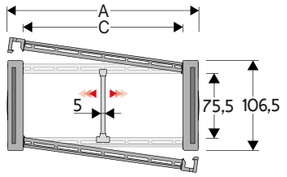
Chain Type	F1
478MU074□□□	33.5
478MU094□□□	53.5
478MU119□□□	78.5
478MU126□□□	85.5
478MU149□□□	108.5
478MU189□□□	148.5
478MU224□□□	183.5
478MU250□□□	209.5
478MU274□□□	233.5
478MU300□□□	259.5
478MU324□□□	283.5
478MU350□□□	309.5
478MU374□□□	333.5
478MU429□□□	388.5
478MU498□□□	457.5

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

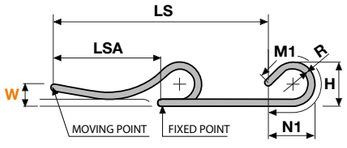
Acceleration
8 m/s²

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
Assembled	Article number S309SMCI, S309SMCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Pin	Article number PG329

R	H	N	M
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

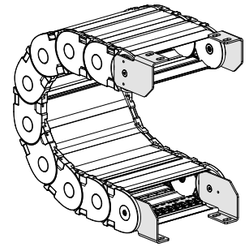


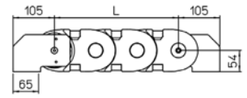
L=LSA + M or M1
Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

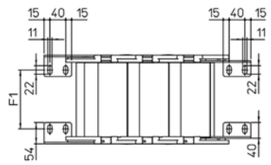
End brackets

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







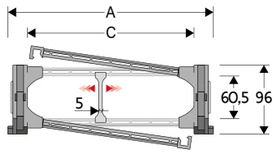
Chain Type	F1
478PU074□□□	35
478PU094□□□	55
478PU119□□□	80
478PU126□□□	87
478PU149□□□	110
478PU189□□□	150
478PU224□□□	185
478PU250□□□	211
478PU274□□□	235
478PU300□□□	261
478PU324□□□	285
478PU350□□□	311
478PU374□□□	335
478PU429□□□	390
478PU498□□□	459

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





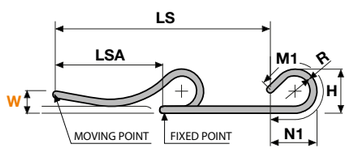
Technical data

- **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 S60SM
Assembled	Article number S60MMC,
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Strong-hold separator for C > 200 mm	
Unassembled	Article number S60HOFL
Assembled	Article number S60HOFLMC
Pin	Article number PNE60-PNI60



R	H	N	M
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)

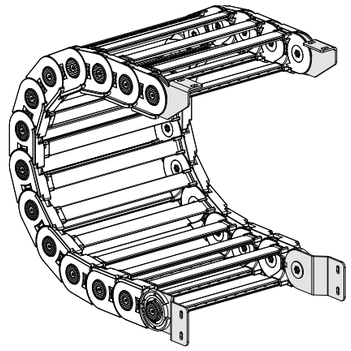
LAPP GROUP
Protective cable conduit systems and cable carrier systems
Cable chain carriers • Nylon cable chain for long travel distance

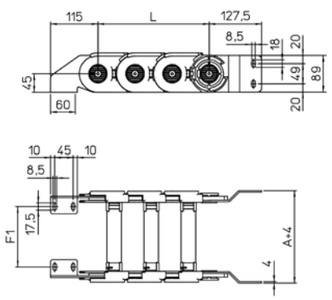
ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
SILVYN®

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





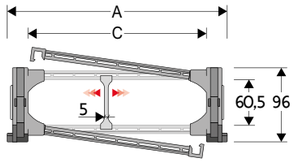
Chain Type	F1
60PU115	95
60PU135	115
60PU160	140
60PU167	147
60PU190	170
60PU230	210
60PU265	245
60PU291	271
60PU315	295
60PU341	321
60PU365	345
60PU391	371
60PU415	395
60PU470	450
60PU539	519

Steel Type Part Numbers
Complete Set Assembled
A60PKM
Complete Set Unassembled
A60PK

□□□ Inner width (C)

SILVYN® CHAIN 60VU

Nylon Cable Chain with opening frames





Technical data

Inner Height (D)
60,5 mm

Pitch (P)
90 mm

Height Moving Point (W)
250 mm

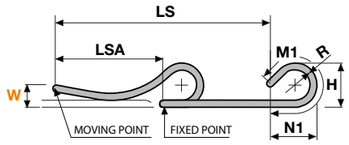
Speed
5 m/s

Acceleration
13 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
169	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

Separator	
Unassembled	Article number S60SM
Assembled	Article number S60MMC,
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Strong-hold separator for C > 200 mm	
Unassembled	Article number S60HOFL
Assembled	Article number S60HOFLMC
Pin	Article number PNE60-PNI60



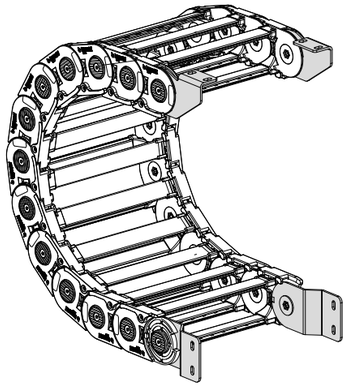
R	H	N	M
200	490	715	1625
250	590	925	2130
300	690	1130	2635
400	890	1550	3645

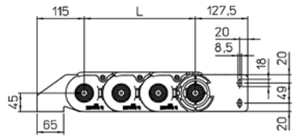
L=LSA + M or M1 Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

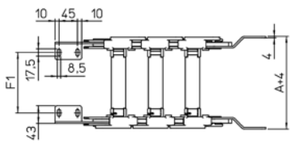
End brackets

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







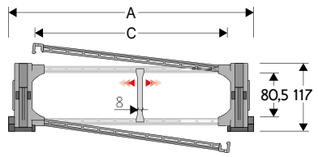
Chain Type	F1
60VU115	95
60VU135	115
60VU160	140
60VU167	147
60VU190	170
60VU230	210
60VU265	245
60VU291	271
60VU315	295
60VU341	321
60VU365	345
60VU391	371
60VU415	395
60VU470	450
60VU539	519

Steel Type Part Numbers
Complete Set Assembled
A60PKM
Complete Set Unassembled
A60PK

□□□ Inner width (C)

SILVYN® CHAIN 80PU

Nylon Cable Chain with opening frames





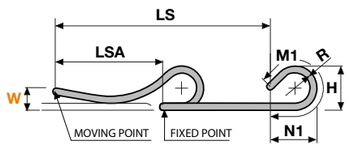
Technical data

- **Inner Height (D)** 80,5 mm
- **Pitch (P)** 110 mm
- **Height Moving Point (W)** 300 mm
- **Speed** 5 m/s
- **Acceleration** 13 m/s²

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	10.00	80PU539□□□

□□□ to be filled with Radius R

Separator	
Unassembled	Article number S80
Assembled	Article number S80MC, S80MCI, S80MCE
MCI: chain opening outer radius	
MCE: chain opening inner radius	
Strong-hold separator for C > 200 mm	
Unassembled	Article number S80HOFL
Assembled	Article number S80HOFLMC
Pin	Article number PNE80-PNI80



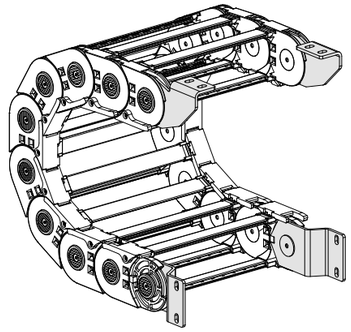
R	H	N	M
200	510	695	1555
250	610	905	2060
300	710	1115	2565
400	910	1530	3575
500	1110	1945	4580
700	1510	2785	6600

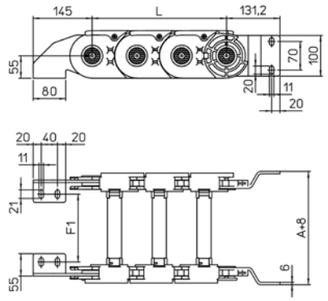
L=LSA + M or M1 Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

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

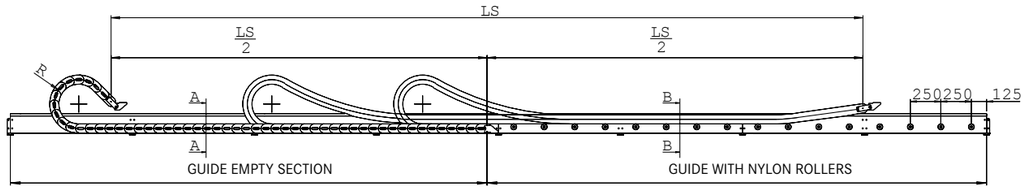
□□□ Inner width (C)

Guide Channel for

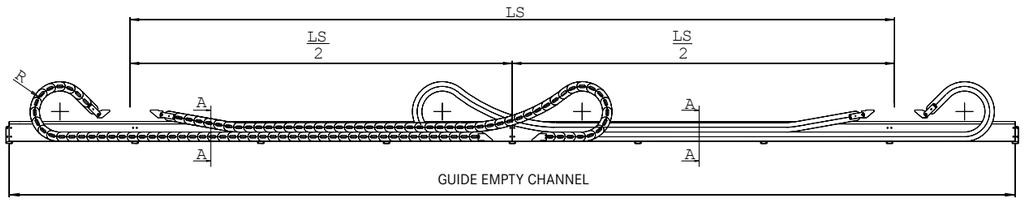
326 - 328 - 60

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

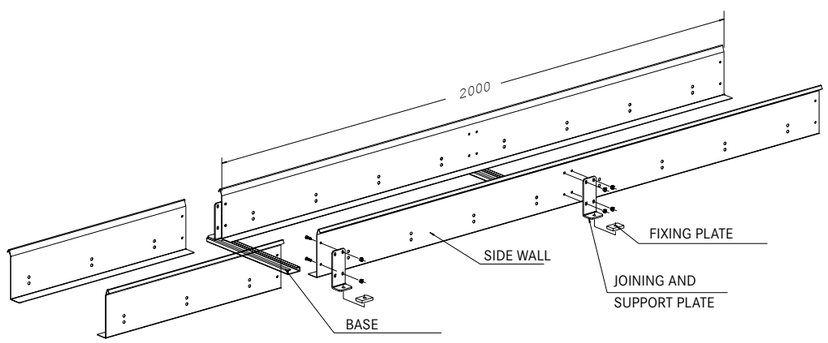
Single Chain Application



Double Chain Application

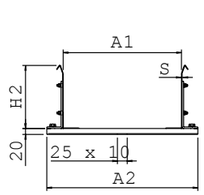


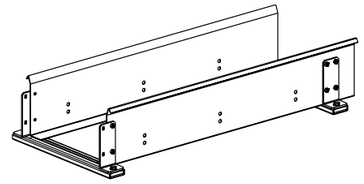
Channel guide is available in kit form composed of:
side walls 2 m standard length
joining plates
fixing screws



Empty Guide Section

Section A-A





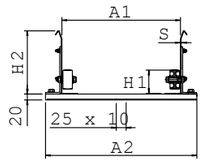
Part Number
CS...

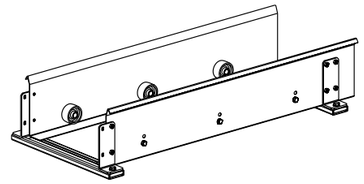
How to order

Chain part number	**326B100150**
Guide channel part number	**CS326B100**

Guide with Nylon Rollers

Section B-B





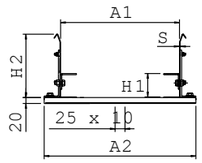
Part Number
CR...

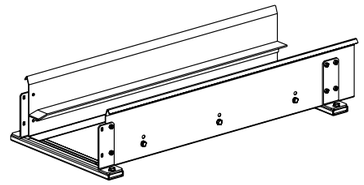
How to order

Chain part number	**326B100150**
Guide channel part number	**CR326B100**

Guide with Steel Sliding Plate

Section B-B





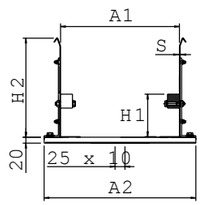
Part Number
CA...

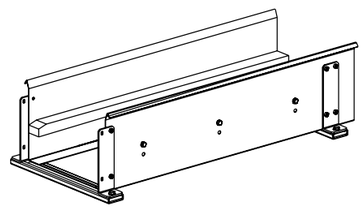
How to order

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**

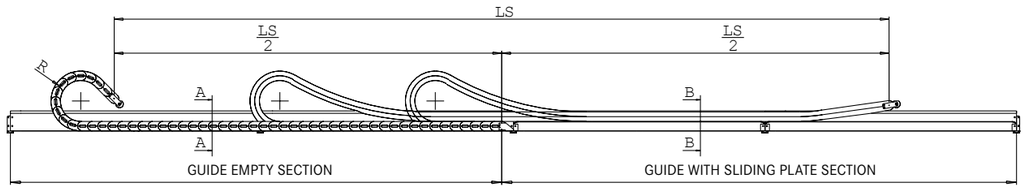
Chain type	H1 mm	H2 mm	A1 mm	A2 mm	S mm
326	59	160	A+4	A+87	1,5
328	79	160	A+4	A+87	1,5
60	96	190	A+4	A+87	1,5

Aluminium Guide Channel for

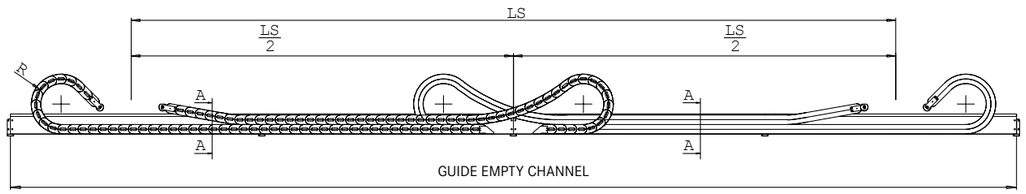
326 - 328 - 60

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

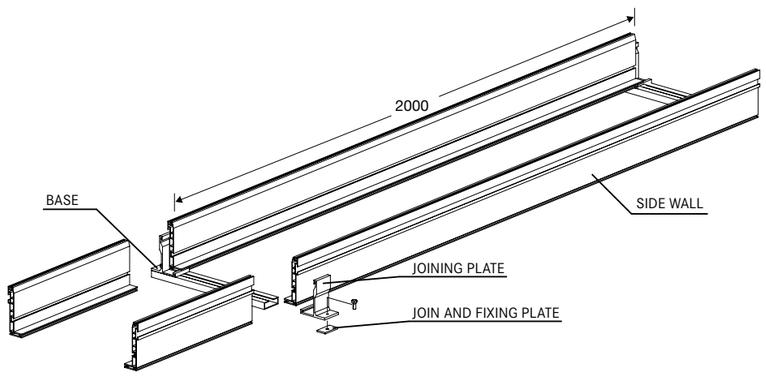
Single Chain Application



Double Chain Application

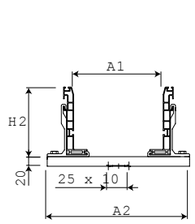


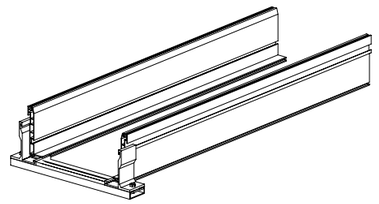
Channel guide is available in kit form composed of:
side walls 2 m standard length
joining plates
fixing screws



Empty Guide Section

Section A-A





Part Number CSA...

How to order

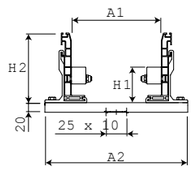
Chain part number	**326B100150**
Guide channel part number	**CSA326B100**

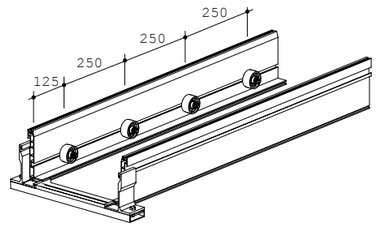
CSA...

Chain part number	**60PU391250**
Guide channel part number	**CSA60-391**

Guide with Nylon Rollers

Section B-B





Part Number CRA...

How to order

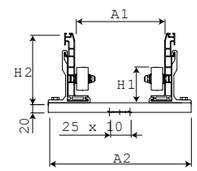
Chain part number	**326B100150**
Guide channel part number	**CRA326B100**

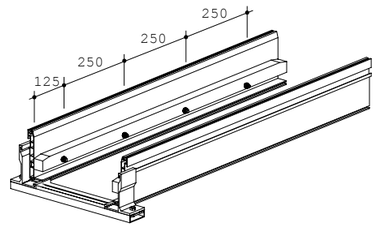
CRA...

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**

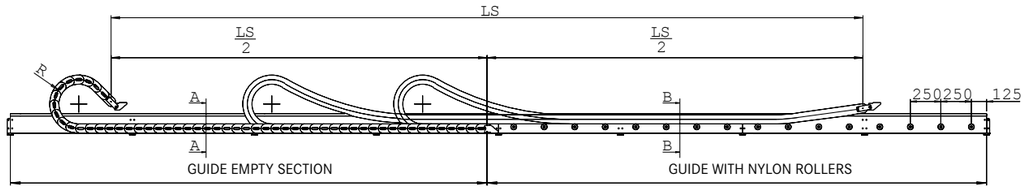
Chain type	H1 mm	H2 mm	A1 mm	A2 mm	S mm
326	59	145	A+4	A+114	1,5
328	79	200	A+4	A+114	1,5
60	96	200	A+4	A+114	1,5

Guide Channel for

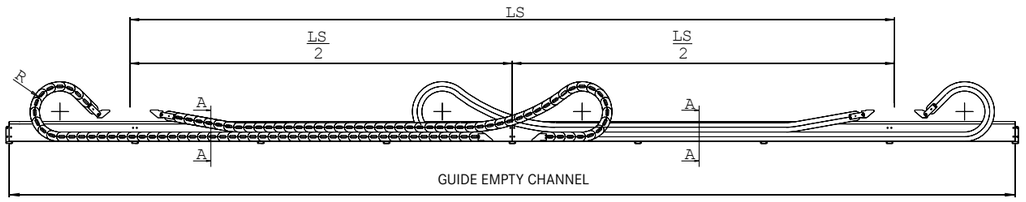
329 - 478 - 80

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

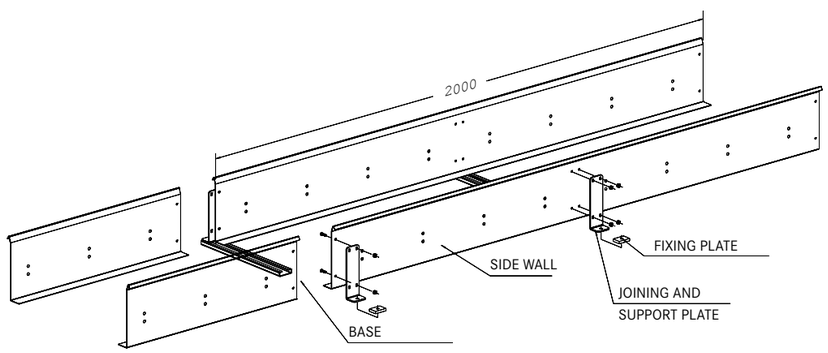
Single Chain Application



Double Chain Application

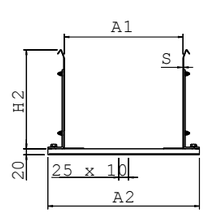


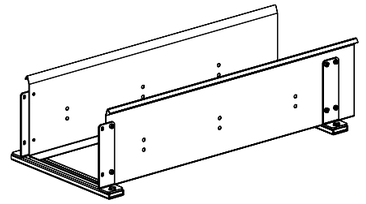
Channel guide is available in kit form composed of:
side walls 2 m standard length
joining plates
fixing screws



Empty Guide Section

Section A-A





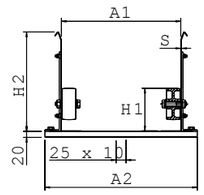
Part Number
CS329...

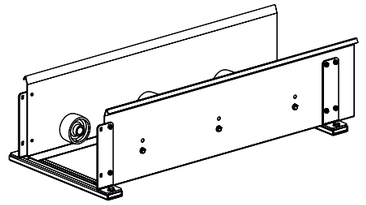
How to order

Chain part number	**329B109200**
Guide channel part number	**CS329B109**

Guide with Nylon Rollers

Section B-B





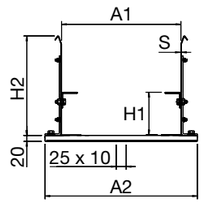
Part Number
CR329...

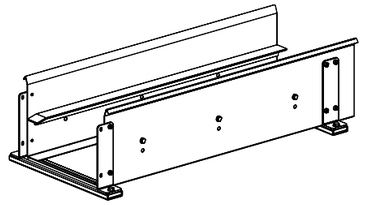
How to order

Chain part number	**329B109200**
Guide channel part number	**CR329B109**

Guide with Steel Sliding Plate

Section B-B





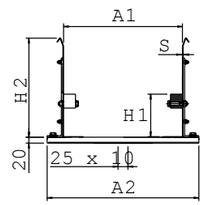
Part Number
CA329...

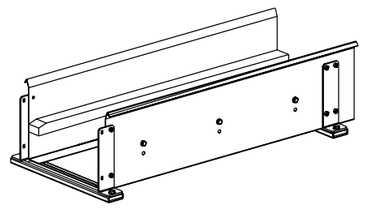
How to order

Chain part number	**329B109200**
Guide channel part number	**CA329B109**

Guide with Plastic Sliding Plate

Section B-B





Part Number
CP329...

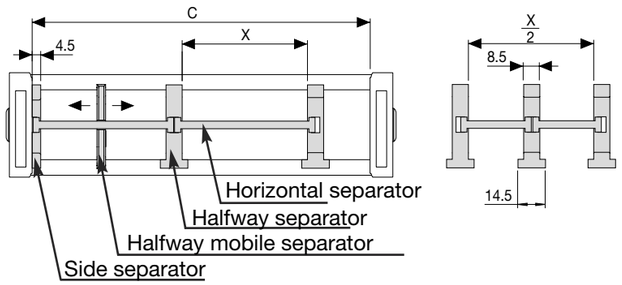
How to order

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

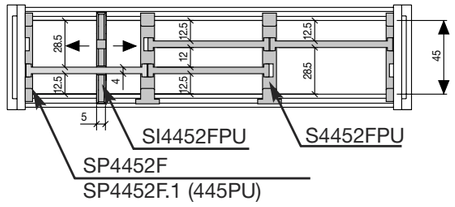
Separation System

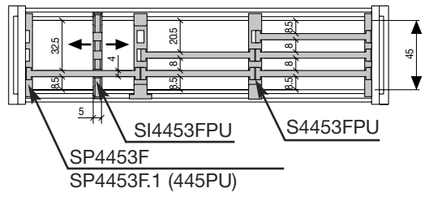
The Separation System guarantees the perfect disposal of cables inside the chain and allows an easy opening of the frame also when the chain is already harnessed. A wide range of horizontal separators is available in order to obtain many different arrangements.



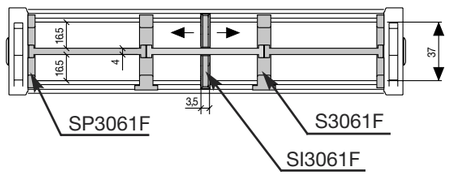
Horizontal Separator Part Number	X mm	X / 2
SO01016	16	
SO01025	25	
SO01029	29	
SO01035	35	
SO01041	41	SO01016 + S... + SO01016
SO01050	50	SO01016 + S... + SO01025
SO01059	59	SO01025 + S... + SO01025
SO01066	66	SO01029 + S... + SO01029
SO01074	74	SO01025 + S... + SO01041
SO01091	91	SO01041 + S... + SO01041
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.

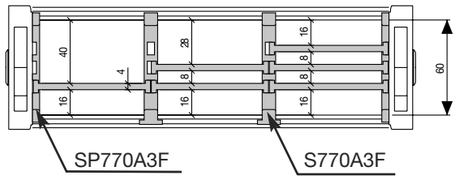




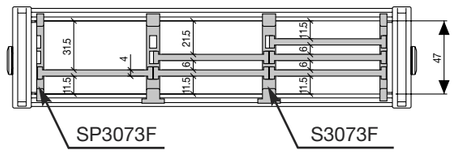
660A - 306SU/CU
Side separator. Halfway separator. Halfway mobile separator.
Horizontal separator. Up to 2 horizontal separations.



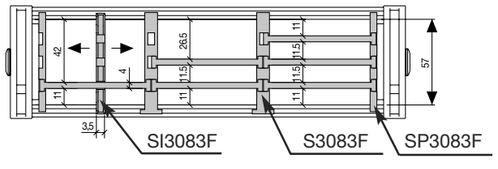
770A
Side separator. Halfway separator. Horizontal separator.
Up to 4 horizontal separations.



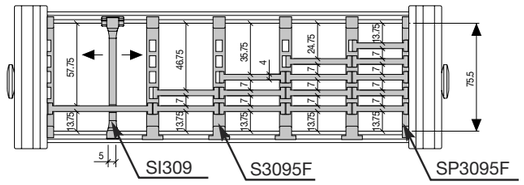
307SU
Side separator. Halfway separator. Horizontal
separator. Up to 4 horizontal separations.



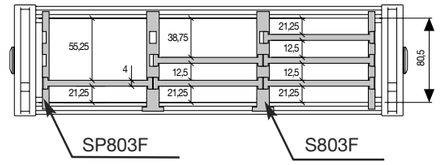
308SU/CU
Side separator. Halfway separator. Halfway mobile separator.
Horizontal separator. Up to 4 horizontal separations.



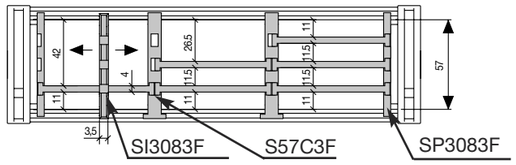
309SU/CU - 475MU/PU - 478MU/PU
Side separator. Halfway separator. Halfway mobile separator.
Horizontal separator. Up to 6 horizontal separations.



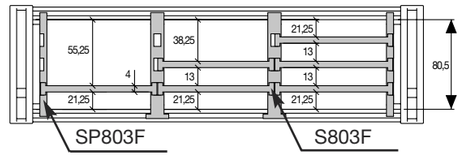
80PU
Side separator. Halfway separator. Halfway mobile separator.
Horizontal separator. Up to 6 horizontal separations.



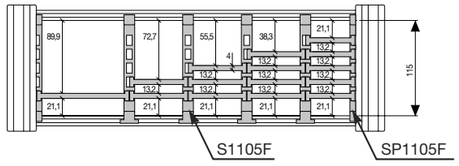
H57SC
Side separator. Halfway separator. Halfway mobile separator.
Horizontal separator. Up to 4 horizontal separations.

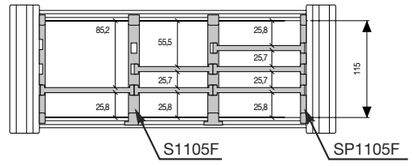


H80SC/SA
Side separator. Halfway separator. Halfway mobile separator.
Horizontal separator. Up to 4 horizontal separations.

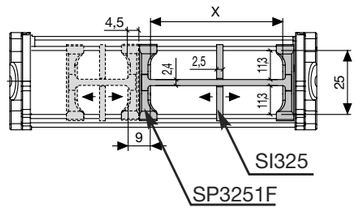


H110SC/SA
Side Separator. Halfway Separator. Horizontal Separator. Up to 4 horizontal separations.
S1105F designed to having a side of 5 slots and other side of 3 slots for many separations.



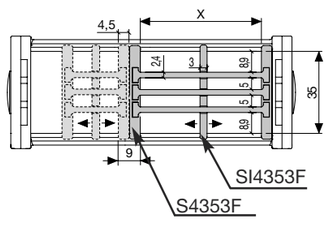


325LI/LE/PI
Side separator. Halfway separator. Halfway mobile separator. Horizontal separator.
Up to 2 horizontal separations.



Horizontal Separator Part Number	X mm
SO11031	31
SO11052	52
SO11068	68

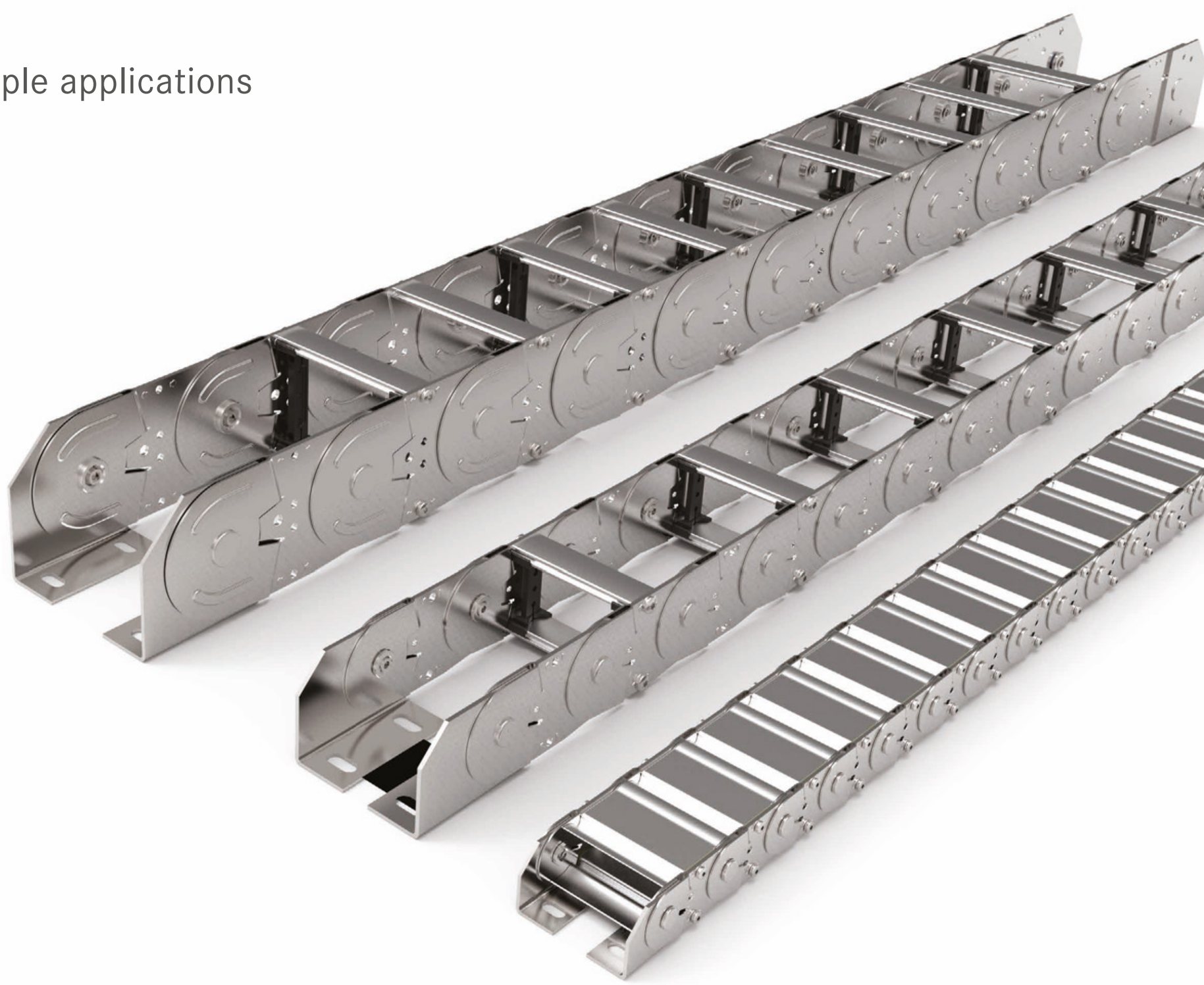
335LI/LE
Side separator. Halfway separator. Halfway mobile separator. Horizontal separator.
Up to 4 horizontal separations.



Horizontal Separator Part Number	X mm
SO11031	31
SO11052	52
SO11068	68

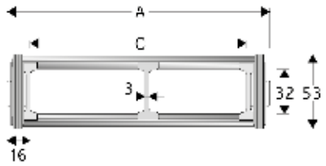
Steel cable chains for multiple applications

Product	Page
SILVYN® CHAIN 20LT	200
SILVYN® CHAIN 20LC	202
SILVYN® CHAIN 30LT	204
SILVYN® CHAIN 30LC	206
SILVYN® CHAIN 35LT	208
SILVYN® CHAIN 35LC	210
SILVYN® CHAIN 40LT	212
SILVYN® CHAIN 40LC	214
SILVYN® CHAIN 42LT	216
SILVYN® CHAIN 45T	218



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

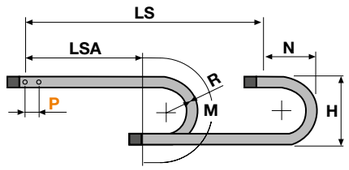
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
111	53	79	32	075-115-150-205-250-305	4.41	20LT079□□□
136	53	104	32	075-115-150-205-250-305	4.56	20LT104□□□
186	53	154	32	075-115-150-205-250-305	4.86	20LT154□□□
236	53	204	32	075-115-150-205-250-305	5.15	20LT204□□□
286	53	254	32	075-115-150-205-250-305	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

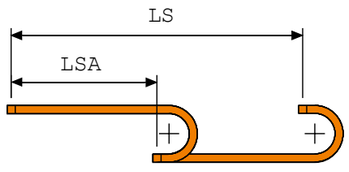
MCI: chain opening outer radius
MCE: chain opening inner radius

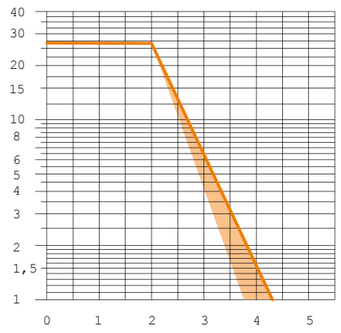


R	H	N	M	N1	M1
075	216	180	390	0	0
115	296	220	515	500	1080
150	364	255	625	675	1485
205	474	310	795	885	2005
250	564	360	940	1030	2385
305	674	410	1110	1190	2825

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.

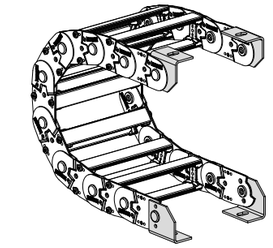
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

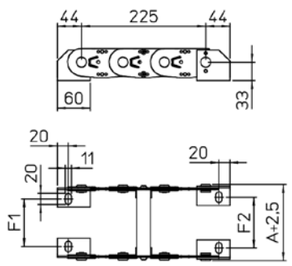
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

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





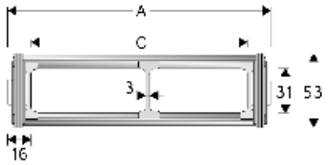
Chain Type	F1mm	F2
20LT079□□□	61	67
20LT104□□□	86	92
20LT154□□□	136	142
20LT204□□□	186	192
20LT254□□□	236	242
20LT304□□□	286	292
20LT□□□□□□	F=A-50	F=A-44

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

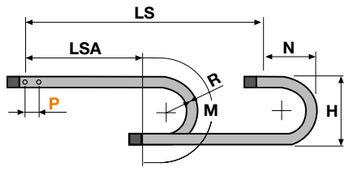
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
111	53	79	32	115-150-205-250-305	5.73	20LC079□□□
136	53	104	32	115-150-205-250-305	6.21	20LC104□□□
186	53	154	32	115-150-205-250-305	7.18	20LC154□□□
236	53	204	32	115-150-205-250-305	8.15	20LC204□□□
286	53	254	32	115-150-205-250-305	9.12	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

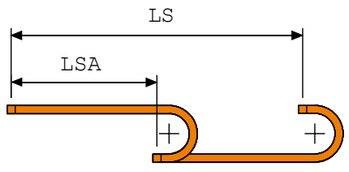
MCI: chain opening outer radius
MCE: chain opening inner radius

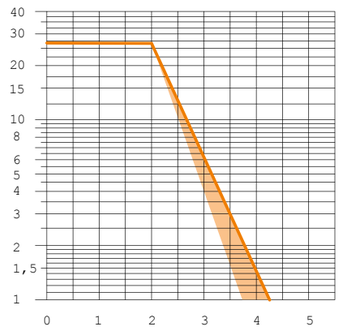


R	H	N	M	N1	M1
115	296	220	515	500	1080
150	366	255	625	675	1485
205	476	310	795	885	2005
250	566	360	940	1030	2385
305	676	410	1110	1190	2825

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.

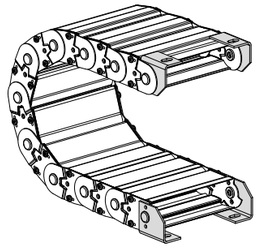
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

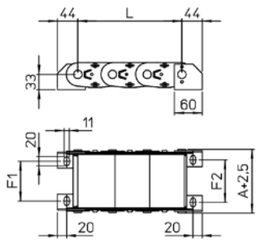
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

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





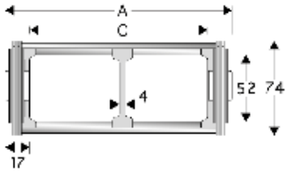
Chain Type	F1mm	F2
20LC079□□□	61	67
20LC104□□□	86	92
20LC154□□□	136	142
20LC204□□□	186	192
20LC254□□□	236	242
20LC304□□□	286	292
20LC□□□□□□	F=A-50	F=A-44

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

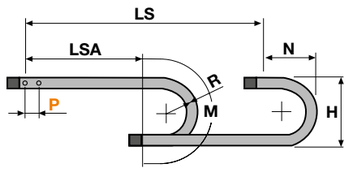
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
140	74	106	52	150-220-250-305-400-535	6.20	30LT106□□□
190	74	156	52	150-220-250-305-400-535	6.44	30LT156□□□
240	74	206	52	150-220-250-305-400-535	6.68	30LT206□□□
290	74	256	52	150-220-250-305-400-535	6.92	30LT256□□□
340	74	306	52	150-220-250-305-400-535	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

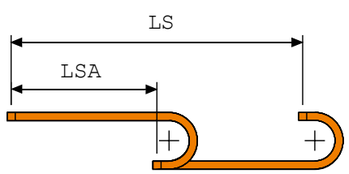
MCI: chain opening outer radius
MCE: chain opening inner radius

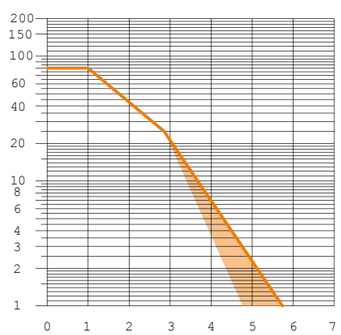


R	H	N	M	N1	M1
150	388	290	670	830	1770
220	528	360	890	1145	2515
250	588	385	980	1255	2800
305	698	440	1150	1450	3285
400	888	540	1450	1740	4065
535	1158	675	1880	2110	5105

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.

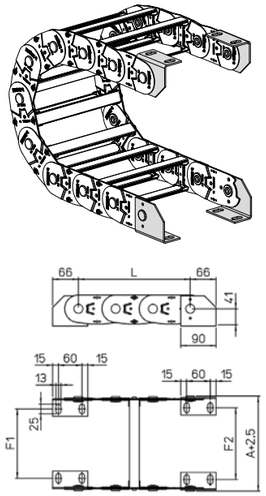
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

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



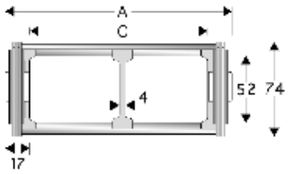
Chain Type	F1	F2mm
30LT106□□□	77	83
30LT156□□□	127	133
30LT206□□□	177	183
30LT256□□□	227	233
30LT306□□□	277	283
30LT356□□□	327	333
30LT406□□□	377	383
30LT456□□□	427	433
30LT506□□□	477	483
30LT□□□□□□	F=A-63	F=A-57

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

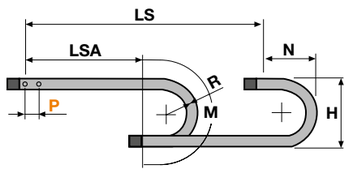
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
140	74	106	52	150-220-250-305-400-535	7.96	30LC106□□□
190	74	156	52	150-220-250-305-400-535	8.87	30LC156□□□
240	74	206	52	150-220-250-305-400-535	9.79	30LC206□□□
290	74	256	52	150-220-250-305-400-535	10.70	30LC256□□□
340	74	306	52	150-220-250-305-400-535	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

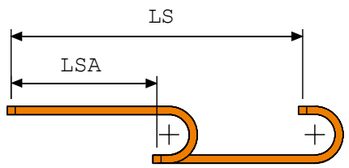
MCI: chain opening outer radius
MCE: chain opening inner radius

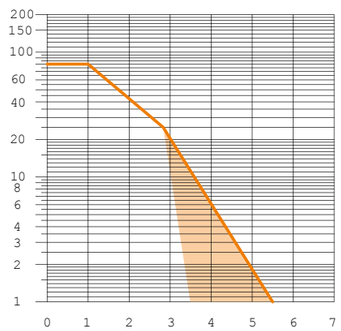


R	H	N	M	N1	M1
150	388	290	670	830	1770
220	528	360	890	1145	2515
250	588	385	980	1255	2800
305	698	440	1150	1450	3285
400	888	540	1450	1740	4065
535	1158	675	1880	2110	5105

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.

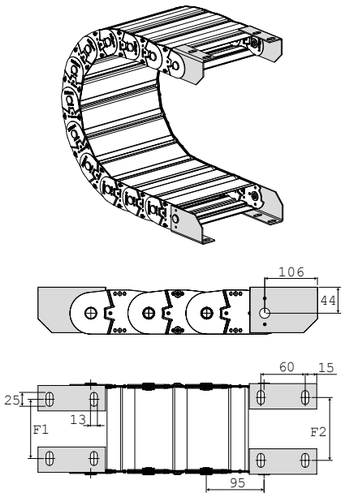
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

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



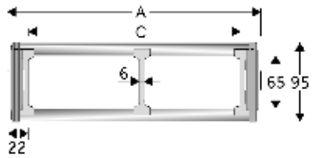
Chain Type	F1	F2mm
30LC106□□□	77	83
30LC156□□□	127	133
30LC206□□□	177	183
30LC256□□□	227	233
30LC306□□□	277	283
30LC356□□□	327	333
30LC406□□□	377	383
30LC456□□□	427	433
30LC506□□□	477	483
30LC□□□□□□	F=A-63	F=A-57

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

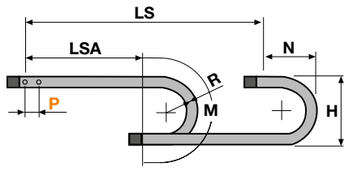
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
148	95	104	65	200-250-300-350-400-450-500-600	10.30	35LT104□□□
198	95	154	65	200-250-300-350-400-450-500-600	10.67	35LT154□□□
248	95	204	65	200-250-300-350-400-450-500-600	11.04	35LT204□□□
298	95	254	65	200-250-300-350-400-450-500-600	11.41	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

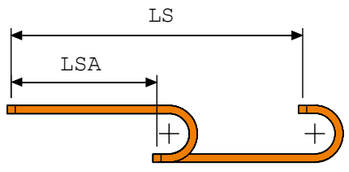
MCI: chain opening outer radius
MCE: chain opening inner radius

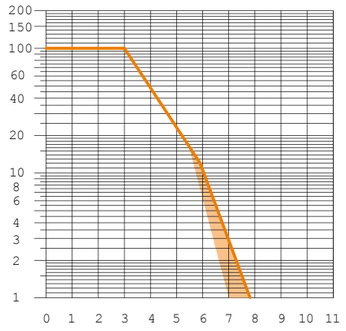


R	H	N	M	N1	M1
200	512	375	880	1100	2360
250	612	425	1040	1310	2870
300	712	480	1200	1495	3335
350	812	525	1350	1670	3775
400	912	575	1510	1825	4190
450	1012	625	1670	1975	4595
500	1112	675	1825	2120	4985
600	1312	775	2140	2390	5750

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.

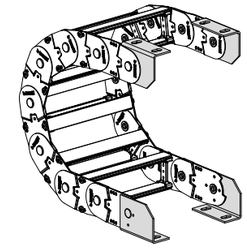
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

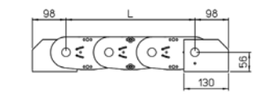
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

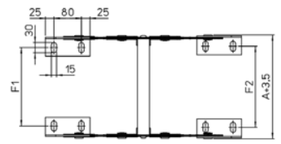
End brackets

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







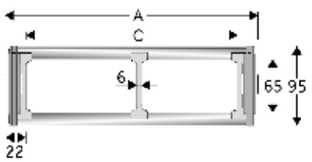
Chain Type	F1	F2
35LT104□□□	77.5	85.5
35LT154□□□	127.5	135.5
35LT204□□□	177.5	185.5
35LT254□□□	227.5	235.5
35LT304□□□	277.5	285.5
35LT354□□□	327.5	335.5
35LT404□□□	377.5	385.5
35LT454□□□	427.5	435.5
35LT504□□□	477.5	485.5
35LT□□□□□□	F=A-70,5	F=A-62,5

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

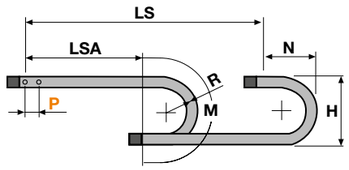
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
148	95	104	65	200-250-300-350-400-450-500-600	12.20	35LC104□□□
198	95	154	65	200-250-300-350-400-450-500-600	13.23	35LC154□□□
248	95	204	65	200-250-300-350-400-450-500-600	14.26	35LC204□□□
298	95	254	65	200-250-300-350-400-450-500-600	15.29	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

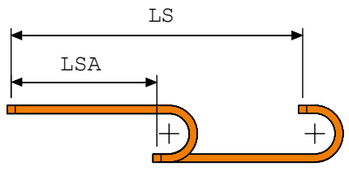
MCI: chain opening outer radius
MCE: chain opening inner radius

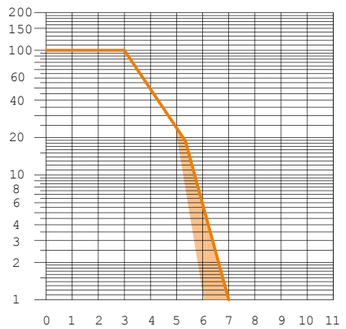


R	H	N	M	N1	M1
200	512	375	880	1100	2360
250	612	425	1040	1310	2870
300	712	480	1200	1495	3335
350	812	525	1350	1670	3775
400	912	575	1510	1825	4190
450	1012	625	1670	1975	4595
500	1112	675	1825	2120	4985
600	1312	775	2140	2390	5750

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.

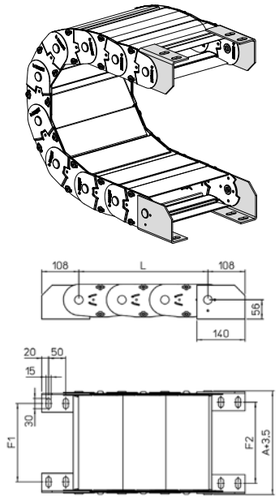
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

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



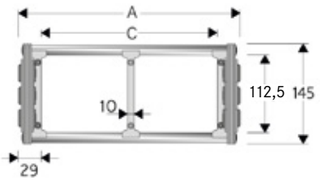
Chain Type	F1	F2
35LC104□□□	77.5	85.5
35LC154□□□	127.5	135.5
35LC204□□□	177.5	185.5
35LC254□□□	227.5	235.5
35LC304□□□	277.5	285.5
35LC354□□□	327.5	335.5
35LC404□□□	377.5	385.5
35LC454□□□	427.5	435.5
35LC504□□□	477.5	485.5
35LC□□□□□□	F=A-70,5	F=A-62,5

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.





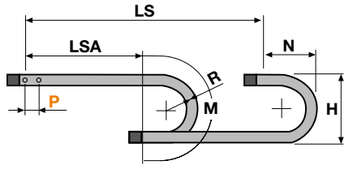
Technical data

- **Inner Height (D)** 112,5 mm
- **Pitch (P)** 180 mm
- **Speed** 0,5 m/s
- **Acceleration** 2 m/s²

Separator	
Unassembled	Article number S310TCF9
Assembled	Article number S310TCF9MC
MCI: chain opening outer radius	
MCE: chain opening inner radius	

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□□□□□□

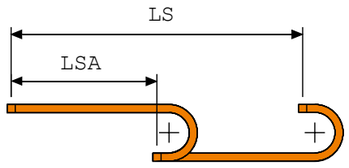
□□□ to be filled with Radius R

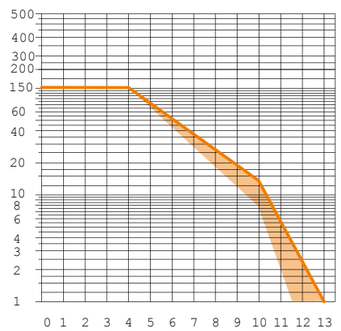


R	H	N	M	N1	M1
250	664	510	1150	1545	3285
300	764	555	1305	1755	3790
350	864	605	1460	1950	4265
400	964	655	1620	2125	4715
450	1064	710	1780	2295	5150
500	1164	755	1930	2455	5570
550	1264	805	2090	2605	5975
600	1364	855	2245	2755	6375
700	1564	955	2560	3035	7155
750	1664	1010	2720	3170	7535
850	1864	1105	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.

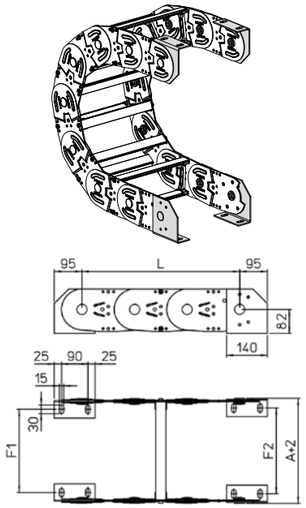
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

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



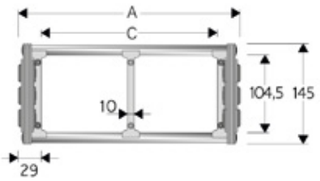
Chain Type	F1	F2
40LT150□□□	135	144
40LT200□□□	185	194
40LT250□□□	235	244
40LT300□□□	285	294
40LT400□□□	385	394
40LT500□□□	485	494
40LT□□□□□□	F=A-73	F=A-64

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

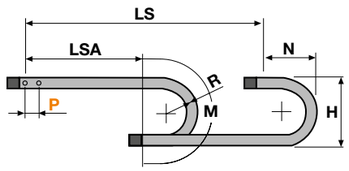
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
208	145	150	104.5	250-300-350-400-450-500-550-600-700-750-850	22.00	40LC150□□□
258	145	200	104.5	250-300-350-400-450-500-550-600-700-750-850	23.00	40LC200□□□
308	145	250	104.5	250-300-350-400-450-500-550-600-700-750-850	25.00	40LC250□□□
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

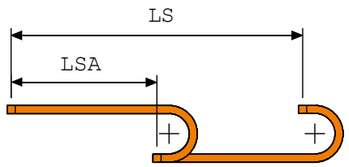
MCI: chain opening outer radius
MCE: chain opening inner radius

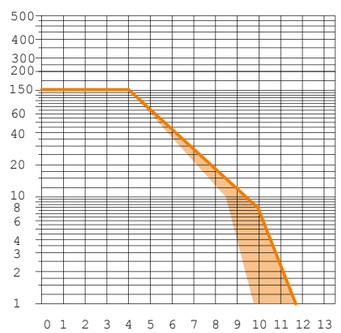


R	H	N	M	N1	M1
250	650	510	1150	1545	3285
300	750	555	1305	1755	3790
350	850	605	1460	1950	4265
400	950	655	1620	2125	4715
450	1050	710	1780	2295	5150
500	1150	755	1930	2455	5570
550	1250	805	2090	2605	5975
600	1350	855	2245	2755	6375
700	1550	955	2560	3035	7155
750	1650	1010	2720	3170	7535
850	1870	1105	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.

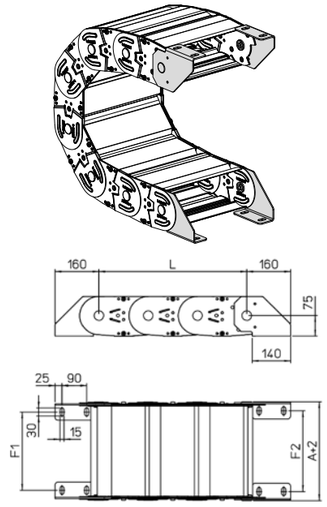
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

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



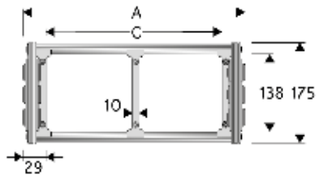
Chain Type	F1	F2
40LC150□□□	135	144
40LC200□□□	185	194
40LC250□□□	235	244
40LC300□□□	285	294
40LC400□□□	385	394
40LC500□□□	485	494
40LC□□□□□□	F=A-73	F=A-64

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

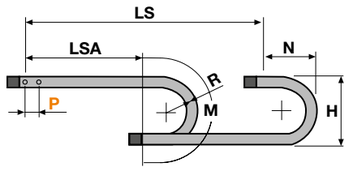
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
208	175	150	138	250-300-350-400-450-500-550-600-700-750-850	19.30	42LT150□□□
258	175	200	138	250-300-350-400-450-500-550-600-700-750-850	19.76	42LT200□□□
308	175	250	138	250-300-350-400-450-500-550-600-700-750-850	20.22	42LT250□□□
358	175	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

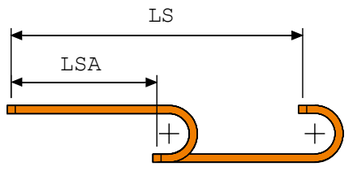
MCI: chain opening outer radius
MCE: chain opening inner radius

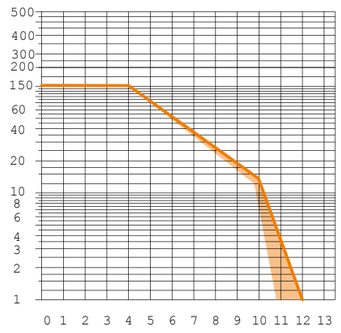


R	H	N	M	N1	M1
250	720	510	1150	1545	3285
300	820	555	1305	1755	3790
350	920	605	1460	1950	4265
400	1020	655	1620	2125	4715
450	1120	710	1780	2295	5150
500	1220	755	1930	2455	5570
550	1320	805	2090	2605	5975
600	1420	855	2245	2755	6375
700	1620	955	2560	3035	7155
750	1720	1010	2720	3170	7535
850	1920	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.

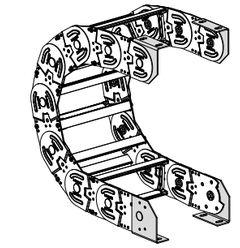
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

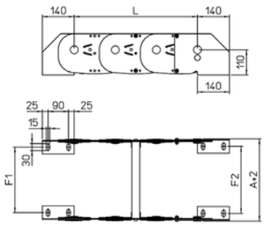
For applications with LSA and weights not included in the area of the diagram showing a self-supporting capacity, verify the possible use of support rollers (see page 41).

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





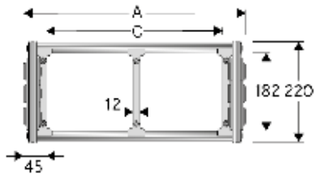
Chain Type	F1	F2
42LT150□□□	135	144
42LT200□□□	185	194
42LT250□□□	235	244
42LT300□□□	285	294
42LT400□□□	385	394
42LT500□□□	485	494
42LT□□□□□□	F=A-73	F=A-64

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

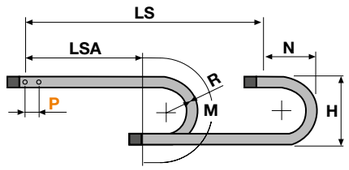
A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
390	220	300	182	400-600-800-1000-1250-1500	40.97	45T300□□□
440	220	350	182	400-600-800-1000-1250-1500	41.31	45T350□□□
490	220	400	182	400-600-800-1000-1250-1500	41.64	45T400□□□
540	220	450	182	400-600-800-1000-1250-1500	41.97	45T450□□□
590	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

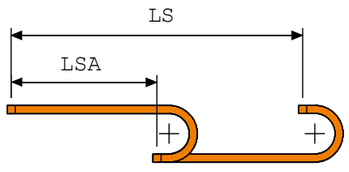
MCI: chain opening outer radius
MCE: chain opening inner radius

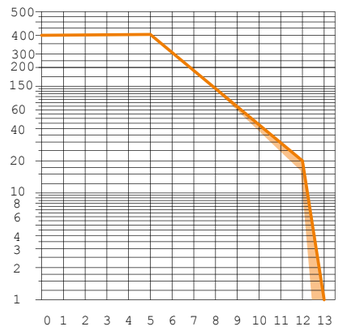


R	H	N	M
400	1060	770	1760
600	1460	970	2390
800	1860	1170	3020
1000	2260	1370	3650
1250	2760	1620	4430
1500	3260	1870	5220

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.

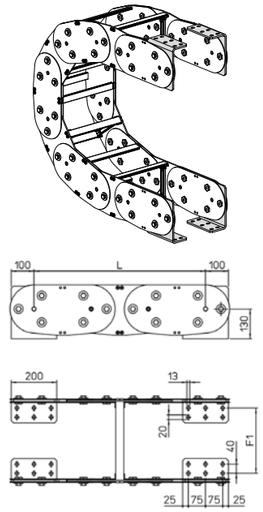
The orange marking/area in the diagram considers the difference of weight between various widths of chain.

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



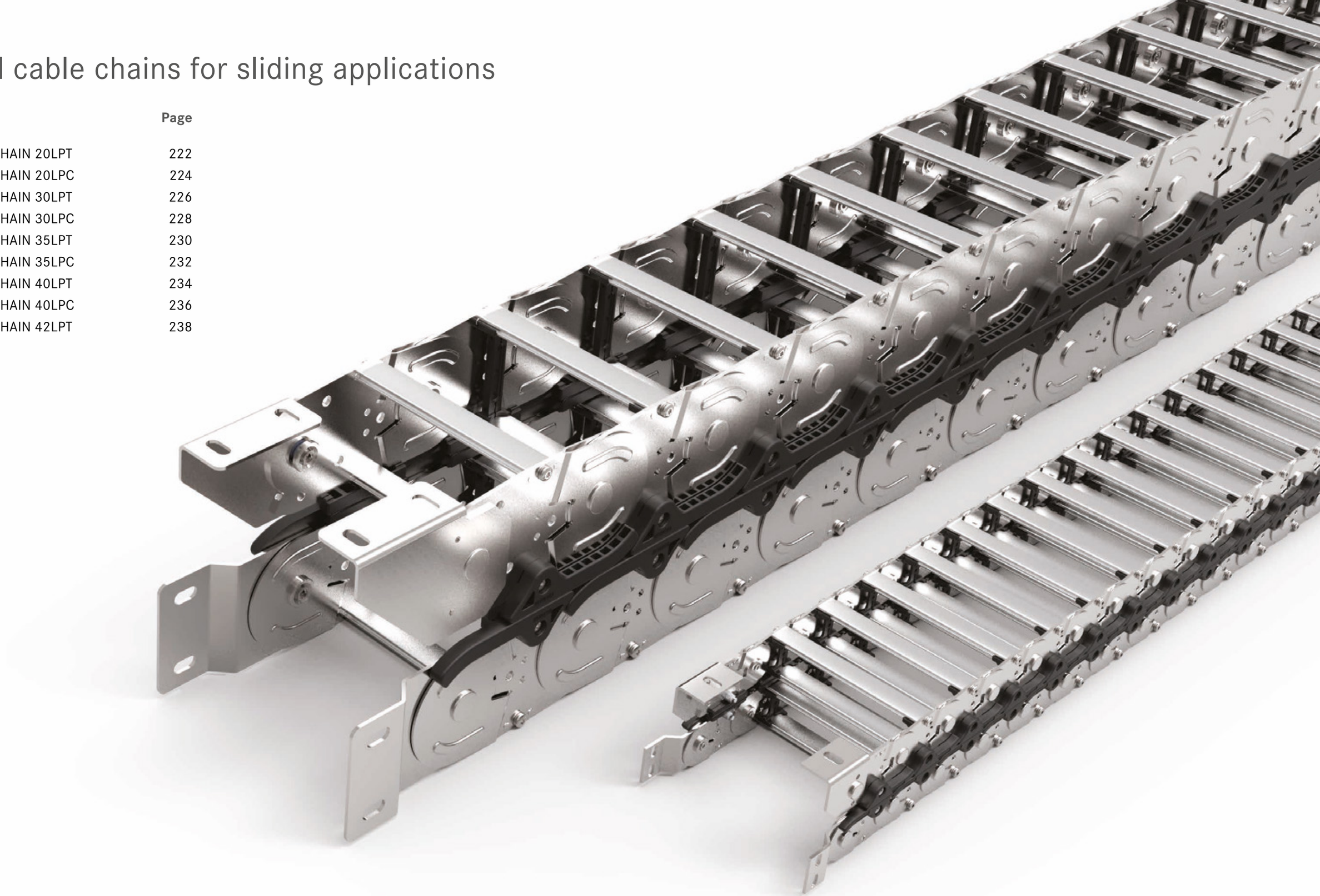
Chain Type	F1
45T300□□□	285
45T350□□□	335
45T400□□□	385
45T450□□□	435
45T500□□□	485
45T600□□□	585
45T□□□□□□	F=A-105

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)

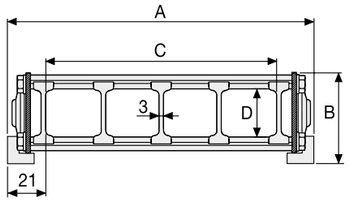
Steel cable chains for sliding applications

Product	Page
SILVYN® CHAIN 20LPT	222
SILVYN® CHAIN 20LPC	224
SILVYN® CHAIN 30LPT	226
SILVYN® CHAIN 30LPC	228
SILVYN® CHAIN 35LPT	230
SILVYN® CHAIN 35LPC	232
SILVYN® CHAIN 40LPT	234
SILVYN® CHAIN 40LPC	236
SILVYN® CHAIN 42LPT	238



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

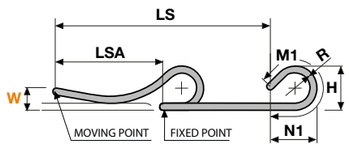
Separator

Unassembled	Article number S20LTF
Assembled	Article number S20LTFMC

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

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	20LPT79□□□
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



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)

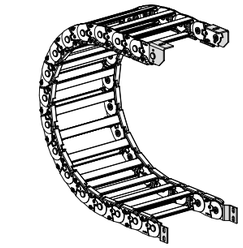
LAPP GROUP
Protective cable conduit systems and cable carrier systems
Cable chain carriers • Steel cable chain for long travel distance

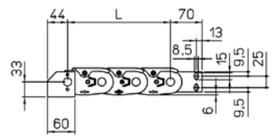
ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
SILVYN®

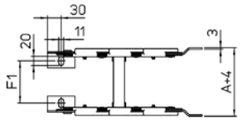
End brackets

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







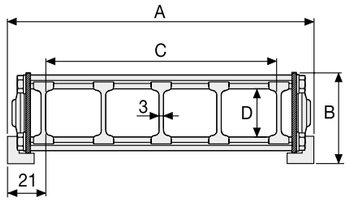
Chain Type	F1
20LPT79□□□	67
20LPT104□□□	92
20LPT154□□□	142
20LPT204□□□	192
20LPT254□□□	242
20LPT304□□□	292
Special width F1	A-54

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

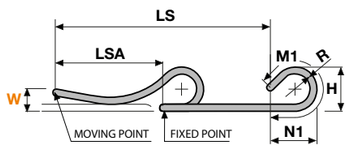
Separator

Unassembled	Article number S20LTF
Assembled	Article number S20LTFMC

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

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	20LPC79□□□
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



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)

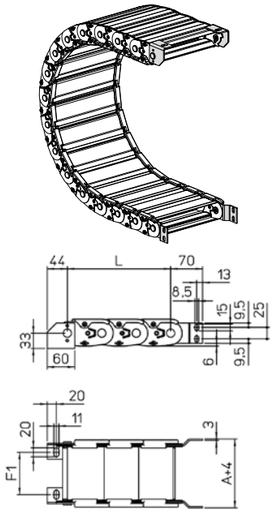
LAPP GROUP
Protective cable conduit systems and cable carrier systems
Cable chain carriers • Steel cable chain for long travel distance

ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
SILVYN®

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



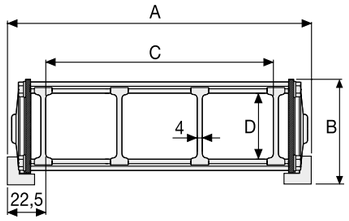
Chain Type	F1
20LPC79□□□	67
20LPC104□□□	92
20LPC154□□□	142
20LPC204□□□	192
20LPC254□□□	242
20LPC304□□□	292
Special width F1	A-54

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

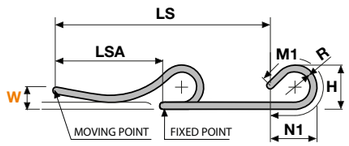
Separator

Unassembled	Article number S308CO
Assembled	Article number S308COMC

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

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



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

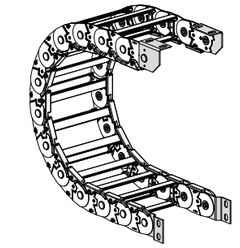
L=LSA + M or M1 Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

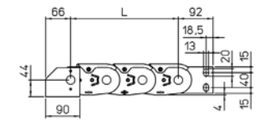
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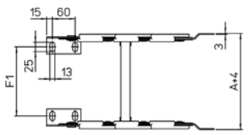
End brackets

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







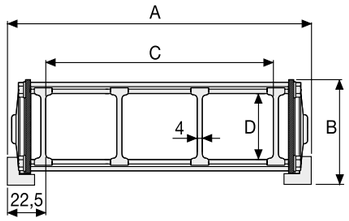
Chain Type	F1
30LPT106□□□	83
30LPT156□□□	133
30LPT206□□□	183
30LPT256□□□	233
30LPT306□□□	283
30LPT356□□□	333
30LPT406□□□	383
30LPT456□□□	433
30LPT506□□□	483
Special width F1	A-68

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

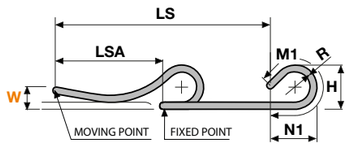
Separator

Unassembled	Article number S308CO
Assembled	Article number S308COMC

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

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



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

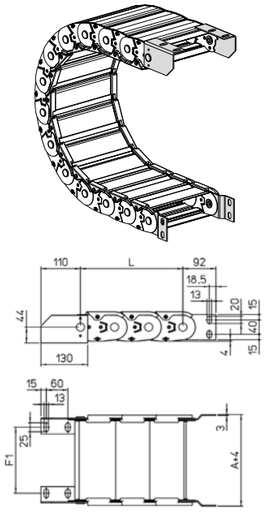
L=LSA + M or M1 Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

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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



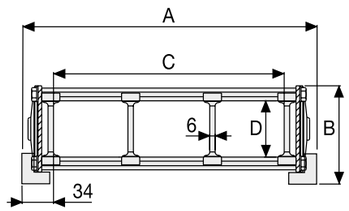
Chain Type	F1
30LPC106□□□	83
30LPC156□□□	133
30LPC206□□□	183
30LPC256□□□	233
30LPC306□□□	283
30LPC356□□□	333
30LPC406□□□	383
30LPC456□□□	433
30LPC506□□□	483
Special width F1	A-68

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

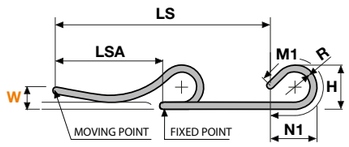
- **Inner Height (D)** 65 mm
- **Pitch (P)** 125 mm
- **Height Moving Point (W)** 300 mm
- **Speed** 2 m/s
- **Acceleration** 2 m/s²

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



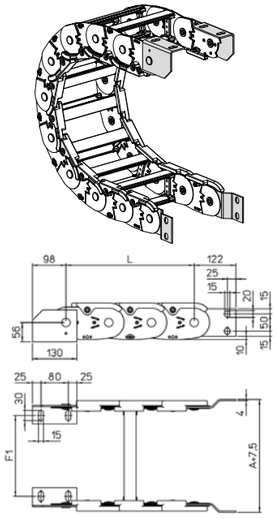
R	H	N1	M1
200	512	1100	2360
250	612	1310	2870
300	712	1495	3335
350	812	1670	3775
400	912	1825	4190
450	1012	1975	4595
500	1112	2120	4985
600	1312	2390	5750

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



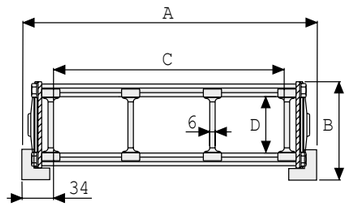
Chain Type	F1
35LPT104□□□	86
35LPT154□□□	136
35LPT204□□□	186
35LPT254□□□	236
35LPT304□□□	286
35LPT354□□□	336
35LPT404□□□	386
35LPT454□□□	436
35LPT504□□□	486
Special width F1	A-86

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

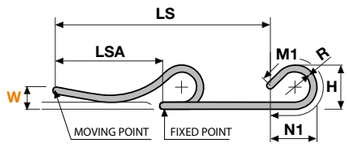
- **Inner Height (D)** 65 mm
- **Pitch (P)** 125 mm
- **Height Moving Point (W)** 300 mm
- **Speed** 2 m/s
- **Acceleration** 2 m/s²

Separator	
Unassembled	Article number ST3500F
Assembled	Article number ST3500FMC

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

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



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

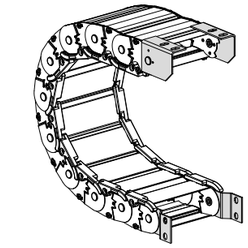
L=LSA + M or M1 Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

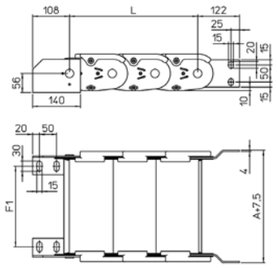
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End brackets

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





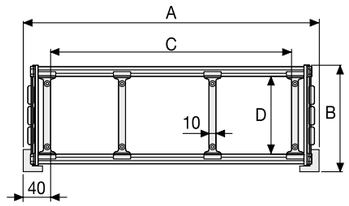
Chain Type	F1
35LPC104□□□	86
35LPC154□□□	136
35LPC204□□□	186
35LPC254□□□	236
35LPC304□□□	286
35LPC354□□□	336
35LPC404□□□	386
35LPC454□□□	436
35LPC504□□□	486
Special width F1	A-86

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

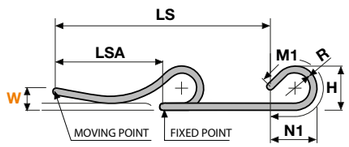
Acceleration
2 m/s²

Separator	
Unassembled	Article number S310TCF9
Assembled	Article number S310TCF9MC

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

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



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)

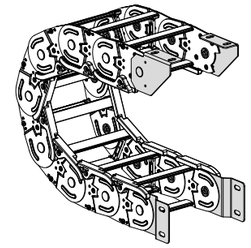
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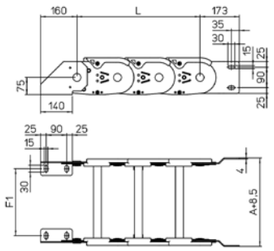
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HITRONIC®
SILVYN®

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





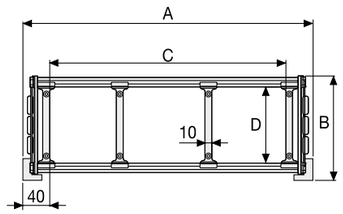
Chain Type	F1
40LPT150□□□	144
40LPT200□□□	194
40LPT250□□□	244
40LPT300□□□	294
40LPT400□□□	394
40LPT500□□□	494
Special width F1	A-86

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

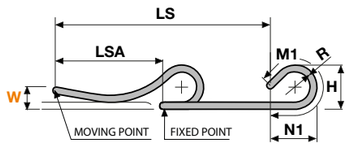
Separator

Unassembled	Article number S310TCF9
Assembled	Article number S310TCF9MC

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

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



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)

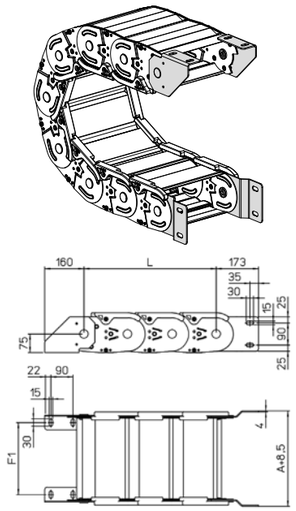
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End brackets

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



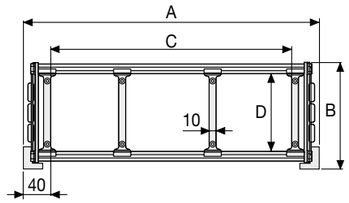
Chain Type	F1
40LPC150□□□	144
40LPC200□□□	194
40LPC250□□□	244
40LPC300□□□	294
40LPC400□□□	394
40LPC500□□□	494
Special width F1	A-86

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

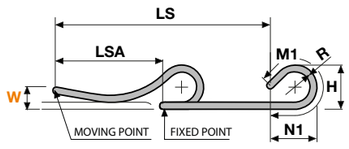
- **Inner Height (D)** 138 mm
- **Pitch (P)** 180 mm
- **Height Moving Point (W)** 350 mm
- **Speed** 2 m/s
- **Acceleration** 2 m/s²

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

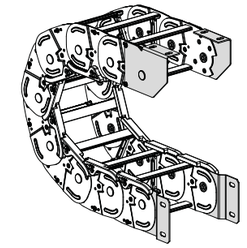
L=LSA + M or M1 Length of chain (L)= Half travel distance LSA plus length of curve (M) or (M1)

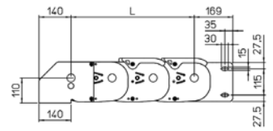
LAPP GROUP
Protective cable conduit systems and cable carrier systems
Cable chain carriers • Steel cable chain for long travel distance
ÖLFLEX®
UNITRONIC®
ETHERLINE®
HITRONIC®
SILVYN®

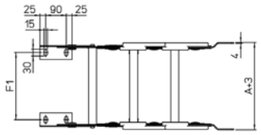
End brackets

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
Special width F1	A-86

Steel Type Part Numbers
Complete Set Assembled
A42LPKM
Complete Set Unassembled
A42LPK

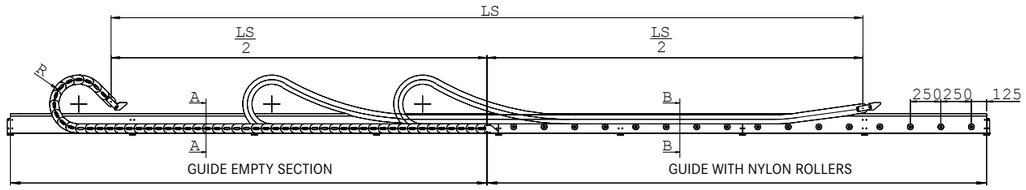
□□□ Inner width (C)

Guide Channel for

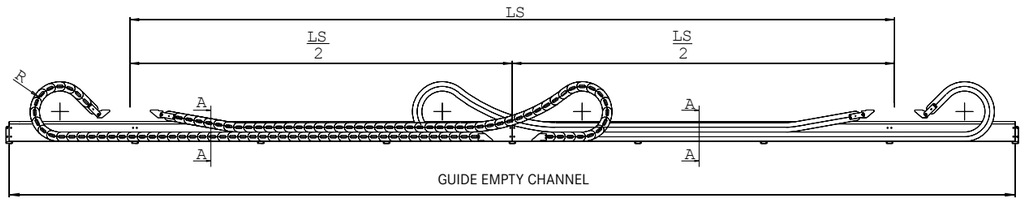
20LP - 30LP

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

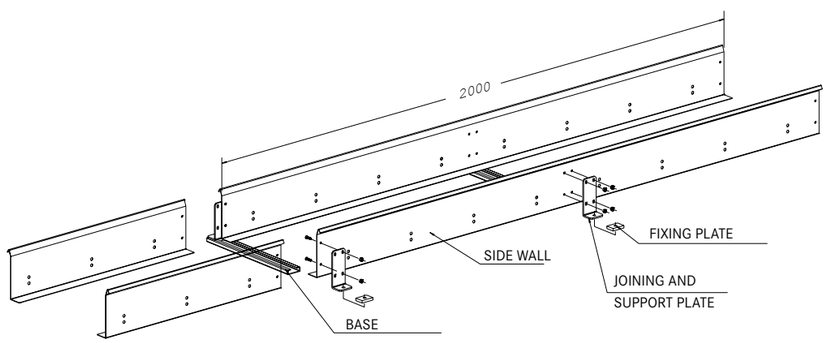
Single Chain Application



Double Chain Application

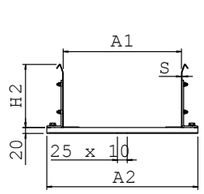


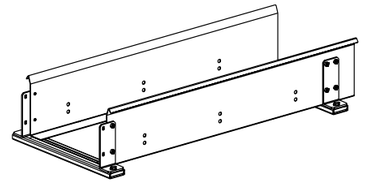
Channel guide is available in kit form composed of:
side walls 2 m standard length
joining plates
fixing screws



Empty Guide Section

Section A-A





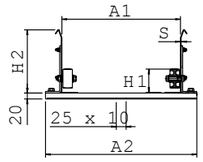
Part Number
CS...

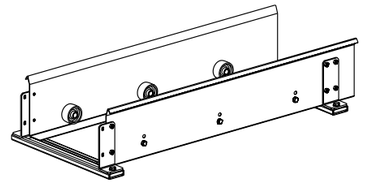
How to order

Chain part number	**30LP100150**
Guide channel part number	**CS30LP100**

Guide with Nylon Rollers

Section B-B





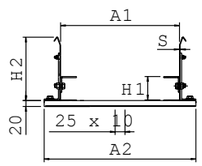
Part Number
CR...

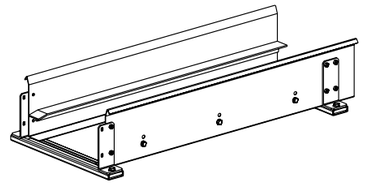
How to order

Chain part number	**30LP100150**
Guide channel part number	**CR30LP100**

Guide with Steel Sliding Plate

Section B-B





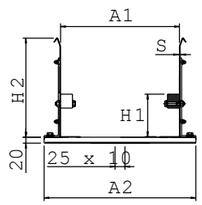
Part Number
CA...

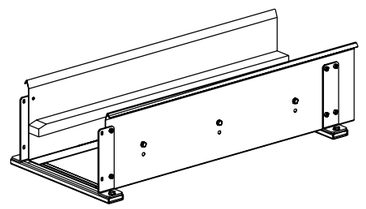
How to order

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**

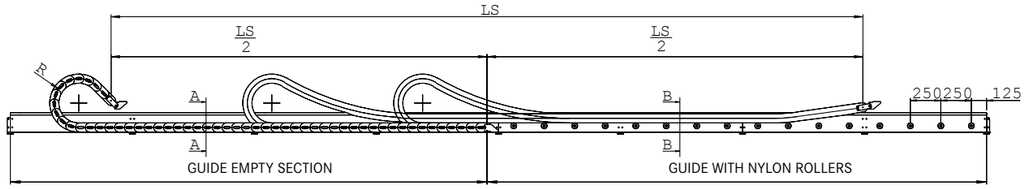
Chain type	H1 mm	H2 mm	A1 mm	A2 mm	S mm
20	59	160	A+4	A+87	1,5
30	81,5	190	A+4	A+88	2

Guide Channel for

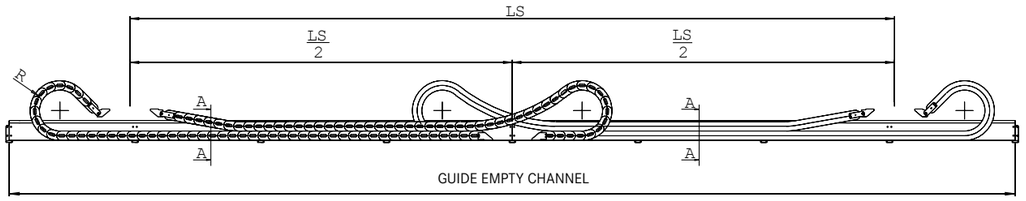
35LP - 40LP

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

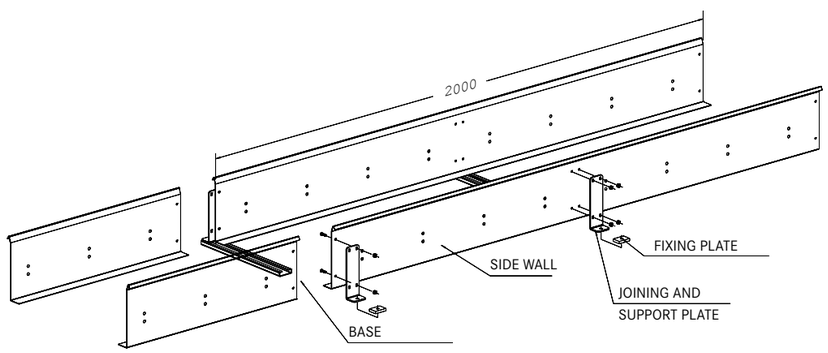
Single Chain Application



Double Chain Application

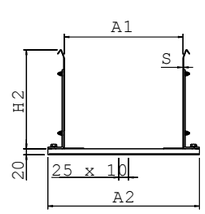


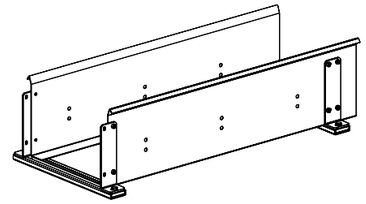
Channel guide is available in kit form composed of:
side walls 2 m standard length
joining plates
fixing screws



Empty Guide Section

Section A-A





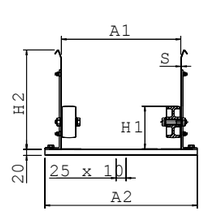
Part Number
CS35LP...

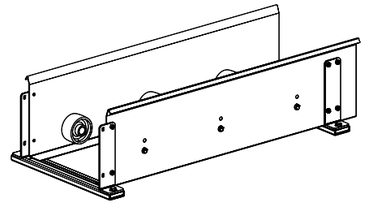
How to order

Chain part number	**35LP104200**
Guide channel part number	**CS35LP104**

Guide with Nylon Rollers

Section B-B





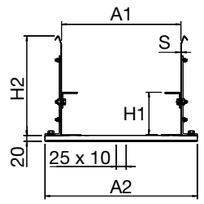
Part Number
CR35LP...

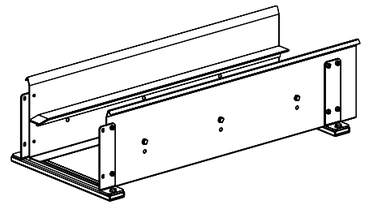
How to order

Chain part number	**35LP104200**
Guide channel part number	**CR35LP104**

Guide with Steel Sliding Plate

Section B-B





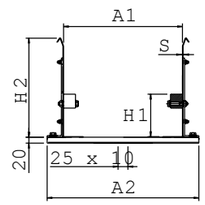
Part Number
CA35LP...

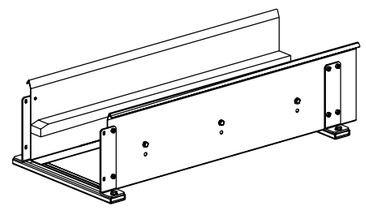
How to order

Chain part number	**35LP104200**
Guide channel part number	**CA35LP104**

Guide with Plastic Sliding Plate

Section B-B





Part Number
CP35LP...

How to order

Chain part number	**35LP104200**
Guide channel part number	**CP35LP104**

Chain type	H1 mm	H2 mm	A1 mm	A2 mm	S mm
35LP	107	250	A+8	A+92	2
40LP	161,5	325	A+8	A+94	3

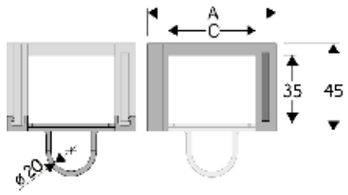


Cable chains for robot applications

Product	Page
SILVYN® CHAIN 495	246
SILVYN® CHAIN 500	248
SILVYN® CHAIN 510TN/515TN	250
SILVYN® CHAIN 545	252
SILVYN® CHAIN 599	254

SILVYN® CHAIN 495

Circular Nylon Cable Chain with removable frames





Technical data

Inner Height (D)
35 mm

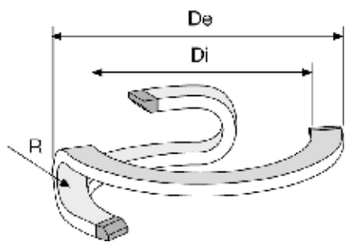
Speed
180 m/s

Acceleration
180 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	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

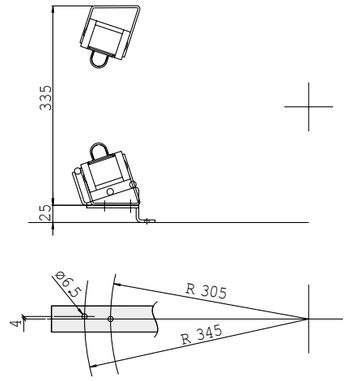


R	Di	De
100	600	755

End brackets

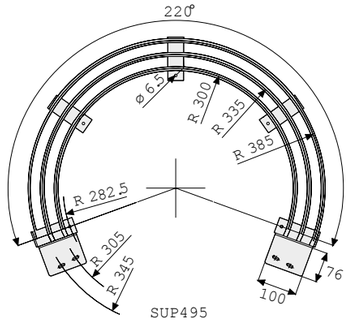
The end brackets set, containing two steel plates screwed to the links, allows the two ends of the chain to be attached to the equipment. The end brackets are installed in one position offering the possibility of attaching the chain externally.

Steel Type



Steel Type Part Numbers
Complete Set Assembled
A495KM
Complete Set Unassembled
A495K

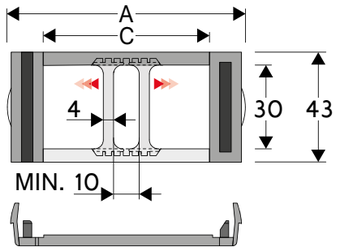
Support Guide



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 500

Circular Nylon Cable Chain with removable frames





Technical data

Inner Height (D)
30 mm

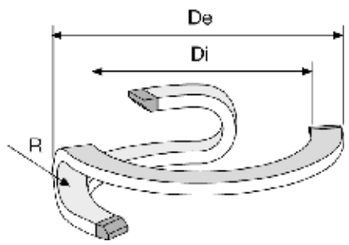
Speed
180 m/s

Acceleration
180 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	Article number
93	43	65	30	100	0.14	5001
93	43	65	30	150	0.14	5002

Separator	
Unassembled	Article number S500
Assembled	Article number S500MC
Pin	Article number PG355

Chain type	Rotation	Pitches
5001	90	12
5001	180	16
5001	270	20
5001	360	24
5002	90	14
5002	180	18
5002	270	23
5002	360	27

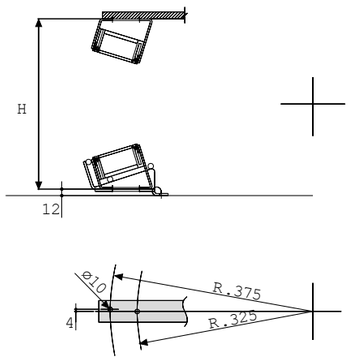


R	Di	De
100	630	830
150	630	830

End brackets

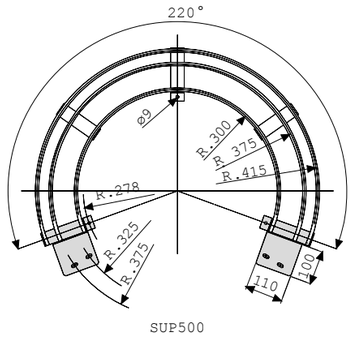
The end brackets set, containing two steel plates screwed to the links, allows the two ends of the chain to be attached to the equipment. The end brackets are installed in one position offering the possibility of attaching the chain externally.

Steel Type



Steel Type Part Numbers
Complete Set Assembled
A500KM
Complete Set Unassembled
A500K

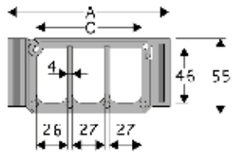
Support Guide



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 510TN / 515TN

Circular Nylon Cable Chain with removable frames





Technical data

Inner Height (D)
46 mm

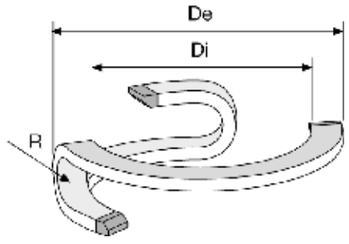
Speed
180 m/s

Acceleration
180 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	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



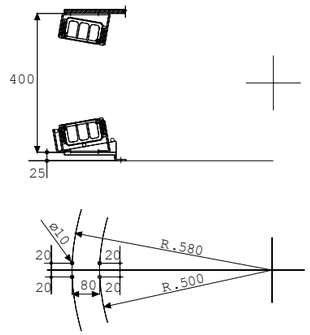
R	Di	De
125	940	1220
175	1060	1340

End brackets

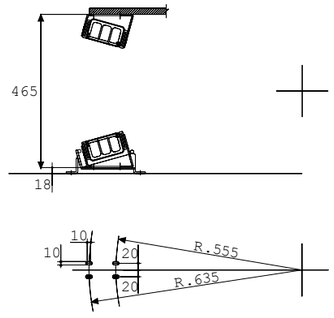
The end brackets set, containing two steel plates screwed to the links, allows the two ends of the chain to be attached to the equipment. The end brackets are installed in one position offering the possibility of attaching the chain externally.

Steel Type

510TN

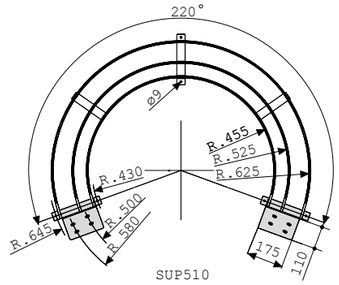


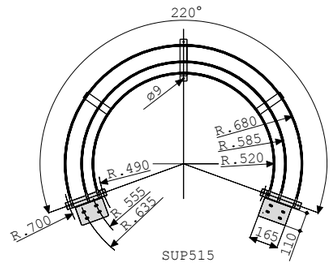
515TN



Steel Type Part Numbers
Complete Set Assembled
A510TNKM
A515TNKM
Complete Set Unassembled
A510TNK
A515TNK

Support Guide

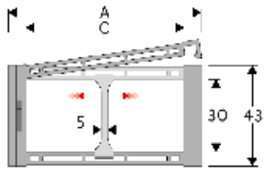




For correct functioning of the chain it is necessary that the installation is done in a specific position. For this reason there is a support guide available which can do this. For particular applications it is possible to create support guides with attachment plates and special dimensions.
For applications 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

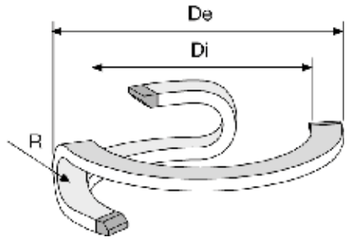
Speed
180 m/s

Acceleration
180 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	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



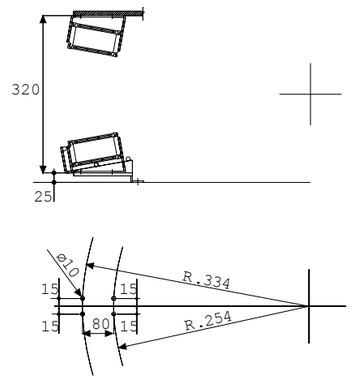
R	Di	De
100	485	760

LAPP GROUP
Protective cable conduit systems and cable carrier systems
Cable chain carriers • Robot chain
ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® SILVYN®

End brackets

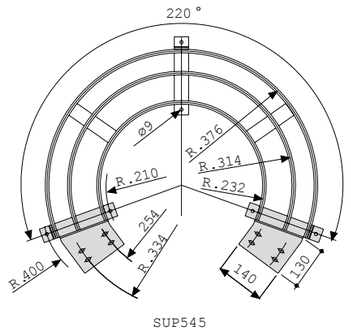
The end brackets set, containing two steel plates screwed to the links, allows the two ends of the chain to be attached to the equipment. The end brackets are installed in one position offering the possibility of attaching the chain externally.

Steel Type



Steel Type Part Numbers
Complete Set Assembled
A545KM
Complete Set Unassembled
A545K

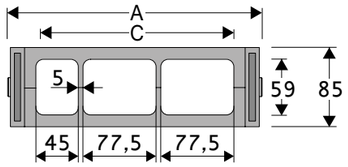
Support Guide



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

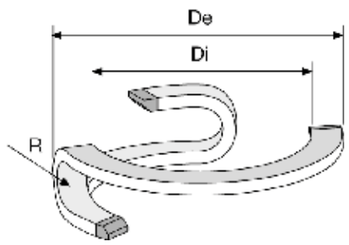
Inner Height (D)
59 mm

Speed
180 m/s

Acceleration
180 m/s²

A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	Weight (kg/m)	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

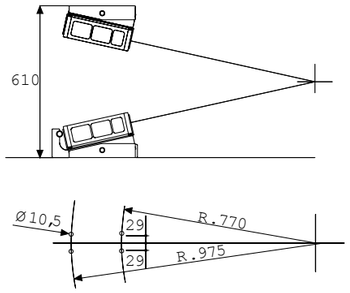


R	Di	De
220	1400	2000

End brackets

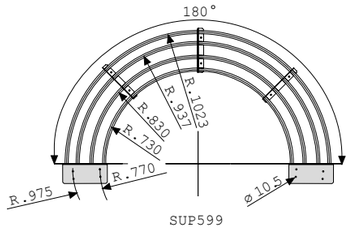
The end brackets set, containing two steel plates screwed to the links, allows the two ends of the chain to be attached to the equipment. The end brackets are installed in one position offering the possibility of attaching the chain externally.

Steel Type



Steel Type Part Numbers
Complete Set Assembled
A599KM
Complete Set Unassembled
A599K

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.

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

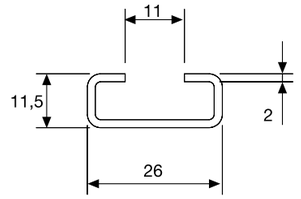
Part.no	Diameter mm
6201012	10-12
6201214	12-14
6201416	14-16
6201618	16-18
6201822	18-22

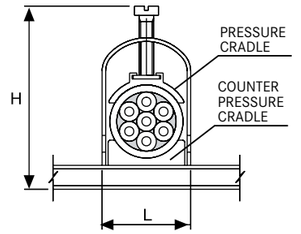
Part.no	Diameter mm
6202426	22-26
6202830	26-30
6203034	30-34
6203438	34-38
6203842	38-42

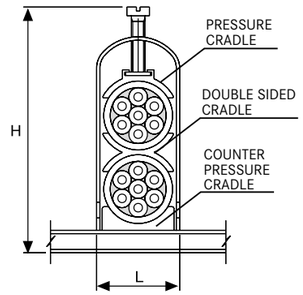
Plastic insert for triple clamp (order separately)

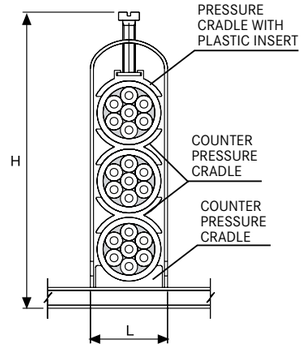
Part.no	Diameter mm
6300612X	10-12
6301214X	12-14
6301416X	14-16
6301618X	16-20

Part.no	Diameter mm
6201822X	20-24
6202226X	24-26
6202630X	26-30









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
- Construction machinery, vehicles and agricultural equipment
- Stage technology
- Mobile electrical equipment (electric tools, power tools, domestic appliances)

ÖLFLEX® SERVO FD 781 CY

Screened, low capacitive servo cable with PVC outer sheath for flexible power chain application

Info

- Core Line for ordinary duty in power chain applications
- EMC-compliant



Benefits

- Well-proven and reliable
- Longer cable connection possible between frequency converter and drive 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
- Designed for 5 million alternating bending cycles and travel distances up to 10 meter

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 5.0 Class-ID: EC000104
ETIM 5.0 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
Flexible use: 7.5 x outer diameter
Fixed installation: 4 x 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

Alternating bending cycles
5 mio. cycles

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 4.0	13.5	210.9	335
0036324	4 G 10.0	19.7	488.2	747
0036325	4 G 16.0	23.9	744.8	1109
0036327	4 G 35.0	33.3	1565.4	2264
0036328	4 G 50.0	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 x 500 m drum or 5 x 100 m coils).
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SERVO FD 796 CP refer to page 261
- SERVO cables in acc. to SIEMENS® Standard 6FX 8PLUS refer to main catalogue

Accessories

- Rectangular connectors refer to main catalogue
- EPIC® POWER LS1 refer to main catalogue
- SKINTOP® EMC/Earthing refer to main catalogue

ÖLFLEX® SERVO FD 796 P

Servo cable with PUR outer sheath for highly dynamic power chain application - certified for North America



Info

- Extended Line for heavy duty in power chain applications
- 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 drive 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

- Dynamic power chain performance:
  Acceleration up to 50 m/s².
  Travel speeds up to 5 m/s.
  Travel distances up to 100 m.
- Designed for 10 million alternating bending cycles and horizontal travel distances up to 100 meter
- 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 (from 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 5.0 Class-ID: EC000104
ETIM 5.0 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
0,34mm² pairs: WH/BN/GN/YE

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
Fixed installation: 4 x 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

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	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 x 1,5)	11,7	99	217
0025320	4 G 2,5 + (2 x 1,5)	13,1	134	270
0025321	4 G 4 + (2 x 1,5)	14,2	195	333
0025322	4 G 6 +(2 x 1,5)	16	272	403
0025323	4 G 10 + (2 x 1,5)	18,4	425	581
0025324	4 G 16 + (2 x 1,5)	22,1	656	887
0025326	4 G 0,75 + 2 x (2 x 0,34)	10,9	54	143
0025327	4 G 1,5 + 2 x (2 x 0,75)	12,3	103	209
0025328	4 G 2,5 + 2 x (2 x 1,0)	14,3	152	306
0025312	4 G 4 + 2 x (2 x 1,0)	15,4	218	381
0025329	4 G 4 + (2 x 1,0) + (2 x 1,5)	15,6	231	388
0025330	4 G 6 + (2 x 1,0) + (2 x 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 are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SERVO FD 796 CP refer to page 261

Accessories

- Protective cable conduit systems and cable carrier systems refer to main catalogue
- Circular connectors refer to main catalogue

ÖLFLEX® SERVO FD 796 CP

Screened servo cable with PUR outer sheath for highly dynamic power chain application - certified



Info

- Extended Line for heavy duty in power chain applications
- AWM certification for USA and Canada
- VDE-tested characteristics

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 drive 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

- Dynamic power chain performance:
  Acceleration up to 50 m/s².
  Travel speeds up to 5 m/s.
  Travel distances up to 100 m.
- Designed for 10 million alternating bending cycles and horizontal travel distances up to 100 meter
- 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
  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 screened control core pairs twisted together in short lay lengths
- Non-woven wrapping
- Tinned-copper braiding
- PUR outer sheath, orange (RAL 2003)

Technical data

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 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
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 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

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	Number of cores and mm² per conductor	Outer diameter (mm)	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
0027959	4 G 1,5 + (2 x 1,5)	11,6	135	261
0027960	4 G 2,5 + (2 x 1,5)	13,4	188	318
0027961	4 G 4 + (2 x 1,5)	14,8	235	385
0027962	4 G 6 + (2 x 1,5)	16,8	329	486
0027963	4 G 10 + (2 x 1,5)	19,4	515	701
0027964	4 G 16 + (2 x 1,5)	23,1	757	1048
0027965	4 G 25 + (2 x 1,5)	26,6	1147	1532
0027966	4 G 35 + (2 x 1,5)	30,9	1538	2097
0027967	4 G 50 + (2 x 1,5)	34	2181	2721
0027969	4 G 1,5 + 2 x (2 x 0,75)	12,2	159	313
0027970	4 G 2,5 + 2 x (2 x 1,0)	14,6	207	395
0027980	4 G 4 + 2 x (2 x 1,0)	16,1	274	466
0027971	4 G 4 + (2 x 1,0) + (2 x 1,5)	16,3	344	485
0027972	4 G 6 + (2 x 1,0) + (2 x 1,5)	18,1	436	588
0027973	4 G 10 + (2 x 1,0) + (2 x 1,5)	21,8	610	819
0027974	4 G 16 + 2 x (2 x 1,5)	25,5	801	1135
0027975	4 G 25 + 2 x (2 x 1,5)	28,8	1187	1559
0027976	4 G 35 + 2 x (2 x 1,5)	30,9	1588	2093
0027977	4 G 50 + 2 x (2 x 2,5)	36,3	2557	2920

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 are not to scale and do not represent detailed images of the respective products.

Accessories

- Circular connectors refer to main catalogue
- SKINTOP® EMC/Earthing refer to main catalogue

ÖLFLEX® SERVO FD 798 CP

Screened encoder cable with PUR outer sheath for highly dynamic power chain application - certified



Info

- Extended Line for heavy duty in power chain applications
- 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

- Dynamic power chain performance:
  Acceleration up to 50 m/s².
  Travel speeds up to 5 m/s.
  Travel distances up to 100 m.
- 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 5.0 Class-ID: EC000104
ETIM 5.0 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
Flexible use: 7.5 x outer diameter
Fixed installation: 4 x outer diameter

Nominal voltage
IEC: 30 V
UL & CSA: 30 V

Test voltage
Core/core: 1500 V rms
Core/screen: 750 V rms

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	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SERVO FD 798 CP				
0036910	4x2x0,34+4x0,5	8,9	79	125
0036911	3x(2x0,14)+2x(0,5)	8,9	70	120
0036912	3x(2x0,14)+4x0,14+2x0,5	8,8	68	110
0036913	3x(2x0,14)+4x0,14+2x0,5+4x0,22	9,4	80	130
0036914	9x0,5	8,8	71	110
0036915	4x2x0,25+2x1,0	8,8	63	109
0036916	6x2x0,25+2x0,5	10,3	67	121
0036917	10x0,14+2x0,5	7,7	41	82
0036918	10x0,14+4x0,5	8,1	54	98
0036920	4x2x0,14+4x0,5	8,2	51	95
0036921	4x2x0,25	7,6	38	75
0036923	8x2x0,18	7,8	51	85
0036924	4x2x0,18	6,4	30	52
0036926	12x0,22	6,9	44	73
0036927	4x2x0,25+2x0,5	8,5	62	98
0036928	2x2x0,14+2x(2x0,14)+4x0,5+(4x0,14)	9,1	79	135
0036929	2x(2x0,25)+2x0,5	8,7	46	98
0036930	2x2x0,25+2x0,5	7,3	38	72

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 are not to scale and do not represent detailed images of the respective products.

Accessories

- Circular connectors refer to main catalogue
- SILVYN® CHAIN cable protection and guiding systems

NEW

ÖLFLEX® SERVO FD 7DSL

Low capacitive hybrid servo cable with PUR outer sheath for highly dynamic power chain application - certified



Info

- OCS - One Cable Solution
- Suitable for Hiperface DSL® motor-feedback systems
- Extended Line for heavy duty in power chain applications

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

- Dynamic power chain performance:
  Acceleration up to 50 m/s².
  Travel speeds up to 5 m/s.
  Travel distances up to 20m.
- Maximum DSL transmission length: 100m
- 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 5.0 Class-ID: EC000104
ETIM 5.0 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
For flexible use:
7.5 x outer diameter
Fixed installation: 5 x 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

Alternating bending cycles
10 mio. cycles

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 x 22AWG)	11,2	115	198
1023276	4 G 2,5 + (2 x 22AWG)	12,6	160	269
1023277	4 G 4 + (2 x 22AWG)	14	218	343
1023274	4 G 1 + (2 x 0,75) + (2 x 22AWG)	11,8	133	202
1023278	4 G 1,5 + (2 x 1,0) + (2 x 22AWG)	13,2	152	256
1023279	4 G 2,5 + (2 x 1,0) + (2 x 22AWG)	14	195	313
1023280	4 G 4 + (2 x 1,0) + (2 x 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
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SERVO 7DSL refer to main catalogue
- ÖLFLEX® SERVO FD 796 CP refer to page 261

Accessories

- Protective cable conduit systems and cable carrier systems refer to main catalogue
- Circular connectors refer to main catalogue

SERVO cables in acc. to LENZE® Standard

Motor and resolver/encoder cables - certified



Info

- Servo drives
- For static or highly flexible use
- EMC-compliant

Benefits

- Motor cables with low-capacitance
- Multi-standard certification reduces part varieties and saves costs

Application range

- Connecting cable between servo controller and encoder/resolver
- Connecting cable between servo controller and motor
- Plant engineering
- Assembly lines, production lines, in all kinds of machines

Norm references / Approvals

- Resolver and encoder cable:
  UL AWM Style 2464 for fixed installation versions,
  UL AWM Style 21165 for highly flexible applications,
  CSA AWM I/II A/B
- Motor cable:
  UL AWM Style 2570 for fixed installation version,
  UL AWM Style 20940 for high flexibility use,
  CSA AWM I/II A/B
- UL File No. E63634
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Design according to LENZE® standard:
- Designs for fixed installation:
  PVC outer sheath, PP core insulation.
- Designs for highly flexible use:
  PUR outer sheath, TPE core insulation
- Refer to data sheet for more details
- Signal cables: green (RAL 6018)
- Servo cable: orange (RAL 2003)

Technical data

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 Class-Description:
Control cable

Core identification code
Encoder cables
- 7072508 (fixed installation)
bk/ye+bk/gn+bk/rd+bk/bu+bk/wh
- 7072517 (flexible use)
gn/ye+bu/rd+gy/pk+bk/vt+bn/wh
Resolver cables:
- 7072507 (fixed installation)
bk/ye+bk/gn+bk/rd+bk/wh
- 7072516 (flexible use)
gn/ye+bu/rd+gy/pk+bn/wh

Minimum bending radius
Flexible use: 10 x outer diameter
Fixed installation: 7.5 x outer diameter

Nominal voltage
Signal cables:
30 V (VDE), 300 V (UL/CSA)
Power cables:
- Power cores:
U_0/U 0.6/1 kV (VDE),
600 V (UL/CSA)
- Control cores:
24 V (VDE)
600 V (UL/CSA)

Test voltage
Signal cable: 1.5 kV
Motor cable:
- Power cores: 4 kV
- Control cores: 2 kV

Protective conductor
G = with GN-YE 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)
Motor cables for fixed installation				
7072500	4 G 1,0 + (2 x 0,5)	10	81	128
7072501	4 G 1,5 + (2 x 0,5)	11,2	106	173
7072502	4 G 2,5 + (2 x 0,5)	12,3	153	244
Screened encoder cable with PVC outer sheath for static use				
7072507	3 x (2 x 0,14) + 1 x (2 x 0,5)	9,3	43	91
7072508	4 x (2 x 0,14) + 1 x (2 x 1,0)	11	65	136
Motor cables for power chain application				
7072509	4 G 1,0 + (2 x 0,5)	10	81	151
7072510	4 G 1,5 + (2 x 0,5)	11,5	106	192

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
7072511	4 G 2,5 + (2 x 0,5)	13,2	153	271
7072512	4 G 4 + (2 x 1,0)	14,6	235	373
7072513	4 G 6 + (2 x 1,0)	16,8	316	477
7072514	4 G 10 + (2 x 1,0)	20,1	513	710
7072515	4 G 16 + (2 x 1,0)	23,8	710	1015
Resolver & encoder cable for power chain applications				
7072516	3 x (2 x 0,14) + 1 x (2 x 0,5)	10	44	107
7072517	4 x (2 x 0,14) + 1 x (2 x 1,0)	11,5	65	145

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).
Lenze® part designations (EWLM_, EWLR_, EWLE_, EWLL_, EYL und 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.
Cables for power chain use should only be handled on drums prior to installation.
Article numbers refer to genuine Lapp products.
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Circular connectors refer to main catalogue
- SKINTOP® EMC/Earthing refer to main catalogue

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 5.0 Class-ID: EC000104
ETIM 5.0 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 x 2 x 0,14 + 4 x 0,5	8,5	black	48	92
70388719	3 x (2 x 0,14) + 2 x (0,5)	8,3	black	64	100
70388720	3 x (2 x 0,14) + 2 x (1,0)	9,1	black	64	115
70388721	4 x 2 x 0,14 + 4 x 0,5 + (4 x 0,14)	8,3	black	56	102
Suitable for ELAU					
70388722	3 x 2 x 0,25 + 2 x 0,5	8,4	green	44	95
Suitable for KEB					
70388724	3 x (2 x 0,14) + 2 x (0,5)	8,1	green	64	100
Suitable for Berger Lahr					
70388726	5 x 2 x 0,25 + 2 x 0,5	9,5	green	56	120
Suitable for B & R					
70388727	3 x 2 x 24AWG	6,5	green	28	60
70388728	5 x 2 x 0,14 + 2 x 0,5	7,8	green	40	80
Suitable for FANUC					
70388730	5 x 0,5 + 2 x 2 x 0,18	7,6	green	94	169
70388731	2 x 0,5 + 4 x 2 x 0,22	7,6	green	72	120
70388732	3 x 2 x0,18 + 6 x 0,5	8,7	green	105	189
70388733	3 x 2 x 0,18 + 6 x 1,0	8,7	green	140	252
70388734	5 x 2 x 0,18 + 6 x 0,5	8,7	green	114	205
70388735	10 x 2 x 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 x 500 m drum or 5 x 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 are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SERVO FD 798 CP refer to page 262
- SERVO cables in acc. to SIEMENS® Standard 6FX 8PLUS refer to main catalogue
- SERVO cables in acc. to INDRAMAT® Standard INK refer to main catalogue

Accessories

- Circular connectors refer to main catalogue
- SKINTOP® EMC/Earthing refer to main catalogue
- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® CLASSIC FD 810

Highly flexible control cable with PVC core insulation and PVC sheath



Info

- Core Line for ordinary duty in power chain applications
- The classic for multi-functional use

Benefits

- Well-proven and reliable
- Cost-effective solution
- 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

- Designed for 5 million alternating bending cycles and travel distances up to 10 meter
- Flame-retardant according IEC 60332-1-2
- Low-adhesive surface

Norm references / Approvals

- Core based on VDE 0245/0285
- 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 (RAL 7001)

Technical data

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 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
For flexible use:
7.5 x outer diameter
Fixed installation: 4 x outer diameter

Nominal voltage
U_0/U: 300/500 V

Test voltage
4000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Alternating bending cycles
5 mio. cycles

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 1.0	6.1	19	58
0026131	3 G 1.0	6.6	29	72
0026132	4 G 1.0	7.3	39	88
0026133	5 G 1.0	8	48	104
0026134	7 G 1.0	9.6	67	142
0026135	12 G 1.0	11.4	115	221
0026136	14 G 1.0	12.3	134.4	258
0026137	16 G 1.0	13	153	287
0026138	18 G 1.0	13.9	173	324
0026139	25 G 1.0	16.4	240	445
0026140	26 G 1.0	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 1.0	18.9	326.4	595
0026142	41 G 1.0	20.6	394	712
0026143	50 G 1.0	22.3	480	854
0026144	65 G 1.0	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 4.0	10.6	120	214
0026181	4 G 4.0	11.7	160	266
0026182	5 G 4.0	13.1	200	325
0026183	4 G 6.0	13.9	230.4	396
0026184	5 G 6.0	15.5	288	484
0026185	4 G 10.0	17.6	384	644
0026186	5 G 10.0	19.6	480	785
0026187	4 G 16.0	21	615	922
0026188	5 G 16.0	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 are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® FD 891 refer to page 274

Accessories

- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® CLASSIC FD 810 CY

Highly flexible, screened control cable with PVC core insulation and PVC inner and outer sheath



Info

- Core Line for ordinary duty in power chain applications
- The classic for multi-functional use
- EMC-compliant

Benefits

- Well-proven and reliable
- Cost-effective solution
- 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

- Designed for 5 million alternating bending cycles and travel distances up to 10 meter
- Flame-retardant according IEC 60332-1-2
- Low-adhesive surface
- EMC-compliant

Norm references / Approvals

- Core based on VDE 0245/0285
- 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 (RAL 7001)

Technical data

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 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
For flexible use:
7.5 x outer diameter
Fixed installation: 4 x outer diameter

Nominal voltage
U_0/U: 300/500 V

Test voltage
4000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Alternating bending cycles
5 mio. cycles

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	13.7	238	360
0026282	5 G 4	15.3	280	436
0026283	4 G 6	16.1	318	514
0026285	4 G 10	20.2	521	824
0026287	4 G 16	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 are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® FD 891 CY refer to page 275

Accessories

- SKINTOP® MS-M BRUSH refer to main catalogue
- SKINTOP® MS-HF-M BRUSH refer to main catalogue
- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® CHAIN 809 SC

Highly flexible, single core cable with PVC insulation and PVC sheath - certified for North America



Info

- Basic Line for light & ordinary duty in power chain applications
- AWM certification for USA and Canada

Benefits

- Multi-standard certification reduces part varieties and saves costs
- Easy to install
- Multifunctional application possibilities
- Under consideration of the temperature range also suitable for flexible outdoor use

Application range

- In power chains or moving machine parts
- For internal wiring of electric and electronic equipment in switch cabinets
- This cable can substitute multi-core power cables where space requirements or minimum bending radii cause problems
- Specially designed for power circuits of servomotors driven by frequency converters
- Test systems in the automotive industry, vehicles and stationary fuel cell systems

Product features

- Designed for 2 million alternating bending cycles and travel distances up to 10 meter
- 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 (RAL 9005)

Technical data

Classification
ETIM 5.0 Class-ID: EC000057
ETIM 5.0 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: 10 x outer diameter
Fixed installation: 4 x outer diameter

Nominal voltage
IEC: U_0/U 600/1000 V
UL & CSA: 600 V

Test voltage
4000 V

Protective conductor
G = with PE conductor
X = without PE jacket

Alternating bending cycles
2 mio. cycles

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
1062923	240	30.6	black	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 are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CHAIN 90 P refer to page 282
- ÖLFLEX® FD 90 refer to page 270

Accessories

- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® CHAIN 809 SC CY

NEW

Highly flexible, screened single core cable with PVC insulation and PVC sheath - certified for North America



Info

- Basic Line for light & ordinary duty in power chain applications
- AWM certification for USA and Canada
- EMC compliant copper screening

Benefits

- Multi-standard certification reduces part varieties and saves costs
- Easy to install
- Multifunctional application possibilities
- Under consideration of the temperature range also suitable for flexible outdoor use
- Copper braiding screens the cable against electromagnetic interference

Application range

- In power chains or moving machine parts
- For internal wiring of electric and electronic equipment in switch cabinets
- This cable can substitute screened multi-core motor cables where space requirements or minimum bending radii cause problems
- Specially designed for power circuits of servomotors driven by frequency converters
- Test systems in the automotive industry, vehicles and stationary fuel cell systems

Product features

- Designed for 2 million alternating bending cycles and travel distances up to 10 meter
- 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 (RAL 9005)

Technical data

Classification
ETIM 5.0 Class-ID: EC000057
ETIM 5.0 Class-Description:
Low voltage power cable

Core identification code
Black, other colours are available upon request

Specific insulation resistance
> 20 GOhm x cm

Conductor stranding
Fine wire according to VDE 0295 Class 5/ IEC 60228 Class 5

Minimum bending radius
Flexing: 10 x outer diameter
Fixed installation: 4 x outer diameter

Nominal voltage
IEC: U_0/U 600/1000 V
UL & CSA: 600 V

Test voltage
4000 V

Protective conductor
X = without protective conductor

Alternating bending cycles
2 mio. cycles

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
1062952	300	33.5	3116	3299

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 are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CHAIN 90 CP refer to page 283
- ÖLFLEX® FD 90 CY refer to page 271

Accessories

- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® FD 90

Highly flexible, single core cable with PVC insulation and PVC sheath - certified for North America



Info

- Core Line for ordinary duty in power chain applications
- 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

Application range

- In power chains or moving machine parts
- For internal wiring of electric and electronic equipment in switch cabinets
- This cable can substitute multi-core power cables where space requirements or minimum bending radii cause problems
- Specially designed for power circuits of servomotors driven by frequency converters
- Test systems in the automotive industry, vehicles and stationary fuel cell systems

Product features

- Designed for 5 million alternating bending cycles and travel distances up to 10 meter
- 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 (RAL 9005)

Technical data

Classification
ETIM 5.0 Class-ID: EC000057
ETIM 5.0 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: 7.5 x outer diameter
Fixed installation: 3 x outer diameter

Nominal voltage
IEC: U_0/U 600/1000 V
UL & CSA: 600 V

Test voltage
4000 V

Protective conductor
G = with PE conductor
X = without PE jacket

Alternating bending cycles
5 mio. cycles

Temperature range
Flexing: -5°C to +90°C
Fixed installation: -40°C to +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
0026641	300	33.5	black	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 are not to scale and do not represent detailed images of the respective products.

Accessories

- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® FD 90 CY

Highly flexible, screened single core cable with PVC insulation and PVC sheath - certified for North America



Info

- Core Line for ordinary duty in power chain applications
- 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

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

- Designed for 5 million alternating bending cycles and travel distances up to 10 meter
- 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 (RAL 2003)

Technical data

Classification
ETIM 5.0 Class-ID: EC000057
ETIM 5.0 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
For flexible use:
7.5 x outer diameter
Fixed installation: 3 x outer diameter

Nominal voltage
IEC: U_0/U 600/1000 V
UL & CSA: 600 V

Test voltage
4000 V

Protective conductor
X = without protective conductor

Alternating bending cycles
5 mio. cycles

Temperature range
Flexing: -5°C to +90°C
Fixed installation: -40°C to +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	1410.4	1924
0026669	185	29.2	1935	2611
0026671	240	32.9	2526	3372
0026673	300	34.8	3128.8	4105
0026653	16	11.2	186.2	297

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 are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® BRUSH ADD-ON refer to main catalogue
- SKINTOP® MS-M BRUSH refer to main catalogue
- SKINTOP® MS-HF-M BRUSH refer to main catalogue
- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® CHAIN 809

Highly flexible control cable with PVC core insulation and PVC sheath - certified for North America



Info

- Basic Line for light & ordinary duty in power chain applications
- AWM certification for USA and Canada

Benefits

- Good combination of quality and price
- Compact design
- Multi-standard certification reduces part varieties and saves costs
- Ideal for export-oriented machinery and equipment 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
- PVC outer sheath, grey (RAL 7001)

Technical data

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 Class-Description:
Control cable

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
For flexible applications:
Chains in self supporting non-gliding arrangements: 10 x outside diameter
Chains in gliding arrangements:
12 x outside diameter
Fixed installation: 4 x outer diameter

Nominal voltage
VDE: U_0/U: 300/500 V
UL & CSA: 1000 V

Test voltage
4000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Alternating bending cycles
2 mio. cycles

Temperature range
Flexing: VDE 0 °C to +70 °C
UL 0 °C to +80 °C
Fixed installation: VDE -40°C to +70°C;
UL/CSA -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® 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 1.0	5.9	19	58
1026717	3 G 1.0	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 1.0	6.9	39	88
1026719	5 G 1.0	7.5	48	104
1026720	7 G 1.0	9	67	142
1026721	12 G 1.0	10.9	115	221
1026722	18 G 1.0	13.2	173	324
1026723	25 G 1.0	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 4.0	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 are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CLASSIC FD 810 refer to page 266

Accessories

- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® CHAIN 809 CY

Highly flexible, screened control cable with PVC core insulation and PVC sheath - certified for North America



Info

- Basic Line for light & ordinary duty in power chain applications
- 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
- Ideal for export-oriented machinery and equipment 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
- 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
- Tinned-copper braiding
- PVC outer sheath, grey (RAL 7001)

Technical data

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 Class-Description:
Control cable

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
For flexible applications:
Chains in self supporting non-gliding arrangements: 10 x outside diameter
Chains in gliding arrangements:
12 x outside diameter
Fixed installation: 4 x outer diameter

Nominal voltage
VDE: U_0/U: 300/500 V
UL & CSA: 1000 V

Test voltage
Core/core: 4000 V
Core/screen: 2000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Alternating bending cycles
2 mio. cycles

Temperature range
Flexing: VDE 0 °C to +70 °C
UL 0 °C to +80 °C
Fixed installation: VDE -40°C to +70°C;
UL/CSA -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® 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 1.0	6.5	51	84
1026768	3 G 1.0	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 1.0	7.5	74	130
1026770	5 G 1.0	8.3	88	156
1026771	7 G 1.0	9.8	112	192
1026772	12 G 1.0	11.7	185	285
1026773	18 G 1.0	14	268	395
1026774	25 G 1.0	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	76.6	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 are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CLASSIC FD 810 CY refer to page 267

Accessories

- SKINTOP® MS-M BRUSH refer to main catalogue
- SKINTOP® MS-HF-M BRUSH refer to main catalogue
- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® FD 891

Highly flexible control cable with PVC core insulation and PVC sheath - certified for North America



Info

- Core Line for ordinary duty in power chain applications
- AWM certification for USA and Canada

Benefits

- Multi-standard certification reduces part varieties and saves costs
- Ideal for export-oriented machinery and equipment 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

- Designed for 5 million alternating bending cycles and travel distances up to 10 meter
- 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 (RAL 9005)

Technical data

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 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
For flexible use:
7.5 x outer diameter
Fixed installation: 4 x outer diameter

Nominal voltage
IEC: U_0/U 300/500 V
UL/CSA: 600 V

Test voltage
4000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Alternating bending cycles
5 mio. cycles

Temperature range
Flexing: -5°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® 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 1.0	7.1	28.8	65
1026129	4 G 1.0	7.8	39	82
1026130	5 G 1.0	8.8	48	105
1026128	7 G 1.0	10.5	67.2	149
1026131	12 G 1.0	12.5	116	225
1026132	18 G 1.0	15	173	331
1026133	25 G 1.0	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 4.0	11.8	153.6	263
1026505	5 G 4.0	13.2	192	325
1026507	7 G 4.0	16.1	268.8	469
1026604	4 G 6.0	13.7	230.4	368
1026614	4 G 10.0	17.9	384	588
1026624	4 G 16.0	24.1	614.4	1031
1026634	4 G 25.0	27.9	960	1530
1026644	4 G 35.0	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 are not to scale and do not represent detailed images of the respective products.

Accessories

- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® FD 891 CY

Highly flexible, screened control cable with PVC insulation and PVC inner and outer sheath - certified



Info

- Core Line for ordinary duty in power chain applications
- AWM certification for USA and Canada
- EMC compliant copper screening

Benefits

- Multi-standard certification reduces part varieties and saves costs
- Ideal for export-oriented machinery and equipment 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

- Designed for 5 million alternating bending cycles and travel distances up to 10 meter
- 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 (RAL 9005)

Technical data

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 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
For flexible use:
7.5 x outer diameter
Fixed installation: 4 x outer diameter

Nominal voltage
IEC: U_0/U 300/500 V
UL/CSA: 600 V

Test voltage
4000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Alternating bending cycles
5 mio. cycles

Temperature range
Flexing: -5°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® 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 1.0	8.7	56	124
1027301	4 G 1.0	9.8	70.2	155
1027293	5 G 1.0	10.6	84	182
1027294	7 G 1.0	12.3	108	237
1027295	12 G 1.0	14.7	178	352
1027302	18 G 1.0	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 1.0	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
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® MS-M BRUSH refer to main catalogue
- SKINTOP® MS-HF-M BRUSH refer to main catalogue
- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® CHAIN 808 P

Highly flexible control cable with PVC core insulation and abrasion and oil resistant PUR sheath



Info

- Basic Line for light & ordinary duty in power chain applications
- Good oil resistance

Benefits

- Good combination of quality and price
- Compact 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

- 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
- Assembly lines, production lines, in all kinds of machines
- In dry, damp or wet interiors

Product features

- Designed for 2 million alternating bending cycles and travel distances up to 10 meter
- High oil-resistance
- Abrasion and notch-resistant
- Low-adhesive surface

Norm references / Approvals

- Based on EN 50525-2-21
- 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
- PUR outer sheath, grey (RAL 7001)

Technical data

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 Class-Description: Control cable

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

Minimum bending radius
For flexible applications:
Chains in self supporting non-gliding arrangements: 10 x outside diameter
Chains in gliding arrangements: 12 x outside diameter
Fixed installation: 4 x outer diameter

Nominal voltage
U_0/U: 300/500 V

Test voltage
Core/core: 4000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Alternating bending cycles
2 mio. cycles

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® CHAIN 808 P				
1027700	2 X 0.5	5.2	10	40
1027701	3 G 0.5	5.5	15	48
1027702	4 G 0.5	6	20	58
1027703	5 G 0.5	6.5	24	67
1027704	7 G 0.5	7.7	34	88
1027705	12 G 0.5	9.2	58	136
1027706	18 G 0.5	11	87	195
1027707	25 G 0.5	13.3	120	274
1027708	2 X 0.75	5.6	15	49
1027709	3 G 0.75	6	22	60
1027710	4 G 0.75	6.5	29	73
1027711	5 G 0.75	7.1	37	86
1027712	7 G 0.75	8.5	51	117
1027713	12 G 0.75	10.3	87	181
1027714	18 G 0.75	12.2	130	259
1027715	25 G 0.75	14.8	181	363
1027716	2 X 1.0	5.9	19	58
1027717	3 G 1.0	6.3	29	72

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1027718	4 G 1.0	6.9	39	88
1027719	5 G 1.0	7.5	48	104
1027720	7 G 1.0	9	67	142
1027721	12 G 1.0	10.9	115	221
1027722	18 G 1.0	13.2	173	324
1027723	25 G 1.0	15.7	240	445
1027724	2 X 1.5	6.5	29	74
1027725	3 G 1.5	6.9	43.2	93
1027726	4 G 1.5	7.6	58	114
1027727	5 G 1.5	8.5	72	139
1027728	7 G 1.5	10.3	101	189
1027729	12 G 1.5	12.3	173	295
1027730	18 G 1.5	14.9	259	429
1027731	25 G 1.5	17.9	360	597
1027732	3 G 2.5	8.4	72	145
1027733	4 G 2.5	9.3	96	179
1027734	7 G 2.5	12.7	168	218
1027737	4 G 4.0	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.
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 are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CLASSIC FD 810 P refer to page 278

Accessories

- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® CHAIN 808 CP

Highly flexible, screened control cable with PVC core insulation and abrasion and oil resistant PUR sheath



Info

- Basic Line for light & ordinary duty in power chain applications
- Good oil resistance
- EMC compliant copper screening

Benefits

- Good combination of quality and price
- Compact design
- Thin and light, without inner sheath
- 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
- Copper braiding screens the cable against electromagnetic interference

Application range

- In power chains or moving machine parts
- In EMC-sensitive environments
- Particularly in wet areas of machine tools and transfer lines
- Suitable for use in measuring, control and regulating circuits
- In dry, damp or wet interiors

Product features

- Designed for 2 million alternating bending cycles and travel distances up to 10 meter
- High oil-resistance
- Abrasion and notch-resistant
- Low-adhesive surface

Norm references / Approvals

- Based on EN 50525-2-21
- 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
- PUR outer sheath, grey (RAL 7001)

Technical data

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 Class-Description: Control cable

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

Minimum bending radius
For flexible applications:
Chains in self supporting non-gliding arrangements: 10 x outside diameter
Chains in gliding arrangements: 12 x outside diameter
Fixed installation: 4 x outer diameter

Nominal voltage
U_0/U: 300/500 V

Test voltage
Core/screen: 2000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Alternating bending cycles
2 mio. cycles

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® CHAIN 808 CP				
1027751	2 X 0.5	5.8	36	45
1027752	3 G 0.5	6.1	43	59
1027753	4 G 0.5	6.6	49	83
1027754	5 G 0.5	7.1	57	96
1027755	7 G 0.5	8.5	69	136
1027756	12 G 0.5	10	104	200
1027757	18 G 0.5	11.8	141	275
1027758	25 G 0.5	14.1	211	350
1027759	2 X 0.75	6.2	43	56
1027760	3 G 0.75	6.6	52	70
1027761	4 G 0.75	7.1	61	95
1027762	5 G 0.75	7.7	72	130
1027763	7 G 0.75	9.1	89	168
1027764	12 G 0.75	10.9	138	232
1027765	18 G 0.75	13	211	315
1027766	25 G 0.75	15.6	280	435
1027767	2 X 1.0	6.5	51	84
1027768	3 G 1.0	6.9	62	110

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1027769	4 G 1.0	7.5	74	130
1027770	5 G 1.0	8.3	88	156
1027771	7 G 1.0	9.8	112	192
1027772	12 G 1.0	11.7	185	285
1027773	18 G 1.0	14	268	395
1027774	25 G 1.0	16.7	354	656
1027775	2 X 1.5	7.1	65	97
1027776	3 G 1.5	7.5	82	125
1027777	4 G 1.5	8.4	100	165
1027778	5 G 1.5	9.1	119	193
1027779	7 G 1.5	10.9	154	245
1027780	12 G 1.5	13.3	268	365
1027781	18 G 1.5	15.7	373	553
1027782	25 G 1.5	18.7	530	734
1027783	3 G 2.5	9	118	188
1027784	4 G 2.5	10.1	147	236
1027785	7 G 2.5	13.5	253	340
1027788	4 G 4.0	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 ≤ 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 are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CLASSIC FD 810 CP refer to page 279

Accessories

- SKINTOP® BRUSH ADD-ON refer to main catalogue
- SKINTOP® MS-M BRUSH refer to main catalogue
- SKINTOP® MS-HF-M BRUSH refer to main catalogue
- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® CLASSIC FD 810 P

Highly flexible control cable with PVC core insulation and abrasion and oil resistant PUR sheath



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
- In dry, damp or wet interiors with normal mechanical stress conditions

Product features

- Designed for 5 million alternating bending cycles and travel distances up to 10 meter
- Flame-retardant according to IEC 60332.1.2
- High oil-resistance
- Abrasion and notch-resistant
- Low-adhesive surface

Norm references / Approvals

- Core based on VDE 0245/0285
- 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 (RAL 7001)

Info

- Core Line for ordinary duty in power chain applications
- Good oil resistance

Technical data

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 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
For flexible use:
7.5 x outer diameter
Fixed installation: 4 x outer diameter

Nominal voltage
U_0/U: 300/500 V

Test voltage
4000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Alternating bending cycles
5 mio. cycles

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 1.0	6.1	20	52
0026331	3 G 1.0	6.6	29	66
0026332	4 G 1.0	7.3	39	82
0026333	5 G 1.0	8	48	97
0026334	7 G 1.0	9.6	67	117
0026335	12 G 1.0	11.4	115	211
0026338	18 G 1.0	13.9	173	310
0026339	25 G 1.0	16.4	240	426
0026341	34 G 1.0	18.9	326.4	571
0026342	41 G 1.0	20.6	394	684
0026343	50 G 1.0	22.3	480	822
0026344	65 G 1.0	25.4	624	1058
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 4.0	11.7	160	252
0026382	5 G 4.0	13.1	200	309
0029200	1 G 6.0	6.4	60	84
0026383	4 G 6.0	13.9	230	377
0029210	1 G 10.0	7.7	100	141
0026385	4 G 10.0	17.6	384	614
0026386	5 G 10.0	19.6	480	751
0029220	1 G 16.0	9.2	160	198
0026387	4 G 16.0	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 are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® FD 855 P refer to page 284

Accessories

- SILVYN® CHAIN cable protection and guiding systems

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 for ordinary duty in power chain applications
- 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

- Designed for 5 million alternating bending cycles and travel distances up to 10 meter
- Flame-retardant according to IEC 60332.1.2
- High oil-resistance
- Abrasion and notch-resistant
- EMC-compliant
- Low-adhesive surface

Norm references / Approvals

- Core based on VDE 0245/0285
- 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 (RAL 7001)

Technical data

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 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
For flexible use:
7.5 x outer diameter
Fixed installation: 4 x outer diameter

Nominal voltage
U_0/U: 300/500 V

Test voltage
4000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Alternating bending cycles
5 mio. cycles

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 1.0	7.7	46	93
0026431	3 G 1.0	8.2	57	109
0026432	4 G 1.0	8.9	70	129
0026433	5 G 1.0	9.8	81	154
0026434	7 G 1.0	11.4	110	200
0026435	12 G 1.0	13.4	182	304
0026438	18 G 1.0	16.1	254	429
0026439	25 G 1.0	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 are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® FD 855 CP refer to page 285

Accessories

- SKINTOP® BRUSH ADD-ON refer to main catalogue
- SKINTOP® MS-M BRUSH refer to main catalogue
- SKINTOP® MS-HF-M BRUSH refer to main catalogue
- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® ROBUST FD

Highly flexible, all-weather control cable with TPE sheath - resistant to a wide range of chemical media



Info

- Extended Line for heavy duty in power chain applications
- 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 plant, animal or synthetic-based organic oils, greases, waxes and the related emulsions
- Good resistance to ammonia compounds and bio-gases
- Good resistance to cold and hot water as well as water-soluble cleaning agents
- Well-suited to frequent 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

- Designed for 10 million alternating bending cycles and horizontal travel distances up to 100 meter
- 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
- Clean room classification for individual items on request
- 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
- Robust outer sheath made of special halogen-free TPE, black (RAL 9005)

Technical data

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 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
For flexible use:
7.5 x cable diameter
(at temperatures < 70 °C)
10 x cable diameter
(at a max. temperature of 105 °C)
Fixed installation: 4 x outer diameter

Nominal voltage
U_0/U: 300/500 V

Test voltage
4000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Alternating bending cycles
10 mio. cycles

Temperature range
Flexing: -40 °C to +105 °C
Fixed installation: -50 °C to +110 °C
Short-term: up to +120 °C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® ROBUST FD				
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
0026509	3 G 1.0	7.4	28.8	63
0026510	4 G 1.0	8.2	38.4	82
0026511	5 G 1.0	9.2	48	105
0026516	7 G 1.0	11.1	67.2	157
0026517	12 G 1.0	13.3	115.2	226
0026518	18 G 1.0	15.9	172.8	345
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 4.0	13.8	153.6	261
0026551	4 G 6.0	14.8	230.4	356
0026561	4 G 10.0	20.1	384	596
0026571	4 G 16.0	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 are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® FD 855 P refer to page 284

Accessories

- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® ROBUST FD C

Highly flexible, screened all-weather control cable with TPE sheath - resistant to a wide range of chemical media



Info

- Extended Line for heavy duty in power chain applications
- 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 plant, animal or synthetic-based organic oils, greases, waxes and the related emulsions
- Good resistance to ammonia compounds and bio-gases
- Good resistance to cold and hot water as well as water-soluble cleaning agents
- Well-suited to frequent steam cleaning

Application range

- 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
- Designed for 10 million alternating bending cycles and horizontal travel distances up to 100 meter
- 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 (RAL 9005)

Technical data

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 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
For flexible use:
7.5 x cable diameter
(at temperatures < 70 °C)
10 x cable diameter
(at a max. temperature of 105 °C)
Fixed installation: 4 x Outer diameter

Nominal voltage
U_0/U: 300/500 V

Test voltage
4000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Alternating bending cycles
10 mio. cycles

Temperature range
Flexing: -40 °C to +105 °C
Fixed installation: -50 °C to +105 °C
Short-term: up to +120 °C

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® ROBUST FD C				
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
0026709	3 G 1.0	9.8	61.1	125
0026716	7 G 1.0	13.9	132.3	278
0026717	12 G 1.0	16.1	189.1	370
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 are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® PETRO FD 865 CP refer to page 286

Accessories

- SKINTOP® MS-M BRUSH refer to main catalogue
- SKINTOP® MS-HF-M BRUSH refer to main catalogue
- SILVYN® CHAIN cable protection and guiding systems

NEW

ÖLFLEX® CHAIN 90 P

Highly flexible single core power cable with abrasion and oil resistant PUR sheath - certified for North America



Info

- Extended Line for heavy duty in power chain applications
- 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
- This cable can substitute multi-core power cables where space requirements or minimum bending radii cause problems
- Specially designed for power circuits of servomotors driven by frequency converters
- Test systems in the automotive industry, vehicles and stationary fuel cell systems
- For indoor and outdoor use

Product features

- Designed for 10 million alternating bending cycles and horizontal travel distances up to 100 meter
- 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 (RAL 9005)

Technical data

Classification
ETIM 5.0 Class-ID: EC000057
ETIM 5.0 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: 7.5 x outer diameter
Fixed installation: 3 x outer diameter

Nominal voltage
IEC: U_0/U 600/1000 V
UL & CSA: 1000 V

Test voltage
4000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Alternating bending cycles
10 mio. cycles

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
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
1026532	70	18	black	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 are not to scale and do not represent detailed images of the respective products.

Accessories

- SILVYN® CHAIN cable protection and guiding systems

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 for heavy duty in power chain applications
- 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

- Designed for 10 million alternating bending cycles and horizontal travel distances up to 100 meter
- 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 (RAL 9005)

Technical data

Classification
ETIM 5.0 Class-ID: EC000057
ETIM 5.0 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
For flexible use:
7.5 x outer diameter
Fixed installation: 3 x outer diameter

Nominal voltage
IEC: U_0/U 600/1000 V
UL & CSA: 1000 V

Test voltage
4000 V

Alternating bending cycles
10 mio. cycles

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
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 are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® BRUSH ADD-ON refer to main catalogue
- SKINTOP® MS-M BRUSH refer to main catalogue
- SKINTOP® MS-HF-M BRUSH refer to main catalogue
- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® FD 855 P

Halogen-free, highly flexible control cable with abrasion and oil resistant PUR sheath - certified



Info

- Extended Line for heavy duty in power chain applications
- Small bending radii - long travel lenghts
- 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 indoor and outdoor use

Product features

- Designed for 10 million alternating bending cycles and horizontal travel distances up to 100 meter
- 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/B 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 (RAL 7001)

Technical data

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 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
For flexible use: 5 x outer diameter
Fixed installation: 3 x outer diameter

Nominal voltage
IEC U_0/U: 300/500 V
UL: 1000 V

Test voltage
3000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Alternating bending cycles
10 mio. cycles

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 1.0	6	19	50
0027561	3 G 1.0	6.5	29	61
0027562	4 G 1.0	7.2	38	70

Article number	Number of cores and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0027563	5 G 1.0	7.8	48	93
0027564	7 G 1.0	9.5	67	122
0027565	12 G 1.0	11.2	115	196
0027566	18 G 1.0	13.7	173	274
0027567	20 G 1.0	14.4	192	300
0027568	25 G 1.0	16.8	240	385
0027570	30 G 1.0	17	288	444
0027571	36 G 1.0	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 are not to scale and do not represent detailed images of the respective products.

Similar products
- ÖLFLEX® CHAIN 896 P refer to page 288

Accessories
- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® FD 855 CP

Halogen-free, highly flexible and screened control cable with abrasion and oil resistant PUR sheath - certified



Info

- Extended Line for heavy duty in power chain applications
- Small bending radii - long travel lenghts
- 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
- For indoor and outdoor use

Product features

- Designed for 10 million alternating bending cycles and horizontal travel distances up to 100 meter
- 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 (RAL 7001)

Technical data

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 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
For flexible use:
7.5 x outer diameter
Fixed installation: 4 x outer diameter

Nominal voltage
IEC U_0/U: 300/500 V
UL: 1000 V

Test voltage
3000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Alternating bending cycles
10 mio. cycles

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 1.0	7.6	45	93
0027636	3 G 1.0	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 1.0	8.8	68	126
0027638	5 G 1.0	9.6	81	147
0027639	7 G 1.0	11.3	106	196
0027640	12 G 1.0	13.2	175	292
0027641	18 G 1.0	15.9	242	418
0027643	25 G 1.0	19.5	329	575
0027645	30 G 1.0	19.6	377	635
0027646	36 G 1.0	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
0027386	25 G 2.5	26.5	765	1266

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 are not to scale and do not represent detailed images of the respective products.

Similar products
- ÖLFLEX® PETRO FD 865 CP refer to page 286

Accessories
- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® SILVYN®

ÖLFLEX® PETRO FD 865 CP

Halogen-free, highly flexible and screened control cable with abrasion and MUD-resistant PUR sheath - certified



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 indoor and outdoor use

Product features

- Designed for 10 million alternating bending cycles and horizontal travel distances up to 100 meter
- 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 against oil and drilling fluids according NEK TS 606:2009 and IEC 61892-4
- Salt water-resistant according to UL 1309
- 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

Info

- Extended Line for heavy duty in power chain applications
- Resistant to oil and drilling fluids acc. to NEK TS 606:2009 (Oil & Mud)
- EMC compliant copper screening

Technical data

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 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
For flexible use:
7.5 x outer diameter
Fixed installation: 4 x 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

Alternating bending cycles
10 mio. cycles

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 1.0	7.6	45	93
0023323	3 G 1.0	8.1	55	109
0023324	4 G 1.0	8.8	68	126
0023325	5 G 1.0	9.6	81	147
0023326	7 G 1.0	11.3	106	196
0023327	12 G 1.0	13.2	175	292
0023328	18 G 1.0	15.9	242	418
0023329	20 G 1.0	16.6	269	427
0023330	25 G 1.0	19.2	329	575
0023331	30 G 1.0	19.6	377	635
0023332	36 G 1.0	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	821	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 4.0	13.9	205	311
0023354	5 G 4.0	15.4	250	381
0023355	4 G 6.0	16.2	289	423
0023356	5 G 6.0	17.8	354	512
0023357	4 G 10.0	20.4	475	672
0023358	5 G 10.0	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 are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® PETRO C HFFR refer to main catalogue

Accessories

- SKINTOP® MS-M ATEX BRUSH refer to main catalogue
- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® SILVYN®

ÖLFLEX® FD 891 P

Highly flexible control cable with PVC core insulation and abrasion and oil resistant PUR sheath - certified



Info

- Core Line for ordinary duty in power chain applications
- 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
- Ideal for export-oriented machinery and equipment 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

Product features

- Designed for 5 million alternating bending cycles and travel distances up to 10 meter
- 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 (RAL 9005)

Technical data

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 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
For flexible use:
7.5 x outer diameter
Fixed installation: 4 x outer diameter

Nominal voltage
IEC: U_0/U 300/500 V
UL/CSA: 600 V

Test voltage
4000 V

Protective conductor
G = with GN-YE protective conductor
X = without protective conductor

Alternating bending cycles
5 mio. cycles

Temperature range
Flexing: -5°C to +80°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® 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
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 4.0	10.9	115.2	197
1028504	4 G 4.0	12.1	153.6	257
1028507	7 G 4.0	16.1	268.8	471
1028604	4 G 6.0	13.7	230.4	363
1028614	4 G 10.0	17.9	384	605
1028624	4 G 16.0	23.4	614.4	973
1028634	4 G 25.0	27.6	960	1437

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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Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® FD 855 P refer to page 284

Accessories

- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® CHAIN 896 P

Highly flexible, halogen-free power cable with low capacitive insulation and oil resistant PUR sheath - certified



Info

- Extended Line for heavy duty in power chain applications
- 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

- Dynamic power chain performance: Acceleration up to 50 m/s². Travel speeds up to 5 m/s. Travel distances up to 100 m.
- 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 (RAL 9005)

Technical data

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 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
For flexible use:
7.5 x outer diameter (≤16mm²)
10 x outer diameter (>16mm²)
Fixed installation: 4 x outer diameter

Nominal voltage
IEC U_0/U: 600/1000 V
UL & CSA: 1000 V

Test voltage
4000 V

Protective conductor
G = with GN-YE protective conductor
X = without 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	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 4.0	12.5	154	242
1023246	5 G 4.0	13.7	192	316
1023248	4 G 6.0	14.3	231	335
1023249	5 G 6.0	15.7	288	439
1023250	4 G 10.0	17	384	503
1023251	5 G 10.0	18.9	480	663
1023252	4 G 16.0	21.2	615	810
1023253	5 G 16.0	23.8	768	1065
1023254	4 G 25.0	25.9	960	1254
1023255	5 G 25.0	29	1200	1582

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 are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SERVO 7DSL refer to main catalogue
- ÖLFLEX® SERVO FD 796 P refer to page 260
- ÖLFLEX® SERVO FD 7DSL refer to page 263

Accessories

- SILVYN® CHAIN cable protection and guiding systems

ÖLFLEX® ROBOT 900 P

TPE-PUR robot cable for flexing and torsion load



Info

- Simultaneous bending and torsion
- Torsion angle up to +/- 360 °/m

Benefits

- Allows much faster speed and accelerations which increases the economic efficiency of the machines
- 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

- Plant engineering
- Industrial machinery and machine tools
- Automated handling equipment
- Multi-axis articulated robots
- In power chains or moving machine parts

Product features

- Abrasion and notch-resistant
- Flame-retardant
- High oil-resistance
- Flexible at low temperatures
- Low-adhesive surface

Norm references / Approvals

- For travel distances up to 10 m.
- For use in power chains: Please comply with assembly guideline Appendix T3

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
- PTFE tape wrapping
- PUR outer sheath, black (RAL 9005)

Technical data

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 Class-Description: Control cable

Core identification code
Up to 0.34 mm²: DIN 47100 cores
From 0.5 mm²: black cores with white printed numbers

Mutual capacitance
C/C approx. 100 nF/km
C/S approx. 120 nF/km

Peak operating voltage
0.34 mm²: 350 V
(not for power transmission)

Inductivity
approx. 0.7 mH/km

Conductor stranding
Fine wire or extra-fine wire

Torsion
Torsion load max. ± 360 °/m

Minimum bending radius
Flexing: 15 x outer diameter
Fixed installation: 4 x 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				
0028110	7 X 0.25	6.2	16.8	48
0028116	25 X 0.25	10.2	60	141
0028188	2 X 0.34	5.0	7	27
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 1.0	6.2	19.2	47
0028171	3 G 1.0	6.5	29	61
0028172	4 G 1.0	7.0	38.4	76
0028174	7 G 1.0	9.3	67.2	131
0028176	12 G 1.0	11.5	115.2	216
0028185	16 G 1,0 + (2 x 1,0)	16.0	195	376
0028178	18 G 1.0	13.2	172.8	287
0028186	23 G 1,0 + (2 x 1,0)	17.3	262	470
0028180	25 G 1.0	16.4	240	433
0028190	34 G 1.0	19.9	326.4	571
0028191	41 G 1.0	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 16.0	21.4	460.8	721
0028187	3 G 25.0	26.2	720	1178
0028189	3 G 35.0	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 are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® ROBOT F1 refer to page 291

Accessories

- SILVYN® RILL PA 12 refer to page 364

ÖLFLEX® ROBOT 900 DP

Screened TPE-PUR robot cable for bending and torsion loads



Info

- Simultaneous bending and torsion
- Torsion angle up to +/- 180 °/m
- Copper screening

Benefits

- Allows much faster speed and accelerations which increases the economic efficiency of the machines
- 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

- Plant engineering
- Industrial machinery and machine tools
- Automated handling equipment
- Multi-axis articulated robots
- In power chains or moving machine parts

Product features

- Abrasion and notch-resistant
- Flame-retardant
- High oil-resistance
- Flexible at low temperatures
- Low-adhesive surface

Norm references / Approvals

- 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
- PTFE tape wrapping
- Screen wrapping of tinned copper wires
- PUR outer sheath, black (RAL 9005)

Technical data

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 Class-Description: Control cable

Core identification code
Up to 0.34 mm²: DIN 47100 cores
From 0.5 mm²: black cores with white printed numbers

Mutual capacitance
C/C approx. 100 nF/km
C/S approx. 120 nF/km

Peak operating voltage
0.34 mm²: 350 V
(not for power transmission)

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 x outer diameter
Fixed installation: 4 x 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				
0028100	12 x 0,14	6.7	42.5	69
0028105	3 x 2 x 0,14	6.2	17	44
0028126	25 x 0,25	11.1	103.5	183
0028135	4 x 0,34	5.7	21.3	46
0028136	5 x 2 x 0,34	9.1	64.4	114
0028195	12 G 1,5	14.0	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 are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® ROBOT F1 (C) refer to page 292

Accessories

- SILVYN® RILL PA 12 refer to page 364

ÖLFLEX® ROBOT F1

TPE-PUR robot cable for flexing and torsion load, 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
- 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

Application range

- Multi-axis articulated robots
- Automated handling equipment
- Industrial machinery and machine tools
- In power chains or moving machine parts
- Plant engineering

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
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine strands, 0.14 mm² - 0.5 mm², made from tinned-copper wires, bare above.
- Core insulation: TPE
- Cores (or core pairs) twisted in layers or bundles
- PTFE tape wrapping
- Pair screen (D): layer of tinned-copper wires
- PUR outer sheath, black (RAL 9005)

Technical data

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 Class-Description: Control cable

Core identification code
Up to 0.34 mm²: DIN 47100 cores
From 0.5 mm²: white cores with black printed numbers

Conductor stranding
Extra-fine wire

Torsion
Torsion load max. ± 360 °/m

Minimum bending radius
Flexible use: 10 x outer diameter
Fixed installation: 4 x outer diameter

Nominal voltage
IEC: up to 0.34 mm² 250 Vss.
0.5 - 2.5 mm² 300/500 V
UL/CSA up to 1.5 mm² 600 V,
from 2.5 mm² 1000 V

Test voltage
Cores: spark test 6 kV

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				
0029590	7 X 0.25	6.7	16.8	62
0029591	12 X 0.25	9.0	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
0029608	18 G 0.5	12.3	84	202
0029609	25 G 0.5	15.2	120	284
0029610	2 X 1.0	6.3	19	60
0029611	3 G 1.0	6.6	28	71
0029612	4 G 1.0	7.2	38	87
0029614	7 G 1.0	9.2	65	141
0029615	12 G 1.0	12.4	110	237
0029616	14 G 1.0	13.2	128	257
0029617	16 G 1,0 + (2 x 1,0)	15.4	190	346
0029618	18 G 1.0	16.1	170	349
0029619	23 G 1 + (2 x 1,0)	18.0	250	461
0029620	25 G 1.0	18.3	240	407
0029621	34 G 1.0	21.1	320	600
0029622	41 G 1.0	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 6.0	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 are not to scale and do not represent detailed images of the respective products.

Accessories

- SILVYN® RILL PA 12 refer to page 364

ÖLFLEX® ROBOT F1 (C)

Screened TPE-PUR robot cable for bending and torsion loads, 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
- 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

Application range

- Multi-axis articulated robots
- Automated handling equipment
- Industrial machinery and machine tools
- In power chains or moving machine parts
- Plant engineering

Product features

- Abrasion and notch-resistant
- Flame-retardant
- High oil-resistance
- Resistant to cold temperatures
- Low-adhesive surface

Norm references / Approvals

- UL AWM Style 20940
  cUL AWM I/II A/B
- UL File No. E213974
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine strands, 0.14 mm² - 0.5 mm², made from tinned-copper wires, bare above.
- Core insulation: TPE
- Cores (or core pairs) twisted in layers or bundles
- PTFE tape wrapping
- Braiding or wrapping of tinned copper wires
- PUR outer sheath, black (RAL 9005)

Technical data

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 Class-Description: Control cable

Core identification code
Up to 0.34 mm²: DIN 47100 cores
From 0.5 mm²: white cores with black printed numbers

Conductor stranding
Extra-fine wire

Torsion
Torsion load max. ± 180 °/m

Minimum bending radius
Flexible use: 10 x outer diameter
Fixed installation: 4 x outer diameter

Nominal voltage
IEC: up to 0.34 mm² 250 Vss.
0.5 - 2.5 mm² 300/500 V
UL/CSA up to 1.5 mm² 600 V,
from 2.5 mm² 1000 V

Test voltage
Cores: spark test 6 kV

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)				
0029653	3 x 2 x 0,25	8.0	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 x 0,34	10.2	69	158
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 x 1,0)	11.0	116	213
0029692	4 G 2,5 + (2 x 1,0)	12.0	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 are not to scale and do not represent detailed images of the respective products.

Accessories

- SILVYN® RILL PA 12 refer to page 364

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

- Strands of bare copper wires
- Core insulation: rubber compound
- Special supporting element as strain relief
- Outer sheath: rubber compound, type EM2

Technical data

Classification
ETIM 5.0 Class-ID: EC001578
ETIM 5.0 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 1.0 mm²
0.20 mm wire diameter from 1.5 mm²

Minimum bending radius
Flexible use: 12.5 x outer diameter
Fixed installation: 6 x 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 1.0	7.4	300	19.2	89
0039002	3 G 1.0	8.3	300	28.8	106
00390033	4 G 1.0	8.9	300	38.4	127
00390043	5 G 1.0	10.4	300	48	149
0039107	7 G 1.0	12.9	300	67.2	206
0039109	9 G 1.0	14.4	300	86.4	281
0039054	12 G 1.0	18.5	360	115.2	422
0039055	18 G 1.0	19.2	540	172.8	451
0039056	24 G 1.0	22.1	720	230.4	646
0039057	36 G 1.0	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 are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CRANE NSHTÖU refer to page 294
- ÖLFLEX® CRANE VS (N)SHTÖU refer to page 295

Accessories

- SKINTOP® CLICK System refer to main catalogue

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
- For connecting mobile equipment in hazardous areas acc. to DIN VDE 0165
- 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 5.0 Class-ID: EC000057
ETIM 5.0 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 x outer diameter
Cables with outer diameter > 21,5 mm: 6,25 x 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 4.0	18.4	153.6	440
00430333	5 G 4.0	19.6	192	520
00430213	4 G 6.0	19.8	230.4	530
00430343	5 G 6.0	21.7	288	690
00430223	4 G 10.0	23.4	384	830
00430003	5 G 10.0	25.2	480	1000
00430233	4 G 16.0	25.5	614.4	1170
00430323	5 G 16.0	27.5	768	1400
00430243	4 G 25.0	32.6	960	1830
00430253	4 G 35.0	34.8	1344	2280
00430263	4 G 50.0	40.6	1920	3220
00430283	4 G 70.0	44.8	2688	4200
00430293	4 G 95.0	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 are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CRANE VS (N)SHTÖU refer to page 295
- ÖLFLEX® CRANE PUR refer to page 296

Accessories

- STAR STRIP stripping tool refer to main catalogue
- KT cable shears refer to main catalogue

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
- For connecting mobile equipment in hazardous areas acc. to DIN VDE 0165

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 5.0 Class-ID: EC000057
ETIM 5.0 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 x 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 are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CRANE NSHTÖU refer to page 294
- ÖLFLEX® CRANE PUR refer to page 296

Accessories

- EASY STRIP stripping and cutting tool refer to main catalogue
- V 1311-A pressing pliers, hydraulic refer to main catalogue
- STAR STRIP stripping tool refer to main catalogue
- KT cable shears refer to main catalogue
- PVL 1300 pressing pliers battery-operated refer to main catalogue

LAPP KABEL

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
- For connecting mobile equipment in hazardous areas acc. to DIN VDE 0165

Product Make-up

- Strands 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 5.0 Class-ID: EC000057
ETIM 5.0 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 x outer diameter

Nominal voltage
U_0/U: 600/1000 V

Test voltage
3500 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	3x25+3G6	25.7	2000	892.8	1380
0045241	3x35+3G6	27.6	2500	1180.8	1695
0045242	3x50+3G10	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 are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CRANE NSHTÖU refer to page 294
- ÖLFLEX® CRANE VS (N)SHTÖU refer to page 295

Accessories

- EASY STRIP stripping and cutting tool refer to main catalogue
- KT cable shears refer to main catalogue

NEW

ÖLFLEX® SERVO Core Line for Siemens 6FX5002 (PVC)

Info

- Connector with novel, safe screen connection
- Custom length available



Benefits

- Regional manufactured worldwide available
- Lapp quality standards

Application range

- Specifically for machine tool building
- For travel distances up to 10 m.
- For static and dynamic applications

Product features

- Core Line for light duty power chain applications
- New PVC servo cable, shielded
- Innovative connnector concept

Norm references / Approvals

- Design according to SIEMENS® standard

Product Make-up

- Brake wire with 1.5 mm² wire gauge

Technical data

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 Class-Description:
Control cable

Nominal voltage
Power cable:- Power cores:: 1000 V (UL/CSA) 600 /1000 V (VDE Uo/U)-
Control cores: 1000 V (UL/CSA)
600 /1000 V (VDE Uo/U)

Distance of Travel
Power cables up to 6mm²: 10m

Acceleration
Power cable up to 6mm²: 3m/s²

Speed of Travel
Power cable up to 6mm²: 3m/s

Max. bending cycles
Power cable up to 6mm²: 5 Mio.

Temperature range
Flexible use: -5°C to +70°C

Article number	Length (m)	SIEMENS® assembly designation	Copper index kg/1.000 pieces	Other dimensions	PU
ÖLFLEX® SERVO Core Line for Siemens 6FX5002 (PVC)					
5480007020	10.0	5CA05	818.1	Other lengths available	1
5480007090	10.0	5CA15	1212	Other lengths available	1
5480007510	10.0	5CN01	818.1	Other lengths available	1
5480007650	10.0	5CN11	1212	Other lengths available	1
5480007720	10.0	5CN21	818.1	Other lengths available	1
5480007790	10.0	5CN31	1212	Other lengths available	1
5480008210	10.0	5CQ15	1212	Other lengths available	1
5480008630	10.0	5CS01	818.1	Other lengths available	1

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 are not to scale and do not represent detailed images of the respective products.

NEW

ÖLFLEX® SERVO Core Line for Siemens 6FX8002 (PUR)



Info
- Connector with novel, safe screen connection
- Custom length available

Benefits
- Regional manufactured worldwide available
- Lapp quality standards

Application range
- Specifically for machine tool building
- For travel distances up to 10 m.
- For highly dynamic applications

Product features
- New PUR servo cable, halogen-free & shielded
- Innovative connnector concept
- Core Line for light duty power chain applications

Norm references / Approvals
- Design according to SIEMENS® standard

Product Make-up
- Brake wire with 1.5 mm² wire gauge

Technical data

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 Class-Description: Control cable

Nominal voltage
Power cable:- Power cores:: 1000 V (UL/CSA) 600 /1000 V (VDE Uo/U)- Control cores: 1000 V (UL/CSA) 600 /1000 V (VDE Uo/U)

Distance of Travel
Power cables up to 6mm²: 10m

Acceleration
Power cable up to 6mm²: 3m/s²

Speed of Travel
Power cable up to 6mm²: 3m/s

Max. bending cycles
Power cable up to 6mm²: 5 Mio.

Temperature range
Moved: -40°C to +90°C

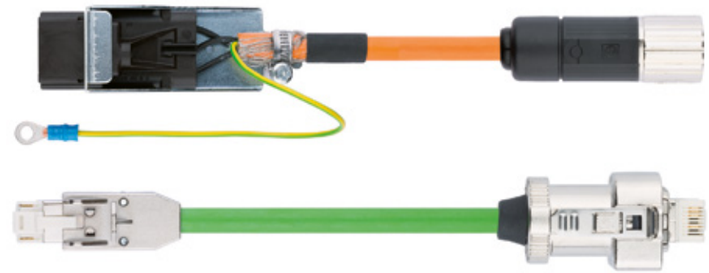
Article number	Length (m)	SIEMENS® assembly designation	Copper index kg/1.000 pieces	Other dimensions	PU
ÖLFLEX® SERVO Core Line for Siemens 6FX8002 (PUR)					
5480005390	10.0	5CS31	1302.9	Other lengths available	1
5480000665	10.0	5CN01	818.1	Other lengths available	1
5480000715	10.0	5CN11	1212	Other lengths available	1
5480000765	10.0	5CN31	1212	Other lengths available	1
5480001065	10.0	5CS01	818.1	Other lengths available	1
5480001115	10.0	5CS11	1212	Other lengths available	1
5480001215	10.0	5CS21	818.1	Other lengths available	1
5480001765	10.0	5DN11	1828.1	Other lengths available	1
5480001840	10.0	5DN41	2727	Other lengths available	1
5480002115	10.0	5DS01	1393.8	Other lengths available	1
5480002215	10.0	5DS31	1828.1	Other lengths available	1

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 are not to scale and do not represent detailed images of the respective products.

NEW

ÖLFLEX® 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



Benefits
- Regional manufactured worldwide available
- Lapp quality standards

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

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 Class-Description: Control cable

Minimum bending radius
Flexible use: 7.5 x outer diameter
Flexible Use: from 25mm²
10x outer diameter

Nominal voltage
Signal cables: See cable datasheet
Power cable:
- Power cores: See cable datasheet
- Control cores: See cable datasheet

Distance of Travel
up to 100m

Acceleration
up to 50m/s2

Speed of Travel
5m/s

Max. bending cycles
10 Mio.

Temperature range
Flexing: -40°C to +90°C

Article number	Length (m)	SIEMENS® assembly designation	Copper index kg/1.000 pieces	Other dimensions	PU
Assemblies for signal transmission systems					
5480000015	10.0	2AD00	707	Other lengths available	1
5480000065	10.0	2AH00	515.1	Other lengths available	1
5480000165	10.0	2CA31	808	Other lengths available	1
5480000290	10.0	2CH00	707	Other lengths available	1
5480000390	10.0	2DC10	424.2	Other lengths available	1
5480000415	10.0	2DC20	424.2	Other lengths available	1
5480000440	10.0	2EQ10	808	Other lengths available	1
5480004940	10.0	5CN51	2989.6	Other lengths available	1
5480005290	10.0	5CS13	4534.9	Other lengths available	1
5480005440	10.0	5CS51	2989.6	Other lengths available	1
5480005990	10.0	5DN51	3322.9	Other lengths available	1

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 are not to scale and do not represent detailed images of the respective products.

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 5.0 Class-ID: EC000104
ETIM 5.0 Class-Description: Control cable

Core identification code
DIN 47100, refer to Appendix T9

Mutual capacitance
C/C: approx. 100 nF/km

Peak operating voltage
(not for power applications)
350 V

Inductivity
approx. 0.65 mH/km

Conductor stranding
Stranded, extra-fine wire

Minimum bending radius
Flexing: 5 x outer diameter
Fixed installation: 3 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				
0027841	3 x 0.14	3.9	4.2	26
0027842	3 x 0.14	4.2	5.6	31
0027843	5 x 0.14	4.5	7	35
0027844	7 x 0.14	5.1	9.8	50
0027845	10 x 0.14	6.1	14	63
0027846	14 x 0.14	6.2	19.6	77
0027847	18 x 0.14	6.8	25.2	91
0027848	25 x 0.14	8.3	35	125
0027855	2 x 0.25	4.3	5	27
0027856	3 x 0.25	4.5	7.5	33
0027857	4 x 0.25	4.9	10	40
0027858	5 x 0.25	5.3	12.5	51
0027859	7 x 0.25	6.1	17.5	51
0027860	10 x 0.25	7.4	25	84
0027861	14 x 0.25	7.5	35	108
0027863	18 x 0.25	8.5	45	130
0027865	25 x 0.25	10.4	62.5	178
0027870	2 x 0.34	4.7	6.8	30
0027871	3 x 0.34	5	10.2	43
0027872	4 x 0.34	5.4	13.6	57
0027873	5 x 0.34	5.9	17	65
0027874	7 x 0.34	6.8	23.8	85
0027875	10 x 0.34	8.5	34	117
0027876	14 x 0.34	8.6	47.6	151
0027877	18 x 0.34	9.7	61.2	182
0027878	25 x 0.34	11.9	85	250

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 are not to scale and do not represent detailed images of the respective products.

Similar products
- ÖLFLEX® CLASSIC FD 810 refer to page 266
- UNITRONIC® FD CY refer to page 302
- UNITRONIC® FD P plus refer to page 303

Accessories
- SILVYN® CHAIN refer to main catalogue
- DATA STRIP stripping tool refer to main catalogue

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 5.0 Class-ID: EC000104
ETIM 5.0 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

Peak operating voltage
(not for power applications)
350 V

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 x 0.14	4.5	14.1	37
0027412	4 x 0.14	4.8	15.5	42
0027413	5 x 0.14	5.1	18.3	47
0027414	7 x 0.14	5.7	27.6	70
0027416	10 x 0.14	6.7	39.3	90
0027418	14 x 0.14	6.8	45.3	106
0027420	18 x 0.14	7.4	54.1	123
0027422	25 x 0.14	8.9	68.4	163
0027425	2 x 0.25	4.9	14.9	39
0027426	3 x 0.25	5.1	18.8	46
0027427	4 x 0.25	5.5	21.3	53
0027428	5 x 0.25	5.9	31	71
0027429	7 x 0.25	6.7	39.6	75
0027431	10 x 0.25	8.2	53.9	114
0027434	14 x 0.25	8.3	64.2	141
0027436	18 x 0.25	9.1	78.4	167
0027438	25 x 0.25	11	101	221
0027440	2 x 0.34	5.3	16.1	47
0027441	3 x 0.34	5.6	28.7	63
0027442	4 x 0.34	6	35.7	81
0027443	5 x 0.34	6.5	39.1	89
0027444	7 x 0.34	7.4	52.7	117
0027446	10 x 0.34	9.1	67.4	155
0027448	14 x 0.34	9.2	85.3	194
0027450	18 x 0.34	10.3	99.7	225
0027452	25 x 0.34	12.5	155	327

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 are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CLASSIC FD 810 CY refer to page 267
- UNITRONIC® FD CP plus refer to page 304

Accessories

- SKINTOP® MS-SC-M refer to main catalogue
- SILVYN® CHAIN refer to main catalogue
- SKINTOP® MS-HF-M SC refer to main catalogue
- STAR STRIP stripping tool refer to main catalogue

NEW

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.
- Multifunctional-use, e.g. for packaging industry and storage and retrieval units
- Suitable for use in measuring, control and regulating circuits
- Drag chain use - in case of horizontal installation travel distances up to 100 m. ...No use inside drag chains in the USA since the UL AWM Style 21576 does not allow for external wiring/ interconnection
- For use in drag chains: 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
- CULus AWM/ Recognized certification (by UL/ UL file no. for Stuttgart-based U.I. Lapp GmbH: E63634): UL AWM Style 21576 acc. to UL 758 and AWM A/B I/II to CSA C22.2 No. 210-11

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 5.0 Class-ID: EC000104
ETIM 5.0 Class-Description: Control cable

Core identification code
DIN 47100, refer to Appendix T9

Mutual capacitance
C/C approx. 60 nF/km

Peak operating voltage
Peak: 250 V (not for power current use or continuous operating voltage to ground above 49VAC or 74VDC)

Inductivity
approx. 0.65 mH/km

Conductor stranding
Stranded, extra-fine wire

Minimum bending radius
Flexing: 5 x outer diameter
Fixed installation: 3 x outer diameter

Test voltage
1500 V

Temperature range
Flexing: -40°C to +80°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 P plus				
0028647	2 x 0.14	3.4	2.8	20
0028650	3 x 0.14	3.9	4.1	25
0028651	4 x 0.14	4.2	5.6	30
0028652	5 x 0.14	4.5	7	34
0028677	6 x 0.14	5.1	8.4	42
0028653	7 x 0.14	5.1	9.8	48
0028654	10 x 0.14	6.1	14	60
0028678	12 x 0.14	6.3	16.8	67
0028656	18 x 0.14	6.8	25.2	87
0028657	25 x 0.14	8.3	35	120
0028658	2 x 0.25	4.3	5	27
0028659	3 x 0.25	4.5	7.5	32
0028660	4 x 0.25	4.9	10	39
0028661	5 x 0.25	5.3	12.5	49
0028679	6 x 0.25	6.1	15	55
0028662	7 x 0.25	6.1	17.5	61
0028663	10 x 0.25	7.4	25	80
0028680	12 x 0.25	7.5	30	87
0028664	14 x 0.25	7.5	35	103
0028665	18 x 0.25	8.5	45	125
0028666	25 x 0.25	10.4	62.5	171
0028667	2 x 0.34	4.7	6.8	33
0028668	3 x 0.34	5	10.2	41
0028669	4 x 0.34	5.4	13.6	55
0028670	5 x 0.34	5.9	17	62
0028671	7 x 0.34	6.8	23.8	80
0028672	10 x 0.34	8.5	34	110
0028673	14 x 0.34	8.6	47.6	144
0028674	18 x 0.34	9.7	61.2	175
0028675	25 x 0.34	11.9	85	239

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). 7 Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® CLASSIC FD 810 P refer to page 278
- UNITRONIC® FD CP plus refer to page 304

Accessories

- SILVYN® CHAIN refer to main catalogue
- SMART STRIP stripping tool refer to main catalogue

UNITRONIC® FD CP plus

Screened highly flexible data transmission cable with PUR outer sheath - UL/CSA-listed



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

- Multifunctional-use, e.g. for packaging industry and storage and retrieval units
- Suitable for use in measuring, control and regulating circuits
- Drag chain use - in case of horizontal installation travel distances up to 100 m. ...No use inside drag chains in the USA since the UL AWM Style 21576 does not allow for external wiring/ interconnection
- For use in drag chains: 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 ratings: IEC 60332-1-2, VW-1 acc. UL 1581, FT2 (Horizontal Flame Test)
- Designed for 5 up to 10 million bending/ unbending cycles (constant flex) in drag chains

Norm references / Approvals

- CULus CMX (Communications Cable listing) acc. to UL 444 and CSA C22.2 No.214, certified by UL (UL file no. for Stuttgart-based U.I. Lapp GmbH: E236660)
- CULus AWM/ Recognized certification (by UL/ UL file no. for Stuttgart-based U.I. Lapp GmbH: E63634): UL AWM Style 21576 acc. to UL 758 and AWM A/B I/II to CSA C22.2 No. 210-11

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)

Info

- Flexible at low temperatures
- Low capacitance
- Halogen-free

Technical data

Classification
ETIM 5.0 Class-ID: EC000104
ETIM 5.0 Class-Description: Control cable

Core identification code
DIN 47100, refer to Appendix T9

Mutual capacitance
C/C approx. 60 nF/km

Peak operating voltage
Peak: 250 V (not for power current use or continuous operating voltage to ground above 49VAC or 74VDC)

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 x outer diameter
Fixed installation: 4 x 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
UL/CSA CMX: +75°C
UL AWM: +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 x 0.14	4.3	11.2	33
0028881	3 x 0.14	4.5	14.1	36
0028882	4 x 0.14	4.8	15.5	40
0028883	5 x 0.14	5.1	18.3	45
0028884	7 x 0.14	5.7	27.8	67
0028885	10 x 0.14	6.7	39.3	87
0028886	14 x 0.14	6.8	45.3	102
0028887	18 x 0.14	7.4	54.1	118
0028888	25 x 0.14	8.9	68.4	157
0028889	2 x 0.25	4.9	14.9	38
0028890	3 x 0.25	5.1	18.8	45
0028891	4 x 0.25	5.5	21.3	52
0028892	5 x 0.25	5.9	31	69
0028893	7 x 0.25	6.7	39.6	84
0028894	10 x 0.25	8.2	53.9	109
0028895	14 x 0.25	8.3	64.2	136
0028896	18 x 0.25	9.1	78.4	161
0028897	25 x 0.25	11	101	213
0028898	2 x 0.34	5.3	18.1	45
0028899	3 x 0.34	5.6	28.7	61
0028900	4 x 0.34	6	35.7	77
0028901	5 x 0.34	6.5	39.1	83
0028902	7 x 0.34	7.4	52.7	109
0028903	10 x 0.34	9.1	67.4	147
0028904	14 x 0.34	9.2	85.8	186
0028905	18 x 0.34	10.3	99.7	216
0028906	25 x 0.34	12.5	155	314

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 are not to scale and do not represent detailed images of the respective products.

Similar products

- UNITRONIC® FD CP (TP) plus refer to page 305

Accessories

- SKINTOP® MS-SC-M refer to main catalogue
- SILVYN® CHAIN refer to main catalogue
- SKINTOP® MS-HF-M SC refer to main catalogue
- STAR STRIP stripping tool refer to main catalogue

LAPP KABEL
Data communication systems
Low frequency data transmission cables • Highly flexible and UL/CSA-certified

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® SILVYN®

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. ...No use inside drag chains in the USA since the UL AWM Style 21576 does not allow for external wiring/ interconnection
- For use in drag chains: 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 ratings: IEC 60332-1-2, VW-1 acc. UL 1581, FT2 (Horizontal Flame Test)
- Designed for 10 million alternating bending cycles and horizontal travel distances up to 100 meter

Norm references / Approvals

- CULus CMX (Communications Cable listing) acc. to UL 444 and CSA C22.2 No.214, certified by UL (UL file no. for Stuttgart-based U.I. Lapp GmbH: E236660)
- CULus AWM/ Recognized certification (by UL/ UL file no. for Stuttgart-based U.I. Lapp GmbH: E63634): UL AWM Style 21576 acc. to UL 758 and AWM A/B I/II to CSA C22.2 No. 210-11

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 5.0 Class-ID: EC000104
ETIM 5.0 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

Peak operating voltage
Peak: 250 V (not for power current use or continuous operating voltage to ground above 49VAC or 74VDC)

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 x outer diameter
Fixed installation: 4 x 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
UL/CSA CMX: +75°C
UL AWM: +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 x 2 x 0.14	5.9	19.4	42
0030911	3 x 2 x 0.14	6.2	23.4	53
0030912	4 x 2 x 0.14	6.7	27.1	59
0030913	5 x 2 x 0.14	7.3	37.4	75
0030914	6 x 2 x 0.14	7.5	49.4	91
0030915	8 x 2 x 0.14	8.8	54.8	109
0030916	10 x 2 x 0.14	10.1	60.1	120
0030962	1 x 2 x 0.25	4.9	14	27
0030919	2 x 2 x 0.25	6.5	32	60
0030920	3 x 2 x 0.25	6.8	38.4	72
0030921	4 x 2 x 0.25	7.4	43.2	85
0030922	5 x 2 x 0.25	8.3	51.5	103
0030923	6 x 2 x 0.25	8.9	71.8	131
0030924	8 x 2 x 0.25	10.4	74.4	155
0030925	10 x 2 x 0.25	12	90	186
0030926	14 x 2 x 0.25	12.2	111.2	219
0030963	1 x 2 x 0.34	5.3	20	36
0030928	2 x 2 x 0.34	7.1	41	81
0030929	3 x 2 x 0.34	7.5	52	101
0030930	4 x 2 x 0.34	8.4	59	119
0030932	6 x 2 x 0.34	10.1	86.2	165
0030934	10 x 2 x 0.34	13.8	131.1	274
0030964	1 x 2 x 0.5	5.9	22	47
0030937	2 x 2 x 0.5	8.3	50	99
0030938	3 x 2 x 0.5	8.8	71.8	130
0030939	4 x 2 x 0.5	9.8	74.4	148
0030940	5 x 2 x 0.5	10.7	84.5	168

Article number	Number of pairs and mm² per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0030941	6 x 2 x 0.5	11.8	99.6	194
0030942	8 x 2 x 0.5	14	144.3	284
0030943	10 x 2 x 0.5	15.9	176	343
0030944	14 x 2 x 0.5	16.2	215.4	401
0030965	1 x 2 x 0.75	6.3	34	61
0030946	2 x 2 x 0.75	8.9	60	112
0030947	3 x 2 x 0.75	9.7	85.7	157
0030948	4 x 2 x 0.75	10.6	93.6	172
0030950	6 x 2 x 0.75	12.8	130.4	231
0030951	8 x 2 x 0.75	15.2	192.2	342
0030952	10 x 2 x 0.75	17.3	258	466
0030953	14 x 2 x 0.75	18.2	316.6	545
0030955	1 x 2 x 1	6.7	42	71
0030956	2 x 2 x 1	9.7	73	129
0030957	3 x 2 x 1	10.4	93.6	169
0030958	4 x 2 x 1	11.6	117.8	204
0030959	5 x 2 x 1	12.7	139	237

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 are not to scale and do not represent detailed images of the respective products.

Accessories
- SKINTOP® MS-SC-M refer to main catalogue
- SILVYN® CHAIN refer to main catalogue
- SKINTOP® MS-HF-M SC refer to main catalogue
- STAR STRIP stripping tool refer to main catalogue

UNITRONIC® BUS LD FD P

Info
- LD is a LAPP abbreviation for long distance



Benefits
- PUR outer sheath, tear and notch-resistant, resistant to mineral oils and abrasion when used in power chains
- UL versions with certification: UL/CSA type CMX acc. to UL 444 and CSA C22.2 no. 214-02
- Suitable for multiple Bus systems based on RS485 / RS422

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
- Flame-retardant according IEC 60332-1-2

Product Make-up
- Stranded conductor, bare, core identification code in accordance with DIN 47100
- Copper braid
- PUR outer sheath
- Colour: violet (RAL 4001)
- UV-resistant (but colour may change after some time)

Technical data
Classification
ETIM 5.0 Class-ID: EC000830
ETIM 5.0 Class-Description: Data cable

Mutual capacitance
Flexible use: 10 x outer diameter

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 (power chains, moving machine parts)					
2170213	UNITRONIC® BUS LD FD P	1 x 2 x 0,25	6	18	39
2170214	UNITRONIC® BUS LD FD P	2 x 2 x 0,25	7.9	33	65
2170215	UNITRONIC® BUS LD FD P	3 x 2 x 0,25	8	39	77
For highly flexible applications (e.g. power chains) - with UL/CSA (CMX) certification					
2170813	UNITRONIC® BUS LD FD P A	1 x 2 x 0,25	6.2	18	39
2170814	UNITRONIC® BUS LD FD P A	2 x 2 x 0,25	8.3	33	65
2170815	UNITRONIC® BUS LD FD P A	3 x 2 x 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 are not to scale and do not represent detailed images of the respective products.

Accessories
- SILVYN® CHAIN refer to main catalogue
- SMART STRIP stripping tool refer to main catalogue

UNITRONIC® BUS ASI FD

Highly flexible application



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: blue and brown
- Profiled outer sheath: TPE or PUR
- Colour: yellow (RAL 1023) or black (RAL 9005)

Info

- “FD” = suitable for power chains
- “LD” = Long Distance

Technical data

Classification
ETIM 5.0 Class-ID: EC000830
ETIM 5.0 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 material	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	PUR UL/CSA (AWM)	yellow	Data and power transmission	2 x 1,5	29	64
2170358	UNITRONIC® BUS ASI FD P FRNC	PUR UL/CSA (AWM)	black	Transmission of 30 V DC auxiliary power	2 x 1,5	29	64
2170317	UNITRONIC® BUS ASI LD FD P	PUR UL/CSA (AWM)	yellow	Data and power transmission	2 x 2,5	48	74
2170318	UNITRONIC® BUS ASI LD FD P	PUR UL/CSA (AWM)	black	Transmission of 30 V DC auxiliary power	2 x 2,5	48	74
2170830	UNITRONIC® BUS ASI FD (TPE) A	TPE UL/CSA (AWM)	yellow	Data and power transmission	2 x 1,5	29	64
2170831	UNITRONIC® BUS ASI FD (TPE) A	TPE UL/CSA (AWM)	black	Transmission of 30 V DC auxiliary power	2 x 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
Lapp Kabel is a member of the AS-International Association
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® DIX-M AUTOMATION refer to main catalogue
- UNIVERSAL STRIP stripping tool refer to main catalogue
- AS-I clip clamp / AS-I end sealing refer to main catalogue
- AS-I STRIP special stripping tool refer to main catalogue
- AS-I STRIP special
- SKINTOP® DIX ASI

UNITRONIC® BUS PB FD P

Highly flexible application



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).
- 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

- Foam Skin - core isolation (O2YS)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Tin-plated copper wire braiding
- Outer sheath: PUR compound

Technical data

Classification
ETIM 5.0 Class-ID: EC000830
ETIM 5.0 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 x 2 x 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).
SIMATIC® is a registered trademark of SIEMENS AG. FIP is a registered trademark of World FIP
Lapp Kabel is a member of the PROFIBUS user organisation (PNO)
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Sub-D Bus-Connectors refer to main catalogue

UNITRONIC® BUS PB FD P A

Highly flexible application



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
- For highly flexible applications (power chains, moving machine parts)

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).
- 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
- Foam Skin - core isolation (O2YS)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Screening: wrapped with braided tinned-copper wires
- Outer sheath: PUR compound

Technical data

Classification
ETIM 5.0 Class-ID: EC000830
ETIM 5.0 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 x 2 x 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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Accessories

- Sub-D Bus-Connectors refer to main catalogue

UNITRONIC® BUS PB FD P FC

Highly flexible application



Benefits

- Fast Connect (FC) cable design
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP
- For highly flexible applications (power chains, moving machine parts)

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

- 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
- Foam Skin - core isolation (O2YS)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Screening: wrapped with braided tinned-copper wires
- Outer sheath: PUR compound

Technical data

Classification
ETIM 5.0 Class-ID: EC000830
ETIM 5.0 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 x 2 x 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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Accessories

- Sub-D Bus-Connectors refer to main catalogue
- FC STRIP stripping tool refer to main catalogue

UNITRONIC® BUS PB FD FRNC FC

Highly flexible application



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
- 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

- 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

- The cable is UL/CSA-certified (CMG)
- Halogen-free
- High flame retardancy in accordance with IEC 60332-3 and FT4
- 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
- Foam Skin - core isolation (O2YS)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Screening: wrapped with braided tinned-copper wires
- Outer sheath: PUR compound

Technical data

Classification
ETIM 5.0 Class-ID: EC000830
ETIM 5.0 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	1x2x0,64	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). / Lapp Kabel is a member of the PROFIBUS user organisation (PNO)
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Accessories

- Sub-D Bus-Connectors refer to main catalogue
- FC STRIP stripping tool refer to main catalogue

UNITRONIC® BUS PB FD P COMBI

Highly flexible application



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 to IEC 60332.1.2

Product Make-up

- Cores for Power Supply
  3 x 1.0 mm² (AWG18)
- Core insulation: Based on Polyolefin
- PUR-based outer sheath

Technical data

Classification
ETIM 5.0 Class-ID: EC000830
ETIM 5.0 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: 145 mm

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)
Highly flexible application					
2170227	UNITRONIC® BUS PB FD P COMBI	1 x 2 x 0.64 Ø + 3 x 1.0 mm²	10.1	59	125

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). / SIMATIC® is a registered trademark of SIEMENS AG. FIP is a registered trademark of World FIP
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UNITRONIC® BUS PB FD P HYBRID

Highly flexible application



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
- Oil-resistant

Product Make-up

- Cores for Power Supply
  4 x 1.5 mm² (AWG16)

Technical data

Classification
ETIM 5.0 Class-ID: EC000830
ETIM 5.0 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)
Highly flexible application					
2170495	UNITRONIC® BUS PB FD P HYBRID	1 x 2 x 0.64 Ø + 4 x 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 application



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

- Outer sheath: special PVC compound
- Cores for Power Supply 4 x 1.5 mm² (AWG16)

Technical data

Classification
ETIM 5.0 Class-ID: EC000830
ETIM 5.0 Class-Description: Data cable

Peak operating voltage
600 V (not for power applications)

Minimum bending radius
Fixed installation:
10 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 x 2 x 0.64 Ø + 4 x 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® DeviceNet FD THICK+THIN

Highly flexible and UL/CSA-certified



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 5.0 Class-ID: EC000830
ETIM 5.0 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)
Version P (PUR)					
2170344	UNITRONIC® BUS DN THICK FD P	1x2xAWG18 + 1x2xAWG15	12.2	94	184
2170345	UNITRONIC® BUS DN THIN FD P	1x2xAWG24 + 1x2xAWG22	6.9	33.4	67.7
Version Y (PVC)					
2170346	UNITRONIC® BUS DN THICK FD Y	1x2xAWG18 + 1x2xAWG15	12.2	94	195
2170347	UNITRONIC® BUS DN THIN FD Y	1x2xAWG24 + 1x 2xAWG22	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 are not to scale and do not represent detailed images of the respective products.

Accessories

- SILVYN® CHAIN refer to main catalogue
- SMART STRIP stripping tool refer to main catalogue

UNITRONIC® BUS CAN FD P



Application range
- For highly flexible applications

Product features
- Halogen-free outer sheath
- 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
- Screening: wrapped with braided copper wires
- PUR outer sheath
- Colour: violet (RAL 4001)
- UV-resistant (but colour may change after some time)

Technical data

Classification
ETIM 5.0 Class-ID: EC000830
ETIM 5.0 Class-Description: Data cable

Mutual capacitance
Flexible use: 10 x outer diameter

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 x 2 x 0,25	6.4	159.8	24	40
2170273	UNITRONIC® BUS CAN FD P	2 x 2 x 0,25	8.4	159.8	33	65
2170275	UNITRONIC® BUS CAN FD P	1 x 2 x 0,34	6.8	122	32.8	60
2170276	UNITRONIC® BUS CAN FD P	2 x 2 x 0,34	9.6	122	52.4	88
2170278	UNITRONIC® BUS CAN FD P	1 x 2 x 0,5	8	72.8	41.9	74
2170279	UNITRONIC® BUS CAN FD P	2 x 2 x 0,5	10.8	72.8	59.4	100

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 are not to scale and do not represent detailed images of the respective products.

Accessories
- SILVYN® CHAIN refer to main catalogue
- Multipurpose shears A and B refer to main catalogue
- SMART STRIP stripping tool refer to main catalogue
- SENSOR STRIP stripping tool refer to main catalogue

UNITRONIC® BUS CC FD P FRNC



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 and flame-retardant (IEC 60332-1-2)

Norm references / Approvals
- AWM 20233 80 °C 300V

Technical data

Classification
ETIM 5.0 Class-ID: EC000830
ETIM 5.0 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
Flexing: 8 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 x 1 x 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 are not to scale and do not represent detailed images of the respective products.

UNITRONIC® BUS SAFETY



Benefits
- For serial transmission of safety-oriented data

Application range
- For fixed installation and 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

Product Make-up
- Stranded conductor, 3 cores twisted, colour-coded in accordance with DIN 47100 (white, brown, green), copper braiding, halogen-free outer sheath
- UNITRONIC® BUS SAFETY FD P is as per UNITRONIC® BUS SAFETY, but also suitable for highly flexible applications
- Flame-retardant according IEC 60332-1-2

Technical data

Classification
ETIM 5.0 Class-ID: EC000830
ETIM 5.0 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:
10 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
Moved: -30 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)
for fixed installation					
2170295	UNITRONIC® BUS SAFETY	3 x 0.75	7.6	49	68
For highly flexible applications (e.g. power chains)					
2170885	UNITRONIC® BUS SAFETY FD P	3 x 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 are not to scale and do not represent detailed images of the respective products.

Accessories
- FC STRIP stripping tool refer to main catalogue

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 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 5.0 Class-ID: EC001578
ETIM 5.0 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	3x0.25	4.4	PP/PUR	black	7.5
7038884	Lif9Y11Y	4x0.25	4.7	PP/PUR	black	10.2
7038867	Lif9Y11Y	5 x 0.25	4.7	PP/PUR	black	12
7038868	Lif9Y11Y	8 x 0.25	5.9	PP/PUR	black	19
7038864	Lif9Y11Y	3 x 0.34	4.6	PP/PUR	black	9.8
7038865	Lif9Y11Y	4 x 0.34	4.7	PP/PUR	black	13
7038866	Lif9Y11Y	5 x 0.34	5.1	PP/PUR	black	16
UNITRONIC® SENSOR FD screened						
7038885	Lif9YC11Y	3 x 0.34	4.3	PP/PUR	black	19.1
7038886	Lif9YC11Y	4 x 0.34	4.6	PP/PUR	black	23.5
7038887	Lif9YC11Y	5 x 0.34	5	PP/PUR	black	27.5

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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 are not to scale and do not represent detailed images of the respective products.

Accessories
- EPIC® SENSOR M12 refer to main catalogue
- EPIC® SENSOR M8 refer to main catalogue
- STAR STRIP stripping tool refer to main catalogue
- SMART STRIP stripping tool refer to main catalogue

UNITRONIC® SENSOR M8

M8 plug/socket on free conductor end



Info

- Other types are available on www.lappgroup.com/assemblyfinder or upon 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
  refer to main catalogue

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
IP65/IP67/IP68

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
22260319	AB-C4-10,0PUR-M8FA	4	10	angled	no	30	1

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UL certifications can be found in the data sheet

UNITRONIC® SENSOR M8-M8

M8 plug on M8 socket



Info

- Other types are available on www.lappgroup.com/assemblyfinder or upon 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 5.0 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
IP65/IP67/IP68

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
Connector to 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
22260062	AB-C4-M8MS-2,0PUR-M8FA	4	2	straight-angled	no	30	1

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UL certifications can be found in the data sheet

UNITRONIC® SENSOR M8-M12

M8 plug on M12 socket



Info

- Other types are available on www.lappgroup.com/assemblyfinder or upon 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 5.0 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
IP65/IP67/IP68

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
22260274	AB-C3-M8MS-2,0PUR-M12FA-2L	3	2	straight-angled	2 LEDs	24	1

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UL certifications can be found in the data sheet

UNITRONIC® SENSOR M12

M12 plug/socket on free conductor end



Info

- Other types are available on www.lappgroup.com/assemblyfinder or upon 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: 0,34 mm²
  (8-pin: 0,25 mm²)
- 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
  refer to main catalogue

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
IP65/IP67/IP68

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)

Article number	Article designation	Number of pins	Length (m)	Design	LED	Rated voltage (V)	PU
3-pin							
Plug							
22260221	AB-C3-M12MS-2,0PUR	3	2	straight	no	250	1
22260222	AB-C3-M12MS-5,0PUR	3	5	straight	no	250	1
22260249	AB-C3-M12MS-10,0PUR	3	10	straight	no	250	1
22260223	AB-C3-M12MA-2,0PUR	3	2	angled	no	250	1
22260224	AB-C3-M12MA-5,0PUR	3	5	angled	no	250	1
22260256	AB-C3-M12MA-10,0PUR	3	10	angled	no	250	1
Socket							
22260257	AB-C3-2,0PUR-M12FS	3	2	straight	no	250	1
22260250	AB-C3-5,0PUR-M12FS	3	5	straight	no	250	1
22260251	AB-C3-10,0PUR-M12FS	3	10	straight	no	250	1
22260252	AB-C3-2,0PUR-M12FS-2L	3	2	straight	2 LEDs	24	1
22260265	AB-C3-5,0PUR-M12FS-2L	3	5	straight	2 LEDs	24	1
22260266	AB-C3-10,0PUR-M12FS-2L	3	10	straight	2 LEDs	24	1
22260258	AB-C3-2,0PUR-M12FA	3	2	angled	no	250	1
22260259	AB-C3-5,0PUR-M12FA	3	5	angled	no	250	1
22260260	AB-C3-10,0PUR-M12FA	3	10	angled	no	250	1
22260253	AB-C3-2,0PUR-M12FA-2L	3	2	angled	2 LEDs	24	1
22260254	AB-C3-5,0PUR-M12FA-2L	3	5	angled	2 LEDs	24	1
22260255	AB-C3-10,0PUR-M12FA-2L	3	10	angled	2 LEDs	24	1
4-pin							
Plug							
22260320	AB-C4-M12MS- 2,0PUR	4	2	straight	no	250	1
22260321	AB-C4-M12MS- 5,0PUR	4	5	straight	no	250	1
22260342	AB-C4-M12MS-10,0PUR	4	10	straight	no	250	1
22260301	AB-C4-M12MA-2,0PUR	4	2	angled	no	250	1
22260302	AB-C4-M12MA-5,0PUR	4	5	angled	no	250	1
22260303	AB-C4-M12MA-10,0PUR	4	10	angled	no	250	1

Article number	Article designation	Number of pins	Length (m)	Design	LED	Rated voltage (V)	PU
Socket							
22260322	AB-C4- 2,0PUR-M12FS	4	2	straight	no	250	1
22260323	AB-C4- 5,0PUR-M12FS	4	5	straight	no	250	1
22260343	AB-C4-10,0PUR-M12FS	4	10	straight	no	250	1
22260344	AB-C4- 2,0PUR-M12FS-2L	4	2	straight	2 LEDs	24	1
22260345	AB-C4- 5,0PUR-M12FS-2L	4	5	straight	2 LEDs	24	1
22260346	AB-C4-10,0PUR-M12FS-2L	4	10	straight	2 LEDs	24	1
22260324	AB-C4- 2,0PUR-M12FA	4	2	angled	no	250	1
22260325	AB-C4- 5,0PUR-M12FA	4	5	angled	no	250	1
22260341	AB-C4-10,0PUR-M12FA	4	10	angled	no	250	1
22260326	AB-C4- 2,0PUR-M12FA-3L	4	2	angled	3 LEDs	24	1
22260327	AB-C4- 5,0PUR-M12FA-3L	4	5	angled	3 LEDs	24	1
22260340	AB-C4-10,0PUR-M12FA-3L	4	10	angled	3 LEDs	24	1
5-pin							
Plug							
22260400	AB-C5-M12MS-2,0PUR	5	2	straight	no	60	1
22260401	AB-C5-M12MS-5,0PUR	5	5	straight	no	60	1
22260414	AB-C5-M12MS-10,0PUR	5	10	straight	no	60	1
22260402	AB-C5-M12MA-2,0PUR	5	2	angled	no	60	1
22260403	AB-C5-M12MA-5,0PUR	5	5	angled	no	60	1
22260417	AB-C5-M12MA-10,0PUR	5	10	angled	no	60	1
Socket							
22260404	AB-C5- 2,0PUR-M12FS	5	2	straight	no	60	1
22260405	AB-C5- 5,0PUR-M12FS	5	5	straight	no	60	1
22260415	AB-C5-10,0PUR-M12FS	5	10	straight	no	60	1
22260406	AB-C5- 2,0PUR-M12FA	5	2	angled	no	60	1
22260407	AB-C5- 5,0PUR-M12FA	5	5	angled	no	60	1
22260418	AB-C5-10,0PUR-M12FA	5	10	angled	no	60	1
22260408	AB-C5- 2,0PUR-M12FA-3L	5	2	angled	3 LEDs	24	1
22260409	AB-C5- 5,0PUR-M12FA-3L	5	5	angled	3 LEDs	24	1
22260416	AB-C5-10,0PUR-M12FA-3L	5	10	angled	3 LEDs	24	1
8-pin							
Plug							
22260091	AB-C8-M12MS-2,0PUR	8	2	straight	no	30	1
22260092	AB-C8-M12MS-5,0PUR	8	5	straight	no	30	1
22260093	AB-C8-M12MS-10,0PUR	8	10	straight	no	30	1
22260094	AB-C8-M12MA-2,0PUR	8	2	angled	no	30	1
22260095	AB-C8-M12MA-5,0PUR	8	5	angled	no	30	1
22260096	AB-C8-M12MA-10,0PUR	8	10	angled	no	30	1
Socket							
22260726	AB-C8-2,0PUR-M12FS	8	2	straight	no	30	1
22260728	AB-C8-5,0PUR-M12FS	8	5	straight	no	30	1
22260729	AB-C8-10,0PUR-M12FS	8	10	straight	no	30	1
22260141	AB-C8-2,0PUR-M12FA	8	2	angled	no	30	1
22260615	AB-C8-5,0PUR-M12FA	8	5	angled	no	30	1
22260616	AB-C8-10,0PUR-M12FA	8	10	angled	no	30	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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UL certifications can be found in the data sheet

Accessories

- FLEXIMARK® Label LMB refer to main catalogue

LAPPKABEL
Data communication systems
Sensor/actuator cabling • M12 cordsets

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® SILVYN®

UNITRONIC® SENSOR M12-M12

M12 plug on M12 socket

Info

- Other types are available on www.lappgroup.com/assemblyfinder or upon 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: 0,34 mm² (8-pin: 0,25 mm²)
- 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
IP65/IP67/IP68

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)

Article number	Article designation	Length (m)	Design	LED	Rated voltage (V)	PU
Connector to socket						
3-pin						
22260233	AB-C3-M12MS-0,3PUR-M12FS	0.3	straight-straight	no	250	1
22260234	AB-C3-M12MS-0,6PUR-M12FS	0.6	straight-straight	no	250	1
22260235	AB-C3-M12MS-1,0PUR-M12FS	1	straight-straight	no	250	1
22260236	AB-C3-M12MS-2,0PUR-M12FS	2	straight-straight	no	250	1
22260237	AB-C3-M12MS-0,3PUR-M12FA	0.3	straight-angled	no	250	1
22260238	AB-C3-M12MS-0,6PUR-M12FA	0.6	straight-angled	no	250	1
22260239	AB-C3-M12MS-1,0PUR-M12FA	1	straight-angled	no	250	1
22260240	AB-C3-M12MS-2,0PUR-M12FA	2	straight-angled	no	250	1
22260261	AB-C3-M12MS-0,3PUR-M12FA-2L	0.3	straight-angled	2 LEDs	24	1
22260262	AB-C3-M12MS-0,6PUR-M12FA-2L	0.6	straight-angled	2 LEDs	24	1
22260263	AB-C3-M12MS-1,0PUR-M12FA-2L	1	straight-angled	2 LEDs	24	1
22260264	AB-C3-M12MS-2,0PUR-M12FA-2L	2	straight-angled	2 LEDs	24	1
4-pin						
22260328	AB-C4-M12MS- 0,3PUR-M12FS	0.3	straight-straight	no	250	1
22260329	AB-C4-M12MS- 0,6PUR-M12FS	0.6	straight-straight	no	250	1
22260330	AB-C4-M12MS- 1,0PUR-M12FS	1	straight-straight	no	250	1
22260331	AB-C4-M12MS- 2,0PUR-M12FS	2	straight-straight	no	250	1
22260332	AB-C4-M12MS- 0,3PUR-M12FA	0.3	straight-angled	no	250	1
22260333	AB-C4-M12MS- 0,6PUR-M12FA	0.6	straight-angled	no	250	1
22260334	AB-C4-M12MS-1,0PUR-M12FA	1	straight-angled	no	250	1
22260335	AB-C4-M12MS-2,0PUR-M12FA	2	straight-angled	no	250	1
22260304	AB-C4-M12MA-0,3PUR-M12FS	0.3	angled-straight	no	250	1
22260305	AB-C4-M12MA-0,6PUR-M12FS	0.6	angled-straight	no	250	1
22260306	AB-C4-M12MA-1,0PUR-M12FS	1	angled-straight	no	250	1
22260307	AB-C4-M12MA-2,0PUR-M12FS	2	angled-straight	no	250	1
22260336	AB-C4-M12MS-0,3PUR-M12FA-3L	0.3	straight-angled	3 LEDs	24	1
22260337	AB-C4-M12MS-0,6PUR-M12FA-3L	0.6	straight-angled	3 LEDs	24	1
22260338	AB-C4-M12MS-1,0PUR-M12FA-3L	1	straight-angled	3 LEDs	24	1
22260339	AB-C4-M12MS-2,0PUR-M12FA-3L	2	straight-angled	3 LEDs	24	1
5-pin						
22260410	AB-C5-M12MS-0,3PUR-M12FS	0.3	straight-straight	no	60	1
22260411	AB-C5-M12MS-0,6PUR-M12FS	0.6	straight-straight	no	60	1
22260412	AB-C5-M12MS-1,0PUR-M12FS	1	straight-straight	no	60	1
22260413	AB-C5-M12MS-2,0PUR-M12FS	2	straight-straight	no	60	1
22260063	AB-C5-M12MS-0,3PUR-M12FA	0.3	straight-angled	no	60	1

Article number	Article designation	Length (m)	Design	LED	Rated voltage (V)	PU
22260064	AB-C5-M12MS-0,6PUR-M12FA	0.6	straight-angled	no	60	1
22260065	AB-C5-M12MS-1,0PUR-M12FA	1	straight-angled	no	60	1
22260066	AB-C5-M12MS-2,0PUR-M12FA	2	straight-angled	no	60	1
22260067	AB-C5-M12MS-0,3PUR-M12FA-3L	0.3	straight-angled	3 LEDs	24	1
22260068	AB-C5-M12MS-0,6PUR-M12FA-3L	0.6	straight-angled	3 LEDs	24	1
22260069	AB-C5-M12MS-1,0PUR-M12FA-3L	1	straight-angled	3 LEDs	24	1
22260070	AB-C5-M12MS-2,0PUR-M12FA-3L	2	straight-angled	3 LEDs	24	1
8-pin						
22260097	AB-C8-M12MS-0,3PUR-M12FS	0.3	straight-straight	no	30	1
22260098	AB-C8-M12MS- 0,6PUR-M12FS	0.6	straight-straight	no	30	1
22260099	AB-C8-M12MS-1,0PUR-M12FS	1	straight-straight	no	30	1
22260042	AB-C8-M12MS- 2,0PUR-M12FS	2	straight-straight	no	30	1
22260137	AB-C8-M12MS-0,3PUR-M12FA	0.3	straight-angled	no	30	1
22260138	AB-C8-M12MS-0,6PUR-M12FA	0.6	straight-angled	no	30	1
22260139	AB-C8-M12MS1,0PUR-M12FA	1	straight-angled	no	30	1
22260140	AB-C8-M12MS-2,0PUR-M12FA	2	straight-angled	no	30	1
22260234	AB-C3-M12MS-0,6PUR-M12FS	0.6	straight-straight	no	250	1

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UL certifications can be found in the data sheet

Accessories

- FLEXIMARK® Label LMB refer to main catalogue

UNITRONIC® SENSOR M12-M8

M12 plug on M8 socket



Info

- Other types are available on www.lappgroup.com/assemblyfinder or upon 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 5.0 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
IP65/IP67/IP68

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	Length (m)	Design	LED	Rated voltage (V)	PU
Connector to 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
22260269	AB-C3-M12MS-1,0PUR-M8FA-2L	1	straight-angled	2 LEDs	24	1
22260270	AB-C3-M12MS-2,0PUR-M8FA-2L	2	straight-angled	2 LEDs	24	1
4-pin						
22260347	AB-C4-M12MS-0,3PUR-M8FS	0.3	straight-straight	no	30	1
22260349	AB-C4-M12MS-0,6PUR-M8FS	0.6	straight-straight	no	30	1
22260350	AB-C4-M12MS-1,0PUR-M8FS	1	straight-straight	no	30	1
22260348	AB-C4-M12MS-2,0PUR-M8FS	2	straight-straight	no	30	1

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UL certifications can be found in the data sheet

Accessories

- FLEXIMARK® Label LMB refer to main catalogue

UNITRONIC® SENSOR SH M12

M12 plug/socket on free conductor end, shielded



Info

- Other types are available on www.lappgroup.com/assemblyfinder or upon 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
- Shielding is conducted over the knurl
- 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: 0,34 mm²
- 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), gy (5)
- Outer sheath: PUR, black
- Shielded version

Suitable tools

- DATA STRIP stripping tool refer to main catalogue

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
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							
22260453	AB-C3-M12MS- 2,0PUR-SH	3	2	straight	no	250	1
22260454	AB-C3-M12MS- 5,0PUR-SH	3	5	straight	no	250	1
22260455	AB-C3-M12MS-10,0PUR-SH	3	10	straight	no	250	1
Socket							
22260450	AB-C3- 2,0PUR-M12FS-SH	3	2	straight	no	250	1
22260451	AB-C3- 5,0PUR-M12FS-SH	3	5	straight	no	250	1
22260452	AB-C3-10,0PUR-M12FS-SH	3	10	straight	no	250	1
22260071	AB-C3- 2,0PUR-M12FA-SH	3	2	angled	no	250	1
22260072	AB-C3- 5,0PUR-M12FA-SH	3	5	angled	no	250	1
22260073	AB-C3-10,0PUR-M12FA-SH	3	10	angled	no	250	1
4-pin							
Plug							
22260459	AB-C4-M12MS- 2,0PUR-SH	4	2	straight	no	250	1
22260460	AB-C4-M12MS- 5,0PUR-SH	4	5	straight	no	250	1
22260461	AB-C4-M12MS-10,0PUR-SH	4	10	straight	no	250	1
Socket							
22260456	AB-C4- 2,0PUR-M12FS-SH	4	2	straight	no	250	1
22260457	AB-C4- 5,0PUR-M12FS-SH	4	5	straight	no	250	1
22260458	AB-C4-10,0PUR-M12FS-SH	4	10	straight	no	250	1
22260074	AB-C4- 2,0PUR-M12FA-SH	4	2	angled	no	250	1
22260675	AB-C4- 5,0PUR-M12FA-SH	4	5	angled	no	250	1
22260680	AB-C4-10,0PUR-M12FA-SH	4	10	angled	no	250	1
5-pin							
Plug							
22260465	AB-C5-M12MS- 2,0PUR-SH	5	2	straight	no	60	1
22260466	AB-C5-M12MS- 5,0PUR-SH	5	5	straight	no	60	1
22260467	AB-C5-M12MS-10,0PUR-SH	5	10	straight	no	60	1
Socket							
22260462	AB-C5- 2,0PUR-M12FS-SH	5	2	straight	no	60	1
22260463	AB-C5- 5,0PUR-M12FS-SH	5	5	straight	no	60	1
22260464	AB-C5-10,0PUR-M12FS-SH	5	10	straight	no	60	1
22260946	AB-C5- 2,0PUR-M12FA-SH	5	2	angled	no	60	1
22260714	AB-C5- 5,0PUR-M12FA-SH	5	5	angled	no	60	1
22260991	AB-C5-10,0PUR-M12FA-SH	5	10	angled	no	60	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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Accessories

- FLEXIMARK® Label LMB refer to main catalogue

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 x 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 refer to main catalogue

Technical data

Classification
ETIM 5.0 Class-ID: EC001855
ETIM 5.0 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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Accessories

- SENSOR STRIP stripping tool refer to main catalogue
- FLEXIMARK® Label LMB refer to main catalogue

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 x 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 5.0 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

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
22260550	AB-C3-M12MS-0,3PUR-A-1L-S	3	0.3	1 LED	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 are not to scale and do not represent detailed images of the respective products.

Accessories

- FLEXIMARK® Label LMB refer to main catalogue

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 x 0.34 mm²
- Core colours: bn, bu, bk
- Outer sheath: PUR halogen-free, black

Suitable tools

- DATA STRIP stripping tool refer to main catalogue

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

Protection rating
IP65/IP67/IP68

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	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

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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 are not to scale and do not represent detailed images of the respective products.
UL certifications can be found in the data sheet

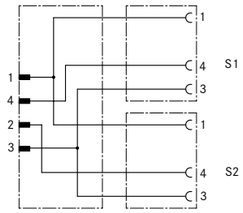
Accessories

- FLEXIMARK® Label LMB refer to main catalogue

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 plug on 2 x M8 socket (3-pin)
- Including tag carrier
- PWIS-free
- Suitable for drag chains

Product Make-up

- 3 x 0.25 mm²
- Core colours: bn, bu, bk
- Outer sheath: PUR halogen-free, 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

Protection rating
IP65/IP67/IP68

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)	LED	Rated voltage (V)	PU
Y plug to straight socket						
22260514	AB-C3-M12Y-0,3PUR-M8FS	3	0.3	60	no	1
22260515	AB-C3-M12Y-0,6PUR-M8FS	3	0.6	60	no	1
22260516	AB-C3-M12Y-1,0PUR-M8FS	3	1	60	no	1
22260517	AB-C3-M12Y-2,0PUR-M8FS	3	2	60	no	1
Y plug to angled socket						
22260518	AB-C3-M12Y-0,3PUR-M8FA	3	0.3	60	no	1
22260519	AB-C3-M12Y-0,6PUR-M8FA	3	0.6	60	no	1
22260520	AB-C3-M12Y-1,0PUR-M8FA	3	1	60	no	1
22260521	AB-C3-M12Y-2,0PUR-M8FA	3	2	60	no	1
Y plug to angled socket with LEDs						
22260522	AB-C3-M12Y-0,3PUR-M8FA-2L	3	0.3	24	2 LEDs	1
22260523	AB-C3-M12Y-0,6PUR-M8FA-2L	3	0.6	24	2 LEDs	1
22260524	AB-C3-M12Y-1,0PUR-M8FA-2L	3	1	24	2 LEDs	1
22260525	AB-C3-M12Y-2,0PUR-M8FA-2L	3	2	24	2 LEDs	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 are not to scale and do not represent detailed images of the respective products.
UL certifications can be found in the data sheet

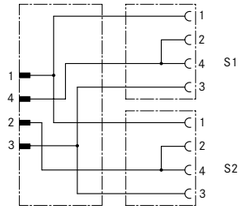
Accessories

- FLEXIMARK® Label LMB refer to main catalogue

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 plug on 2 x M12 socket (4-pin)
- Socket M12 PIN 2+4 bridged
- Including tag carrier
- PWIS-free
- Suitable for drag chains

Product Make-up

- 3 x 0.34 mm²
- Core colours: bn, bu, bk
- Outer sheath: PUR halogen-free, 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

Protection rating
IP65/IP67/IP68

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)	LED	Rated voltage (V)	PU
Y plug to straight socket						
22260501	AB-C3-M12Y-0,3PUR-M12FS-B	3	0.3	250	no	1
22260502	AB-C3-M12Y-0,6PUR-M12FS-B	3	0.6	250	no	1
22260503	AB-C3-M12Y-1,0PUR-M12FS-B	3	1	250	no	1
22260504	AB-C3-M12Y-2,0PUR-M12FS-B	3	2	250	no	1
Y plug to angled socket						
22260505	AB-C3-M12Y-0,3PUR-M12FA-B	3	0.3	250	no	1
22260506	AB-C3-M12Y-0,6PUR-M12FA-B	3	0.6	250	no	1
22260507	AB-C3-M12Y-1,0PUR-M12FA-B	3	1	250	no	1
22260508	AB-C3-M12Y-2,0PUR-M12FA-B	3	2	250	no	1
Y plug to angled socket with LEDs						
22260509	AB-C3-M12Y-0,3PUR-M12FA-2L-B	3	0.3	24	2 LEDs	1
22260510	AB-C3-M12Y-0,6PUR-M12FA-2L-B	3	0.6	24	2 LEDs	1
22260511	AB-C3-M12Y-1,0PUR-M12FA-2L-B	3	1	24	2 LEDs	1
22260512	AB-C3-M12Y-2,0PUR-M12FA-2L-B	3	2	24	2 LEDs	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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UL certifications can be found in the data sheet

Accessories

- FLEXIMARK® Label LMB refer to main catalogue

UNITRONIC® SENSOR M12 | M16

M12 / M16 socket with connected master cable



Benefits

- Connecting cable for M8 boxes with 4 to 10 slots
- Instead of numerous individual conductors, one master cable is laid to the control unit
- Hybrid cable for signal and power transmission

Product features

- Angled socket M12 on free conductor end, halogen-free
- Angled socket M16 on free conductor end
- Suitable for drag chains
- PWIS-free

Product Make-up

- Core cross-section:
  M16: power: 0.75 mm²,signal: 0,34mm²;
  M12: 0,14mm²
- Core insulation: PP (M12), PVC (M16)
- Outer sheath: PUR, black

Technical data

Classification
ETIM 5.0 Class-ID: EC001855
ETIM 5.0 Class-Description:
Sensor-actuator patch cord

Material
Contact: CuZn
Contact surface: Ni/Au
Knurl: Nickel-plated brass
Gripping body: TPU, flame-retardant, self-extinguishing

Protection rating
IP 67
IP 65/IP 67/IP 68 (M12)

Ambient temperature (operation)
Plug/socket -25°C to +90°C
Fixed installation -40°C to +90°C
-40°C to +80°C (M12)
Flexing -5°C to 80°C

Coding
A-standard

Rated current (A)
4 A
1,5 A (M12)

Article number	Article designation	Length (m)	Rated voltage (V)	PU
M12 socket, angled				
22262127	AB-C12-5,0PUR-M12FA	5	30	1
22262128	AB-C12-10,0PUR-M12FA	10	30	1
M16 socket, angled				
8 pole (6x signal - 2 bridged, 2x power)				
22260607	AB-C8-5,0PUR-M16FA	5	125	1
22260608	AB-C8-10,0PUR-M16FA	10	125	1
10-pin (8x signal - 2 bridged, 2x power)				
22260609	AB-C10-5,0PUR-M16FA	5	125	1
22260610	AB-C10-10,0PUR-M16FA	10	125	1
12-pin (10x signal - 2 bridged, 2x power)				
22260611	AB-C12-5,0PUR-M16FA	5	125	1
22260612	AB-C12-10,0PUR-M16FA	10	125	1
14-pin (12x signal - 2 bridged, 2x power)				
22260613	AB-C14-5,0PUR-M16FA	5	125	1
22260614	AB-C14-10,0PUR-M16FA	10	125	1

Copper price basis: inclusive of copper. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Distribution Box M8 refer to main catalogue

UNITRONIC® SENSOR M12 Power

Power cable: M12 plug/socket on free conductor

Info

- Other types are available on www.lappgroup.com/assemblyfinder or upon 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
  refer to main catalogue

Suitable connectors

- EPIC® SENSOR M12
  refer to main catalogue

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
Flexing: 10 x outer diameter

Protection rating
IP65/IP67/IP68

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

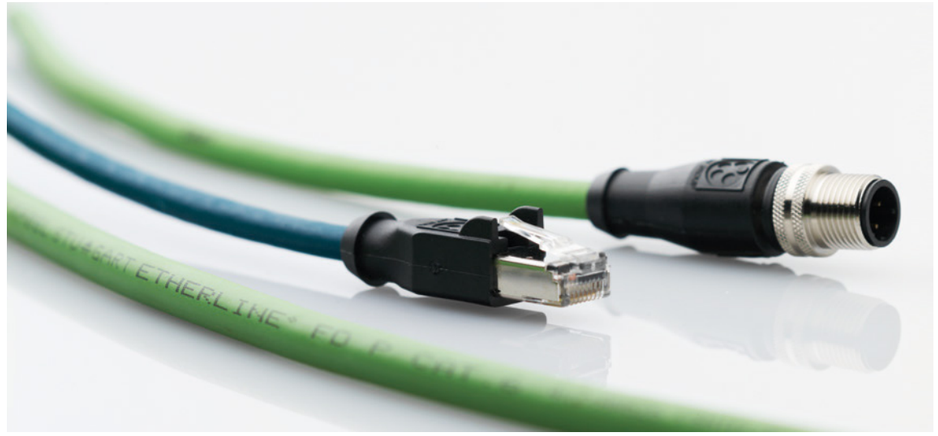
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Accessories

- FLEXIMARK® Label LMB refer to main catalogue

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. The systems are made up of durable and robust cables and connection components for passive 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

Highly flexible application



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

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, 26AWG (19 x 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 5.0 Class-ID: EC000830
ETIM 5.0 Class-Description: Data cable

Peak operating voltage
(not for power applications) 125 V

Minimum bending radius
Fixed installation: 8 x outer diameter
Flexing: 15 x outer diameter

Test voltage
Core/core: 1000 V
Core/screen: 500 V

Characteristic impedance
100 Ohm +- 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

Product features
- High-quality, double screening ensures high transmission reliability in areas with 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

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2-pair version					
2170289	ETHERLINE® FD P CAT.5e	2 x 2 x AWG26/19	6.2	20	48
4-pair version					
2170489	ETHERLINE® FD P CAT.5e	4 x 2 x AWG26/19	6.6	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 are not to scale and do not represent detailed images of the respective products.

Accessories
- Connector RJ45 CAT.6 Hirose TM21 refer to main catalogue
- SMART STRIP stripping tool refer to main catalogue
- DATA STRIP stripping tool refer to main catalogue

ETHERLINE® Cat.5 FD BK

The Ethernet cable for installation in events



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
- Usable on the roads

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

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, 26AWG (19 x 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

Classification
ETIM 5.0 Class-ID: EC000830
ETIM 5.0 Class-Description: Data cable

Peak operating voltage
(not for power applications) 125 V

Minimum bending radius
Flexing: 15 x outer diameter
Fixed installation: 8 x outer diameter

Test voltage
Core/core: 1000 V
Core/screen: 500 V

Characteristic impedance
100 Ohm +- 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

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

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ETHERLINE® Cat.5 FD BK					
CE217489	ETHERLINE® FD P BK Cat.5	4x2xAWG26/19	6.6	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 are not to scale and do not represent detailed images of the respective products.

Accessories

- Connector RJ45 CAT.6 Hirose TM21 refer to main catalogue
- SMART STRIP stripping tool refer to main catalogue

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, ISO/IEC 11801 and EN 50173, 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

- Tinned stranded copper wire, 26AWG (19 x 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 5.0 Class-ID: EC000830
ETIM 5.0 Class-Description: Data cable

Peak operating voltage
max. 100 V (not for power applications)

Minimum bending radius
Fixed installation: 4 x Outer diameter
Flexing: 8 x outer diameter

Characteristic impedance
100 Ohm +- 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	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ETHERLINE® EC FD Cat.5e					
2170433	ETHERLINE® P EC FD Cat.5e	1 x 4 x AWG26/19	5.0	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 are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® SENSOR M8 refer to main catalogue

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 5.0 Class-ID: EC000830
ETIM 5.0 Class-Description: Data cable

Peak operating voltage
(not for power applications) 125 V

Minimum bending radius
Flexing: 8 x outer diameter
Fixed installation: 5 x outer diameter

Test voltage
Core/core: 700 V
Core/screen: 700 V

Characteristic impedance
100 Ohm +- 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	Max. 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	6.8	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 are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® DATA PN AX RJ45 refer to main catalogue
- EPIC® DATA PN 90 RJ45 refer to main catalogue
- EPIC® DATA AX RJ45 Cat.6_A IP68 refer to main catalogue
- EPIC® DATA M12D refer to main catalogue

ETHERLINE® CAT.6 FD

Highly flexible application



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!
- LAN Cat.6 cables are specified up to 350 MHz
- Designed for 1...2 million bending/ unbending 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 5.0 Class-ID: EC000830
ETIM 5.0 Class-Description: Data cable

Peak operating voltage
max. 100 V (not for power applications)

Minimum bending radius
Fixed installation: 4 x outer diameter
Flexing: 7.5 x outer diameter

Test voltage
700 V

Characteristic impedance
At 1 - 100 MHz: 100 ± 15 Ohm

Temperature range
Fixed installation: -40°C to +80°C
Flexing: -30°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ETHERLINE® CAT.6 FD					
2170488	ETHERLINER CAT.6 FD	4 x 2 x AWG26/19	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 are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® DATA AX RJ45 Cat.6_A refer to main catalogue
- EPIC® DATA 90 RJ45 Cat.6_A refer to main catalogue
- DATA STRIP stripping tool refer to main catalogue

ETHERLINE® FD CAT.6$_A$

For highly flexible applications



Info

- CAT.6$_A$ 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

Norm references / Approvals

- Electrical requirements acc. to IEC 61156-6
- PUR: 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 5.0 Class-ID: EC000830
ETIM 5.0 Class-Description: Data cable

Minimum bending radius
Flexing: 15 x outer diameter
Fixed installation: 8 x cable diameter

Characteristic impedance
100 Ohm

Temperature range
Fixed installation
PVC: -40°C bis +80°C
PUR: -40°C bis +80°C
Flexing
PVC: -10°C to +70°C
PUR: -30°C to +70°C

Product features

- PUR version is halogen-free according to IEC 60754
- Oil-resistant acc. IEC 60811-2-1
- CAT.6$_A$ for drag chain, qualified for 10Gbit/s
- Meets the requirements according to CAT.6$_A$, ISO/IEC 11801 and EN 50173
- Min. 2.5 million bending cycles in the power chain

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
PVC sheath					
2170485	ETHERLINE® FD CAT.6$_A$	4x2xAWG24/7	9.0	44	88
PUR outer sheath, halogen-free					
2170484	ETHERLINE® FD P CAT.6$_A$	4x2xAWG24/7	9.0	44	90

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Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® DATA AX RJ45 Cat.6$_A$ refer to main catalogue
- EPIC® DATA 90 RJ45 Cat.6$_A$ refer to main catalogue
- EPIC® DATA AX RJ45 Cat.6$_A$ IP68 refer to main catalogue
- EPIC® DATA M12X refer to main catalogue
- EPIC® DATA CCR FA refer to main catalogue

NEW

ETHERLINE® EC FD Cat.5e M8

Industrial Ethernet EC Patchcord M8

Info

- Industrial Ethernet cable
- Suitable for drag chains
- Other types are available on www.lappgroup.com/assemblyfinder or upon request



Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use
- For highly flexible applications
- Automation technology

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Product Make-up

- AWG 26 (19-wire)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PUR
- Colour: green (based on RAL 6018)
- Pre-assembled patchcords with M8 connectors

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: 4 x outer diameter

Protection rating
M8 - IP 67

Characteristic impedance
100 Ohm +- 15%

Temperature range
During installation: -30°C to +50°C
Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index kg/1.000 pieces
Straight plug M8 on straight plug M8				
2171700	IE-EC-5-M8-S-0,5-P-2-26-FD-M8-S	2x2xAWG26	0.5	10
2171701	IE-EC-5-M8-S-1-P-2-26-FD-M8-S	2x2xAWG26	1	20
2171702	IE-EC-5-M8-S-2-P-2-26-FD-M8-S	2x2xAWG26	2	40
2171703	IE-EC-5-M8-S-3-P-2-26-FD-M8-S	2x2xAWG26	3	60
2171704	IE-EC-5-M8-S-5-P-2-26-FD-M8-S	2x2xAWG26	5	100
2171705	IE-EC-5-M8-S-7-P-2-26-FD-M8-S	2x2xAWG26	7	140
2171706	IE-EC-5-M8-S-10-P-2-26-FD-M8-S	2x2xAWG26	10	200
2171707	IE-EC-5-M8-S-15-P-2-26-FD-M8-S	2x2xAWG26	15	300
2171708	IE-EC-5-M8-S-20-P-2-26-FD-M8-S	2x2xAWG26	20	400
Angled plug M8 on straight plug M8				
2171718	IE-EC-5-M8-A-0,5-P-2-26-FD-M8-S	2x2xAWG26	0.5	10
2171719	IE-EC-5-M8-A-1-P-2-26-FD-M8-S	2x2xAWG26	1	20
2171720	IE-EC-5-M8-A-2-P-2-26-FD-M8-S	2x2xAWG26	2	40
2171721	IE-EC-5-M8-A-3-P-2-26-FD-M8-S	2x2xAWG26	3	60
2171722	IE-EC-5-M8-A-5-P-2-26-FD-M8-S	2x2xAWG26	5	100
2171723	IE-EC-5-M8-A-7-P-2-26-FD-M8-S	2x2xAWG26	7	140
2171724	IE-EC-5-M8-A-10-P-2-26-FD-M8-S	2x2xAWG26	10	200
2171725	IE-EC-5-M8-A-15-P-2-26-FD-M8-S	2x2xAWG26	15	300
2171726	IE-EC-5-M8-A-20-P-2-26-FD-M8-S	2x2xAWG26	20	400
Straight connector on free conductor end				
2171709	IE-EC-5-M8-S-0,5-P-2-26-FD-OE	2x2xAWG26	0.5	10
2171710	IE-EC-5-M8-S-1-P-2-26-FD-OE	2x2xAWG26	1	20
2171711	IE-EC-5-M8-S-2-P-2-26-FD-OE	2x2xAWG26	2	40
2171712	IE-EC-5-M8-S-3-P-2-26-FD-OE	2x2xAWG26	3	60
2171713	IE-EC-5-M8-S-5-P-2-26-FD-OE	2x2xAWG26	5	100
2171714	IE-EC-5-M8-S-7-P-2-26-FD-OE	2x2xAWG26	7	140
2171715	IE-EC-5-M8-S-10-P-2-26-FD-OE	2x2xAWG26	10	200
2171716	IE-EC-5-M8-S-15-P-2-26-FD-OE	2x2xAWG26	15	300
2171717	IE-EC-5-M8-S-20-P-2-26-FD-OE	2x2xAWG26	20	400
Angled connector on free conductor end				
2171727	IE-EC-5-M8-A-0,5-P-2-26-FD-OE	2x2xAWG26	0.5	10
2171728	IE-EC-5-M8-A-1-P-2-26-FD-OE	2x2xAWG26	1	20
2171729	IE-EC-5-M8-A-2-P-2-26-FD-OE	2x2xAWG26	2	40
2171730	IE-EC-5-M8-A-3-P-2-26-FD-OE	2x2xAWG26	3	60
2171731	IE-EC-5-M8-A-5-P-2-26-FD-OE	2x2xAWG26	5	100
2171732	IE-EC-5-M8-A-7-P-2-26-FD-OE	2x2xAWG26	7	140
2171733	IE-EC-5-M8-A-10-P-2-26-FD-OE	2x2xAWG26	10	200
2171734	IE-EC-5-M8-A-15-P-2-26-FD-OE	2x2xAWG26	15	300
2171735	IE-EC-5-M8-A-20-P-2-26-FD-OE	2x2xAWG26	20	400

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.
Other lengths and types of connectors are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.

NEW

ETHERLINE® EC FD Cat.5e M8-RJ45

Industrial Ethernet Patchcord M8/RJ45



Info

- Industrial Ethernet cable
- Suitable for drag chains
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use
- For highly flexible applications
- Automation technology

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Product Make-up

- AWG 26 (19-wire)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PUR
- Colour: green (based on RAL 6018)
- Pre-assembled patchcords with M8 connector and RJ45 connector

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: 4 x outer diameter

Protection rating
M8 - IP 67
RJ45 - IP 20

Characteristic impedance
100 Ohm +- 15%

Temperature range
During installation: -30°C to +50°C
Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index kg/1.000 pieces
straight plug M8 on straight plug RJ45				
2171757	IE-EC-5-M8-S-0,5-P-2-26-FD-RJ45	2x2xAWG26	0.5	10
2171758	IE-EC-5-M8-S-1-P-2-26-FD-RJ45	2x2xAWG26	1	20
2171759	IE-EC-5-M8-S-2-P-2-26-FD-RJ45	2x2xAWG26	2	40
2171760	IE-EC-5-M8-S-3-P-2-26-FD-RJ45	2x2xAWG26	3	60
2171761	IE-EC-5-M8-S-5-P-2-26-FD-RJ45	2x2xAWG26	5	100
2171762	IE-EC-5-M8-S-10-P-2-26-FD-RJ45	2x2xAWG26	10	200
2171763	IE-EC-5-M8-S-20-P-2-26-FD-RJ45	2x2xAWG26	20	400

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.
Other lengths and types of connectors are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.

LAPPKABEL
Data communication systems for ETHERNET technology
Industrial Ethernet Patchcord Cat.5/Cat.5e • Industrial Ethernet EC FD - continuous flexing application

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® SILVYN®

NEW

ETHERLINE® EC FD Cat.5e M12

Industrial Ethernet EC Patchcord M12



Info

- Industrial Ethernet cable
- Suitable for drag chains
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use
- For highly flexible applications
- Automation technology

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Product Make-up

- AWG 26 (19-wire)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PUR
- Colour: green (based on RAL 6018)
- Pre-assembled patchcords with M12 D-coded connectors
- 4 pole M12 connector with vibration protection

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: 4 x outer diameter

Protection rating
M12 - IP 67 / IP 69

Characteristic impedance
100 Ohm +- 15%

Temperature range
During installation: -30°C to +50°C
Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index kg/1.000 pieces
straight plug M12 on straight plug M12				
2171778	IE-EC-5-M12D-S-0,5-P-2-26-FD-M12D-S	2x2xAWG26	0.5	10
2171779	IE-EC-5-M12D-S-1-P-2-26-FD-M12D-S	2x2xAWG26	1	20
2171780	IE-EC-5-M12D-S-2-P-2-26-FD-M12D-S	2x2xAWG26	2	40
2171781	IE-EC-5-M12D-S-3-P-2-26-FD-M12D-S	2x2xAWG26	3	60
2171782	IE-EC-5-M12D-S-5-P-2-26-FD-M12D-S	2x2xAWG26	5	100
2171783	IE-EC-5-M12D-S-10-P-2-26-FD-M12D-S	2x2xAWG26	10	200
2171784	IE-EC-5-M12D-S-20-P-2-26-FD-M12D-S	2x2xAWG26	20	400
angled plug M12 on straight plug M12				
2171785	IE-EC-5-M12D-A-0,5-P-2-26-FD-M12D-S	2x2xAWG26	0.5	10
2171786	IE-EC-5-M12D-A-1-P-2-26-FD-M12D-S	2x2xAWG26	1	20
2171787	IE-EC-5-M12D-A-2-P-2-26-FD-M12D-S	2x2xAWG26	2	40
2171788	IE-EC-5-M12D-A-3-P-2-26-FD-M12D-S	2x2xAWG26	3	60
2171789	IE-EC-5-M12D-A-5-P-2-26-FD-M12D-S	2x2xAWG26	5	100
2171790	IE-EC-5-M12D-A-10-P-2-26-FD-M12D-S	2x2xAWG26	2	200
2171791	IE-EC-5-M12D-A-20-P-2-26-FD-M12D-S	2x2xAWG26	20	400
straight plug M12 on free conductor end				
2171792	IE-EC-5-M12D-S-0,5-P-2-26-FD-OE	2x2xAWG26	0.5	10
2171793	IE-EC-5-M12D-S-1-P-2-26-FD-OE	2x2xAWG26	1	20
2171794	IE-EC-5-M12D-S-2-P-2-26-FD-OE	2x2xAWG26	2	40
2171795	IE-EC-5-M12D-S-3-P-2-26-FD-OE	2x2xAWG26	3	60
2171796	IE-EC-5-M12D-S-5-P-2-26-FD-OE	2x2xAWG26	5	100
2171797	IE-EC-5-M12D-S-10-P-2-26-FD-OE	2x2xAWG26	10	200
2171798	IE-EC-5-M12D-S-20-P-2-26-FD-OE	2x2xAWG26	20	400
angled plug M12 on free conductor end				
2171870	IE-EC-5-M12D-A-0,5-P-2-26-FD-OE	2x2xAWG26	0.5	10
2171871	IE-EC-5-M12D-A-1-P-2-26-FD-OE	2x2xAWG26	1	20
2171872	IE-EC-5-M12D-A-2-P-2-26-FD-OE	2x2xAWG26	2	40
2171873	IE-EC-5-M12D-A-3-P-2-26-FD-OE	2x2xAWG26	3	60
2171874	IE-EC-5-M12D-A-5-P-2-26-FD-OE	2x2xAWG26	5	100
2171875	IE-EC-5-M12D-A-10-P-2-26-FD-OE	2x2xAWG26	10	200
2171876	IE-EC-5-M12D-A-20-P-2-26-FD-OE	2x2xAWG26	20	400
angled plug M12 on angled plug M12				
2171906	IE-EC-5-M12D-A-0,5-P-2-26-FD-M12D-A	2x2xAWG26	0.5	10
2171907	IE-EC-5-M12D-A-1-P-2-26-FD-M12D-A	2x2xAWG26	1	20
2171908	IE-EC-5-M12D-A-2-P-2-26-FD-M12D-A	2x2xAWG26	2	40
2171909	IE-EC-5-M12D-A-3-P-2-26-FD-M12D-A	2x2xAWG26	3	60
2171910	IE-EC-5-M12D-A-5-P-2-26-FD-M12D-A	2x2xAWG26	5	100
2171911	IE-EC-5-M12D-A-10-P-2-26-FD-M12D-A	2x2xAWG26	10	200
2171913	IE-EC-5-M12D-A-20-P-2-26-FD-M12D-A	2x2xAWG26	20	400

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.
Other lengths and types of connectors are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.

NEW

ETHERLINE® EC FD Cat.5e M12-RJ45

Industrial Ethernet EC Patchcord M12/RJ45



Info

- Industrial Ethernet cable
- Suitable for drag chains
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use
- For highly flexible applications
- Automation technology

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Product Make-up

- AWG 26 (19-wire)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PUR
- Colour: green (based on RAL 6018)
- Pre-assembled patchcords with D-coded M12 connector and RJ45-connector
- 4 pole M12 connector with vibration protection

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: 4 x outer diameter

Protection rating
M12 - IP 67 / IP 69
RJ45 - IP 20

Characteristic impedance
100 Ohm +- 15%

Temperature range
During installation: -30°C to +50°C
Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index kg/1.000 pieces
straight plug M12 on straight plug RJ45				
2171750	IE-EC-5-M12D-S-0,5-P-2-26-FD-RJ45	2x2xAWG26	0.5	10
2171751	IE-EC-5-M12D-S-1-P-2-26-FD-RJ45	2x2xAWG26	1	20
2171752	IE-EC-5-M12D-S-2-P-2-26-FD-RJ45	2x2xAWG26	2	40
2171753	IE-EC-5-M12D-S-3-P-2-26-FD-RJ45	2x2xAWG26	3	60
2171754	IE-EC-5-M12D-S-5-P-2-26-FD-RJ45	2x2xAWG26	5	100
2171755	IE-EC-5-M12D-S-10-P-2-26-FD-RJ45	2x2xAWG26	10	200
2171756	IE-EC-5-M12D-S-20-P-2-26-FD-RJ45	2x2xAWG26	20	400

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.
Other lengths and types of connectors are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.

LAPPKABEL
Data communication systems for ETHERNET technology
Industrial Ethernet Patchcord Cat.5/Cat.5e • Industrial Ethernet EC FD - continuous flexing application

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® SILVYN®

NEW

ETHERLINE® EC FD Cat.5e RJ45

Industrial Ethernet EC Patchcord RJ45



Info

- Industrial Ethernet cable
- Suitable for drag chains
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use
- For highly flexible applications
- Automation technology

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Product Make-up

- AWG 26 (19-wire)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PUR
- Colour: green (based on RAL 6018)
- Pre-assembled patchcord with RJ45 connectors

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: 4 x outer diameter

Protection rating
RJ45 - IP 20

Characteristic impedance
100 Ohm +- 15%

Temperature range
During installation: -30°C to +50°C
Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index kg/1.000 pieces
straight plug RJ45 on straight plug RJ45				
2171764	IE-EC-5-RJ45-0,5-P-2-26-FD-RJ45	2x2xAWG26	0.5	10
2171765	IE-EC-5-RJ45-1-P-2-26-FD-RJ45	2x2xAWG26	1	20
2171766	IE-EC-5-RJ45-2-P-2-26-FD-RJ45	2x2xAWG26	2	40
2171767	IE-EC-5-RJ45-3-P-2-26-FD-RJ45	2x2xAWG26	3	60
2171768	IE-EC-5-RJ45-5-P-2-26-FD-RJ45	2x2xAWG26	5	100
2171769	IE-EC-5-RJ45-10-P-2-26-FD-RJ45	2x2xAWG26	10	200
2171770	IE-EC-5-RJ45-20-P-2-26-FD-RJ45	2x2xAWG26	20	400
straight plug RJ45 on free conductor end				
2171771	IE-EC-5-RJ45-0,5-P-2-26-FD-OE	2x2xAWG26	0.5	10
2171772	IE-EC-5-RJ45-1-P-2-26-FD-OE	2x2xAWG26	1	20
2171773	IE-EC-5-RJ45-2-P-2-26-FD-OE	2x2xAWG26	2	40
2171774	IE-EC-5-RJ45-3-P-2-26-FD-OE	2x2xAWG26	3	60
2171775	IE-EC-5-RJ45-5-P-2-26-FD-OE	2x2xAWG26	5	100
2171776	IE-EC-5-RJ45-10-P-2-26-FD-OE	2x2xAWG26	10	200
2171777	IE-EC-5-RJ45-20-P-2-26-FD-OE	2x2xAWG26	20	400

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.
Other lengths and types of connectors are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.

NEW

ETHERLINE® EC FD Cat.5e M12F



Info

- Industrial Ethernet cable
- Suitable for drag chains
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use
- For highly flexible applications
- Automation technology

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Product Make-up

- AWG 26 (19-wire)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PUR
- Colour: green (based on RAL 6018)
- Pre-assembled patchcords with M12 socket, D-coded
- 4 pole M12 connector with vibration protection

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: 4 x outer diameter

Protection rating
M12 - IP 67 / IP 69

Characteristic impedance
100 Ohm +- 15%

Temperature range
During installation: -30°C to +50°C
Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index kg/1.000 pieces
straight socket M12 on straight plug M12				
2171736	IE-EC-5-M12DF-S-0,5-P-2-26-FD-M12D-S	2x2xAWG26	0.5	10
2171737	IE-EC-5-M12DF-S-1-P-2-26-FD-M12D-S	2x2xAWG26	1	20
2171738	IE-EC-5-M12DF-S-2-P-2-26-FD-M12D-S	2x2xAWG26	2	40
2171739	IE-EC-5-M12DF-S-3-P-2-26-FD-M12D-S	2x2xAWG26	3	60
2171740	IE-EC-5-M12DF-S-5-P-2-26-FD-M12D-S	2x2xAWG26	5	100
2171741	IE-EC-5-M12DF-S-10-P-2-26-FD-M12D-S	2x2xAWG26	10	200
2171742	IE-EC-5-M12DF-S-20-P-2-26-FD-M12D-S	2x2xAWG26	20	400
straight socket M12 on angled plug M12				
2171743	IE-EC-5-M12DF-S-0,5-P-2-26-FD-M12D-A	2x2xAWG26	0.5	10
2171744	IE-EC-5-M12DF-S-1-P-2-26-FD-M12D-A	2x2xAWG26	1	20
2171745	IE-EC-5-M12DF-S-2-P-2-26-FD-M12D-A	2x2xAWG26	2	40
2171746	IE-EC-5-M12DF-S-3-P-2-26-FD-M12D-A	2x2xAWG26	3	60
2171747	IE-EC-5-M12DF-S-5-P-2-26-FD-M12D-A	2x2xAWG26	5	100
2171748	IE-EC-5-M12DF-S-10-P-2-26-FD-M12D-A	2x2xAWG26	10	200
2171749	IE-EC-5-M12DF-S-20-P-2-26-FD-M12D-A	2x2xAWG26	20	400
straight socket M12 on straight socket M12				
2171915	IE-EC-5-M12DF-S-0,5-P-2-26-FD-M12DF-S	2x2xAWG26	0.5	10
2171916	IE-EC-5-M12DF-S-1-P-2-26-FD-M12DF-S	2x2xAWG26	1	20
2171917	IE-EC-5-M12DF-S-2-P-2-26-FD-M12DF-S	2x2xAWG26	2	40
2171918	IE-EC-5-M12DF-S-3-P-2-26-FD-M12DF-S	2x2xAWG26	3	60
2171919	IE-EC-5-M12DF-S-5-P-2-26-FD-M12DF-S	2x2xAWG26	5	100
2171920	IE-EC-5-M12DF-S-10-P-2-26-FD-M12DF-S	2x2xAWG26	10	200
2171921	IE-EC-5-M12DF-S-20-P-2-26-FD-M12DF-S	2x2xAWG26	20	400

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.
Other lengths and types of connectors are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.

ETHERLINE® PN FD Cat.5 M12

PROFINET Patchcord M12



Info

- For PROFINET applications (D-coded)
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- For directly connecting two electric components
- Non-permanent connections allow for easy change of equipment
- CAT.5-Performance

Application range

- For PROFINET applications type C
- Highly flexible application
- 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, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Norm references / Approvals

- The cable is UL/CSA-certified (CMX)
- UL File Number: E249137

Product Make-up

- Extra-fine wire, tinned braided conductor
- Star quad
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PUR
- Colour: green (based on RAL 6018)
- Pre-assembled patchcords with M12 D-coded connectors
- 4 pole M12 connector with vibration protection

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

Protection rating
IP 67/IP 69

Characteristic impedance
100 Ohm +- 15%

Temperature range
Flexing: -20°C to +60°C
Fixed installation: -30°C to +70°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index kg/1.000 pieces
straight plug M12 on straight plug M12				
2171049	IE-PNC-5-M12D-S-1-P-2-22-FD-M12D-S	2x2xAWG22	1	31.3
2171050	IE-PNC-5-M12D-S-2-P-2-22-FD-M12D-S	2x2xAWG22	2	62.6
2171051	IE-PNC-5-M12D-S-3-P-2-22-FD-M12D-S	2x2xAWG22	3	93.9
2171052	IE-PNC-5-M12D-S-5-P-2-22-FD-M12D-S	2x2xAWG22	5	156.5
2171053	IE-PNC-5-M12D-S-10-P-2-22-FD-M12D-S	2x2xAWG22	10	313
2171054	IE-PNC-5-M12D-S-20-P-2-22-FD-M12D-S	2x2xAWG22	20	626
angled plug M12 on straight plug M12				
2171061	IE-PNC-5-M12D-A-1-P-2-22-FD-M12D-S	2x2xAWG22	1	31.3
2171062	IE-PNC-5-M12D-A-2-P-2-22-FD-M12D-S	2x2xAWG22	2	62.6
2171063	IE-PNC-5-M12D-A-3-P-2-22-FD-M12D-S	2x2xAWG22	3	93.9
2171064	IE-PNC-5-M12D-A-5-P-2-22-FD-M12D-S	2x2xAWG22	5	156.5
2171065	IE-PNC-5-M12D-A-10-P-2-22-FD-M12D-S	2x2xAWG22	10	313
2171066	IE-PNC-5-M12D-A-20-P-2-22-FD-M12D-S	2x2xAWG22	20	626
straight plug M12 on free conductor end				
2171055	IE-PNC-5-M12D-S-1-P-2-22-FD-OE	2x2xAWG22	1	31.3
2171056	IE-PNC-5-M12D-S-2-P-2-22-FD-OE	2x2xAWG22	2	62.6
2171057	IE-PNC-5-M12D-S-3-P-2-22-FD-OE	2x2xAWG22	3	93.9
2171058	IE-PNC-5-M12D-S-5-P-2-22-FD-OE	2x2xAWG22	5	156.5
2171059	IE-PNC-5-M12D-S-10-P-2-22-FD-OE	2x2xAWG22	10	313
2171060	IE-PNC-5-M12D-S-20-P-2-22-FD-OE	2x2xAWG22	20	626
angled plug M12 on free conductor end				
2171067	IE-PNC-5-M12D-A-1-P-2-22-FD-OE	2x2xAWG22	1	31.3
2171068	IE-PNC-5-M12D-A-2-P-2-22-FD-OE	2x2xAWG22	2	62.6
2171069	IE-PNC-5-M12D-A-3-P-2-22-FD-OE	2x2xAWG22	3	93.9
2171070	IE-PNC-5-M12D-A-5-P-2-22-FD-OE	2x2xAWG22	5	156.5
2171071	IE-PNC-5-M12D-A-10-P-2-22-FD-OE	2x2xAWG22	10	313
2171072	IE-PNC-5-M12D-A-20-P-2-22-FD-OE	2x2xAWG22	20	626

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.
Other lengths and types of connectors are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® DATA PN AX RJ45 refer to main catalogue
- EPIC® DATA PN 90 RJ45 refer to main catalogue

NEW

ETHERLINE® PN FD Cat.5 M12-RJ45

PROFINET Patchcord M12/RJ45



Info

- For PROFINET applications
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- For PROFINET applications type C
- Highly flexible application
- 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, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Norm references / Approvals

- The cable is UL/CSA-certified (CMG)

Product Make-up

- Flexible fine-wire copper conductor
- Star quad
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PUR
- Colour: green (based on RAL 6018)
- Pre-assembled patchcords with D-coded M12 connector and RJ45-connector
- 4 pole M12 connector with vibration protection

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

Protection rating
M12 - IP 67 / IP 69
RJ45 - IP 20

Characteristic impedance
100 Ohm +- 15%

Temperature range
Flexing: -20°C to +60°C
Fixed installation: -30°C to +70°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index kg/1.000 pieces
straight plug M12 on straight plug RJ45				
2171264	IE-PNC-5-M12D-S-0,5-P-2-22-FD-RJ45	2x2xAWG22	0.5	15.65
2171265	IE-PNC-5-M12D-S-1-P-2-22-FD-RJ45	2x2xAWG22	1	31.3
2171266	IE-PNC-5-M12D-S-2-P-2-22-FD-RJ45	2x2xAWG22	2	62.6
2171267	IE-PNC-5-M12D-S-3-P-2-22-FD-RJ45	2x2xAWG22	3	93.9
2171268	IE-PNC-5-M12D-S-5-P-2-22-FD-RJ45	2x2xAWG22	5	156.5
2171269	IE-PNC-5-M12D-S-10-P-2-22-FD-RJ45	2x2xAWG22	10	313
2171270	IE-PNC-5-M12D-S-20-P-2-22-FD-RJ45	2x2xAWG22	20	626
angled plug M12 on straight plug RJ45				
2171271	IE-PNC-5-M12D-A-0,5-P-2-22-FD-RJ45	2x2xAWG22	0.5	15.65
2171272	IE-PNC-5-M12D-A-1-P-2-22-FD-RJ45	2x2xAWG22	1	31.3
2171273	IE-PNC-5-M12D-A-2-P-2-22-FD-RJ45	2x2xAWG22	2	62.6
2171274	IE-PNC-5-M12D-A-3-P-2-22-FD-RJ45	2x2xAWG22	3	93.9
2171275	IE-PNC-5-M12D-A-5-P-2-22-FD-RJ45	2x2xAWG22	5	156.5
2171276	IE-PNC-5-M12D-A-10-P-2-22-FD-RJ45	2x2xAWG22	10	313
2171277	IE-PNC-5-M12D-A-20-P-2-22-FD-RJ45	2x2xAWG22	20	626

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.
Other lengths and types of connectors are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.

LAPPKABEL
Data communication systems for ETHERNET technology
Industrial Ethernet Patchcord Cat.5/Cat.5e • PROFINET Type C - continuous flexing application

ÖLFLEX® UNITRONIC® ETHERLINE® HITRONIC® SILVYN®

NEW

ETHERLINE® PN FD Cat.5 RJ45

PROFINET Patchcord RJ45



Info

- For PROFINET applications
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- For PROFINET applications type C
- Highly flexible application
- 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, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Norm references / Approvals

- The cable is UL/CSA-certified (CMG)

Product Make-up

- Flexible fine-wire copper conductor
- Star quad
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PUR
- Colour: green (based on RAL 6018)
- Pre-assembled patchcord with RJ45 connectors

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

Protection rating
RJ45 - IP 20

Characteristic impedance
100 Ohm +- 15%

Temperature range
During installation: -20°C to +60°C
Fixed installation: -30°C to +70°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index kg/1.000 pieces
straight plug RJ45 on straight plug RJ45				
2171278	IE-PNC-5-RJ45-0,5-P-2-22-FD-RJ45	2x2xAWG22	0.5	15.65
2171279	IE-PNC-5-RJ45-1-P-2-22-FD-RJ45	2x2xAWG22	1	31.3
2171280	IE-PNC-5-RJ45-2-P-2-22-FD-RJ45	2x2xAWG22	2	62.6
2171281	IE-PNC-5-RJ45-3-P-2-22-FD-RJ45	2x2xAWG22	3	93.9
2171282	IE-PNC-5-RJ45-5-P-2-22-FD-RJ45	2x2xAWG22	5	156.5
2171283	IE-PNC-5-RJ45-10-P-2-22-FD-RJ45	2x2xAWG22	10	313
2171284	IE-PNC-5-RJ45-20-P-2-22-FD-RJ45	2x2xAWG22	20	626
straight plug RJ45 on free conductor end				
2171285	IE-PNC-5-RJ45-0,5-P-2-22-FD-OE	2x2xAWG22	0.5	15.65
2171286	IE-PNC-5-RJ45-1-P-2-22-FD-OE	2x2xAWG22	1	31.3
2171287	IE-PNC-5-RJ45-2-P-2-22-FD-OE	2x2xAWG22	2	62.6
2171288	IE-PNC-5-RJ45-3-P-2-22-FD-OE	2x2xAWG22	3	93.9
2171289	IE-PNC-5-RJ45-5-P-2-22-FD-OE	2x2xAWG22	5	156.5
2171290	IE-PNC-5-RJ45-10-P-2-22-FD-OE	2x2xAWG22	10	313
2171291	IE-PNC-5-RJ45-20-P-2-22-FD-OE	2x2xAWG22	20	626

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.
Other lengths and types of connectors are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.
For detailed technical information please refer to the data sheet

Accessories

- EPIC® DATA PN AX RJ45 refer to main catalogue
- EPIC® DATA PN 90 RJ45 refer to main catalogue

HITRONIC®

Optical transmission systems

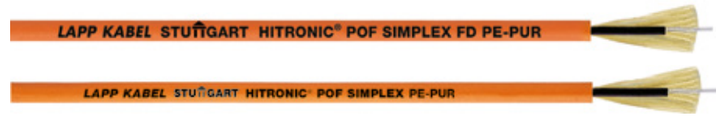


HITRONIC® fibre optic cables make transmitting large data volumes easy: fault free, bug proof and at almost light speed. Even electromagnetic radiation does not interfere with the transmission. The HITRONIC® range includes the ideal solution for indoor or outdoor use, for demanding conditions, and even 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

Info
- J-V2Y(ZN)11Y 1P 980/1000
- Simplex POF cable with strain relief and PUR outer sheath
- FD - Highly flexible (power chains)



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 5.0 Class-ID: EC000034
ETIM 5.0 Class-Description: Fibre optic cable

Optical fibre type
Core material: PMMA
Cladding material: fluoropolymers

Permissible bending radius
≥ 10 x 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
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories
- POF Assembly Sets refer to main catalogue
- POF Cutting Tools refer to main catalogue
- POF Connector F-SMA and ST(BFOC) refer to main catalogue
- STAR STRIP stripping tool refer to main catalogue
- SMART STRIP stripping tool refer to main catalogue

HITRONIC® POF DUPLEX CABLE



Info

- J-V2Y(ZN)11Y 2P 980/1000
- Duplex plastic fibre optic cable with strain relief and PUR outer sheath
- FD - Highly flexible (power chains)

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 5.0 Class-ID: EC000034
ETIM 5.0 Class-Description: Fibre optic cable

Optical fibre type
Core material: PMMA
Cladding material: fluoropolymers

Permissible bending radius
≥ 10 x 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

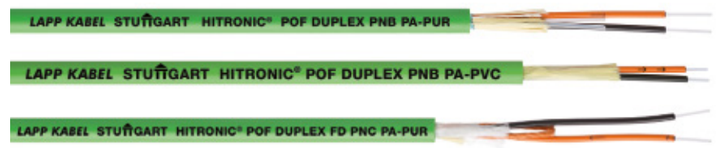
Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- POF Assembly Sets refer to main catalogue
- POF Cutting Tools refer to main catalogue
- POF Connector F-SMA and ST(BFOC) refer to main catalogue
- POF Connector SC-RJ refer to main catalogue
- STAR STRIP stripping tool refer to main catalogue

NEW

HITRONIC® POF cables for PROFINET Applications



Info

- PROFINET compliant - Type B or Type C
- J-V4Y(ZN)11Y 2P980/1000
  J-V4Y(ZN)Y 2P980/1000
  J-V4Y(ZN)11Y 2P980/1000 flex

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 5.0 Class-ID: EC000034
ETIM 5.0 Class-Description: Fibre optic cable

Dimensions
Buffered fibre: 2.2mm
Cable: see table

Core identification code
Black, orange (with arrow printing)

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

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
Lapp Kabel is a member of the PROFIBUS user organisation (PNO)
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- POF Assembly Sets refer to main catalogue
- POF Cutting Tools refer to main catalogue
- POF Connector F-SMA and ST(BFOC) refer to main catalogue
- POF Connector SC-RJ refer to main catalogue
- EPIC® DATA PB Sub-D FO refer to main catalogue
- STAR STRIP stripping tool refer to main catalogue

HITRONIC® PCF DUPLEX FD cables



Info

- A/J-V(ZN)H11Y
- 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: 2.2mm
- Aramid yarns as strain relief
- PUR outer sheath
- Colour: orange (RAL 2003)

Technical data

Classification
ETIM 5.0 Class-ID: EC000034
ETIM 5.0 Class-Description:
Fibre optic cable

Minimum bending radius
Static: ≥ 15 x outer diameter
Dynamic: ≥ 20 x outer diameter

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 are not to scale and do not represent detailed images of the respective products.

Accessories

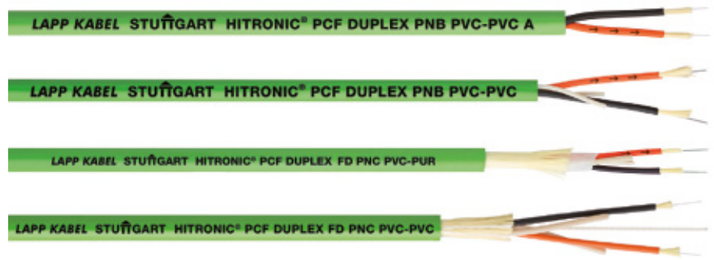
- PCF Assembly Sets refer to main catalogue
- PCF Connector HFBR refer to main catalogue
- PCF Connector F-SMA and ST(BFOC) refer to main catalogue
- PCF Cutting Tools refer to main catalogue
- PCF Connector SC-RJ refer to main catalogue
- STAR STRIP stripping tool refer to main catalogue

NEW

HITRONIC® PCF cables for PROFINET Applications

Info

- PROFINET compliant
  - Type B or Type C
- J-V(ZN)YY 2K200/230
  J-V(ZN)Y(ZN)11Y 2K200/230 flex
  J-V(ZN)Y(ZN)Y 2K200/230 flex



Benefits

- Optical data transmisson up to 500m
- 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: 2.2mm
- Aramid yarns as strain relief
- Outer sheath material PUR or PVC
  (see article description)
- Outer sheath colour: green (RAL 6018)

Technical data

Classification
ETIM 5.0 Class-ID: EC000034
ETIM 5.0 Class-Description:
Fibre optic cable

Dimensions
Sub cable outer diameter: 2.2mm
Cable: see table

Core identification code
Black, orange (with arrow printing)

Minimum bending radius
see data sheet

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

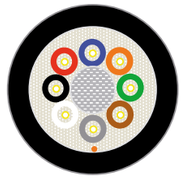
Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Lapp Kabel is a member of the PROFIBUS user organisation (PNO)
The cables can also be supplied as pre-terminated fibre optic trunks.
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- PCF Assembly Sets refer to main catalogue
- PCF Connector F-SMA and ST(BFOC) refer to main catalogue
- PCF Cutting Tools refer to main catalogue
- PCF Connector SC-RJ refer to main catalogue
- EPIC® DATA PB Sub-D FO refer to main catalogue
- STAR STRIP stripping tool refer to main catalogue

HITRONIC® HRM-FD Cable





Info

- A/J-V(ZN)H(ZN)11Y
- Flexible breakout cable designed for use in power chain applications

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 5.0 Class-ID: EC000034
ETIM 5.0 Class-Description:
Fibre optic cable

Optical fibre type
Core material: glass
Cladding material: glass

Permissible bending radius
Static: ≥ 15 x outer diameter
Dynamic: ≥ 20 x 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

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The cables can also be supplied as pre-terminated fibre optic trunks.
Photographs are not to scale and do not represent detailed images of the respective products.



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

Product Make-up
- PVC-insulated steel spring wire
- Soft PVC outer sheath

Note
- PU = 50 m (on request)

Technical data

Classification
ETIM 5.0 Class-ID: EC001177
ETIM 5.0 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	7.0 x 10.0	8	10 x 1,0	12 x 1,5	7	25
61711590	14	10.0 x 14.0	10	12 x 1,5	16 x 1,5	9	25
61711630	17	13.0 x 17.0	13	16 x 1,5	20 x 1,5	11	25
61711670	19	15.0 x 19.0	15			13,5	25
61711710	21	16.0 x 21.0	17	20 x 1,5	25 x 1,5	16	25
61711750	27	22.0 x 27.0	20	25 x 1,5	32 x 1,5	21	25
61711790	36	29.0 x 36.0	25	32 x 1,5	40 x 1,5	29	25
61711830	45	38.0 x 45.0	36	40 x 1,5	50 x 1,5	36	25
61711910	56	48.0 x 56.0	40	50 x 1,5	63 x 1,5	48	25
SILVYN® FPS 10M							
61721690	10	7.0 x 10.0	8	10 x 1,0	12 x 1,5	7	10
61721700	14	10.0 x 14.0	10	12 x 1,5	16 x 1,5	9	10
61721710	17	13.0 x 17.0	13	16 x 1,5	20 x 1,5	11	10
61721720	19	15.0 x 19.0	15			13,5	10
61721730	21	16.0 x 21.0	17	20 x 1,5	25 x 1,5	16	10
61721740	27	22.0 x 27.0	20	25 x 1,5	32 x 1,5	21	10
61721750	36	29.0 x 36.0	25	32 x 1,5	40 x 1,5	29	10
61721760	45	38.0 x 45.0	36	40 x 1,5	50 x 1,5	36	10
61721780	56	48.0 x 56.0	40	50 x 1,5	63 x 1,5	48	10

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products
- SILVYN® FD-PU refer to page 363

Accessories
- SILVYN® MSK-M EE refer to main catalogue
- SILVYN® US-M refer to main catalogue
- SILVYN® LKI-M refer to main catalogue
- SILVYN® US refer to main catalogue
- SILVYN® USK-M refer to main catalogue
- SILVYN® LKI refer to main catalogue
- SILVYN® EE-K refer to main catalogue

NEW

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 5.0 Class-ID: EC001177
ETIM 5.0 Class-Description:
Protective plastic hose

Material
insulated spring steel wire with Soft PVC and galvanized steel braid

Temperature range
-25°C to +80°C
Short-term: up to +100°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	9.0 x 14.0	16	16 x 1,5	16 x 1,5	9	50
61802331	17	12.0 x 17.0	19	20 x 1,5	20 x 1,5	11	50
61802332	19	14.0 x 19.0	22			13,5	50
61802333	21	15.0 x 21.0	24	25 x 1,5	20 x 1,5	16	50
61802334	27	20.0 x 27.0	30	32 x 1,5	25 x 1,5	21	50
61802335	36	28.0 x 36.0	40	40 x 1,5	32 x 1,5	29	25
61802336	45	37.0 x 45.0	48	50 x 1,5	40 x 1,5	36	25
61802337	56	48.0 x 56.0	60	63 x 1,5	50 x 1,5	48	25

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- SILVYN® FPS refer to page 361
- SILVYN® FD-PU refer to page 363
- SILVYN® EDU-AS refer to main catalogue

Accessories

- SILVYN® MSK-M US refer to main catalogue
- SILVYN® US-M refer to main catalogue
- SILVYN® US refer to main catalogue

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 5.0 Class-ID: EC001177
ETIM 5.0 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	7.0 x 10.0	8	10 x 1,0	12 x 1,5	7	10
64453670	14	10.0 x 14.0	10	12 x 1,5	16 x 1,5	9	10
64453680	17	13.0 x 17.0	13	16 x 1,5	20 x 1,5	11	10
64453690	19	15.0 x 19.0	15			13,5	10
64453700	21	16.0 x 21.0	17	20 x 1,5	25 x 1,5	16	10
64453710	27	22.0 x 27.0	20	25 x 1,5	32 x 1,5	21	10
64453720	36	29.0 x 36.0	25	32 x 1,5	40 x 1,5	29	10
64453730	45	38.0 x 45.0	36	40 x 1,5	50 x 1,5	36	10
64453750	56	48.0 x 56.0	40	50 x 1,5	63 x 1,5	48	10

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- SILVYN® MSK-M EE refer to main catalogue
- SILVYN® US-M refer to main catalogue
- SILVYN® LKI-M refer to main catalogue
- SILVYN® US refer to main catalogue
- SILVYN® USK-M refer to main catalogue
- SILVYN® LKI refer to main catalogue
- SILVYN® EE-K refer to main catalogue

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 5.0 Class-ID: EC001175
ETIM 5.0 Class-Description:
Corrugated plastic hose

Certifications
IEC EN 61386-23
UL File No. E308201
DNV, Lloyd's Register
Rail:
DB DIN 5510 Part 2 (S4/SR2/ST2)
EN 45545-2 (HL-2) - only in black colour
SNCF NFF16 101 / 102 (I3/F2 - I4/F1)
UNDERGROUND BS 6853

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 x 10.0	13	10 x 1,5	7/-	12 x 1,5/7	50
61815110	13	10.0 x 13.0	15	12 x 1,5/16 x 1,5	9	16x1,5/9	50
61815120	16	12.0 x 15.8	22	16 x 1,5/20 x 1,5	11	20x1,5/11	50
61815180	18	14.3 x 18.5	27		13,5	-/13,5	50
61815130	21	16.5 x 21.2	35	20 x 1,5	16	25x1,5/16	50
61815140	28	23.0 x 28.5	45	25 x 1,5	21	32x1,5/21	50
61815150	34	29.0 x 34.5	50	32 x 1,5	29	40x1,5/29	25
61815160	42	36.0 x 42.5	80	40 x 1,5	36	50x1,5/36	25
61815170	54	48.0 x 54.5	100	50 x 1,5	48	63x1,5/48	25
SILVYN® RILL PA 12 black							
61815105	10	6.5 x 10.0	13	10 x 1,5	7/-	12 x 1,5/7	50
61815115	13	10.0 x 13.0	15	12 x 1,5/16 x 1,5	9	16x1,5/9	50
61815125	16	12.0 x 15.8	22	16 x 1,5/20 x 1,5	11	20x1,5/11	50
61815185	18	14.3 x 18.5	27		13,5	-/13,5	50
61815135	21	16.5 x 21.2	35	20 x 1,5	16	25x1,5/16	50
61815145	28	23.0 x 28.5	45	25 x 1,5	21	32x1,5/21	50
61815155	34	29.0 x 34.5	50	32 x 1,5	29	40x1,5/29	25
61815165	42	36.0 x 42.5	80	40 x 1,5	36	50x1,5/36	25
61815175	54	48.0 x 54.5	100	50 x 1,5	48	63x1,5/48	25

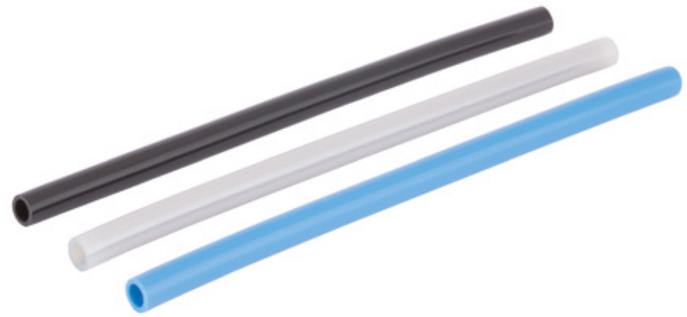
Photographs are not to scale and do not represent detailed images of the respective products.

Similar products
- SILVYN® FPAS refer to main catalogue
- SILVYN® RILL PA 6 refer to main catalogue

Accessories
- SILVYN® KLICK-M refer to main catalogue
- SILVYN® KLICK 90° M refer to main catalogue
- SILVYN® KLICK GPZ-M refer to main catalogue
- SILVYN® KSE refer to main catalogue
- SILVYN® KLICK PG refer to main catalogue
- SILVYN® KLICK 90° PG refer to main catalogue
- SILVYN® KLICK-GPZ refer to main catalogue
- SILVYN® KLICK-Y refer to main catalogue
- SILVYN® KLICK-RH refer to main catalogue
- SILVYN® K-EM refer to main catalogue

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 - blue				
61713200	2.1 x 3.0	9	blue	50
61713203	2.6 x 4.0	11	blue	50
61713206	4.0 x 6.0	16	blue	50
61713224	5.7 x 8.0	24	blue	50
61713212	7.0 x 10.0	28	blue	50
61713215	8.0 x 12.0	33	blue	50
61713218	9.8 x 14.0	45	blue	50
61713221	11.0 x 16.0	45	blue	50
PUN - black				
61713202	2.1 x 3.0	9	black	50
61713205	2.6 x 4.0	11	black	50
61713208	4.0 x 6.0	16	black	50
61713226	5.7 x 8.0	24	black	50
61713214	7.0 x 10.0	28	black	50
61713217	8.0 x 12.0	33	black	50
61713220	9.8 x 14.0	45	black	50
61713223	11.0 x 16.0	45	black	50
PUN - silver				
61713201	2.1 x 3.0	9	silver	50
61713204	2.6 x 4.0	11	silver	50
61713207	4.0 x 6.0	16	silver	50
61713225	5.7 x 8.0	24	silver	50
61713213	7.0 x 10.0	28	silver	50
61713216	8.0 x 12.0	33	silver	50
61713219	9.8 x 14.0	45	silver	50
61713222	11.0 x 16.0	45	silver	50

* Trade product, no Lapp product
Photographs are not to scale and do not represent detailed images of the respective products.

A2 · Selection tables

Usage criteria	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- green or orange	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	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
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 indoor application, flexing	✔	✔	✔	✔	✔		✔		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
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 (for continuous flexing)																														
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		✔	✔	✔	✔																									✔
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 10 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			✔	✔		✔	✔	✔													✔	✔	✔				✔	✔	✔	✔
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

Usage criteria	ÖLFLEX® ROBOT 900 P	ÖLFLEX® ROBOT 900 DP	ÖLFLEX® ROBOT F1	ÖLFLEX® CRANE NSHTÖU	ÖLFLEX® CRANE PUR	UNITRONIC® FD	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 Cat.6$_A$ Y	ETHERLINE® TORSION Cat.5	ETHERLINE® TORSION Cat.6$_A$ P	ETHERLINE® FD Cat.6$_A$ P	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 indoor application, flexing	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
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 (for continuous flexing)																															
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 10 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

Notices

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Safety

Without exception, our products are tested for application safety in accordance with defined standards and our own regulations, which complement the standards. Relevant legal requirements and safety regulations are also observed. Provided due care and attention is paid, the possibility of product-specific danger to the user may thus reasonably be excluded. Where products are used carelessly or incorrectly, however, considerable danger to persons and the environment may arise. For this reason, our cables must only be processed and/or used responsibly by trained electricians or specialists. This catalogue contains general information for the application of each product. Independent of such information, the application standards DIN VDE 0298 and DIN VDE 0891 for cables will apply. Excerpts from these standards, as well as complementary selection and application tables, design and installation guidelines, are contained in the tables in the appendix to this catalogue. Our machines and installation tools are – where necessary – designed in accordance with the machine guidelines and display the CE identification mark. It must be noted, however, that our machines and installation tools must only be used by trained specialist personnel and for the purpose for which they were designed.

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