

# THE WORLD OF LAPP

Food & Beverage



**LAPP GROUP**



# Welcome









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## Legend for icons

### Industries

-  Automation
-  e-Mobility
-  Food & Beverage
-  Mechanical and Plant Engineering
-  Oil & Gas
-  Rail
-  Solar Energy
-  Wind Energy

### Product characteristics

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

**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.

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ÖLFLEX®  
Power and  
control cables



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UNITRONIC®  
Data communication  
systems



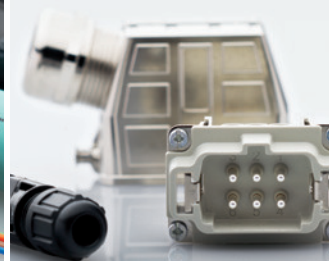
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Data communication  
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## Brand quality from Stuttgart



### 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.



### EPIC® Industrial connectors

EPIC® industrial connectors can be found everywhere in industrial machinery and plant engineering, for measuring, control and drives. EPIC® is a flexible system of housings, inserts and contacts: all extremely robust, absolutely safe and simplicity itself to assemble.



### 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.



### SKINTOP® Cable glands

Simply feed in the cable and twist. That's it. Our SKINTOP® cable glands provide secure connections in no time. The universal systems are simple but effective. They secure and centre the cable, hermetically seal it and guarantee optimum strain relief.



### 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.



### 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.



### 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.



### FLEXIMARK® Marking systems

The requirement: permanent marking. The solution: FLEXIMARK®. These sophisticated systems mean that a clear overview inside a control cabinet is no longer just a pipe dream. From simple labels for manual marking through to electronic markings, the FLEXIMARK® range is guaranteed to be permanent.

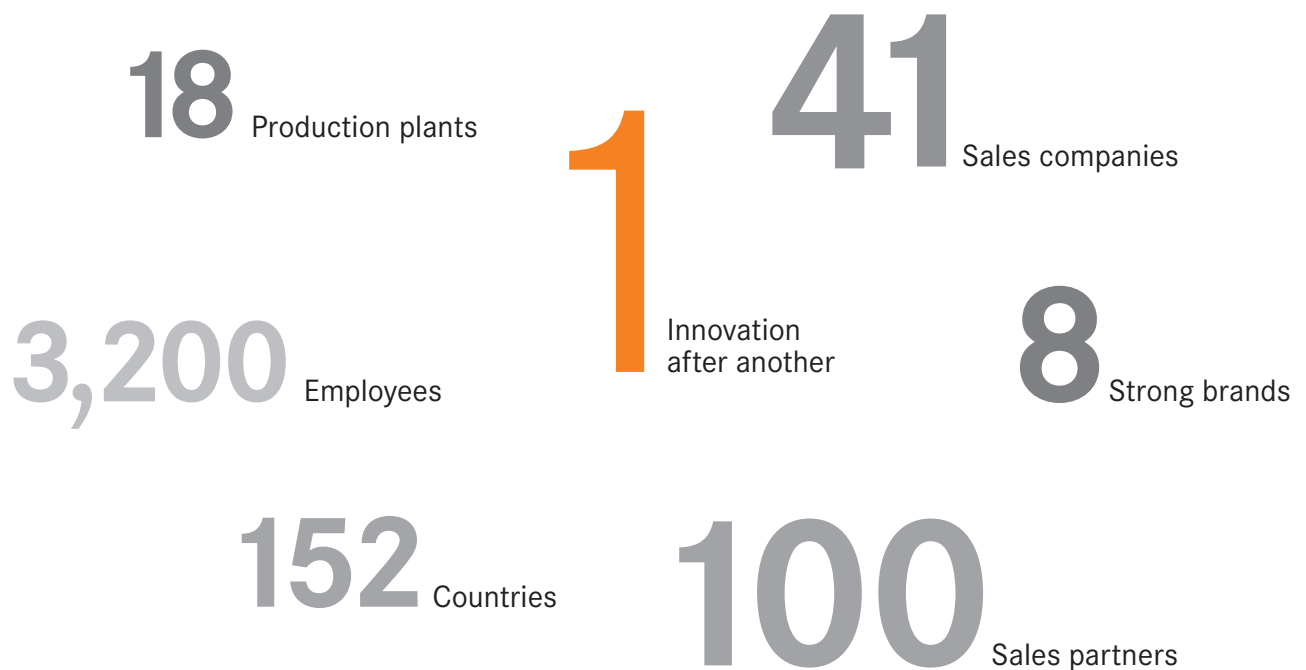
# Reliably connecting the world

We want to help you become even more productive and successful. This is why we work tirelessly on optimising our processes. We do everything to make sure we always find the best solution for you and also provide you with quick, efficient and effective support.

No matter where you are – we are always by your side. Our plants, sales companies, partners and, above all, our competent teams of advisers ensure we offer you a comprehensive service on every continent. We do not simply distribute cable technology, we also

manufacture our products ourselves – which represents another advantage for you. As a manufacturer with 18 of our own production facilities, you will benefit from our expertise in the development, design and manufacture of cables, system products and cable accessories. Thanks to this expertise, we can guarantee that Lapp will provide you with the quality that you require and that you demand.

You can always rely on quality from Lapp – wherever you are in the world. This is also embodied by our strong brands.



As of 01.04.2014



[www.lappgroup.com/worldwide](http://www.lappgroup.com/worldwide)



# Lapp Systems GmbH – your system partner with development expertise

From consultation on system development to production, testing, logistics and aftersales services, Lapp Systems offers you everything from a single source. We are fast, flexible and represented worldwide thanks to our anchoring in the Lapp Group.

## Facts and figures

- Founded in 1983
- 230 employees at 3 production sites
- Certifications:  
ISO TS 16949,  
DIN EN ISO 9001:2008

## Our configurators

Assemble your personalised spiral or charging cable quickly and conveniently.  
[www.lappsystems.de](http://www.lappsystems.de)

## OUR SERVICES

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### System assembly

Individual cable systems and assemblies for industrial applications.

### Power chains

Power chain assembly optimally tailored to and manufactured for your application.

### e-Mobility

Our strengths: charging cables, high-voltage cabling and cable harnesses.

### Spiral cables

We offer tailored solutions as a leading manufacturer of spiral and helical cables.

### Servo cables

Assembled servo cable systems, manufactured from high-quality, in-house branded products.

### Fibre optic cables

Special lengths and individual assemblies ready for immediate installation.





## Lapp solutions for Food & Beverage

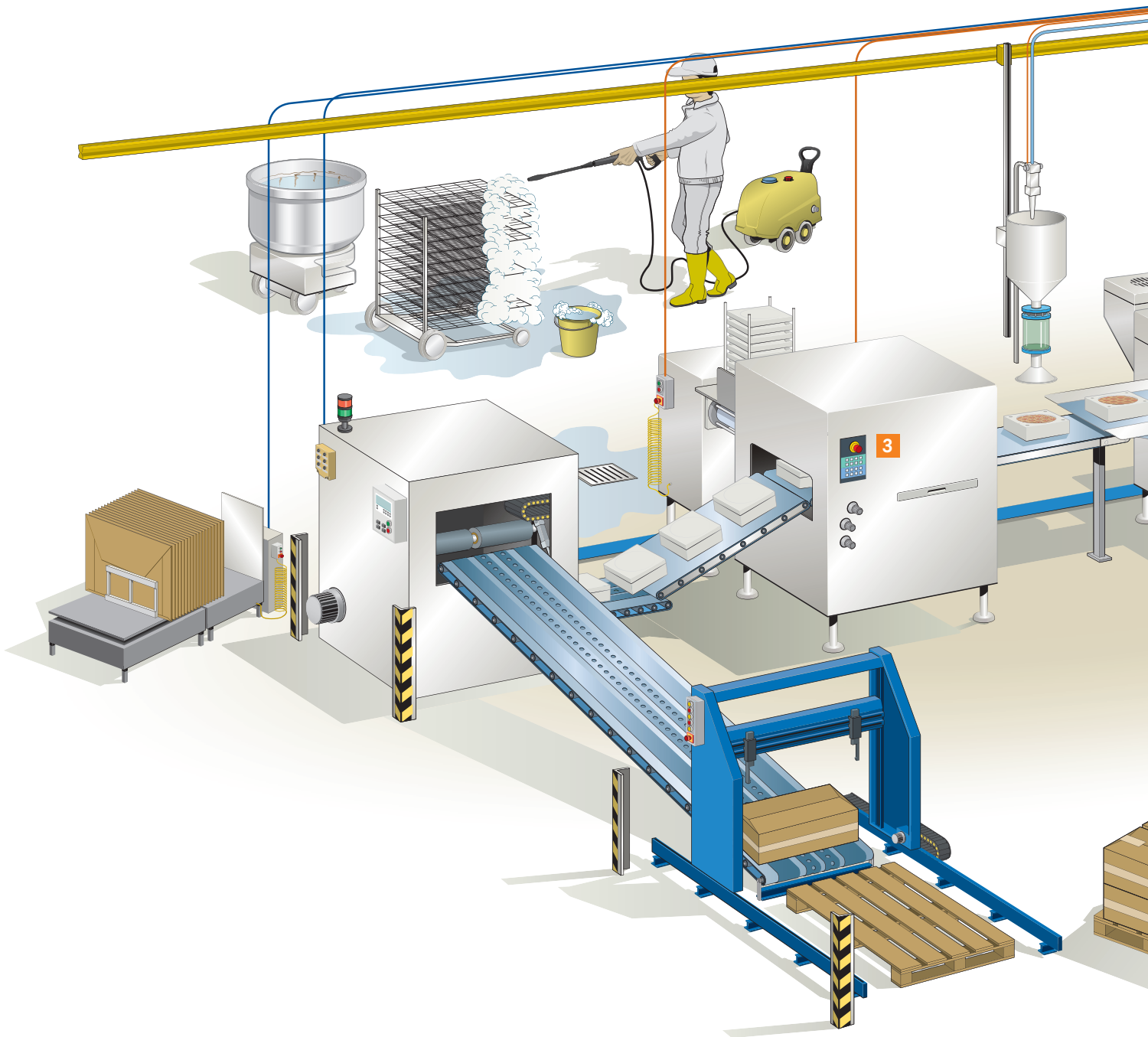
There are few industries which are as multi-faceted and demanding when it comes to the requirements and operating conditions as the food and beverage industry. The strict hygiene and cleanliness requirements that exist in the food processing segment also apply to its machineries and electrical components.

There are complex requirements for cables and accessories in the food and beverage industry, as well as in bottling and food packaging plants. They must be resistant to a whole host of chemical, thermal and physical stresses so that they can fulfil their functions reliably even when used in refrigerated areas and damp environments. Hygiene takes top priority when it comes to food production. As a result, resistance to aggressive industrial cleaning and alkali agents which are commonly used during cleaning processes becomes particularly important.

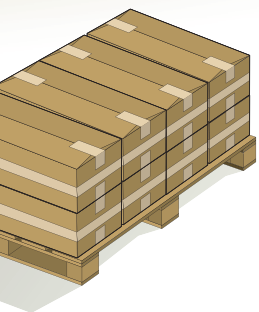
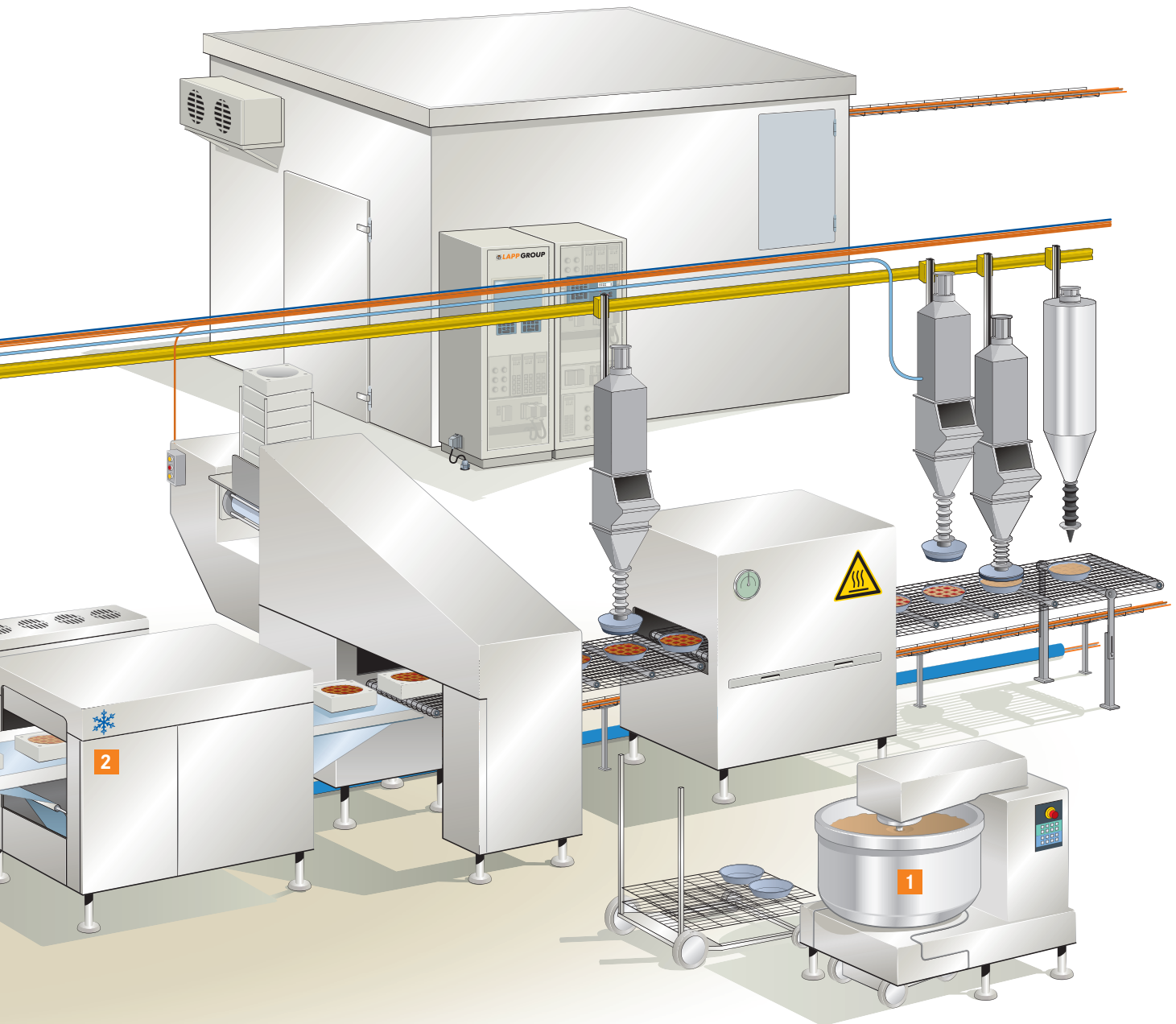
As a long-term partner to the mechanical and plant engineering industry, Lapp has a comprehensive range of standard and specialised products that meet the requirements of the food and beverage industry. Our proven and tested range of products consists of a solution for almost any application. Our in-house laboratory and testing facilities are also an important source of support.

We have been collaborating with many different partners throughout the entire food and beverage industry and are familiar with the specific requirements of this industry. In this way, we can develop a credible solution for each application related to:

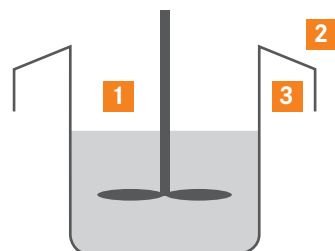
- Dairy processing/dairy technology
- Meat and fish processing
- Baking and confectionery processing
- Bottling plants
- Packaging machines







## Definition of Food & Beverage zones

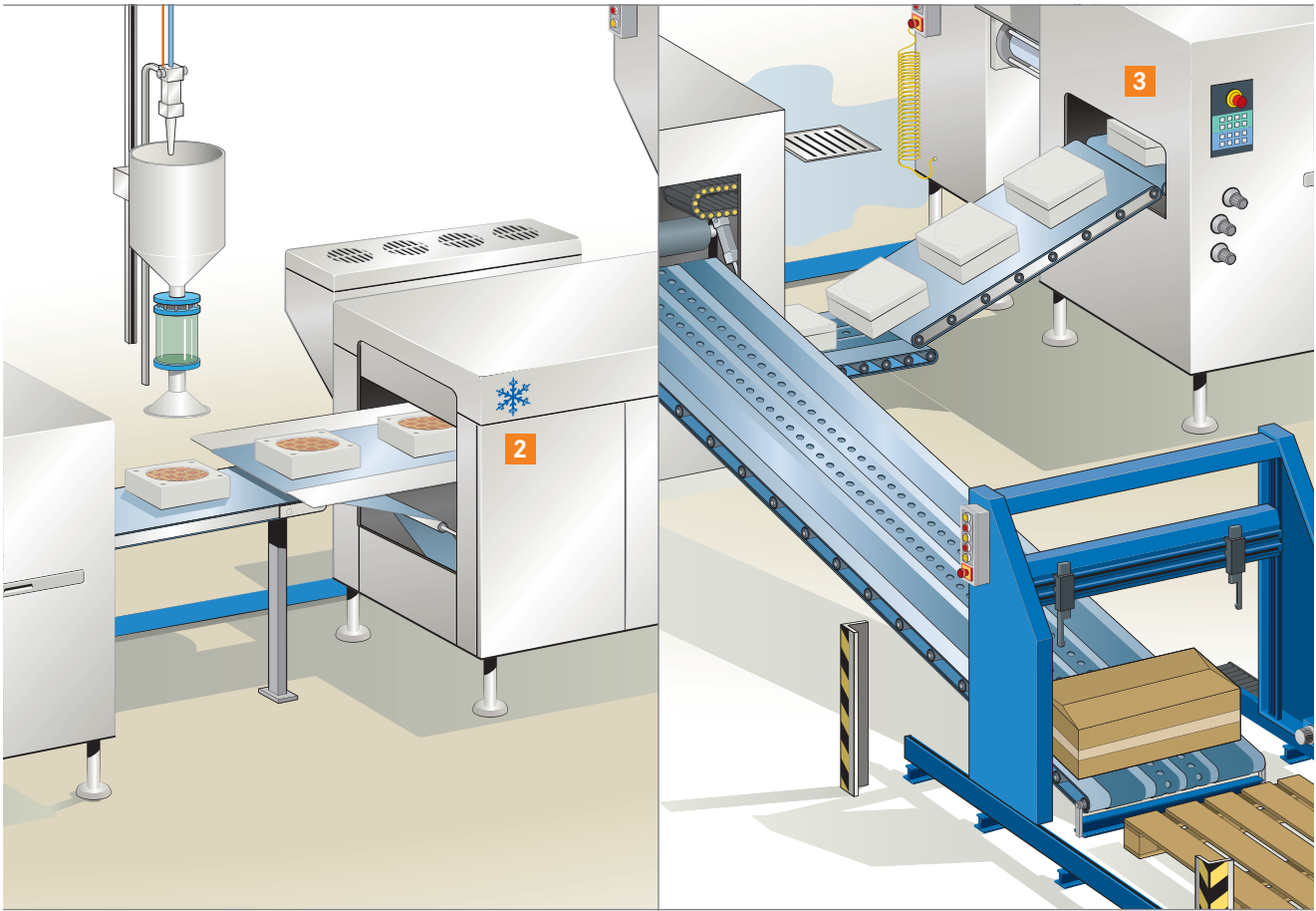


### The 3 zones in Food & Beverage production and machineries

- 1 Hygienic Design Zone**  
Food is in direct contact with equipment and electrical components
- 2 Splash Zone**  
Drips or splashes of food could return to the food manufacturing process, causing contamination
- 3 Non-Product Zone**  
No contact with food

# Definition of Food & Beverage zones

	<p><b>1 Hygienic Design Zone</b></p>
<p><b>Possible Applications</b></p>	<ul style="list-style-type: none"> <li>• For direct and permanent contact with food</li> <li>• Electrical equipment or components will be washed down for maintenance</li> </ul>
<p><b>Product Requirements</b></p>	<ul style="list-style-type: none"> <li>• Hygienic design standards (e. g. EHEDG, DIN EN ISO 14159 or DIN EN 1672-2) should be followed</li> <li>• Recommended to use FDA-approved materials and materials that can withstand cleaning agents (chemicals, acids, alkalis, hot water)</li> <li>• Consider the following requirements: temperature range, chemical resistance, mechanical strength, flexibility</li> </ul>
<p><b>Product Examples</b></p>	<ul style="list-style-type: none"> <li>• ÖLFLEX® ROBUST Series, ÖLFLEX® PUR Series</li> <li>• UNITRONIC® BUS PB ROBUST</li> <li>• ETHERLINE® ROBUST</li> <li>• S/A cable: Hygienic Design for Food &amp; Beverage</li> <li>• SKINTOP® HYGIENIC</li> <li>• SILVYN® HYGIENIC</li> <li>• SILVYN® FG NM or SILVYN® FG</li> <li>• FLEXIMARK® PUR or FLEXIMARK® Stainless Steel FCC</li> <li>• TY-RAP® detectable cable tie</li> </ul>



## 2 Splash Zone

- In or near the food manufacturing process
  - Drips or splashes of food could return to the food manufacturing process, causing contamination
  - Areas that will be washed down
- Assess the risks on the possibility that the food could get back into the manufacturing process
  - Able to withstand cleaning agents (chemicals, acids, alkalis, hot water)
  - Consider the following requirements: temperature range, chemical resistance, mechanical strength, flexibility

- ÖLFLEX® ROBUST Series, ÖLFLEX® PUR Series
- UNITRONIC® BUS PB ROBUST
- ETHERLINE® ROBUST or ETHERLINE® PN
- SKINTOP® INOX and SKINTOP® HYGIENIC
- SKINDICHT® CN-M
- SILVYN® HYGIENIC
- SILVYN® ELT, SILVYN® FG NM or SILVYN® FG
- FLEXIMARK® PUR or FLEXIMARK® Stainless Steel FCC
- TY-RAP® detectable cable tie
- EPIC® ULTRA









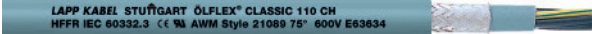


## 3 Non-Product Zone

- No contact with food, e.g. conveyor belt for packaged products

- Select relevant products from the standard Lapp product portfolio
- Consider the following requirements: temperature range, chemical resistance, mechanical strength, flexibility

- ÖLFLEX® CLASSIC 110
- UNITRONIC® BUS PB
- ETHERLINE® P
- SILVYN® RILL PA6
- SILVYN® SPLIT
- SKINTOP® INOX
- SKINTOP® ST-M
- SKINTOP® MS-M
- EPIC® H-B
- Basic Tie
- FLEXIMARK® LCK

# Product overview Food & Beverage

	Cables – Control, Signal	Data Transmission
1 Hygienic Design Zone	<p>Not applicable as such cables are usually not located in Hygienic Design Zones</p>	 <p>S/A cable: Hygienic Design for Food &amp; Beverage</p>
2 Splash Zone	 <p>ÖLFLEX® ROBUST 200</p>  <p>ÖLFLEX® CLASSIC (400 CP, 440)</p>	 <p>ETHERLINE® ROBUST</p>  <p>UNITRONIC® BUS PB</p>  <p>ETHERLINE® PN Cat.5e Y</p>
3 Non-Product Zone	 <p>ÖLFLEX® SERVO FD (796 CP)</p>  <p>ÖLFLEX® HEAT (180 EWKF)</p>  <p>ÖLFLEX® CLASSIC (110, 110 CH)</p>	 <p>ETHERLINE® P (Cat. 5e, 6, 7)</p>  <p>UNITRONIC® PUR CP</p>



Connectors	Cable Glands	Conduits	Marking + Acc.
	 <p>SKINTOP® HYGIENIC</p>	 <p>SILVYN® HYGIENIC</p>  <p>SILVYN® FG</p>  <p>SILVYN® FG NM</p>	 <p>TY-RAP® Detectable cable ties</p>
 <p>EPIC® ULTRA</p>	 <p>SKINDICHT® CN-M</p>  <p>SKINTOP® INOX</p>  <p>SKINTOP® INOX SC</p>	 <p>SILVYN® ELT</p>	 <p>FLEXIMARK® Stainless steel FCC</p>  <p>FLEXIMARK® Cablelabel PUR</p>
 <p>EPIC® H-B</p>  <p>EPIC® LS1 D6</p>  <p>EPIC® LS1 A3</p>	 <p>SKINDICHT® SHV-M-VITON®</p>  <p>SKINTOP® MS-M BRUSH</p>  <p>SKINTOP® MS-M</p>  <p>SKINTOP® CUBE</p>  <p>SKINTOP® CLICK</p>  <p>SKINTOP® COLD</p>	 <p>SILVYN® RILL PA 6</p>  <p>SILVYN® SPLIT</p>  <p>SILVYN® SSUE</p>	 <p>FLEXIMARK® Wrapping labels LCK</p>  <p>Basic Tie cable tie</p>

# Certifications & standards



## EHEDG

The European Hygienic Engineering & Design Group (EHEDG) is a consortium of equipment manufacturers, food industries, research institutes and public health authorities, and was founded in 1989 with the aim of promoting hygiene during the processing and packing of food products.

The principal goal of EHEDG is the promotion of safe food by improving hygienic engineering and design in all aspects of food manufacture.

EHEDG actively supports European legislation, which requires that handling, preparation processing and packaging of food is done hygienically using hygienic machinery and in hygienic premises (EC Directive 2006/42/EC for Machinery, EN 1672-2 and EN ISO 14159 Hygiene requirement).

Aiming to enhance food safety by promoting hygiene in the production and processing of food, EHEDG and the U.S. 3-A Sanitary Standards organisation have many common goals and a similar mission. Both organisations exchange their draft guidelines and standards for expert review and comments before publication.

Our SKINTOP® HYGIENIC had been tested and certified according to Guideline No. 2, Test No. 477/12/12.09.2014 - Type EL CLASS 1 AUX.



## ECOLAB

Ecolab is the global leader in water, hygiene and energy technologies and services. Around the world, businesses in food-service, food processing, hospitality, healthcare, industrial, and oil and gas markets choose Ecolab products and services to keep their environment clean and safe, operate efficiently and achieve sustainability goals.

For the cleaning and sanitising of Food & Beverage Processing equipment, Ecolab

has a complete line of cleaners and EPA-registered sanitisers and disinfectants for clean-in-place(CIP), COP, exterior foam or manual cleaning.

Some of our products had been tested and certified according to their test method F&E/P3-E Nr. 40-1 (based on 9.2014 - REV 2 and REV 3) to ensure that they can withstand the cleaning requirements of our customers.



## FDA - 21 CFR §177 Subpart C

The Food and Drug Administration (FDA) is an agency within the U.S. Department of Health and Human Services, responsible for protecting the public health by assuring the safety, effectiveness, quality and security of human and veterinary drugs, vaccines and other biological products, and medical devices. The FDA is also responsible for the safety and security of most of the USA's food supply, all cosmetics, dietary supplements and products that give off radiation. FDA - 21 CFR §177 Subpart C (Substances for Use Only as Components of Articles Intended for Repeated Use) defines the requirements and lists the materials that are approved for use.

SKINTOP® HYGIENIC, SILVYN® FG, SILVYN® FG NM, and S/A cable: Hygienic Design for Food & Beverage use these approved materials that are allowed to come into direct contact with food.

## 3-A

3-A SSI is an independent, not-for-profit corporation dedicated to advancing hygienic equipment design for the food, beverage and pharmaceutical industries.

## NSF 51

Develops public health standards and certification programmes that help protect the world's food, water, consumer products and environment. Founded in 1944 as the National Sanitation Foundation, the name was changed to NSF International in 1990 as they expanded their services beyond sanitation and into global markets. NSF 51 refer to regulations for plastics, materials and components used in food equipment.

## DIN ISO 14159

Defines the hygiene requirements for the design of machinery

## EN-1672-2

Defines the general guidelines for product design and hygiene requirements for food processing machinery

## EC 2002/72

Relates to plastic materials and articles intended to come into contact with foodstuffs



**ÖLFLEX® ROBUST 200**

Proven all-weather connection cables - resistant against a variety of chemical media

**Info**

- Excellent weather resistance
- Good chemical resistance
- Voltage class 450/750 V



**Benefits**

- Outstanding weather, ozone and UV resistance together with the wide temperature range enable versatile use for both 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
- Agricultural equipment
- For indoor and outdoor use

**Product features**

- Halogen-free materials
- Good chemical resistance to ester-based hydraulic fluids
- Ozone, UV and weather-resistant according to EN 50396 and HD 605 S2
- Flexible down to -40°C
- Colour-coded up to 5 cores

**Norm references / Approvals**

- Based on EN 50525-2-21

**Product Make-up**

- Fine-wire strand made of bare copper wires
- Core insulation made of modified PP
- Cores twisted in layers
- Outer sheath made of special TPE
- Sheath colour: black

**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**  
Fine wire according to VDE 0295, class 5/IEC 60228 class 5

**Minimum bending radius**  
Occasional flexing: 10 x outer diameter  
Fixed installation: 4 x outer diameter

**Nominal voltage**  
U<sub>0</sub>/U: 450/750 V

**Test voltage**  
4000 V

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

**Temperature range**  
Occasional flexing: -40°C to +80°C  
Fixed installation: -50°C to +80°C

Article number	Number of cores and mm <sup>2</sup> per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
<b>ÖLFLEX® ROBUST 200</b>				
0021800	2 X 1.0	8.0	19.2	65
0021801	3 G 1.0	8.4	29	79
0021802	4 G 1.0	9.2	38.4	96
0021803	5 G 1.0	10.0	48	113
0021805	2 X 1.5	8.6	29	78
0021806	3 G 1.5	9.1	43	97
0021807	4 G 1.5	9.9	58	122
0021808	5 G 1.5	10.8	72	146
0021809	7 G 1.5	13.5	101	208
0021810	2 X 2.5	9.8	48	114
0021811	3 G 2.5	10.4	72	144
0021812	4 G 2.5	11.5	96	181
0021813	5 G 2.5	13.1	120	222

Article number	Number of cores and mm <sup>2</sup> per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0021814	7 G 2.5	15.9	168	312
0021816	3 G 4	12.4	115.2	215
0021817	4 G 4	14.0	154	273
0021818	5 G 4	15.8	192	333
0021822	4 G 6	15.7	230	378
0021823	5 G 6	17.2	288	463
0021825	4 G 10	19.4	384	570
0021826	5 G 10	21.4	480	770
0021828	4 G 16	22.4	614	885
0021829	5 G 16	24.6	768	1100
0021831	4 G 25	27.0	960	1365
0021833	4 G 35	29.7	1344	1773
0021836	4 G 50	36.2	1920	3454

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](http://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).  
Single lengths for sizes: ≥ 4G16 max. 600 m; ≥ 4G25 max. 300 m; ≥ 4G50 max. 250 m  
Photographs are not to scale and do not represent detailed images of the respective products.

**Similar products**

- H07RN-F, enhanced version
- ÖLFLEX® ROBUST 210
- ÖLFLEX® ROBUST 215 C

**Accessories**

- FLEXIMARK® Stainless steel kit
- SKINTOP® MS-M
- SKINTOP® ST-HF-M
- SKINTOP® BS-M METAL / SKINTOP® BSR-M METAL

**Harsh conditions**

High mechanical and chemical resistance



**ÖLFLEX® ROBUST 210**

Proven all-weather control cables resistant to a wide range of chemical media

LAPP KABEL STUTTGART ÖLFLEX® ROBUST 210 CE

**Info**

- Excellent weather resistance
- Good chemical resistance
- Reduced outer diameter

**Benefits**

- Outstanding weather, ozone and UV resistance together with the wide temperature range enable versatile use for both 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
- Agricultural equipment
- For indoor and outdoor use

**Product features**

- Halogen-free materials
- Good chemical resistance to ester-based hydraulic fluids
- Ozone, UV and weather-resistant according to EN 50396 and HD 605 S2
- Flexible down to -40°C
- Number-coded cores

**Norm references / Approvals**

- Based on VDE 0250 / 0285

**Product Make-up**

- Fine-wire strand made of bare copper wires
- Core insulation made of modified PP
- Cores twisted in layers
- Outer sheath made of special TPE
- Sheath colour: black

**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**  
Occasional flexing: 15 x outer diameter  
Fixed installation: 4 x outer diameter

**Nominal voltage**  
U<sub>0</sub>/U: 300/500 V

**Test voltage**  
4000 V

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

**Temperature range**  
Occasional flexing: -40°C to +80°C  
Fixed installation: -50°C to +80°C

Article number	Number of cores and mm <sup>2</sup> per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
<b>ÖLFLEX® ROBUST 210</b>				
0021880	2 X 0.5	4.9	10	27
0021881	3 G 0.5	5.2	15	33
0021882	3 X 0.5	5.2	15	33
0021883	4 G 0.5	5.8	19.2	41
0021884	4 X 0.5	5.8	19.2	41
0021885	5 G 0.5	6.3	24	49
0021886	5 X 0.5	6.3	24	49
0021888	7 G 0.5	6.9	33.6	64
0021889	7 X 0.5	6.9	33.6	64
0021890	10 G 0.5	8.8	48	92
0021891	12 G 0.5	9.1	58	106
0021892	18 G 0.5	10.8	86.4	151
0021893	25 G 0.5	12.7	120	210
0021897	2 X 0.75	5.5	14.4	35
0021898	3 G 0.75	5.8	21.6	43
0021899	3 X 0.75	5.8	21.6	43
0021900	4 G 0.75	6.3	28.8	49
0021901	4 X 0.75	6.3	28.8	49
0021902	5 G 0.75	6.9	36	66
0021903	5 X 0.75	6.9	36	66
0021904	7 G 0.75	7.5	50	85
0021905	7 X 0.75	7.5	50	85
0021907	12 G 0.75	10.1	86	144
0021908	18 G 0.75	12.0	130	208
0021909	25 G 0.75	14.1	180	288
0021910	34 G 0.75	16.3	245	386
0021911	41 G 0.75	17.8	296	464
0021912	50 G 0.75	19.6	360	560
0021913	2 X 1.0	5.8	19.2	42
0021914	3 G 1.0	6.1	28.8	49
0021915	3 X 1.0	6.1	28.8	49
0021916	4 G 1.0	6.6	38.4	63
0021917	4 X 1.0	6.6	38.4	63
0021918	5 G 1.0	7.3	48	78
0021919	5 X 1.0	7.3	48	78
0021920	7 G 1.0	8.1	67	107
0021921	10 G 1.0	10.4	96	154

Article number	Number of cores and mm <sup>2</sup> per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0021922	12 G 1.0	10.7	115	178
0021923	18 G 1.0	12.9	173	262
0021924	25 G 1.0	15.0	240	357
0021925	34 G 1.0	17.5	326	484
0021926	41 G 1.0	19.2	394	582
0021927	50 G 1.0	21.0	480	703
0021928	2 X 1.5	6.4	29	56
0021929	3 G 1.5	6.8	43	72
0021930	3 X 1.5	6.8	43	72
0021931	4 G 1.5	7.4	58	91
0021932	4 X 1.5	7.4	58	91
0021933	5 G 1.5	8.3	72	108
0021934	5 X 1.5	8.3	72	108
0021936	7 G 1.5	9.0	101	149
0021937	7 X 1.5	9.0	101	149
0021938	10 G 1.5	11.8	143	215
0021940	12 G 1.5	12.2	173	234
0021941	18 G 1.5	14.6	259	369
0021942	25 G 1.5	17.2	360	510
0021943	34 G 1.5	19.8	490	683
0021945	50 G 1.5	24.0	720	999
0021946	2 X 2.5	7.6	48	86
0021947	3 G 2.5	8.3	72	115
0021949	4 G 2.5	9.0	96	131
0021951	5 G 2.5	10.1	120	178
0021953	7 G 2.5	11.2	168	241
0021954	12 G 2.5	15.1	288	405
0021963	3 G 4	10.1	115	180
0021964	4 G 4	11.1	157	228
0021965	5 G 4	12.4	192	280
0021966	7 G 4	13.6	269	377
0021967	4 G 6	13.3	230	332
0021968	5 G 6	14.8	288	407
0021969	4 G 10	16.5	384	541
0021970	5 G 10	18.4	480	620
0021971	4 G 16	18.8	614.4	806
0021972	4 G 25	23.5	960	1218
0021973	4 G 35	26.4	1344	1658

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](http://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).  
Single lengths for sizes: ≥ 4G16 max. 600 m; ≥ 4G25 max. 300 m; ≥ 4G50 max. 250 m  
Photographs are not to scale and do not represent detailed images of the respective products.

**Similar products**

- ÖLFLEX® ROBUST 200
- ÖLFLEX® ROBUST 215 C

**Accessories**

- FLEXIMARK® Stainless steel bit
- SKINTOP® MS-M
- SKINTOP® ST-HF-M
- SKINTOP® BS-M METAL / SKINTOP® BSR-M METAL





## ÖLFLEX® ROBUST 215 C

Proven all-weather control cables - screened and resistant to a wide range of chemical media

**Info**

- Excellent weather resistance
- Good chemical resistance
- EMC compliant copper screening



**Benefits**

- Outstanding weather, ozone and UV resistance together with the wide temperature range enable versatile use for both 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
- Agricultural equipment
- For indoor and outdoor use
- In EMC-sensitive environments (electromagnetic compatibility)

**Product features**

- Halogen-free materials
- Good chemical resistance to ester-based hydraulic fluids
- Ozone, UV and weather-resistant according to EN 50396 and HD 605 S2
- Flexible down to -40°C
- Number-coded cores

**Norm references / Approvals**

- Based on VDE 0250 / 0285

**Product Make-up**

- Fine-wire strand made of bare copper wires
- Core insulation made of modified PP
- Cores twisted in layers
- Halogen-free plastic foil wrapping
- Tinned copper screen braiding
- Outer sheath made of special TPE
- Sheath colour: black

**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**  
Occasional flexing: 20 x outer diameter  
Fixed installation: 6 x outer diameter

**Nominal voltage**  
U<sub>0</sub>/U: 300/500 V

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

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

**Temperature range**  
Occasional flexing: -40°C to +80°C  
Fixed installation: -50°C to +80°C

Article number	Number of cores and mm <sup>2</sup> per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
<b>ÖLFLEX® ROBUST 215 C</b>				
0022700	2 X 0.5	5.9	36	42
0022701	3 G 0.5	6.2	43	52
0022702	3 X 0.5	6.2	43	52
0022703	4 G 0.5	6.6	49	59
0022704	4 X 0.5	6.6	49	59
0022705	5 G 0.5	7.1	57	68
0022706	5 X 0.5	7.1	57	68
0022708	7 G 0.5	7.7	69	85
0022709	7 X 0.5	7.7	69	85
0022711	12 G 0.5	10.1	104	136
0022712	18 G 0.5	11.8	141	189
0022713	25 G 0.5	13.7	211	265
0022717	2 X 0.75	6.3	43	50
0022718	3 G 0.75	6.6	52	60
0022719	3 X 0.75	6.6	52	60
0022720	4 G 0.75	7.1	61	72
0022721	4 X 0.75	7.1	61	72
0022722	5 G 0.75	7.9	72	88
0022723	5 X 0.75	7.9	72	88
0022724	7 G 0.75	8.5	89	110
0022725	7 X 0.75	8.5	89	110
0022727	12 G 0.75	11.1	138	177
0022728	18 G 0.75	13.0	211	247
0022729	25 G 0.75	15.1	280	347
0022730	34 G 0.75	17.5	380	460
0022733	2 X 1.0	6.6	51	60
0022734	3 G 1.0	6.9	62	70
0022735	3 X 1.0	6.9	62	70
0022736	4 G 1.0	7.4	74	85

Article number	Number of cores and mm <sup>2</sup> per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0022737	4 X 1.0	7.4	74	85
0022738	5 G 1.0	8.3	88	103
0022739	5 X 1.0	8.3	88	103
0022740	7 G 1.0	8.9	112	131
0022742	12 G 1.0	11.7	185	213
0022743	18 G 1.0	14.1	268	321
0022744	25 G 1.0	16.2	354	425
0022748	2 X 1.5	7.2	65	71
0022749	3 G 1.5	7.6	82	90
0022750	3 X 1.5	7.6	82	90
0022751	4 G 1.5	8.4	100	114
0022752	4 X 1.5	8.4	100	114
0022753	5 G 1.5	9.1	119	136
0022754	5 X 1.5	9.1	119	136
0022756	7 G 1.5	10.0	154	177
0022757	7 X 1.5	10.0	154	177
0022760	12 G 1.5	13.4	268	290
0022761	18 G 1.5	15.8	373	435
0022762	25 G 1.5	18.2	530	579
0022763	34 G 1.5	21.2	683	797
0022767	3 G 2.5	9.1	118	134
0022768	4 G 2.5	10.0	147	169
0022769	5 G 2.5	11.1	176	207
0022770	7 G 2.5	12.0	253	270
0022774	4 G 4	11.9	190	258
0022776	4 G 6	14.5	290	392
0022777	4 G 10	17.5	458	602
0022778	4 G 16	20.2	736.6	928
0022771	4 G 25	25.1	1126.7	1411
0022780	4 G 35	28.0	1540	1883

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](http://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).  
Single lengths for sizes: ≥ 4G16 max. 600 m; ≥ 4G25 max. 300 m; ≥ 4G50 max. 250 m  
Photographs are not to scale and do not represent detailed images of the respective products.

**Similar products**

- ÖLFLEX® CLASSIC 135 CH BK 0,6/1 kV

**Accessories**

- SKINTOP® MS-SC-M
- SKINTOP® MS-M BRUSH



## ÖLFLEX® ROBUST FD

TPE-insulated, numbered, TPE sheath



**Info**

- Good chemical resistance
- Extended Line for heavy duty in power chain applications

### Benefits

- Well-proven and reliable
- Various applications
- Suitable for all weather conditions
- For indoor and outdoor use

### 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
- Particularly in wet areas of machine tools and transfer lines
- Resistant to contact with plant, animal or synthetic-based organic oils, greases, waxes and the related emulsions

### Product features

- Low-adhesive surface
- Highly resistant to oil and chemicals
- Hydrolysis-resistant to warm and hot water
- In dry, damp or wet interiors with normal mechanical stress conditions
- Designed for 10 million alternating bending cycles and horizontal travel distances up to 100 meter

### Norm references / Approvals

- Based on VDE 0250 / 0285
- For use in power chains: Please comply with the assembly guidelines listed in 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<sub>0</sub>/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 mm <sup>2</sup> per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
<b>ÖLFLEX® ROBUST FD</b>				
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	13.8	153.6	261
0026551	4 G 6	14.8	230.4	356
0026561	4 G 10	20.1	384	596
0026571	4 G 16	23.8	614.4	910

Unless specified otherwise, the shown product values are nominal values. 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](http://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

### Accessories

- SILVYN® CHAIN cable protection and guiding systems



**Info**

- Good chemical resistance
- Extended Line for heavy duty in power chain applications

**ÖLFLEX® ROBUST FD C**

Screened, TPE-insulated, numbered, TPE inner and outer sheath



**Benefits**

- Well-proven and reliable
- Various applications
- Suitable for all weather conditions
- EMC-compliant
- For indoor and outdoor use

**Application range**

- Machine tool building, medical technology, laundries, car washing equipment, chemical industry, composting plants, sewage works
- Particularly in wet areas of machine tools and transfer lines
- Food and beverage industry, especially for production and processing equipment of milk and meat products
- Resistant to contact with plant, animal or synthetic-based organic oils, greases, waxes and the related emulsions
- Assembly lines, production lines, in all kinds of machines

**Product features**

- Hydrolysis-resistant to warm and hot water
- Low-adhesive surface
- Highly resistant to oil and chemicals
- In dry, damp or wet interiors with normal mechanical stress conditions
- Designed for 10 million alternating bending cycles and horizontal travel distances up to 100 meter

**Norm references / Approvals**

- Based on VDE 0250 / 0285
- For use in power chains: Please comply with the assembly guidelines listed in 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<sub>0</sub>/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 mm <sup>2</sup> per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
<b>ÖLFLEX® ROBUST FD C</b>				
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. 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](http://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

**Accessories**

- SKINTOP® MS-M BRUSH
- SILVYN® CHAIN cable protection and guiding systems

Various applications

PVC outer sheath and numbered cores



## ÖLFLEX® CLASSIC 110

VDE-registered oil-resistant PVC control cable for a wide range of applications



**Info**

- VDE certificate of conformity with factory surveillance
- More than 140 items with up to 100 conductors

### Benefits

- Wide choice of standardized lengths and individual cuts
- Very broad range, items with up to 100 conductors

### Application range

- For fixed installation as well as occasional flexing at free, non-continuously recurring movement without tensile load
- Dry or damp rooms that are subject to medium mechanical loads
- Dairy and cheese technology
- Packaging machines
- Deighing and dosing systems
- Mills for grains and cereals
- In power chains for a travelling distance up to 5 m and 0,2 ... 1 million bending cycles, for following dimensions: 0,5 to 2.5mm<sup>2</sup> and 2 to 7 conductors

### Product features

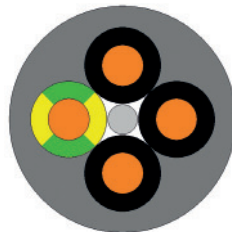
- Flame-retardant according IEC 60332-1-2
- Good chemical resistance, see catalogue appendix T1
- Oil-resistant according to DIN EN 50290-2-22 (TM54)

### Norm references / Approvals

- VDE reg. no. 7030 for the following sizes:
  - up to 2.5 mm<sup>2</sup>: 2 - 65 cores
  - from 4 mm<sup>2</sup>: 2 - 7 cores
  - from 25 mm<sup>2</sup>: 2 - 5 cores

### Product Make-up

- Fine-wire strand made of bare copper wires
- PVC insulation LAPP P8 / 1
- Cores twisted in layers
- 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 DIN EN 60228 (VDE 0295), class 5 / IEC 60228 class 5
- Torsion movement in WTG**  
TW-0 & TW-1, refer to Appendix T0
- Minimum bending radius**  
Occasional flexing: 10 x outer diameter  
In power chains: 15 x outer diameter  
Fixed installation: 4 x outer diameter
- Nominal voltage**  
U<sub>0</sub>/U: 300/500 V
- Test voltage**  
4000 V
- Protective conductor**  
G = with GN-YE protective conductor  
X = without protective conductor
- Temperature range**  
Occasional flexing: -15°C to +70°C  
In power chains: -5°C to +70°C  
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm <sup>2</sup> per conductor	Standard lengths, metre							Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
		25	50	100	200	300	500	1000			
<b>ÖLFLEX® CLASSIC 110</b>											
1119752	2 X0.5			100	200	300	500	1000	4.8	9.6	35
1119003	3 G0.5			100	200	300	500	1000	5.1	14.4	42
1119753	3 X0.5			100	200	300	500	1000	5.1	14.4	42
1119004	4 G0.5			100	200	300	500	1000	5.7	19.2	54
1119754	4 X0.5			100	200	300	500	1000	5.7	19.2	54
1119005	5 G0.5			100	200	300	500	1000	6.2	24	63
1119755	5 X0.5			100	200	300	500	1000	6.2	24	63
1119007	7 G0.5		50	100	200	300	500	1000	6.7	33.6	81
1119757	7 X0.5		50	100	200	300	500	1000	6.7	33.6	81
1119010	10 G0.5		50	100	200	300	500	1000	8.6	48	116
1119012	12 G0.5		50	100	200	300	500	1000	8.9	58	131
1119014	14 G0.5		50	100			500	1000	9.5	67	153
1119018	18 G0.5		50	100			500	1000	10.5	86.4	188
1119021	21 G0.5		50	100			500	1000	11.7	101	221
1119025	25 G0.5		50	100			500	1000	12.4	120	261
1119030	30 G0.5		50	100			500	1000	13.3	144	304
1119035	35 G0.5		50	100			500	1000	14.5	168	356
1119040	40 G0.5		50	100			500	1000	15.4	192	400
1119052	52 G0.5		50	100			500		17.3	250	517
1119061	61 G0.5		50	100			500		18.5	293	603
1119065	65 G0.5		50	100			500		19.6	312	644
1119080	80 G0.5		50	100			500		21.1	384	780
1119100	100 G0.5		50	100			500		23.6	480	975
1119802	2 X0.75			100	200	300	500	1000	5.4	14.4	45
1119103	3 G0.75			100	200	300	500	1000	5.7	21.6	55
1119803	3 X0.75			100	200	300	500	1000	5.7	21.6	55
1119104	4 G0.75			100	200	300	500	1000	6.2	28.8	66
1119804	4 X0.75			100	200	300	500	1000	6.2	28.8	66
1119105	5 G0.75		50	100	200	300	500	1000	6.7	36	79
1119805	5 X0.75		50	100	200	300	500	1000	6.7	36	79
1119107	7 G0.75		50	100	200	300	500	1000	7.3	50	101



Article number	Number of cores and mm <sup>2</sup> per conductor	Standard lengths, metre							Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
		25	50	100	200	300	500	1000			
1119807	7 X0.75		50	100	200	300	500	1000	7.3	50	101
1119109	9 G0.75		50	100	200	300	500	1000	9.4	65	137
1119110	10 G0.75		50	100	200	300	500	1000	9.6	72	150
1119112	12 G0.75		50	100	200	300	500	1000	9.9	86	171
1119812	12 X0.75		50	100	200	300	500	1000	9.9	86	171
1119115	15 G0.75		50	100			500	1000	10.9	108	209
1119117	15 X0.75		50	100			500	1000	10.9	108	209
1119116	16 G0.75		50	100			500	1000	11.1	115.2	220
1119118	18 G0.75		50	100			500	1000	11.7	130	244
1119121	21 G0.75		50	100			500	1000	13.0	151	286
1119125	25 G0.75		50	100			500	1000	13.8	180	337
1119126	26 G0.75		50	100			500	1000	14.2	187.2	350
1119134	34 G0.75		50	100			500	1000	15.9	245	448
1119141	41 G0.75		50	100			500	1000	17.4	296	538
1119150	50 G0.75		50	100			500		19.2	360	648
1119151	51 G0.75		50	100			500		19.2	367	646
1119161	61 G0.75		50	100			500		20.5	439	779
1119165	65 G0.75		50	100			500		21.8	468	832
1119180	80 G0.75		50	100			500		23.6	576	1019
1119200	100 G0.75		50	100			500		26.4	718	1271
1119852	2 X1.0			100	200	300	500	1000	5.7	19.2	53
1119203	3 G1.0			100	200	300	500	1000	6.0	28.8	65
1119853	3 X1.0			100	200	300	500	1000	6.0	28.8	65
1119204	4 G1.0		50	100	200	300	500	1000	6.5	38.4	79
1119854	4 X1.0		50	100	200	300	500	1000	6.5	38.4	79
1119205	5 G1.0		50	100	200	300	500	1000	7.1	48	94
1119855	5 X1.0		50	100	200	300	500	1000	7.1	48	94
1119206	6 G1.0		50	100	200	300	500	1000	8.0	58	113
1119207	7 G1.0		50	100	200	300	500	1000	8.0	67	126
1119857	7 X1.0		50	100	200	300	500	1000	8.0	67	126
1119208	8 G1.0		50	100	200	300	500	1000	9.5	77	149
1119209	9 G1.0		50	100	200	300	500	1000	10.0	86	164
1119210	10 G1.0		50	100	200	300	500	1000	10.2	96	180
1119212	12 G1.0		50	100	200	300	500	1000	10.5	115	205
1119862	12 X1.0		50	100	200	300	500	1000	10.5	115	205
1119214	14 G1.0		50	100			500	1000	11.2	134	238
1119216	16 G1.0		50	100			500	1000	11.8	153.6	266
1119218	18 G1.0		50	100			500	1000	12.7	173	320
1119868	18 X1.0		50	100			500	1000	12.7	173	320
1119220	20 G1.0		50	100			500	1000	13.4	192	330
1119870	20 X1.0		50	100			500	1000	13.4	192	330
1119225	25 G1.0		50	100			500	1000	14.7	240	408
1119226	26 G1.0		50	100			500	1000	15.1	249	424
1119234	34 G1.0		50	100			500	1000	17.1	326	551
1119236	36 G1.0		50	100			500	1000	17.4	346	578
1119241	41 G1.0		50	100			500	1000	18.8	394	661
1119250	50 G1.0		50	100			500		20.6	480	797
1119256	56 G1.0		50	100			500		21.4	538	888
1119261	61 G1.0		50	100			500		22.1	586	958
1119265	65 G1.0		50	100			500		23.6	624	1033
1119280	80 G1.0		50	100			500		25.3	768	1251
1119300	100 G1.0		50	100			500		28.3	960	1560
1119902	2 X1.5			100	200	300	500	1000	6.3	29	68
1119303	3 G1.5	25	50	100	200	300	500	1000	6.7	43	84
1119903	3 X1.5		50	100	200	300	500	1000	6.7	43	84
1119304	4 G1.5	25	50	100	200	300	500	1000	7.2	58	104
1119904	4 X1.5		50	100	200	300	500	1000	7.2	58	104
1119305	5 G1.5	25	50	100	200	300	500	1000	8.1	72	128
1119905	5 X1.5		50	100	200	300	500	1000	8.1	72	128
1119306	6 G1.5		50	100	200	300	500	1000	8.4	86.4	157
1119307	7 G1.5	25	50	100	200	300	500	1000	8.9	101	166
1119907	7 X1.5		50	100	200	300	500	1000	8.9	101	166
1119308	8 G1.5		50	100			500	1000	10.6	115	210
1119313	8 X1.5		50	100			500	1000	10.6	116	210
1119309	9 G1.5		50	100			500	1000	11.4	130	221
1119310	10 G1.5		50	100			500	1000	11.6	143	243
1119311	11 G1.5		50	100			500	1000	11.6	158	258
1119312	12 G1.5	25	50	100			500	1000	12.0	173	279
1119912	12 X1.5		50	100			500	1000	12.0	173	279
1119314	14 G1.5		50	100			500	1000	12.7	202	323
1119316	16 G1.5		50	100			500	1000	13.4	230.4	361
1119318	18 G1.5	25	50	100			500	1000	14.4	259	407
1119321	21 G1.5		50	100			500	1000	15.7	302	469
1119325	25 G1.5	25	50	100			500	1000	16.9	360	560
1119326	26 G1.5		50	100			500	1000	17.3	374.4	582
1119332	32 G1.5		50	100			500	1000	18.7	461	704
1119334	34 G1.5		50	100			500	1000	19.4	490	746
1119341	41 G1.5		50	100			500	1000	21.3	591	895
1119350	50 G1.5		50	100			500		23.5	720	1089
1119361	61 G1.5		50	100			500		25.2	878	1309
1119365	65 G1.5		50	100			500		26.7	936	1398
1119952	2 X2.5	25	50	100	200	300	500	1000	7.5	48	101
1119403	3 G2.5	25	50	100	200	300	500	1000	8.1	72	132
1119404	4 G2.5	25	50	100	200	300	500	1000	8.9	96	163
1119405	5 G2.5	25	50	100	200	300	500	1000	10.0	120	200
1119407	7 G2.5	25	50	100			500	1000	11.1	168	267
1119412	12 G2.5	25	50	100			500	1000	14.8	288	445
1119414	14 G2.5		50	100			500	1000	15.8	336	515
1119418	18 G2.5	25	50	100			500	1000	17.8	432	648

Various applications

PVC outer sheath and numbered cores

Article number	Number of cores and mm <sup>2</sup> per conductor	Standard lengths, metre							Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
		25	50	100	200	300	500	1000			
1119425	25 G2.5	25	50	100			500	1000	20.8	600	890
1119434	34 G2.5		50	100			500	1000	24.4	816	1208
1119450	50 G2.5		50	100			500		29.4	1200	1754
1119503	3 G4	25	50	100			500	1000	9.9	115	201
1119504	4 G4	25	50	100			500	1000	10.8	154	249
1119505	5 G4	25	50	100			500	1000	12.1	192	294
1119507	7 G4	25	50	100			500	1000	13.4	269	407
1119511	11 G4		50	100			500	1000	17.6	422	634
1119512	12 G4		50	100			500	1000	18.1	461	660
1119603	3 G6	25	50	100			500	1000	11.7	172.8	289
1119604	4 G6	25	50	100			500	1000	13.0	230	365
1119605	5 G6	25	50	100			500	1000	14.5	288	447
1119607	7 G6	25	50	100			500	1000	16.0	403	600
1119613	3 G10	25	50	100			500	1000	14.6	288	466
1119614	4 G10	25	50	100			500	1000	16.2	384	590
1119615	5 G10	25	50	100			500	1000	18.1	480	722
1119617	7 G10	25	50	100			500	1000	20.0	672	968
1119624	4 G16		50	100			500		18.8	614	1087
1119625	5 G16		50	100			500		21.2	768	1370
1119627	7 G16		50	100			500		23.4	1075	1779
1119634	4 G25		50	100			500		23.5	960	1582
1119635	5 G25		50	100			500		26.4	1200	1998
1119636	7 G25		50	100			500		29.1	1680	2825
1119644	4 G35		50	100			500		26.4	1344	2106
1119645	5 G35		50	100			500		29.6	1680	2635

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.

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® 191

■ Accessories

- SKINTOP® CLICK



**Info**

- EMC-compliant
- Thin and light, without inner sheath

**ÖLFLEX® CLASSIC 115 CY**  
Screened PVC control cable with small outer diameter



**Benefits**

- Space-saving installation due to small cable diameters

**Application range**

- Dairy and cheese technology
- Packaging machines
- Deighing and dosing systems
- Mills for grains and cereals
- Office machines and systems for data processing

**Product features**

- Flame-retardant according IEC 60332-1-2
- Good chemical resistance, see catalogue appendix T 1

**Norm references / Approvals**

- Based on EN 50525-2-51

**Product Make-up**

- Fine-wire strand made of bare copper wires
- PVC insulation LAPP P8/1
- Plastic foil 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
- Minimum bending radius**  
Occasional flexing: 20 x outer diameter  
Fixed installation: 6 x outer diameter
- Nominal voltage**  
U<sub>0</sub>/U: 300/500 V
- Test voltage**  
Core/core: 4000 V  
Core/screen: 2000 V
- Protective conductor**  
G = with GN-YE protective conductor  
X = without protective conductor
- Temperature range**  
Occasional flexing: -5°C to +70°C  
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm <sup>2</sup> per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
<b>ÖLFLEX® CLASSIC 115 CY</b>				
1136752	2 X0.5	5.8	36	45
1136003	3 G0.5	6.1	43	59
1136753	3 X0.5	6.1	43	59
1136004	4 G0.5	6.5	49	71
1136754	4 X0.5	6.5	49	71
1136005	5 G0.5	7.0	57	86
1136755	5 X0.5	7.0	57	86
1136007	7 G0.5	7.5	69	105
1136757	7 X0.5	7.5	69	105
1136012	12 G0.5	9.9	104	200
1136762	12 X0.5	9.9	104	200
1136018	18 G0.5	11.5	141	275
1136768	18 X0.5	11.5	141	275
1136025	25 G0.5	13.4	211	350
1136775	25 X0.5	13.4	211	350
1136802	2 X0.75	6.2	43	56
1136103	3 G0.75	6.5	52	70
1136803	3 X0.75	6.5	52	70
1136104	4 G0.75	7.0	61	95
1136804	4 X0.75	7.0	61	95
1136105	5 G0.75	7.7	72	108
1136805	5 X0.75	7.7	72	108
1136107	7 G0.75	8.3	89	127
1136807	7 X0.75	8.3	89	127
1136112	12 G0.75	10.9	138	232
1136118	18 G0.75	12.7	211	315
1136125	25 G0.75	14.8	280	435
1136825	25 X0.75	14.8	280	435
1136852	2 X1.0	6.5	51	71
1136203	3 G1.0	6.8	62	86
1136853	3 X1.0	6.8	62	86
1136204	4 G1.0	7.3	74	98
1136854	4 X1.0	7.3	74	98
1136205	5 G1.0	8.1	88	121
1136855	5 X1.0	8.1	88	121

Article number	Number of cores and mm <sup>2</sup> per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1136207	7 G1.0	8.8	112	147
1136857	7 X1.0	8.8	112	147
1136212	12 G1.0	11.5	185	285
1136218	18 G1.0	13.9	268	395
1136225	25 G1.0	15.9	354	486
1136902	2 X1.5	7.1	65	86
1136303	3 G1.5	7.5	82	112
1136903	3 X1.5	7.5	82	112
1136304	4 G1.5	8.2	100	135
1136904	4 X1.5	8.2	100	135
1136305	5 G1.5	8.9	119	148
1136905	5 X1.5	8.9	119	148
1136307	7 G1.5	9.9	154	192
1136907	7 X1.5	9.9	154	192
1136312	12 G1.5	13.0	268	365
1136318	18 G1.5	15.6	373	520
1136325	25 G1.5	17.9	530	734
1136334	34 G1.5	20.8	683	944
1136403	3 G2.5	8.9	118	151
1136404	4 G2.5	9.9	147	188
1136405	5 G2.5	11.0	176	270
1136407	7 G2.5	11.9	253	340
1136412	12 G2.5	16.0	355	540
1136418	18 G2.5	19.0	569	782
1136425	25 G2.5	22.2	827	1358
1136504	4 G4	11.6	248	305
1136507	7 G4	14.4	355	500
1136604	4 G6	14.2	343	440
1136607	7 G6	17.0	505	672
1136614	4 G10	17.2	535	680
1136615	5 G10	19.5	592	824
1136624	4 G16	20.2	800	1050
1136625	5 G16	22.6	895	1285
1136634	4 G25	25.1	1075	1413
1136635	5 G25	28.0	1400	1976
1136638	4 G35	28.0	1576	2070

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](http://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® ROBUST 215 C
- ÖLFLEX® CLASSIC 110 CY

**Accessories**

- 3M Scotch™ 1183 screening tape
- SKINTOP® MS-M BRUSH

Various applications

PVC sheath, certified



# ÖLFLEX® 150

Oil resistant multi-standard cable with H05VV5-F and AWM approval

LAPP KABEL STUTTGART ÖLFLEX® 150 H05VV5-F ROHS CE  
 70 AWM VW-1 CSA AWM I A/B II A/B 600 V FT1 90°C

**Benefits**

- Wide application range due to multiple certifications

**Application range**

- Dairy and cheese technology
- Packaging machines
- Deighing and dosing systems
- Mills for grains and cereals
- Plant engineering  
Industrial machinery  
Heating and air-conditioning systems
- Mainly used in dry, damp and wet interiors (including water-oil mixtures), but not for outdoor use
- For fixed installation under medium mechanical load conditions, and applications with occasional flexing at free, non-continuously recurring movement without tensile load or compulsory guidance
- Note: for the use of AWM (Appliance Wiring Material) cables in industrial machinery (USA) according to NFPA 79 Ed. 2012: please see the catalogue appendix table T29

**Product features**

- Flame-retardant according to IEC 60332-1-2 and UL 1581 §1061 Cable Flame Test
- Oil-resistant according to EN 50363-4-1: TM5

**Norm references / Approvals**

- H05VV5-F (EN 50525-2-51)
- UL AWM Style 21098 or 2587  
CSA AWM I A/B II A/B
- Multi-standard cables have conductor strands with nominal sizes in mm<sup>2</sup> or AWG/kcmil. The master size is mentioned in the table below, while the equivalent size of the other system can be found in the Appendix T 16 of this catalogue. For this related secondary size the cross-section of the conductor mostly works out to be greater than the specified nominal value.

**Product Make-up**

- Fine-wire strand made of bare copper wires
- PVC core insulation
- PVC outer sheath, high oil-resistance, grey (RAL 7001)

**Info**

- Oil-resistant according to EN 50363-4-1: TM5
- Harmonised (HAR): H05VV5-F and UL recognized

**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**  
 Occasional flexing: 12.5 x outer diameter  
 Fixed installation: 4 x outer diameter

**Nominal voltage**  
 HAR U<sub>0</sub>/U: 300/500 V  
 UL/CSA: 600 V

**Test voltage**  
 3000 V

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

**Temperature range**  
 Occasional flexing:  
 HAR: -5°C to +70°C  
 UL/CSA: -5°C to +90°C  
 Fixed installation:  
 HAR: -40°C to +70°C  
 UL/CSA: -40°C to +90°C

Article number	Number of cores and mm <sup>2</sup> per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
<b>ÖLFLEX® 150</b>				
0015002	2 X 0.5	5.9	9.6	47
0015003	3 G 0.5	6.2	14.4	62.4
0015004	4 G 0.5	6.8	19.2	68.2
0015005	5 G 0.5	7.4	24	87.1
0015007	7 G 0.5	9.0	33.6	118.7
0015012	12 G 0.5	11.1	58	198
0015018	18 G 0.5	13.2	86.4	328
0015025	25 G 0.5	16.0	120	380.4
0015034	34 G 0.5	18.1	164	509
0015041	41 G 0.5	19.7	197	595
0015102	2 X 0.75	6.3	14.4	61
0015103	3 G 0.75	6.7	21.6	75.6
0015104	4 G 0.75	7.2	28.8	83.9
0015105	5 G 0.75	8.1	36	113.3
0015107	7 G 0.75	9.9	50	145
0015112	12 G 0.75	12.0	86	244.9
0015118	18 G 0.75	14.4	130	327.7
0015125	25 G 0.75	17.1	180	466.4
0015134	34 G 0.75	19.7	245	626.5
0015141	41 G 0.75	21.6	296	748
0015202	2 X 1.0	6.6	19.2	80
0015203	3 G 1.0	7.0	28.8	79
0015204	4 G 1.0	7.8	38.4	98.6
0015205	5 G 1.0	8.6	48	132.1
0015206	6 G 1.0	9.5	57.6	150

Article number	Number of cores and mm <sup>2</sup> per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0015207	7 G 1.0	10.4	67	169.3
0015212	12 G 1.0	12.8	115	285.9
0015218	18 G 1.0	15.1	173	405.2
0015225	25 G 1.0	18.0	240	569.5
0015234	34 G 1.0	20.9	326	741.7
0015241	41 G 1.0	22.8	394	886
0015250	50 G 1.0	25.0	480	1072.2
0015302	2 X 1.5	7.6	28.8	95
0015303	3 G 1.5	8.3	43	109.8
0015304	4 G 1.5	9.0	58	145
0015305	5 G 1.5	10.1	72	168
0015307	7 G 1.5	12.5	101	224.2
0015312	12 G 1.5	15.1	173	361.7
0015318	18 G 1.5	18.0	259	518.3
0015325	25 G 1.5	21.4	360	729.9
0015334	34 G 1.5	25.0	490	946.6
0015341	41 G 1.5	27.2	591	1136
0015402	2 X 2.5	9.2	48	159
0015403	3 G 2.5	9.9	72	170
0015404	4 G 2.5	10.8	96	210
0015405	5 G 2.5	12.1	120	257
0015407	7 G 2.5	14.7	168	340
0015412	12 G 2.5	17.9	288	580
0015418	18 G 2.5	21.6	432	850
0015425	25 G 2.5	25.6	600	1166

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](http://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 600 m drum or 8 x 75 m coils).  
 Photographs are not to scale and do not represent detailed images of the respective products.

**Similar products**

- H05VV-F
- ÖLFLEX® 140\*
- ÖLFLEX® 191

**Accessories**

- SKINTOP® CLICK
- SKINTOP® ST-M



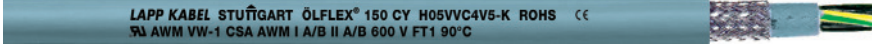


**Info**

- Oil-resistant according to EN 50363-4-1: TM5
- Harmonised (HAR): H05VVC4V5-K and UL recognized
- EMC-compliant

**ÖLFLEX® 150 CY**

Screened and oil-resistant multi-standard cable with H05VVC4V5-K and AWM approval



**Benefits**

- Wide application range due to multiple certifications

**Application range**

- Dairy and cheese technology
- Packaging machines
- Deighing and dosing systems
- Mills for grains and cereals
- Plant engineering  
Industrial machinery  
Heating and air-conditioning systems
- In EMC-sensitive environments (electromagnetic compatibility)
- Mainly used in dry, damp and wet interiors (including water-oil mixtures), but not for outdoor use
- For fixed installation under medium mechanical load conditions, and applications with occasional flexing at free, non-continuously recurring movement without tensile load or compulsory guidance
- Note: for the use of AWM (Appliance Wiring Material) cables in industrial machinery (USA) according to NFPA 79 Ed. 2012: please see the catalogue appendix table T29

**Product features**

- Flame-retardant according to IEC 60332-1-2 and UL 1581 §1061 Cable Flame Test
- Oil-resistant according to EN 50363-4-1: TM5
- High degree of screening  
low transfer impedance  
(max. 250 Ω/km at 30 MHz)

**Norm references / Approvals**

- H05VVC4V5-K (EN 50525-2-51)
- UL AWM Style 21098 or 2587  
CSA AWM I A/B II A/B
- Multi-standard cables have conductor strands with nominal sizes in mm<sup>2</sup> or AWG/kcmil. The master size is mentioned in the table below, while the equivalent size of the other system can be found in the Appendix T16 of this catalogue. For this related secondary size the cross-section of the conductor mostly works out to be greater than the specified nominal value.

**Product Make-up**

- Fine-wire strand made of bare copper wires
- PVC core insulation
- PVC inner sheath, grey
- Tinned-copper braiding
- PVC outer sheath, high oil-resistance, 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**  
Occasional flexing: 20 x outer diameter  
Fixed installation: 6 x outer diameter

**Nominal voltage**  
HAR U<sub>0</sub>/U: 300/500 V  
UL/CSA: 600 V

**Test voltage**  
3000 V

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

**Temperature range**  
Occasional flexing:  
HAR: -5°C to +70°C  
UL/CSA: -5°C to +90°C  
Fixed installation:  
HAR: -40°C to +70°C  
UL/CSA: -40°C to +90°C

Article number	Number of cores and mm <sup>2</sup> per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
<b>ÖLFLEX® 150 CY</b>				
0015602	2 X 0.75	8.5	40	109
0015603	3 G 0.75	8.9	51	125
0015604	4 G 0.75	9.6	70	157
0015605	5 G 0.75	10.3	77	180
0015607	7 G 0.75	12.3	93	226
0015612	12 G 0.75	14.8	155	325
0015702	2 X 1.0	8.8	46.4	121
0015703	3 G 1.0	9.4	76	145
0015704	4 G 1.0	10.0	80	180
0015705	5 G 1.0	11.0	95	203
0015707	7 G 1.0	13.0	118	273
0015712	12 G 1.0	15.6	195	425
0015802	2 X 1.5	10.0	59.2	151
0015803	3 G 1.5	10.5	84	159
0015804	4 G 1.5	11.4	94.8	211
0015805	5 G 1.5	12.7	122	241
0015807	7 G 1.5	15.1	143	306
0015812	12 G 1.5	17.8	254	480
0015903	3 G 2.5	11.9	120	245
0015904	4 G 2.5	13.2	170	295
0015905	5 G 2.5	14.7	205	365
0015907	7 G 2.5	17.5	241	480

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](http://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 600 m drum or 8 x 75 m coils).  
Photographs are not to scale and do not represent detailed images of the respective products.

**Similar products**

- ÖLFLEX® 140 CY\*
- ÖLFLEX® 191 CY

**Accessories**

- SKINTOP® MS-SC-M
- SKINTOP® MS-M BRUSH

Various applications

PVC sheath, certified



# ÖLFLEX® CONTROL TM



**Info**

- Torsion resistant for drip loops
- Wide application range (NFPA 70/ NEC)/ compliance with NFPA 79 for industrial machinery
- (UL) SUN. RES. approval in preparation

**Benefits**

- Wide application range due to multiple certifications
- Cost-saving, easy installation due to omission of closed raceways (suitable for open wiring)

**Application range**

- Industrial machinery; plant engineering
- Dairy and cheese technology
- Packaging machines
- Deighing and dosing systems
- Mills for grains and cereals
- Oil presses
- Coaters and roasters
- TC-ER (Tray Cable Exposed Run) approval for open wiring between cable tray and industrial machines/plants acc. to NEC 336.10(7)
- Class 1, Div. 2 in accordance with NEC "National Electrical Code" Art. 336, 392, 501

**Product features**

- Flame-retardant according to CSA FT4 UL Vertical-Tray Flame Test
- Oil-resistant according to UL OIL RES I & II
- Water-resistant, UL 75°C wet rating
- Suitable for outdoor use thanks to technical UV and ozone resistance

**Norm references / Approvals**

- Multi-standard cables have conductor strands with nominal sizes in mm<sup>2</sup> or AWG/kcmil. The master size is mentioned in the table below, while the equivalent size of the other system can be found in the Appendix T16 of this catalogue. For this related secondary size the cross-section of the conductor mostly works out to be greater than the specified nominal value.

• UL cable type certifications for US use:

- (UL) TC-ER per UL 1277 [UL file no.: E171371];
- (UL) MTW per UL 1063 [UL file no.: E155920];
- (UL) WTTC per UL 2277 [UL file no.: E323700];
- UL AWM styles 2587 & 21098 (Oil) per UL 758 [UL file no.: E100338].

Attributes:

- UL OIL RES I/ II;
- 75 °C Wet, 90°C Dry;
- Technically sunlight resistant (not SUN. RES. certified);
- Direct burial;
- Bus Drop Cable (2.5 mm<sup>2</sup>/ 14 AWG and larger, 3-core and 4-core versions only);
- NFPA 79 2015 Edition;
- FT4 flame retardance.

NEC (NFPA 70):

- Class 1, Division 2 per NEC Article 501.

UL and CSA cable type certifications for use in Canada:

- c(UL) CIC/ TC FT4 [UL file no.: E171371];
- CSA AWM I/II A/B FT1;
- CSA C22.2 210.2.

Additionally:

- Impact and Crush test per UL 1277 (excluding 0.75 mm<sup>2</sup>)

**Product Make-up**

- Fine-wire strand made of bare copper wires
- Insulation: PVC with nylon sheath (PA skin)
- Outer sheath made of special PVC compound, grey

**Technical data**

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

**Core identification code**  
Black with white numbers

**Conductor stranding**  
Fine-wire, bare copper strand

**Torsion movement in WTG**  
TW-0 & TW-2, refer to Appendix T0

**Minimum bending radius**  
Static/Occ. moved: 5/15xOD\*

**Nominal voltage**  
UL/CSA: 600 V (TC, MTW, CIC),  
WTTC 1000 V  
UL/CSA: 1000 V (AWM)  
VDE U<sub>0</sub>/U: 600/1000 V

**Test voltage**  
2000 V

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

**Temperature range**  
-40°C (static)/ -25°C (occ. moved)  
to +90°C (AWM: +105°C)

**Similar products**

- ÖLFLEX® TRAY II

**Accessories**

- SKINTOP® MS-M
- SKINTOP® ST-M
- SKINTOP® BS-M METAL / SKINTOP® BSR-M METAL

Article number	Number of cores and mm <sup>2</sup> per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
<b>ÖLFLEX® CONTROL TM</b>				
281803	3 G 1.0	7.4	28.8	82
281804	4 G 1.0	8.0	38.4	95
281805	5 G 1.0	8.6	48	112
281807	7 G 1.0	9.3	67	144
281812	12 G 1.0	12.0	115	247
281818	18 G 1.0	14.7	173	365
281825	25 G 1.0	16.7	240	464
281602	2 X 1.5	7.3	28.8	74
281603	3 G 1.5	8.1	43	100
281604	4 G 1.5	8.8	58	119
281605	5 G 1.5	9.5	72	141
281607	7 G 1.5	10.3	101	183
281609	9 G 1.5	11.9	129.6	247
281612	12 G 1.5	14.1	172.8	328
281618	18 G 1.5	16.4	259	403
281625	25 G 1.5	18.6	360	596
281403	3 G 2.5	8.9	72	125
281404	4 G 2.5	9.8	96	155
281405	5 G 2.5	10.7	120	185
281407	7 G 2.5	11.6	168	244
281203	3 G 4	10.6	115	165
281204	4 G 4	11.5	154	220
281205	5 G 4	12.6	192	269
281207	7 G 4	14.6	269	482
281004	4 G 6	14.5	231	382
281005	5 G 6	15.8	288	457
280804	4 G 10	17.7	384	615
280805	5 G 10	19.4	480	771
280604	4 G 16	22.5	615	864

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](http://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 610 m drum or 8 x 76 m coils). Photographs are not to scale and do not represent detailed images of the respective products.



**ÖLFLEX® CONTROL TM CY**

LAPP KABEL STUÏTGART ÖLFLEX® CONTROL TM CY (UL) TC-ER or MTW 90°C 800V OIL RES II WTTTC 1000V 90°C CSA AWM FT4 CE



**Info**

- Torsion resistant for drip loops
- Wide application range (NFPA 70/ NEC)/ compliance with NFPA 79 for industrial machinery
- EMC/Screened

**Benefits**

- Wide application range due to multiple certifications
- Cost-saving, easy installation due to omission of closed raceways (suitable for open wiring)

**Application range**

- Industrial machinery; plant engineering
- Dairy and cheese technology
- Packaging machines
- Deighing and dosing systems
- Mills for grains and cereals
- Oil presses
- Coaters and roasters
- TC-ER (Tray Cable Exposed Run) approval for open wiring between cable tray and industrial machines/plants acc. to NEC 336.10(7)
- Class 1, Div. 2 in accordance with NEC "National Electrical Code" Art. 336, 392, 501

**Product features**

- Flame-retardant according to CSA FT4 UL Vertical-Tray Flame Test
- Oil-resistant according to UL OIL RES I & II
- Water-resistant, UL 75°C wet rating

**Norm references / Approvals**

- Multi-standard cables have conductor strands with nominal sizes in mm<sup>2</sup> or AWG/kcmil. The master size is mentioned in the table below, while the equivalent size of the other system can be found in the Appendix T 16 of this catalogue. For this related secondary size the cross-section of the conductor mostly works out to be greater than the specified nominal value.

- UL cable type certifications for US use:
  - (UL) TC-ER per UL 1277 [UL file no.: E171371];
  - (UL) MTW per UL 1063 [UL file no.: E155920];
  - (UL) WTTTC per UL 2277 [UL file no.: E323700];
  - UL AWM styles 2587 & 21098 (Oil) per UL 758 [UL file no.: E100338].

Attributes:

- UL OIL RES I/ II;
- 75°C Wet, 90°C Dry;
- Technically sunlight resistant (not SUN. RES. certified);
- Direct burial;
- Bus Drop Cable (2.5 mm<sup>2</sup>/ 14 AWG and larger, 3-core and 4-core versions only);
- NFPA 79 2015 Edition;
- FT4 flame retardance.

NEC (NFPA 70):

- Class 1, Division 2 per NEC Article 501.

UL and CSA cable type certifications for use in Canada:

- c(UL) CIC/ TC FT4 [UL file no.: E171371];
- CSA AWM I/II A/B FT1;
- CSA C22.2 210.2.

Additionally:

- Impact and Crush test per UL 1277 (excluding 0.75 mm<sup>2</sup>)

**Product Make-up**

- Fine-wire strand made of bare copper wires
- Insulation: PVC with nylon sheath (PA skin)
- Aluminum-coated foil
- Tinned-copper braiding
- Outer sheath made of special PVC compound, grey

**Technical data**

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

**Core identification code**  
Black with white numbers

**Conductor stranding**  
Fine-wire, bare copper strand

**Torsion movement in WTG**  
TW-0 & TW-2, refer to Appendix T0

**Minimum bending radius**  
Static/Occ. moved: 5/20xOD\*

**Nominal voltage**  
UL/CSA: 600 V (TC, MTW, CIC), WTTTC 1000 V  
UL/CSA: 1000 V (AWM)  
VDE U<sub>0</sub>/U: 600/1000 V

**Test voltage**  
2000 V

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

**Temperature range**  
-40°C (static) / -25°C (occ. moved) to +90°C (AWM: +105°C)

**Similar products**

- ÖLFLEX® TRAY II CY

**Accessories**

- SKINTOP® MS-SC-M

Article number	Number of cores and mm <sup>2</sup> per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
<b>ÖLFLEX® CONTROL TM CY</b>				
281803CY	3 G 1.0	8.1	49.5	119
281804CY	4 G 1.0	8.6	60.2	137
281805CY	5 G 1.0	9.3	81.4	149
281807CY	7 G 1.0	10.0	101.1	193
281812CY	12 G 1.0	12.8	161.4	330
281818CY	18 G 1.0	15.5	228.2	438
281825CY	25 G 1.0	17.5	326.4	574
281602CY	2 X 1.5	8.3	49.7	115
281603CY	3 G 1.5	8.8	65	144
281604CY	4 G 1.5	9.4	81.9	173
281605CY	5 G 1.5	10.2	99.1	189
281607CY	7 G 1.5	11.1	140.4	246
281612CY	12 G 1.5	15.0	225.2	426
281618CY	18 G 1.5	17.2	321.7	552
281625CY	25 G 1.5	19.4	453.6	750
281403CY	3 G 2.5	9.7	105.7	180
281404CY	4 G 2.5	10.4	135.6	223
281405CY	5 G 2.5	11.5	160.3	268
281407CY	7 G 2.5	12.4	213	327
281204CY	4 G 4	12.3	198.5	315
281205CY	5 G 4	14.2	242.7	388
281207CY	7 G 4	15.3	323.4	499
281004CY	4 G 6	15.3	284.236	552
281005CY	5 G 6	16.7	348.8	613
280804CY	4 G 10	18.5	458.4	857
280604CY	4 G 16	22.9	723.6	1208

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 T 17 for the definition and calculation of copper-related surcharges.  
 Please find our standard lengths at: [www.lappkabel.de/en/cable-standardlengths](http://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 610 m drum or 8 x 76 m coils).  
 Photographs are not to scale and do not represent detailed images of the respective products.  
 \*OD = Outer diameter

**Harsh conditions**

High mechanical and chemical resistance



# ÖLFLEX® CLASSIC 400 P

Abrasion-resistant control cables with PUR sheath for increased application requirements



**Info**

- High mechanical strength
- Good oil resistance

**Benefits**

- 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
- Also available as DESINA® compliant power cable with black outer sheath colour

**Application range**

- Machine tools
- Industrial machinery and machine tools
- Measurement, control and electrical applications
- Outdoor use is possible within the indicated operating temperature range
- Very suitable for oily wet areas within machinery and production lines that are subject to normal mechanical stress

**Product features**

- High oil-resistance
- Abrasion and notch-resistant
- Low-adhesive surface
- Resistant to hydrolysis and microbes

**Norm references / Approvals**

- Based on VDE 0285

**Product Make-up**

- Fine-wire strand made of bare copper wires
- Core insulation: special PVC
- Cores twisted in layers
- Special polyurethane outer sheath (PUR)
- Sheath colour: silver grey (RAL 7001)
- DESINA®-compliant: 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**  
Fine wire according to VDE 0295, class 5/IEC 60228 class 5

**Minimum bending radius**  
Flexible use: 12.5 x outer diameter  
Fixed installation: 4 x outer diameter

**Nominal voltage**  
U<sub>0</sub>/U: 300/500 V

**Test voltage**  
4000 V

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

**Temperature range**  
Occasional flexing: -5°C to +70°C  
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm <sup>2</sup> per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
<b>ÖLFLEX® CLASSIC 400 P - sheath colour: grey</b>				
1312802	2 X 0.5	4.8	10	32
1312003	3 G 0.5	5.1	15	43
1312803	3 X 0.5	5.1	15	43
1312004	4 G 0.5	5.7	19.2	50
1312804	4 X 0.5	5.7	19.2	50
1312005	5 G 0.5	6.2	24	59
1312805	5 X 0.5	6.2	24	59
1312007	7 G 0.5	6.7	34	73
1312807	7 X 0.5	6.7	34	73
1312010	10 G 0.5	8.6	48	109
1312012	12 G 0.5	8.9	57.6	125
1312018	18 G 0.5	10.5	87	180
1312025	25 G 0.5	12.4	120	250
1312034	34 G 0.5	14.3	164	333
1312041	41 G 0.5	15.7	197	400
1312852	2 X 0.75	5.4	14.4	41
1312103	3 G 0.75	5.7	21.6	51
1312853	3 X 0.75	5.7	21.6	51
1312104	4 G 0.75	6.2	28.8	62
1312854	4 X 0.75	6.2	28.8	62
1312105	5 G 0.75	6.7	36	74
1312855	5 X 0.75	6.7	36	74
1312107	7 G 0.75	7.3	50	97
1312857	7 X 0.75	7.3	50	97
1312110	10 G 0.75	9.6	72	142
1312112	12 G 0.75	9.9	86.4	163
1312118	18 G 0.75	11.7	129.6	234
1312125	25 G 0.75	13.8	180	324
1312134	34 G 0.75	15.9	244.8	431
1312141	41 G 0.75	17.4	295.2	529
1312902	2 X 1.0	5.7	19.2	48
1312203	3 G 1.0	6.0	28.8	61
1312903	3 X 1.0	6.0	28.8	61
1312204	4 G 1.0	6.5	38.4	74
1312904	4 X 1.0	6.5	38.4	74
1312205	5 G 1.0	7.1	48	89
1312905	5 X 1.0	7.1	48	89
1312207	7 G 1.0	8.0	67	116
1312210	10 G 1.0	10.2	96	171
1312212	12 G 1.0	10.5	115	197
1312218	18 G 1.0	12.7	173	289

Article number	Number of cores and mm <sup>2</sup> per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1312225	25 G 1.0	14.7	240	412
1312234	34 G 1.0	17.1	326.4	532
1312241	41 G 1.0	18.8	393.6	638
1312952	2 X 1.5	6.3	29	63
1312303	3 G 1.5	6.7	43	79
1312953	3 X 1.5	6.7	43	79
1312304	4 G 1.5	7.2	58	98
1312954	4 X 1.5	7.2	58	98
1312305	5 G 1.5	8.1	72	121
1312955	5 X 1.5	8.1	72	121
1312307	7 G 1.5	8.9	101	159
1312957	7 X 1.5	8.9	101	159
1312312	12 G 1.5	12.0	173	268
1312318	18 G 1.5	13.4	259.5	392
1312325	25 G 1.5	16.9	360	531
1312334	34 G 1.5	19.4	489.6	722
1312341	41 G 1.5	21.3	590.4	867
1312403	3 G 2.5	8.1	72	132
1312404	4 G 2.5	8.9	96	163
1312405	5 G 2.5	10.0	120	186
1312407	7 G 2.5	11.1	168	267
1312412	12 G 2.5	14.8	288	445
1312504	4 G 4	10.8	154	237
1312505	5 G 4	12.1	192	291
1312507	7 G 4	13.4	269	391
1312604	4 G 6	13.0	230.4	327
1312605	5 G 6	14.5	288	424
1312607	7 G 6	16.0	403	580
1312614	4 G 10	16.2	384	567
1312615	5 G 10	18.1	480	695
1312617	7 G 10	20.0	672	937
1312624	4 G 16	18.8	614.4	1064
<b>ÖLFLEX® CLASSIC 400 P DESINA - sheath colour: black</b>				
1312970	4 G 1.5	7.2	58	98
1312981	7 G 1.5	8.8	101	159
1312983	11 G 1.5	11.6	158	228
1312973	4 G 2.5	8.9	96	163
1312974	4 G 4	10.8	154	237
1312975	4 G 6	13.0	230.4	350
1312976	4 G 10	16.2	384	567
1312978	4 G 25	23.5	960	1582

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](http://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.

**Similar products**

- ÖLFLEX® 440 P
- ÖLFLEX® 491 P

**Accessories**

- SKINTOP® metric plastic cable glands





## ÖLFLEX® CLASSIC 400 CP

Screened and abrasion-resistant control cables with PUR sheath for increased application requirements

**Info**

- High mechanical strength
- Good oil resistance
- EMC compliant copper screening



### Benefits

- 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

- Machine tools
- Industrial machinery and machine tools
- Measurement, control and electrical applications
- Very suitable for oily wet areas within machinery and production lines that are subject to normal mechanical stress
- Outdoor use is possible within the indicated operating temperature range

### Product features

- High oil-resistance
- Abrasion and notch-resistant
- EMC-compliant
- Low-adhesive surface
- Resistant to hydrolysis and microbes

### Norm references / Approvals

- Based on VDE 0285

### Product Make-up

- Fine-wire strand made of bare copper wires
- Core insulation: special PVC
- Cores twisted in layers
- PVC inner sheath, grey
- Tinned-copper braiding
- Special polyurethane outer sheath (PUR)
- Sheath colour: silver 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**  
Occasional flexing: 20 x outer diameter  
Fixed installation: 6 x outer diameter

**Nominal voltage**  
U<sub>0</sub>/U: 300/500 V

**Test voltage**  
4000 V

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

**Temperature range**  
Occasional flexing: -5°C to +70°C  
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm <sup>2</sup> per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
<b>ÖLFLEX® CLASSIC 400 CP</b>				
1313852	2 X 0.75	7.4	45	85
1313103	3 G 0.75	7.9	52	99
1313853	3 X 0.75	7.9	52	99
1313104	4 G 0.75	8.4	77	114
1313854	4 X 0.75	8.4	77	114
1313105	5 G 0.75	8.9	84	130
1313855	5 X 0.75	8.9	84	130
1313107	7 G 0.75	9.7	92	161
1313857	7 X 0.75	9.7	92	161
1313112	12 G 0.75	12.3	138	245
1313118	18 G 0.75	14.5	219	354
1313125	25 G 0.75	16.6	277	463
1313134	34 G 0.75	18.9	420	598
1313141	41 G 0.75	20.6	500	725
1313902	2 X 1.0	7.9	50	97
1313203	3 G 1.0	8.2	77	111
1313903	3 X 1.0	8.2	77	111
1313204	4 G 1.0	8.7	87	129
1313904	4 X 1.0	8.7	87	129
1313205	5 G 1.0	9.5	90	152
1313207	7 G 1.0	10.2	110	184
1313212	12 G 1.0	13.3	194	306
1313218	18 G 1.0	15.5	267	417
1313225	25 G 1.0	17.5	379	541
1313234	34 G 1.0	20.3	516	735

Article number	Number of cores and mm <sup>2</sup> per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
1313241	41 G 1.0	22.0	610	860
1313952	2 X 1.5	8.5	77	116
1313303	3 G 1.5	8.9	85	135
1313953	3 X 1.5	8.9	85	135
1313304	4 G 1.5	9.6	100	162
1313954	4 X 1.5	9.6	100	162
1313305	5 G 1.5	10.3	120	187
1313955	5 X 1.5	10.3	120	187
1313307	7 G 1.5	11.3	152	236
1313957	7 X 1.5	11.3	152	236
1313312	12 G 1.5	14.8	267	392
1313318	18 G 1.5	17.2	400	536
1313325	25 G 1.5	20.1	572	742
1313334	34 G 1.5	21.9	754	960
1313341	41 G 1.5	24.7	874	1118
1313403	3 G 2.5	10.3	121	191
1313404	4 G 2.5	11.3	163	232
1313405	5 G 2.5	12.6	199	282
1313407	7 G 2.5	13.9	261	370
1313412	12 G 2.5	17.2	470	580
1313504	4 G 4	13.4	238	345
1313505	5 G 4	14.7	279	412
1313604	4 G 6	15.8	318	483
1313605	5 G 6	17.3	370	576
1313614	4 G 10	19.0	558	733
1313624	4 G 16	22.2	804	1340

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](http://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.

### Similar products

- ÖLFLEX® CLASSIC 415 CP
- ÖLFLEX® 440 CP

### Accessories

- Conductor end sleeves
- SKINTOP® MS-SC-M



## UNITRONIC® BUS PB ROBUST

### Fixed installation



#### ■ Benefits

- Robust PROFIBUS cable for use under harsh environmental conditions

#### ■ Application range

- For use for PROFIBUS-DP or FIP in harsh industrial environments
- Fixed installation
- Dairy and cheese technology
- Packaging machines
- Weighing and dosing systems
- Mills for grains and cereals
- Oil presses
- Coaters and roasters

#### ■ Product features

- Significantly extended use and application areas, water and chemical resistance for use in industrial conditions.
- High resistance to tensides, soaps etc.
- UV-resistant
- Flame-retardant according IEC 60332-1-2

- 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

- Solid and bare copper conductor
- Foam Skin - core isolation (O2YS)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Tin-plated copper wire braiding
- With conventional cable design, but with an outer sheath made of special TPE

#### ■ Technical data

- Mutual capacitance**  
(1 kHz): approx. 28.5 nF/km
- Peak operating voltage**  
(not for power applications) 250 V
- Minimum bending radius**  
Fixed installation: 75 mm
- Test voltage**  
Core/core: 1500 V rms  
Core/screen: 1500 V
- Characteristic impedance**  
(3 - 20 MHz): 150 ± 15 Ohm
- Temperature range**  
-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 fixed installation					
2170620	UNITRONIC® BUS PB ROBUST	1 x 2 x 0.64	8	26	55

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](http://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

- EPIC® Data Connectors

ÖLFLEX®  
 UNITRONIC®  
 ETHERLINE®  
 HITRONIC®  
 EPIC®  
 SKINTOP®  
 SILVYN®  
 FLEXIMARK®  
 ACCESSORIES



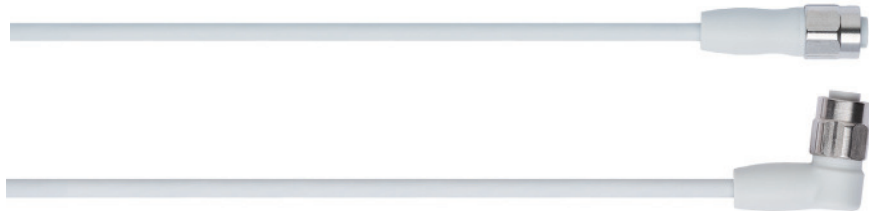
**New**

## S/A cable: Hygienic Design for Food & Beverage



**Info**

- Other types are available upon request



### Benefits

- Hygienic Design for ideal cleaning results
- Guaranteed density by meeting the highest protection class
- Stainless steel knurl to ensure protection against corrosion
- Bright colors to detect contamination quickly

### Application range

- Food and beverage industry
- Automation technology
- Mechanical engineering
- Plant engineering
- Dairy and cheese technology
- Packaging machines
- Weighing and dosing systems
- Mills for grains and cereals
- Oil presses
- Coaters and roasters

### Product features

- 4-pin plug/socket with M12 thread on free conductor end

### Product Make-up

- 4 x 0.34 mm<sup>2</sup>
- Core colours: brown(1), white(2), blue(3), black(4)
- Outer sheath: TPE, halogen-free
- Outer sheath colour: grey

### Technical data



**Material**  
 Contact: CuSn  
 Contact surface: Ni/Au  
 Knurl: Stainless steel (V4A)  
 Gripping body: PP



**Minimum bending radius**  
 Fixed installation: 5 x outer diameter  
 Flexing: 10 x outer diameter



**Protection rating**  
 IP65/IP67/IP68/IP69K



**Ambient temperature (operation)**  
 Fixed installation -40°C to +105°C  
 Flexing -25°C to +105°C

**Coding**  
 A-standard

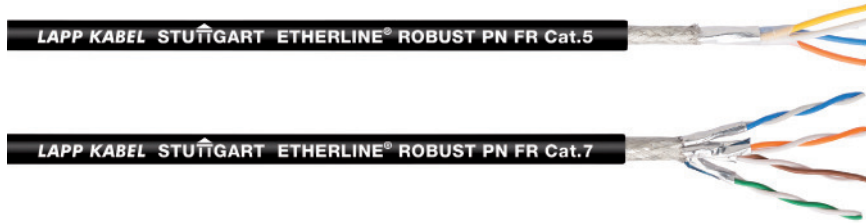
Article number	Article designation	Number of pins	Length (m)	Nominal voltage U <sub>N</sub> (V)	Nominal current I <sub>N</sub> in (A)	PU
<b>Straight connector</b>						
22262040	AB-C4-M12MS-2,0TPE-HD	4	2	250	4	1
22262041	AB-C4-M12MS-5,0TPE-HD	4	5	250	4	1
22262060	AB-C4-M12MS-7,5TPE-HD	4	7.5	250	4	1
22262042	AB-C4-M12MS-10,0TPE-HD	4	10	250	4	1
22262061	AB-C4-M12MS-15,0TPE-HD	4	15	250	4	1
<b>Straight socket</b>						
22262043	AB-C4-2,0TPE-M12FS-HD	4	2	250	4	1
22262044	AB-C4-5,0TPE-M12FS-HD	4	5	250	4	1
22262062	AB-C4-7,5TPE-M12FS-HD	4	7.5	250	4	1
22262045	AB-C4-10,0TPE-M12FS-HD	4	10	250	4	1
22262063	AB-C4-15,0TPE-M12FS-HD	4	15	250	4	1
<b>Angled socket</b>						
22262046	AB-C4-2,0TPE-M12FA-HD	4	2	250	4	1
22262047	AB-C4-5,0TPE-M12FA-HD	4	5	250	4	1
22262064	AB-C4-7,5TPE-M12FA-HD	4	7.5	250	4	1
22262048	AB-C4-10,0TPE-M12FA-HD	4	10	250	4	1
22262065	AB-C4-15,0TPE-M12FA-HD	4	15	250	4	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.



New

## ETHERLINE® ROBUST FR



Info

- For PROFINET applications
- Flame-retardant

### Benefits

- Outstanding weather, ozone and UV resistance together with the wide temperature range enable versatile use for both 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

- For flexible applications (7-wire stranded conductor)
- 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 industrial secondary and tertiary cabling according to EN 50173-3 ISO/IEC 24702

### Product features

- Flame retardant acc. to IEC 60332-1-2
- Good chemical resistance to ester-based hydraulic fluids
- Ozone, UV and weather-resistant according to EN 50396 and HD 605 S2

### Product Make-up

- Stranded 7-wire bare conductor
- Core insulation: Based on Polyolefin
- Screening: wrapped with braided tinned-copper wires
- Outer sheath made of special TPE
- Outer sheath colour: black

### Technical data



**Minimum bending radius**  
Flexing: 10 x outer diameter



**Characteristic impedance**  
100 Ohm +- 15%



**Temperature range**  
Occasional flexing: -40°C to +80°C  
Fixed installation: -50°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)
<b>PROFINET Cat.5e</b>			
2170454	ETHERLINE® ROBUST PN FR Cat.5e	2x2xAWG22/7	6,8
<b>PROFINET Cat.7</b>			
2170455	ETHERLINE® ROBUST PN FR Cat.7	4x2xAWG23/7	9,0
<b>INDUSTRIAL ETHERNET Cat.7</b>			
2170456	ETHERLINE® ROBUST FR Cat.7	4x2xAWG26/7	6,5

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](http://www.lappkabel.de/en/cable-standardlengths)  
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.





New

## ETHERLINE® ROBUST

**Info**

- For PROFINET applications
- Good chemical resistance



### Benefits

- Outstanding weather, ozone and UV resistance together with the wide temperature range enable versatile use for both 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

- For flexible applications (7-wire stranded conductor)
- 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 industrial secondary and tertiary cabling according to EN 50173-3 ISO/IEC 24702

### Product features

- Halogen-free materials
- Good chemical resistance to ester-based hydraulic fluids
- Ozone, UV and weather-resistant according to EN 50396 and HD 605 S2
- Low smoke density according to IEC 61034-2

### Product Make-up

- Stranded 7-wire bare conductor
- Core insulation: Based on Polyolefin
- Screening: wrapped with braided tinned-copper wires
- Outer sheath made of special TPE
- Outer sheath colour: black

### Technical data

- Minimum bending radius**  
Flexing: 10 x outer diameter
- Characteristic impedance**  
100 Ohm +- 15%
- Temperature range**  
Occasional flexing: -40°C to +80°C  
Fixed installation: -50°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)
<b>PROFINET Cat.5e</b>			
2170451	ETHERLINE ROBUST PN Cat.5e	2x2xAWG22/7	6,8
<b>PROFINET Cat.7</b>			
2170452	ETHERLINE® ROBUST PN Cat.7	4x2xAWG23/7	9,0
<b>INDUSTRIAL ETHERNET Cat.7</b>			
2170453	ETHERLINE® ROBUST Cat.7 flex	4x2xAWG26/7	6,5

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](http://www.lappkabel.de/en/cable-standardlengths)  
 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.



New

## ETHERLINE® PN FLEX

LAPP KABEL STUTTGART ETHERLINE® PN Cat.5 Y FLEX FC 2x2xAWG22/7



Info

- For Profinet applications
- CAT.5-Performance
- Flexible use

### Benefits

- Screened against interference
- For PROFINET applications type B
- Industrial use
- Can be used in dry or damp rooms

### Application range

- For industrial secondary and tertiary cabling according to EN 50173-3 ISO/IEC 24702
- For flexible applications (7-wire stranded conductor)
- Wiring of machines, tools, devices, appliances and control cabinets
- Suitable for EtherCAT and EtherNet/IP applications
- 2pair: 10/100 Mbit/s for Industrial Ethernet

### Product features

- Flame-retardant according to CSA FT4 UL Vertical-Tray Flame Test
- CAT.5-Performance
- Fast Connect (FC) cable design

### Norm references / Approvals

- The cable is UL/CSA-certified (CMG)
- ETHERLINE® PN Cat.5 Y FLEX FC: ECOLAB® Industry standard for innovation and efficiency in the field of professional cleaning and disinfection

### Product Make-up

- Stranded 7-wire bare conductor
- Core insulation: PE
- Star quad
- Inner sheath made of PVC
- Overall screening with copper braid and plastic-laminated aluminium foil
- PVC jacket material
- Colour: green (based on RAL 6018)

### Technical data



**Peak operating voltage**  
(not for power applications) 125 V



**Minimum bending radius**  
PVC cable:  
during installation: 15 x outer diameter  
fixed: 10 x outer diameter



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



**Characteristic impedance**  
100 Ohm +/- 15%



**Temperature range**  
cable with PVC jacket  
Fixed installation: -40°C to +80°C  
moved: -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)
<b>PVC sheath</b>					
2170886	ETHERLINE® PN Cat.5 Y FLEX FC	2 x 2 x AWG22/7	6.8	31.3	67

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](http://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

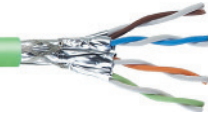
- EPIC® DATA PN AX RJ45
- EPIC® DATA PN 90 RJ45
- Easy Connect RJ45 Modul Cat.6<sub>A</sub> 10G
- BUS M12 connectors that can be assembled
- FC STRIP stripping tool



New

## ETHERLINE® PN Cat.6<sub>A</sub> FLEX

LAPP KABEL STUTTGART ETHERLINE® PN Cat.6<sub>A</sub> Y Flex



Info

- For PROFINET applications with 4 pairs

### Benefits

- For PROFINET applications type B
- Screened against interference
- Industrial use
- Can be used in dry or damp rooms

### Application range

- For industrial secondary and tertiary cabling according to EN 50173-3 ISO/IEC 24702
- For flexible applications (7-wire stranded conductor)
- Plant engineering, machinery manufacturing
- Suitable for EtherCAT and EtherNet/IP applications

### Product features

- CAT.6<sub>A</sub> for flexible application, qualified for 10Gbit/s
- Meets the requirements according to CAT.6<sub>A</sub>, ISO/IEC 11801 and EN 50173
- High-quality, double screening ensures high transmission reliability in areas with electromagnetic interference
- The oil-resistant PVC sheath enables usage in industrial environments

### Norm references / Approvals

- PVC cable is UL/CSA-certified (CMG)
- ETHERLINE® PN Cat.6A Y FLEX:ECOLAB® Industry standard for innovation and efficiency in the field of professional cleaning and disinfection

### Product Make-up

- Stranded 7-wire bare conductor
- Core insulation: PE
- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- PVC jacket material
- Colour: green (based on RAL 6018)

### Technical data

- Peak operating voltage**  
(not for power applications) 125 V
- Minimum bending radius**  
Flexing: 15 x outer diameter  
Fixed installation: 8 x outer diameter
- Characteristic impedance**  
100 ± 15 Ohm (> 1 MHz)
- Temperature range**  
PVC: -10°C to +70°C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
<b>PVC outer sheath</b>					
2170930	ETHERLINE PN Cat.6 <sub>A</sub> Y FLEX	4 x 2 x AWG23/7	9.0	48	92

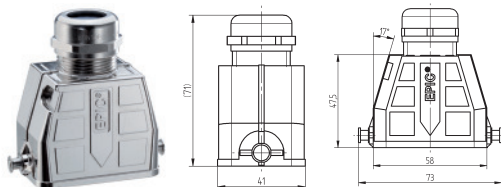
Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.  
 PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)  
 Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.  
 Photographs are not to scale and do not represent detailed images of the respective products.

### Accessories

- Easy Connect RJ45 Modul Cat.6<sub>A</sub> 10G
- EPIC® DATA AX RJ45 Cat.6<sub>A</sub>
- EPIC® DATA 90 RJ45 Cat.6<sub>A</sub>
- Connector industry RJ45 Cat.6<sub>A</sub> 10 IP68
- EPIC® DATA M12D
- EPIC® DATA M12X
- EPIC® DATA CCR FA
- DATA STRIP stripping tool



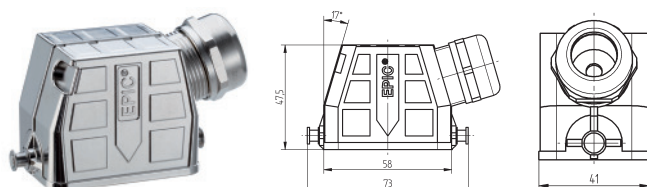
## EPIC® ULTRA H-B 6 TG LB



**Info**

- EMC protection
- Corrosion-resistant
- SKINTOP® integrated cable gland

## EPIC® ULTRA H-B 6 TS LB



**Info**

- EMC protection
- Corrosion-resistant
- SKINTOP® integrated cable gland

### Benefits

- Optimum, low-resistance 360° screening
- All-purpose due to high corrosion resistance and high environmental protection.
- Space-saving due to compact dimensions
- Faster than any other comparable system
- High mechanical resistance

### Application range

- Packaging machines
- Filling and weighing machines
- In EMC-sensitive environments
- For fixed and flexible applications (e.g. machinery building, wind turbines)
- Construction machinery
- Electric motor manufacturing

### Product features

- Housings with the BRUSH addition come with BRUSH cable screen contacting
- Pluggable with standard housings
- Corrosion-resistant according to DIN EN 6988
- Resistance to cyclic salt spray is tested according to IEC 68-2-52, severity level 2
- Salt spray testing according to DIN EN ISO 9227, method NSS, period of test 480 hours

### Suitable inserts

- Refer to Selection Table A10 to select the required inserts and housings

### Technical data



**Material**

Housing: nickel-plated zinc die-casting  
 Lever and bolts: stainless steel  
 Sealing: NBR  
 Cable gland  
 Body: nickel-plated brass  
 Insert: PA  
 Seal: special elastomer



**Protection rating**

IP 65



**Temperature range**

-40°C to +100°C

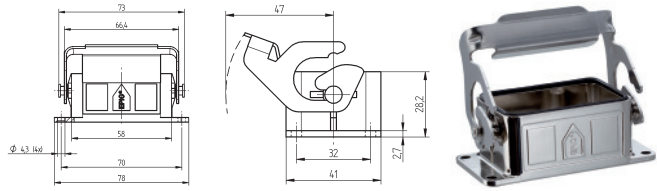
Article number	Article	Clamping range in mm	Minimum Ø above braiding (mm)	Pieces / PU
<b>H-B housing: hood (straight cable entry, bolts for single lever)</b>				
70250200	ULTRA H-B 6 TG-LB 6-13	6 - 13		1
70250201	ULTRA H-B 6 TG-LB 9-17	9 - 17		1
70250202	ULTRA H-B 6 TG-LB 9-17 BRUSH	9 - 17	6	1
<b>H-B housing: hood (side cable entry, bolts for single lever)</b>				
70250203	ULTRA H-B 6 TS-LB 6-13	6 - 13		1
70250204	ULTRA H-B 6 TS-LB 9-17	9 - 17		1
70250205	ULTRA H-B 6 TS-LB 9-17 BRUSH	9 - 17	6	1

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

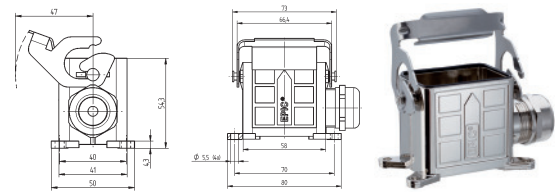




**EPIC® ULTRA H-B 6 AG LB**



**EPIC® ULTRA H-B 6 SGR LB**



**Info**

- EMC protection
- Corrosion-resistant
- SKINTOP® integrated cable gland

**Info**

- EMC protection
- Corrosion-resistant
- SKINTOP® integrated cable gland

**Benefits**

- Optimum, low-resistance 360° screening
- All-purpose due to high corrosion resistance and high environmental protection.
- Space-saving due to compact dimensions
- Faster than any other comparable system
- High mechanical resistance

**Application range**

- Packaging machines
- Filling and weighing machines
- In EMC-sensitive environments
- For fixed and flexible applications (e.g. machinery building, wind turbines)
- Construction machinery
- Electric motor manufacturing

**Product features**

- Housings with the BRUSH addition come with BRUSH cable screen contacting
- Pluggable with standard housings
- Corrosion-resistant according to DIN EN 6988
- Resistance to cyclic salt spray is tested according to IEC 68-2-52, severity level 2
- Salt spray testing according to DIN EN ISO 9227, method NSS, period of test 480 hours

**Suitable inserts**

- Refer to Selection Table A 10 to select the required inserts and housings

**Technical data**

**Material**  
 Housing: nickel-plated zinc die-casting  
 Lever and bolts: stainless steel  
 Sealing: NBR  
 Cable gland  
 Body: nickel-plated brass  
 Insert: PA  
 Seal: special elastomer

**IP Protection rating**  
 IP 65

**Temperature range**  
 -40°C to +100°C

Article number	Article	Clamping range in mm	Minimum Ø above braiding (mm)	Pieces / PU
<b>H-B housing: panel-mount base (single lever)</b>				
70250206	ULTRA H-B 6 AG LB			1
<b>H-B housing: surface-mount base (1 cable entry, single lever)</b>				
70250207	ULTRA H-B 6 SGR LB 6-13	6 - 13		1
70250208	ULTRA H-B 6 SGR LB 9-17	9 - 17		1
70250209	ULTRA H-B 6 SGR LB 9-17 BRUSH	9 - 17	6	1

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



**New**

**SKINTOP® INOX / SKINTOP® INOX-R**



**Info**

- Stainless steel version with compact design
- For use in the splash zone in the food production

**Benefits**

- Corrosion-resistant
- Sea water-resistant
- Smooth surfaces - no edges
- Compact design
- Wide, variable clamping ranges

**Application range**

- Onshore and offshore applications
- Bottling plants and breweries
- Food industry (product-free zone, splash zone)
- Weighing and dosing systems

**Norm references / Approvals**

- **ECOLAB®**  
Industry standard in the field of professional cleaning and disinfection

**DIN EN 1672-2**

Guideline for the design of machinery

**DIN EN ISO 14 159**

Security of machinery  
Hygienic requirements for the design of machinery

**Product Make-up**

- Metric connection thread acc. to DIN EN 60423

**Suitable cables**

- The following cables are recommended for IP 69 applications:  
ÖLFLEX® ROBUST 200  
H07RN8-F  
H07RN-F

**Technical data**

**Classification**  
ETIM 5.0 Class-ID: EC000441  
ETIM 5.0 Class-Description: cable screw gland

**Material**  
Body: Stainless steel - V4A (1.4404 / 316L)  
Insert: Polyamide  
Sealing ring: Silicone  
O-Ring: Silicone

**Protection rating**  
IP 68 - 10 bar (M12 - M20)  
IP 68 - 5 bar (M25 - M32)  
IP 69

**Temperature range**  
-40°C to +100°C

Article number	Article designation / size	Clamping range ØF (mm)	Thread length, D (mm)	SW (mm)	Overall length, C (mm)	Pieces / PU
<b>SKINTOP® INOX</b>						
53806739	12x1,5	4-7	6,5	16	29,3	5
53806740	16x1,5	6-10	7	20	32,4	5
53806741	20x1,5	7-13	8	24	35,8	5
53806742	25x1,5	9-17	8	29	37,8	5
53806743	32x1,5	11-21	9	36	43,3	5
<b>SKINTOP® INOX-R</b>						
53806749	12x1,5	3-5	6,5	16	29,3	5
53806750	16x1,5	5-7	7	20	32,4	5
53806751	20x1,5	5-10	8	24	35,8	5
53806752	25x1,5	7-13	8	29	37,8	5
53806753	32x1,5	7-15	9	36	43,3	5

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

**Similar products**

- SKINDICHT® CN-M
- SKINTOP® HYGIENIC

**Accessories**

- Suitable counter nut SKINDICHT® SM CrNi M





**New**

**SKINTOP® INOX SC**



**Info**

- Stainless steel version with compact design
- Optimum EMC protection

**Benefits**

- Smooth surfaces - no edges
- Compact design
- Wide, variable clamping ranges
- Low-resistance screen contact, optimum EMC protection
- Highly conductive, flexible EMC contact for clamping various screen diameters

**Application range**

- For EMC-compliant earthing of the copper braiding, or for cables with copper shaft sheath
- Pharmaceutical industry
- Food industry (product-free zone, splash zone)
- Onshore and offshore applications
- Bottling plants and breweries

**Norm references / Approvals**

- **DIN EN ISO 14 159**  
Security of machinery  
Hygienic requirements for the design of machinery
- **DIN EN 1672-2**  
Guideline for the design of machinery
- **ECOLAB®**  
Industry standard in the field of professional cleaning and disinfection

**Product Make-up**

- Metric connection thread acc. to DIN EN 60423

**Note**

- EMC counter nut, SKINDICHT® SM nut should be used to ensure optimum contact with painted, anodised or powder-coated housings
- For suitable accessories, refer to SKINTOP® metric accessories

**Technical data**

**Classification**  
ETIM 5.0 Class-ID: EC000240  
ETIM 5.0 Class-Description:  
Cable entry system

**Caution**  
Refer to the instruction leaflet for the installation dimensions and torques

**Material**  
Body: Stainless steel - V4A (1.4404 / 316L)  
Insert: Polyamide  
Sealing ring: Silicone  
O-Ring: Silicone

**Protection rating**  
IP 68 - 10 bar (M12 - M20)  
IP 68 - 5 bar (M25 - M32)  
IP 69

**Temperature range**  
-40°C to +100°C

Article number	Article designation / size	Clamping range ØF (mm)	Thread length, D (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
<b>SKINTOP® INOX SC</b>							
53806720	M 12 x 1,5	4-7	6,5	16	29,3	6,5	5
53806722	M 16 x 1,5	6-10	7	20	32,4	7	5
53806724	M 20 x 1,5	7-12,5	8	24	35,5	8	5
53806726	M 25 x 1,5	9-17	8	29	30,8	8	5
53806728	M 32 x 1,5	11-21	9	36	44,6	9	5

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

**Similar products**

- SKINDICHT® CN-M
- SKINTOP® HYGIENIC

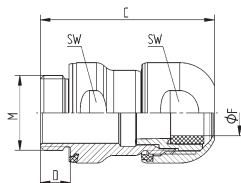
**Accessories**

- Suitable counter nut SKINDICHT® SM CrNi M



**New**

**SKINTOP® HYGIENIC / SKINTOP® HYGIENIC-R**



**Info**

- Ideal for hygienic critical areas - resistant, edge-free, robust and reliable
- No gaps, voids or outer lying thread - so no risk of contamination of food machines, facilities or components.

**Benefits**

- Hygienic Design for ideal cleaning results
- Smooth surfaces and no edges prevent the accumulation of fluids and formation of micro-organisms

**Application range**

- Food machinery, equipment and components
- For use in **product zone**
- Pharmaceutical industry
- Dairy and cheese technology
- Mills for grains and cereals

**Norm references / Approvals**

- **EHEDG (TYPE EL Class I AUX)**  
Hygienic design for machinery and components (pending)
- **ECOLAB®**  
Industry standard in the field of professional cleaning and disinfection
- **FDA 21 CFR 177.2600**  
Special sealing element for food and beverage industry in North America
- **DIN EN 1672-2**  
Guideline for the design of machinery

**DIN EN ISO 14 159**

Security of machinery Hygienic requirements for the design of machinery

**Product Make-up**

- Material and shape provide an easy and safe cleaning
- By the blue coloring of the sealing material clearly distinguishable from foodstuffs
- Metric connection thread acc. to DIN EN 60423
- One complete assembly is easily mounted from the outside

**Note**

- Other sizes are available upon request
- EMC version is available upon request
- Installation wrench for very high packing density on request

**Suitable cables**

- The following cables are recommended for IP 69 applications:  
ÖLFLEX® ROBUST 200  
H07RN8-F  
H07RN-F

**Technical data**



**Classification**

ETIM 5.0 Class-ID: EC000441  
ETIM 5.0 Class-Description:  
cable screw gland



**Material**

Body: Stainless steel - V4A (1.4404 / 316L)  
Insert: Polyamide  
Sealing material: Special Elastomer



**Protection rating**

IP 68 - 10 bar  
IP 69



**Temperature range**

-20°C to +100°C

Article number	Article designation / size	Clamping range ØF (mm)	Thread length, D (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
<b>SKINTOP® HYGIENIC</b>							
53105100	M 12 x 1,5	4-6	6.5	16	39.9	6.5	5
53105110	M 16 x 1,5	6,5-9	7	20	43.4	7	5
53105120	M 20 x 1,5	9-12	8	24	46.4	8	5
53105130	M 25 x 1,5	11,5-15,5	8	29	48.9	8	5
<b>SKINTOP® HYGIENIC-R</b>							
53105200	M 12 x 1,5	2-4,5	6.5	16	39.9	6.5	5
53105210	M 16 x 1,5	4,5-7	7	20	43.4	7	5
53105220	M 20 x 1,5	7-10	8	24	46.4	8	5
53105230	M 25 x 1,5	9-12,5	8	29	48.9	8	5

Other sizes are available upon request.  
Photographs are not to scale and do not represent detailed images of the respective products.

**Similar products**

- SKINTOP® INOX

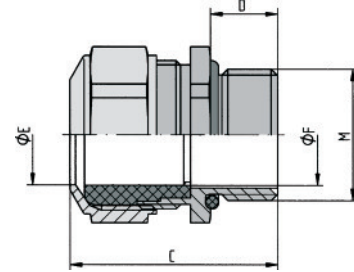
**Accessories**

- Suitable counter nut SKINDICHT® SM CrNi M
- SKINMATIC® QUICK SET





**SKINDICHT® CN-M**



**Benefits**

- For high temperatures
- Resistant to oils, solvents, acids and chemicals
- Seawater-resistant
- For high mechanical stress
- High corrosion-resistance

**Application range**

- Chromium nickel steel cable gland with VITON® seal, specially designed for use under tough conditions
- Pharmaceutical and petrochemical industry
- Offshore sector
- Oil presses
- Coaters and roasters

**Product Make-up**

- Metric connection thread acc. to DIN EN 60423

**Note**

- Refer to the chart to find a suitable counter-nut for SKINDICHT® SM CrNi M

**Technical data**

**Classification**  
 ETIM 5.0 Class-ID: EC000441  
 ETIM 5.0 Class-Description: cable screw gland

**Caution**  
 The installation dimensions can be found in appendix T21

**Material**  
 Body: chrome-nickel steel in accordance with DIN, material no. 1.4305  
 Inner seal: FPM  
 O-ring: FPM

**Protection rating**  
 IP 68 - 5 bar

**Temperature range**  
 -40°C to +200°C

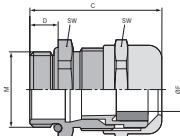
Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
<b>SKINDICHT® CN-M</b>						
52032580	12 x 1,5/1	3,5 - 5	17	27,0	10	5
52032590	12 x 1,5/2	5 - 6,5	17	27,0	10	5
52032600	12 x 1,5/3	6,5 - 8	17	27,0	10	5
52032610	16 x 1,5	8 - 10,5	18	30,0	10	5
52032620	20 x 1,5	11 - 15	24	31,0	10	5
52032630	25 x 1,5	16 - 20,5	30	36,0	11	5
52032640	32 x 1,5	21 - 25,5	36	41,0	13	5
52032650	40 x 1,5	28,5 - 33	46	44,0	13	1
52032660	50 x 1,5	37 - 42	55	48,0	14	1
52032670	63 x 1,5	46 - 52	70	51,0	14	1
<b>SKINDICHT® SM CrNi M counter nuts</b>						
52032585	12 x 1,5	-	17	3,0	3	10
52032615	16 x 1,5	-	19	3,0	3	10
52032625	20 x 1,5	-	24	3,5	3,5	10
52032635	25 x 1,5	-	30	3,5	3,5	10
52032645	32 x 1,5	-	36	4,5	4,5	10
52032655	40 x 1,5	-	46	4,5	4,5	10
52032665	50 x 1,5	-	55	5,5	5,5	10
52032675	63 x 1,5	-	70	6,0	6	10

Viton® is a registered trademark of DuPont de Nemours  
 Photographs are not to scale and do not represent detailed images of the respective products.





**SKINTOP® COLD / SKINTOP® COLD-R**



**Info**

- For extreme sub-zero temperatures

**Benefits**

**SKINTOP® COLD**

- High cold-resistance
- Cold impact resistance
- High mechanical stability
- Optimum strain relief
- Wide, variable clamping ranges

**Application range**

**SKINTOP® COLD**

- In areas where mechanical stability and high cold-resistance are critical
- Air-conditioning technology
- Freezing plants, cold storage
- Offshore sector
- Plant engineering

**SKINTOP® COLD-R**

- With reducing seal insert, to seal cables with smaller outer diameters.

**Product Make-up**

- Metric connection thread acc. to DIN EN 60423

**Note**

- Counter nut to be used: SKINDICHT® SM-M
- Refer to SKINTOP® metric accessories for suitable accessories

**Technical data**



**Classification**

ETIM 5.0 Class-ID: EC000441  
ETIM 5.0 Class-Description: cable screw gland



**Caution**

Refer to Appendix T21 for the installation dimensions and torques



**Note**

In stainless steel V2A available



**Material**

Body: nickel-plated brass  
Insert: special polyamide  
Sealing ring: silicone  
O-ring: silicone



**Protection rating**

**SKINTOP® COLD**  
IP 68 - 10 bar (M12 - M20)  
IP 68 - 5 bar (M25 - M63)  
**SKINTOP® COLD-R**  
IP 68 - 5 bar (M25 - M63)



**Temperature range**

-70°C to +100°C

Article number	Article designation / size	Clamping range ØF (mm)	SW (mm)	Overall length, C (mm)	Thread length, D (mm)	Pieces / PU
<b>SKINTOP® COLD</b>						
53113500	12 x 1,5	3-7	16	26.5	6.5	100
53113510	16 x 1,5	4,5-10	20	32.0	7	100
53113520	20 x 1,5	7-13	24	35.5	8	50
53113530	25 x 1,5	9-17	29	37.5	8	25
53113540	32 x 1,5	11-21	36	42.2	9	25
53113550	40 x 1,5	19-28	45	49.5	9	10
53113560	50 x 1,5	27-35	54	52.0	10	5
53113570	63 x 1,5	34-45	67	61.3	15	5
<b>SKINTOP® COLD-R</b>						
53113600	12 x 1,5	1-5	16	26.5	6.5	100
53113610	16 x 1,5	2-7	20	32.0	7	100
53113620	20 x 1,5	5-10	24	35.5	8	50
53113630	25 x 1,5	6-13	29	37.5	8	25
53113640	32 x 1,5	7-15	36	42.2	9	25
53113650	40 x 1,5	15-23	45	49.5	9	10
53113660	50 x 1,5	22-29	54	52.0	10	5
53113670	63 x 1,5	28-39	67	61.3	15	5

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

**Accessories**

**SKINTOP® COLD**

- SKINDICHT® SM-M

ÖLFLEX®  
UNITRONIC®  
ETHERLINE®  
HITRONIC®  
EPIC®  
SKINTOP®  
SILVYN®  
FLEXIMARK®  
ACCESSORIES



New

**SILVYN® FG NM**



**Info**

- All-plastic conduit
- Specifically for the food and beverage industry

**Benefits**

- FDA-approved outer sheath
- Smooth, blue surface makes it easy to clean
- Protects against liquids

**Application range**

- Food and beverage industry, especially for production and processing equipment of milk and meat products
- Packaging machines
- Dairy and cheese technology
- Mechanical engineering
- Plant engineering

**Product features**

- Flexible
- Dimensionally stable
- Flame-retardant

**Norm references / Approvals**

- Certified according to FDA CFR 21 and NSF 51 (standard for the USA)
- **ECOLAB®**  
Industry standard for innovation and efficiency in the field of professional cleaning and disinfection

**Product Make-up**

- Hard PVC inner spiral
- Special, FDA-approved plastic sheath

**Technical data**

**DIN VDE** Certifications  
FDA CFR 21  
NSF 51

**RAL** Colour delivered  
Blue

**Material**  
Special soft PVC sheath with hard PVC spiral

**Temperature range**  
-20°C to +60°C  
Short-term: +80 °C

Article number	Internal Ø x external Ø (mm)	Nominal size	Bending radius (mm)	Dynamic bending radius (mm)	PU ring (m)
<b>SILVYN® FG NM blue</b>					
55503370	12.6 x 17.8	3/8"	70	100	30
55503371	16.0 x 21.1	1/2"	100	135	30
55503372	21.0 x 26.4	3/4"	130	175	30
55503373	26.5 x 33.1	1"	180	220	30
55503374	35.1 x 41.8	1 1/4"	225	270	15
55503375	40.3 x 47.8	1 1/2"	255	320	15
55503376	51.6 x 59.9	2"	310	400	15

\* Trade product, no Lapp product  
Photographs are not to scale and do not represent detailed images of the respective products.

**Similar products**

- SILVYN® FG

**Accessories**

- SILVYN® HYGIENIC
- SILVYN® AMG-M FG

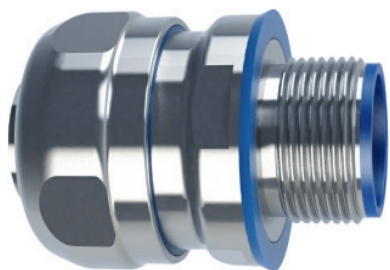
Liquid-tight conduits

Impermeable conduits



New

**SILVYN® HYGIENIC**



**Info**

- Ideal for hygienic critical areas - resistant, edge-free, robust and reliable
- No gaps, voids or outer lying thread - so no risk of contamination of food machines, facilities or components.

**Benefits**

- Hygienic Design for ideal cleaning results
- Smooth surfaces and no edges prevent the accumulation of fluids and formation of micro-organisms

**Application range**

- Food machinery, equipment and components
- For use in **product zone**
- Packaging machines
- Dairy and cheese technology

**Product features**

- High chemical and thermal stability with very aggressive media such as Detergents and disinfectants, acids and alkalis during cleaning processes etc.

**Norm references / Approvals**

- **DIN EN 1672-2**  
Guideline for the design of machinery
- **DIN EN ISO 14 159**  
Security of machinery  
Hygienic requirements for the design of machinery

**Product Make-up**

- Material and shape provide an easy and safe cleaning
- By the blue coloring of the sealing material clearly distinguishable from foodstuffs
- Rounded key areas for mounting with standard tools

**Suitable conduits**

- SILVYN® FG
- SILVYN® FG NM

**Technical data**

**Norm references / Approvals**  
DIN VDE IEC EN 61386-23

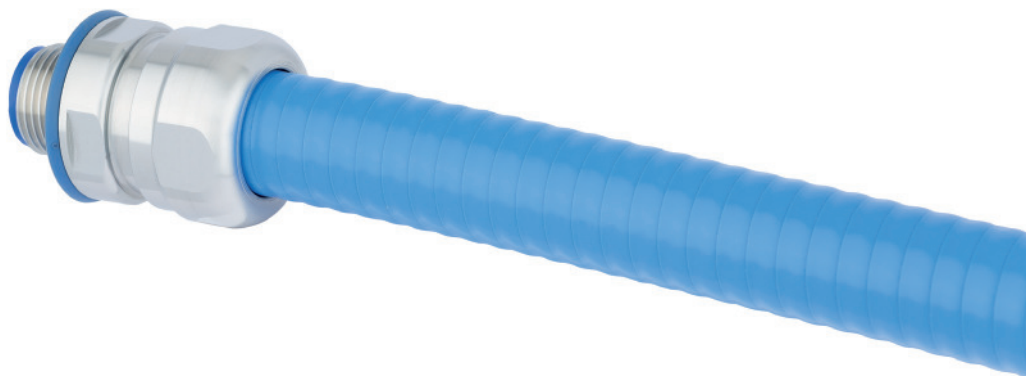
**Material**  
Body: Stainless Steel (Grade 316)  
Insert: Nickel Plated Brass  
Inner seal: Polyamide 6  
Sealing material: Special Elastomer

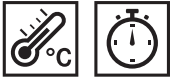
**Protection rating**  
IP66  
IP67  
IP68 (2 bar)  
IP69

**Temperature range**  
-50°C to +135°C

Article number	Article designation	Nominal size	min. internal Ø	Pieces / PU
<b>SILVYN® HYGIENIC</b>				
55510700	M16 x 1,5	3/8"	10.7	1
55510701	M20 x 1,5	1/2"	14.5	1
55510702	M25 x 1,5	3/4"	18.7	1
55510703	M32 x 1,5	1"	24.6	1
55510704	M40 x 1,5	1 1/4"	32.7	1
55510705	M50 x 1,5	1 1/2"	37.7	1

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





**SILVYN® ELT**



**Benefits**

- High temperature resistance
- Easy assembly of cables and wires due to smooth inner
- Bendable
- Crush-resistant
- A fully insulated system when used in combination with SILVYN® MPC/MPC-M

**Application range**

- Deighing and dosing systems
- Coaters and roasters
- Packaging machines
- Applications with higher temperatures

**Product features**

- High temperature resistance
- Smooth inner wall
- Flexible
- Dimensionally stable

**Norm references / Approvals**

- **ECOLAB®**  
Industry standard for innovation and efficiency in the field of professional cleaning and disinfection
- UL FILENUMBER E308201

**Product Make-up**

- Integrated hard PVC spiral
- Modified soft PVC sheath

**Technical data**

- DIN VDE** **Certifications**  
IEC EN 61386-23
- RAL** **Colour delivered**  
Blue (RAL 5012)
- Material**  
Special soft PVC sheath with hard PVC spiral
- Temperature range**  
-20°C to +90°C

Article number	Internal Ø x external Ø (mm)	Bending radius (mm)	Suitable for SILVYN® MPC-M/MPC 90°M	Suitable for SILVYN® MPC	Suitable for SILVYN® MPC 90°	PU ring (m)
<b>SILVYN® ELT</b>						
61751700	10.0 x 14.5	25	16/1	9	9	30
61751710	12.0 x 16.5	25	16/2, 20/1	11, 13,5/1	11, 13,5/1	30
61751720	16.0 x 21.0	35	20/2	13,5/2, 16	13,5/2, 16	30
61751730	22.0 x 27.5	45	25 x 1,5	21	21	30
61751740	25.0 x 30.5	55	32/1	29/1	29/1	30
61751750	28.0 x 33.5	60	32/2	29/2	29/2	30
61751760	35.0 x 41.0	80	40 x 1,5	36	36	30
61751770	40.0 x 46.4	105	50 x 1,5	42		30
61751780	50.0 x 57.0	120	63 x 1,5	48		30

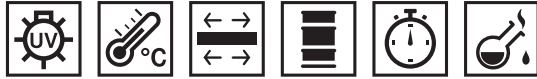
Photographs are not to scale and do not represent detailed images of the respective products.

**Similar products**

- SILVYN® EL
- SILVYN® ELÖ

**Accessories**

- SILVYN® MPC-M
- SILVYN® MPC
- SILVYN® MPC 90° M
- SILVYN® MPC 90°



## SILVYN® MPC-M / SILVYN® MPC



### ■ Benefits

- All-purpose
- Fast and easy assembly

### ■ Application range

- Deighing and dosing systems
- Coaters and roasters
- Packaging machines

### ■ Product features

- Dust protection
- Moisture-protection
- High-tensile

### ■ Norm references / Approvals

- UL FILENUMBER E308201

### ■ Product Make-up

#### SILVYN® MPC-M

- Metric connection thread
- Hexagonal collar with integrated conduit connection

#### SILVYN® MPC

- PG connection thread
- Hexagonal collar with integrated conduit connection

### ■ Suitable conduits

- SILVYN® EL
- SILVYN® ELÖ
- SILVYN® ELT
- SILVYN® SP
- SILVYN® SP-PU

### ■ Technical data



**Certifications**  
IEC EN 61386-23



**Colour delivered**  
Black (RAL 9005), UV-resistant  
Grey, RAL 7001



**Material**  
PA66  
Halogen-free



**Protection rating**  
IP 65

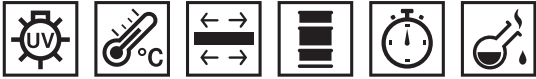


**Temperature range**  
-40°C to +120°C

Article number	Article designation	PG size	Connection thread M	Clear opening (mm)	Suitable for SILVYN® SI	Suitable for SILVYN® SP/SP-PU	SILVYN® EL/ELÖ/ELT	Pieces / PU
<b>SILVYN® MPC-M black</b>								
55502460	SILVYN MPC M16/1		16 x 1.5	9	11 x 14		10 x 14.7	10
55502461	SILVYN MPC M16/2		16 x 1.5	10.5	13 x 16	12 x 16	12 x 16.6	10
55502462	SILVYN MPC-M 20/1		20 x 1.5	10.5	13 x 16	12 x 16	12 x 16.6	10
55502463	SILVYN MPC M20/2		20 x 1.5	14.5		16 x 20	16 x 20.7	10
55502464	SILVYN MPC M25		25 x 1.5	19		22 x 27	22 x 27.7	10
55502465	SILVYN MPC M32/1		32 x 1.5	24.5			25,0 x 30,6	10
55502469	SILVYN MPC M32/2		32 x 1.5	24.5			28 x 33,5	10
55502466	SILVYN MPC M40		40 x 1.5	33			35 x 41,0	2
55502467	SILVYN MPC M50		50 x 1.5	39			40 x 46,4	2
55502468	SILVYN MPC M63		63 x 1.5	48		50 x 56	50 x 57,2	1
<b>SILVYN® MPC-M grey</b>								
55502441	SILVYN MPC M16/1		16 x 1.5	9	11 x 14		10 x 14.7	10
55502442	SILVYN MPC M16/2		16 x 1.5	10.5	13 x 16	12 x 16	12 x 16.6	10
55502443	SILVYN MPC-M 20/1		20 x 1.5	10.5	13 x 16	12 x 16	12 x 16.6	10
55502444	SILVYN MPC M20/2		20 x 1.5	14.5		16 x 20	16 x 20.7	10
55502445	SILVYN MPC M25		25 x 1.5	19		22 x 27	22 x 27.7	10
55502446	SILVYN MPC M32/1		32 x 1.5	24.5			25,0 x 30,6	10
55502447	SILVYN MPC M32/2		32 x 1.5	24.5			28 x 33,5	10
55502448	SILVYN MPC M40		40 x 1.5	33			35 x 41,0	2
55502449	SILVYN MPC M50		50 x 1.5	39			40 x 46,4	2
55502439	SILVYN MPC M63		63 x 1.5	48		50 x 56	50 x 57,2	1
<b>SILVYN® MPC black</b>								
55502470	SILVYN MPC 9	9		9	11 x 14		10 x 14.7	10
55502471	SILVYN MPC 11	11		10.5	13 x 16	12 x 16	12 x 16.6	10
55502472	SILVYN MPC 13,5/1	13.5		10.5	13 x 16	12 x 16	12 x 16.6	10
55502494	SILVYN MPC 13,5/2	13.5		14.5		16 x 20	16 x 20.7	10
55502473	SILVYN MPC 16	16		14.5		16 x 20	16 x 20.7	10
55502474	SILVYN MPC 21	21		19		22 x 27	22 x 27.7	10
55502476	SILVYN MPC 29/1	29		24.5			25,0 x 30,6	10
55502495	SILVYN MPC 29/2	29		24.5			28 x 33,5	10
55502477	SILVYN MPC 36	36		33			35 x 41,0	2
55502478	SILVYN MPC 42	42		39			40 x 46,4	2
55502479	SILVYN MPC 48	48		48			50 x 57,2	2
<b>SILVYN® MPC grey</b>								
55502496	SILVYN MPC 9	9		9	11 x 14		10 x 14.7	10
55502497	SILVYN MPC 11	11		10.5	13 x 16	12 x 16	12 x 16.6	10
55502498	SILVYN MPC 13,5/1	13.5		10.5	13 x 16	12 x 16	12 x 16.6	10
55502499	SILVYN MPC 13,5/2	13.5		14.5		16 x 20	16 x 20.7	10
55502451	SILVYN MPC 16	16		14.5		16 x 20	16 x 20.7	10
55502452	SILVYN MPC 21	21		19		22 x 27	22 x 27.7	10
55502453	SILVYN MPC 29/1	29		24.5			25,0 x 30,6	10
55502454	SILVYN MPC 29/2	29		24.5			28 x 33,5	10
55502455	SILVYN MPC 36	36		33			35 x 41,0	2
55502456	SILVYN MPC 42	42		39			40 x 46,4	2
55502457	SILVYN MPC 48	48		48			50 x 57,2	2

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





## SILVYN® MPC 90° / SILVYN® MPC 90° M



### Benefits

- All-purpose
- Fast and easy assembly
- 90° elbow allows easy installation

### Application range

- Deighing and dosing systems
- Coaters and roasters
- Packaging machines

### Product features

- Dust protection
- Moisture-protection
- High-tensile

### Norm references / Approvals

- UL FILENUMBER E308201

### Product Make-up

#### SILVYN® MPC 90° M

- Metric connection thread
- 90° elbow with integrated conduit connection

#### SILVYN® MPC 90°

- PG connection thread
- 90° elbow with integrated conduit connection

### Suitable conduits

- SILVYN® EL
- SILVYN® ELÖ
- SILVYN® ELT
- SILVYN® SP
- SILVYN® SP-PU

### Technical data



**Certifications**  
IEC EN 61386-23



**On request**  
With 45° elbow



**Colour delivered**  
Black (RAL 9005), UV-resistant  
Grey, RAL 7001



**Material**  
PA 66  
Halogen-free



**Protection rating**  
IP 65



**Temperature range**  
-40°C to +120°C

Article number	Article designation	PG size	Connection thread M	Clear opening (mm)	Suitable for SILVYN® SI	Suitable for SILVYN® SP/SP-PU	SILVYN® EL/ELÖ/ELT	Pieces / PU
<b>SILVYN® MPC 90° M black</b>								
55502480	SILVYN MPC 90° M 16/1		16 x 1.5	10.5	13 x 16	12 x 16	12 x 16,6	10
55502481	SILVYN MPC 90° M 20/1		20 x 1.5	10.5	13 x 16	12 x 16	12 x 16,6	10
55502482	SILVYN MPC 90° M 20/2		20 x 1.5	14.5		16 x 20	16 x 20,7	10
55502483	SILVYN MPC 90° M 25		25 x 1.5	19		22 x 27	22 x 27,7	10
55502484	SILVYN MPC 90° M 32		32 x 1.5	24.5			28 x 33,5	10
55502485	SILVYN MPC 90° M 40		40 x 1.5	33			35 x 41,0	2
<b>SILVYN® MPC 90° M grey</b>								
55502458	SILVYN MPC 90° M 16/1		16 x 1.5	10.5	13 x 16	12 x 16	12 x 16,6	10
55502459	SILVYN MPC 90° M 20/1		20 x 1.5	10.5	13 x 16	12 x 16	12 x 16,6	10
55502366	SILVYN MPC 90° M 20/2		20 x 1.5	14.5		16 x 20	16 x 20,7	10
55502367	SILVYN MPC 90° M 25		25 x 1.5	19		22 x 27	22 x 27,7	10
55502368	SILVYN MPC 90° M 32		32 x 1.5	24.5			28 x 33,5	10
55502369	SILVYN MPC 90° M 40		40 x 1.5	33			35 x 41,0	2
<b>SILVYN MPC 90° BK</b>								
55502486	SILVYN MPC 90° PG 11 BK	11		10.5	13 x 16	12 x 16	12 x 16,6	10
55502487	SILVYN MPC 90° PG 13,5 BK	13.5		10.5	13 x 16	12 x 16	12 x 16,6	10
55502488	SILVYN MPC 90° PG 16 BK	16		14.5			16 x 20,7	10
55502489	SILVYN MPC 90° PG 21 BK	21		19		16 x 20	22 x 27,7	10
55502490	SILVYN MPC 90° PG 29 BK	29		24.5		16 x 20	28 x 33,5	10
55502493	SILVYN MPC 90° PG 36 BK	36		33			35 x 41,0	2
<b>SILVYN® MPC 90° GY</b>								
55502370	SILVYN MPC 90° PG 11 GY	11		10.5	13 x 16	12 x 16	12 x 16,6	10
55502371	SILVYN MPC 90° PG 13,5 GY	13.5		10.5	13 x 16	12 x 16	12 x 16,6	10
55502372	SILVYN MPC 90° PG 16 GY	16		14.5			16 x 20,7	10
55502373	SILVYN MPC 90° PG 21 GY	21		19		16 x 20	22 x 27,7	10
55502374	SILVYN MPC 90° PG 29 GY	29		24.5		16 x 20	28 x 33,5	10
55502375	SILVYN MPC 90° PG 36 GY	36		33			35 x 41,0	2

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



## FLEXIMARK® Stainless steel marking FCC



**Info**

- Contained in FLEXIMARK® sample bag (article number M3251010)

**Benefits**

- Customised stainless steel cable and component marking
- Markers are sorted prior to delivery
- No time-consuming preparation and installation
- Acid-resistant
- Diverse criteria as ageing resistance and chemical resistance are tested by the independent SP Technical Research Institute of Sweden according to SP 2171 Test Method (see selection table A 15)

**Application range**

- Cable and component marking system for the splash zone
- Dairy and cheese technology
- Oil presses
- Coaters and roasters
- Markers will be delivered with the desired text (printing service is included in the price)

**Product features**

- For fastening with cable ties (LS) up to a width of 7.9 mm
- Included cable ties in article no.83251406, 83251456, 83251426, 83251468: Stainless steel cable ties LS 4,6-200 (article no.61812950)

**Note**

- **Ordering process:** Customised data will be emailed as an Excel file to the responsible Lapp employee when the order is made
  - Column A: Text for the first row
  - Column B: Text for the second row
  - Column B or C: Amount of each text
- Length of the markers is depending on the number of characters
- The column "number of characters" refers to the quantity in one line (the maximum amount of characters for a two-line embossing is 30-max.15 per line)
- All characters are printed in capital letters

**Design**

- Also available with pre-assembled cable tie (LxW: 200 x 4,6 mm)

**Suitable tools**

- STEEL GUN HT-338 cable tie pliers

**Technical data**



**Dimensions**

Character size (height): 4.5 mm  
Diameter borehole: 3,2 mm



**On request**

Blank version available upon request



**Note**

Gap between characters: approximately 1 mm



**Info**

Available characters:  
A-Ö, 0-9, +/;/;= -.  
X Earthing sign



**Material**

Acid resistant stainless steel  
AISI 316-V4a



**Temperature range**

-80°C to +500°C

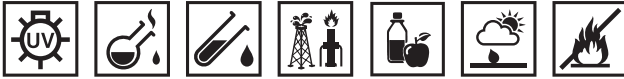
Article number	Article designation	Height (mm)	Product Make-up	Number of characters	Number of markers per PU
<b>One line embossing /with cable tie brackets</b>					
83251406	FLEXIMARK® Stainless SMC FCC LS200 0-15	9.9	with cable tie	0-15	1
83251456	FLEXIMARK® Stainless SMC FCC LS200 16-25	9.9	with cable tie	16-25	1
83251402	FLEXIMARK® Stainless SMC FCC 0-15	9.9	without cable tie	0-15	1
83251454	FLEXIMARK® Stainless SMC FCC 16-25	9.9	without cable tie	16-25	1
<b>One line embossing /with screw hole</b>					
83251450	FLEXIMARK® Stainless SM FCC 0-15	9.9	with screw hole	0-15	1
83251478	FLEXIMARK® Stainless SM FCC 16-25	9.9	with screw hole	16-25	1
<b>Two-line embossing /with cable tie brackets*</b>					
83251426	FLEXIMARK® Stainless SMC2R FCC LS200 0-15	13.9	with cable tie	0-15	1
83251468	FLEXIMARK® Stainless SMC2R FCC LS200 16-25	13.9	with cable tie	16-25	1
83251422	FLEXIMARK® Stainless SMC2R FCC 0-15	13.9	without cable tie	0-15	1
83251466	FLEXIMARK® Stainless SMC2R FCC 16-25	13.9	without cable tie	16-25	1
<b>Two-line embossing /with screw hole</b>					
83251451	FLEXIMARK® Stainless SM2R FCC 0-15	13.9	with screw hole	0-15	1
83251479	FLEXIMARK® Stainless SM2R FCC 16-25	13.9	with screw hole	16-25	1

Blank signplates are available upon request; fasteners for cable ties are also available in concave design (standard: convex). Photographs are not to scale and do not represent detailed images of the respective products. Contents: roll, metre, unit, marker, label

**Accessories**

- LS steel cable ties





**New**

## FLEXIMARK® Cablelabel PUR



**Info**

- PUR 60-10 contained in FLEXIMARK® sample bag (article number M3251010)

### Benefits

- Halogen-free and flame-retardant cable marking
- Good UV-resistance
- Good chemical resistance
- Highly flexible material

### Application range

- For cable and conduit marking
- Can be printed with the FLEXIMARK® thermal transfer printer as CAB A4+M and EOS4
- Printing with FLEXIMARK® Software (Download: <http://www.lappkabel.com/service/downloadcenter/markingsystem/markingsystem.html>)
- For food & beverage applications in the product-free zone
- Packaging machines
- Dighing and dosing systems
- Can be mounted directly on the cable together with plastic cable ties

### Product features

- Recommended ribbon: FLEXIMARK® Ribbon FTI-Y 110-360 BK (article no. 83260200)
- Extremely flame-retardant according to UL 94 V0

### Norm references / Approvals

- Extremely flame-retardant according to UL 94 V0
- MIL 81531 and MIL-STD-202G

### Note

- Customised printing is available upon request

### Product Make-up

- Delivered as a roll of labels

### Technical data

- RAL Colour delivered**  
Standard colour: Yellow/White  
Upon request: Red, orange, blue, black
- Material**  
Halogen-free PUR
- Temperature range**  
-25°C to +80°C

Article number	Article designation	Colour	Width x length (mm)	Contents (unit)	PU
<b>FLEXIMARK® Cablelabel PUR</b>					
83260191	FLEXIMARK® Cablelabel PUR 60-10 YE	yellow	10.0 x 60.0	1000	1
83260192	FLEXIMARK® Cablelabel PUR 75-15 YE	yellow	15.0 x 75.0	1000	1
83260193	FLEXIMARK® Cablelabel PUR 75-25 YE	yellow	25.0 x 75.0	500	1
83260194	FLEXIMARK® Cablelabel PUR 60-10 WH	white	10.0 x 60.0	1000	1
83260195	FLEXIMARK® Cablelabel PUR 75-15 WH	white	15.0 x 75.0	1000	1
83260196	FLEXIMARK® Cablelabel PUR 75-25 WH	white	25.0 x 75.0	500	1

Photographs are not to scale and do not represent detailed images of the respective products.  
Contents: roll, metre, unit, marker, label

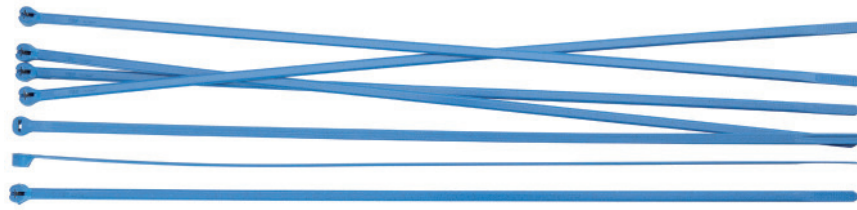
### Accessories

- FLEXIMARK® Software 10.0
- FLEXIMARK® Thermoprint A4+M and EOS4\*
- TY - FAST®- UV-resistant cable ties





## TY-RAP® Detectable cable ties



### Benefits

- Detectable cable ties with a unique compound that can be detected by X-Ray equipment, metal detectors and visual inspection equipment
- Minimize the risk of product contamination
- The colour blue facilitates visual detection
- Help achieve the HACCP EU-Directive
- Available as standard polyamide 6.6 or in buoyant Polypropylene version for liquid-processing applications

### Application range

- Food and beverage industry, especially for production and processing equipment of milk and meat products
- Applications with strong chemical influences
- Pharmaceutical production

### Norm references / Approvals

- Flammability class: UL 94 V-2/ polyamide 6.6
- Flammability class: UL 94 HB/ polypropylene

### Note

- Storage requirements: nylon (polyamide) is, by its nature, susceptible to external influences. Cable ties are mechanically moistened in order to ensure optimal use. As such, they must be stored in a cool, dry location and must not be exposed to direct sunlight. Cable ties are packed in plastic bags to retain moisture; these should remain closed until the cable ties are used.

### Suitable tools

- TY-GUN ERG 50 / TY-GUN ERG 120 cable tie pliers

### Technical data

<b>RAL</b>	<b>Colour delivered</b> Blue
	<b>Material</b> Polyamide 6.6 or polypropylene Halogen-free and silicone-free
	<b>Temperature range</b> -40°C up to +85°C

Article number	Article description	UL certification	Length x width (mm)	Bundling Ø (mm)	Tensile strength (N)	Pieces / PU
<b>Detectable polyamide 6.6</b>						
61723351	Cable tie TY-RAP TY523M-NDT	no	92 x 2	2.0 - 6.0	80	100
61723352	Cable tie TY-RAP TY525M-NDT	no	186 x 4	3.5 - 45.0	220	100
61723353	Cable tie TY-RAP TY528M-NDT	no	360 x 4	3.5 - 102.0	220	100
61723354	Cable tie TY-RAP TY527M-NDT	no	340 x 7	6.0 - 90.0	540	50
<b>Detectable polypropylene</b>						
61723355	Cable tie TY-RAP TY523M-PDT	no	92 x 2	2.0 - 16.0	50	100
61723356	Cable tie TY-RAP TY525M-PDT	no	186 x 4	3.5 - 45.0	130	100
61723357	Cable tie TY-RAP TY528M-PDT	no	360 x 4	3.5 - 102.0	130	100
61723358	Cable tie TY-RAP TY527M-PDT	no	340 x 7	6.0 - 90.0	270	50

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UNITRONIC®  
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HITRONIC®  
EPIC®  
SKINTOP®  
SILVYN®  
FLEXIMARK®  
ACCESSORIES

#### The following applies for the use of our products

The conformity of our products to the relevant European directives and compliance with the provisions contained therein shall be indicated by the CE marking.

The safety of our products is closely associated with how they are used. A knowledge of and adherence to the respective international/national standards of use

(e.g. DIN VDE 0100; 0298) are mandatory. There are particular risks if installed improperly. This applies to all our products/items:

**Processing is only to be done by an authorised electrician! Otherwise, there is the risk of an electric shock or a fire ignited by electric current!**

#### 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 environ-

ment 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 con-

tained in the tables in the appendix to the current main 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. ©Copyright by U.I. Lapp GmbH. Reprinting or reproduction of the text or the

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