

Webguide

**New Products July 2021**

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Cables and accessories for machines and plants:  
a perfect match

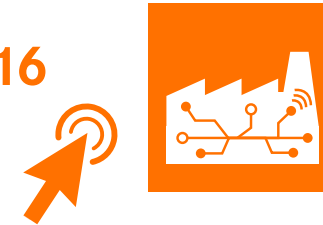
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Our smart transport and logistics solutions

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# MACHINE AND PLANT ENGINEERING


CABLES AND ACCESSORIES  
FOR MACHINES AND PLANTS:  
A PERFECT MATCH


NEW: Summer 2021

 **ÖLFLEX® CLASSIC 115 CH**  
Halogen-free cable, CPR, increased oil resistance,  
for building wiring.

 **ÖLFLEX® CLASSIC 128 H BK SC**  
Halogen-free cable, single core, CPR Cca,  
for building wiring.

 **ÖLFLEX® SERVO 719 CY**  
Shielded PVC servo cable, for fixed installation,  
North America certification.


 **ÖLFLEX® SERVO 728 CY**  
Shielded PVC encoder cable, for fixed  
installation, North America certification.

 **ÖLFLEX® SERVO FD 798 CP**  
Shielded PUR encoder cable, for drag chain,  
North America certification.

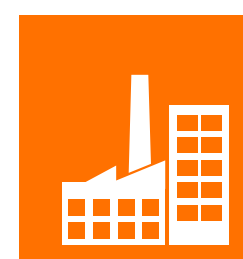
 **ÖLFLEX® SERVO FD 7DSL**  
Hybrid servo cable, for drag chain and  
special One Cable Solution interfaces.

 **ÖLFLEX® SERVO FD 70CS**  
Hybrid servo cable, for drag chain and  
different One Cable Solution interfaces.

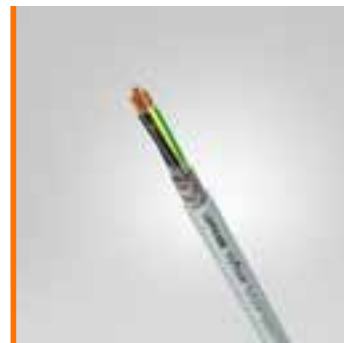
 **H05Z-K 90 °C**  
Halogen-free single core <HAR> according to H05Z-K,  
on coil.

 **H07Z-K 90 °C**  
Halogen-free single core for control cabinet  
<HAR> according to H07Z-K, on coil.

 **Tube cable lugs KRFS**  
Cable lug with narrow connection flange,  
for crimping, UL-certified.

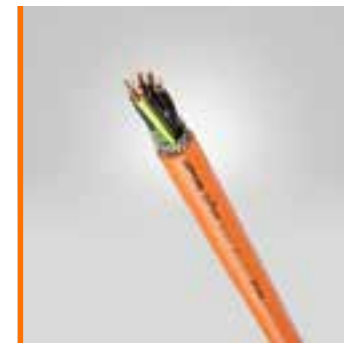


# CABLES AND ACCESSORIES FOR MACHINES AND ENCLOSURES: A PERFECT MATCH



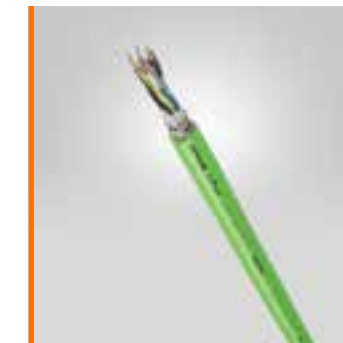
## ÖLFLEX® CLASSIC 115 CH

A true all-rounder! The ÖLFLEX® CLASSIC 115 CH combines many properties that are important when using a halogen-free cable. The applied materials used convince with high electrical safety, high flame resistance, cold flexibility and extended oil resistance. The cable does not require an inner jacket and is therefore particularly space-saving.



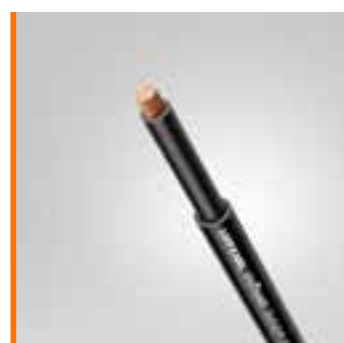
## ÖLFLEX® SERVO 719 CY

New articles available: Our proven servo cable with UL certification for use in North America now includes 4 new variants that differ from the previous ones in terms of structure and conductor cross-section. This means that additional servo motor sizes can be operated. The shielded PVC cable is used for fixed and occasional flexing.



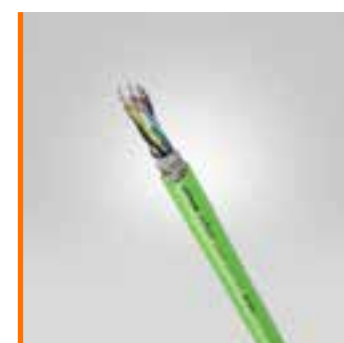
## ÖLFLEX® SERVO FD 798 CP

New articles available: The shielded, green encoder cable with UL certification for use in North America is compatible with feedback systems from various manufacturers. With its highly flexible cable construction and robust PUR outer sheath, it is suitable for dynamic drag chain applications. It is now available in two new cable construction variants.



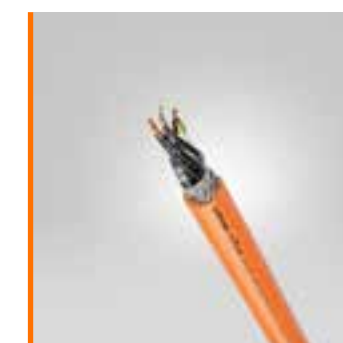
## ÖLFLEX® CLASSIC 128 H BK SC

With this halogen-free single core power cable with high CPR classification, special emphasis was placed on a smart choice of materials. It is more flexible than a standard installation cable, e.g. N2XH and can be optimally used for building cabling. It fits perfectly into our existing portfolio of halogen-free cables as a low-cost single core cable.



## ÖLFLEX® SERVO 728 CY

New articles available: The shielded, green encoder cable with UL certification for use in North America is compatible with feedback systems from various manufacturers. With its PVC outer sheath, it is suitable for fixed and occasional flexing. It is now available in two new cable construction variants for further encoder system standards.



## ÖLFLEX® SERVO FD 7DSL

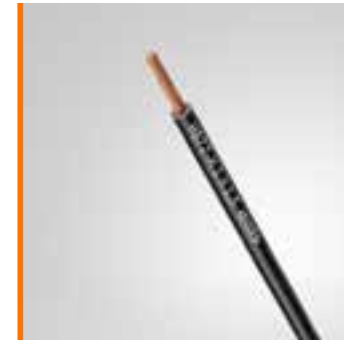
New articles available: The hybrid servo cable is compatible with the single-cable technology interfaces HIPERFACE DSL® and SCS open link. It is used for simultaneous power supply, signal and data transmission and is suitable for moving applications as well as for dynamic drag chain use due to its high flexibility and PUR outer sheath. It is available in three new cable construction variants.

# CABLES AND ACCESSORIES FOR MACHINES AND ENCLOSURES: A PERFECT MATCH



## ÖLFLEX® SERVO FD 70CS

New articles available: The hybrid servo cable is compatible with the single-cable technology interfaces of many manufacturers. It is used for simultaneous power supply, signal and data transmission and is suitable for moving applications as well as for dynamic drag chain use due to its high flexibility and PUR outer sheath. It is available in four new cable construction variants.



## H07Z-K 90°C

This single core according to harmonised design H07Z-K ( $U_0/U$ : 450/750 V) convinces with a halogen-free core insulation, which behaves with low smoke in case of fire and only releases small amounts of corrosive gases. It is often used in buildings with a high personal and material value. In addition to ring and large carton, we now offer many items on reel.



## H05Z-K 90°C

This single core according to harmonised design H05Z-K ( $U_0/U$ : 300/500 V) convinces with a halogen-free core insulation, which behaves with low smoke in case of fire and only releases small amounts of corrosive gases. It is often used in buildings with a high personal and material value. In addition to ring and large carton, we now offer many items on reel.



## TUBE CABLE LUGS KRFS

Accessories? Yes, always! Our cable accessories have been joined by a tubular cable lug which, thanks to its high-quality workmanship, offers you maximum functional reliability. Thanks to the particularly narrow connection flange, it is suitable for connecting switchgear and for all applications where space is limited.

## Power and control cables

Various applications • Halogen-free ÖLFLEX®

NEW



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### Technical Data

**Classification ETIM 5/6**  
ETIM 5.0/6.0 Class-ID: EC000104  
ETIM 5.0/6.0 Class-Description:  
Control cable

**Core identification code**  
Black with white numbers acc. to VDE 0293-334

**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: 6 x outer diameter

**Nominal voltage**  
 $U_0/U$ : 300/500 V  
UL: 600 V

**Test voltage**  
4000 V

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

**Temperature range**  
Occasional flexing: -30 °C to +70 °C  
(UL: +75 °C)  
Fixed installation: -40 °C to +80 °C  
(UL: +75 °C)

## ÖLFLEX® CLASSIC 115 CH

Halogen-free core insulation and sheathing compound

### Benefit

- Easy handling and installation due to very flexible design.
- Release of inner sheath results in lower weight and smaller outer diameters.
- Classified fire behavior according to EU Directive 305/2011 (BauPVO/CPR) with article number selection at [www.lappkabel.de/cpr](http://www.lappkabel.de/cpr).
- Halogen-free and highly flame-retardant materials reduce the risk of fire propagation, high smoke density and toxic fumes in case of fire.
- Increased oil resistance according to DIN EN 50363-4-1 (TM5) as well as UL OIL RES I and OIL RES II.
- Ideal protection against electromagnetic interference due to copper braided shield with high degree of coverage.
- High electrical safety due to 4000V test voltage.
- UL certification according to technical data allows use of the product in the North American area.

### Application

- For building wiring to meet special fire protection requirements.
- Universally applicable for wiring internal and inter-plant control circuits.
- For fixed installation and occasional movement without tensile stress.
- Can be used in dry, damp and especially in oily environments.
- Suitable for medium mechanical stress.
- HFFR outer sheath is largely resistant to acids and alkalis.
- Can be used temporarily outdoors, considering the temperature range.
- Flexible use possible down to -30 °C.



## Power and control cables

Various applications • Halogen-free ÖLFLEX®

NEW



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# ÖLFLEX® CLASSIC 128 H BK SC

Halogen-free cable, single core, CPR Cca, for building wiring.


### Benefit


- Easy handling and installation due to flexible design.
- Classified fire behaviour according to EU Directive 305/2011 (BauPVO/CPR) with article number selection at [www.lappkabel.de/cpr](http://www.lappkabel.de/cpr).
- Halogen-free and highly flame-retardant materials reduce the risk of fire propagation, high smoke density and toxic fumes in case of fire.
- High electrical safety due to 4000V test voltage.


### Application


- For building wiring to meet special fire protection requirements.
- Universally applicable for wiring of internal and inter-plant control circuits.
- For fixed installation and occasional movement without tensile stress.
- Can be used in dry and damp rooms.
- Suitable for medium mechanical stress.


## Technical Data


 Classification ETIM 5/6  
ETIM 5.0/6.0 Class-ID: EC000057  
ETIM 5.0/6.0 Class-Description: Low voltage power cable


 Core identification code  
Black


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


 Torsion movement in WTG  
TW-0 & TW-1, refer to Appendix T0

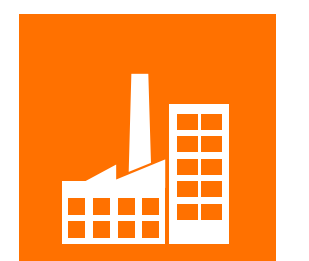
 Minimum bending radius  
Occasional flexing: 15 x outer diameter  
Fixed installation: 4 x outer diameter

 Nominal voltage  
U<sub>0</sub>/U: 600/1000 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



## Power and control cables

Servo applications • PVC sheath, certified

# ÖLFLEX® SERVO 719 CY

**WHAT IS NEW?** Shielded PVC servo cable, for fixed installation, North America certification.

### Benefit

- Compatible with servo drives from well-known manufacturers.
- Ideal protection against electromagnetic interference due to copper shielding braid with high degree of coverage.
- Low-capacity core insulation for long transmission distances.
- UL/CSA certification according to technical data enables use of the product in the North American area.
- Product with multiple certifications enables universal use, reduces variety of parts and thus ensures savings in logistics.
- Operating voltage of 1000 V permitted by UL for North America.
- Product is available both without and with control wire pairs for e.g. brake and temperature sensor (one shielded control wire pair or triplet or two shielded control wire pairs).

### Application

- For connecting frequency inverter and servo motor.
- For fixed installation and occasional movement without tensile stress.
- Can be used in dry and damp rooms.
- Suitable for medium mechanical stress.
- PVC outer sheath is resistant to acids and alkalis and conditionally resistant to oil.


NEW





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## Technical Data


 **Classification ETIM 5**  
ETIM 5.0 Class-ID: EC000104  
ETIM 5.0 Class-Description: Control cable


 **Classification ETIM 6**  
ETIM 6.0 Class-ID: EC000104  
ETIM 6.0 Class-Description: Control cable


 **Core identification code**  
Power cores: black with marking U/L1/C/L+; V/L2; W/L3/D /L-; GN/YE protective conductor  
Single-paired versions: individual design depending on the item  
black; white or brown; white  
Double-paired versions: black with white numbers 5; 6; 7; 8  
0.34 mm<sup>2</sup> pairs: WH/BN/GN/YE  
Triplet: black with white numbers 1; 2; 3


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

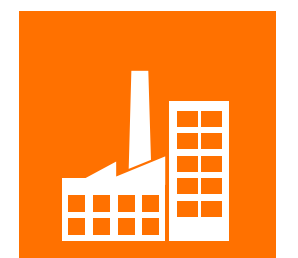
 **Minimum bending radius**  
Occasional flexing: 15 x outer diameter  
Fixed installation: 6 x outer diameter

 **Nominal voltage**  
Power cores and control cores:  
IEC U<sub>c</sub>/U: 600/1000 V  
UL & CSA: 1000 V

 **Test voltage**  
Core/Core: 4 kV  
Core/Screen: 4 kV

 **Protective conductor**  
G = with GN-YE protective conductor

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





## Power and control cables

Servo applications • PVC sheath, certified

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# ÖLFLEX® SERVO 728 CY

**WHAT IS NEW?** Shielded PVC encoder cable, for fixed installation, North America certification.


### Benefit


- Compatible with encoder systems from well-known manufacturers.
- Low-capacity wire insulation for long transmission distances.
- UL/CSA certification according to technical data enables use of the product in North America.
- Product with multiple certifications enables universal use, reduces variety of parts and thus ensures savings in logistics.
- Available in various cable construction variants.
- Available in different shielding variants for ideal protection against electromagnetic interference.


### Application


- For connecting the feedback system in the servo motor to the frequency inverter.
- For fixed installation and occasional movement.
- Can be used in dry, damp and wet rooms.
- Suitable for medium mechanical stress.
- PVC outer sheath is resistant to acids and alkalis and conditionally resistant to oil.


## Technical Data


 Classification ETIM 5  
ETIM 5.0 Class-ID: EC000104  
ETIM 5.0 Class-Description: Control cable


 Core identification code  
Details see datasheet  
ÖLFLEX® SERVO 728 CY

 Conductor stranding  
Fine wire acc. to VDE 0295, class 5 / IEC 60228 class 5  
from 0.5 mm<sup>2</sup>

 Minimum bending radius  
Occasional flexing: 15 x outer diameter  
Fixed installation: 6 x outer diameter

 Nominal voltage  
IEC: 30 V  
UL & CSA: 300 V

 Test voltage  
C/C: 2000 V  
C/S: 1000 V

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



## Power and control cables

Power chain applications • Servo applications – power drive systems, certified

NEW



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### Technical Data

**Classification ETIM 5**  
ETIM 5.0 Class-ID: EC000104  
ETIM 5.0 Class-Description: Control cable

**Classification ETIM 6**  
ETIM 6.0 Class-ID: EC000104  
ETIM 6.0 Class-Description: Control cable

**Core identification code**  
Details see datasheet ÖLFLEX® SERVO FD 798 CP

**Conductor stranding**  
Fine wire or extra-fine wire

**Minimum bending radius**  
Flexing: up from 7.5 x outer diameter  
Fixed installation: 4 x outer diameter

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

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

**Temperature range**  
Flexing: -40 °C to +90 °C  
(UL/CSA: +80 °C)  
Fixed installation: -50 °C to +90 °C  
(UL/CSA: +80 °C)

**Bending cycles & operation parameters**  
See Selection Table A2-1 in the appendix of our online catalogue

## ÖLFLEX® SERVO FD 798 CP

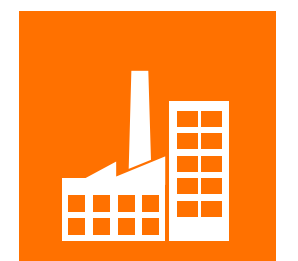
**WHAT IS NEW?** Shielded PUR encoder cable, for drag chain, North America certification.

### Benefit

- Compatible with encoder systems from renowned manufacturers.
- Highly flexible cable design ensures maximum product performance.
- Long service life with long travels or high accelerations (LAPP performance class „Extended Line“). This results in longer maintenance cycles, saving costs and increasing the efficiency of machines.
- Extremely weather-resistant with the possibility of use in a wide temperature range.
- Particularly resistant to oil and drilling fluids, making it ideal for harsh environments.
- Low-capacity core insulation for long transmission distances.
- UL/CSA certification according to technical data enables use of the product in North America.
- Product with multiple certifications enables universal use, reduces the number of parts and thus ensures savings in logistics.
- Available in various cable construction variants.
- Available in different shielding variants for ideal protection against electromagnetic interference.

### Application

- For connecting the feedback system in the servo motor to the frequency inverter.
- Especially for environments where electromagnetic compatibility (EMC) is required.
- Cable design allows highly flexible, continuously moving use in moving machine parts and in the drag chain.
- Can be used in dry, damp and especially in rough and oily environments.
- PUR outer sheath withstands high mechanical loads.
- PUR outer jacket is insensitive to mineral oil-based lubricants and chemically resistant in many cases.
- Suitable for outdoor use.
- Flexible use possible at up to -40 °C.



## Power and control cables

Power chain applications • Servo applications – power drive systems, certified

# ÖLFLEX® SERVO FD 7DSL

**WHAT IS NEW?** Hybrid servo cable, for drag chain and special One Cable Solution interfaces.

### Benefit

- Space- and weight-saving hybrid cable for simultaneous power supply, signal and data transmission (single-cable technology).
- Compatible with single-cable technology interfaces such as HIPERFACE DSL® and SCS open link.
- Allows space-saving installation without additional encoder cable. Instead of the encoder cable, integrated signal pairs, signal wires or star quad bundles take over the signal transmission.
- Lower connection costs due to less cabling and quick installation of fewer components.
- Highly flexible cable design ensures maximum product performance.
- Long service life with long travel distances or high accelerations (LAPP performance class „Extended Line“). This results in longer maintenance cycles, saving costs and increasing the efficiency of machines.
- Low-capacity core insulation for long transmission paths.
- Ideal protection against electromagnetic interference due to copper shielding braid with high degree of coverage.
- UL/CSA certification according to technical data enables use of the product in the North American region.

### Application

- For connecting frequency inverters and servo motors.
- Especially for environments where electromagnetic compatibility (EMC) is required.
- Cable design allows highly flexible, continuous motion use in moving machine parts and in the drag chain, with horizontal travels up to 20 m.
- Can be used in dry, wet and especially in rough and oily environments.
- PUR outer jacket withstands high mechanical loads.
- PUR outer jacket is insensitive to mineral oil-based lubricants and is chemically resistant in many cases.
- Suitable for outdoor use.
- Flexible use possible at up to -40 °C.


NEW





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## Technical Data


 **Classification ETIM 5**  
ETIM 5.0 Class-ID: EC000104  
ETIM 5.0 Class-Description: Control cable


 **Classification ETIM 6**  
ETIM 6.0 Class-ID: EC000104  
ETIM 6.0 Class-Description: Control cable


 **Core identification code**  
Power cores: black with marking U/L1/C/L+; V/L2; W/L3/D /L-;  
GN/YE protective conductor  
Signal pair: white, blue  
Control pair (optional): black with white numbers 5 + 6


 **Conductor stranding**  
Extra-fine wire according to VDE 0295, class 6/IEC 60228 class 6  
DSL data pair: 19-wired

 **Minimum bending radius**  
Flexing: up from 7.5 x outer diameter  
Fixed installation: 5 x outer diameter

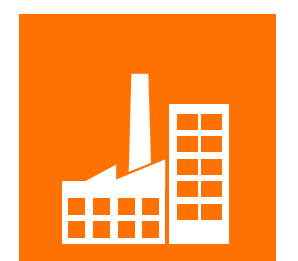
 **Nominal voltage**  
Power and control:  
IEC:  $U_0/U$ : 600/1000 V  
UL: 1000 V  
Signal pair: 300 V

 **Test voltage**  
Power and control: 4 kV  
Data pair: 1kV

 **Protective conductor**  
G = with GN-YE protective conductor

 **Temperature range**  
Flexing: -40 °C to +90 °C  
(UL: +80 °C)  
Fixed installation: -50 °C to +90 °C  
(UL: +80 °C)

**Bending cycles & operation parameters**  
See Selection Table A2-1 in the appendix of our online catalogue



## Power and control cables

Power chain applications • Servo applications – power drive systems, certified

# ÖLFLEX® SERVO FD 70CS

**WHAT IS NEW?** Hybrid servo cable, for drag chain and different One Cable Solution interfaces.

### Benefit

- Space- and weight-saving hybrid cable for simultaneous power supply, signal and data transmission (single-cable technology).
- Compatible with single-cable technology interfaces of many manufacturers.
- Allows space-saving installation without additional encoder cable. Instead of the encoder cable, integrated signal pairs, signal wires or star quad bundles take over the signal transmission.
- Lower connection costs due to less cabling and quick installation of fewer components.
- Highly flexible cable design ensures maximum product performance.
- Long service life with long travel distances or high accelerations (LAPP performance class „Extended Line“). This results in longer maintenance cycles, saving costs and increasing the efficiency of machines.
- Low-capacity core insulation for long transmission paths.
- Ideal protection against electromagnetic interference due to copper shielding braid with high degree of coverage.
- UL/CSA certification according to technical data enables use of the product in North America.

### Application

- For connecting frequency inverters and servo motors.
- Especially for environments where electromagnetic compatibility (EMC) is required.
- Cable design allows highly flexible, continuously moving use in moving machine parts and in the drag chain, with horizontal travels up to 20 m.
- Can be used in dry, wet and especially in rough and oily environments.
- PUR outer jacket withstands high mechanical loads.
- PUR outer jacket is insensitive to mineral oil-based lubricants and is chemically resistant in many cases.
- Suitable for outdoor use.
- Flexible use possible at up to -40 °C.

NEW



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## Technical Data

**Classification ETIM 5**  
ETIM 5.0 Class-ID: EC000104  
ETIM 5.0 Class-Description: Control cable

**Classification ETIM 6**  
ETIM 6.0 Class-ID: EC000104  
ETIM 6.0 Class-Description: Control cable

**Core identification code**  
Details see datasheet

**Conductor stranding**  
Power cores and brake pairs or triplets: Extra-fine wire according to VDE 0295, class 6/IEC 60228 class 6  
Signal cores, data pairs or star quads: Fine-wired

**Minimum bending radius**  
Flexing: 7.5 x outer diameter  
Fixed installation: 5 x outer diameter

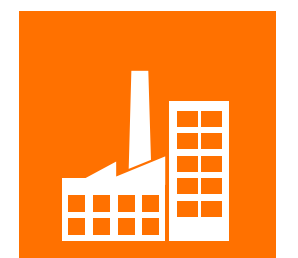
**Nominal voltage**  
Power and control cores:  
Version 1,3 & 4: IEC U<sub>0</sub>/U 600/1000 V  
Version 2: IEC 300 V  
UL all versions: see data sheet  
Individual data pairs and quads:  
see data sheet

**Test voltage**  
Details see datasheet

**Protective conductor**  
G = with GN-YE protective conductor

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

**Bending cycles & operation parameters**  
See Selection Table A2-1 in the appendix of our online catalogue



## Power and control cables

Control Cabinet Single Cores • Halogen-free

NEW



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## H05Z-K 90°C

**WHAT IS NEW?** The halogen-free control cabinet single core according to type H05Z-K is now also available on reel.

### Benefit

- Manufactured according to harmonised European design H05Z-K, with test mark <HAR> for tested safety and quality.
- <HAR> cables widely accepted and applicable in Europe.
- Halogen-free core insulation compound as well as low smoke development and low corrosiveness of the gases in case of fire favour the use in public areas.
- Classified fire behaviour according to EU Directive 305/2011 (BauPVO/CPR) with article number selection at [www.lappkabel.de/cpr](http://www.lappkabel.de/cpr).
- Compact design for easy processing.
- Various core insulation colours available.
- Available as ring, on spool or in disposable large carton.

### Application

- For wiring internal machine circuits, in compliance with special fire protection requirements.
- Suitable for wiring inside control cabinets.
- For wiring luminaires.
- For fixed and protected installation in electrical conduits on or under plaster.
- Can be used on cable trays for open laying for equipotential bonding.
- Can be used in dry rooms.
- For operating temperatures from -40 °C to +90 °C.

## Technical Data

**Classification ETIM 5**  
ETIM 5.0 Class-ID: EC000993  
ETIM 5.0 Class-Description: Single core cable

**Classification ETIM 6**  
ETIM 6.0 Class-ID: EC000993  
ETIM 6.0 Class-Description: Single core cable

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

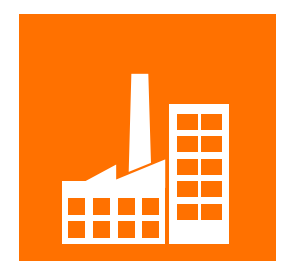
**Minimum bending radius**  
According to EN 50565-1  
4 x outer diameter (OD) for normal use; 2 x OD for cautions bending

**Nominal voltage**  
U<sup>n</sup>/U: 300/500 V

**Test voltage**  
2000 V AC

**Current rating**  
VDE 0298-4  
EN 50565-1/ VDE 0298-565-1

**Temperature range**  
During installation: -5 °C bis +90 °C  
Fixed installation: -40 °C bis +90 °C



## Power and control cables

Control Cabinet Single Cores • Halogen-free

NEW



Click or Scan – More information available online



## H07Z-K 90°C

**WHAT IS NEW?** The halogen-free control cabinet single core according to type H07Z-K is now also available on reel.

### Benefit

- Manufactured according to harmonised European design H07Z-K, with test mark <HAR> for tested safety and quality (does not apply to: transparent, green (single colour), yellow (single colour), all double colours (except green-yellow and yellow-green)).
- <HAR> cables widely accepted and usable in Europe.
- Halogen-free core insulation compound as well as low smoke development and low corrosiveness of the gases in case of fire favour the use in public areas.
- Classified fire behaviour according to EU Directive 305/2011 (BauPVO/CPR) with article number selection at [www.lappkabel.de/cpr](http://www.lappkabel.de/cpr).
- Compact design for easy processing.
- Various core insulation colours available.
- Available as ring, on spool or in disposable bulk carton. Availability of large cartons depends on colour and cross-section and is generally only available up to 6 mm<sup>2</sup> conductor cross-section.

### Application

- For wiring internal machine circuits, in compliance with special fire protection requirements.
- Suitable for wiring inside control cabinets.
- For wiring luminaires.
- For fixed and protected installation in electrical conduits on or under plaster.
- Can be used on cable trays for open laying for equipotential bonding.
- Can be used in dry rooms.
- For operating temperatures from -40 °C to +90 °C.

## Technical Data

**Classification ETIM 5**  
ETIM 5.0 Class-ID: EC000993  
ETIM 5.0 Class-Description: Single core cable

**Classification ETIM 6**  
ETIM 6.0 Class-ID: EC000993  
ETIM 6.0 Class-Description: Single core cable

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

**Minimum bending radius**  
According to EN 50565-1  
OD ≤ 8 mm: 4 x OD\*/2 x OD\*\*;  
8 < OD ≤ 12 mm: 5 x OD\*/3 x OD\*\*;  
OD > 12 mm: 6 x OD\*/4 x OD\*\*

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

**Test voltage**  
2500 V

**Current rating**  
VDE 0298-4  
EN 50565-1/ VDE 0298-565-1

**Temperature range**  
During installation: -5 °C bis +90 °C  
Fixed installation: -40 °C bis +90 °C



## Tools and cable accessories

Connection and crimping • Tube cable lugs

NEW



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## Tube cable lugs KRFS

Tube cable lugs KRFS with narrow flange for cables of class 2, 5 and 6, especially for installation using cable glands

### Benefit

- Thanks to the particularly narrow connection flange, it is ideal when space is limited. The connection flange width is smaller than/equal to the pipe diameter.
- Can still be fed through cable glands after connection to the pipe.
- High-quality electrolytic copper ensures high functional reliability and load capacity.
- With inspection hole for checking the secure hold.

### Application

- To create a secure crimp connection with stranded, fine and superfine copper conductors of classes 2, 5 and 6 (conductor cross-sections 50–240 mm<sup>2</sup>).
- Suitable for outdoor use.

## Technical Data



**Classification ETIM 5**  
ETIM 5.0 Class-ID: EC001051  
ETIM 5.0 Class-Description: Tube cable lug for copper conductors



**Temperature range**  
Temperature range up to +90 °C  
Working temperature: 110 °C, max. +140 °C



**Material**  
Tinned electrolyte copper



# DATA TRANSMISSION SYSTEMS FOR ETHERNET TECHNOLOGY

YOUR HIGHWAY FOR BIG DATA

NEW: Summer 2021

**+ HITRONIC® GOF DUPLEX PNB**  
Fibre optic breakout cable, GOF, for PROFINET applications type B, LSZH halogen-free.

**+ HITRONIC® GOF DUPLEX PNC**  
Fibre optic breakout cable, for PROFINET applications type C, PUR halogen-free.





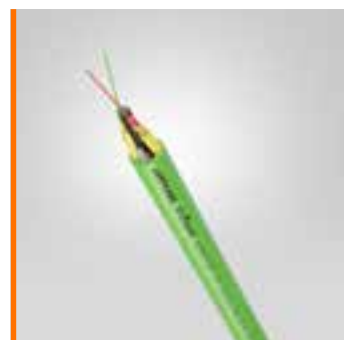
# DATA TRANSMISSION SYSTEMS FOR ETHERNET TECHNOLOGY: YOUR HIGHWAY FOR BIG DATA

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## HITRONIC® GOF DUPLEX PNB

The product name stands for fibre optics + PROFINET + building installation in one! The highly flame-retardant breakout cable with CPR classification is suitable for control cabinet and structured building cabling within PROFINET networks. Both the individual cables inside and the outer sheath impress with halogen-free materials.



## HITRONIC® GOF DUPLEX PNC

The product name stands for fibre optics + PROFINET + permanent movement in one! The breakout cable combines drag chain, torsion and alternating bending properties and is suitable for moving applications, vibration or torsion within PROFINET networks. Thanks to the PUR outer jacket, the product proves to be particularly durable and robust.

## Optical transmission systems

GOF - Glass Optical Fibre • Indoor area


NEW





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### Technical Data

 **Permissible bending radius**  
without tensile load: 15 x outer diameter  
with tensile load: 20 x outer diameter

 **Permissible tensile force**  
Fixed installation: 600 N  
Short-term: 1000 N

 **Temperature range**  
Operating temperature: -20 °C up to 70 °C  
During installation: -5 °C to +50 °C  
Article

## HITRONIC® GOF DUPLEX PNB

Fibre optic breakout cable, GOF, for PROFINET applications type B, LSZH halogen-free.

### Benefit

- Halogen-free and highly flame-retardant materials reduce the risk of fire propagation, high smoke density and toxic fumes in case of fire.
- Classified fire behaviour according to EU Directive 305/2011 (BauPVO/CPR) with article number selection at [www.lappkabel.de/cpr](http://www.lappkabel.de/cpr).
- With non-metallic aramid yarns for strain-relieving effect.
- No generation of electromagnetic interference due to non-metallic materials inside the cable.
- Allows on-site assembly as breakout cable.
- Easy handling due to flexible and compact design.
- Available in different GOF Fiber categories (OM1-OM3, OS2).

### Application

- For flexible use in the PROFINET network (type B).
- For use in the control cabinet.
- For structured building cabling of the secondary and tertiary area, according to EN 50173 and ISO/IEC 11801.
- For fixed and protected routing in installation ducts, on cable trays, in the riser zone, in hollow ceilings and floors and for short distances.
- Can be used in dry rooms.
- Outer sheath of the product and inner sheaths of the two individual cables are made of halogen-free LSZH compound.

**PROFINET**



## Optical transmission systems

GOF - Glass Optical Fibre • Indoor area


NEW




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### Technical Data

 **Permissible bending radius**  
without tensile load: 15 x outer diameter  
with tensile load: 20 x outer diameter

 **Permissible tensile force**  
Fixed installation: 1500 N  
Short-term: 4000 N

 **Temperature range**  
Operation: -40 °C to +70 °C  
During installation: -40 °C to +70 °C

## HITRONIC® GOF DUPLEX PNC

Fibre optic breakout cable, for PROFINET applications type C, PUR halogen-free.

### Benefit

- Insensitive product, thanks to abrasion-, notch- and cut-resistant PUR outer sheath material.
- Halogen-free sheathing compound for compliance with special fire protection requirements.
- Durable cable successfully tested to 1.5 million bending cycles in the drag chain and 1.5 million alternating bending cycles in the TicToc bending test.
- Cable construction allows rotations with torsion angles up to  $\pm 180^\circ/m$ .
- With non-metallic aramid yarns for strain relief.
- No generation of electromagnetic interference due to non-metallic materials inside the cable.
- Allows on-site assembly as breakout cable.
- Available in different GOF fibre categories (OM1-OM3, OS2)

### Application

- For highly flexible, permanently moving use in moving machine parts and in the drag chain in the PROFINET network (type C).
- For fixed and protected routing in installation ducts, on cable trays, in the riser zone, in hollow ceilings and floors and for short plugs.
- Can be used in dry rooms.
- PUR outer sheath withstands high mechanical loads.
- PUR outer sheath is insensitive to mineral oil-based lubricants and chemically resistant in many cases.

PROFINET





# STORAGE, TRANSPORT, PROCESSING

OUR SMART TRANSPORT  
AND LOGISTICS SOLUTIONS

NEW: Summer 2021

 **TRONIC Module single core cart Climber**  
Single-core trolley with stair climbing function for  
accommodating 12 single single cores



# STORAGE, TRANSPORT, PROCESSING – OUR SMART TRANSPORT AND LOGISTICS SOLUTIONS

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## TRONIC MODULE SINGLE CORE CART CLIMBER

No matter where: The 6 hard rubber wheels of the single core cart climber make it easy and safe to overcome stairs and other barriers. So nothing stands in the way of single core transport to the place of use! The trolley can accommodate up to 6 TRONIC modules, i.e. up to 12 single cores, unwind and store them clearly.

## Tools and cable accessories

Transporting, storing, unwinding • Single core shelves

NEW



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### Technical data



#### Dimensions

Fits for cable rings:  
Cable outer diameter: max. 10 mm  
Coil Diameter: max. 295 mm  
Inner diameter: 80–180 mm  
Height: max. 80 mm



#### General data

Max. load per TRONIC: 7 kg



#### Material

Painted steel

## TRONIC Module single core cart Climber

Article extension to the TRONIC products.  
Focus: Stair climbing function

### Benefits

- Mobile means of transport for single cores ensures high flexibility at the place of use and reduces walking distances.
- With specially arranged wheels that make climbing stairs easier. No need to carry heavy loads.
- Tyres suitable for various surfaces.
- Serves at the same time as a practical and safe storage possibility for several single wires and thus enables a tidy and clear workplace.
- Safe unwinding of the single strands, due to the horizontal pull-off without twist.
- Direct material removal at the point of use enables easier and faster further processing of the single cores.
- Quick and easy reloading for user-friendly handling.
- A tray for tools and smaller work equipment is optionally available.

### Application

- For transporting storing, and unwinding single cores.
- Especially suitable to overcome stairs and other barriers.
- The 6 included TRONIC modules can be equipped with up to 12 single cores or the matching single core excess lengths.
- Suitable for indoor and outdoor use.



# LEGEND

## NEW PRODUCT



## ARTICLE EXTENSION



## PRODUCT CHARACTERISTICS



Suitable for outdoor use



Good chemical resistance



Flame-retardant



Wide clamping range



Halogen-free



Heat-resistant



Cold-resistant



Corrosion-resistant



Maximum vibration protection



Mechanical resistance



Assembly time



Low weight



Oil-resistant



Optimum strain relief



Space requirement



Power Chain



Clean room



Robust



Acid-resistant



Reliability



Integrated SKINTOP® cable gland



Voltage



Connector with standard housing unit



Interference signals



Temperature-resistant



Torsion-resistant



Torsion load



UV-resistant



Waterproof



Variety of approval certifications



Submersible use

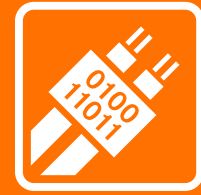
**Please note:**  
The purpose of the icons is to provide you with a quick overview and a rough indication of the product features to which the corresponding information relates. You can find details of product characteristics in the “technical data” sections on the product pages.



**ÖLFLEX®**  
Power and control cables



**EPIC®**  
Industrial connectors



**UNITRONIC®**  
Data communication systems



**SKINTOP®**  
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Due to the current material shortages,  
delivery times may be longer.