Webguide

New Products Autumn 2020

LAPP

CABLES AND ACCESSORIES FOR MACHINES AND ENCLOSURES: A PERFECT MATCH

ÖLFLEX® SERVO FD 798 CP

Our proven green PUR feedback cable for encoder and resolver is now also available in new dimensions. Its cable design allows highly dynamic use in drag chains and withstands a wide temperature range in very rough, oily environments. The encoder cable with UL/CSA certification listing is available in different shielding variants suitable for various OEM standards.

SKINTOP® LEAD-FREE CABLE GLANDS

Since August 2020 LAPP offers cable glands and locknuts also in a lead-free brass version. Why? 1) In terms of sustainability. 2) The exemption for lead in copper alloys according to the RoHS Directive could end after July 21, 2021. 3) According to the REACH Chemicals Regulation, lead may soon no longer be used in principle. You should also think about „lead-free“ at an early stage when developing long-lasting machines!

EPIC® H-BE CRIMP INSERTS

The new crimp inserts from our rectangular connector portfolio now also carry the approval for rail vehicles according to DIN EN 45545-2. Due to maximum contact reliability between contact and wire, they create an extremely vibration-resistant connection and also meet the fire protection requirements demanded in railroad applications.

SHIELD CLAMP EMC-GUARD

Our EMC-Guard shield clamp for reliable grounding and shielding of your control and power components: Compared to existing market solutions, the user-friendly handling, the fast assembly, the large shield contact area and the separate strain relief are convincing. Thanks to different clamping ranges, it can be used variably and individually.

Power and control cables

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

ÖLFLEX® SERVO FD 798 CP

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

Benefits

- Compatible to encoder systems of major manufacturers.
- Durable for long travels or high accelerations (LAPP performance class „Extended Line“).
- Extremely weather-resistant, to be applied in a wide temperature range.
- Particularly resistant to oil and drilling fluids and therefore ideal for harsh environments.
- Low-capacity core insulation for long transmission paths.
- Halogen-free core insulation and sheathing compound to meet special fire protection requirements.
- UL/CSA certification enables use of the product in North America.
- Available in various cable construction variants.
- Available in various shielding variants for ideal protection against electromagnetic interference.

Application

- For connection of feedback system in servo motor with frequency converter.
- Cable design allows highly flexible, permanently moving use in moving machine parts and in the drag chain.
- PUR outer jacket withstands high mechanical loads, is insensitive to mineral oil-based lubricants and is often chemically resistant.
- Can be used in dry, humid and especially in rough and oily environments.
- PUR outer jacket suitable for outdoor use.
- Flexible use in a wide temperature range.

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

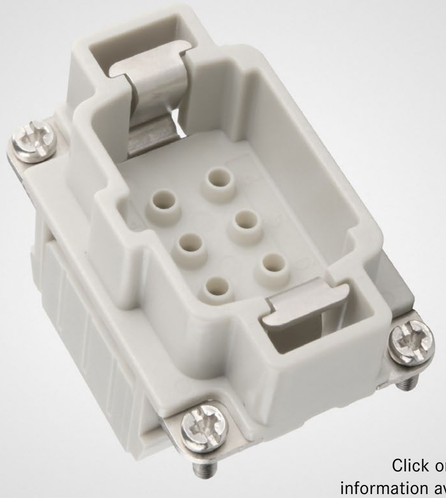
Temperature range
Flexing: -40°C to +90°C
(UL/CSA: +80°C)
Fixed installation: -50°C to +90°C
(UL/CSA: +80°C)

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

LAPP

EPIC® Industrial connectors

Rectangular connectors • EPIC® H-BE Inserts



Click or Scan – More information available online

Technical Data

Classification ETIM 5
ETIM 5.0 Class-ID: EC000438
ETIM 5.0 Class-Description: Contact insert for industrial connectors

Classification ETIM 6
ETIM 6.0 Class-ID: EC000438
ETIM 6.0 Class-Description: Contact insert for industrial connectors

Rated voltage (V)
IEC: 500 VUL: 600 VCSA: 600 V

Rated impulse voltage
6 kV

Rated current (A)
IEC: 16 A
UL: 16 A
CSA: 16 A

Pollution degree
3

Flammability
UL94 V-0

Contact resistance
< 2 mOhm

Contacts
Copper alloy, hard silver/gold-plated

Number of contacts
6 + PE

Termination methods
Crimp termination: 0.14 - 4.0 mm²

Material
PC, polycarbonate

Cycle of mechanical operation
500

Certifications
UL-tested:
UL File Number: E75770

Temperature range
-40°C to +125°C

EPIC® H-BE crimp inserts

The multi-functional insert for versatile application has crimp termination and can be used for higher voltages and currents.

Benefits

- Inserts of the EPIC® H-BE series are regarded as classics in the industry and are ideal for use at higher voltages and currents.
- In the EPIC® H-BE series, inserts of different connection types within the same size can be combined as desired (screw, crimp, cage clamp or push-in).
- Crimp termination creates a vibration-proof connection, ensures maximum contact reliability between contact and wire and is suitable for automated assembly.
- Suitable for conductor cross sections from 0.14 – 4.00 mm².
- Made of robust polycarbonate (flammability class V-0 according to UL94 test method for flammability of plastics).
- Can be used in rail vehicles in conformity with standards (test of fire behavior according to DIN EN 45545-2:2016-02, requirement set R22 and R23, hazard levels HL1, HL2 and HL3).
- UL certification according to Technical Data enables use of the product in North America.
- Large variety of suitable housing variations.

Application

- For power supply connection of devices and machines in various applications.
- Suitable for wiring inside switch cabinets.
- For transmission of control signals to actuators and servo drives.
- Typical applications are stage, lighting and lifting technology.

Cable glands

SKINTOP® cable glands nickel-plated brass metric • Standard

SKINTOP® Lead-free cable glands

Lead-free cable glands. Available products from stock:
SKINTOP® MS-M (further products SKINTOP® MS-SC-M / SKINDICHT® SM-M).

Benefits

- Convincing product for a wide range of applications due to versatile properties.
- Best possible sealing enables protection class IP 68 (10 bar) and IP 69.
- Optimal strain relief through flexible lamellas.
- Extensive range of accessories available.
- No MOQ or long delivery times for SKINTOP® MS-M, MS-SC-M and SKINDICHT® SM-M as they are kept on stock in both materials (M12x1,5 – M63x1,5)
- Other versions will be available on request
- Article numbers ending with „LF“ are lead-free product alternatives with otherwise the same product properties. „Lead-free“ articles continue to comply with the RoHS Directive even after the exemption expires on July 21, 2021, which permits a lead content of up to four percent for copper alloys until then.

Application

- For sealing and strain-relieving cable entry through a housing.
- Withstands high mechanical and chemical loads.
- Suitable for outdoor use, taking into account the temperature range.

Technical Data

Classification ETIM 5
ETIM 5.0 Class-ID: EC000441
ETIM 5.0 Class-Description: Cable screw gland

Classification ETIM 6
ETIM 6.0 Class-ID: EC000441
ETIM 6.0 Class-Description: Cable screw gland

Caution
Refer to Appendix T21 for the installation dimensions and torques

Material
Body: nickel-plated brass
Insert: polyamide
Sealing: CR
O-ring: NBR

Protection rating
IP 68 - 10 bar
IP 69 (M12 - M63)
NEMA Type 1, 4x, 6, 12

Temperature range
Dynamic: -25°C up to + 100°C
Fixed: -40°C to +100°C

Tools and cable accessories

Insulating, protecting, shrinking • Screening

Click or Scan – More information available online

Technical Data

Note
Mounting method:
“DINrail”: snap
“MOUNT”: screw

Material
Material: hardened spring steel
Surface: galvanized

Shield clamp EMC-Guard

EMV shield clamps for earthing cable shields. For direct and top hat rail mounting.

Benefits

- Enables quick and tool-free pressing in of the stripped, shielded cable.
- The strong spring effect ensures constant shield contact and constant conductivity.
- The electrically conductive coating of the galvanized surface and the large-area shield contact create a low-impedance transition between the braided shield of the cable and the shield clamp and thus reliably derive high-frequency interference (EMC).
- Optimum strain relief via strain relief clamp, which is attached to the outer jacket of the cable by cable ties.
- Rounded material without sharp edges for best possible protection of the cable.
- Easy integration into the machine concept due to compact dimensions.
- Available with different clamping ranges for individual, space-saving installation.
- Version „DINrail“ with attachable mounting bracket for 35mm top-hat rails can be mounted without tools.
- Variant „MOUNT“ for direct mounting on e.g. mounting plates / sheet metal constructions by M4 screw.

Application

- Can be used in control cabinets as well as on motor controls, housings or machine systems.
- For contacting shielded cables with ground potential.
- For protection against electromagnetic interference and for potential equalization.
- Suitable for outdoor use.

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

ETHERLINE® ROBOT PN CAT.5E

For robotic applications, rely on our Industrial Ethernet cable which was developed and tested according to the PROFINET® standard „Type R“. Drag chain, torsion and alternating bending properties are now combined in just one cable. LAPP was involved from the very beginning in the development and standardization of the requirements and characteristics for this new PROFINET® network class

ETHERLINE® ACCESS NF

Our NAT router with integrated firewall supports you in integrating machines into existing company networks, protects against unauthorized access and thus stands for secure, Ethernet-based communication in automation technology. The latest firmware version allows now IP ranges to be entered in NAT operating mode. Upgrade now!

SKINTOP® DIX-M AUTOMATION

LAPP now also offers a larger variety of dimensions for the SKINTOP® DIX-M AUTOMATION sealing insert. Thanks to its slotted seal, it is specially designed for the feed-through of already assembled data cables and, in combination with a cable gland, offers ideal sealing of the cable. The new variants cover cable outer diameters from 3 - 10 mm.

ETHERLINE® LAN CAT.6_A PATCHCORDS

ETHERLINE® LAN Cat.6_A Patchcords – Get started right away with our space-saving patchcords! Thanks to their Cat.6_A-transmission characteristics and UL listing, they are suitable for workplace cabling as well as for control cabinet applications in industry. Reduce your diversity of parts and ensure savings in logistics.

EPIC® SIGNAL D-SUB CRIMP CONTACT 1 MM

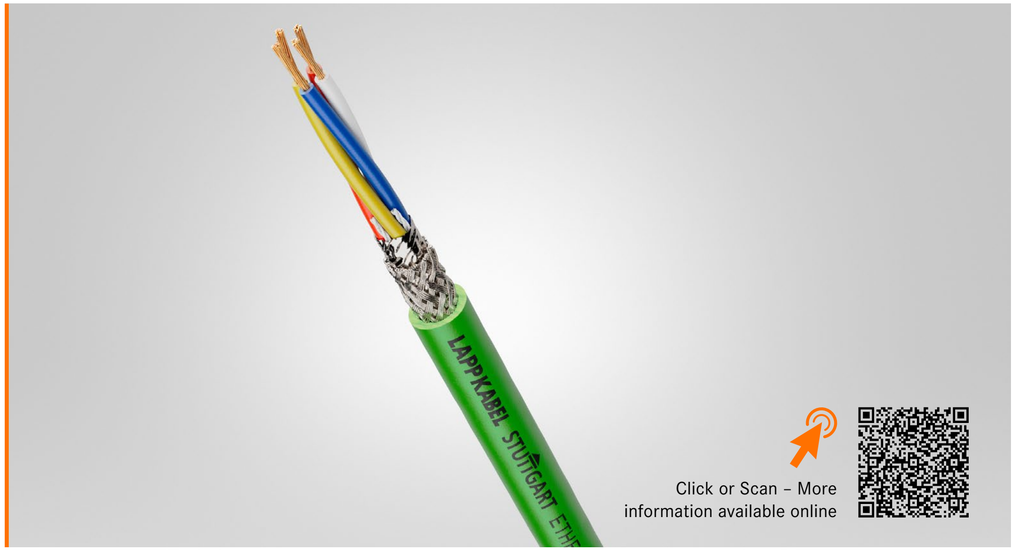
Make 1 out of 2: The new crimp contact replaces the two existing D-Sub contacts 0.14 - 0.34 mm² / 0.34 - 0.5 mm², opens up the 0.5 - 1.00 mm² range in a completely new way and thus reduces the variety of parts in your warehouse. It’s extremely wide connection range allows you to crimp stranded wires with cross sections from 0.25 to 1.00 mm². It is compatible with standard D-Sub connectors.

SKINTOP® FIBER

It has never been easier! With the innovative cable gland, you can quickly and easily insert up to 12 (pre-assembled) fiber optic cables into an enclosure at the same time. The unique sealing construction ensures a particularly gentle clamping of the cables as well as a secure sealing. Loss of transmission performance? Of course not.

Data communication systems for ETHERNET technology

PROFINET, Cat.5e Type R • Cables for robot application



ETHERLINE® ROBOT PN Cat. 5e

Industrial Ethernet cable Cat.5e for highly flexible robot applications acc. to PROFINET Type R

Benefits

- Cable design according to PROFINET® standard „Type R“ for robot applications.
- Bundles essential drag chain, torsion and alternating bending properties in one cable.
- Compatible with PROFINET® compliant components.
- Special core stranding allows simultaneous bending and torsion (torsion angle up to ± 180°/m).
- Successfully tested for 5 million bending cycles in the drag chain, 5 million torsion cycles and 1 million alternating bending cycles in the TicToc bending test.
- Increased resistance to electromagnetic interference thanks to stranding as a star quad as well as double shielding made of aluminum-laminated foil and copper braided shield with high coverage (SF/UTP).
- Low-capacity core insulation for long transmission paths.
- Fast information exchange through Ethernet technology.
- Cat.5 performance up to 100 Mbit/s.
- UL/CSA certification according to technical data enables use of the product in North America.

Application

- Specially designed for highly flexible, permanently moving a pplications with torsional stress in industrial robots and handling devices in the PROFINET® network (Type R).
- Also suitable for EtherCAT and EtherNET/IP applications.
- Applicable in dry, humid and especially in rough and oily environments.
- PUR outer sheath withstands high mechanical stress.
- PUR outer sheath is insensitive to mineral oil-based lubricants and often chemically resistant.

Technical Data

Classification ETIM 5
ETIM 5.0 Class-ID: EC000830
ETIM 5.0 Class-Description: Data cable

Classification ETIM 6
ETIM 6.0 Class-ID: EC000830
ETIM 6.0 Class-Description: Data cable

Peak operating voltage
(not for power applications)
125 V

Minimum bending radius
Fixed installation: 8 x outer diameter
Flexible use: 12 x outer diameter

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

Characteristic impedance
nom. 100 Ω acc. to IEC 61156-6

Temperature range
Fixed installation: -40°C to +80°C
Flexible use: -20°C to +60°C

Data communication systems for ETHERNET technology

Industrial Ethernet, Cat.6_A • Patch cables for flexible applications

Click or Scan – More information available online

ETHERLINE® LAN Cat.6_A Patchcords

Halogen-free, Cat.6_A patchcord for Gigabit Ethernet, with UL approval. Available in different colours and lengths

Benefits

- Fast information exchange through Ethernet technology.
- Connection cable assembled on both sides for time savings during installation and less errors due to plug&play solution.
- Narrow RJ45 connector allows use in devices with very high port density.
- Ideal protection against electromagnetic interference by pair shielding with aluminum composite foil and copper braiding as overall shielding (S/FTP).
- UL/CSA certification according to technical data allows use of the product in North America.
- With halogen-free LSZH outer sheath to meet special fire protection requirements.
- Versatile properties enable more universal use, reduce the variety of parts and thus ensure savings in logistics.
- Available in various colors.

Application

- For structured cabling according to DIN EN 50173 and ISO/IEC 11801.
- Suitable for workplace cabling.
- Can also be used in industrial control cabinets, taking into account the electromagnetic load.
- Suitable for Ethernet applications up to 10GBase-T.

Technical Data

Classification ETIM 5
ETIM 5.0 Class-ID: EC002599
ETIM 5.0 Class-Description: Patch cord copper (twisted pair) industry

Protection rating
IP20

Temperature range
Installation: 0°C bis +50°C
Operating temperature: -20°C to +60°C

Data communication systems for ETHERNET technology

Industrial Ethernet • Active network components

ETHERLINE® ACCESS NF

Industrial NAT router with firewall function. Industrial network switches for ethernet based solutions in Smart Factories.

Click or Scan – More information available online

Benefits

- Reduced installation effort in existing production networks.
- Space-saving, compact design for direct mounting on 35mm top-hat rails.
- Very easy configuration via web interface.
- Integrated firewall protects against unauthorized access to the production network.
- Allows communication between machine network and production network with the same IP address range.

Application

- For use in Ethernet-based networks in automation technology.
- For use in switch cabinets (protection class IP 20).
- Extended temperature range (-40 °C to +75 °C).

Technical Data

Power supply
DC 24 V (18-30 V DC)

Protection rating
IP20

Temperature range
-40°C up to +75°C

EPIC® Industrial connectors

Rectangular connectors • EPIC® Contacts + tools

EPIC® SIGNAL D-SUB Crimp contact 1mm

EPIC® SIGNAL DSUB contacts for M23 DSUB inserts,
MC 20 module, MH Gigabit module

Benefits

- Compatible with standard D-Sub connectors.
- Crimp contact ensures maximum contact reliability between contact and wire and creates a vibration-proof connection.
- Suitable for wire cross sections from 0.25 to 1.00 mm² thanks to a large connection range.
- This allows more universal use, reduces the variety of parts and thus ensures savings in logistics.
- With corrosion-resistant gold coating for low contact resistance and long product life.

Application

- Universally applicable at machine interfaces for many applications for signal and data transmission.

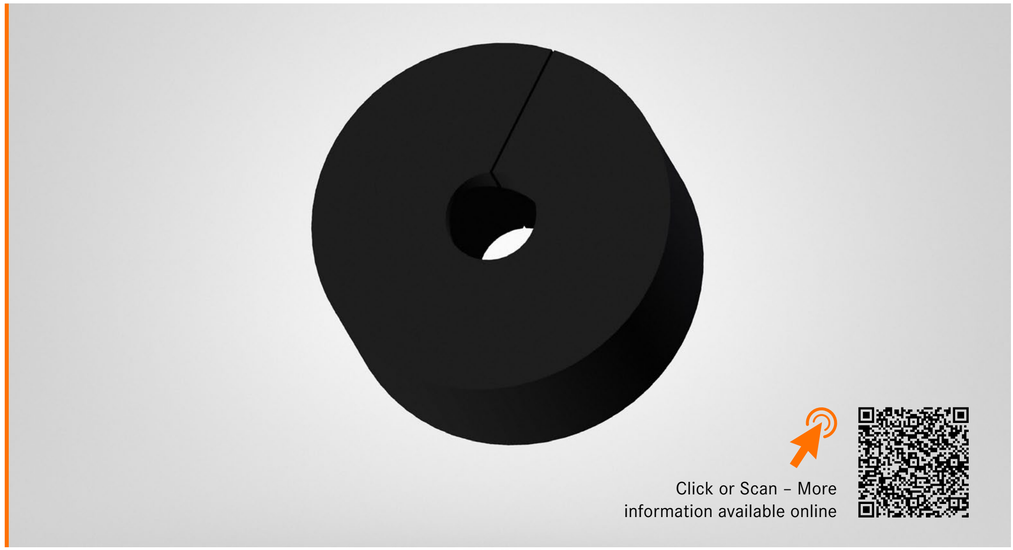
Technical Data

Termination methods
Crimp termination: 0,25mm² ... 1,0mm²

Material
brass gold plated CuZn / Au

Cable glands

SKINTOP® cable gland accessories metric • Multiple sealing inserts/dust protection



SKINTOP® DIX-M AUTOMATION

New range: complete coverage of 3–10 mm clamping range

Benefits

- Special design with slotted holes for easy insertion of one or more pre-assembled data cables.
- Protection class IP 68 can be achieved if the hole is optimally occupied.
- High functional safety thanks to optimum strain relief.

Application

- For use with metric SKINTOP® and SKINTOP® CLICK cable glands.
- To be used instead of the standard sealing insert in the SKINTOP® cable gland.
- UV and oil resistant material.

Technical Data

Classification ETIM 5
ETIM 5.0 Class-ID: EC000032
ETIM 5.0 Class-Description: Plug for cable screw gland

Classification ETIM 6
ETIM 6.0 Class-ID: EC000032
ETIM 6.0 Class-Description: Plug for cable screw gland

On request
Special shapes

Colour delivered
Black, RAL 9005

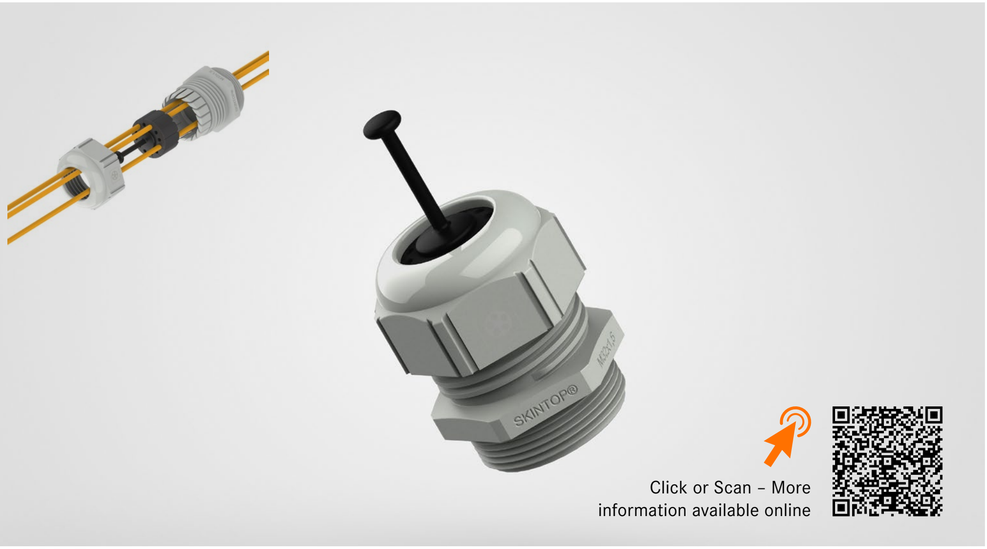
Material
NBR

Protection rating
IP 54
IP 66 and IP 68 - 5 bar, 30 min (only applies to slotted DIX inserts if the specified clamping range is observed)

Temperature range
-40°C to +100°C

Cable glands

SKINTOP® cable glands plastic metric • Fibre optic cables



Click or Scan – More information available online

SKINTOP® FIBER

Cable gland for fiber optic cables, strain relief and sealing.

Benefits

- For maximum simplification and time saving when inserting fiber optic cables into a housing.
- Insertion aid simplifies installation, especially where space is limited. Improper kinking or clamping of the optical fibers is thus prevented.
- Innovative sealing insert made of soft EPDM material is used to gently clamp up to 12 optical fibers.
- Gentle clamping enables good fixing and sealing of the optical fibers without impairing their transmission performance.
- Variable clamping ranges in the sealing insert (0 - 3 mm) allow different cable diameters.
- Thanks to slotted holes in the sealing insert, pre-assembled fiber optic cables can also be fed through.
- Protection class IP 66 can be achieved, provided that all holes are occupied by optical fibers with nominal diameter and unused openings are closed with SKINTOP® DIX-DV sealing plugs.
- Permanent vibration protection prevents the cap nut of the cable gland from opening in case of vibrations.

Application

- For the insertion of optical fibers into a housing.
- Can also be used with pre-assembled fiber optic cables.
- Can be used in Industry 4.0 applications.
- Can be used in FTTx network architectures for broadband expansion.
- Suitable for outdoor applications.

Technical Data

Caution
Tightening torques see installation instructions

Colour delivered
RAL 7035 light grey

Material
Body: Polyamide
Seal: EPDM

Protection rating
IP 66 (when all boreholes are optimally occupied)

Temperature range
-20°C to +120°C

ENERGY SUPPLY PHOTOVOLTAICS: COMPLETE SOLUTIONS FOR YOUR PV SYSTEM

H1Z2Z2-K, OPTIMIZED VERSION

Optimized for you: Our double-insulated, single-core photovoltaic cable with design certification H1Z2Z2-K is convincing in its optimized version in terms of price, adapts to the increased fire protection requirements with a higher CPR class (Dca) and offers improved mechanical strength in accordance with the „Impact-Resistance Test“ according to UL 854 for underground installation.

Power and control cables

Special applications • Photovoltaic

H1Z2Z2-K, optimized version

Cross-linked H1Z2Z2-K/EN 50618 certified solar cable,
UL Impact-Resistance tested

Benefits

- Optimized price compared to the LAPP predecessor product „H1Z2Z2-K“ despite feature upgrade.
- Third-party certification according to harmonized European design H1Z2Z2-K (in accordance with EN 50618) for tested safety and quality.
- Halogen-free core insulation and sheath mixture as well as confirmed low smoke emission in case of fire favour the use of the cable in public areas.
- Adapted to the increased fire protection requirements through improved fire properties. Classified fire behavior (Dca) according to EU Directive 305/2011 (BauPVO/CPR).
- Better mechanical load-bearing capacity compared to LAPP predecessor product „H1Z2Z2-K“, tested by means of underground installation-related „Impact-Resistance Test“ according to UL 854.

Application

- For unprotected connection of photovoltaic module and inverter in grounded and ungrounded photovoltaic systems according to EN 50618.
- For connecting photovoltaic modules to each other.
- For fixed installation and occasional movement, freely suspended if necessary.
- Can be installed in closed installation ducts, under plaster and in devices.
- Underground installation in protective pipes only in case of waterlogged drainage.
- In and on insulated devices of protection class II according to EN 50618.
- For short-circuit and earth-fault proof applications according to EN 50618 and HD 60364-5-52.
- Suitable for medium mechanical stress.

Technical Data

Classification ETIM 5
ETIM 5.0 Class-ID: EC001578
ETIM 5.0 Class-Description: Flexible cable

Classification ETIM 6
ETIM 6.0 Class-ID: EC001578
ETIM 6.0 Class-Description: Flexible cable

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

Minimum bending radius
4 x OD

Nominal voltage
AC U0/U: 1.0/1.0 kV
DC U0/U: 1.5/1.5 kV
Max. permissible DC operating voltage: 1.8 kV

Test voltage
AC 6500 V
DC 15000 V

Current rating
Im compliance with EN 50618, Table A.3
Acc. to EN 50618, reduction factors for clustered wiring per... HD 60364-5-52

Temperature range
>Conductor..., max., per EN 60216-1: 120°C;
>Conductor..., max., short-circuit/ earth fault (period of max. 5 s): 250°C;
>Ambient..., min., stationary use: -40°C;
>Ambient..., min., flexible use or during installation: -25°C;
>Ambient..., max., in conjunction with EN 60216-1: 90°C;
>Ambient..., constant, in conjunction with HD 60364-7-712: 70°C to 90°C;
>Ambient..., ambient temp. related reduction factor 1.00: 60°C;
>Ambient..., max., storage: 40°C

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

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®
Cable glands

ETHERLINE®
Data communication systems
for ETHERNET technology

SILVYN®
Protective cable conduit systems
and cable carrier systems

HITRONIC®
Optical transmission systems

FLEXIMARK®
Marking systems

Note: A detailed article list is available online or from your contact person.

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