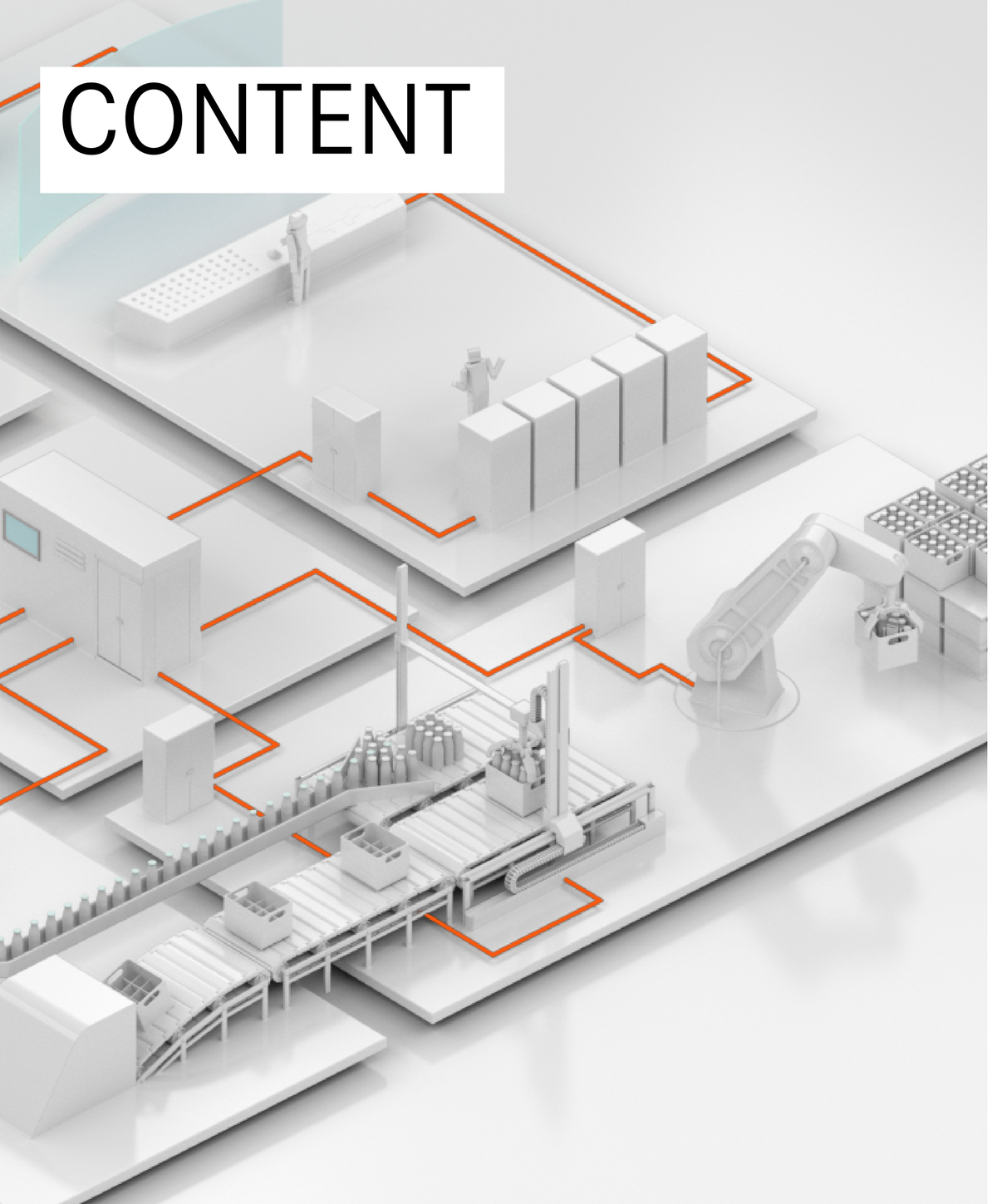
Innovations 2023

April

CONTENT



CABLES

Our product brands ÖLFLEX®, UNITRONIC®, ETHERLINE® and HITRONIC®. In all variations for every requirement.

CONNECTORS

For reliable plug-in connections - even after several mating cycles.

CABLE GLANDS

Sealing and strain-relieving cable entry.

Power and control cables

Various applications • PVC outer sheath and coloured cores

ÖLFLEX® DC GRID 100

What is new? Our direct-current cable for direct burial is now also available in additional dimensions and with a conductor cross-section of up to 240 mm².

Benefits

- Suitable for establishing energy-saving DC grids in industrial plants.
- Suitable for direct underground installation thanks to tough insulation and sheath material as per DIN VDE 0276-603.
- Good installation properties thanks to fine-wire, flexible conductor design.
- With current colour code according to DIN EN 60445 for direct current systems.

Application ranges

- For direct current applications in the low voltage range.
- For industrial plants in which power is distributed via a direct current grid.
- For use in control systems, motors and frequency converters.
- Can be used in dry, damp or wet environments.
- For open installation on cable trays.
- Suitable for direct underground installation.
- Withstands high 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
According to EN 60445

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
DC (core-ground): max. 0,75 kV
DC (core-core): max. 1,5 kV

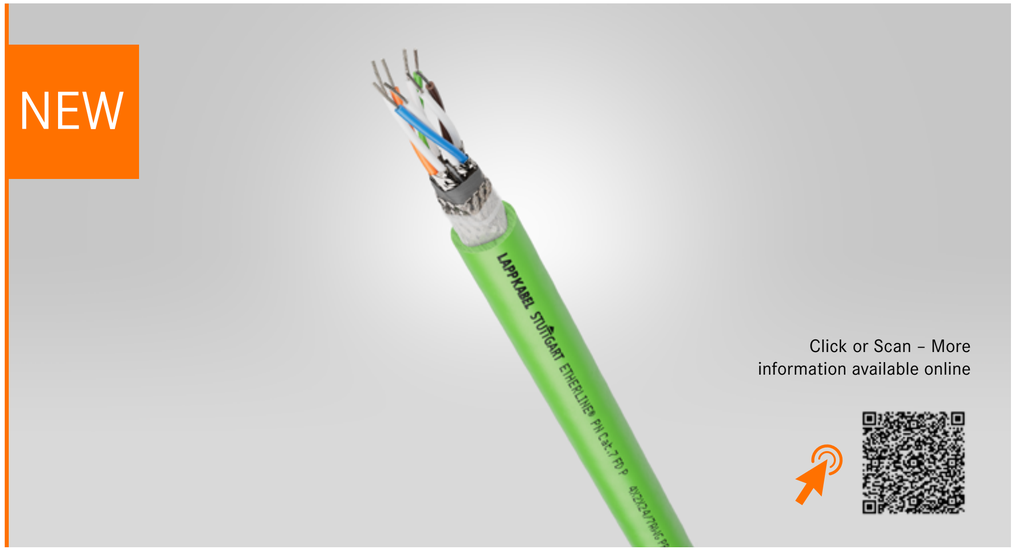
Test voltage
4000 V

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

Data communication systems for ETHERNET technology

PROFINET, Cat.7 • Type C – Cables for continuous flexing applications



Technical Data

Peak operating voltage
(not for power applications) 100 V

Minimum bending radius
Fixed installation: 8 x outer diameter
Flexing: 15 x outer diameter

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

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

Temperature range
Fixed installation: -40 °C to +80 °C
Flexing: -10 °C to +70 °C

ETHERLINE® PN Cat.7 FD

Highly flexible Cat.7 Ethernet cable (10 Gbit/s) for continuous flexing use, for PROFINET applications type C, with UL approval.

Benefits

- Cat. 7 performance up to 10 Gbit/s.
- For transmission of analogue and digital signals in the frequency range up to 600 MHz.
- Successfully tested for over 3.0 million bending cycles in cable chains.
- UL/CSA certification according to technical data enables the product to be used on the North American market.
- Power-over-Ethernet-capable cable for simultaneous power and data supply of smaller network components with low energy requirements (e.g. IP cameras, wireless access points).
- Ideal protection against electromagnetic interference due to pair shielding with aluminium lamination and double overall shielding made of aluminium-laminated foil and copper stranded shielding with a high degree of coverage (SF/FTP).
- Fast information exchange through Ethernet technology.

Application ranges

- For highly flexible, continuously flexing use in moving machine parts and in the cable chain in the PROFINET network (type C).
- Also suitable for EtherCAT and EtherNET/IP applications.
- Can be used in dry and damp environments.
- The PUR outer sheath withstands high mechanical stress.
- The PUR outer sheath is resistant to mineral oil-based lubricants and highly resistant to chemicals.
- Suitable for outdoor use.

Power and control cables

Control Cabinet Single Cores • Various applications

H05V2-K

Control cabinet single core with <HAR> design certification, Lloyd's Register (LR) approval, voltage class 300/500 V, high thermal resistance up to +90 °C.

Benefits

- Thermal resistance up to 90 °C enables higher current ratings at higher ambient temperatures. In certain cases, this allows smaller conductor cross-sections to be selected in compliance with the applicable standards.
- Lloyd's Register (LR) approval for maritime use.
- Made in accordance with harmonised European design H05V2-K, with <HAR> testing mark for proven reliability and quality.
- <HAR> cables are widely accepted and can be used in Europe.
- Suitable for voltage class 300/500 V.
- Different core insulation colours available.
- Also available in large disposable cardboard boxes.
- Classified fire behaviour according to EU Directive 305/2011 (BauPVO/CPR) with article number selection on the LAPP website.

Application ranges

- For wiring circuits inside machines.
- Suitable for wiring inside control cabinets.
- For fixed and protected installation.
- Can be used for open installation on cable trays for equipotential bonding.

Technical Data

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

Minimum bending radius
4x outer diameter

Nominal voltage
U_0/U: 300/500 V

Test voltage
2000 V

Temperature range
–10 °C to +90 °C operating temperature
Minimum installation temperature: 5 °C

Power and control cables

Control Cabinet Single Cores • Various applications

H07V2-K

Control cabinet single core with <HAR> design certification, Lloyd's Register (LR) approval, voltage class 450/750 V, high thermal resistance up to +90 °C.

Benefits

- Thermal resistance up to 90 °C enables higher current ratings at higher ambient temperatures. In certain cases, this allows smaller conductor cross-sections to be selected in compliance with the applicable standards.
- Lloyd's Register (LR) approval for maritime use.
- Made according to harmonised European design H07V2-K, with <HAR> testing mark for proven reliability and quality (not applicable to: transparent, green (single colour), yellow (single colour), all double colours (except green/yellow and yellow/green)).
- <HAR> cables are widely accepted and can be used in Europe.
- Suitable for voltage class 450/750 V.
- Different core insulation colours available.
- Also available in large disposable cardboard boxes. Large cardboard boxes are available depending on the colour and cross-section and generally only up to 6 mm² conductor cross-section.
- Classified fire behaviour according to EU Directive 305/2011 (BauPVO/CPR) with article number selection on the LAPP website.

Application ranges

- For wiring circuits inside machines.
- Suitable for wiring inside control cabinets.
- For fixed and protected installation.
- Can be used for open installation on cable trays for equipotential bonding.

Technical Data

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

Minimum bending radius
4x outer diameter

Nominal voltage
U_0/U: 450/750 V

Test voltage
2500 V

Temperature range
–10 °C to +90 °C operating temperature
Minimum installation temperature: 5 °C

Industrial connectors

Circular connectors • EPIC® POWER M12K

NEW

Click or Scan – More information available online

EPIC® POWER M12K A4

Extremely compact M12 power connector, K-coded, for general power supply and especially for three-phase motors, optionally with crimp or solder contacts.

Benefits

- A4 panel-mount base for use with F6 cable connector.
- Powerful up to 12 A despite extremely space-saving design for tight spaces.
- The mechanical K coding of the connector face prevents incorrect plugging with the mating connector.
- Crimp termination creates a vibration-proof connection, provides maximum contact protection between the contact and cable and is suitable for automated assembly.
- Suitable for conductor cross-sections from 0.75 to 2.50 mm².
- When connected, protection class IP 65, IP 67 and IP 69 can be achieved.
- Packaging unit with individual power connector and solder contacts especially available for maintenance work.
- Optionally available with crimp or solder contacts.

Application ranges

- For connecting three-phase motors up to 7.5 kW.
- For connecting devices and machines to a power supply in various applications.
- Especially for environments where electromagnetic compatibility (EMC) is required.
- Withstands high environmental and mechanical stress.

Technical Data

Rated voltage (V)
630 V

Rated impulse voltage
1.5 kV

Rated current (A)
12 A

Pollution degree
3

Number of contacts
4+PE

Termination methods
0.75mm² – 2.5mm²

Material
Housing: nickel-plated zinc die-casting, nickel-plated brass
Insert: PA,
Seal: FPM

Protection rating
IP65/IP67/IP69

Cycle of mechanical operation
100

Temperature range
–25 °C up to +125 °C

Industrial connectors

Circular connectors • EPIC® POWER M12K

NEW

Click or Scan – More information available online

EPIC® POWER M12K D6

Extremely compact M12 power connector, K-coded, for general power supply and especially for three-phase motors, optionally with crimp or solder contacts.

Benefits

- D6 coupling connector for use with G4 panel-mount base or F6 cable connector.
- Powerful up to 12 A despite extremely space-saving design for tight spaces.
- The mechanical K coding of the connector face prevents incorrect plugging with the mating connector.
- Crimp termination creates a vibration-proof connection, provides maximum contact protection between the contact and cable and is suitable for automated assembly.
- Suitable for conductor cross-sections from 0.75 to 2.50 mm².
- When connected, protection class IP 65, IP 67 and IP 69 can be achieved.
- Packaging unit with individual power connector and solder contacts especially available for maintenance work.
- Optionally available with crimp or solder contacts.

Application ranges

- For connecting three-phase motors up to 7.5 kW.
- For connecting devices and machines to a power supply in various applications.
- Especially for environments where electromagnetic compatibility (EMC) is required.
- Withstands high environmental and mechanical stress.

Technical Data

Rated voltage (V)
630 V

Rated impulse voltage
1.5 kV

Rated current (A)
12 A

Pollution degree
3

Number of contacts
4+PE

Termination methods
0.75mm² – 2.5mm²

Material
Housing: nickel-plated zinc die-casting, nickel-plated brass
Insert: PA,
Seal: FPM

Protection rating
IP65/IP67/IP69

Cycle of mechanical operation
100

Temperature range
–25 °C up to +125 °C

Industrial connectors

Circular connectors • EPIC® POWER M12K

NEW

Click or Scan – More information available online

EPIC® POWER M12K G4

Extremely compact M12 power connector, K-coded, for general power supply and especially for three-phase motors, optionally with crimp or solder contacts.

Benefits

- G4 panel-mount base for use with D6 coupling connector.
- Powerful up to 12 A despite extremely space-saving design for tight spaces.
- The mechanical K coding of the connector face prevents incorrect plugging with the mating connector.
- Crimp termination creates a vibration-proof connection, provides maximum contact protection between the contact and cable and is suitable for automated assembly.
- Suitable for conductor cross-sections from 0.75 to 2.50 mm².
- When connected, protection class IP 65, IP 67 and IP 69 can be achieved.
- Packaging unit with individual power connector and solder contacts especially available for maintenance work.
- Optionally available with crimp or solder contacts.

Application ranges

- For connecting three-phase motors up to 7.5 kW.
- For connecting devices and machines to a power supply in various applications.
- Especially for environments where electromagnetic compatibility (EMC) is required.
- Withstands high environmental and mechanical stress.

Technical Data

Rated voltage (V)
630 V

Rated impulse voltage
1.5 kV

Rated current (A)
12 A

Pollution degree
3

Number of contacts
4+PE

Termination methods
0.75mm² – 2.5mm²

Material
Housing: nickel-plated zinc die-casting, nickel-plated brass
Insert: PA,
Seal: FPM

Protection rating
IP65/IP67/IP69

Cycle of mechanical operation
100

Temperature range
–25 °C up to +125 °C

Industrial connectors

Circular connectors • EPIC® POWER M12K

NEW

Click or Scan – More information available online

EPIC® POWER M12K F6

Extremely compact M12 power connector, K-coded, for general power supply and especially for three-phase motors, optionally with crimp or solder contacts.

Benefits

- F6 cable connector for use with A4 panel-mount base or D6 coupling connector.
- Powerful up to 12 A despite extremely space-saving design for tight spaces.
- The mechanical K coding of the connector face prevents incorrect plugging with the mating connector.
- Crimp termination creates a vibration-proof connection, provides maximum contact protection between the contact and cable and is suitable for automated assembly.
- Suitable for conductor cross-sections from 0.75 to 2.50 mm².
- When connected, protection class IP 65, IP 67 and IP 69 can be achieved.
- Packaging unit with individual power connector and solder contacts especially available for maintenance work.
- Optionally available with crimp or solder contacts.

Application ranges

- For connecting three-phase motors up to 7.5 kW.
- For connecting devices and machines to a power supply in various applications.
- Especially for environments where electromagnetic compatibility (EMC) is required.
- Withstands high environmental and mechanical stress.

Technical Data

Rated voltage (V)
630 V

Rated impulse voltage
1.5 kV

Rated current (A)
12 A

Pollution degree
3

Number of contacts
4+PE

Termination methods
0.75mm² – 2.5mm²

Material
Housing: nickel-plated zinc die-casting, nickel-plated brass
Insert: PA,
Seal: FPM

Protection rating
IP65/IP67/IP69

Cycle of mechanical operation
100

Temperature range
–25 °C up to +125 °C

Industrial connectors

Rectangular connectors • EPIC® Contacts + tools

Technical Data

Contact resistance
< 0.3 mΩ

Termination methods
Crimp termination: 35 mm² ... 70 mm²

Material
brass silver plated CuZn / Ag

Cycle of mechanical operation
500

Temperature range
-40 °C to +120 °C

EPIC® ASC 10.0 mm contacts

Axial screw contact for high-current module EPIC® MH 1 250A, suitable for conductor cross-sections from 35 to 70 mm², service-friendly connection without special tools.

Benefits

- Axial screw termination technology allows service-friendly connection without a special crimping tool, saves costs and is suitable for detachable connections.
- Easy cable connection using an Allen wrench and open-end wrench.
- Only one axial screw contact is required for conductor cross-sections from 35 to 70 mm².
- The axial screw contact can be used as an alternative to the crimp contact in an existing high-current module.
- Connection of the high-current module with axial screw contact ensures maximum safety for the user thanks to contact protection.
- The axial screw contact that can be rotated freely in the high-current module simplifies assembly, prevents torsional stress and thus ensures contact safety between the contact and the cable.
- Mounting of the contact outside of the module enables optical control of the connection and thus eliminates the potential for errors due to insufficient overlap between the contact and core.
- Silver-plated contact surface for low contact resistances and minimum heat generation at the contact.

Application ranges

- For manufacturing a modular connector insert.
- For connecting devices and machines to a power supply in various applications.
- For use with the EPIC® MH 1 250A high-current module.

Cable glands

SKINTOP® cable glands nickel-plated brass metric • Flat cable

NEW

Click or Scan – More information available online

SKINTOP® FLAT

What is new? The flat cable gland is now available with an M63 thread and an extended clamping range for inserting thicker cables (7.0 to 13.0 mm).

Benefits

- Particularly effective cable sealing thanks to the innovative sealing insert, especially for flat cables (protection class IP 68 (5 bar)).
- Gentle cable clamping due to high elasticity of the sealing insert material.
- Evenly distributed clamping force across the cable enables high strain relief.
- Large, variable clamping range for various flat cable dimensions (width/height).
- Halogen free materials make the product suitable for use in public areas.

Application ranges

- For sealing and strain relieving cable insertion into a housing.
- For use with flat cables (angled or round cable contours).
- Can be used in dry and damp environments.
- Withstands high mechanical stress.
- Suitable for outdoor use.

Technical Data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000441
ETIM 5.0/6.0 Class-Description: Cable screw gland

Caution
Tightening torques see installation instructions

Material
Body: Nickel-plated brass
Insert: Polyamid
Sealing: NBR
O-Ring: NBR

Protection rating
IP 68 - 5 bar

Temperature range
–20 °C to +100 °C

Cable glands

SKINTOP® cable bushing systems • Cable bushing systems

NEW

Click or Scan – More information available online

Technical Data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000240
ETIM 5.0/6.0 Class-Description:
Cable entry

Certifications
UL File No. E349737
Fire behaviour acc. to UL94 V-2
Hazard Level HL 2 acc. to EN 45545-2

Note
On request:
- individual bushing configuration
- other metric thread sizes

Material
Frame: Polycarbonat
Sealing: Gel
O-Ring: NBR

Protection rating
IP 68

Temperature range
With O-ring: -20 °C to +100 °C
Without O-ring: -30 °C to +110 °C

SKINTOP® MULTI-M

What is new? The round multi-entry is now available for larger cable diameters (up to 10 mm) and with additional bushing variants.

Benefits

- Multi-entry of cables allows a higher packing density (up to 30 cables depending on the variant).
- Large clamping ranges, variable by 4 mm each for different cable diameters.
- Direct cable entry without pre-piercing the bushings.
- Flexibility in selecting the cable diameter reduces the variety of parts in the warehouse, generating logistical and cost benefits.
- Easy assembly on the housing by screwing or fastening with a lock nut.
- Unused bushings remain securely closed and sealed thanks to elastic gel technology with innovative membrane solution.
- The best possible sealing to the housing and the cables enables protection class IP 68.
- UL certification according to technical data enables the product to be used on the North American market.

Application ranges

- For sealing and strain relieving multi-entry of unassembled cables through a housing.
- Can be used in dry, damp and oily environments.
- Suitable for outdoor use.

Cable glands

SKINTOP® cable glands nickel-plated brass metric • EMC

NEW

Click or Scan – More information available online

SKINTOP® MS-M BRUSH XL

Cable gland with 360° brass brush as shield contact, for optimum EMC protection, especially for thick-walled housings thanks to the long connection thread.

Benefits

- Optimum EMC protection thanks to the unique 360° brass brush, which creates a low-impedance contact between the copper braided screening and the gland.
- Reliable EMC protection is guaranteed even after dismantling and reinstallation, as the copper braided screening is not damaged by the brass brush.
- Safe, fast and uncomplicated installation.
- The best possible sealing enables protection class IP 68 (10 bar) and IP 69.

Application ranges

- For EMC-compliant installation of copper-screened cables.
- For use in control systems, motors and frequency converters.
- Withstands high chemical and mechanical loads.
- Suitable for outdoor use, subject to the temperature range.
- Note: For painted, anodised or powder-coated housings, use the lock nut SKINDICHT® SM-PE-M for equipotential bonding.
- The „XL“ version is particularly suitable for thick-walled housings thanks to the exceptionally long connection thread.

Technical Data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000441
ETIM 5.0/6.0 Class-Description: Cable screw gland

Caution
Refer to Appendix T21 for the installation dimensions and torques

Material
Body: nickel-plated brass
Cap nut: nickel-plated brass
Insert: polyamide
EMC brush: brass wire
Sealing ring: elastomer
O-ring: elastomer

Protection rating
IP 68 – 10 bar (M12 – M110)
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

Cable glands

SKINTOP® cable glands plastic metric • Standard

NEW

Click or Scan – More information available online

Technical Data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000441
ETIM 5.0/6.0 Class-Description:
Cable screw gland

Colour delivered
Silver grey (RAL 7001)
Light grey (RAL 7035)
Black (RAL 9005)

SKINTOP® ST-M L-BOXX

Practical, robust assortment box for SKINTOP® ST-M cable glands, integration into vehicle equipment systems, click system for combining boxes.

Benefits

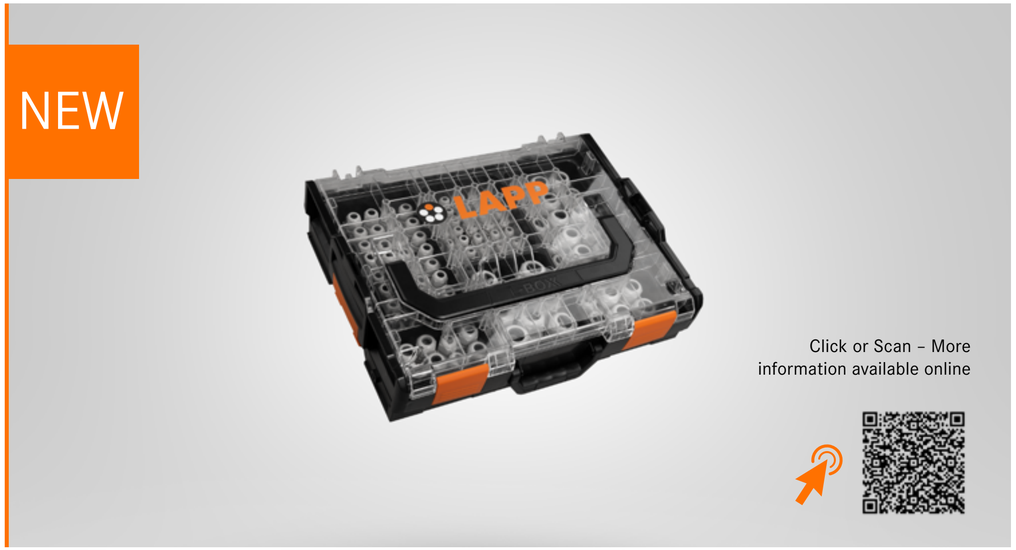
- The use of small parts tray ensures optimum order and prevents the content from being mixed up.
- Box made of light and robust, shock- and impact-resistant ABS plastic.
- Intelligent click system enables quick connection, combination and separation of boxes, saving time and effort during transport.
- Easy integration into vehicle equipment systems from numerous manufacturers.
- Transparent lid allows a perfect overview even when closed.
- Two robust locking mechanisms ensure secure locking.
- Case can be refilled with standard packaging units.
- Included: assembly instructions and lock nut.

Application ranges

- For safe transport and storage of SKINTOP® ST-M cable glands (sizes M12 to M32).
- Especially for assembly use, e.g. on construction sites.

Cable glands

SKINTOP® cable glands plastic metric • CLICK System



SKINTOP® CLICK L-BOXX

Practical, robust assortment box for SKINTOP® CLICK cable glands, integration into vehicle equipment systems, click system for combining boxes.

Benefits

- The use of small parts tray ensures optimum order and prevents the content from being mixed up.
- Box made of light and robust, shock- and impact-resistant ABS plastic.
- Intelligent click system enables quick connection, combination and separation of boxes, saving time and effort during transport.
- Easy integration into vehicle equipment systems from numerous manufacturers.
- Transparent lid allows a perfect overview even when closed.
- Two robust locking mechanisms ensure secure locking.
- Case can be refilled with standard packaging units.
- Included: assembly instructions and disassembly tool.

Application ranges

- For safe transport and storage of SKINTOP® CLICK cable glands (sizes M12 to M32).
- Especially for assembly use, e.g. on construction sites.

Technical Data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000441
ETIM 5.0/6.0 Class-Description:
Cable screw gland

Colour delivered
Silver grey (RAL 7001)
Light grey (RAL 7035)
Black (RAL 9005)

LEGEND

NEW PRODUCT

PRODUCT 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


Cable 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®
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

LAPP