

# Data Network Cabling System EasyLan



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# General Information

## GENERAL INFORMATION

- All **dimensioned drawings** are displayed within the confines of available space on the page and are only intended as a guide.
- All **circuit diagrams** are schematic wiring diagrams which are intended to allow better understanding of the function, and will need to be edited/added to during the course of project planning.
- All **images** represent samples of the product and are intended for information purposes only.

Unless otherwise stipulated, the current version of the General Terms of Delivery issued by The Association of the Austrian Electrical and Electronics Industries "EEL" shall apply. You can find a copy of these at the end of this catalogue.

No liability for errors in text, type or images; we reserve the right to make changes to technical specifications of the product range.

The user information contained in this catalogue reflect the opinion of the company at the time of writing. The information contained in it was assembled on the basis of published norms, specialist industry presentations, specialist literature and in-house expertise. The content is for informational purposes only and has no validity in law.

**Availability information:**

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# Data network cabling

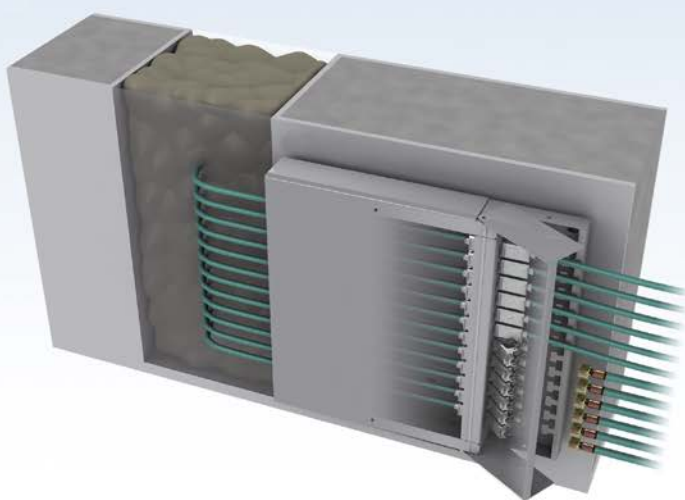


- H.D.S. Fiber Optic
- H.D.S. Splice Splitting System
- FO Trunk Cable
- LED FO Patchcords
- Customized Solutions
- preLink® H.D.S. Copper
- preLink® H.D.S. Fiber Optic
- preLink® Trunk Cable
- preLink® Keystone Module
- preLink® Data Center Module
- LED Copper Patchcord
- LED FO Patchcord
- Ackermann Underfloor Systems
- preLink® Data Outlet
- preLink® H.D.S. Copper
- preLink® Keystone
- preLink® Extender
- preLink® Consolidation Point
- preLink® flex. version, solid version





- preLink® Extender
- preLink® Data Outlet
- preLink® M12
- Camera
- Gate
- Access Control



Emphasis is increasingly being placed on system applications, which offer the user the opportunity to build the entire network infrastructure based on a single integrated cabling technology.

We offer an integrated and barrier-free network with guaranteed 10 Gigabit performance, high availability even during real-time operation, and flexible cost-saving adaptation and expansion/upgrade options. All the components and systems for data network cabling shown here are based on internationally recognized cabling standards.

Consistent compliance with the normative requirements of ISO/IEC 11801 and EN 50173-x means that our cabling systems can be safely installed worldwide. The product range shown is based on the latest proprietary technologies in the copper and the fiber optic range of the EasyLan® brand.

The preLink® system represents a core technology in the area of copper cabling. All components of the preLink® system offer simple, quick installation and open up a number of new possibilities and advantages with respect to the maintenance, operation and installation of your network. The installation of a product from the preLink® family always adheres to the same scheme, regardless of which application (Keystone, RJ45 connector, Extender, IP20, IP65/67, HDS, etc.) is to be put into operation.

Therefore, each product area features innovative solutions that give your cabling unique performance characteristics during installation, operation and maintenance.

# Data network cabling



stock

manufacturing



### Product Range

The EasyLan® system is continuously expanded with innovative products in the area of passive network technology. This ever-growing family of products makes your network more secure, thereby significantly increasing availability. See the benefits of the EasyLan® product range for yourself.

### Customized Products

These include assembled copper and fiber optic cables, complete wiring sets for transmission networks, passive network connection components and special solutions tailored to customer requirements.

### Tailored Manufacturing

The market doesn't have solutions for everything. Need to make adaptations to existing products, special assemblies or new products? Our research and development department works with you on "your product". In addition, you'll receive technical data sheets, support during the certification process, and PR-related images and information.

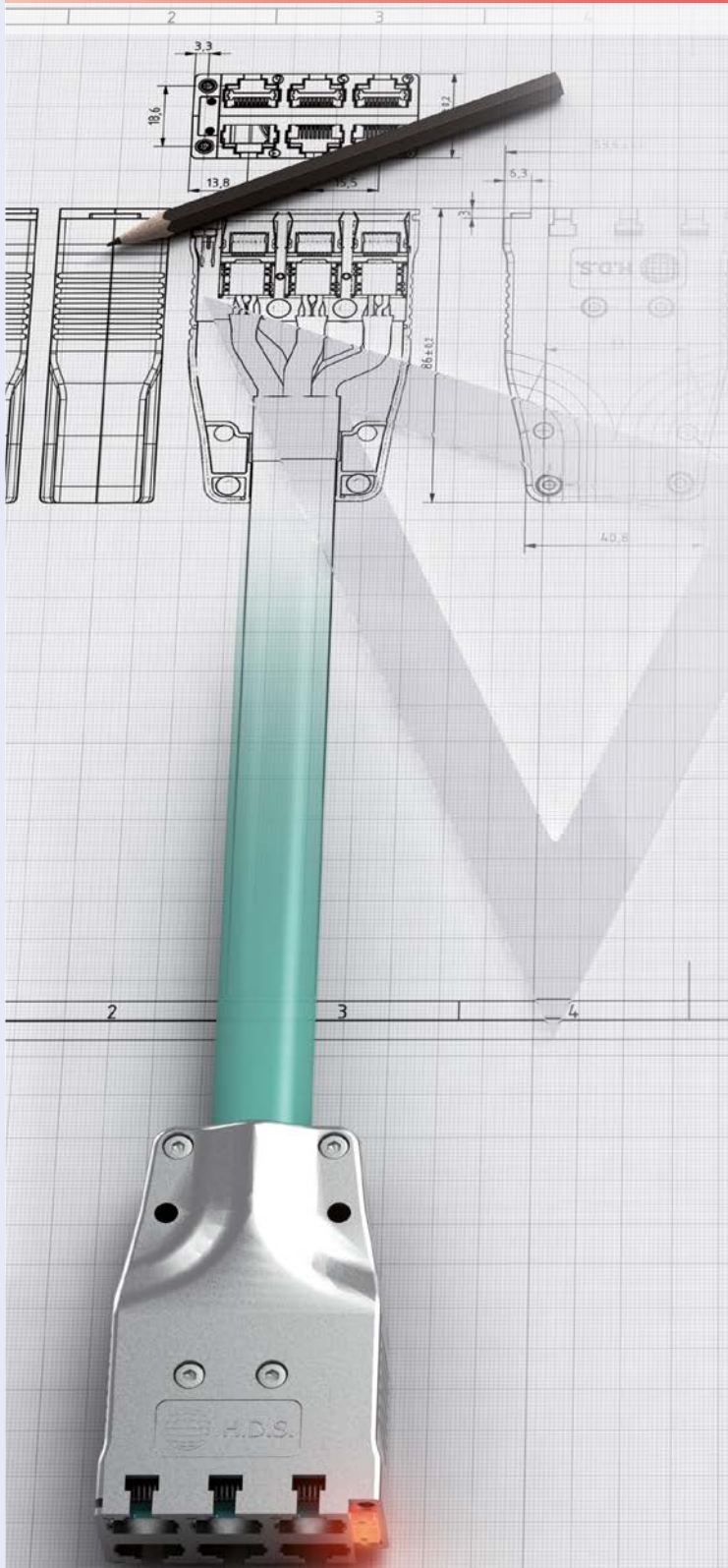
### Quality Label

No product leaves European EasyLan® manufacturing facilities without undergoing extensive checks. Measurement results are stored centrally in databases. Individual test reports are provided upon request.

The business philosophy of ZVK GmbH, Germany, which manufactures EasyLan® products, is to only source goods from certified suppliers, ensuring maximum quality and safety for all EasyLan® products.



...from the idea  
to the product...



#### **Idea**

Our products come to life as a result of constant observation of the market and the consistent implementation of requirements.

#### **Feasibility study**

An experienced team of engineers and technicians turns ideas into products and verifies their feasibility via simulation programs.

#### **Prototypes**

With the help of 3D printers, the initial prototypes are produced and developed together with users.

#### **Testing**

All newly developed products undergo a rigorous quality program. Testing isn't restricted to electronic parameters – we place even more emphasis on using selected environmental tests to ensure long-term performance and thereby product reliability.

#### **Series production**

Once all tests have been successfully completed, series production begins. Every product is designed so that installation errors are automatically eliminated.

#### **QM**

Each component is promptly tested, with the careful selection of our suppliers guaranteeing the highest reliability.

#### **Patents**

95% of EasyLan® products are unique and protected worldwide by various intellectual property rights.

#### **Commitment to quality...**



# 25

## 25-year PPA EL system warranty on EasyLan® products for copper and fiber optic products

**The 25-year "PPA EL System Warranty" on certified EL fiber optic and copper systems is comprised of the following:**

### Product warranty:

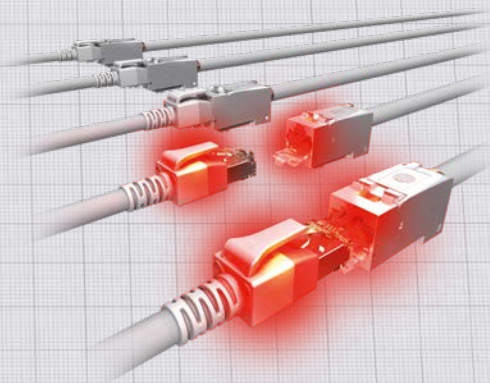
The product warranty covers all components in an EL fiber optic or copper cabling system that was installed and tested by a qualified installer in accordance with EL specifications and the applicable installation standards contained in EN 50174. The parent company of the EasyLan® product range (ZVK GmbH, Germany) guarantees that, during the 25-year system warranty starting from the date of purchase (EL invoice date), all EL system components will meet or exceed the cabling standards ISO/IEC 11801, EN 50173 and EIA/TIA 568B applicable at the time of installation, as well as the link requirements.

### Performance guarantee:

In addition to the application (Ethernet, Fiber Channel, ATM, etc.), the performance guarantee covers system features such as transfer speeds (10Mbit, 100Mbit, 1Gbit and 10Gbit). The parent company of the EasyLan® product range (ZVK GmbH, Germany) guarantees that the transmission speed of all specified applications which are based on the following cabling standards applicable at the time of installation – ISO/IEC 11801, EN 50173 and EIA/TIA 568B – will not be affected by the EL cabling system.

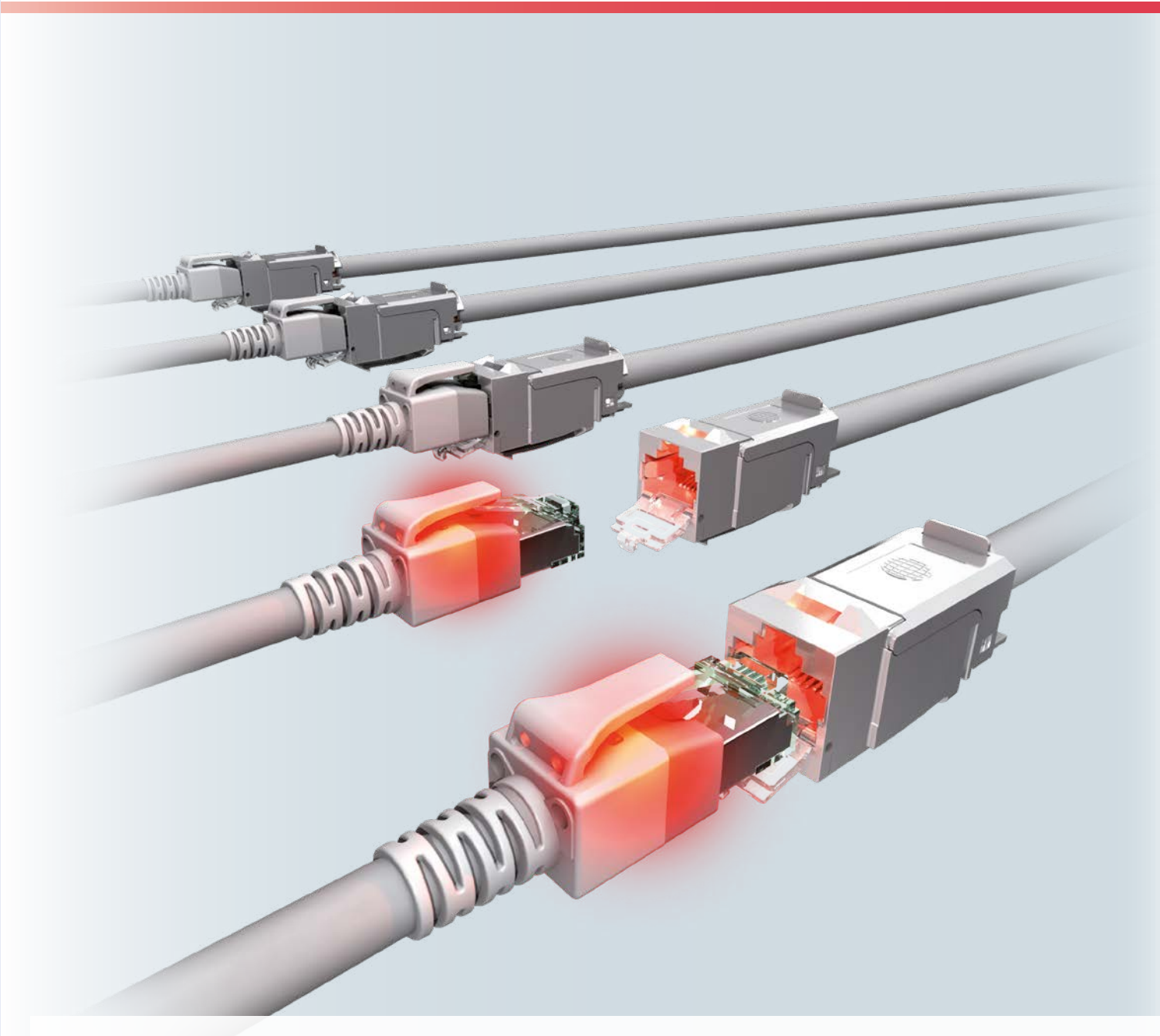
### Application guarantee:

The application guarantee covers all specified applications (Ethernet, Fiber Channel, ATM, etc.), which are based on the relevant cabling standards per ISO/IEC 11801, EN 50173 and EIA/TIA 568B applicable at the time of installation



# 1

## fixLink® Cabling System



# 01 fixLink® Cabling System

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fixLink<sup>®</sup> SL Keystone Cat.6, ISO/IEC  
CKFAK001 (Solid Version)  
CKFAKFL1 (Flex Version)

fixLink<sup>®</sup> SL Keystone  
CKWA...  
CKW...

Data outlets SL



Single  
CKVDUSL1R

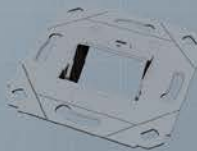


Double  
CKVDUSL2R



Triple  
CKVDUSL3R

Designable data outlets

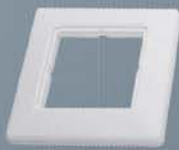


Double without cover plate  
CKVD1DS



Double with cover plate  
CKVD1D1

Cover plates for data outlets



Single  
ADZ00102



Double  
ADZ00103

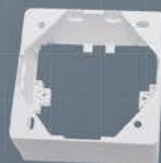
Surface mount data outlets



Double  
CKVDU292

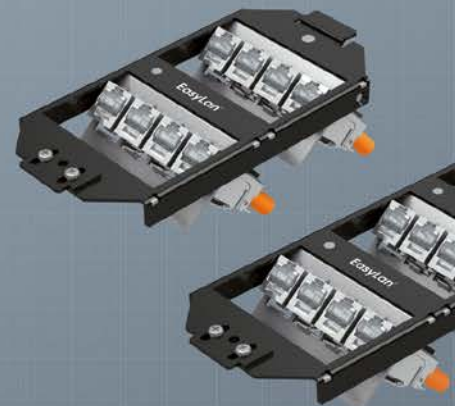


Surface mount housing  
CKVDAP90



Depth extender 10 mm  
CKVDDR90

Underfloor



OBO carrier plate GB2  
ABG00011

OBO carrier  
ABG00...

Carrier Rail modular housing



for distributor cabinets  
with circuit breaker  
covers  
CKVHMOD



for distributor cabinets  
without circuit breaker  
covers  
CKVHECOMOD



lateral cover  
CKVHECOSTL

Consolidation



4-fold  
CKVPL0041E



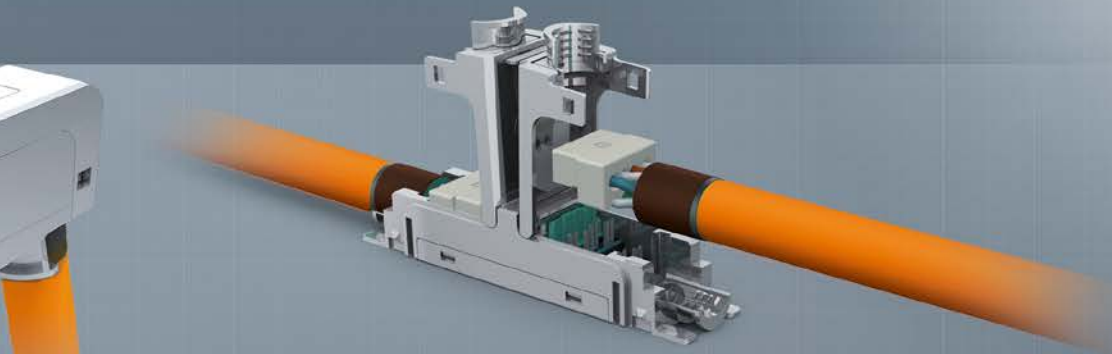
6-fold  
CKVPL0061E



8-fold  
CKVPL0081E



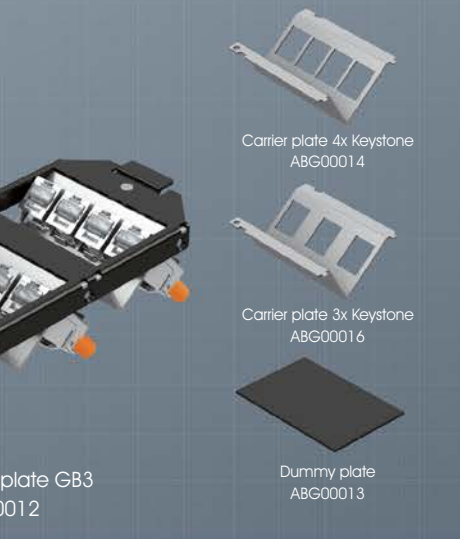
# System



Keystone Cat.6 ISO/IEC angled  
 AK007 (Solid Version)  
 AKFL7 (Flex Version)

fixlink® Extender Cat.6 ISO/IEC  
 CKEFFL00 (Solid Version)  
 CKEFFLFL (Flex Version)

## Systems



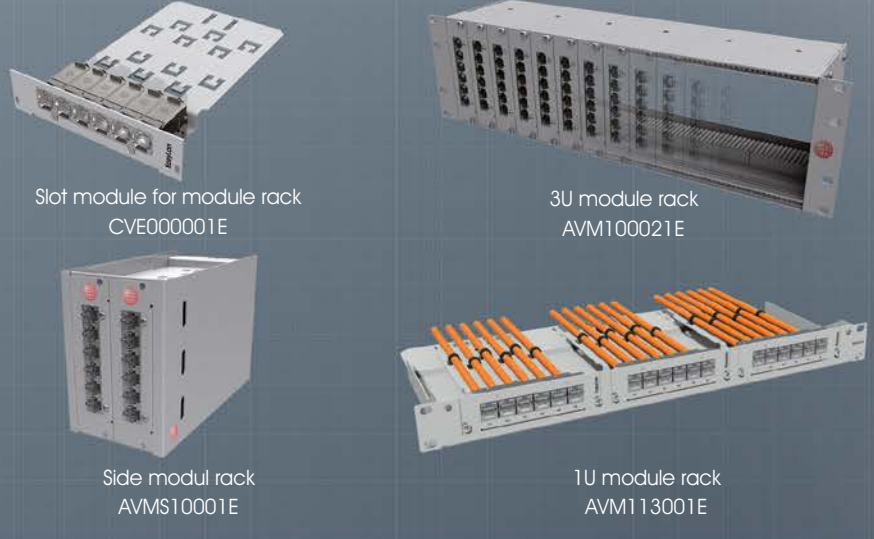
Carrier plate 4x Keystone  
 ABG00014

Carrier plate 3x Keystone  
 ABG00016

Dummy plate  
 ABG00013

Carrier plate GB3  
 ABG00012

## Module Rack (BGT)



Slot module for module rack  
 CVE000001E

3U module rack  
 AVM100021E

Side modul rack  
 AVMS10001E

1U module rack  
 AVM113001E

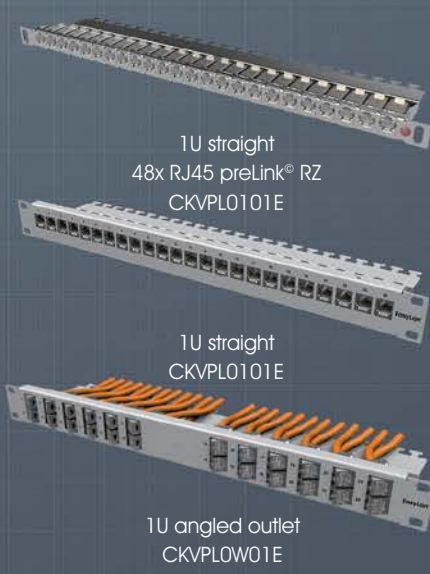
## Modular consolidation point panels



10" modular for 12x Keystone  
 CPPF01KS1E

19" modular for 24x Keystone  
 CPPF09KS1E

## Panels

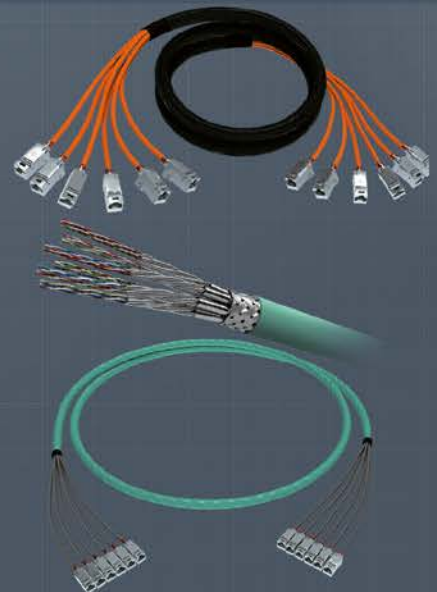


1U straight  
 48x RJ45 preLink® RZ  
 CKVPL0101E

1U straight  
 CKVPL0101E

1U angled outlet  
 CKVPL0W01E

## Accessoires



## point panels



3-fold  
 CKVPL0081E

12-fold  
 CKVPL0121E

fixLink®-System  
 Cu

# fixLink® SL RJ45 Keystone Module shielded Cat.6<sub>A</sub> (ISO/IEC)



With the fixLink® SL RJ45 Keystone module, the user receives a top-quality RJ45 socket module. The fixLink® SL RJ45 Keystone module can be assembled in under a minute using a side cutter. The freely accessible contact zone ensures perfect assembly quality and the associated guaranteed transmission performance. 360° shield connectivity only requires the integrated cover to be clicked into place, eliminating time-consuming attachment of a cable tie. The special contact geometry, in connection with 50 μ" gold plating ensures 4PPoE per IEEE 802.3bt under all conditions. The housing material consists of nickel-plated die-cast zinc and consequently meets the highest mechanical and environmental requirements. Use with the multi-design module holder permits combination with all switch product ranges. Various certifications from independent test laboratories round out the highest quality demands of the fixLink® SL Keystone module. The fixLink® SL Keystone modules are delivered in an environmentally friendly cardboard box.

**Connector norm:** IEC 60603-7-51

### Mechanical Properties:

Mating cycles	≥ 750
Housing material	nickel-plated die-cast zinc
Gold plating in contact area	50 μ"
Contacting	AWG 27-22
Cable diameter	5-9 mm

### Environmental requirements:

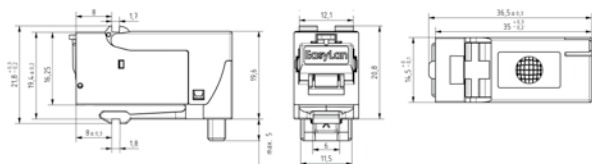
Connection class	IP 20
Temperature range	-40 °C to +70 °C

### Electrical properties:

Contact resistance	≤ 20 mΩ
Insulation resistance between contacts	≥ 500 MΩ
Dielectric withstanding voltage contact – contact	1000 V DC/AC peak
Dielectric withstanding voltage contact – screen	1500 V DC/AC peak
Current-carrying capacity at 50° C	1.25 A
4PPoE acc. to IEEE 802.3bt	4PPoE

### Transmission properties:

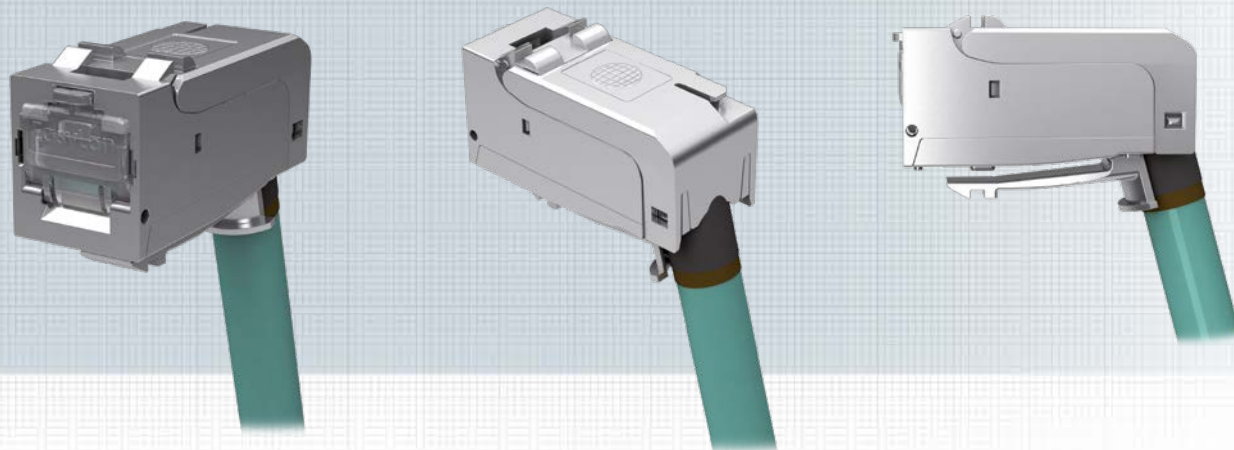
10 Gbit Class E <sub>A</sub>	supported ISO/IEC 11801 AMD1 and AMD2, link length > 1 m
Cat.6 <sub>A</sub> GHMT	ISO/IEC 11801 AMD2 VVP-certificated



Description	Type	Order No.	Type	Order No.
	PU: 24		PU: 1	
fixLink® SL RJ45 Keystone Cat.6 <sub>A</sub> ISO/IEC for AWG 24-AWG 22	CKFAK001	<b>HEKFM6GGI2</b>	CKFAK001EP	<b>HEKFM6GGI1</b>
fixLink® SL RJ45 Keystone Cat.6 <sub>A</sub> ISO/IEC for AWG 27-AWG 26	CKFAKFL1	<b>HEKFM6GGF2</b>	CKFAKFL1EP	<b>HEKFM6GGF1</b>



# fixLink® SL RJ45 Keystone Module shielded Cat.6<sub>A</sub> (ISO/IEC) angled



With the fixLink® SL RJ45 Keystone module, the user receives a top-quality RJ45 socket module specially developed for applications with space constraints. The 75° cable exit makes the module especially suitable for use in data outlets and cable installation in cavities. The minimal 27mm installation depth permits a virtually unlimited variety of applications. The fixLink® SL RJ45 Keystone module can be assembled in under a minute using a side cutter. The freely accessible contact zone ensures perfect assembly quality and the associated transmission performance. 360° shield removal only requires the integrated cover to be clicked into place, eliminating time-consuming attachment of a cable tie. The special contact geometry, in connection with 50 μ" gold plating ensures PoE+ per IEEE 802.3at under all conditions. The housing material consists of nickel-plated die-cast zinc and consequently meet the highest mechanical and environmental requirements. Use with the multi-design module holder permits combination with all switch ranges. Various certifications from independent test laboratories round out the highest quality demands of the fixLink® SL Keystone module. The fixLink® SL Keystone modules are delivered in an environmentally friendly cardboard box.

**Connector standard:** IEC 60603-7-51

### Mechanical Properties:

Mating cycles	≥ 750
Housing material	nickel-plated die-cast zinc
Gold plating in contact area	50 μ"
Contacting	AWG 27-22

Cable diameter 5-9 mm

### Environmental requirements:

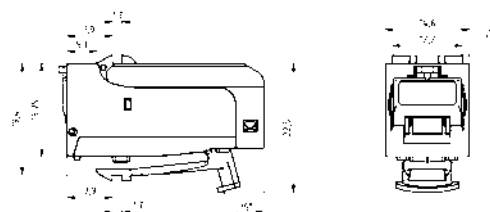
Connection class	IP 20
Temperature range	-40° C to +70° C

### Electrical properties:

Contact resistance	≤ 20 mΩ
Insulation resistance between contacts	≥ 500 MΩ
Dielectric withstanding voltage contact – contact	1000 V DC/AC peak
Dielectric withstanding voltage contact – screen	1500 V DC/AC peak
Current-carrying capacity at 50° C	1.25 A
PoE+ acc. to IEEE 802.3at	PoE+

### Transmission properties:

10 Gbit Class E <sub>A</sub>	supported ISO/IEC 11 801 AMD1 and AMD2, link length > 1 m
Cat.6 <sub>A</sub> GHMT	ISO/IEC 11 801 AMD2 PVP-certificated

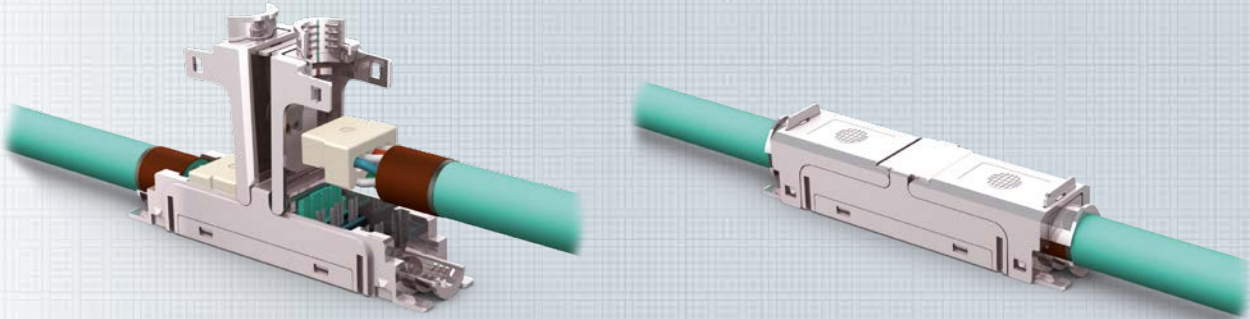


Description	Type	Order No.	Type	Order No.
	PU: 24		PU: 1	
fixLink® SL RJ45 Keystone Cat.6 <sub>A</sub> ISO/IEC for AWG 24-AWG 22, angled	CKWAK007	<b>HEKFM6GW12</b>	CKWAK007EP	HEKFM6GW11
fixLink® SL RJ45 Keystone Cat.6 <sub>A</sub> ISO/IEC for AWG 27-AWG 26, angled	CKWAKFL7	<b>HEKFM6GWF2</b>	CKWAKFL7EPP	HEKFM6GWF1





# fixLink® Extender Cat.6<sub>A</sub> (ISO/IEC) shielded



The fixLink® Extender enables cables to be extended with minimal effort. In addition, unused cables can be reactivated and extended to the next required connection. This results in optimal use of the tight space in the cable channel. The installer simply screws the extender onto the end of the installed cable in the channel or on the wall. Once installation has been completed, the extended cable can be used up to the maximum link length, even for 10 Gigabit Ethernet transmission, and supports PoE+ (Power over Ethernet).

Packaging unit: 1 piece in polybag

#### Standards:

IEEE 802.3; 10Base-T; 100Base-T; 1000Base-T; 1GBase-T; 10GBase-T; IEEE 802.5; 16 MB; ISDN; ATM, Telephone

#### Properties:

Installation dimension	
Housing material	nickel-plated die-cast zinc
Insulation components material	PC aqua
Gold plating in contact area	30 μm
Contacting	AWG 27-22, depending on fixLink® Extender
Cable diameter	5-9.5 mm
Assembly	Screwed connection
EMC	360° shielding
Electrical values	Cat.6 <sub>A</sub> and Class E <sub>A</sub> for extended link
Length of	link up to 90 m
Link extension	No additional cable rotation needed

#### Environmental requirements:

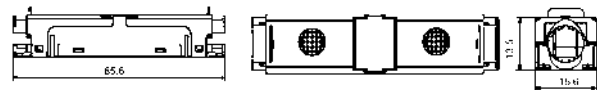
Connection class	IP 20
Temperature range	-40° C to +70° C

#### Electrical properties:

Contact resistance	≤ 20 mΩ
Insulation resistance between contacts	500 MΩ
Dielectric withstanding voltage contact – contact	1000 V DC/AC peak
Dielectric withstanding voltage contact – screen	≥ 1500 V DC/AC peak
Current-carrying capacity at 50° C	1.25 A
PoE+ acc. to IEEE 802.3at	PoE+

#### Transmission properties:

10 Gbit	supported
Cat.6 <sub>A</sub>	ISO/IEC 11801



Description	Type	Order No.
fixLink® Extender Cat.6 <sub>A</sub> ISO/IEC with 2 cable terminals for AWG 24-22	CKEFFL00	<a href="#">HCAT6AREPK</a>
fixLink® Extender Cat.6 <sub>A</sub> ISO/IEC, with 1 cable terminal for AWG 24-22 and 1 terminal for AWG 27-26	CKEF00FL	<a href="#">HEKFE6IF--</a>
fixLink® Extender Cat.6 <sub>A</sub> ISO/IEC with 2 cable terminals for AWG 27-26	CKEFFLFL	<a href="#">HEKFE6FF--</a>





# Tools and Accessories



## Stripping Tool for Mantle and Foil of Data Cable

Stripping tool to remove mantle of any cable or to strip off metallic foil from any data cable. Color: Blue.

Packaging unit: 1 piece

## Copper strip

Copper adhesive tape to affix mesh screen. Pre-cut to 35mm x 9mm.

Packaging unit: bag of 20 pcs.  
roll with 1500 pcs.



## Dust Protection Covers

Colorful dust protection covers for preLink® SL and fixLink® SL Keystone module.

Packaging unit: 50 pieces/polybag

Description	Type	Order No.
Stripping Tool	CZABIBL1	<b>HTOOL00005</b>
Copper strip, bag of 20	CZCUBT20	<b>HSEKB0020-</b>
Copper strip, roll of 1,500	CZCUBR15	<b>HSEKB1800-</b>

Description	Type	Order No.
Dust Protection Covers	CKZMSKWS	<b>HEKFPZDCW-</b>
Dust Protection Cover transparent blue	CKZMSKBL	<b>HEKFPZDCB-</b>
Dust Protection Cover transparent green	CKZMSKGN	<b>HEKFPZDCU-</b>
Dust Protection Cover transparent red	CKZMSKRD	<b>HEKFPZDCR-</b>
Dust Protection Cover transparent yellow	CKZMSKYE	<b>HEKFPZDCY-</b>



# Data Outlet SL with Cover Plate and Frame 80x80mm

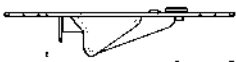
## Snap-in angle, single, double, triple



The SL data outlet are particularly suitable for installation in a cable channel (IC), for flush mounting (FM) and for surface mounting (SM). Breaking of two mounting tabs also makes floor tank assembly (FT) possible. The SL module holder can accommodate 1-3 EasyLan Keystones absolutely securely and permanently. The SL module holders feature a large, centered labeling window for easy identification. The central plate (50x50mm) and the frame (80x80mm) are made of UV-resistant and extremely shatterproof plastic. This ensures high color fidelity over the long term.

### Properties:

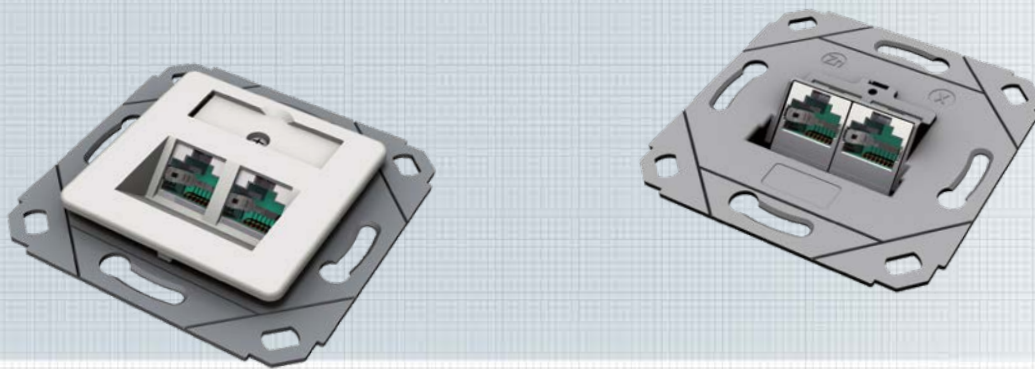
Material	module holder: Die-cast zinc frame: Polymer
Color	white, similar to RAL 9010
Components	central plate 50 x 50 mm, frame 80 x 80 mm
Application	installation in cable conduit, flush or surface-mounted
Packaging unit:	5 pieces per box



Description	Type	Order No.
Module holder, flush-mounted, single	CKVDUSL1R	<a href="#">HEKFPD1W2V</a>
Module holder, flush-mounted, double	CKVDUSL2R	<a href="#">HEKFPD2W2V</a>
Module holder, flush-mounted, triple	CKVDUSL3R	<a href="#">HEKFPD3W2V</a>

# Designable Data Outlet SL with Cover Plate

## Snap-in angle, single, double

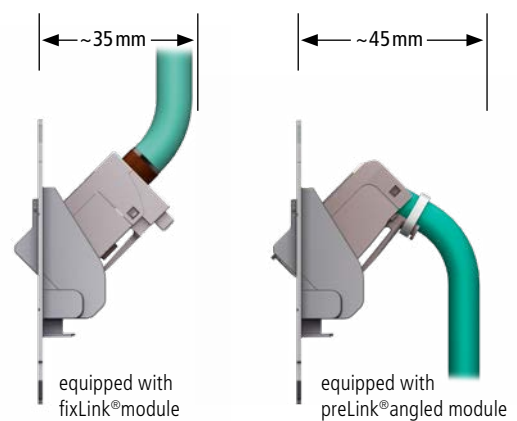
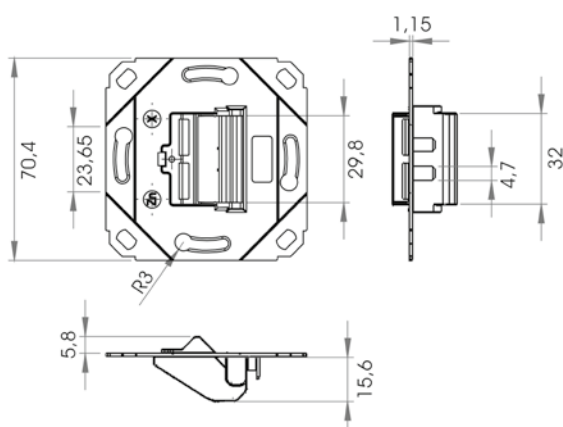


Keystone modules are not included!

The designable module holder is made of a die-cast zinc frame. It is suitable for installation in a cable channel (IC), for flush mounting (FM) as well as for surface mounting (SM) using a separate frame. Breaking of two mounting tabs also makes floor tank assembly (FT) possible. The multi-design data outlet can be combined with nearly all switch ranges on the market.

### Properties:

Material	module holder: Die-cast zinc
Color cover plate	white, similar to RAL 9010
Components	central plate 50 x 50 mm, • preLink® SL • fixLink® SL
Range of application	Installation in cable duct, flush or surface mounting, can be combined with all VAE central plates from common switch manufacturers
Packaging unit:	1 piece in polybag



Description	Type	Order No.
Multi-design module holder (without cover plate), single, double	CKVD1DS	<a href="#">HSED02UMBV</a>
Multi-design module holder (with cover plate), single	CKVD1D2	<a href="#">HEKFPD1WBV</a>
Multi-design module holder (with cover plate), double	CKVD1D1	<a href="#">HEKFPD2WBV</a>



# Data Outlet SL with Cover Plate and Frame 80x80mm Horizontal, Double



## Data outlet, empty, straight exit, flush-mounted, double

The module holder with straight Keystone exit consists of a die-cast zinc frame and is suitable for installation in a cable channel (IC), for flush mounting (FM) as well as for surface mounting (SM) using a separate frame.

### Properties:

Material	module holder: Die-cast zinc, frame: Polymer
Color	white, similar to RAL 9010
Components	central plate 50 x 50 mm, frame 80 x 80 mm, labeling area (also available as separate spare part)
Packaging unit	10 pieces per box

Description	Type	Order No.
preLink®/fixLink® Data Outlet SL with Cover Plate and Frame 80x80mm Horizontal, Double	CKVDU292	<b>HSED02UW1S</b>



# Cover Plates, Surface-Mounted Housing



## Properties Cover Plate Single/Double:

Material	plastic
Color	white, similar to RAL 9010
Range of application	Cover plate for preLink®/fixLink®Module holder SL
Packaging unit:	5 pieces per box

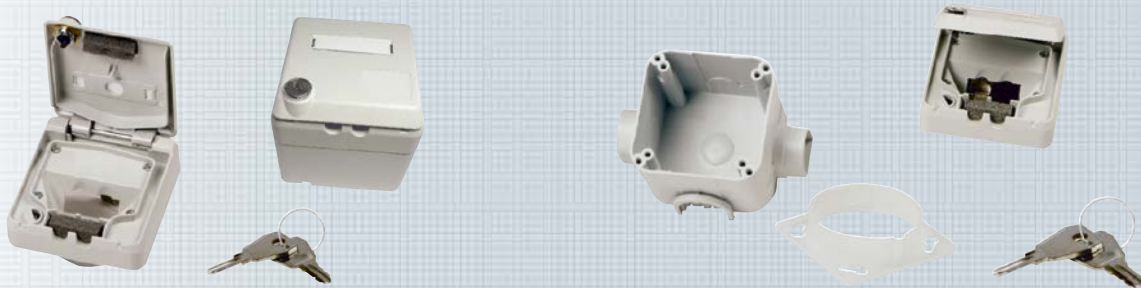
## Properties surface-mounted housing IP20, 80 x 80 x 42 mm:

Material	plastic
Dimensions:	80 x 80 x 42 mm:
Color	white, similar to RAL 9010
Range of application	Surface-mounted frame for preLink®/fixLink®Module holder SL
Packaging unit:	5 pieces per box

Description	Type	Order No.
Cover Plate Single for Data Outlets 80x80mm white RAL 9010	ADZ00102	<b>HEKFPDR1--</b>
Cover Plate Double for Data Outlets 150x80mm white RAL 9010	ADZ00103	<b>HEKFPDR2--</b>
Surface Mount Housing 80x80x42mm white RAL 9010	CKVDAP90	<b>HSEAP840WV</b>
Frame for Surface Mount Housing white RAL 9010	CKVDDR90	<b>HEKFPDA1--</b>



# Surface-Mount Housing IP 44, Lockable, Double



## Surface-Mount Housing set double, lockable IP44

The surface-mounted housing is suitable for installation of preLink® and fixLink® Keystone modules via an adapter. For better strain relief we recommend using cable clamp M25 / 2x8, which is designed to handle two cables with a diameter of up to 8 mm.

### Properties:

Material	Polymer
Color	light gray, similar to RAL 7035
Dimensions (HxWxD)	90 x 90 x 90 mm
Connection class	degree of protection IP44
Packaging unit	1 piece per box

## Flush-mounted housing set double, lockable IP44

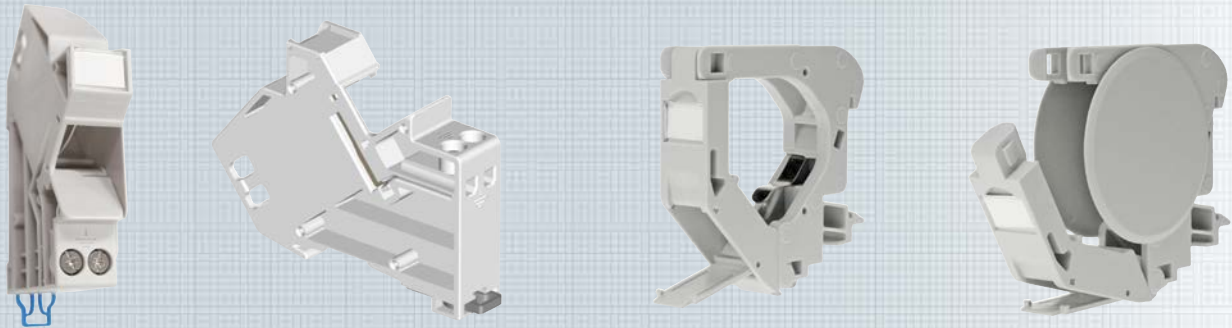
The flush-mounted housing is suitable for installation of preLink® and fixLink® Keystone modules via an adapter. The set contains the flush-mounted housing as well as the IP44 flush-mounted outlet.

### Properties:

Material	Polymer
Color	light gray, similar to RAL 7035
Dimensions (HxWxD)	35 x 90 x 90 mm
Connection class	degree of protection IP44
Packaging unit	1 piece per box

Description	Type	Order No.
Surface-Mount Housing, IP 44, Lockable, Double	CKVDAP42	<b>HEKFPDIA--</b>
Cable Clamp for Surface-Mount Housing Set, Lockable	CKVDZP40	<b>HSEIP44AKT</b>
Cable Clamp for Surface-Mount Housing Set, Lockable	CKVDUP42	<b>HEKFPDIU--</b>

# Carrier rail modular housing and adapter set



## Carrier rail modular housing for 1 module

Carrier rail modular housing for preLink®/fixLink®-modules, suitable for distributor cabinets with cover for circuit breakers.

### Properties:

Material	plastic
Color	gray, RAL 7035
Dimensions (WxHxD)	18 x 65 x 90 mm (1U installation) ground terminal separate
Range of application	Modular housing of module on carrier rails, suitable for cabinets with cover for circuit breakers
Packaging unit	1 piece per box

## Compact carrier rail modular housing for 1 module

Carrier rail modular housing for preLink®/fixLink®-modules, suitable for distributor cabinets without cover for circuit breakers.

### Properties:

Material	plastic
Color	gray
Dimensions w/o side panels	18 x 70.5 x 67.5 mm (WxHxD)
Dimensions with side panels	18 x 70.5 x 67.5 mm (WxHxD) (1U installation), ground terminal integrated
Range of application	Modular housing of module on carrier rails, suitable for cabinets without cover for circuit breakers

## Carrier rail adapter set

Carrier rail adapter set for installation of preLink®/fixLink® sub-mounted panel for 4-8 modules, for 1U installation.

### Properties:

Material	spring plate
Range of application	Adapter clip for distribution panels for mounting on carrier rails
Packaging unit	1 piece per box



Description	Type	Order No.
Carrier Rail Modular Housing for one Modul (for distribution cabinets with cover)	CKVHMOD	<b>HSERH010GS</b>
Compact Carrier Rail Modular Housing for one Modul (ground terminal integrated)	CKVHECOMOD	<b>HEKRH010GV</b>
Carrier Rail Side Panels for Compact Carrier Rail Modular Housing, PU: 2	CKVHECOSTL	<b>HEKRH011GV</b>
Carrier Rail Adapter Set, for 4-8 modules	CKVHMEK	<b>HSERHUTADA</b>



# OBO/Ackermann Floor Tank Systems GB2, GB3

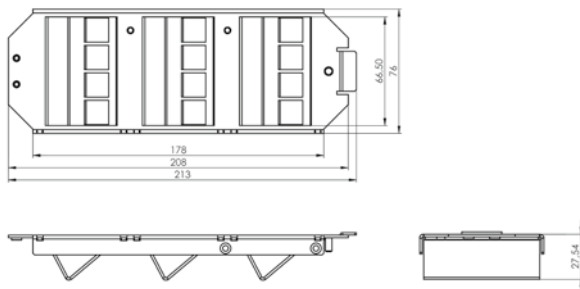


The support plate replaces the device carriers and thus offers the greatest possible space for cable feed. The slanted ingress and exit enable secure cable routing even with very low intermediate floors.

Allows a combination of installation plates for 4x preLink®/fixLink® modules or 1x H.D.S.. The installation plates are fastened to the support plate with two screws. Unused fields of the support plate can be covered with dummy plates.

#### Properties:

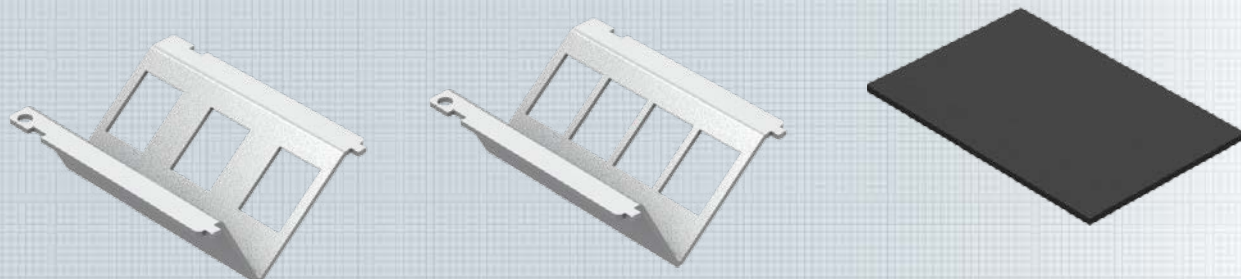
Dimension	Per specification of Ackermann under-floor systems
Material	steel plate, hot-dipped galvanized
Color	black, RAL 9005
Material thickness	1.5 mm
Equipped	- with a max. of 12 socket modules preLink®/fixLink® - with a max. of 3 H.D.S. Cu modules
Version	GB2 and GB3
Packaging unit	1 piece



Description	Type	Order No.
OBO / Ackermann Support Plate for Underfloor System GB2 modular, RAL9005	ABG00011	<b>HEKFPZBT01</b>
OBO / Ackermann Support Plate for Underfloor System GB3 modular, RAL9005	ABG00012	<b>HEKFPZBT02</b>



# OBO/Ackermann Inserts for Floor Tank Systems GB2, GB3



## Installation plates for 3 or 4 Keystone modules

For grounding purposes, the inserts for modules are not powder-coated or hot-dip galvanized. The installation plates are fastened to the support plate with two screws. Unused fields in the support plate can be covered with dummy plates.

## Properties:

Dimension	Per specification of OBO/Ackermann underfloor systems
Material	steel plate, hot-dipped galvanized
Color inserts	Metal, hot-dipped galvanized, black, RAL 9005
Color	black, RAL 9005
Material thickness	1.5 mm

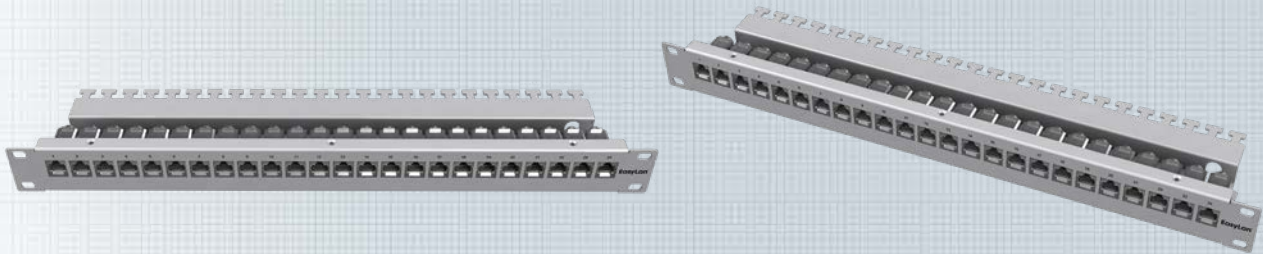
## Installation examples:



Description	Type	Order No.
OBO / Ackermann Carrier Plate 4x Keystone for Underfloor System, Nickel-plated	ABG00014	<b>HEKFPZBT03</b>
OBO / Ackermann Carrier Plate 3x Keystone for Underfloor System, Nickel-plated	ABG00016	<b>HEKFPZBT04</b>
OBO / Ackermann Carrier Plate 1x H.D.S. for Underfloor System, Nickel-plated	ABG00015	<b>HEKFPZBT05</b>
OBO / Ackermann Dummy Plate for Underfloor System, RAL 9005	ABG00013	<b>HEKFPZBT06</b>



# Panel empty 19" 1U for 24 Keystone modules



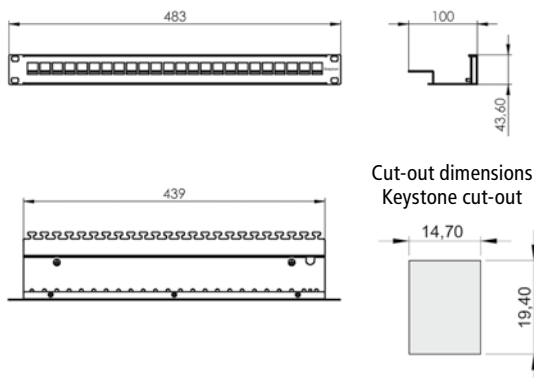
The 19" 1U distribution panel can be loaded with up to 24 preLink® / fixLink® RJ45 Keystone modules. The panel has two levels. This positions the modules flush with the front panel. The distribution panel can be ordered in stainless steel or powder-coated iron sheet.

Mounting material and Keystone modules are not included!

**Standards:** IEC 60 603-7-1

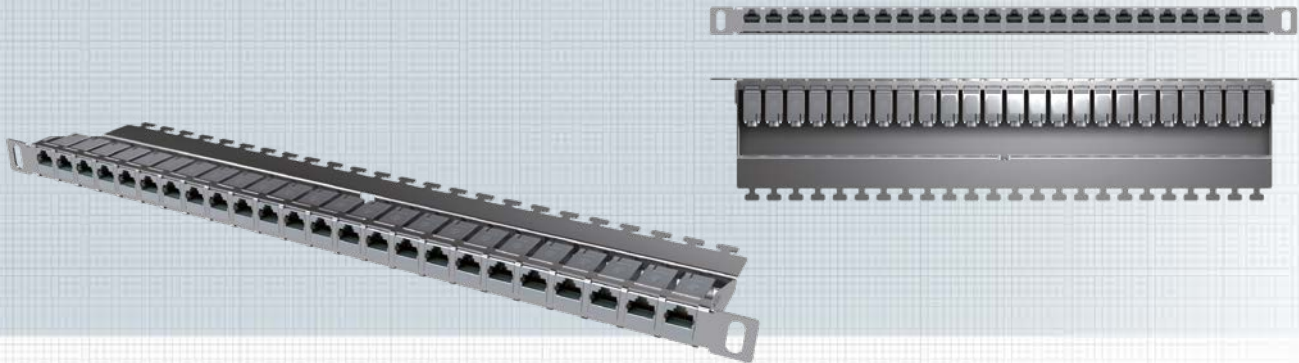
**Properties:**

Installation dimension	19" 1U Depth 155 mm
Front-side standard cut-out	24 modules
Back side	cable clamps
Material housing	steel plate, varnished / stainless steel
Cable fastening	via cable ties
Materials	per RoHS 2002/95/EG
Connection class	IP20
Temperature range	-40° C to +70° C
Application	Installation in distribution rack
Packaging unit	1 piece per box



Description	Type	Order No.
preLink® / fixLink® Panel empty 19" 1U 24x Keystone RAL7035	CKVPL0101E	HEKR0240GV

# Panel empty 19" 0.5U for 24 Keystone modules



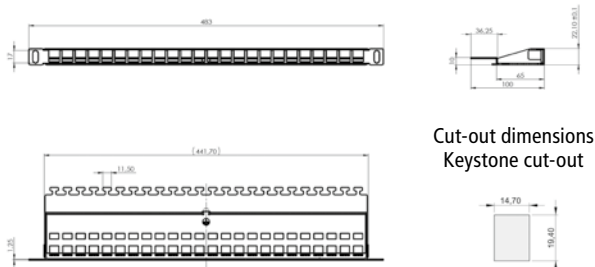
The fixLink® distribution panel 19" 0.5U can be loaded with up to 24 fixLink® RJ45 Keystone modules. The modules are flush with the front panel.

Mounting material and Keystone modules are not included!

**Standards:** IEC 60 603-7-1

**Properties:**

Installation dimension	19" 0.5U depth 155 mm
Front side	standard cut-out 24 modules
Back side	cable clamps
Material housing	stainless steel
Cable fastening	via velcro cable ties
Materials	According to RoHS 2002/95/EG
Connection class	IP20
Temperature range	-40° C to +70° C
Application	Installation in distribution rack
Packaging unit	1 piece per box



Description	Type	Order No.
preLink® / fixLink® Panel empty 19" 0,5U 24x Keystone, Stainless Steel	CKVPL5F0EE	<b>HEKR0240SB</b>
Labeling area for für 19" Panel, Stainless Steel, printed 1-24	CVZB5FEE	<b>HEKRZBS1--</b>

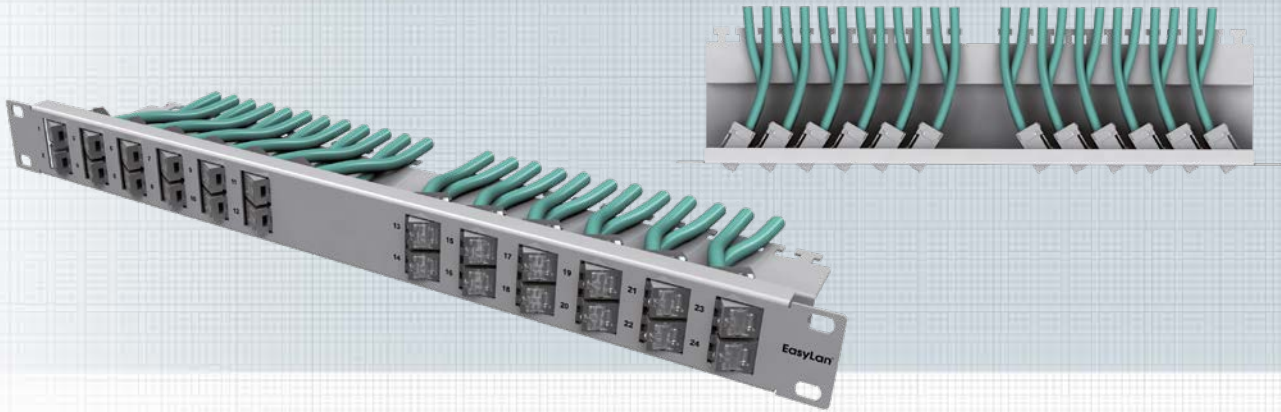
fixLink®-System  
Cu





# Angled panel empty 30° 19" 1U for 24 Keystone modules

Variant 1: Keystone Angle: 12 left, 12 right

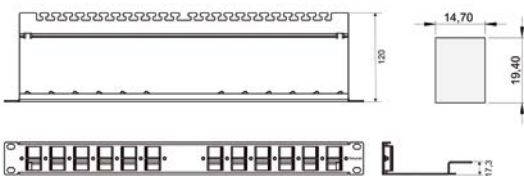


With the preLink®/fixLink® angled panel, the user has the option of clicking 24 keystone modules into the panel at an angle of 30°, and as a result the connected patchcords automatically run to the cabinet side and need only be attached laterally beside the patch level. This means the user can eliminate additional routing panels for cable routing. During operation, the angled panels with the flat front side and the side-facing patchcords also require less space than conventional patch panels with vertically installed ports.

Mounting material and Keystone modules are not included!

<b>Standards:</b>	IEC 60 603-7-1
<b>Properties:</b>	
Installation dimension	19" 1U depth 120 mm
Front side	standard cut-out 24 modules
Back side	cable clamps
Material housing	steel plate, varnished RAL7035 (gray)
Cable fastening	via cable ties
Materials	per RoHS 2002/95/EG
Environmental requirements	Connection class IP20
Temperature range	-40°C to +70° C
Application	Installation in distribution rack
Packaging unit	1 piece per box

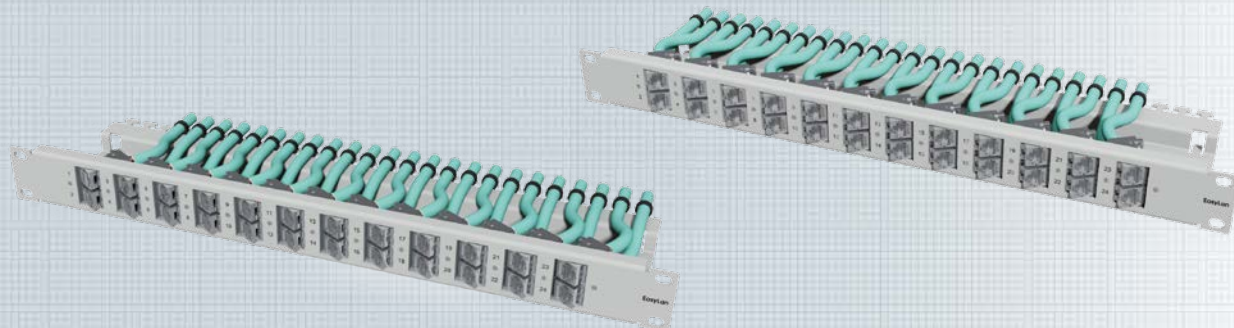
Cut-out dimensions  
Keystone cut-out



Description	Type	Order No.
preLink® / fixLink® Angeld Panel empty 1U 19" Variant 1 / Keystone Angle: 12 left, 12 right	CKVPL0W01E	<b>HEKR0240LR</b>

# Angled panel empty 30° 19" 1U for 24 Keystone modules

Variant 2: Keystone Angle: 24 left ; Variant 3: Keystone Angle: 24 right



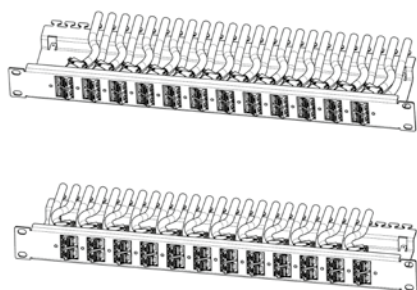
With the preLink®/fixLink® angled panel, the user has the option of clicking 24 keystone modules into the panel at an angle of 30°, and as a result the connected patchcords automatically run to the cabinet side and need only be attached laterally beside the patch level. This means the user can eliminate additional routing panels for cable routing. During operation, the angled panels with the flat front side and the side-facing patchcords also require less space than conventional patch panels with vertically installed ports.

Mounting material and Keystone modules are not included!

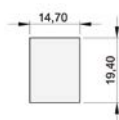
**Standards:** IEC 60 603-7-1

**Properties:**

Installation dimension	19" 1U depth 120 mm
Front side	standard cut-out 24 modules
Back side	cable clamps
Material housing	steel plate, varnished RAL7035 (gray)
Cable fastening	via cable ties
Materials	per RoHS 2002/95/EG
Environmental requirements	Connection class IP20
Temperature range	-40°C to +70° C
Application	Installation in distribution rack
Packaging unit	1 piece per box



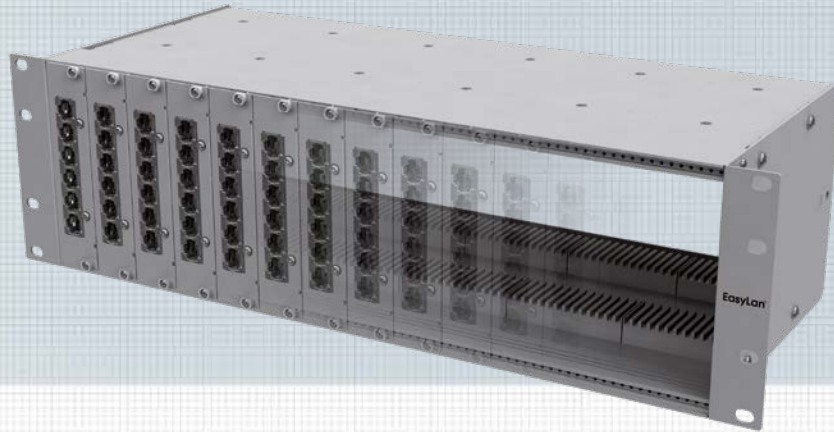
Cut-out dimensions  
Keystone cut-out



Description	Type	Order No.
preLink® / fixLink® Angled Panel empty 1U 19" Variant 2 / Keystone Angle: 24 left	CKVPL0L01E	<b>HEKR0240LL</b>
preLink® / fixLink® Angled Panel empty 1U 19" Variant 3 / Keystone Angle: 24 right	CKVPL0R01E	<b>HEKR0240RR</b>



# Modul Rack (MR) empty 19" 3U, 7HP for max. 12x Slot Modules



Module holder (CR) for use with 7 depth-unit slot modules in copper and FO. The slot modules are fastened to the module holder from the panel side using 2 screws. The slot modules can be completely pulled out of the module holder. A maximum of 12 x 7 depth-unit slot modules (72 ports) can be mounted in the module holder.

Mounting material and Keystone modules are not included!

#### Properties:

Material	Steel plate Nickel-plated and Heat-treated
Color	Gray, RAL 7035 Cover: Metallic Luster
Installation depth Keystone modules	190 mm For max. 72 Ports divided among 12 slot modules
Range of application	Limited cabinet space, high flexibility, individual extensions, e.g. in data centers
Packaging:	1 piece per box

Description	Type	Order No.
Modul Rack (MR) empty 19" 3U, 7HP for max. 12x Slot Modules	AVM100021E	<b>HEKB3712--</b>
Dummy Plate for Modul Rack (MR) and Side-Modul Rack (S-MR), 7HP, Aluminium	AVMB00001E	<b>HEKBB001--</b>



# Modul Rack (MR) empty 19" 1U, 7HP for max. 3x Slot Modules



Module holder (CR) for use with 7HP insert modules in copper and FO. The insert modules are fastened to the module holder from the panel side using 2 screws. The insert modules can be completely pulled out of the module holder. A maximum of 3 x 7HP insert modules (18 ports) can be mounted in the module holder.

Mounting material and Keystone modules are not included!

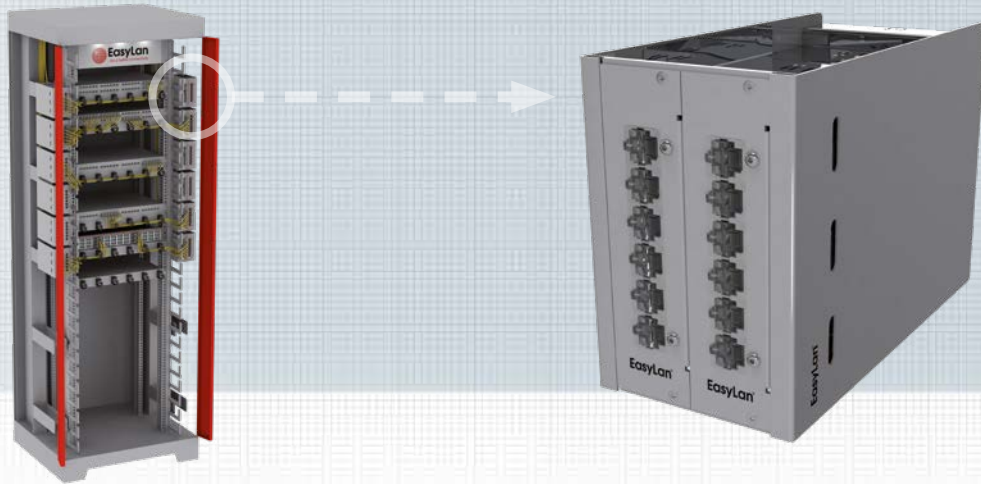
### Properties:

Material	Steel plate Nickel-plated and Heat-treated
Color	Gray, RAL 7035 Cover: Metallic Luster
Installation depth Keystone modules	250 mm For max. 18 Ports divided among 3 slot modules
Range of application	Limited cabinet space, high flexibility, individual extensions, e.g. in data centers
Packaging:	1 piece per box

Description	Type	Order No.
Modul Rack (MR) empty 19" 1U, 7HP for max. 3x Slot Modules	AVM113001E	<b>HEKB10703-</b>
Dummy Plate for Modul Rack (MR) and Side-Modul Rack (S-MR), 7HP, Aluminium	AVMB00001E	<b>HEKBB001--</b>



# Modul Rack (S-MR) empty 19" 3U, 7HP for max. 12x Slot Modules



Side module holder (S-CR) for use with 7HP insert modules in copper and FO. The plug-in modules are fastened to the module holder from the panel side using 2 screws. The plug-in modules can be completely pulled out of the module holder. A maximum of 2 x 7HP insert modules (12 ports) can be mounted in the module holder. The side module holder (S-CR) is affixed on the lateral cabinet perforation. This makes mounting simple and fast. Side-mounting of the cabinet makes it possible to perform cabling in space-saving manner while enhancing climate control and without impacting the air flow.

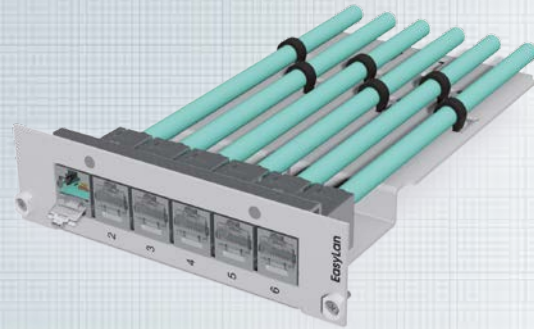
Mounting material and Keystone modules are not included!

#### Properties:

Material	Steel plate Nickel-plated and Heat-treated
Color	Gray, RAL 7035
Installation depth	190 mm
Keystone modules	For max. 12 Ports divided among 2 slot modules
Range of application	Limited cabinet space, high flexibility, individual extensions, e.g. in data centers
Packaging:	1 piece per box

Description	Type	Order No.
Modul Rack (S-MR) empty 19" 3U, 7HP for max. 12x Slot Modules	AVMS10001E	<b>HEKB31402-</b>
Dummy Plate for Modul Rack (MR) and Side-Modul Rack (S-MR), 7HP, Aluminium	AVMB00001E	<b>HEKBB001--</b>

# Slot Module for 6x Keystones 7TE empty for Modul Rack (MR) and Side-Modul Rack (S-MR)

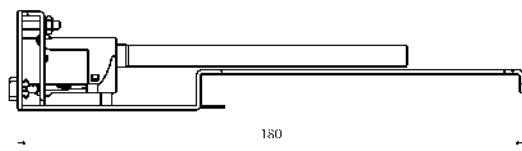
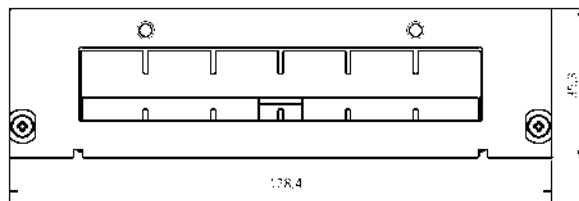


Keystone insert module for loading module carriers. The Keystone insert module can be equipped with up to 6 preLink® or fixedLink® Keystone modules. The Keystone insert module is composed of two levels, and as a result the modules are flush with the front panel. The cable is clamped directly on the insert module housing. For 6 single cables.

Mounting material and Keystone modules are not included!

### Properties:

Material	Steel plate Nickel-plated and Heat-treated
Color	Gray, RAL 7035
Installation depth Keystone modules	190 mm For max. 6 Ports
Range of application	Limited cabinet space, high flexibility, individual extensions, e.g. in data centers
Packaging:	1 piece per box



### Description

Slot Module for 6x Keystones 7TE empty, for Modul Rack (MR) and Side-Modul Rack (S-MR)

### Type

CVE000001E

### Order No.

HEKBM07---



# Subfloor Consolidation Point Panel 1U with exchangeable front plates



Subfloor Consolidation Point Panel with exchangeable front plates to accommodate a wide array of connections in copper and FO. The subfloor Consolidation Point Panel can optionally be secured against unauthorized access by a lock.

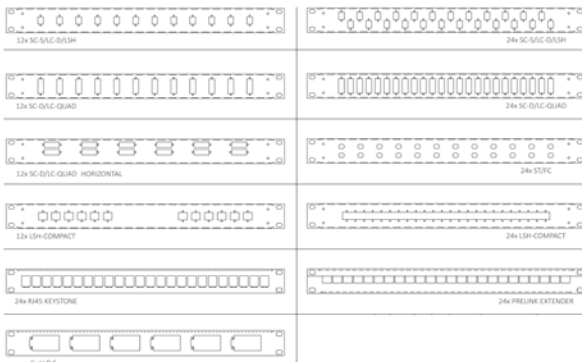
Mounting material and Keystone modules are not included!

#### Properties:

Material	steel plate, varnished
Materials	per RoHS 2002/95/EG
Dimensions (HxWxD)	45 x 270 x 300 mm
Color	gray RAL 7035 / black RAL 9004

#### Environment:

Connection class	IP20
Temperature	-40° C to +70° C



Description	Type	Order No.
Subfloor Consolidation Point Panel with exchangeable front plates, 45 x 270 x 300mm	on request	<a href="#">on request</a>
Subfloor Consolidation Point Panel with exchangeable front plates, 45 x 500 x 300mm	on request	<a href="#">on request</a>



# Desk Mounted Consolidation Point Panel empty for 4 -12 Keystone modules



Desk Mounted Consolidation Point Panel for preLink® / fixLink® RJ45 Keystone modules, for use as Consolidation Panel, direct mounting or mounting set on DIN rails in electrical distribution systems.

The Desk Mounted Consolidation Point Panel has two levels. This positions the modules flush with the front panel.

Mounting material and Keystone modules are not included!

**Standards:** IEC 60 603-7

**Properties:**

Front side standard cut-out	4 modules / 6 modules / 8 modules / 12 modules
Back side	cable clamps
Material housing	zinc-plated steel, hot-dip coated
Cable fastening	via cable ties
Materials	per RoHS 2002/95/EG

**Environmental requirements:**

Connection class	IP20
Temperature range	-40° C to +70° C
Application	Consolidation Panel, direct installation or DIN rail
Packaging unit	1 piece per box

Description	Type	Order No.
preLink® /fixLink® Desk Mounted Consolidation Point Panel empty 4x Keystone RAL7035	CKVPL0041E	<b>HEKFPCP04-</b>
preLink® /fixLink® Desk Mounted Consolidation Point Panel empty 6x Keystone RAL7035	CKVPL0061E	<b>HEKFPCP06-</b>
preLink® /fixLink® Desk Mounted Consolidation Point Panel empty 8x Keystone RAL7035	CKVPL0081E	<b>HEKFPCP08-</b>
preLink® / fixLink® Desk Mounted Consolidation Point Panel empty 12x Keystone RAL7035	CKVPL0121E	<b>HEKFPCP12-</b>



# fixLink® SL CTBC Distribution System Copper-Trunk-Bundled-Cable



The CTBC distribution system is ideal for flexible use in structured building cabling and data centers. The cables are prebundled in a braided hose and are factory assembled and pre-tested with fixLink® Keystone modules. The bundles can be made using either installation or flexible cables. The maximum length of the bundled cable is 20 meters. The distribution system as 10 Gbit solution for data center cabling meets Class E<sub>A</sub> requirements at a minimum. The transmission parameters depend on the choice of fixLink® modules used.

#### Features:

- Bundling of AWG 22 to AWG 27 data cables
- Universal pre-assembly with preLink® cable connectors
- Slim cable end
- Flexible installation
- Up to 12 cables

#### Properties of braided hose:

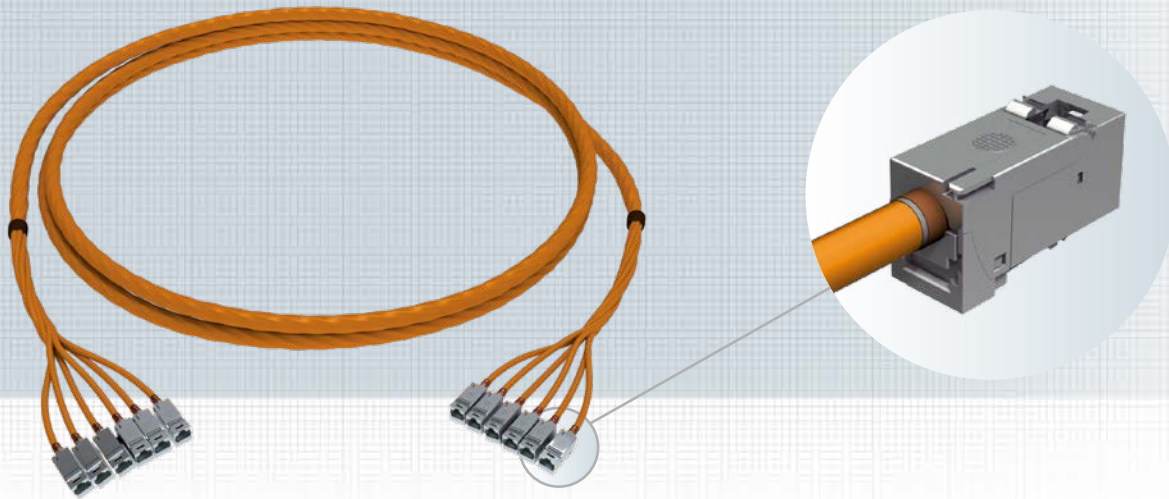
- UL-certified
- Reach
- RoHS
- Easy installation due to 100% covering
- halogen-free

#### Applications:

- Data centers
- Cabinet connections
- Structured building cabling

Description	Type	Order No.
fixLink® SL CTBC Distribution System Copper-Trunk-Bundled-Cable	on request	on request

# fixLink® SL CTMC Distribution System Copper-Trunk-Multi-Cable



The CTBC distribution system is ideal for flexible use in structured building cabling and data centers. Six-fold (6 x 4P), 8-fold (8 x 4P) or single cables leave the factory pre-assembled with preLink® cable connectors and tested.

The maximum bundled cable length is up to 90m for AWG 23 and up to 60m for AWG 26. The distribution system as 10 Gbit solution for data center cabling meets Class E<sub>A</sub> requirements at a minimum.

The transmission parameters depend on the choice of fixLink® modules used.

#### Features:

- Single or multi-cables in AWG 26 or AWG 23
- Universal pre-assembly with preLink® cable connectors
- Slim cable end

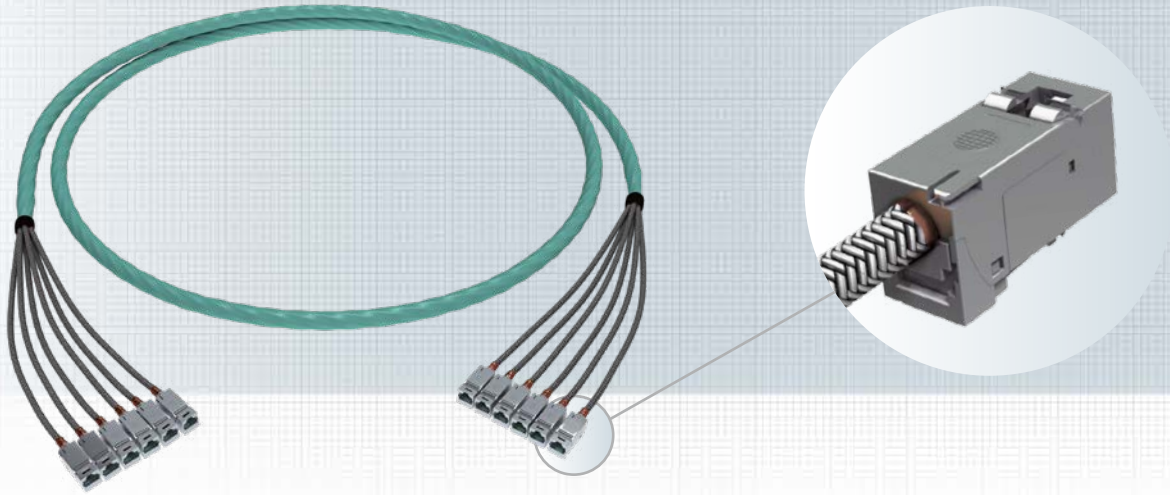
#### Applications:

- Data centers
- Cabinet connections
- Structured building cabling

Description	Type	Order No.
fixLink® SL CTMC Distribution System Copper-Trunk-Multi-Cable	on request	on request



# fixLink® SL CTCC Distribution System Copper-Trunk-Compact-Cable



Thanks to its minimal cable diameter and the associated low fire load, the CTCC distribution system is ideal for flexible use in structured building cabling and data centers. Six-fold (6 x 4P) cables leave the factory pre-assembled with fixLink® cable connectors and tested. The maximum length of the multi-cable is 60 meters. The distribution system as 10 Gbit solution for data center cabling meets Class E<sub>A</sub> requirements at a minimum.

#### Properties:

- Multi-cable in AWG 26 with minimal outer diameter
- Minimal space requirement compared to bundled cables, break-out variants and single-laid cables
- Improved cabinet climate control due to reduced air inflow
- Significant reduction in fire load

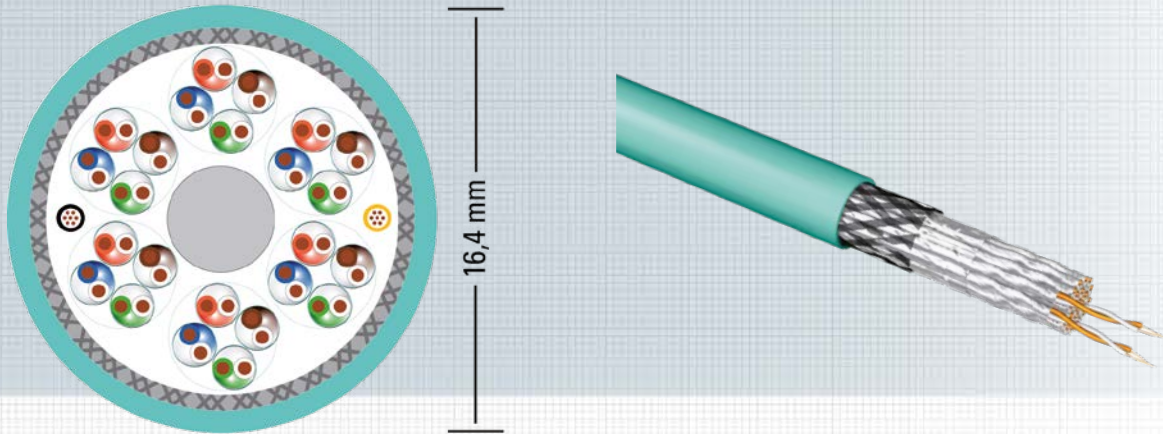
#### Applications:

- Data centers
- Structured building cabling

Description	Type	Order No.
fixLink® SL CTCC-Aufteilsystem Copper-Trunk-Compact-Cable	on request	on request



# H.D.S. Indoor Cable Cat.7 6x (4 x 2 x AWG 24) S-FTP – for confection



H.D.S internal cable Cat.7 6x (4x2xAWG24 S/FTP) for easy cabinet-to-cabinet cabling in data centers and multi-connection of server rooms to sub-distribution. The cable assembly consists of 24 pair-shielded cable elements, 4 pairs are combined into a strand. Each stranding element is provided with a range of numbers for easy identification. The flexible central strain relief provides very good protection for the cable during installation. The shell is made of a flexible LSOH material. The pilot cores are AWG 28/7.

#### Standards:

Applicable Standards	IEC 61156-6, IEEE 802.3at (PoE+), ISO/IEC 11801, RoHS-2 2011/65/EU
Flamability Rating	IEC 60332-1, IEC 60332-3, IEC 60754-1/2, IEC 61034-1/2

#### Caution:

**This cable is used exclusively for assembly of trunks and is not supplied by the meter!**

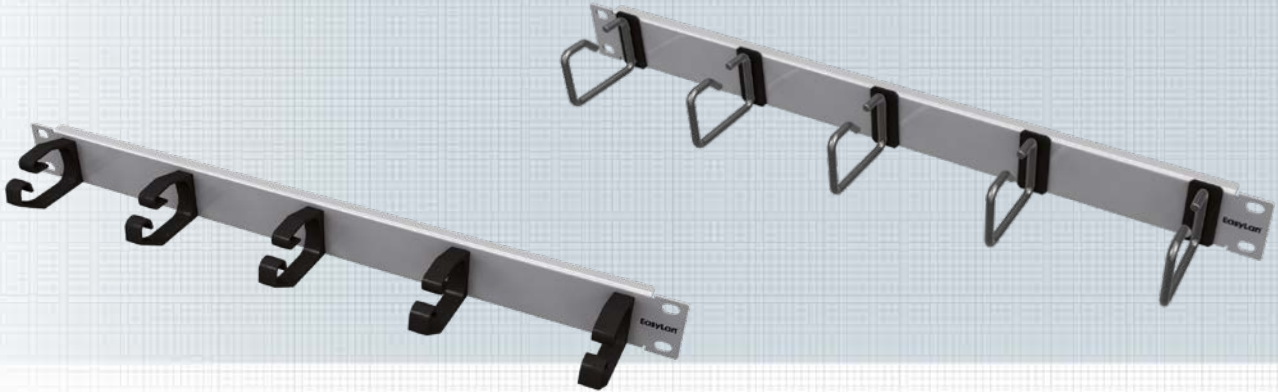
#### Technical Data:

Electrical values	Cat.7
Strand	AWG 24
Strand diameter	1.04 mm nom.
Outside diameter	16.4 mm nom.
Weight	270 kg/km
Sheath	FR-LSZH
Sheath color	aqua
Flame retardancy index	IEC 60332.3
Transmission length	Class E <sub>g</sub> >= 60 m
Flame retardancy	1.83 MJ/m; 0.51 kWh/m
Temperature range	-35°C to +65°C
Max. tensile strength	190 N
Minimum bending radius	>65.6 mm (In operation) >130 mm (Installation)

Frequency [MHz]	Return loss [dB/100m]	NEXT [dB]	RL [dB]	ELFEXT [dB]
	Typ. value	Typ. value	Typ. value	Typ. value
1	2.6	108	22	98
4	4.9	101	25	93
10	7.7	98	28	89
20	10.9	93	28	83
100	25.0	83	24	69
250	40.8	78	20	61
500	59.5	73	19	50
600	62.0	73	19	50

Only for ready-made trunks, not available by the meter!

# Routing Panel 19" with 5 cable clamps



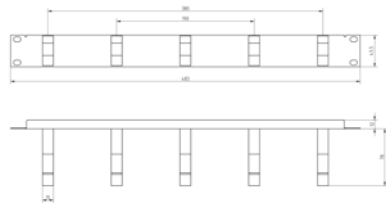
## Routing panel / Installation, 19" 1U

Routing panel / Installation, 19" 1U, 5 Plastic cable clamps

Routing panel for routing of jumpers in 19" cabinet – Built-in version

### Properties:

Material	Steel plate, powder coated
Color	Gray, RAL 7035 (standard) – other colors on request
Range of application	Installation in 19" Cabinet
Description	5 cable clamps of Plastic on Carrier panel 19"
Packaging unit	1 piece per box



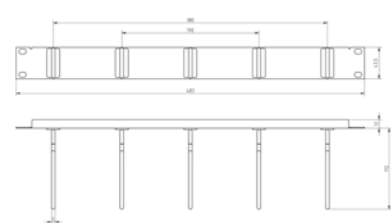
## Routing panel / Installation, 19" 1U

Routing panel / Installation, 19" 1U, 5 Steel cable clamps

Routing panel for routing of jumpers in 19" cabinet – Built-in version

### Properties:

Material	Steel plate, powder coated
Color	Gray, RAL 7035 (standard) – other colors on request
Range of application	Installation in 19" Cabinet
Description	5 cable clamps of steel on Carrier panel 19"
Packaging unit	1 piece per box



Description	Type	Order No.
Routing Panel 1U with 5 Cable Clamps of Plastic 78mm long, RAL7035	AVR5KSTB1E	<b>HEKDBK01--</b>
Routing Panel 1U with 5 Cable Clamps of Steel 60mm long, RAL7035	AVR5METB1E	<b>HEKDBC01--</b>
Routing Panel 1U with 5 Cable Clamps of Steel 110mm long, RAL7035	AVR5METC1E	<b>HEKDBC02--</b>

# F-Coupling and Blind Cover Module Replacement Empty Module Replacement for SC-S or LC-D



## F-Coupling and Blind Cover Module Replacement

The F-Coupling is used to integrate coax cables into a preLink® patch panel and the socket product range. Blind covers are used in distribution panels as well as in outlets to cover ports which are not in use.

### Properties:

Material	Polymer
Color	white, similar to RAL 9010
Note:	Dust protector must be removed prior to installation of F-coupling.
Packaging unit	1 piece

## Empty Module Replacement for SC-S or LC-D

Empty module for SC-S or SC-D couplings in distribution panels or outlets.

One blind cover must be installed between each module.

### Properties:

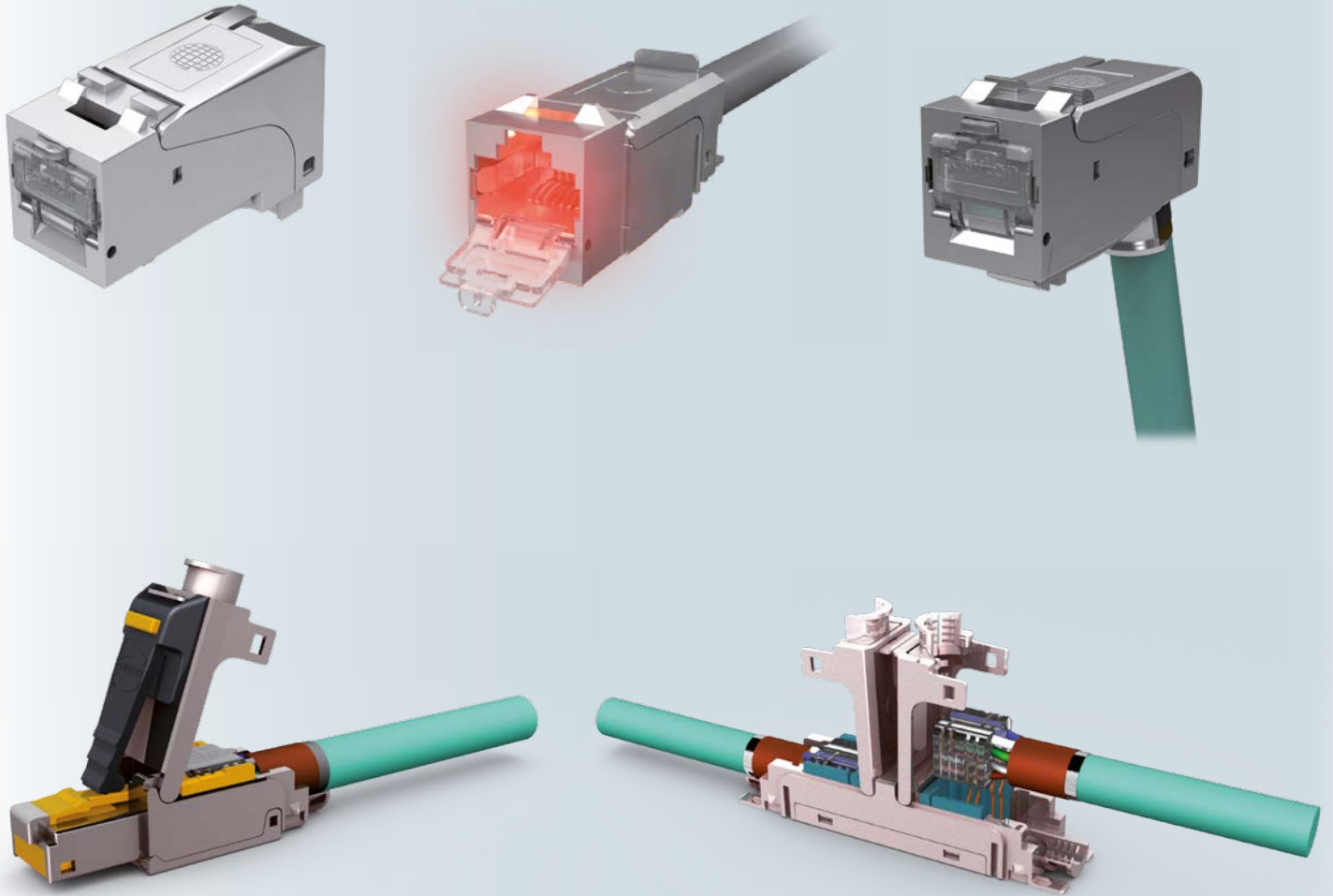
Material	Polymer
Color	white, similar to RAL 9010
Note:	Dust protector must be removed prior to installation of outlets.
Packaging unit	1 piece

Description	Type	Order No.
F-Coupling to integrate Coax Cables into Keystone Patch Panel	CKVZMFK1	<b>HSEMRKFFWS</b>
Blind Cover Module white RAL 9010	CKVZMB01	<b>HSEMRZ01WF</b>
Empty Module Replacement for LC-D/SC-S white RAL 9010	CKVZMLC1	<b>HSEMRLLLWS</b>



# 2

## preLink® Cabling System





# 02 preLink® Cabling System

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preLink<sup>®</sup> RJ45 Keystone Cat.6<sub>A</sub> ISO/IEC  
CKPAS011 (Solid Version)  
CKPAS021 (Flex Version)



preLink<sup>®</sup> RJ45 Keystone L.E.O. Cat.6A EIA/TIA  
CKLES010 (Solid Version)  
CKLES020 (Flex Version)



preLink<sup>®</sup> RJ45 Keystone  
CKWAS011 (Solid Version)  
CKWAS021 (Flex Version)

Data outlets SL



Single  
CKVDUSL1R

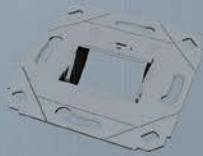


Double  
CKVDUSL2R



Triple  
CKVDUSL3R

Designable data outlets



Double without cover plate  
CKVD1DS



Double with cover plate  
CKVD1D1

Cover plates for data outlets



Single  
ADZ00102

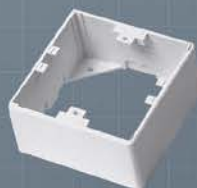


Double  
ADZ00103

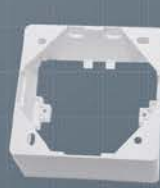
Surface mount data outlets



Double straight  
CKVDU292



Surface mount housing  
CKVDAP90



Depth extender 10 mm  
CKVDDR90

Underfloor



OBO carrier plate GB2  
ABG00011



OBO carrier  
ABG00011

Carrier Rail modular housing



for distributor cabinets  
with circuit breaker  
covers  
CKVHMOD



for distributor cabinets  
without circuit breaker  
covers  
CKVHECOMOD



lateral cover  
CKVHECOSTL

Consolidation



4-fold  
CKVPL0041E

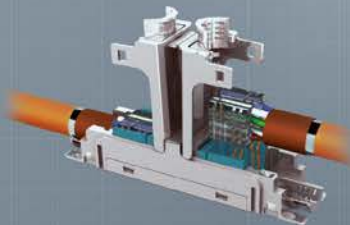


6-fold  
CKVPL0061E



8-fold  
CKVPL0081E

# - System

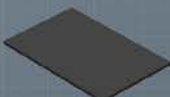
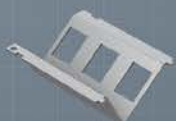


Angled Cat.6<sub>A</sub> ISO/IEC  
(Solid Version)  
(Flex Version)

prelink® RJ45 Connector module Cat.6<sub>A</sub> ISO/IEC  
CKSA0100

prelink® Extender Cat.6<sub>A</sub> ISO/IEC  
CKEA0100 (Solid Version)

## Systems



Carrier plate GB3  
ABG00012

Carrier plate 4x Keystone  
ABG00014

Carrier plate 3x Keystone  
ABG00016

Dummy plate  
ABG00013

## Modular consolidation point panels



10" modular for 12x Keystone  
CPPF01KS1E

19" modular for 24x Keystone  
CPPF09KS1E

## Point panels



8-fold  
CKVPL0081E

12-fold  
CKVPL0121E

## Module Rack (BGT)



Slot module for module rack  
CVE000001E



Side modul rack  
AVMS10001E



3U module rack  
AVM100021E



1U module rack  
AVM113001E

## Panels



1U straight  
48x RJ45 preLink® RZ  
CKVPL0101E

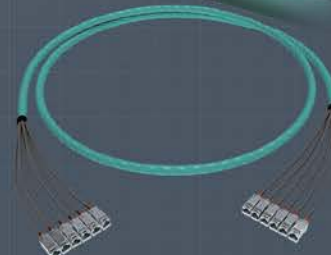


1U straight  
CKVPL0101E



1U angled outlet  
CKVPL0W01E

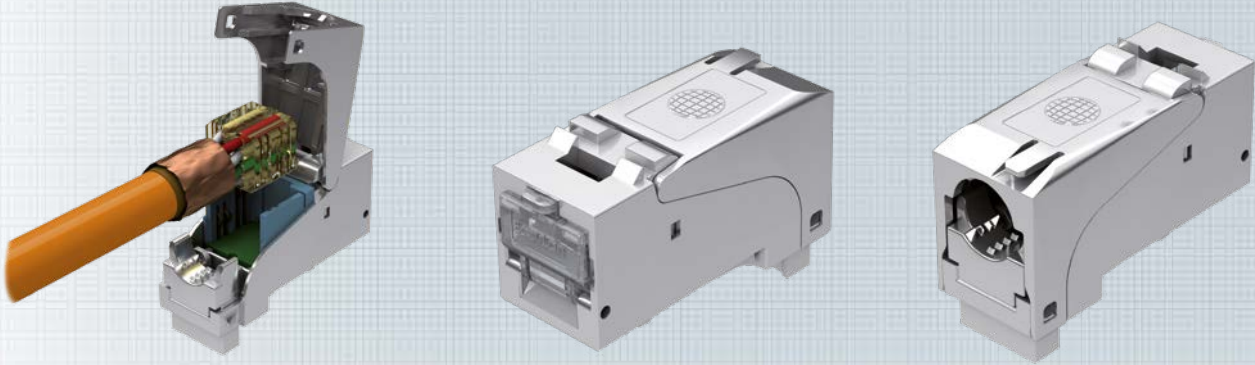
## Accessoires





# preLink® SL RJ45 Keystone Module

## Cat.6<sub>A</sub> ISO/IEC, shielded



With the preLink® SL RJ45 Keystone module, the user receives a top-quality RJ45 socket module with a maximum of flexibility. The preLink® SL RJ45 Keystone module makes it easy to just snap it onto the preLink® cable termination block. Thanks to an assembly process defined by way of preLink® assembly pliers, consistently high-quality assembly is ensured along with secure transmission performance. The special contact geometry in combination with a 50 μ" gold plating ensures PoE + according to IEEE 802.3at under all conditions. The housing material is made of nickel-plated die-cast zinc and thus meets the highest mechanical and environmental requirements. Use with the multi-design module holder permits combination with all switch product ranges. Various certifications from independent test laboratories round out the highest quality demands of the preLink® system. The preLink® Keystone modules are delivered in an environmentally friendly cardboard box.

### Standards:

Connector Standard	IEC 60603-7-51
--------------------	----------------

### Mechanical Properties:

Mating cycles (RJ45 side)	≥ 750
Mating cycles (opposite side)	≥ 100
Housing material	nickel-plated die-cast zinc
Gold plating in contact area	50 μ"
Contacting	AWG 27-22; depending on the terminal used
Cable diameter	5 – 9.5 mm

### Environmental requirements:

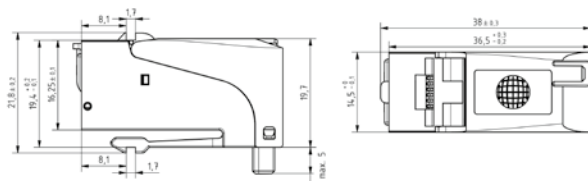
Connection class	IP 20
Temperature range	-40° C to +70° C

### Electrical properties:

EMC	360° shielding
Current-carrying capacity at 50° C	1.25 A
PoE+ according to IEEE 802.3at	Suitable for Power over Ethernet+

### Transmission characteristics for Cat.6<sub>A</sub> ISO/IEC:

10 Gbit Class E <sub>A</sub>	Supported
Cat.6 <sub>A</sub>	ISO/IEC 11 801 AM1 and AMD2, Link length > 5 m
	ISO/IEC 11 801 AMD2

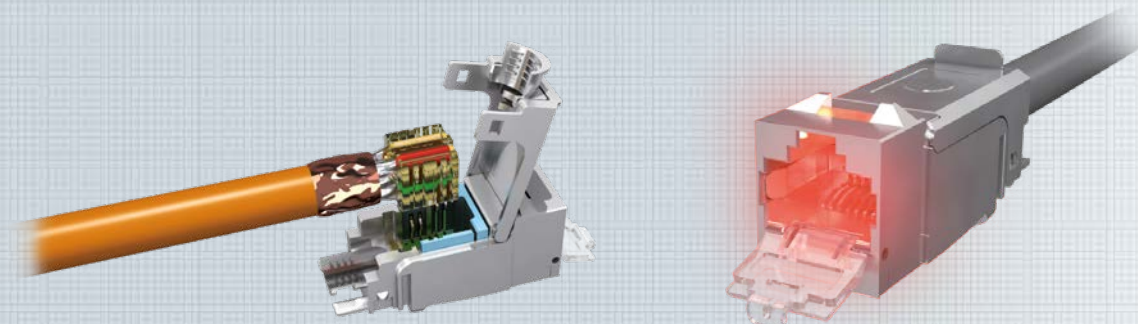


Description	Type	Order No.	Type	Order No.
	PU: 24		PU: 1	
preLink® SL RJ45 Keystone Shielded Cat.6 <sub>A</sub> (ISO/IEC) with Cable Termination AWG 24-22	CKPAS011	<b>HEKPM6G-I2</b>	CKPAS011EP	HEKPM6G-I1
preLink® SL RJ45 Keystone Shielded Cat.6 <sub>A</sub> (ISO/IEC) with Cable Termination AWG 27-26	CKPAS021	<b>HEKPM6G-F2</b>	CKPAS021EPP	HEKPM6G-F1
preLink® SL RJ45 Keystone Shielded Cat.6 <sub>A</sub> (ISO/IEC) without Cable Termination	CKPAO101	<b>HSLMGOL-02</b>		
preLink® SL RJ45 Keystone Shielded Cat.6A (EIA/TIA) with Cable Termination AWG 24-22	CKPES011	<b>HEKPMEG-I2</b>	CKPES011EP	HEKPMEG-I1
preLink® SL RJ45 Keystone Shielded Cat.6A (EIA/TIA) with Cable Termination AWG 27-26	CKPES021	<b>HEKPMEG-F2</b>	CKPES021EP	HEKPMEG-F1
preLink® SL RJ45 Keystone Shielded Cat.6A (EIA/TIA) without Cable Termination	CKPEO101	<b>HEKPMEG--2</b>		





# preLink® RJ45 Keystone Module L.E.O. Cat.6A EIA/TIA, shielded



With the preLink® SL RJ45 Keystone module, the user receives a top-quality RJ45 socket module with a maximum of flexibility. The "Light Emitting Outlet" (L.E.O.) technology uses a detector to light up matching cable ends. This function works with all common, shielded data cables for all patch points. The preLink® SL RJ45 Keystone module makes it easy to just snap it onto the preLink® cable termination block. Thanks to an assembly process defined by way of preLink® assembly pliers, consistently high-quality assembly is ensured along with secure transmission performance. The special contact geometry in combination with a 50 µ" gold plating ensures PoE + according to IEEE 802.3at under all conditions. The housing material is made of nickel-plated die-cast zinc and thus meets the highest mechanical and environmental requirements. Use with the multi-design module holder permits combination with all switch product ranges. Various certifications from independent test laboratories round out the highest quality demands of the preLink® system. The preLink® Keystone modules are delivered in an environmentally friendly cardboard box.

#### Standards:

Connector Standard IEC 60603-7-51

#### Mechanical Properties:

Mating cycles (RJ45 side)	≥ 750
Mating cycles (opposite side)	≥ 100
Housing material	nickel-plated die-cast zinc
Gold plating in contact area	50 µ"
Contacting	AWG 27-22; depending on the terminal used
Cable diameter	5 – 9.5 mm

#### Environmental requirements:

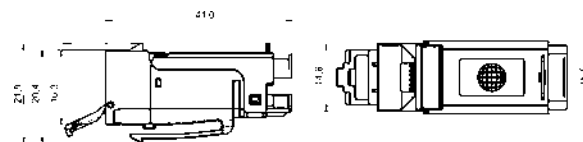
Connection class	IP 20
Temperature range	-40° C to +70° C

#### Electrical properties:

EMC	360° shielding
Current-carrying capacity at 50° C	1.25 A
PoE+ according to IEEE 802.3at	Suitable for Power over Ethernet+

#### Transmission characteristics for Cat.6A EIA/TIA:

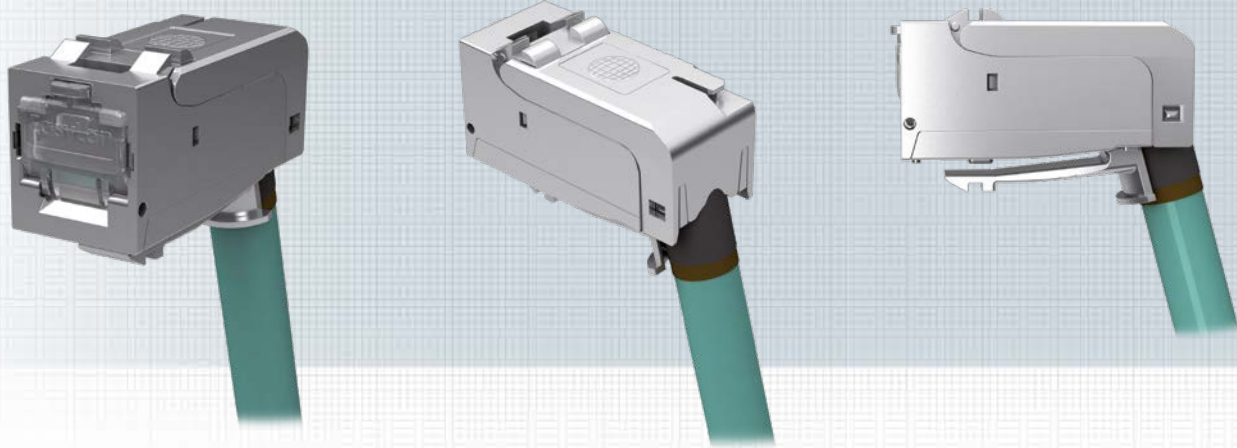
10 Gbit	supported
Cat.6A	EIA/TIA 568B.2-10
Input voltage	12 V AC
Light detection	≤ 100 m



Description	Type	Order No.	Type	Order No.
	PU: 24		PU: 1	
preLink® SL RJ45 Keystone Shielded Cat.6A (EIA/TIA) L.E.O. with Cable Termination AWG 24-22	CKLES010	<b>HEKPMEGLI2</b>	CKLES010EP	HEKPMEGLI1
preLink® SL RJ45 Keystone Shielded Cat.6A (EIA/TIA) L.E.O. with Cable Termination AWG 27-26	CKLES020	<b>HEKPMEGLF2</b>	CKLES020EP	HEKPMEGLF1
preLink® SL RJ45 Keystone Shielded Cat.6A (EIA/TIA) L.E.O. without Cable Termination	CKLEO100	<b>HEKPMEGL-2</b>		
preLink® SL L.E.O. Detektor	CKZWD001	<b>HSLTOOL01-</b>		



# preLink® SL RJ45 Keystone Module, angled Cat.6<sub>A</sub> ISO/IEC, shielded



With the angled preLink® SL 75° Keystone module, the user receives a top-quality RJ45 socket module with a maximum of flexibility. The preLink® SL 75° Keystone module makes it easy to just snap it onto the preLink® cable termination block. Thanks to an assembly process defined by way of preLink® assembly pliers, consistently high-quality assembly is ensured along with secure transmission performance. The special contact geometry in combination with a 50 μ" gold plating ensures PoE + according to IEEE 802.3at under all conditions. The housing material is made of nickel-plated die-cast zinc and thus meets the highest mechanical and environmental requirements. Use with the multi-design module holder permits combination with all switch product ranges. Various certifications from independent test laboratories round out the highest quality demands of the preLink® system. The preLink® Keystone modules are delivered in an environmentally friendly cardboard box.

#### Standards:

Connector Standard: IEC 60603-7-51

#### Mechanical Properties:

Mating cycles (RJ45 side)	≥ 750
Mating cycles (opposite side)	≥ 100
Housing material	nickel-plated die-cast zinc
Gold plating in contact area	50 μ"
Contacting	AWG 27-22 (depending on the terminal used)
Cable diameter	5-9.5 mm (depending on the terminal used)

#### Environmental requirements:

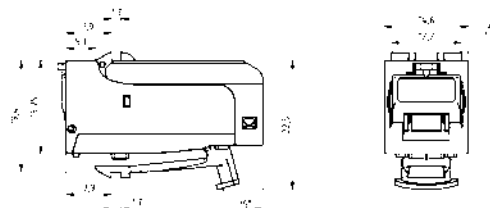
Connection class	IP 20
Temperature range	-40°C - +70°C

#### Electrical properties:

Current-carrying capacity at 50° C	1.25 A
PoE+ according to IEEE 802.3at	Suitable for Power over Ethernet+

#### Transmission characteristics for Cat.6<sub>A</sub> ISO/IEC:

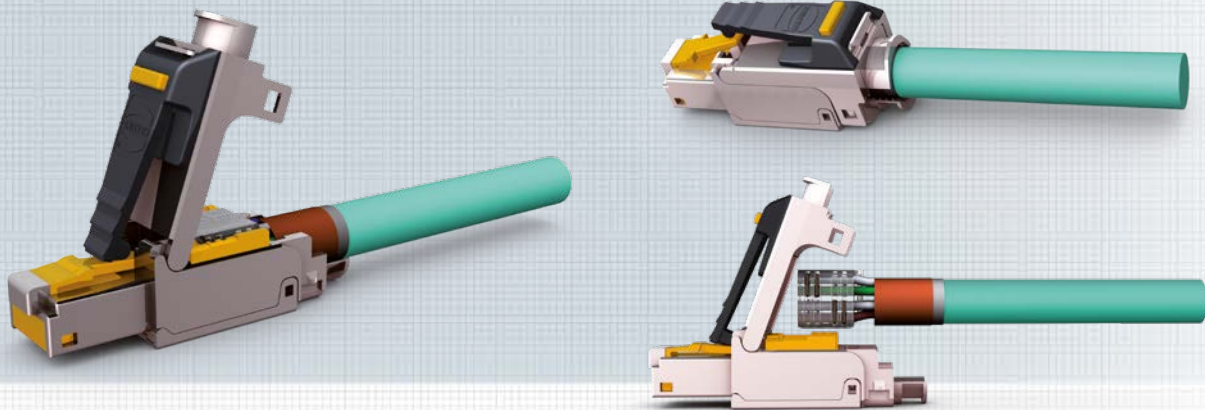
10 Gbit Class E <sub>A</sub>	Supported
Cat.6 <sub>A</sub>	ISO/IEC 11801 AM1 and AMD2, Link length > 5 m ISO/IEC 11801 AMD2



Description	Type	Order No.	Type	Order No.
	PU: 24		PU: 1	
preLink® SL RJ45 Keystone Shielded Cat.6 <sub>A</sub> (ISO/IEC) with Cable Termination AWG 24-22 angled	CKWAS011	<b>HEKPM6GWI2</b>	CKWAS011EP	HEKPM6GWI1
preLink® SL RJ45 Keystone Shielded Cat.6 <sub>A</sub> (ISO/IEC) with Cable Termination AWG 27-26 angled	CKWAS021	<b>HEKPM6GWF2</b>	CKWAS021EP	HEKPM6GWF1
preLink® SL RJ45 Keystone Shielded Cat.6 <sub>A</sub> (ISO/IEC) without Cable Termination angled	CKWAO101	<b>HEKPM6GW-2</b>		
preLink® SL RJ45 Keystone Shielded Cat.6A (EIA/TIA) with Cable Termination AWG 24-22 angled	CKWES011	<b>HEKPMEGWI2</b>	CKWES011EP	HEKPMEGWI1
preLink® SL RJ45 Keystone Shielded Cat.6A (EIA/TIA) with Cable Termination AWG 27-26 angled	CKWES021	<b>HEKPMEGWF2</b>	CKWES021EP	HEKPMEGWF1

# preLink® RJ45 Connector Module

## Cat.6<sub>A</sub> ISO/IEC, Shielded



The preLink® connector module provides users with a field-installable RJ45 connector in Category 6<sub>A</sub> ISO/IEC 11801. The user simply crimps a preLink® cable termination block onto the cable end and clips the preLink® RJ45 connector module over it. The preLink® connector supports Power over Ethernet (PoE) according to IEEE 802.3af and PoE+ according to IEEE 802.3at. As a result, a connector can be installed in seconds on pre-assembled cables fitted with preLink® termination blocks.

The preLink® cable termination block is available in two versions: in transparent yellow for installation cable with 4 pairs in AWG 23 -22, or in transparent white for flexible cable with 4 pairs in AWG 27-26. The novel IDC contacts ensure long-term stability and vibration-resistant contacting up to 10 Gigabit Ethernet.

### Advantages:

- Field assembly of RJ45 connector
- Cat 6<sub>A</sub> ISO/IEC (10 GBit/s)
- Suitable for PoE and PoE+
- Compact, robust design
- 360° shielding

Packaging unit: 1 piece in polybag

### Standards:

Connection standard IEC 60603-7-51

### Mechanical properties:

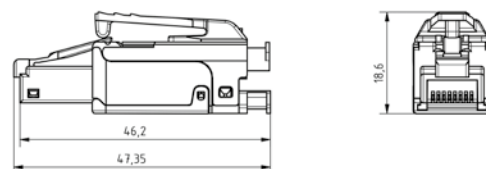
Mating cycles ≥ 750  
 Housing material Nickel-plated die-cast zinc  
 Gold plating in contact area 50µ"  
 Contacting AWG 27 - 22 depending on cable termination block  
 Insulation diameter 5 – 9 mm

### Environmental requirements:

Connection class IP20  
 Temperature range -40° C to +70° C

### Transmission characteristics:

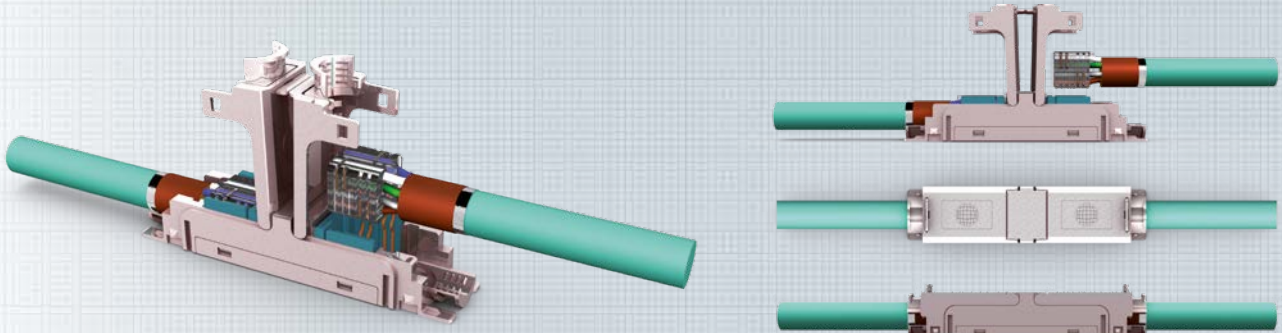
10 GBit/s Class E<sub>A</sub> Supported  
 ISO/IEC 11801 AM1 and AM02,  
 Link length > 5m  
 Cat.6<sub>A</sub> ISO/IEC 11801 AM02



Description	Type	Order No.
Field Installable preLink® RJ45 Plug Shielded Cat.6 <sub>A</sub> (ISO/IEC) without Cable Termination	CKSA0100	<b>HLSLR6SI3A</b>
preLink® Cable Termination AWG24-22 (package of 24)	CKPK1001	<b>HSLKBI--24</b>
preLink® Cable Termination AWG27-26 (package of 24)	CKPK6001	<b>HSLKBF--24</b>



# preLink® RJ45 Extender Cat.6<sub>A</sub> ISO/IEC, shielded



The preLink® Extender enables cables to be extended with minimal effort. In addition, unused cables can be reactivated and extended to the next required connection. This results in optimal use of the tight space in the cable channel. The installer simply assembles the extender onto the end of the installed cable in the channel or on the wall. Once installation has been completed, the extended cable can be used up to the maximum link length, even for 10 Gigabit Ethernet transmission, and supports PoE+ (Power over Ethernet).

Packaging unit: 24 units per polybag

**Standards:**

IEEE 802.3; 10Base-T; 100Base-T; 1000Base-T; 1GBase-T; 10GBase-T; IEEE 802.5; 16 MB; ISDN; ATM, Telephone

**Properties:**

Mating cycles	≥ 100
Housing material	nickel-plated die-cast zinc
Gold plating in contact area	50 μm
Contacting	AWG 27-22, depending on the terminal used

Cable diameter	5-9.5 mm
EMC	360° shielding
Electrical Values	Cat.6 <sub>A</sub> and Class E <sub>A</sub> for the extended link
Length of link extension	link up to 90 m
	No additional cable rotation needed

**Environmental requirements:**

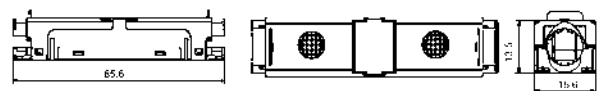
Connection class	IP 20
Temperature range	-40° C to +70° C

**Electrical properties:**

Contact resistance	≤ 20 mΩ
Insulation resistance between contacts	500 MΩ
Dielectric withstanding voltage contact – contact	1000 V DC/AC peak
Dielectric withstanding voltage contact – screen	≥ 1500 V DC/AC peak
Current-carrying capacity at 50°C	1.25 A
PoE+ acc. to IEEE 802.3at	PoE+

**Transmission properties:**

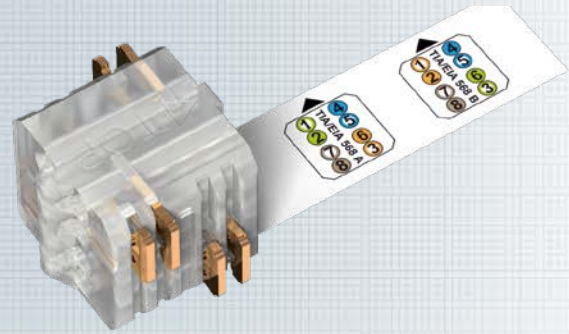
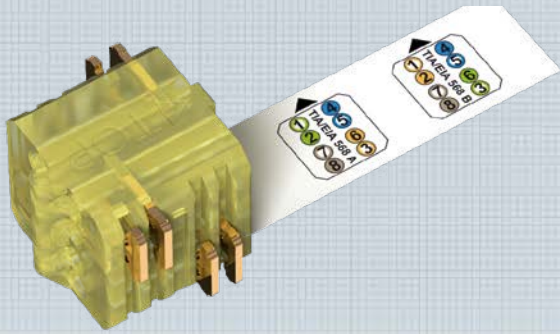
10 Gbit Cat.6 <sub>A</sub>	supported ISO/IEC 11801
----------------------------	-------------------------



Description	Type	Order No.
preLink® Extender Cat.6 <sub>A</sub> (ISO/IEC) with two Cable Termination AWG 24-22	CKEA0100	HSLKG-----



# preLink® Cable Plug AWG 24-22, AWG 27-26



## preLink® Cable Plug AWG 24 – 22, Transparent Yellow, for Installation Cable

Used to connect installation cables with solid wire in AWG 24 – AWG 22 range. Innovative IDC contacts ensure contacting in 10 Gigabit technology which remains stable over the long term and is resistant to vibration. The plug creates the basis for further set-up as Cat.6 Class E<sub>A</sub> and Cat.6<sub>A</sub> ISO/IEC with and without flashing function or other connectors.

### Properties:

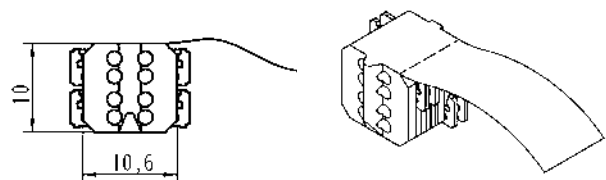
Construction	plastic with insulation displacement connection
Color	transparent yellow
Application:	installation cable with solid wire, AWG 24 to AWG 22 and flex. Plug bears small flag-like installation guide with color codes for pin-out according to EIA/TIA 568 A and B.
Packaging	24 pcs. in polybag

## preLink® Cable Plug AWG 27 – 26, Transparent White, for Flex Cable

For connecting flexible cables in the range of AWG 27 – AWG 26. Innovative IDC contacts ensure contacting for 10 Gigabit technology which remains stable over the long term and is resistant to vibration. The plug creates the basis for further set-up as Cat.6, Class E<sub>A</sub> and Cat.6<sub>A</sub> ISO/IEC with and without flashing function or other connectors.

### Properties:

Construction	plastic with insulation displacement connection
Color	transparent white
Application:	Flex cable AWG 27 – AWG 26. Plug bears small flag-like installation guide with color codes for pin-out according to EIA/TIA 568 A and B.
Packaging	24 pcs. in polybag

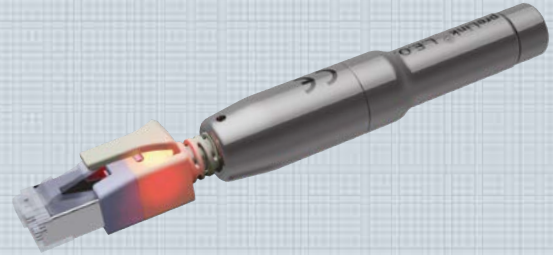
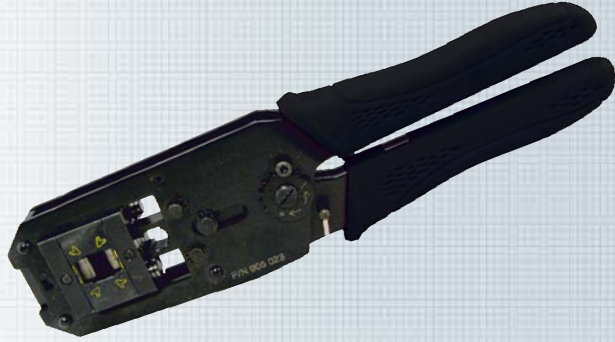


Description	Type	Order No.
preLink® Cable Plug for Installation Cable	CKPK1001	<b>HSLKBI--24</b>

Description	Type	Order No.
preLink® Cable Plug for Flex Cable	CKPK6001	<b>HSLKBF--24</b>



# preLink® Tools and Accessories



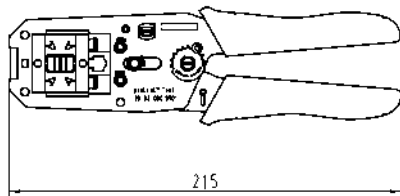
## preLink® Installation Tool

The preLink® installation tool ensures the simultaneous, reliable pressing of all eight IDC contacts into their optimal position. The precise shortening of wire lengths ensures finalized assembly in a single step. The easy-to-use release lever allows every press point to be easily opened.

The tool is equipped with a cycles-ratchet-mechanism. In case of blocking, that mechanism allows the tool to be opened and the blocking element to be removed without damage.

Application: Crimping of preLink® Cable Plug  
AWG 27 – AWG 22

Packaging: 1 piece



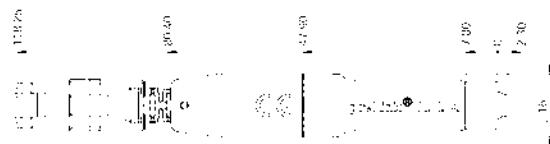
## preLink® L.E.O. Detector

Detector is required to supply input voltage for modules featuring the L.E.O. Function.

Housing: Full metal  
Supply: 12V battery  
Contacting: RJ45 plug. Permanent contacting permits successful search for second link side.

Application: Transmission of light to the L.E.O. preLink® connectors

Packaging: 1 piece

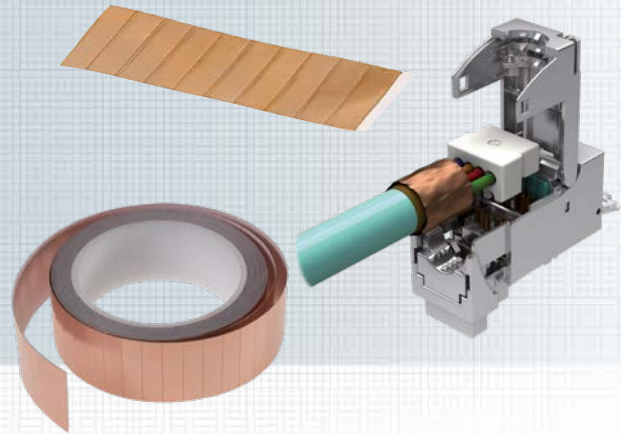


Description	Type	Order No.
preLink® installation tool	CKZWZ002	<b>HSLTOOL02-</b>

Description	Type	Order No.
preLink® L.E.O. Detector	CKZWD001	<b>HSLTOOL01-</b>



# Tools and Accessories



## Stripping Tool for Mantle and Foil of Data Cable

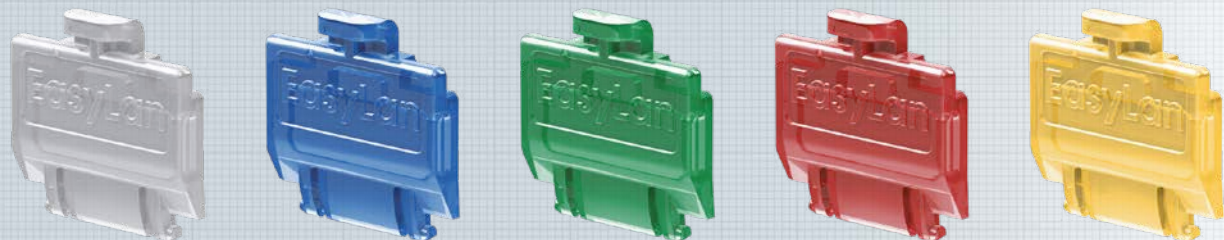
Stripping tool to remove mantle of any cable or to strip off metallic foil from any data cable. Color: Blue.

Packaging unit: 1 piece

## Copper strip

Copper adhesive tape to affix mesh screen. Pre-cut to 35mm x 9mm.

Packaging unit: bag of 20 pcs.  
roll with 1500 pcs.



## Dust Protection Covers

Colorful dust protection covers for preLink® SL and fixLink® SL Keystone module.

Packaging unit: 50 pieces/polybag

Description	Type	Order No.
Stripping Tool	CZABIBL1	<b>HTOOL0005</b>
Copper strip, bag of 20	CZCUBT20	<b>HSEKB0020-</b>
Copper strip, roll of 1,500	CZCUBR15	<b>HSEKB1800-</b>

Description	Type	Order No.
Dust Protection Covers transparent white	CKZMSKWS	<b>HEKFPZDCW-</b>
Dust Protection Cover transparent blue	CKZMSKBL	<b>HEKFPZDCB-</b>
Dust Protection Cover transparent green	CKZMSKGN	<b>HEKFPZDCU-</b>
Dust Protection Cover transparent red	CKZMSKRD	<b>HEKFPZDCR-</b>
Dust Protection Cover transparent yellow	CKZMSKYE	<b>HEKFPZDCY-</b>



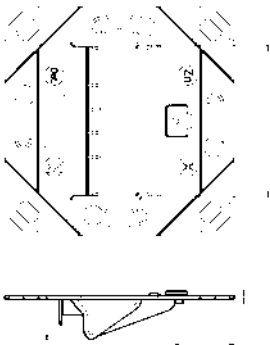
# Data outlet SL, empty, 45° exit, flush-mounted, single, double, triple



The SL data outlets are particularly suitable for installation in a cable channel (IC), for flush mounting (FM) and for surface mounting (SM). Breaking of two mounting tabs also makes floor tank assembly (FT) possible. The SL data outlet can accommodate 1-3 EasyLan Keystones absolutely securely and permanently. The SL data outlet feature a large, centered labeling window for easy identification. The central plate (50x50mm) and the frame (80x80mm) are made of UV-resistant and extremely shatterproof plastic. This ensures high color fidelity over the long term.

#### Properties:

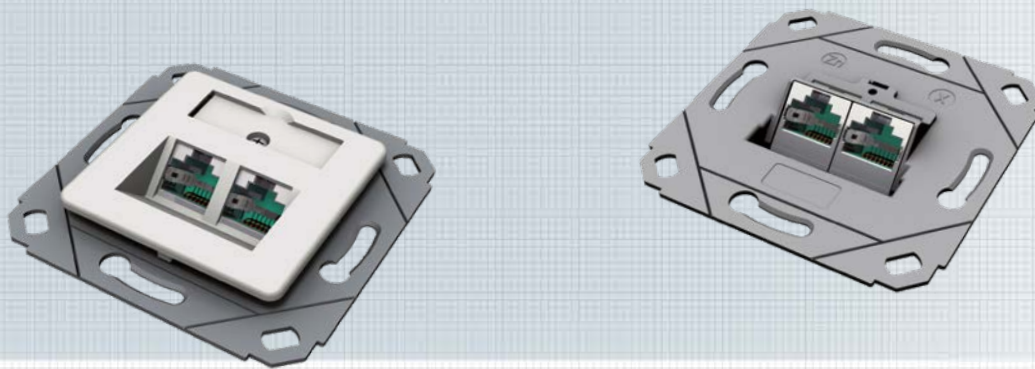
Material	Module mount: Die-cast zinc frames: Polymer
Color	white, similar to RAL 9010
Components:	50 x 50mm central plate, 80 x 80mm frame
Application	Installation in cable conduit, flush or wall-mounted
Packaging unit	5 pieces per box



Description	Type	Order No.
Data outlet, flush-mounted, single	CKVDUSL1R	<b>HEKFPD1W2V</b>
Data outlet, flush-mounted, double	CKVDUSL2R	<b>HEKFPD2W2V</b>
Data outlet, flush-mounted, triple	CKVDUSL3R	<b>HEKFPD3W2V</b>



# Designable data outlet SL empty, 45° exit, single, double

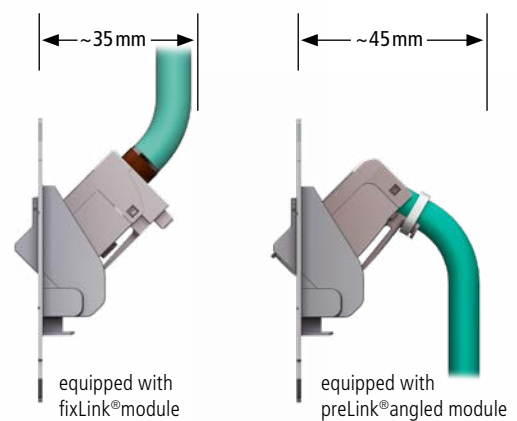
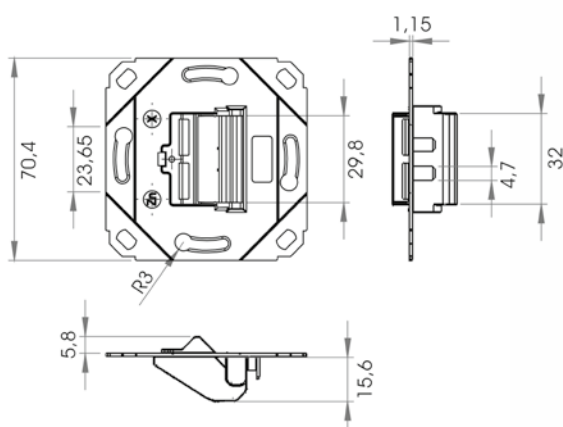


Keystone modules are not included!

The designable data outlet is made of a die-cast zinc frame. It is suitable for installation in a cable channel (IC), for flush mounting (FM) as well as for surface mounting (SM) using a separate frame. Breaking of two mounting tabs also makes floor tank assembly (FT) possible. The multi-design data outlet can be combined with nearly all switch ranges on the market.

### Properties:

Material	Data outlet: Die-cast zinc
Color cover plate	white, similar to RAL 9010
Mounting	Central plate 50 x 50 mm, • preLink® angled • fixLink®
Range of application	Installation in cable duct, flush or surface mounting, can be combined with all VAE central plates from common switch manufacturers
Packaging unit	5 pieces per box



Description	Type	Order No.
Designable data outlet (without cover plate), single, double	CKVD1DS	<a href="#">HSED02UMBV</a>
Designable data outlet (with cover plate), single	CKVD1D2	<a href="#">HEKFPD1WBV</a>
Designable data outlet (with cover plate), double	CKVD1D1	<a href="#">HEKFPD2WBV</a>



# Data outlet, empty, flush-mounted straight exit



## Data outlet, empty, straight exit, flush-mounted, double

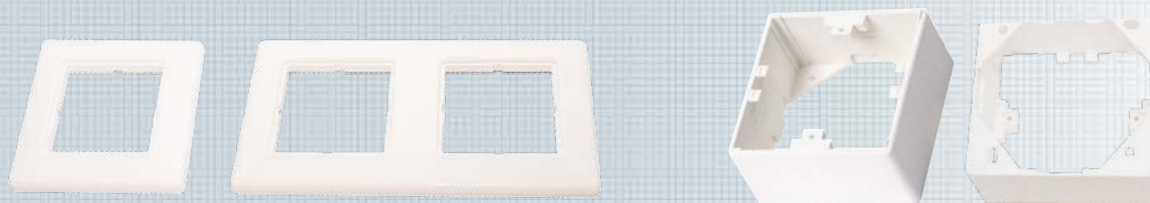
System junction boxes consist of die-cast zinc frame and are suitable for installation in cable conduit, flush mounting or surface mounting via separate frame.

### Properties:

Material	Data outlet: Die-cast zinc,
frame: Polymer	
Color	white, similar to RAL 9010
Components	50 x 50mm central plate, 80 x 80mm frame Labeling area (also available as separate spare part)
Packaging unit	10 pieces per box

Description	Type	Order No.
Data connection outlet, empty, straight exit, flush-mounted, double	CKVDU292	<b>HSED02UW1S</b>

# Cover Plates, Surface-Mounted Housing



## Properties Cover Plate Single/Double:

Material	plastic
Color	white, similar to RAL 9010
Range of application	Cover plate for preLink®/fixLink®Module holder SL
Packaging unit:	5 pieces per box

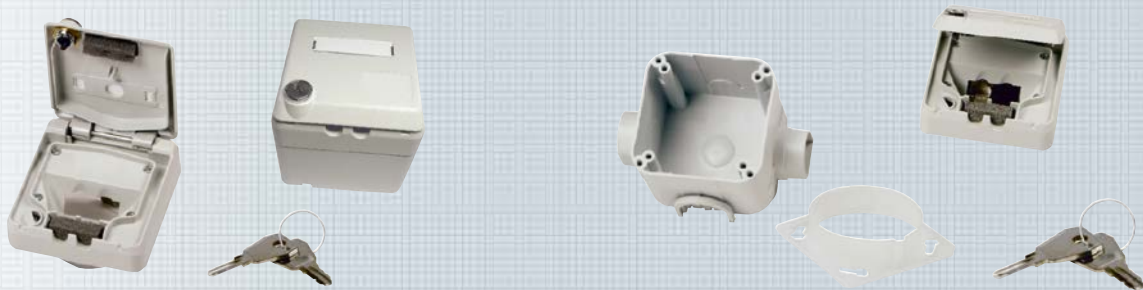
## Properties surface-mounted housing IP20, 80 x 80 x 42 mm:

Material	plastic
Dimensions	80 x 80 x 42 mm
Color	white, similar to RAL 9010
Range of application	Surface-mounted housing for preLink®/fixLink®Module holder SL
Packaging unit	5 pieces per box

Description	Type	Order No.
Cover plate, single, 80 x 80 mm	ADZ00102	<b>HEKFPDR1--</b>
Cover plate, double, 150 x 80 mm	ADZ00103	<b>HEKFPDR2--</b>
Surface-mounted housing IP20, 80 x 80 x 42 mm	CKVDAP90	<b>HSEAP840WV</b>
Intermediate frame for surface-mounted housing IP20, 80 x 80 x 10 mm	CKVDDR90	<b>HEKFPDA1--</b>



# Surface-Mount Housing IP 44, Lockable, Double



## Surface-Mount Housing set double, lockable IP44

The surface-mounted housing is suitable for installation of preLink® and fixLink® Keystone modules via an adapter. For better strain relief we recommend using cable clamp M25 / 2x8, which is designed to handle two cables with a diameter of up to 8 mm.

### Properties:

Material	Polymer
Color	light gray, similar to RAL 7035
Dimensions (HxWxD)	90 x 90 x 90 mm
Connection class	degree of protection IP44
Packaging unit	1 piece per box

## Flush-mounted housing set double, lockable IP44

The flush-mounted housing is suitable for installation of preLink® and fixLink® Keystone modules via an adapter. The set contains the flush-mounted housing as well as the IP44 flush-mounted outlet.

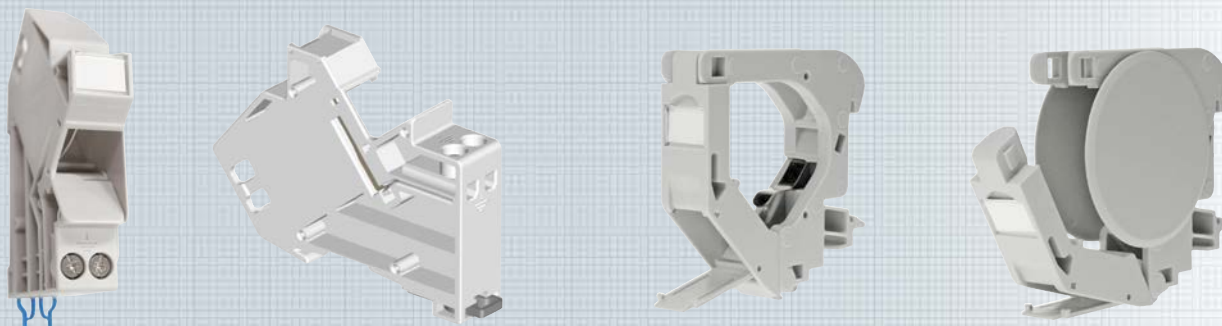
### Properties:

Material	Polymer
Color	light gray, similar to RAL 7035
Dimensions (HxWxD)	35 x 90 x 90 mm
Connection class	degree of protection IP44
Packaging unit	1 piece per box

Description	Type	Order No.
Surface-Mount Housing, IP 44, Lockable, Double	CKVDAP42	<b>HEKFPDIA--</b>
Cable Clamp for Surface-Mount Housing Set, Lockable	CKVDZP40	<b>HSEIP44AKT</b>
Cable Clamp for Surface-Mount Housing Set, Lockable	CKVDUP42	<b>HEKFPDIU--</b>



# Carrier rail modular housing and adapter set



## Carrier rail modular housing for 1 module

Carrier rail modular housing for preLink®/fixLink®-modules, suitable for distributor cabinets with cover for circuit breakers.

### Properties:

Material	plastic
Color	gray, RAL 7035
Dimensions (WxHxD)	18 x 65 x 90 mm (1U installation) ground terminal separate
Range of application	Modular housing of module on carrier rails, suitable for cabinets with cover for circuit breakers
Packaging unit	1 piece per box

## Compact carrier rail modular housing for 1 module

Carrier rail modular housing for preLink®/fixLink®-modules, suitable for distributor cabinets without cover for circuit breakers.

### Properties:

Material	plastic
Color	gray
Dimensions w/o side panels	18 x 70.5 x 67.5 mm (WxHxD)
Dimensions with side panels	18 x 70.5 x 67.5 mm (WxHxD) (1U installation), ground terminal integrated
Range of application	Modular housing of module on carrier rails, suitable for cabinets without cover for circuit breakers

## Carrier rail adapter set

Carrier rail adapter set for installation of preLink®/fixLink® sub-mounted panel for 4-8 modules, for 1U installation.

### Properties:

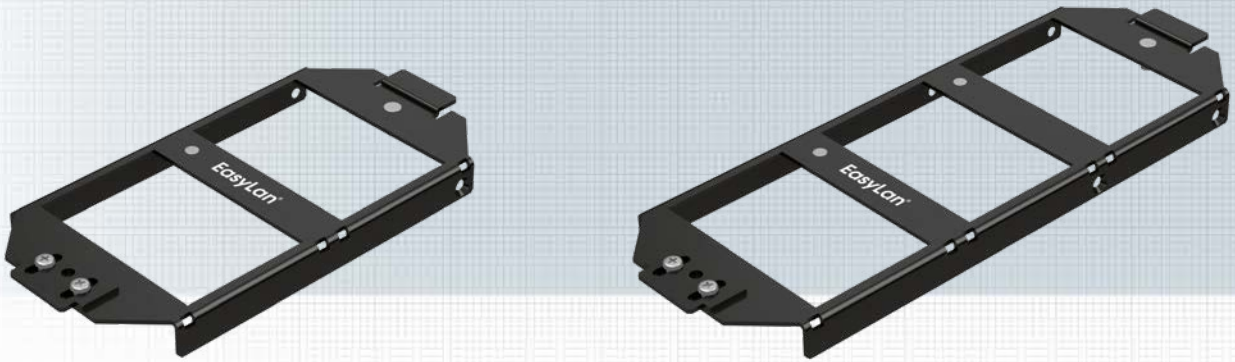
Material	spring plate
Range of application	Adapter clip for distribution panels for mounting on carrier rails
Packaging unit	1 piece per box



Description	Type	Order No.
Carrier Rail Modular Housing for one Modul (for distribution cabinets with cover)	CKVHMOD	<b>HSERH010GS</b>
Compact Carrier Rail Modular Housing for one Modul (ground terminal integrated)	CKVHECOMOD	<b>HEKRH010GV</b>
Carrier Rail Side Panels for Compact Carrier Rail Modular Housing, PU: 2	CKVHECOSTL	<b>HEKRH011GV</b>
Carrier Rail Adapter Set, for 4-8 modules	CKVHMEK	<b>HSERHUTADA</b>



# OBO/Ackermann Floor Tank Systems GB2, GB3

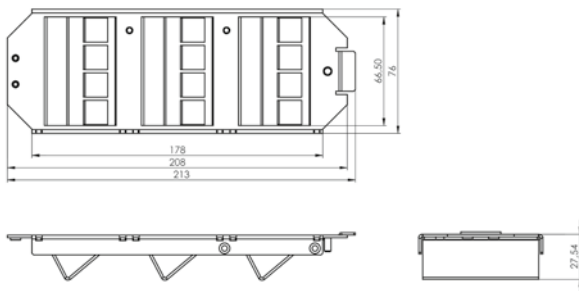


The support plate replaces the device carriers and thus offers the greatest possible space for cable feed. The slanted ingress and exit enable secure cable routing even with very low intermediate floors.

Allows a combination of installation plates for 4x preLink®/fixLink® modules or 1x H.D.S.. The installation plates are fastened to the support plate with two screws. Unused fields of the support plate can be covered with dummy plates.

**Properties:**

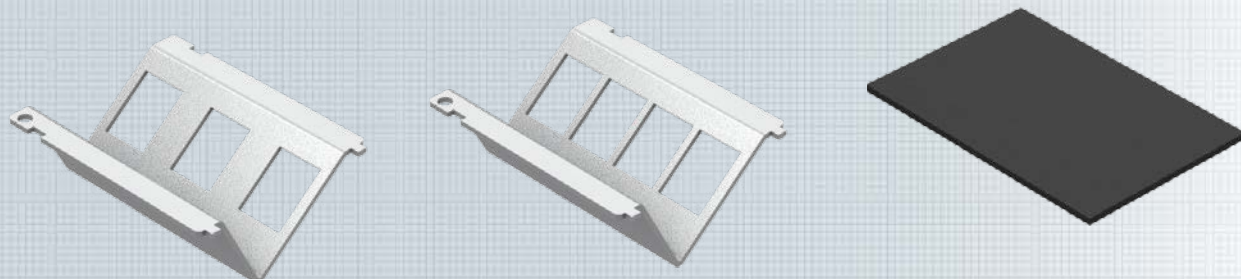
Dimension	Per specification of Ackermann under-floor systems
Material	steel plate, hot-dipped galvanized
Color	black, RAL 9005
Material thickness	1.5 mm
Equipped	- with a max. of 12 socket modules preLink®/fixLink® - with a max. of 3 H.D.S. Cu modules
Version	GB2 and GB3
Packaging unit	1 piece of each



Description	Type	Order No.
Ackermann support plate GB2	ABG00011	<a href="#">HEKFPZBT01</a>
Ackermann support plate GB3	ABG00012	<a href="#">HEKFPZBT02</a>



# OBO/Ackermann Inserts for Floor Tank Systems GB2, GB3



## Installation plates for 3 or 4 Keystone modules

For grounding purposes, the inserts for modules are not powder-coated or hot-dip galvanized. The installation plates are fastened to the support plate with two screws. Unused fields in the support plate can be covered with dummy plates.

## Properties:

Dimension	Per specification of OBO/Ackermann underfloor systems
Material	steel plate, hot-dipped galvanized
Color inserts	Metal, hot-dipped galvanized, black, RAL 9005
Color	black, RAL 9005
Material thickness	1.5 mm

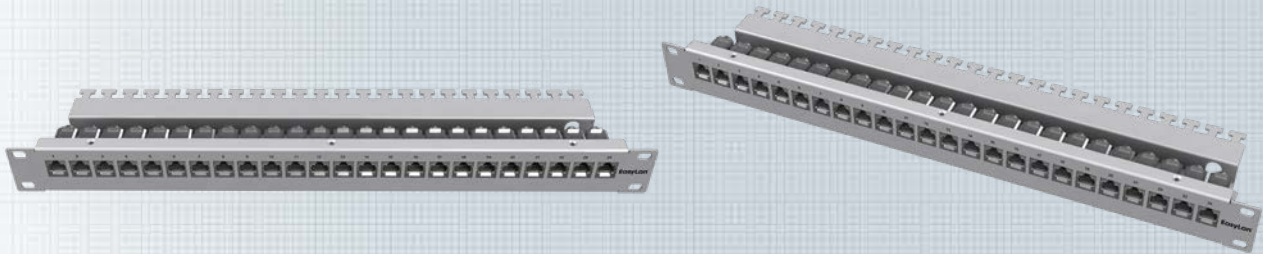
## Installation examples:



Description	Type	Order No.
Carrier plate 4x Keystone Module nickel-plated unpolished	ABG00014	<b>HEKFPZBT03</b>
Carrier plate 3x Keystone Module nickel-plated unpolished	ABG00016	<b>HEKFPZBT04</b>
Carrier plate 1x H.D.S. nickel-plated unpolished	ABG00015	<b>HEKFPZBT05</b>
Dummy plate black RAL 9005	ABG00013	<b>HEKFPZBT06</b>



# Panel empty 19" 1U for 24 Keystone modules



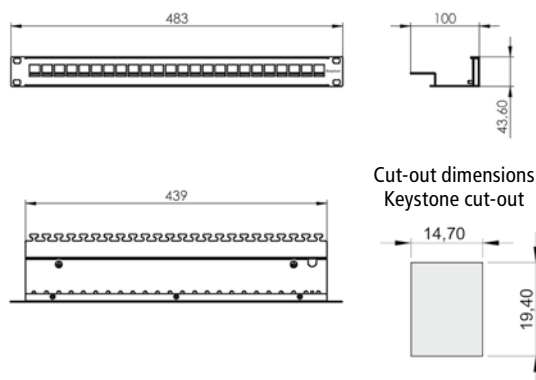
The 19" 1U distribution panel can be loaded with up to 24 preLink® / fixLink® RJ45 Keystone modules. The panel has two levels. This positions the modules flush with the front panel. The distribution panel can be ordered in stainless steel or powder-coated iron sheet.

Mounting material and Keystone modules are not included!

**Standards:** IEC 60 603-7-1

**Properties:**

Installation dimension	19" 1U Depth 155 mm
Front-side standard cut-out	24 modules
Back side	cable clamps
Material housing	steel plate, varnished / stainless steel
Cable fastening	via cable ties
Materials	per RoHS 2002/95/EG
Connection class	IP20
Temperature range	-40° C to +70° C
Application	Installation in distribution rack
Packaging unit	1 piece per box

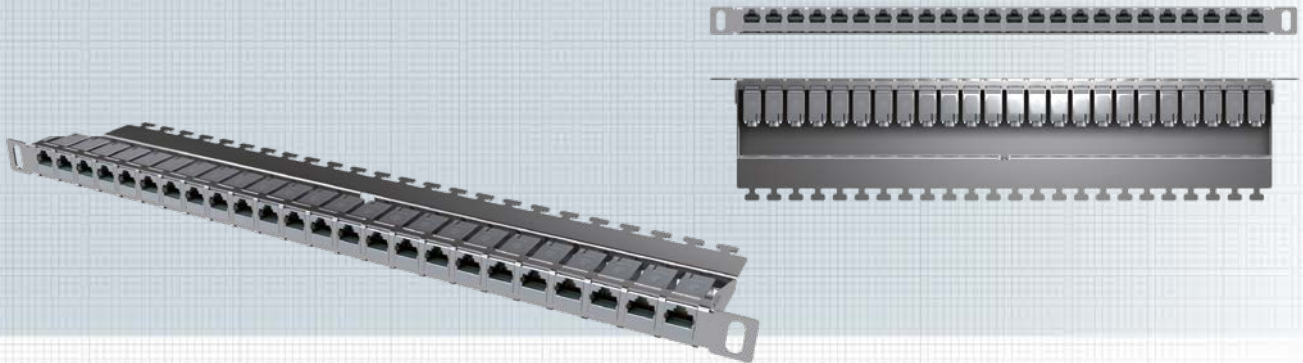


Description	Type	Order No.
Built-in panel empty 1U 19" for 24 Keystone modules	CKVPL0101E	<a href="#">HEKR0240GV</a>





# Panel empty 19" 0.5U for 24 Keystone modules



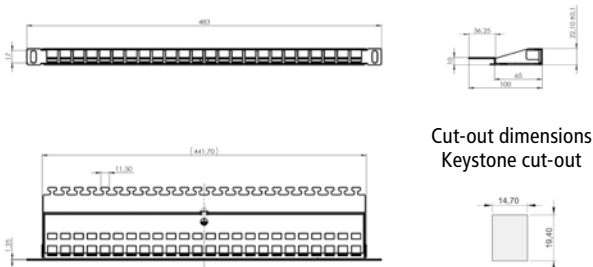
The fixLink® distribution panel 19" 0.5U can be loaded with up to 24 fixLink® RJ45 Keystone modules. The modules are flush with the front panel.

Mounting material and Keystone modules are not included!

**Standards:** IEC 60 603-7-1

**Properties:**

Installation dimension	19" 0.5U depth 100 mm
Front side	standard cut-out 24 modules
Back side	cable clamps
Material housing	stainless steel
Cable fastening	via velcro cable ties
Materials	per RoHS 2002/95/EG
Connection class	IP20
Temperature range	-40° C to +70° C
Application	Installation in distribution rack
Packaging unit	1 piece per box

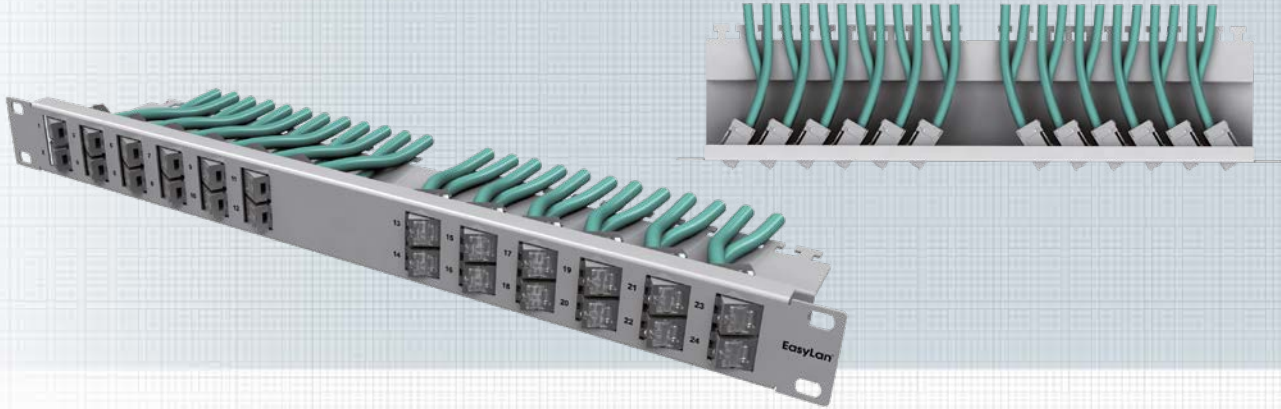


Description	Type	Order No.
Built-in panel empty fixLink® 0.5U 19", stainless steel, for 24 Keystone modules	CKVPL5F0EE	<b>HEKR0240SB</b>
Labeling strips, stainless steel	CVZB5FEE	<b>HEKRZBS1--</b>

preLink®-System  
Cu

# Angled panel empty 30° 19" 1U for 24 Keystone modules

Variant 1: Keystone Angle: 12 left, 12 right

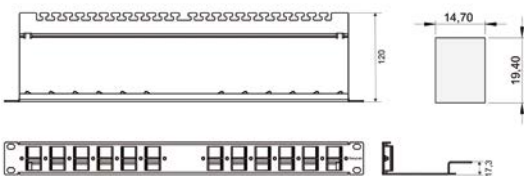


With the preLink®/fixLink® angled panel, the user has the option of clicking 24 keystone modules into the panel at an angle of 30°, and as a result the connected patchcords automatically run to the cabinet side and need only be attached laterally beside the patch level. This means the user can eliminate additional routing panels for cable routing. During operation, the angled panels with the flat front side and the side-facing patchcords also require less space than conventional patch panels with vertically installed ports.

Mounting material and Keystone modules are not included!

<b>Standards:</b>	IEC 60 603-7-1
<b>Properties:</b>	
Installation dimension	19" 1U depth 120 mm
Front side	standard cut-out 24 modules
Back side	cable clamps
Material housing	steel plate, varnished RAL7035 (gray)
Cable fastening	via cable ties
Materials	per RoHS 2002/95/EG
Environmental requirements	Connection class IP20
Temperature range	-40°C to +70° C
Application	Installation in distribution rack
Packaging unit	1 piece per box

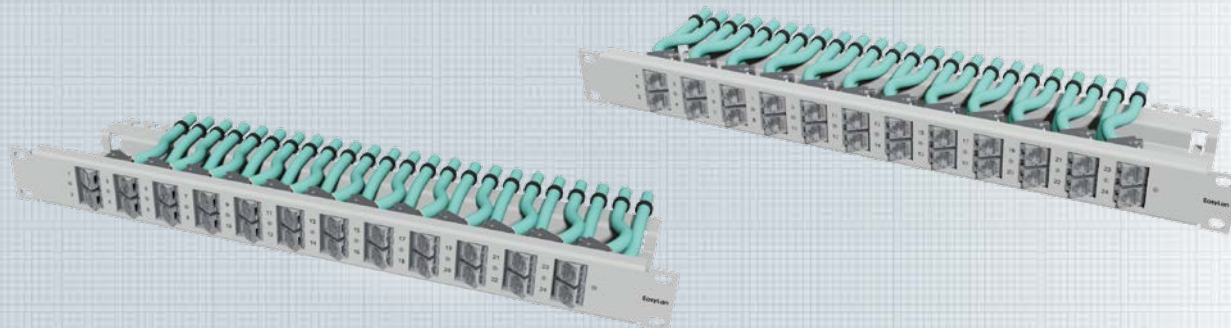
Cut-out dimensions  
Keystone cut-out



Description	Type	Order No.
Angled panel empty 1U 19" Variant 1 Keystone Angle: 12 left, 12 right	CKVPLW01E	<b>HEKR0240LR</b>

# Angled panel empty 30° 19" 1U for 24 Keystone modules

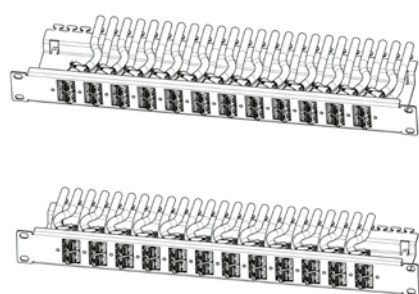
Variant 2: Keystone Angle: 24 left ; Variant 3: Keystone Angle: 24 right



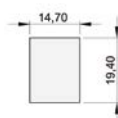
With the preLink®/fixLink® angled panel, the user has the option of clicking 24 keystone modules into the panel at an angle of 30°, and as a result the connected patchcords automatically run to the cabinet side and need only be attached laterally beside the patch level. This means the user can eliminate additional routing panels for cable routing. During operation, the angled panels with the flat front side and the side-facing patchcords also require less space than conventional patch panels with vertically installed ports.

Mounting material and Keystone modules are not included!

<b>Standards:</b>	IEC 60 603-7-1
<b>Properties:</b>	
Installation dimension	19" 1U depth 120 mm
Front side	standard cut-out 24 modules
Back side	cable clamps
Material housing	steel plate, varnished RAL7035 (gray)
Cable fastening	via cable ties
Materials	per RoHS 2002/95/EG
Environmental requirements	Connection class IP20
Temperature range	-40°C to +70° C
Application	Installation in distribution rack
Packaging unit	1 piece per box



Cut-out dimensions  
Keystone cut-out



Description	Type	Order No.
preLink® / fixLink® Angled panel empty 1U 19" Variant 2 / Keystone Angle: 24 left	CKVPL0L01E	<b>HEKR0240LL</b>
preLink® / fixLink® Angled panel empty 1U 19" Variant 3 / Keystone Angle: 24 right	CKVPL0R01E	<b>HEKR0240RR</b>



# preLink® DC Panel incl. modules, 19" 1U, Cat.6<sub>A</sub> ISO/IEC, Cat.6A EIA/ITA, Class E<sub>A</sub>, with L.E.O. Function



For the preLink® Data Center patch panel Cat.6A EIA/ITA the data center modules come pre-mounted on a rail and need only be finalized with the relevant cable terminal block. Here, we particularly recommend the pre-assembled data center solutions, which may be ordered as single or multiple cable.

The "Light-Emitting-Outlet" (L.E.O.) allows you to easily identify matching cable ends using a detector. The con-

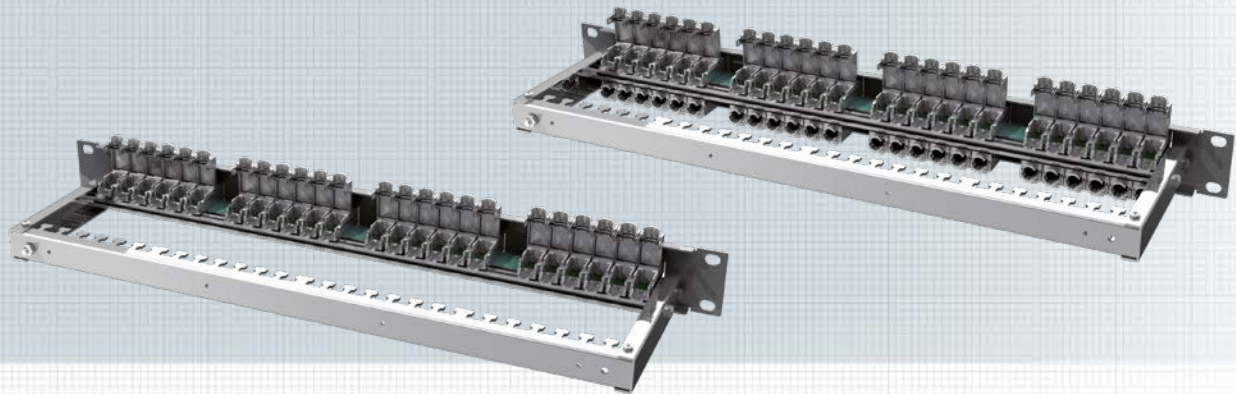
nections on both sides can be made to emit light even in the case of patched data links. This function works with all common, shielded data cables.

This works with all standard shielded data cables. Due to their slim design, the die-cast zinc socket modules are especially suitable for densely packed data center panels with up to 48 ports in 1U.

Packaging unit: 1 pc. per box

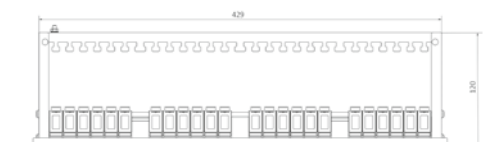
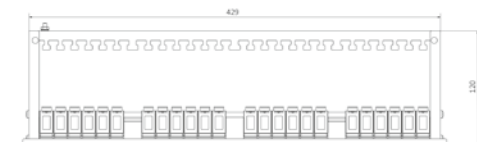
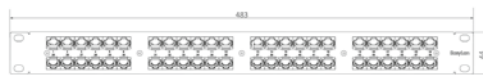
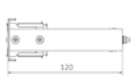
Description	Type	Order No.
	Housing grey	
preLink DC-Panel 19" 1U 24x RJ45 Cat.6 <sub>A</sub> , AWG 24-22	CKRASP111E	<a href="#">HEKPR624IG</a>
preLink DC-Panel 19" 1U 24x RJ45 Cat.6 <sub>A</sub> , AWG 27-26	CKRASP161E	<a href="#">HEKPR624FG</a>
preLink DC-Panel 19" 1U 24x RJ45 Cat.6 <sub>A</sub> , without Cable Termination	CKRARP101E	<a href="#">HEKPR624-G</a>
preLink DC-Panel 19" 1U 48x RJ45 Cat.6 <sub>A</sub> , AWG 24-22	CKRASP611E	<a href="#">HEKPR648IG</a>
preLink DC-Panel 19" 1U 48x RJ45 Cat.6 <sub>A</sub> , AWG 27-26	CKRASP661E	<a href="#">HEKPR648FG</a>
preLink DC-Panel 19" 1U 48x RJ45 Cat.6 <sub>A</sub> , without Cable Termination	CKRARP601E	<a href="#">HEKPR648-G</a>
preLink DC-Panel 19" 1U 24x RJ45 Cat.6A, AWG 24-22	CKRESP111E	<a href="#">HEKPRE24IG</a>
preLink DC-Panel 19" 1U 24x RJ45 Cat.6A, AWG 27-26	CKRESP161E	<a href="#">HEKPRE24FG</a>
preLink DC-Panel 19" 1U 24x RJ45 Cat.6A, without Cable Termination	CKRERP101E	<a href="#">HEKPRE24-G</a>
preLink DC-Panel 19" 1U 48x RJ45 Cat.6A, AWG 24-22	CKRESP611E	<a href="#">HEKPRE48IG</a>
preLink DC-Panel 19" 1U 48x RJ45 Cat.6A, AWG 27-26	CKRESP661E	<a href="#">HEKPRE48FG</a>
preLink DC-Panel 19" 1U 48x RJ45 Cat.6A, without Cable Termination	CKRERP601E	<a href="#">HEKPRE48-G</a>
preLink DC-Panel L.E.O. 19" 1U 24x RJ45 Cat.6A, AWG 24-22	CKRESL111E	<a href="#">HEKPL24IG</a>
preLink DC-Panel L.E.O. 19" 1U 24x RJ45 Cat.6A, AWG 27-26	CKRESL161E	<a href="#">HEKPL24FG</a>
preLink DC-Panel L.E.O. 19" 1U 24x RJ45 without Cable Termination Cat.6A	CKRERL101E	<a href="#">HEKPL24-G</a>
preLink DC-Panel L.E.O. 19" 1U 48x RJ45 Cat.6A, AWG 24-22	CKRESL611E	<a href="#">HEKPL48IG</a>
preLink DC-Panel L.E.O. 19" 1U 48x RJ45 Cat.6A, AWG 27-26	CKRESL661E	<a href="#">HEKPL48FG</a>
preLink DC-Panel L.E.O. 19" 1U 48x RJ45 without Cable Termination Cat.6A	CKRERL601E	<a href="#">HEKPL48-G</a>
preLink® L.E.O. Detector	CKZWD001	<a href="#">HSLTOOL01-</a>



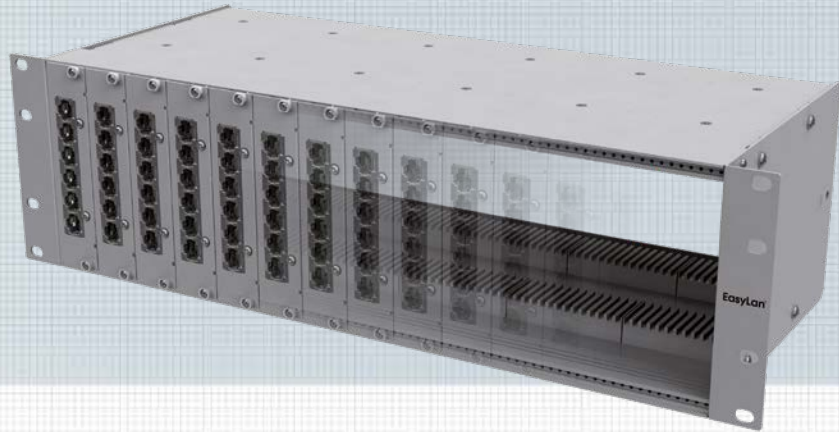


## Technical Data

	RJ 45 Shielded, Cat.6 <sub>A</sub> ISO/IEC	RJ 45 Shielded L.E.O. Cat.6A EIA/TIA
<b>Connector norm:</b>	IEC 60603-7-51	IEC 60603-7-51
<b>Mechanical Properties:</b>		
Fitting dimension	19" 1U	19" 1U
Mating cycles (RJ 45 side)	≥ 750	≥ 750
Mating cycles (other side)	≥ 100	≥ 100
Material Housing	Steel plate nickel-plated and powder coated	Steel plate nickel-plated and powder coated
Gold plating in contact area	50 μ"m	50 μ"m
Wire termination	AWG 27-22	AWG 27-22
Cable diameter	5 - 9.5 mm	5 - 9.5 mm
<b>Environmental requirements::</b>		
IP rating	IP 20	IP 20
Temperature range	-40°C to +70°C	-40°C to +70°C
<b>Electrical Properties:</b>		
Current rating at 50°C	1.25 A	1.25 A
PoE+ according to IEEE 802.3at	PoE+	PoE+
<b>Transmission Properties:</b>		
10 Gbit	Supported Cat.6 <sub>A</sub> ISO/IEC AM1 and AMD2, link length > 5m	Supported Cat.6A EIA/TIA 568B.2-10
<b>L.E.O. Function:</b>		
Input terminal voltage	--	12 V AC
Light recognition	--	≥ 100 m



# Module holder (CR) empty 19" 3U for use with plug-in modules



Module holder (CR) for use with 7 depth-unit plug-in modules in copper and FO. The plug-in modules are fastened to the module holder from the panel side using 2 screws. The plug-in modules can be completely pulled out of the module holder. A maximum of 12 x 7 depth-unit plug-in modules (72 ports) can be mounted in the module holder.

Mounting material and Keystone modules are not included!

#### Properties:

Material	Steel plate Nickel-plated and Heat-treated
Color	Gray, RAL 7035 Cover: Metallic Luster
Installation depth Keystone modules	190 mm For max. 72 Ports divided among 12 slot modules
Range of application	Limited cabinet space, high flexibility, individual extensions, e.g. in data centers
Packaging:	1 piece per box

Description	Type	Order No.
Module holder (CR) empty 19" 3U	AVM100021E	<b>HEKB3712--</b>
Dummy plate, Alu	AVMB00001E	<b>HEKB001--</b>

# Module holder (CR) empty 19" 1U for use with plug-in modules



Module holder (CR) for use with 7HP insert modules in copper and FO. The insert modules are fastened to the module holder from the panel side using 2 screws. The insert modules can be completely pulled out of the module holder. A maximum of 3 x 7HP insert modules (18 ports) can be mounted in the module holder.

Mounting material and Keystone modules are not included!

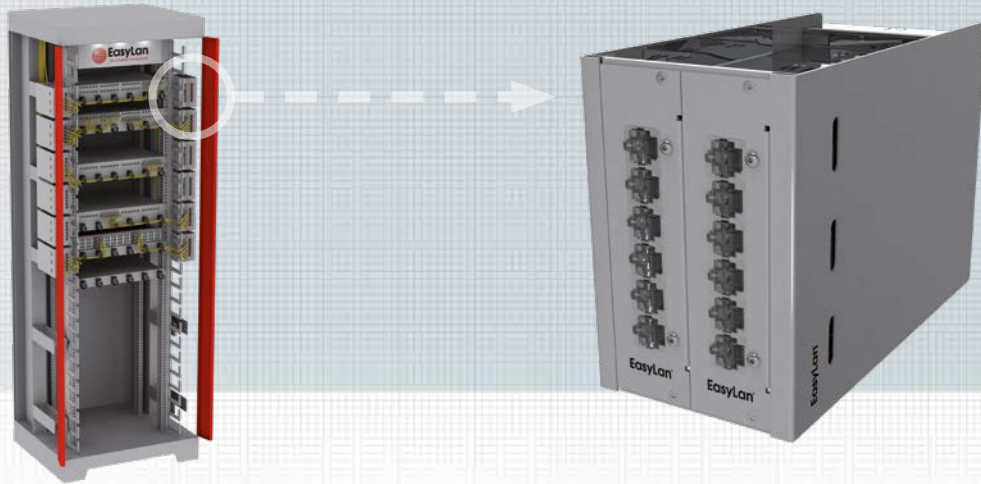
### Properties:

Material	Steel plate Nickel-plated and Heat-treated
Color	Gray, RAL 7035 Cover: Metallic Luster
Installation depth	250 mm
Keystone modules	For max. 18 Ports divided among 3 slot modules
Range of application	Limited cabinet space, high flexibility, individual extensions, e.g. in data centers
Packaging:	1 piece per box

Description	Type	Order No.
Module holder (CR) empty 19" 1U	AVM113001E	<b>HEKB10703-</b>
Dummy plate, Alu	AVMB00001E	<b>HEKB001--</b>



## Side module holder (S-CR) empty 14HP 3U for use with plug-in modules



Side module holder (S-CR) for use with 7HP insert modules in copper and FO. The plug-in modules are fastened to the module holder from the panel side using 2 screws. The plug-in modules can be completely pulled out of the module holder. A maximum of 2 x 7HP insert modules (12 ports) can be mounted in the module holder. The side module holder (S-CR) is affixed on the lateral cabinet perforation. This makes mounting simple and fast. Side-mounting of the cabinet makes it possible to perform cabling in space-saving manner while enhancing climate control and without impacting the air flow.

Mounting material and Keystone modules are not included!

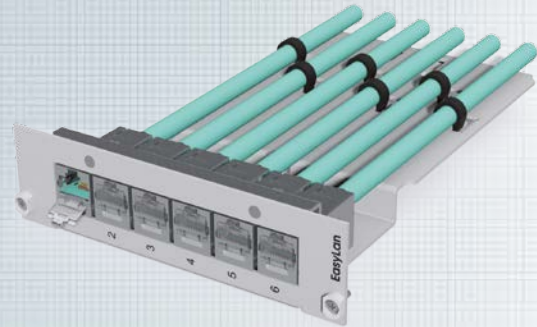
### Properties:

Material	Steel plate Nickel-plated and Heat-treated
Color	Gray, RAL 7035
Installation depth	190 mm
Keystone modules	For max. 12 Ports divided among 2 slot modules
Range of application	Limited cabinet space, high flexibility, individual extensions, e.g. in data centers
Packaging:	1 piece per box

Description	Type	Order No.
preLink®/fixLink® Side module holder (S-CR) empty 14HP 3U	AVMS10001E	<b>HEKB31402-</b>
Dummy plate, Alu	AVMB00001E	<b>HEKB001--</b>



# Keystone slot module empty for module holder

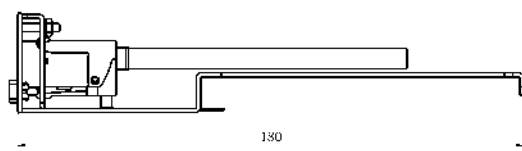
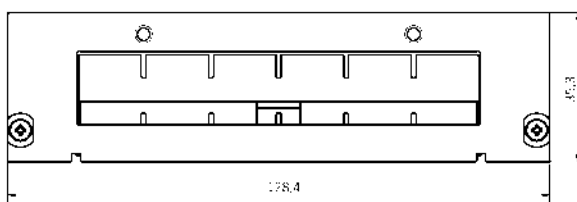


Keystone slot module for loading module carriers. The Keystone slot module can be equipped with up to 6 preLink® or fixedLink® Keystone modules. The Keystone slot module is composed of two levels, and as a result the modules are flush with the front panel. The cable is clamped directly on the insert module housing. For 6 single cables.

Mounting material and Keystone modules are not included!

### Properties:

Material	Steel plate Nickel-plated and Heat-treated
Color	Gray, RAL 7035
Installation depth Keystone modules	190 mm For max. 6 Ports
Range of application	Limited cabinet space, high flexibility, individual extensions, e.g. in data centers
Packaging:	1 piece per box



### Description

preLink® / fixLink® Keystone slot module empty 7TE

### Type

CVE000001E

### Order No.

HEKBM07---



# preLink® DC slot module incl. modules, 19" 3U, 7HP Cat.6<sub>A</sub> ISO/IEC



For the preLink® Data Center patch panel Cat.6<sub>A</sub> ISO/IEC the data center modules come pre-mounted on a rail and need only be finalized with the relevant cable terminal block. Here, we particularly recommend the pre-assembled data center solutions, which may be ordered as single or multiple cable. The "Light-Emitting-Outlet" (L.E.O.) allows you to easily identify matching cable ends using a detector. The connections on both sides can be made to emit light even in the case of patched data links. This function works with all common, shielded data cables.

Packaging: 1 piece per box

**Standards** IEC 60603-7-51

#### Mechanical Properties:

Installation dimension	19" 3U, 7HP
Mating force	≤ 30 N
Mating cycles (RJ 45 side)	≥ 750
Mating cycles (other side)	≥ 100
Housing material	Steel plate varnished, heat-treated, RAL 7035
Insulation components material	PC white
Gold plating in contact area	50 μ"
Contacting	AWG 27-22
Cable diameter	5 - 9.5 mm

#### Environmental requirements:

Connection class	IP20
Temperature range	-40°C to +70°C

#### Electrical properties:

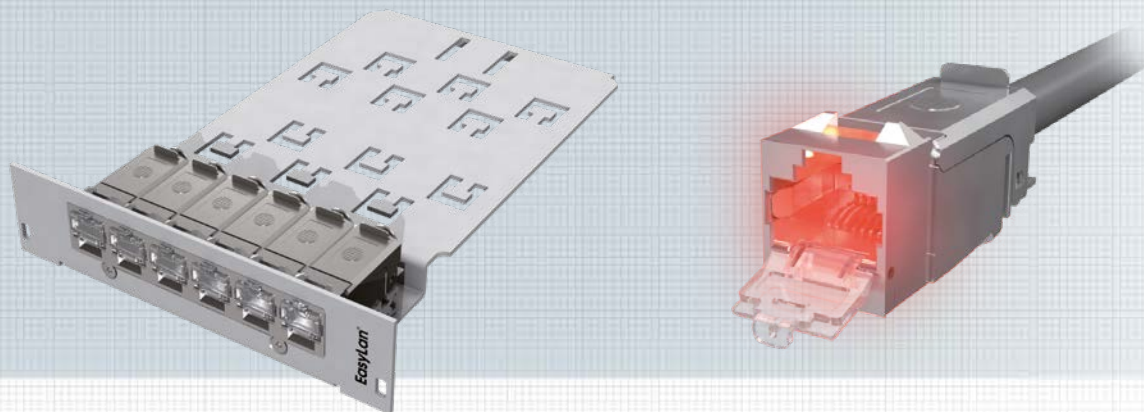
Contact resistance	≤ 20 mΩ
Insulation resistance between contacts	≥ 500 MΩ
Dielectric withstanding voltage contact – contact	1000 V DC/AC peak
Dielectric withstanding voltage contact – screen	1500 V DC/AC peak
Proof voltage	
contact – screen (L.E.O. variant)	--
Current-carrying capacity at 50°C	1.25 A
PoE+ per IEEE 802.3at	PoE+

#### Transmission characteristics:

10 Gbit Cat.6 <sub>A</sub>	supported ISO/IEC 11801 AM1 and AMD2
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Description	Type	Order No.
preLink® DC-Slot Module 3U 7HP Cat.6 <sub>A</sub> (ISO/IEC) with cable termination AWG 24-22 RAL7035	CVEASP211E	<b>HEKP8076-I</b>
preLink® DC-Slot Module 3U 7HP Cat.6 <sub>A</sub> (ISO/IEC) with cable termination AWG 27-26 RAL7035	CVEASP261E	HEKP8076-F
preLink® DC-Slot Module 3U 7HP Cat.6 <sub>A</sub> (ISO/IEC) without cable termination RAL7035	CVEARP201E	HEKP8076--

# preLink® DC slot module incl. modules, 19" 3U, 7HP Cat.6A EIA/TIA with L.E.O. Function, 6-Port



For the preLink® Data Center patch panel Cat.6A EIA/TIA the data center modules come pre-mounted on a rail and need only be finalized with the relevant cable terminal block. Here, we particularly recommend the pre-assembled data center solutions, which may be ordered as single or multiple cable. The "Light-Emitting-Outlet" (L.E.O.) allows you to easily identify matching cable ends using a detector. The connections on both sides can be made to emit light even in the case of patched data links. This function works with all common, shielded data cables.

Packaging: 1 piece per box

**Standards** IEC 60603-7-6

### Mechanical Properties:

Installation dimension	19" 3U, 7HP
Mating force	≤ 30 N
Mating cycles (RJ 45 side)	≥ 750
Mating cycles (other side)	≥ 100
Housing material	Steel plate varnished, heat-treated,
Insulation components material	PC white
Gold plating in contact area	50 μ"
Contacting	AWG 27-22
Cable diameter	5 - 9.5 mm

### Environmental requirements:

Connection class	IP20
Temperature range	-40°C to +70°C

### Electrical properties:

Contact resistance	≤ 20 mΩ
Insulation resistance between contacts	≥ 500 MΩ
Dielectric withstanding voltage contact – contact	1000 V DC/AC peak
Dielectric withstanding voltage contact – screen	1500 V DC/AC peak
Proof voltage	
contact – screen (L.E.O. variant)	--
Current-carrying capacity at 50°C PoE+ per IEEE 802.3at	1.25 A PoE+

### Transmission characteristics:

10 Gbit Cat.6A	supported EIA/TIA 568B.2-10
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### L.E.O. Function (Version RJ45 shielded L.E.O.):

Input terminal voltage	12 V AC
Light recognition	≤ 100 m

Description	Type	Order No.
preLink DC - Slot Module 3U 7HP Cat.6A AWG 24-22 RAL7035	CVEESP211E	HEKPB07E-I
preLink DC - Slot Module 3U 7HP Cat.6A AWG 27-26 RAL7035	CVEESP261E	HEKPB07E-F
preLink DC - Slot Module 3U 7HP Cat.6A, without cable termination, RAL7035	CVEERP201E	HEKPB07E--
preLink DC - Slot Module L.E.O. 3U 7HP Cat.6A AWG 24-22, RAL7035	CVEESL211E	HEKPB07ELI
preLink DC - Slot Module L.E.O. 3U 7HP Cat.6A AWG 27-26, RAL7035	CVEESL261E	HEKPB07ELF
preLink DC - Slot Module L.E.O. 3U 7HP Cat.6A, without Cable Termination RAL7035	CVEERL201E	HEKPB07EL-
preLink® L.E.O. Detektor	CKZWD001	HSLTOOL01-



# Subfloor Consolidation Point Panel with exchangeable front plates



Subfloor Consolidation Point Panel with exchangeable front plates to accommodate a wide array of connections in copper and FO. The subfloor Consolidation Point Panel can optionally be secured against unauthorized access by a lock.

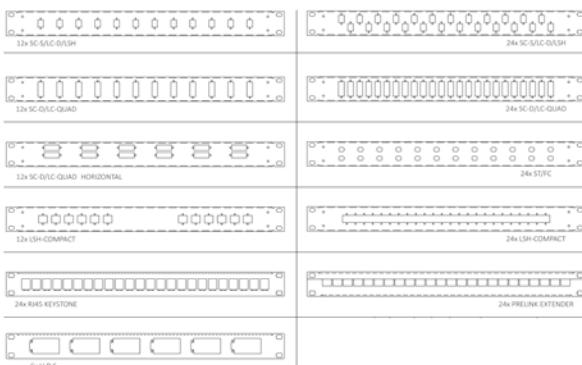
Mounting material and Keystone modules are not included!

#### Properties:

Material	steel plate, varnished
Materials	per RoHS 2002/95/EG
Dimensions (HxWxD)	45 x 270 x 300mm, 45 x 500 x 300mm
Color	gray RAL 7035 / black RAL 9004

#### Environment:

Connection class	IP20
Temperature	-40° C to +70° C



Description	Type	Order No.
Subfloor Consolidation Point Panel with exchangeable front plates, 45 x 270 x 300mm	on request	on request
Subfloor Consolidation Point Panel with exchangeable front plates, 45 x 500 x 300mm	on request	on request



# Desk Mounted Consolidation Point Panel empty for 4 -12 Keystone modules



Desk Mounted Consolidation Point Panel for preLink® / fixLink® RJ45 Keystone modules, for use as Consolidation Panel, direct mounting or mounting set on DIN rails in electrical distribution systems.

The Desk Mounted Consolidation Point Panel has two levels. This positions the modules flush with the front panel.

Mounting material and Keystone modules are not included!

**Standards:** IEC 60 603-7

**Properties:**

Front side standard cut-out	4 modules / 6 modules / 8 modules / 12 modules
Back side	cable clamps
Material housing	zinc-plated steel, hot-dip coated
Cable fastening	via cable ties
Materials	per RoHS 2002/95/EG

**Environmental requirements:**

Connection class	IP20
Temperature range	-40° C to +70° C
Application	Consolidation Panel, direct installation or DIN rail
Packaging unit	1 piece per box

Description	Type	Order No.
preLink®/fixLink® Desk Mounted Consolidation Point Panel empty for 4 modules	CKVPL0041E	<b>HEKFPCP04-</b>
preLink®/fixLink® Desk Mounted Consolidation Point Panel empty for 6 modules	CKVPL0061E	<b>HEKFPCP06-</b>
preLink®/fixLink® Desk Mounted Consolidation Point Panel empty for 8 modules	CKVPL0081E	<b>HEKFPCP08-</b>
preLink®/fixLink® Desk Mounted Consolidation Point Panel empty for 12 modules	CKVPL0121E	<b>HEKFPCP12-</b>



# preLink® SL CTBC Distribution System Copper-Trunk-Bundled-Cable



The CTBC distribution system is ideal for flexible use in structured cabling and data centers. The cables are pre-bundled in a braided hose and are factory assembled and pre-tested with preLink® Keystone modules. The bundles can be made using either installation cables or flexible cables. The maximum length of the bundled cable is 20 meters.

The distribution system as 10 Gbit solution for data center cabling meets Class E<sub>A</sub> requirements at a minimum. The transmission parameters depend on the choice of fixLink® modules used.

**Note:** preLink® SL modules are not included in delivery and must be ordered separately.

#### Features:

- Bundling of AWG 26 or AWG 23 data cables
- Universal pre-assembly with preLink® connectors
- Slim cable end
- Flexible installation
- Up to 12 cables

#### Properties of braided hose:

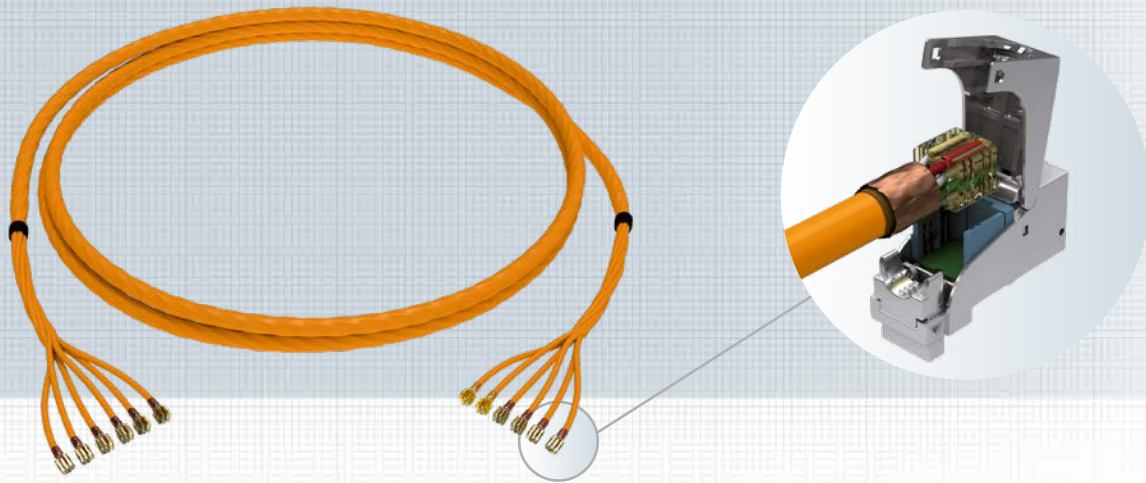
- UL-certified
- Reach
- RoHS
- Easy installation due to 100% covering
- halogen-free

#### Range of application:

- Data centers
- Switch cabinet connections
- Structured cabling

Description	Type	Order No.
preLink® SL CTBC Distribution System Copper-Trunk-Bundled-Cable	on request	on request

# preLink® SL CTMC Distribution System Copper-Trunk-Multi-Cable



The flexibility of the CTMC distribution system makes it ideal for use in structured cabling for buildings and data centers. Six-fold (6 x 4P), eight-fold (8 x 4P) stranded or single cables leave the factory pre-assembled with preLink® cable-plugs and are tested by our quality control team. Despite its considerable functionality the cable terminal is very small and only minimally increases the total diameter of the cable. During installation this offers the advantage of a slimmer cable end in comparison to Keystone-assembled systems. The cable end need only be finished off with the preLink® connectors on site.

The maximum bundled cable length is up to 80m for AWG 23 and up to 60m for AWG 26. As a 10 Gigabit solution for data center cabling, the distribution system at a minimum meets the requirements for class E<sub>A</sub>.

Transmission parameters are determined by the preLink® module selected.

**Note:** preLink® SL modules are not included in delivery and must be ordered separately.

#### Features:

- Single or multi-cables in AWG 26 or AWG 23
- Universal pre-assembly with preLink® cable connectors
- Slim cable end

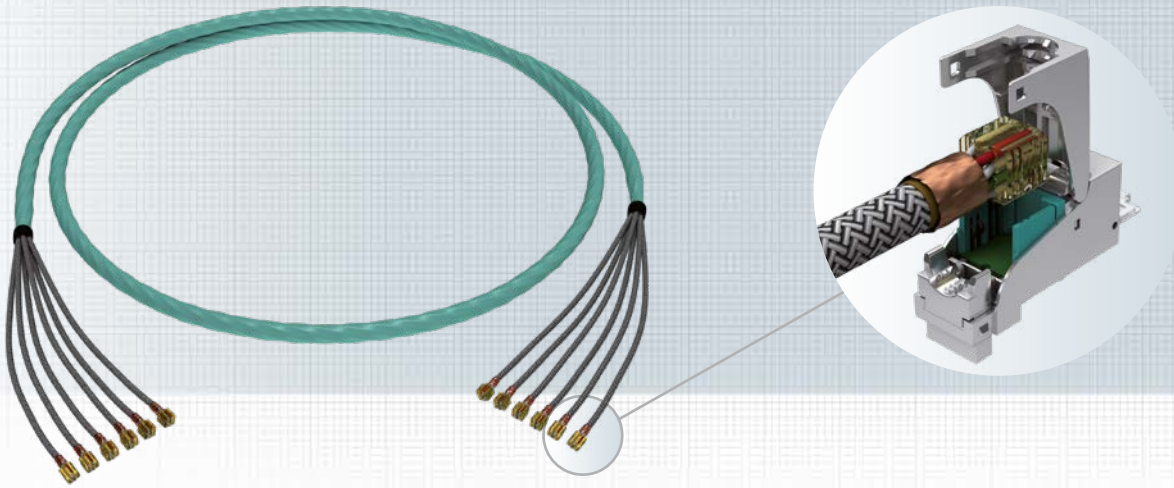
#### Applications:

- Data centers
- Switch cabinet connections
- Structured facility cabling

Description	Type	Order No.
preLink® SL CTMC Distribution System Copper-Trunk-Multi-Cable	on request	on request



# preLink® SL CTCC Distribution System Copper-Trunk-Compact-Cable



Thanks to its minimal cable diameter and correspondingly low fire load, the CTCC distribution system is ideal for flexible use in structured cabling and data centers. Stranded sixfold (6 x 4P) cables are factory pre-assembled with preLink® cable plugs and tested. Since the cable termination is very small – despite its functionality – it increases the cable diameter only minimally and thus enhances installation with the advantage of a smaller cable end compared to Keystone assembled systems. The cable termination need only be finished off with preLink® connectors on site. The maximum length of the bundled cable is 60 meters.

The distribution system as 10 Gbit solution for data center cabling needs meets Class E<sub>A</sub> requirements at a minimum.

**Note:** preLink® SL modules are not included in delivery and must be ordered separately.

#### Properties:

- Multi-cable in AWG 26 with minimal outer diameter
- Minimal space requirement compared to bundled cables, break-out variants and single-laid cables
- Improved cabinet cooling due to minimized air flow
- Significant reduction in fire load
- Universal pre-assembly with preLink® connectors
- Slim cable end due to small outer dimension of cable connectors in comparison with traditional Keystone modules

#### Applications:

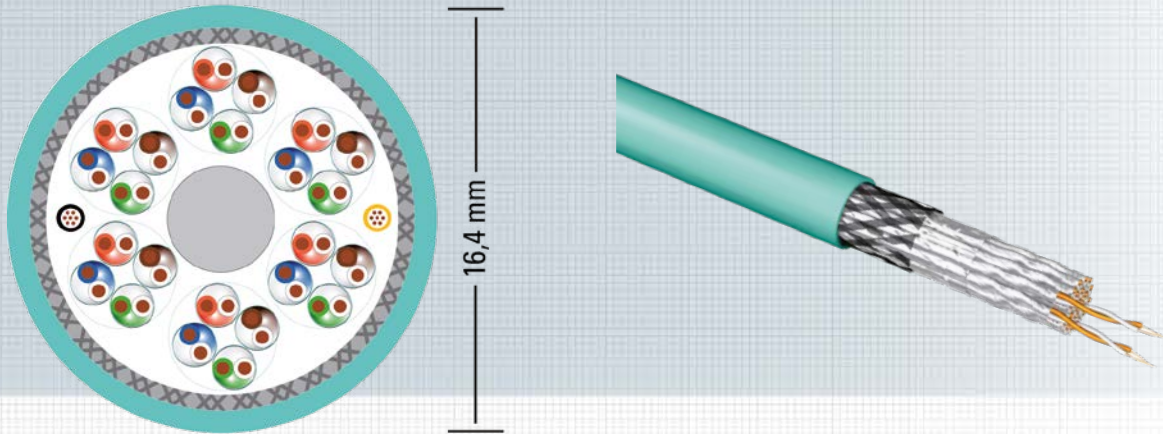
- Data centers
- Structured building cabling

Description	Type	Order No.
preLink® SL CTCC Distribution System Copper-Trunk-Compact-Cable	on request	on request





# H.D.S. Indoor Cable Cat.7 6x (4 x 2 x AWG 24) S-FTP



H.D.S internal cable Cat.7 6x (4x2xAWG24 S/FTP) for easy cabinet-to-cabinet cabling in data centers and multi-connection of server rooms to sub-distribution. The cable assembly consists of 24 pair-shielded cable elements, 4 pairs are combined into a strand. Each stranding element is provided with a range of numbers for easy identification. The flexible central strain relief provides very good protection for the cable during installation. The shell is made of a flexible LSOH material. The pilot cores are AWG 28/7.

#### Standards:

Applicable Standards	IEC 61156-6, IEEE 802.3at (PoE+), ISO/IEC 11801, RoHS-2 2011/65/EU
Flamability Rating	IEC 60332-1, IEC 60332-3 , IEC 60754-1/2, IEC 61034-1/2

#### Caution:

**This cable is used exclusively for assembly of trunks and is not supplied by the meter!**

#### Technical Data:

Electrical values	Cat.7
Strand	AWG 24
Strand diameter	1.04 mm nom.
Outside diameter	16.4 mm nom.
Weight	270 kg/km
Sheath	FR-LSZH
Sheath color	aqua
Flame retardancy index	IEC 60332.3
Transmission length	Class E <sub>7</sub> >= 60 m
Flame retardancy	1.83 MJ/m; 0.51 kWh/m
Temperature range	-35°C to +65°C
Max. tensile strength	190 N
Minimum bending radius	>65.6 mm (In operation) >130 mm (Installation)

Frequency [MHz]	Return loss [dB/100m]	NEXT [dB]	RL [dB]	ELFEXT [dB]
	Typ. value	Typ. value	Typ. value	Typ. value
1	2.6	108	22	98
4	4.9	101	25	93
10	7.7	98	28	89
20	10.9	93	28	83
100	25.0	83	24	69
250	40.8	78	20	61
500	59.5	73	19	50
600	62.0	73	19	50

Only for ready-made trunks, not available by the meter!

# preLink® System Cable 1x Termination Block



## preLink® cable segment

Assembled at one end, termination block inserted into protective cap.

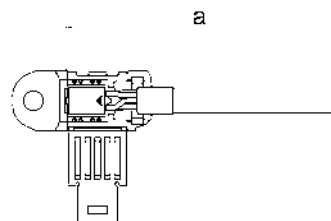
### Benefits:

- Pre-assembled system cables
- Fast, flexible and reliable use
- Easy to use
- Robust design
- Extension of preLink® cable lines in industrial or skeleton environment
- Connection and connection cable for control or distributor cabinets or within controllers

**Note:** preLink® SL modules are not included in delivery and must be ordered separately.

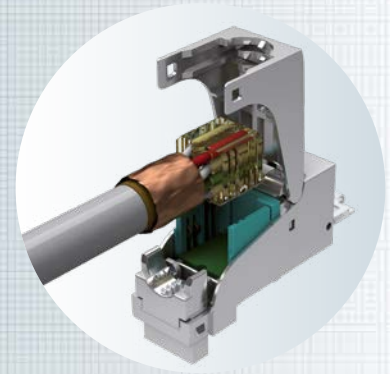
## Technical Data:

Connector types used	1x assembled, termination block inserted into protective cap, 1 end open
Cable terminal	with copper strip
Following depends on application:	<ul style="list-style-type: none"> <li>- cable used</li> <li>- sheath material</li> <li>- wiring</li> <li>- transmission characteristics</li> <li>- transmission speed</li> <li>- shielding</li> <li>- operating temperature range</li> </ul>



Description	Type	Order No.
preLink® cable segment, xxxx = length in dm, flexible cable	CTSD171xxxx	<a href="#">on request</a>
preLink® cable segment, xxxx = length in dm, solid cable	CTSD131xxxx	<a href="#">on request</a>
Version with fixLink®-Modulen	on request	<a href="#">on request</a>

# preLink® System Cable Termination Block + RJ45



## preLink® cable segment

Side 1 assembled with cable termination block inserted into protective cap; Side 2 RJ45 DualBoot® molded, with latch protection.

### Benefits:

- Pre-assembled system cables
- Fast, flexible and reliable use
- Easy to use
- Robust design
- Building preLink® cable lines in industrial or skeleton environment
- Connection and connection cable for control or distributor cabinets or within controllers

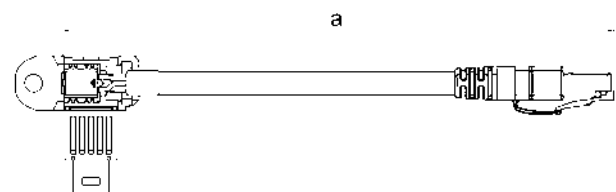
**Note:** preLink® SL modules are not included and must be ordered separately.

### Technical Data:

Connector types used	1x assembled, termination block inserted into protective cap 1 x RJ45, Dualboot® molded, with latch protection
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Following depends on application:

- cable used
- sheath material
- wiring
- transmission characteristics
- transmission speed
- shielding
- operating temperature range



Description	Type	Order No.
preLink® patchcord, xxxx = length in dm, flexible cable	CP1IAPWDAxxxx	on request
Version with fixLink®-Modulen	on request	on request



# preLink® SL System Cable Termination Block



## preLink® cable segment

Assembled at both ends, termination block inserted into protective cap.

### Benefits:

- Pre-assembled system cables
- Fast, flexible and reliable use
- Easy to use
- Robust design
- Building preLink® cable lines in industrial or skeleton environment
- Connection and connection cable for control or distributor cabinets or within controllers
- incl. test records

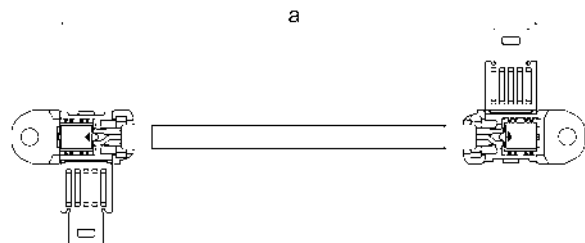
**Note:** preLink® SL modules are not included in delivery and must be ordered separately.

## Technical Data:

Connector types used      1x assembled, termination block inserted into protective cap  
    1 x RJ45, Dualboot® molded, with latch protection

Following depends on application:

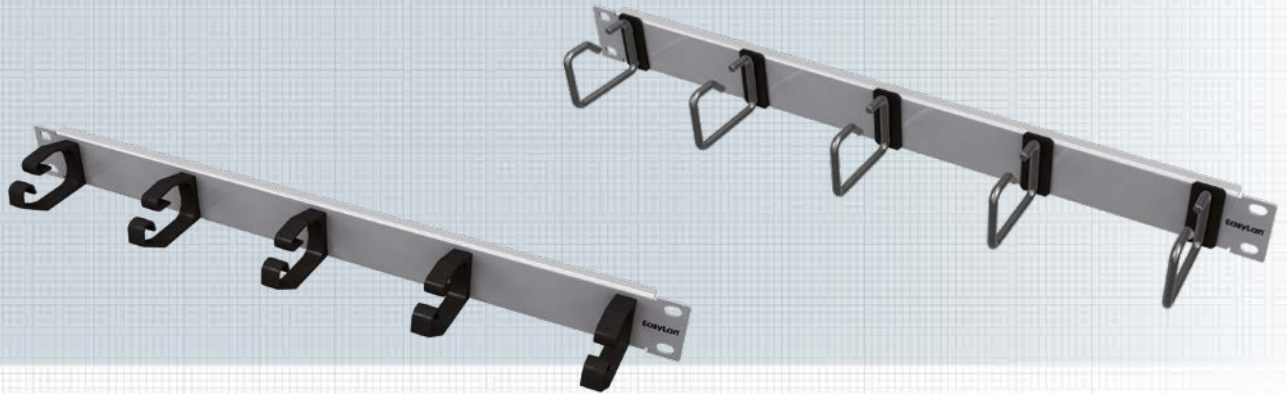
- cable used
- sheath material
- wiring
- transmission characteristics
- transmission speed
- shielding
- operating temperature range



Description	Type	Order No.
preLink® patchcord, xxxx = length in dm, flexible cable	CTSD172xxxx	<a href="#">on request</a>
preLink® patchcord, xxxx = length in dm, solid cable	CTSD132xxxx	<a href="#">on request</a>
Version with fixLink®-Modulen	on request	<a href="#">on request</a>



# Routing Panel 19" with 5 cable clamps



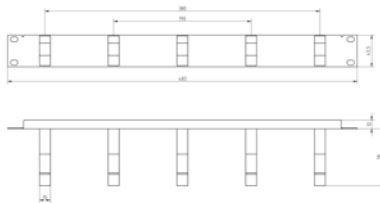
## Routing panel / Installation, 19" 1U

Routing panel / Installation, 19" 1U, 5 cable clamps of Plastic

Routing panel for routing of jumpers in 19" cabinet – Built-in version

### Properties:

Material	Steel plate, powder coated
Color	Gray, RAL 7035 (standard) – other colors on request
Range of application	Installation in 19" Cabinet
Description	5 cable clamps of Plastic on Carrier panel 19"
Packaging unit	1 piece per box



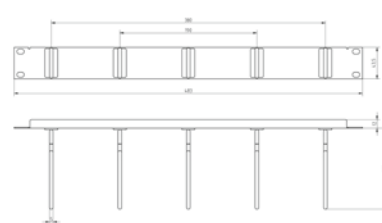
## Routing panel / Installation, 19" 1U

Routing panel / Installation, 19" 1U, 5 cable clamps of steel

Routing panel for routing of jumpers in 19" cabinet – Built-in version

### Properties:

Material	Steel plate, powder coated
Color	Gray, RAL 7035 (standard) – other colors on request
Range of application	Installation in 19" Cabinet
Description	5 cable clamps of steel on Carrier panel 19"
Packaging unit	1 piece per box



Description	Type	Order No.
Routing panel / Installation, 19" 1U, 5 cable clamps of Plastic	AVR5KSTB1E	<b>HEKDBK01--</b>
Routing panel / Installation, 19" 1U, 5 cable clamps of Steel, 60 mm long	AVR5METB1E	<b>HEKDBC01--</b>
Routing panel / Installation, 19" 1U, 5 cable clamps of Steel, 100 mm long	AVR5METC1E	<b>HEKDBC02--</b>



# F-Coupling and Blind Cover Module Replacement



## F-Coupling and Blind Cover Module Replacement

The F-coupling is used to integrate coax cables into a preLink® patch panel and the socket product range.

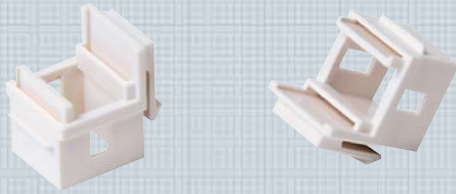
Blind covers are used in distribution panels as well as in outlets to cover ports which are not in use.

### Properties:

Material	Polymer
Color	white, similar to RAL 9010
Note:	Dust protector must be removed prior to installation of F-coupling.
Packaging unit	1 piece

Description	Type	Order No.
F-Coupling to integrate Coax Cables into Keystone Patch Panel	CKVZMFK1	<b>HSEMRKFFWS</b>
Blind Cover Module white RAL 9010	CKVZMB01	<b>HSEMRZ01WF</b>

# Empty Module Replacement for SC-S or LC-D



## Empty Module Replacement for SC-S or LC-D

Empty module for SC-S or SC-D couplings in distribution panels or outlets. One blind cover must be installed between each module.

### Properties:

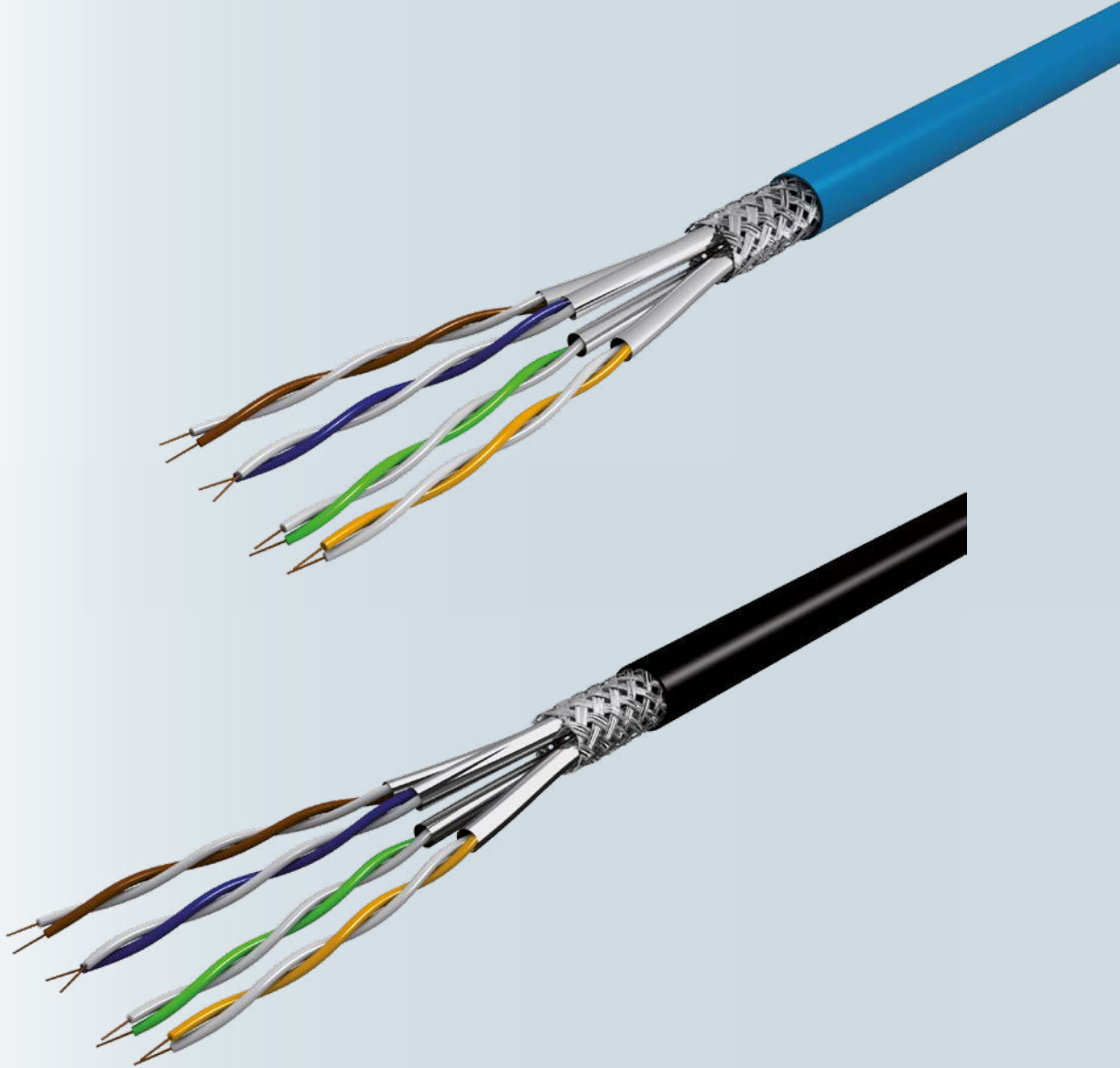
Material	Polymer
Color	white, similar to RAL 9010
Note:	Dust protector must be removed prior to installation of outlets.
Packaging unit	1 piece

Description	Type	Order No.
Empty Module Replacement for LC-D/SC-S white RAL 9010	CKVZMLC1	<b>HSEMRLLLWS</b>



# 3

## Cu Data Cable





## 03 Cu Data Cable

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• S/FTP Data Cable x2xAWG23/1 Cat.6 <sub>A</sub> LSOH-3	91
<ul style="list-style-type: none"> <li>• <b>Further cable types can be found in the Schrack webshop <a href="http://www.schrack.com">www.schrack.com</a> or in the Schrack network technology catalogue K-DATA-EN7</b></li> </ul>	

Cu

Data Cable

# S/FTP Data Cable Cat.7<sub>A</sub> AWG22 1200 MHz



## Applications:

- Installation cable for generic cabling systems
- Support current and future applications requiring Class D to F<sub>A</sub> (e.g. 10GBase-T, 1000Base-T, 100Base-TX, ATM) as well as VoIP, PoE, PoE+
- Versions: Simplex, Duplex

## General Informations:

Temperature range during operating:	-30°C to +60°C
Temperature range during installation:	0°C to +50°C
Min. bend radius during operation:	Simplex: 33 mm Duplex: 33 mm (flat side)
Min. bend radius during installation:	Simplex: 66 mm Duplex: 66 mm (flat side)
Max. pulling strength:	Simplex: 110 N, Duplex: 220 N
Burning load:	Simplex: 700 kJ/m, Duplex: 1400 kJ/m
Total cable weight:	Simplex: 65 kg/km, Duplex: 130 kg/km
Max. operating voltage:	< 72V D.C. and < 50V A.C.
Max. continuous current per conductor (25°C):	1,5 A
NVP (Nominal velocity of propagation):	4 – 1200 0,73 c

## Standards:

- ISO/IEC 11801, EN 50173-1
- Better than category 7<sub>A</sub> according to IEC 61156-5, EN 50288-9-1
- Much better than IEEE 802.3 an 10 Gigabit Ethernet

## Construction und Dimensions:

Conductor: Simplex:	4 individual screened pairs, all twisted together / Duplex: 2x4
Conductor material:	Solid bare copper AWG22/1 (0,64 mm)
Insulation material:	Foamed polyethylene
Nominal diameter over insulation:	1,54 mm
Pair-Foil:	Laminated aluminium polyester Aluminium facing outside (PiMF)
Overall Braid:	Solid, tinned copper, coverage ≥ 50%
Ripcord:	Nylon
Jacket:	LS0H-3, FRNC according to: - IEC 61034-1/2, EN 50268-1/2 - IEC 60754-1/2, EN 50267-1/2 - IEC 60332-3-24, EN 60332-3-24
Outside diameter Simplex:	8,1 mm ± 0,3 mm
Outside diameter Duplex:	8,1 mm ± 0,3 mm x 17,5 mm ± 0,5 mm
Jacket color:	Blue, RAL 5015
Color code pairs:	Pair 1 White / Blue Pair 2 White / Orange Pair 3 White / Green Pair 4 White / Brown

## Description

S/FTP Data Cable Cat.7<sub>A</sub>, 4x2xAWG22/1, 1200Mhz, LS0H-3, B2ca-s1-d1-a1, 50%, blue

S/FTP Data Cable Cat.7<sub>A</sub>, 2x(4x2xAWG22/1), 1200Mhz, LS0H-3, Cca-s1-d1-a1, 50%, blue

## Order No.

**HSEKP422HB**

**HSEKP822HB**

# S/FTP Data Cable Cat.7 AWG23 1000 MHz LSOH-3



## Applications:

- Installation cable for generic cabling systems
- Support current and future applications requiring Class D to F (e.g. 10GBase-T, 1000Base-T, 100Base-TX, ATM) as well as VoIP, PoE, PoE+
- Versions: Simplex, Duplex

## General Informations:

Temperature range during operating:	-30°C to +60°C
Temperature range during installation:	0°C to +50°C
Min. bend radius during operation:	Simplex: 32 mm Duplex: 32 mm (flat side)
Min. bend radius during installation:	Simplex: 64 mm Duplex: 64 mm (flat side)
Max. pulling strength:	Simplex: 110 N, Duplex: 220 N
Burning load:	Simplex: 750 kJ/m, Duplex: 1500 kJ/m
Total cable weight:	Simplex: 62 kg/km, Duplex: 125 kg/km
Max. operating voltage:	< 72V D.C. and < 50V A.C.
Max. continuous current per conductor (25°C):	1,5 A
NVP (Nominal velocity of propagation):	4 – 600 0,78 c

**Standards:** ISO/IEC 11801, EN 50173-1

## Construction und Dimensions:

Conductor: Simplex:	4 individual screened pairs, all twisted together / Duplex: 2x4
Conductor material:	Solid bare copper AWG23/1 (0,58 mm)
Insulation material:	Foamed polyethylene
Nominal diameter over insulation:	1,45 mm
Pair-Foil:	Laminated aluminium polyester Aluminium facing outside (PiMF)
Overall Braid:	Solid, tinned copper, coverage ≥ 30%
Ripcord:	Nylon
Jacket:	LSOH-3, FRNC according to: IEC 61034-1/2, EN 50268-1/2 IEC 60754-1/2, EN 50267-1/2 IEC 60332-3-24, EN 60332-3-24
Outside diameter Simplex:	7,9 mm ± 0,3 mm
Outside diameter Duplex:	7,9 mm ± 0,3 mm x 16,0 mm ± 0,5 mm
Jacket color:	Blue, RAL 5015
Color code pairs:	Pair 1 White / Blue Pair 2 White / Orange Pair 3 White / Green Pair 4 White / Brown

Description	Order No.
S/FTP Data Cable Cat.7, 4x2xAWG23/1, 1000Mhz, LSOH-3, Dca-s1-d1-a1, 30%, blue	<b>HSEKP4233P</b>
S/FTP Data Cable Cat.7, 2x(4x2xAWG23/1), 1000Mhz, LSOH-3, Cca-s1-d1-a1, 30%, blue	<b>HSEKP8233P</b>



# S/FTP Data Cable Cat.7 AWG23 1000 MHz



## Applications:

- Installation cable for generic cabling systems
- Support current and future applications requiring Class D to F (e.g. 10GBase-T, 1000Base-T, 100Base-TX, ATM) as well as VoIP, PoE, PoE+
- Versions: Simplex, Duplex

## General Informations:

Temperature range during operating:	-30°C to +60°C
Temperature range during installation:	0°C to +50°C
Min. bend radius during operation:	Simplex: 29 mm Duplex: 29 mm (flat side)
Min. bend radius during installation:	Simplex: 58 mm Duplex: 68 mm (flat side)
Max. pulling strength:	Simplex: 110 N, Duplex: 220 N
Burning load:	Simplex: 500 kJ/m, Duplex: 1000 kJ/m
Total cable weight:	Simplex: 53 kg/km, Duplex: 111 kg/km
Max. operating voltage:	< 72V D.C. and < 50V A.C.
Max. continuous current per conductor (25°C):	1,5 A
NVP (Nominal velocity of propagation):	4 – 600,078 c

## Standards:

- ISO/IEC 11801, EN 50173-1
- Better than category 7 according to IEC 61156-5, EN 50288-4-1
- Much better than IEEE 802.3 an 10 Gigabit Ethernet

## Construction and Dimensions:

Conductor: Simplex:	4 individual screened pairs, all twisted together / Duplex: 2x4
Conductor material:	Solid bare copper AWG23/1 (0,58 mm)
Insulation material:	Foamed polyethylene
Nominal diameter over insulation:	1,45 mm
Pair-Foil:	Laminated aluminium polyester Aluminium facing outside (PiMF)
Overall Braid:	Solid, tinned copper, coverage ≥ 40%
Ripcord:	Nylon
Jacket:	LSOH, FRNC according to: - IEC 61034-1/2, EN 50268-1/2 - IEC 60754-1/2, EN 50267-1/2 - IEC 60332-1, EN 60332-1
Outside diameter Simplex:	7,2 mm ± 0,3 mm
Outside diameter Duplex:	7,2 mm ± 0,3 mm x 16,0 mm ± 0,5 mm
Jacket color:	Blue, RAL 5015
Color code pairs:	Pair 1 White / Blue Pair 2 White / Orange Pair 3 White / Green Pair 4 White / Brown

## Description

S/FTP Data Cable Cat.7, 4x2xAWG23/1, 1000Mhz, LSOH, Dca-s2-d1-a1, 40%, blue

S/FTP Data Cable Cat.7, 2x(4x2xAWG23/1), 1000Mhz, LSOH, Dca-s2-d2-a1, 40%, blue

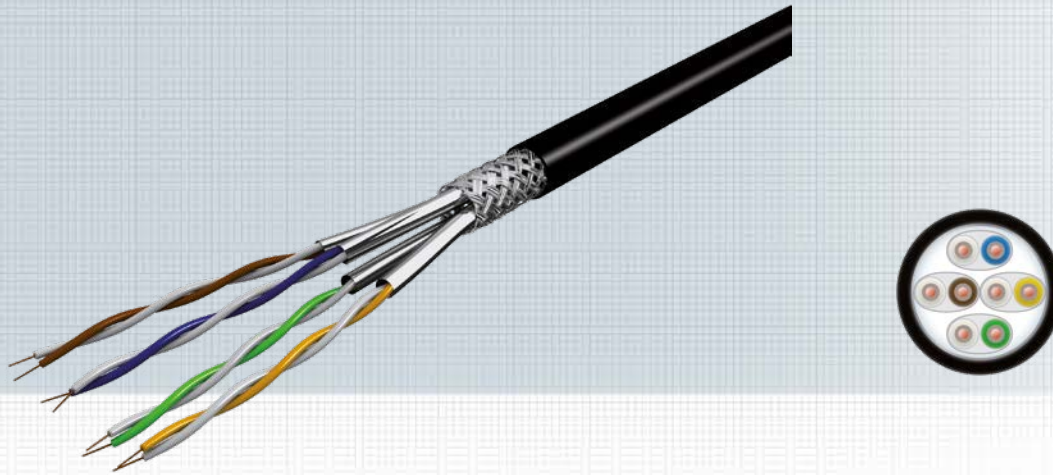
## Order No.

**HSEKP423HB**

**HSEKP823HB**



# S/FTP Data Cable 4x2xAWG23/1 Cat.6<sub>A</sub> LSOH-3



## Applications:

- Installation cable for generic cabling systems
- Support current and future applications requiring Class D to F (e.g. 10GBase-T, 1000Base-T, 100Base-TX, ATM) as well as VoIP, PoE, PoE+
- Versions: Simplex

## Characteristics:

Specified up to 500 MHz for Class E<sub>A</sub> applications  
 Fulfills the requirements of Cat.6<sub>A</sub> standards EN 50288 and IEC 61156-5  
 Outstanding electrical characteristics  
 Each twisted pair is individually shielded with a metal foil (PIMF)  
 Wire color coding: white/blue, white/orange, white/green, white/brown  
 Complete braid shielded with tinned copper wires (30%)  
 Low propagation delay and low delay skew between the pairs  
 Halogen free version ZH (Zero Halogen)  
 Flame retardant (FR) acc. to IEC 60332-3-24 and EN 50266-2-4  
 Non-corrosive acc. to IEC 60754-2 nd EN 50267  
 Low smoke (LS) acc. to IEC 61034 and EN 50268

## Construction und Dimensions:

Category	6 <sub>A</sub>
Conductor:	Simplex: 4 individual screened pairs, all twisted together
Conductor material:	Solid bare copper AWG23/1 (0,58 mm)
Burning load:	Simplex: 500 kJ/m
Halogen free:	yes
Max. pulling strength:	Simplex: 113 N
Outside diameter:	Simplex: 7,2 mm
Total cable weight:	Simplex: 49 kg/km

## Electrical characteristics at 20°C:

Max. loop resistance:	165 Ω/km
Max. resistance difference:	1%
Insulation resistance:	> 5000 MΩ x km
Transfer impedance:	< 10 mΩ per meter at 10 MHz
Propagation velocity:	> 10 MHz (NVP*c): 0.79 c
Propagation delay:	≥ 10 MHz: 4.2 ns/m
Skew:	< 25 ns/100m
Typical coupling attenuation:	80 dB
Max. operating voltage:	< 72V D.C. and < 50V A.C.

## Description

S/FTP Data Cable Cat.6<sub>A</sub>, 4x2xAWG23/1, 500MHz, LSOH-3, Dca-s2-d2-a1, black

## Order No.

**HSEKP4233A**



# 4 Cu Patchcord

## FlexBoot

<p>Gland + Plug (TM21, TM31, saCon®)</p>	<p>Advantages:</p> <ul style="list-style-type: none"> <li>• inexpensive</li> <li>• 30µ gold layer thickness on contacts</li> </ul>	<p>Rating: ★ ★ ★</p>
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## DualBoot® Standard

<p>Gland + Overmoulding + Plug (TM21, TM31, saCon®, EMT)</p>	<p>Advantages:</p> <ul style="list-style-type: none"> <li>• overmoulding guarantees permanent performance metrics</li> <li>• highest torsion protection</li> <li>• highest tensile and compression protection</li> <li>• up to 1500 mating cycles</li> <li>• 50µ gold layer thickness on contacts</li> </ul>	<p>Rating: ★ ★ ★ ★</p>
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## DualBoot® PushPull

<p>PushPull Gland + Overmoulding + Plug (saCon®)</p>	<p>Advantages:</p> <ul style="list-style-type: none"> <li>• same as DualBoot® Standard</li> <li>• unlocking also possible under cramped conditions</li> <li>• 50µ gold layer thickness on contacts</li> </ul>	<p>Rating: ★ ★ ★ ★ ★</p>
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## DualBoot® LED

<p>Gland + LED + Overmoulding + Plug (saCon®)</p>	<p>Advantages:</p> <ul style="list-style-type: none"> <li>• same as DualBoot®</li> <li>• unlocking also possible under cramped conditions</li> <li>• 50µ gold layer thickness on contacts</li> </ul>	<p>Rating: ★ ★ ★ ★ ★</p>
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## Standard Connector Types

	Manufacturer	
TM11, TM21, TM31 saCon® Tera™ saCon® Industry EMT * SS39	Hirose Electric Group ZVK GmbH Siemon Company ZVK GmbH Tyco Electronics Bel Stewart	

\*on request; Tera™ is a registered trademark of Siemon Company

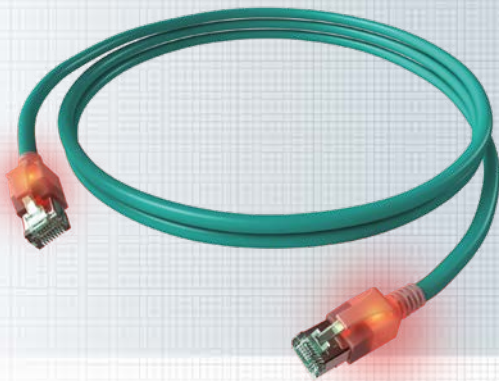
# 04 Cu Patchcord

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Cu  
Patchcord

# DualBoot® LED Patchcord Cat.6<sub>A</sub> ISO/IEC, Shielded



DualBoot® LED patchcords have been specially developed for use in offices, industrial facilities and data centers. The rugged cable design ensures that electrical transmission parameters can only be affected by the use of physical force. The use of a special combination shield (PiMF + braided shield with 65% covering) and 360° shielded RJ45 plugs provides maximum data transmission reliability. The patented method for simple assignment of the plugs to each other significantly increases operating reliability, which makes accidentally pulling apart the patchcords virtually impossible. Both RJ45 housings are optically excited and light up following contact of a patchcord end with the detector. Service mapping may also be effected at a later point in time via the application of color coding. An RFID chip can also be added for automatic network detection.

Please find the appropriate detector on page 100. Use of a non-approved detector may cause permanent damage to DualBoot® LED patchcords.

#### Standards:

IEEE 802.3; 10BaseT; 100BaseT; 1000BaseT; 10GBaseT;  
IEEE 802.5 16MB; ISDN; ATM; Telephone

#### Properties:

Sheaths	FRNC: IEC 60332-1; IEC 60754-2; IEC 61034
Color EMC	white, black, gray, red, yellow, green, blue combination shield (PiMF + braided shield with 65% covering)
Plug	saCon®
Electrical Specifications	Cat.6 <sub>A</sub> ISO/IEC 2nd FPDAM 2 to ISO/IEC 11801 AMD 2 (2009-04)
Length	Optical detection up to 100m
Chemical Properties	Free of hazardous substances according to RoHS 2002/95/EG
Packaging unit	up to 3m in length: 10 units in polybag; 3.01 – 5m in length: 5 units in polybag; over 5m: packed individually
Length key	last four digits in ordering code = length of cord in dm
GHMT	certified



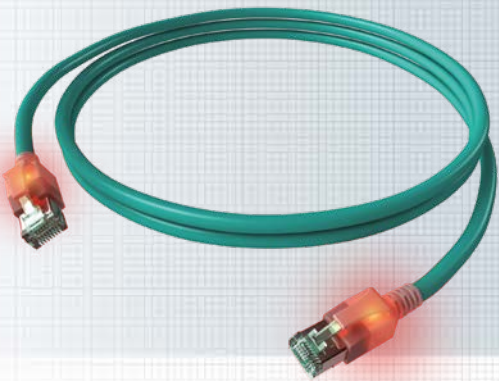
## Ordering information

Description	Type	Order No.
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, grey, 0,3m	CS10AADAD0003	<b>H6GSG00K3G</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, grey, 0,5m	CS10AADAD0005	<b>H6GSG00K5G</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, grey, 1,0m	CS10AADAD0010	<b>H6GSG01K0G</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, grey, 2,0m	CS10AADAD0020	<b>H6GSG02K0G</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, grey, 3,0m	CS10AADAD0030	<b>H6GSG03K0G</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, grey, 5,0m	CS10AADAD0050	<b>H6GSG05K0G</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, grey, 7,0m	CS10AADAD0070	<b>H6GSG07K0G</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, grey, 10,0m	CS10AADAD0100	<b>H6GSG10K0G</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, grey, 15,0m	CS10AADAD0150	<b>H6GSG15K0G</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, grey, 20,0m	CS10AADAD0200	<b>H6GSG20K0G</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, grey, 30,0m	CS10AADAD0300	<b>H6GSG30K0G</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, grey, 50,0m	CS10AADAD0500	<b>H6GSG50K0G</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, red, 0,5m	CS1ORADAD0005	<b>H6GSR00K5R</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, rot, 1,0m	CS1ORADAD0010	<b>H6GSR01K0R</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, rot, 2,0m	CS1ORADAD0020	<b>H6GSR02K0R</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, rot, 3,0m	CS1ORADAD0030	<b>H6GSR03K0R</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, rot, 5,0m	CS1ORADAD0050	<b>H6GSR05K0R</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, rot, 7,0m	CS1ORADAD0075	<b>H6GSR07K0R</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, rot, 10,0m	CS1ORADAD0100	<b>H6GSR10K0R</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, blue, 0,5m	CS1ORADAD0005	<b>H6GSB00K5B</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, blue, 1,0m	CS1ORADAD0010	<b>H6GSB01K0B</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, blue, 2,0m	CS1ORADAD0020	<b>H6GSB02K0B</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, blue, 3,0m	CS1ORADAD0030	<b>H6GSB03K0B</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, blue, 5,0m	CS1ORADAD0050	<b>H6GSB05K0B</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, blue, 7,0m	CS1ORADAD0075	<b>H6GSB07K0B</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, blue, 10,0m	CS1ORADAD0100	<b>H6GSB10K0B</b>



# DualBoot® LED Patchcord

## Cat.6<sub>A</sub> ISO/IEC, Shielded – Continuation



### Ordering information

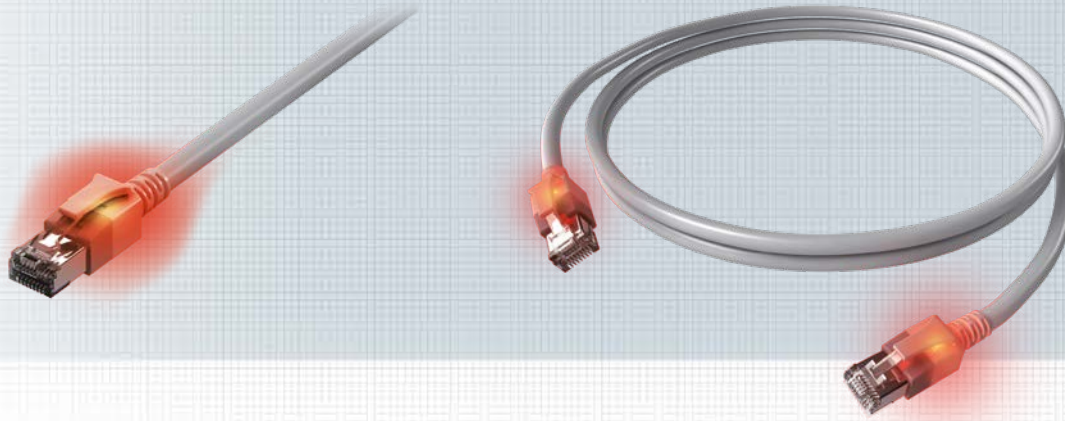
Description	Type	Order No.
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, yellow, 0,5m	CS10RADAD0005	<b>H6GSY00K5Y</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, yellow, 1,0m	CS10RADAD0010	<b>H6GSY01K0Y</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, yellow, 2,0m	CS10RADAD0020	<b>H6GSY02K0Y</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, yellow, 3,0m	CS10RADAD0030	<b>H6GSY03K0Y</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, yellow, 5,0m	CS10RADAD0050	<b>H6GSY05K0Y</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, yellow, 7,0m	CS10RADAD0075	<b>H6GSY07K0Y</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, yellow, 10,0m	CS10RADAD0100	<b>H6GSY10K0Y</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, green, 0,5	CS10RADAD0005	<b>H6GSU00K5U</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, green, 1,0m	CS10RADAD0010	<b>H6GSU01K0U</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, green, 2,0m	CS10RADAD0020	<b>H6GSU02K0U</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, green, 3,0m	CS10RADAD0030	<b>H6GSU03K0U</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, green, 5,0m	CS10RADAD0050	<b>H6GSU05K0U</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, green, 7,0m	CS10RADAD0075	<b>H6GSU07K0U</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, green, 10,0m	CS10RADAD0100	<b>H6GSU10K0U</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, black, 1,0m	CS10SADAD0010	<b>H6GSS01K0S</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, black, 2,0m	CS10SADAD0020	<b>H6GSS02K0S</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, black, 3,0m	CS10SADAD0030	<b>H6GSS03K0S</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, black, 5,0m	CS10SADAD0050	<b>H6GSS05K0S</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, black, 7,5m	CS10SADAD0075	<b>H6GSS07K5S</b>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, black, 10,0m	CS10SADAD0100	<b>H6GSS10K0S</b>

## Ordering information

Description	Type	Order No.
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, orange, 1,0m	CS100ADAD0010	<a href="#">H6GSN01K0N</a>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, orange, 2,0m	CS100ADAD0020	<a href="#">H6GSN02K0N</a>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, orange, 3,0m	CS100ADAD0030	<a href="#">H6GSN03K0N</a>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, orange, 5,0m	CS100ADAD0050	<a href="#">H6GSN05K0N</a>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, orange, 7,5m	CS100ADAD0075	<a href="#">H6GSN07K5N</a>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, orange, 10,0m	CS100ADAD0100	<a href="#">H6GSN10K0N</a>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, white, 1,0m	CS10WADAD0010	<a href="#">H6GSW01K0W</a>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, white, 2,0m	CS10WADAD0020	<a href="#">H6GSW02K0W</a>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, white, 3,0m	CS10WADAD0030	<a href="#">H6GSW03K0W</a>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, white, 5,0m	CS10WADAD0050	<a href="#">H6GSW05K0W</a>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, white, 7,5m	CS10WADAD0075	<a href="#">H6GSW07K5W</a>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, white, 10,0m	CS10WADAD0100	<a href="#">H6GSW10K0W</a>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, violet, 1,0m	CS10VADAD0010	<a href="#">H6GSV01K0V</a>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, violet, 2,0m	CS10VADAD0020	<a href="#">H6GSV02K0V</a>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, violet, 3,0m	CS10VADAD0030	<a href="#">H6GSV03K0V</a>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, violet, 5,0m	CS10VADAD0050	<a href="#">H6GSV05K0V</a>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, violet, 7,5m	CS10VADAD0075	<a href="#">H6GSV07K5V</a>
DualBoot® LED Patchcord, Cat.6 <sub>A</sub> ISO/IEC, shielded, violet, 10,0m	CS10VADAD0100	<a href="#">H6GSV10K0V</a>



# DualBoot® LED Patchcord UTP Cat.6, Class E, Shielded



DualBoot® LED patchcords have been specially developed for use in offices, industrial facilities and data centers. The rugged cable design ensures that electrical transmission parameters can only be affected by the use of physical force. The patented method for simple assignment of the plugs to each other significantly increases operating reliability, which makes accidentally pulling apart the patchcords virtually impossible.

Both RJ45 housings are optically excited and light up following contact of a patchcord side with the detector. Service mapping may also be effected at a later point in time via the application of color coding. An RFID chip can also be added for automatic network detection.

Please find the appropriate detector on page 100.

Use of a non-approved detector may cause permanent damage to DualBoot® LED patchcords.

#### Standards:

IEEE 802.3; 10BaseT; 100BaseT; 1000BaseT;  
IEEE 802.5 16MB; ISDN; ATM; Telephone

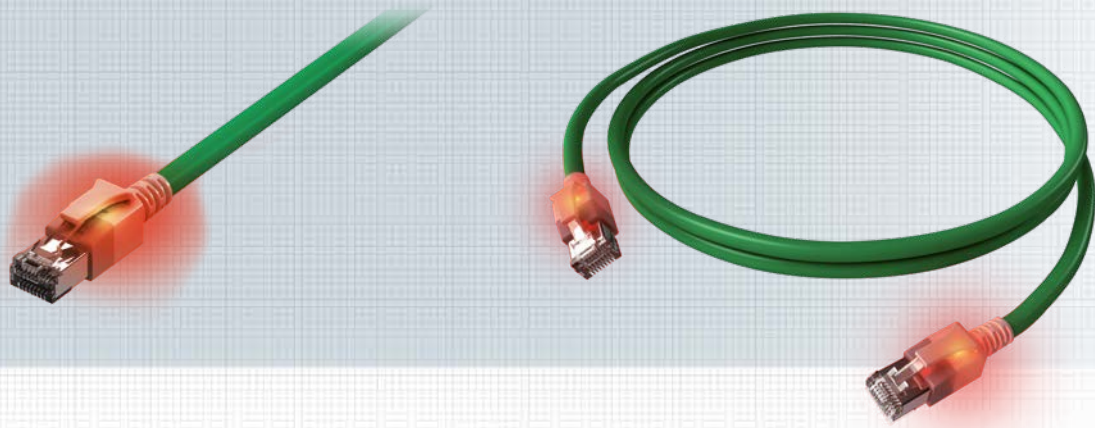
#### Properties:

Sheaths	FRNC: IEC 60 332-1-2; IEC 60 754-2; IEC 61 034
Color	gray
Connector	saCon®
Electrical Specifications	Cat.6 suitable for Class E 250 MHz data transmission
Length	Optical detection up to 100m
Chemical Properties	Free of hazardous substances according to RoHS 2002/95/EG
Packaging unit	up to 3m in length: 10 units in polybag; 3.01 – 5m in length: 5 units in polybag; over 5m: packed individually
Length key	last four digits in ordering code = length of cord in dm
Standard lengths	1m, 2m, 3m, 5m, 7,5m, 10m; other lengths on request

Description	Type	Order No.
DualBoot® LED Patchcord, Cat.6, Class E, unshielded, grey, 0,5m	CS1XACDCD0005	<b>H6USG00K5G</b>
DualBoot® LED Patchcord, Cat.6, Class E, unshielded, grey, 1,0m	CS1XACDCD0010	<b>H6USG01K0G</b>
DualBoot® LED Patchcord, Cat.6, Class E, unshielded, grey, 2,0m	CS1XACDCD0020	<b>H6USG02K0G</b>
DualBoot® LED Patchcord, Cat.6, Class E, unshielded, grey, 3,0m	CS1XACDCD0030	<b>H6USG03K0G</b>
DualBoot® LED Patchcord, Cat.6, Class E, unshielded, grey, 5,0m	CS1XACDCD0050	<b>H6USG05K0G</b>
DualBoot® LED Patchcord, Cat.6, Class E, unshielded, grey, 7,5m	CS1XACDCD0075	<b>H6USG07K5G</b>
DualBoot® LED Patchcord, Cat.6, Class E, unshielded, grey, 10,0m	CS1XACDCD0100	<b>H6USG10K0G</b>



# DualBoot® LED ISDN-Patchcord UTP 2-pair (36/45), 1:1 Pinout, Unshielded



DualBoot® LED ISDN patchcords have been specially developed for use in offices, industrial facilities and data centers. The rugged cable design ensures that electrical transmission parameters can only be affected by the use of physical force. The patented method for simple assignment of the plugs to each other significantly increases operating reliability, which makes accidentally pulling apart the patchcords virtually impossible. Both RJ45 housings are optically excited and light up following contact of a patchcord end with the detector. Service mapping may also be effected at a later point in time via the application of color coding. An RFID chip can also be added for automatic network detection.

Please find the appropriate detector on page 100. Use of a non-approved detector may cause permanent damage to DualBoot® LED patchcords.

#### Applications:

ISDN; Telephone

#### Properties:

Sheaths	FRNC: IEC 60332-1-2; IEC 60754-2; IEC 61034
Color	green
Plug	saCon®
Electrical Specifications	Cat.3
Length	Optical detection up to 100 m
Chemical Properties	Free of hazardous substances according to RoHS 2002/95/EG
Packaging unit	up to 3m in length: 10 units in polybag; 3.01 – 5m in length: 5 units in polybag; over 5m: packed individually
Length key	last four digits in ordering code = length of cord in dm

Description	Type	Order No.
DualBoot® LED ISDN-Patchcord UTP 2-pairs, 1,0m	CSIWGDCDCD0010	HIUSU01K0U
DualBoot® LED ISDN-Patchcord UTP 2-pairs, 2,0m	CSIWGDCDCD0020	HIUSU02K0U
DualBoot® LED ISDN-Patchcord UTP 2-pairs, 3,0m	CSIWGDCDCD0030	HIUSU03K0U
DualBoot® LED ISDN-Patchcord UTP 2-pairs, 5,0m	CSIWGDCDCD0050	HIUSU05K0U
DualBoot® LED ISDN-Patchcord UTP 2-pairs, 7,5m	CSIWGDCDCD0075	HIUSU07K5U
DualBoot® LED ISDN-Patchcord UTP 2-pairs, 10,0m	CSIWGDCDCD0100	HIUSU10K0U



# Accessories

## DualBoot® LED Detector



### DualBoot® LED Detector

Power supply for DualBoot® LED patchcords.  
Simply plug the detector into the appropriate electrical contact pairs on the RJ45 plug. Repeatedly pushing on the button permits the selection of 4 different operating modes, allowing you to adjust to all lighting conditions.  
Batteries: 4 x button cell LR41.

### Properties:

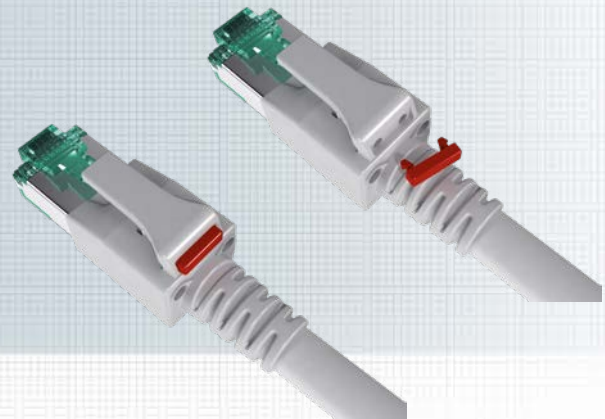
Material	Metal
Color	chrome
Applications	suitable for voltage supply for all DualBoot® LED patchcords
Packaging unit	1 pc.

Description	Type	Order No.
Detector for DualBoot® LED Patchcord/FO LED Patchcord	CPZLWLA1	<b>HLEDTOOL--</b>



# Accessories

## Colourclip for DualBoot® LED Patchcord



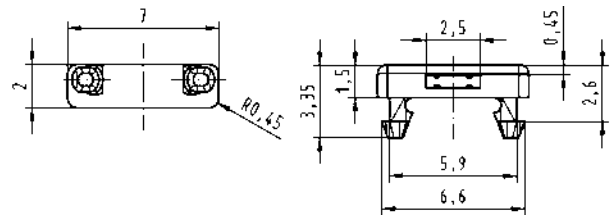
### Colourclip for DualBoot® LED Patchcord

Plug marking clip for placement on the RJ45 plug boot of a DualBoot® LED patchcord.

Clips can simply be inserted in the plug's kink protection boot, enabling subsequent color-coded plug identification. May be equipped as needed with RFID chip for automatic recognition and archiving of patchcord ID.

#### Properties:

Material	Polyamide (PA)
Color	yellow, red, blue, green, white, black, pink, brown, purple, orange, gray – special colors on request
Applications	Color and electrical coding of DualBoot® LED Patchcords
Packaging unit	100 pcs.



Description	Type	Order No.
Colourclip for DualBoot® LED Patchcord, <b>white</b>	CSZCWS	<b>HLEDCLIPW-</b>
Colourclip for DualBoot® LED Patchcord, <b>gray</b>	CSZCGR	<b>HLEDCLIPG-</b>
Colourclip for DualBoot® LED Patchcord, <b>yellow</b>	CSZCYE	<b>HLEDCLIPY-</b>
Colourclip for DualBoot® LED Patchcord, <b>magenta</b>	CSZCMG	<b>HLEDCLIPM-</b>
Colourclip for DualBoot® LED Patchcord, <b>red</b>	CSZCRD	<b>HLEDCLIPR-</b>
Colourclip for DualBoot® LED Patchcord, <b>blue</b>	CSZCBL	<b>HLEDCLIPB-</b>
Colourclip for DualBoot® LED Patchcord, <b>green</b>	CSZCGN	<b>HLEDCLIPU-</b>
Colourclip for DualBoot® LED Patchcord, <b>brown</b>	CSZCBN	<b>HLEDCLIPB-</b>
Colourclip for DualBoot® LED Patchcord, <b>black</b>	CSZCSW	<b>HLEDCLIPS-</b>
Colourclip for DualBoot® LED Patchcord, <b>pink</b>	CSZCRS	<b>HLEDCLIPF-</b>
Colourclip for DualBoot® LED Patchcord, <b>orange</b>	CSZCOR	<b>HLEDCLIPN-</b>
DualBoot® LED Marking Clips, <b>assortment box</b>	CSZC11BOX	<b>HLEDCLIP11</b>



# PushPull IP20 Patchcord RJ45 DualBoot®, Cat.6<sub>A</sub> ISO/IEC, Shielded



PushPull connection cable RJ45/RJ45, shielded 1:1 pinout and featuring DualBoot® overmoulding incl. PushPull unlock protection. In this RJ45 plug variant, the small RJ45 tab is not pressed to release, instead all you have to do is pull on the boot. PushPull locking works with any standard RJ45 socket and jack. The PushPull patchcord facilitates e.g. patching in densely packed data center patch panels, in difficult-to-access consolidation points or for subscriber ports in floor boxes. The plugs are optimized for applications in high density switches. Use of DualBoot® overmoulding ensures optimal strain relief and eliminates catching of locking levers. The patchcord provides maximum data reliability via its foil shield and 360° shielded RJ45 plugs.

#### Standards:

IEEE 802.3; 10BaseT; 100BaseT; 1000BaseT; 10GBaseT;  
IEEE 802.5 16MB; ISDN; ATM; Telephone

#### Properties:

Sheath	FRNC: IEC 60332-1-2; IEC 60754-2; IEC 61034
Color	white, black, gray, red, yellow, green, blue, turquoise, violet, orange
Boot color	gray, red, blue, yellow, green
EMC	Shielding / plug acc. to EN 60603-7 with 360° shielding
Connector	saCon®
Electrical specifications	Cat.6 <sub>A</sub> ISO/IEC 2nd FPDAM 2 to ISO/IEC 11801 AMD 2 (2009-04)
Chemical properties	Free of hazardous substances pursuant to RoHS 2002/95/EC
Packaging unit	up to 3m in length: 10 units in polybag; 3.01 – 5m in length: 5 units in polybag; over 5m: packed individually
Length key	last four digits in ordering code = length of cord in dm

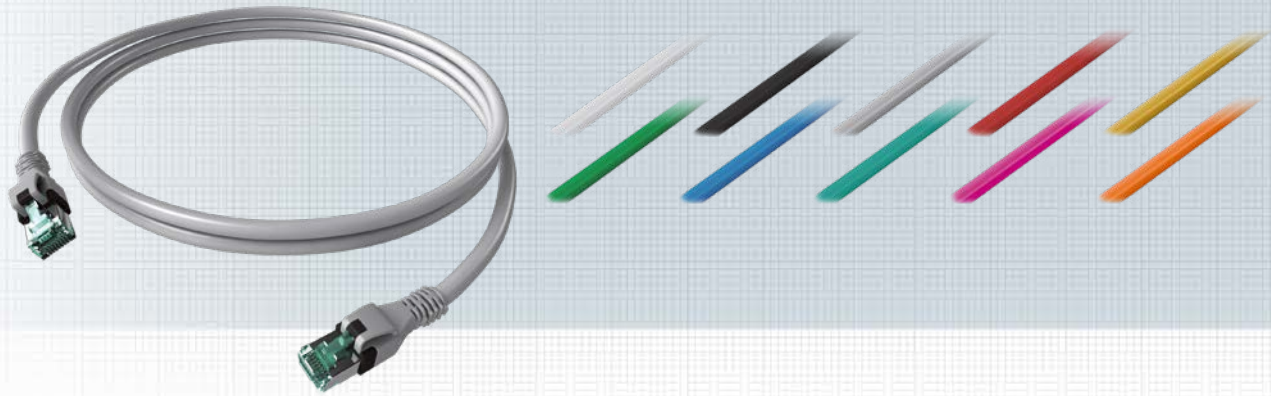


## Ordering information

Description	Type	Order No.
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, grey, 0,5m	CPP10AAAAA0005	<b>H6GPG00K5G</b>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, grey, 1,0m	CPP10AAAAA0010	<b>H6GPG01K0G</b>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, grey, 1,5m	CPP10AAAAA0015	<b>H6GPG01K5G</b>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, grey, 2,0m	CPP10AAAAA0020	<b>H6GPG02K0G</b>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, grey, 3,0m	CPP10AAAAA0030	<b>H6GPG03K0G</b>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, grey, 5,0m	CPP10AAAAA0050	<b>H6GPG05K0G</b>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, grey, 7,5m	CPP10AAAAA0075	<b>H6GPG07K5G</b>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, grey, 10,0m	CPP10AAAAA0100	<b>H6GPG10K0G</b>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, red, 1,0m	CPP10RARAR0010	H6GPR01K0R
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, red, 2,0m	CPP10RARAR0020	H6GPR02K0R
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, red, 3,0m	CPP10RARAR0030	H6GPR03K0R
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, red, 5,0m	CPP10RARAR0050	H6GPR05K0R
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, red, 7,5m	CPP10RARAR0075	H6GPR07K5R
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, red, 10,0m	CPP10RARAR0100	H6GPR10K0R
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, blue, 1,0m	CPP10BABAB0010	H6GPB01K0B
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, blue, 2,0m	CPP10BABAB0020	H6GPB02K0B
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, blue, 3,0m	CPP10BABAB0030	H6GPB03K0B
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, blue, 5,0m	CPP10BABAB0050	H6GPB05K0B
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, blue, 7,5m	CPP10BABAB0075	H6GPB07K5B
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, blue, 10,0m	CPP10BABAB0100	H6GPB10K0B
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, yellow, 1,0m	CPP10YAYAY0010	H6GPY01K0Y
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, yellow, 2,0m	CPP10YAYAY0020	H6GPY02K0Y
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, yellow, 3,0m	CPP10YAYAY0030	H6GPY03K0Y
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, yellow, 5,0m	CPP10YAYAY0050	H6GPY05K0Y
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, yellow, 7,5m	CPP10YAYAY0075	H6GPY07K5Y
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, yellow, 10,0m	CPP10YAYAY0100	H6GPY10K0Y



# PushPull IP20 Patchcord RJ45 DualBoot®, Cat.6<sub>A</sub> ISO/IEC, Shielded – Continuation



## Ordering information

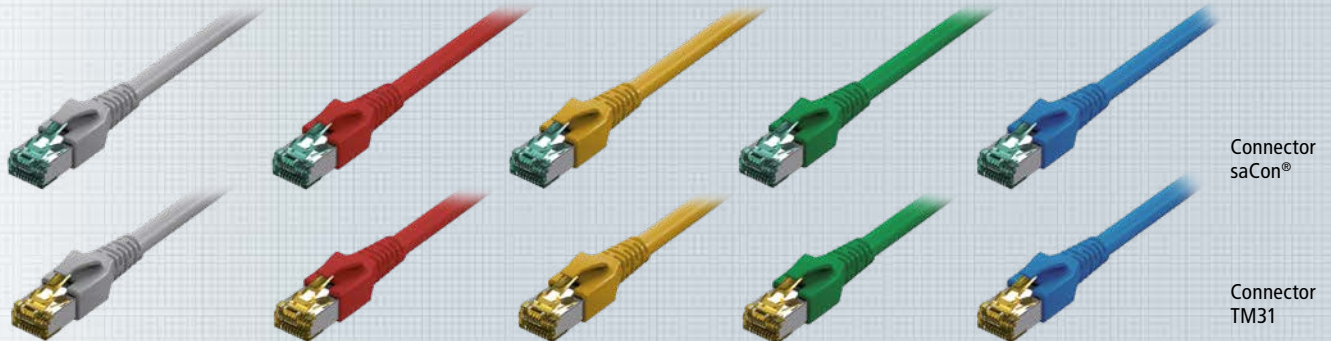
Description	Type	Order No.
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, green, 1,0m	CPP10GAGAG0010	<a href="#">H6GPU01K0U</a>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, green, 2,0m	CPP10GAGAG0020	<a href="#">H6GPU02K0U</a>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, green, 3,0m	CPP10GAGAG0030	<a href="#">H6GPU03K0U</a>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, green, 5,0m	CPP10GAGAG0050	<a href="#">H6GPU05K0U</a>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, green, 7,5m	CPP10GAGAG0075	<a href="#">H6GPU07K5U</a>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, green, 10,0m	CPP10GAGAG0100	<a href="#">H6GPU10K0U</a>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, black, 1,0m	CPP10SASAS0010	<a href="#">H6GPS01K0S</a>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, black, 2,0m	CPP10SASAS0020	<a href="#">H6GPS02K0S</a>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, black, 3,0m	CPP10SASAS0030	<a href="#">H6GPS03K0S</a>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, black, 5,0m	CPP10SASAS0050	<a href="#">H6GPS05K0S</a>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, black, 7,5m	CPP10SASAS0075	<a href="#">H6GPS07K5S</a>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, black, 10,0m	CPP10SASAS0100	<a href="#">H6GPS10L0S</a>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, orange, 1,0m	CPP100A0A00010	<a href="#">H6GPN01K0N</a>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, orange, 2,0m	CPP100A0A00020	<a href="#">H6GPN02K0N</a>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, orange, 3,0m	CPP100A0A00030	<a href="#">H6GPN03K0N</a>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, orange, 5,0m	CPP100A0A00050	<a href="#">H6GPN05K0N</a>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, orange, 7,5m	CPP100A0A00075	<a href="#">H6GPN07K5N</a>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, orange, 10,0m	CPP100A0A00100	<a href="#">H6GPN10K0N</a>

## Ordering information

Description	Type	Order No.
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, white, 1,0m	CPP1OWAWAW0010	<b>H6GPW01K0W</b>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, white, 2,0m	CPP1OWAWAW0020	<b>H6GPW02K0W</b>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, white, 3,0m	CPP1OWAWAW0030	<b>H6GPW03K0W</b>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, white, 5,0m	CPP1OWAWAW0050	<b>H6GPW05K0W</b>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, white, 7,5m	CPP1OWAWAW0075	<b>H6GPW07K5W</b>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, white, 10,0m	CPP1OWAWAW0100	<b>H6GPW10K0W</b>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, turquoise, 1,0m	CPP1OTATAT0010	<b>H6GPA01K0A</b>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, turquoise, 2,0m	CPP1OTATAT0020	<b>H6GPA02K0A</b>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, turquoise, 3,0m	CPP1OTATAT0030	<b>H6GPA03K0A</b>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, turquoise, 5,0m	CPP1OTATAT0050	<b>H6GPA05K0A</b>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, turquoise, 7,5m	CPP1OTATAT0075	<b>H6GPA07K5A</b>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, turquoise, 10,0m	CPP1OTATAT0100	<b>H6GPA10K0A</b>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, violet, 1,0m	CPP1OVAVAV0010	<b>H6GPV01K0V</b>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, violet, 2,0m	CPP1OVAVAV0020	<b>H6GPV02K0V</b>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, violet, 3,0m	CPP1OVAVAV0030	<b>H6GPV03K0V</b>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, violet, 5,0m	CPP1OVAVAV0050	<b>H6GPV05K0V</b>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, violet, 7,5m	CPP1OVAVAV0075	<b>H6GPV07K5V</b>
PushPull IP20 Patchcord Cat.6 <sub>A</sub> DualBoot® 1:1, violet, 10,0m	CPP1OVAVAV0100	<b>H6GPV10H0V</b>



# Patchcord RJ45 FlexBoot Cat.6<sub>A</sub> ISO/IEC, Shielded



Connection cable RJ45/RJ45, shielded 1:1 pinout with saCon® connector and FlexBoot boot. This patchcord is suitable for installations in offices and data centers. Service mapping may also be effected at a later point in time via the application of color coding (special accessory).

#### Standards:

IEEE 802.3; 10BaseT; 100BaseT; 1000BaseT; 10GBaseT;  
IEEE 802.5 16MB; ISDN; ATM; Telephone

#### Properties:

Sheath	FRNC: IEC 60332-1-2; IEC 60754-2; IEC 61034
Boot color	yellow, green, blue, red, magenta, orange
EMC	PiMf / Connector conforms to EN 60603-7 with 360° shielding
Approved connectors	saCon®, TM31,
Electrical specifications	Cat.6A 2nd FPDAM 2 to ISO/IEC 11801 AMD 2 (2009-04)
Chemical properties	Free of hazardous substances pursuant to RoHS 2002/95/EC
Packaging unit	up to 3m in length: 10 units in polybag; 3.01 - 5m in length: 5 units in polybag; over 5m: packed individually
Length key	last four digits in ordering code = length of cord in dm

Description	Type	Order No.
Patchcord Cat.6 <sub>A</sub> , saCon® Connector 1:1 FlexBoot, grey, 0,5m	CP1KABABA0005	<b>H6GTG00K5G</b>
Patchcord Cat.6 <sub>A</sub> , saCon® Connector 1:1 FlexBoot, grey, 1,0m	CP1KABABA0010	<b>H6GTG01K0G</b>
Patchcord Cat.6 <sub>A</sub> , saCon® Connector 1:1 FlexBoot, grey, 2,0m	CP1KABABA0020	<b>H6GTG02K0G</b>
Patchcord Cat.6 <sub>A</sub> , saCon® Connector 1:1 FlexBoot, grey, 3,0m	CP1KABABA0030	<b>H6GTG03K0G</b>
Patchcord Cat.6 <sub>A</sub> , saCon® Connector 1:1 FlexBoot, grey, 5,0m	CP1KABABA0050	<b>H6GTG05K0G</b>
Patchcord Cat.6 <sub>A</sub> , saCon® Connector 1:1 FlexBoot, grey, 7,5m	CP1KABABA0075	<b>H6GTG07K5G</b>
Patchcord Cat.6 <sub>A</sub> , saCon® Connector 1:1 FlexBoot, grey, 10,0m	CP1KABABA0100	<b>H6GTG10K0G</b>
Patchcord Cat.6 <sub>A</sub> , saCon® Connector 1:1 FlexBoot, red, 0,5m	CP1KRBRBR0005	<b>H6GTR00K5R</b>
Patchcord Cat.6 <sub>A</sub> , saCon® Connector 1:1 FlexBoot, red, 1,0m	CP1KRBRBR0010	<b>H6GTR01K0R</b>
Patchcord Cat.6 <sub>A</sub> , saCon® Connector 1:1 FlexBoot, red, 2,0m	CP1KRBRBR0020	<b>H6GTR02K0R</b>
Patchcord Cat.6 <sub>A</sub> , saCon® Connector 1:1 FlexBoot, red, 3,0m	CP1KRBRBR0030	<b>H6GTR03K0R</b>
Patchcord Cat.6 <sub>A</sub> , saCon® Connector 1:1 FlexBoot, red, 5,0m	CP1KRBRBR0050	<b>H6GTR05K0R</b>
Patchcord Cat.6 <sub>A</sub> , saCon® Connector 1:1 FlexBoot, red, 7,5m	CP1KRBRBR0075	<b>H6GTR07K5R</b>
Patchcord Cat.6 <sub>A</sub> , saCon® Connector 1:1 FlexBoot, red, 10,0m	CP1KRBRBR0100	<b>H6GTR10K0R</b>





## Ordering information

Description	Type	Order No.
Patchcord Cat.6 <sub>A</sub> saCon® Connector 1:1 FlexBoot, blue, 0,5m	CP1KBBBBB0005	<b>H6GTB00K5B</b>
Patchcord Cat.6 <sub>A</sub> saCon® Connector 1:1 FlexBoot, blue, 1,0m	CP1KBBBBB0010	<b>H6GTB01K0B</b>
Patchcord Cat.6 <sub>A</sub> saCon® Connector 1:1 FlexBoot, blue, 2,0m	CP1KBBBBB0020	<b>H6GTB02K0B</b>
Patchcord Cat.6 <sub>A</sub> saCon® Connector 1:1 FlexBoot, blue, 3,0m	CP1KBBBBB0030	<b>H6GTB03K0B</b>
Patchcord Cat.6 <sub>A</sub> saCon® Connector 1:1 FlexBoot, blue, 5,0m	CP1KBBBBB0050	<b>H6GTB05K0B</b>
Patchcord Cat.6 <sub>A</sub> saCon® Connector 1:1 FlexBoot, blue, 7,5m	CP1KBBBBB0075	<b>H6GTB07K5B</b>
Patchcord Cat.6 <sub>A</sub> saCon® Connector 1:1 FlexBoot, blue, 10,0m	CP1KBBBBB0100	<b>H6GTB10K0B</b>
Patchcord Cat.6 <sub>A</sub> saCon® Connector 1:1 FlexBoot, yellow, 0,5m	CP1KYBYBY0005	<b>H6GTY00K5Y</b>
Patchcord Cat.6 <sub>A</sub> saCon® Connector 1:1 FlexBoot, yellow, 1,0m	CP1KYBYBY0010	<b>H6GTY01K0Y</b>
Patchcord Cat.6 <sub>A</sub> saCon® Connector 1:1 FlexBoot, yellow, 2,0m	CP1KYBYBY0020	<b>H6GTY02K0Y</b>
Patchcord Cat.6 <sub>A</sub> saCon® Connector 1:1 FlexBoot, yellow, 3,0m	CP1KYBYBY0030	<b>H6GTY03K0Y</b>
Patchcord Cat.6 <sub>A</sub> saCon® Connector 1:1 FlexBoot, yellow, 5,0m	CP1KYBYBY0050	<b>H6GTY05K0Y</b>
Patchcord Cat.6 <sub>A</sub> saCon® Connector 1:1 FlexBoot, yellow, 7,5m	CP1KYBYBY0075	<b>H6GTY07K5Y</b>
Patchcord Cat.6 <sub>A</sub> saCon® Connector 1:1 FlexBoot, yellow, 10,0m	CP1KYBYBY0100	<b>H6GTY10K0Y</b>
Patchcord Cat.6 <sub>A</sub> saCon® Connector 1:1 FlexBoot, green, 0,5m	CP1KGBGBG0005	<b>H6GTU00K5U</b>
Patchcord Cat.6 <sub>A</sub> saCon® Connector 1:1 FlexBoot, green, 1,0m	CP1KGBGBG0010	<b>H6GTU01K0U</b>
Patchcord Cat.6 <sub>A</sub> saCon® Connector 1:1 FlexBoot, green, 2,0m	CP1KGBGBG0020	<b>H6GTU02K0U</b>
Patchcord Cat.6 <sub>A</sub> saCon® Connector 1:1 FlexBoot, green, 3,0m	CP1KGBGBG0030	<b>H6GTU03K0U</b>
Patchcord Cat.6 <sub>A</sub> saCon® Connector 1:1 FlexBoot, green, 5,0m	CP1KGBGBG0050	<b>H6GTU05K0U</b>
Patchcord Cat.6 <sub>A</sub> saCon® Connector 1:1 FlexBoot, green, 7,5m	CP1KGBGBG0075	<b>H6GTU07K5U</b>
Patchcord Cat.6 <sub>A</sub> saCon® Connector 1:1 FlexBoot, green, 10,0m	CP1KGBGBG0100	<b>H6GTU10K0U</b>



# Patchcord RJ45 90° Cat.6<sub>A</sub> ISO/IEC, shielded – Cat.6, Shielded

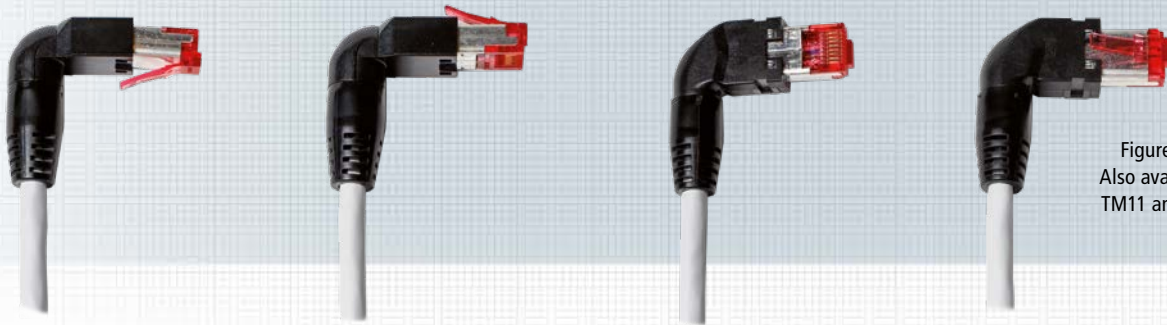


Figure: TM21;  
Also available in  
TM11 and TM31

Connection cable RJ45/RJ45, shielded 1:1 pinout with angled RJ45 plugs. This patchcord is suitable for installations in offices and data centers.

The use of a special combination shield (PiMF + braided shield) and the 360° shielded RJ45 plugs means the cable provides maximum data transmission reliability. Due to the large number of variations, each order is calculated separately.

#### Standards:

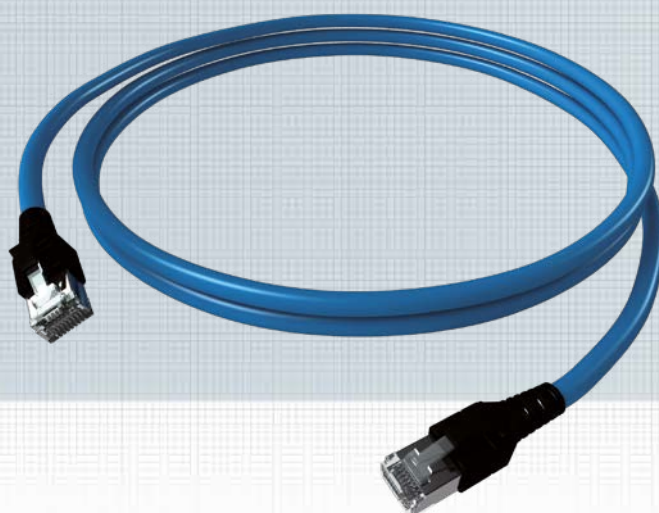
IEEE 802.3; 10BaseT; 100BaseT; 1000BaseT;  
IEEE 802.5 16MB; ISDN; ATM; Telephone

#### Properties:

Sheath	FRNC: IEC 60332-1-2; IEC 60754-2; IEC 61034
Boot color	black
EMC	Combination shield (PiMF + braided shield) / connector acc. to EN 60603-7 with 360° shielding
Approved connectors	TM11, TM21, TM31
Electrical specifications	TM31: Cat.6 <sub>A</sub> TM21: Cat.6
Chemical properties	Free of hazardous substances pursuant to RoHS 2002/95/EC
Packaging unit	up to 3m in length: 10 units in polybag; 3.01 - 5m in length: 5 units in polybag; over 5m: packed individually
Length key	last four digits in ordering code = length of cord in dm

Description	TM21	Order No.	TM31	Order No.
Patchcord RJ45 Hirose 90°, <b>grey</b>	on request	<a href="#">on request</a>	on request	<a href="#">on request</a>
Patchcord RJ45 Hirose 90°, <b>red</b>	on request	<a href="#">on request</a>	on request	<a href="#">on request</a>
Patchcord RJ45 Hirose 90°, <b>yellow</b>	on request	<a href="#">on request</a>	on request	<a href="#">on request</a>
Patchcord RJ45 Hirose 90°, <b>green</b>	on request	<a href="#">on request</a>	on request	<a href="#">on request</a>
Patchcord RJ45 Hirose 90°, <b>blue</b>	on request	<a href="#">on request</a>	on request	<a href="#">on request</a>

# Patchcord AWG23 RJ45, SolidCon Shielded



Mainly intended for use in PoE applications (like Access Points).  
The advantage of this cable is that longer distances can be covered, as well as it's higher current carrying capacity.

#### Standards:

IEEE 802.3; 10BaseT; 100BaseT; 1000BaseT; 10GBaseT;  
IEEE 802.5 16MB; ISDN; ATM; Telephone

#### Eigenschaften:

Cable	AWG23/1 - F/FTP or U/FTP
Color	blue
Connector color	white-transparent
Gland	black
Electrical specifications	Cat.6 <sub>A</sub> ISO/IEC
Packaging unit	Up to 3m in length: 10 units in polybag 3.01 – 5m in length: 5 units in polybag Over 5m: individually packed
Length key	Last 4 digits in order code = length of cord in dm

Description	Type	Order No.
Patchcord AWG23 RJ45, SolidCon, 1 m	CP1PoEBQSQS0010	<b>H6GZB01K0B</b>
Patchcord AWG23 RJ45, SolidCon, 2 m	CP1PoEBQSQS0020	<b>H6GZB02K0B</b>
Patchcord AWG23 RJ45, SolidCon, 3 m	CP1PoEBQSQS0030	<b>H6GZB03K0B</b>
Patchcord AWG23 RJ45, SolidCon, 5 m	CP1PoEBQSQS0050	<b>H6GZB05K0B</b>
Patchcord AWG23 RJ45, SolidCon, 7,5 m	CP1PoEBQSQS0075	<b>H6GZB07K5B</b>
Patchcord AWG23 RJ45, SolidCon, 10 m	CP1PoEBQSQS0100	<b>H6GZB10K0B</b>



# Patchcord RJ45 Tera™

## 2 or 4-pair, Shielded



Depending on requirements, data and connection cables are equipped with Tera™ or RJ45 plugs, whereby RJ45 plugs are marked with kink-protection color indicating the relevant use (yellow for Ethernet, blue for Token Ring and green for ISDN).

All cable types are adapted to their respective applications, with the 4-pair version designed for use in the 10 GHz bandwidth range.

### Standards:

IEEE 802.3; 10BaseT; 100BaseT; 1000BaseT;  
IEEE 802.5 16MB; ISDN; ATM; Telephone

### Properties:

Sheaths / Color	FRNC/LSOH (Kink protection Tera™ black /RJ45-color) / gray
EMC	Combination shield (PiMF + braid) / plug to EN 60603-7 with 360° shielding
Chemical properties	Free of hazardous substances pursuant to RoHS 2002/95/EC
Packaging unit	up to 3m in length: 10 units in polybag; 3.01 - 5m in length: 5 units in polybag; over 5m: packed individually
Length key	last four digits in ordering code = length of cord in dm

Description	Type	Order No.
Patchcord Tera™ / Tera™, 2-Pairs, shielded, gray	CP1NAYSYSxxxx	<a href="#">on request</a>
Patchcord Tera™ / Tera™, 4-Pairs, shielded, gray	CP1LAZSZSxxxx	<a href="#">on request</a>
Patchcord Tera™/DualBoot®, 4-Pairs, shielded, gray	CPSLAYSCAxxxx	<a href="#">on request</a>
Patchcord Tera™ / RJ45 Ethernet, yellow - Boot, 2-Pairs, shielded, gray	CPSNAYSCYxxxx	<a href="#">on request</a>
Patchcord Tera™ / RJ45 Token Ring, blue - Boot, 2-Pairs, shielded, gray	CPSNAYSCBxxxx	<a href="#">on request</a>
Patchcord Tera™ / ISDN, green - Boot, 2-Pairs, shielded, gray	CPSNAYSCGxxxx	<a href="#">on request</a>

Tera™ is a registered trademark of Siemon Company





# Patchcord RJ45 Tera™

## 1-pair, Unshielded



Depending on requirements, patch and connection cables are equipped with unshielded 1-pair Tera™, RJ45 or RJ11/ RJ12 plugs, whereby the RJ45 plugs feature a kink protection gland. Cable is offered in FR / LSOH or FR / PVC versions and is adapted for the relevant application.

### Standards:

Telephone

### Properties:

Cable	FR / LSOH or FR / PVC
Color	black or gray
Chemical properties	Free of hazardous substances pursuant to RoHS 2002/95/EC
Packaging unit	up to 3m in length: 10 units in polybag; 3.01 - 5m in length: 5 units in polybag; over 5m: packed individually
Length key	last four digits in ordering code = length of cord in dm

Description	Type	Order No.
Patchcord Tera™ / Tera™, 1-Pair, unshielded, gray	CP1ZSXSXSxxxx	<a href="#">on request</a>
Patchcord Tera™ / RJ45, 1-Pair, unshielded, gray	CPSZSXSFSxxxx	<a href="#">on request</a>
Patchcord Tera™ / RJ11/RJ12, 1-Pair, unshielded, gray	CPSZAXSWxxxx	<a href="#">on request</a>

Tera™ is a registered trademark of Siemon Company



# Patchcord VoIP RJ45 Shielded



Connection cable RJ45/RJ45 shielded with a 1:1 assignment. A saCon plug with dual-boot overmolding is used on one end. On the second end, a highly compact RJ45 connector is used. This cable was specially developed for the VoIP application since e.g. very little space is available for the plug in VoIP phones. The cable used offers a maximum data security thanks to its braided shield with pair shielding as well as the 360° shielded RJ45 connectors.

#### Standards:

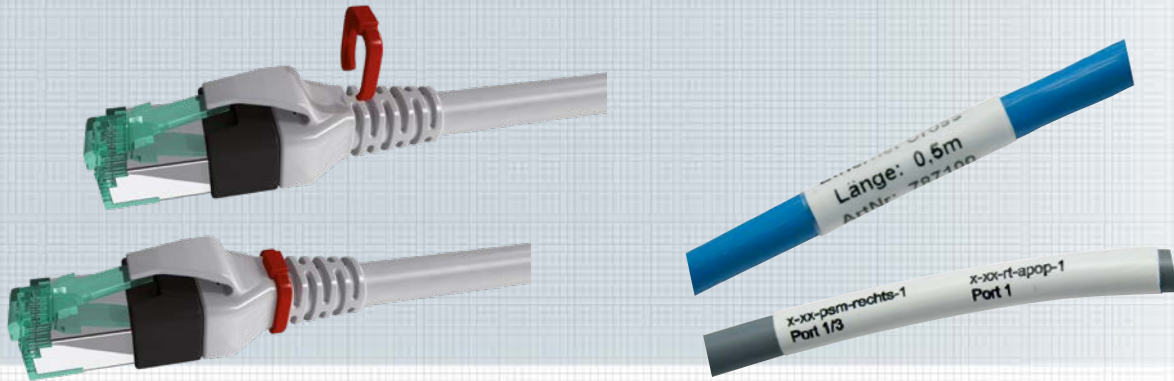
IEEE 802.3; 10BaseT; 100BaseT; 1000BaseT;  
IEEE 802.5 16MB; ISDN; ATM; Telefon

#### Properties:

Sheaths / Color	FRNC/LSOH (Kink protection Tera™ black /RJ45-color) / gray
EMC	Combination shield (PIMF + braid) / plug to EN 60603-7 with 360° shielding
Chemical properties	Free of hazardous substances pursuant to RoHS 2002/95/EC
Packaging unit	up to 3m in length: 10 units in polybag; 3.01 - 5m in length: 5 units in polybag; over 5m: packed individually
Length key	last four digits in ordering code = length of cord in dm

Description	Type	Order No.
VoIP - Patchcord Cat.6 <sub>A</sub> (ISO/IEC), shielded, black, 1 m	CPVoIPISCSOS0010	<a href="#">H6GVG01K0G</a>
VoIP - Patchcord Cat.6 <sub>A</sub> (ISO/IEC), shielded, black, 2 m	CPVoIPISCSOS0020	<a href="#">H6GVG02K0G</a>
VoIP - Patchcord Cat.6 <sub>A</sub> (ISO/IEC), shielded, black, 3 m	CPVoIPISCSOS0030	<a href="#">H6GVG03K0G</a>
VoIP - Patchcord Cat.6 <sub>A</sub> (ISO/IEC), shielded, black, 5 m	CPVoIPISCSOS0050	<a href="#">H6GVG05K0G</a>
VoIP - Patchcord Cat.6 <sub>A</sub> (ISO/IEC), shielded, black, 7.5 m	CPVoIPISCSOS0075	<a href="#">H6GVG07K5G</a>
VoIP - Patchcord Cat.6 <sub>A</sub> (ISO/IEC), shielded, black, 10 m	CPVoIPISCSOS0100	<a href="#">H6GVG10K0G</a>

# Accessories



## HS Color Clips for DualBoot® and FlexBoot patchcords

Color coding clips for DualBoot®-Standard, DualBoot®-PushPull and FlexBoot patchcords.

### Properties:

Material plastic PA  
Color orange, black, gray, red, yellow, green, blue

Packaging unit 100 pcs. in polybag



## Shrink tubing (printed) / Laminating labels

Self-laminating labels or printed white shrink tubes, for identifying or labeling patchcords.

### Properties:

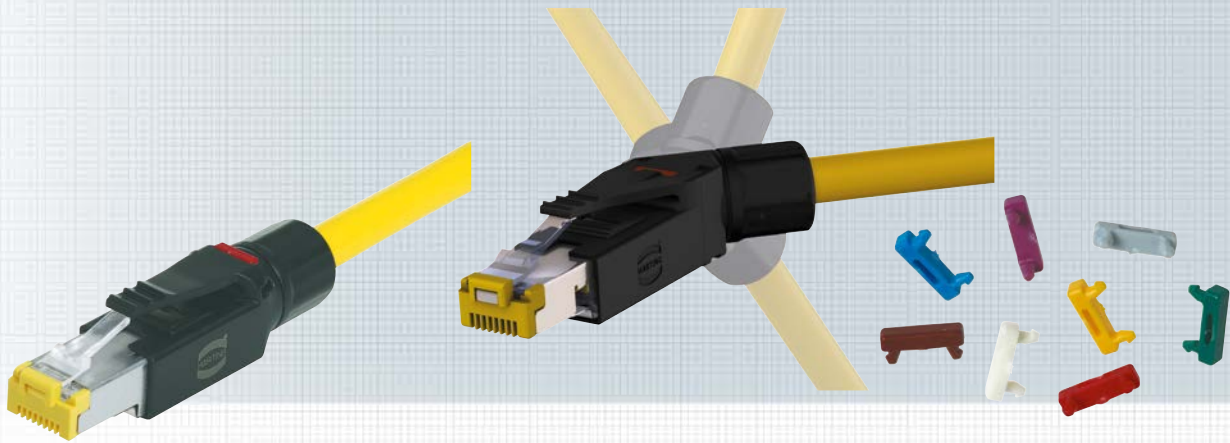
Material Polyolefin (Shrink tubing), PVC (Laminating labels)  
Color white (Shrink tubing) + Laminating labels

Packaging unit 1 pc.

Description	Type	Order No.
HS Colorclip for DualBoot®-Patchcord, <b>orange</b>	CPZCORHS1	<a href="#">on request</a>
HS Colorclip for DualBoot®-Patchcord, <b>black</b>	CPZCSWHS1	<a href="#">on request</a>
HS Colorclip for DualBoot®-Patchcord, <b>gray</b>	CPZCGRHS1	<a href="#">on request</a>
HS Colorclip for DualBoot®-Patchcord, <b>red</b>	CPZCRDHS1	<a href="#">on request</a>
HS Colorclip for DualBoot®-Patchcord, <b>yellow</b>	CPZCYEHS1	<a href="#">on request</a>
HS Colorclip for DualBoot®-Patchcord, <b>green</b>	CPZCGNHS1	<a href="#">on request</a>
HS Colorclip for DualBoot®-Patchcord, <b>blue</b>	CPZCBLHS1	<a href="#">on request</a>
HS Colorclip for DualBoot®-Patchcord, <b>assortment box</b>	CPZHS7BOX	<b><a href="#">HLEDCLIPBX</a></b>
Laminating label	<a href="#">on request</a>	<a href="#">on request</a>
Heat shrink	<a href="#">on request</a>	<a href="#">on request</a>



# Field installable RJ45 plug Cat.6 HARTING RJ Industrial® 10G



HARTING RJ Industrial® 10G connector set, 8-poles for assembly of RJ45 system cables.

### Advantages:

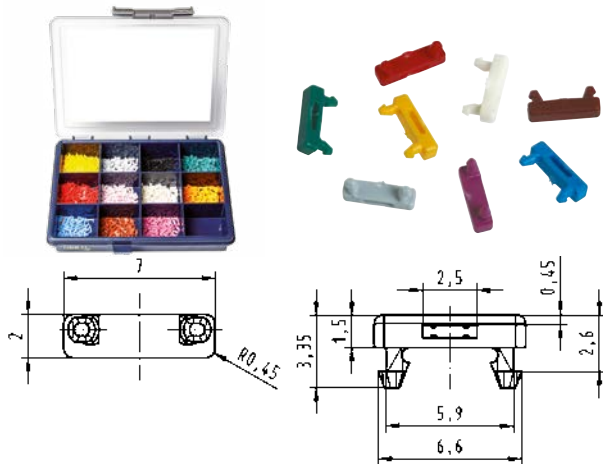
- RJ45 Ethernet data connector suitable for industry
- tool-less field installable with HARAX® quick termination in IDC technology
- compact design
- ergonomically unlocking clip
- less weight assures shock- and vibration resisting connection
- transmission category Cat.6
- suitable for terminating solid and stranded wires

### Properties:

Connector type	RJ45 plug acc. to IEC 60 603-7
Number of contacts	8
Transmission properties	Category 6 / Class E <sub>A</sub> up to 500 MHz acc. to ISO/IEC 11 801:2002, EN 50 173-1
Transmission rate	10/100 Mbit/s – 1/10 Gbit/s
Shielding	Fully shielded, 360° Screen contact
Installation	field installable
Conductor connection	via IDC contacts, no tool needed
Cable to be connected	
– Conductor cross section	AWG 27 ... AWG 22 (solid / stranded)
– Conductor diameter	max. 1.6 mm (including insulation)
– Cable diameter	4.5 ... 9 mm
Degree of protection	IP20
Operating temperature range	–40 °C to +70 °C
Housing material	Polyamide, UL94 V-0
Color	Black

### HARTING RJ Industrial® 10G Color Coding

Set for HARTING RJ Industrial® 10G connectors.  
Packaging unit 100 pcs.





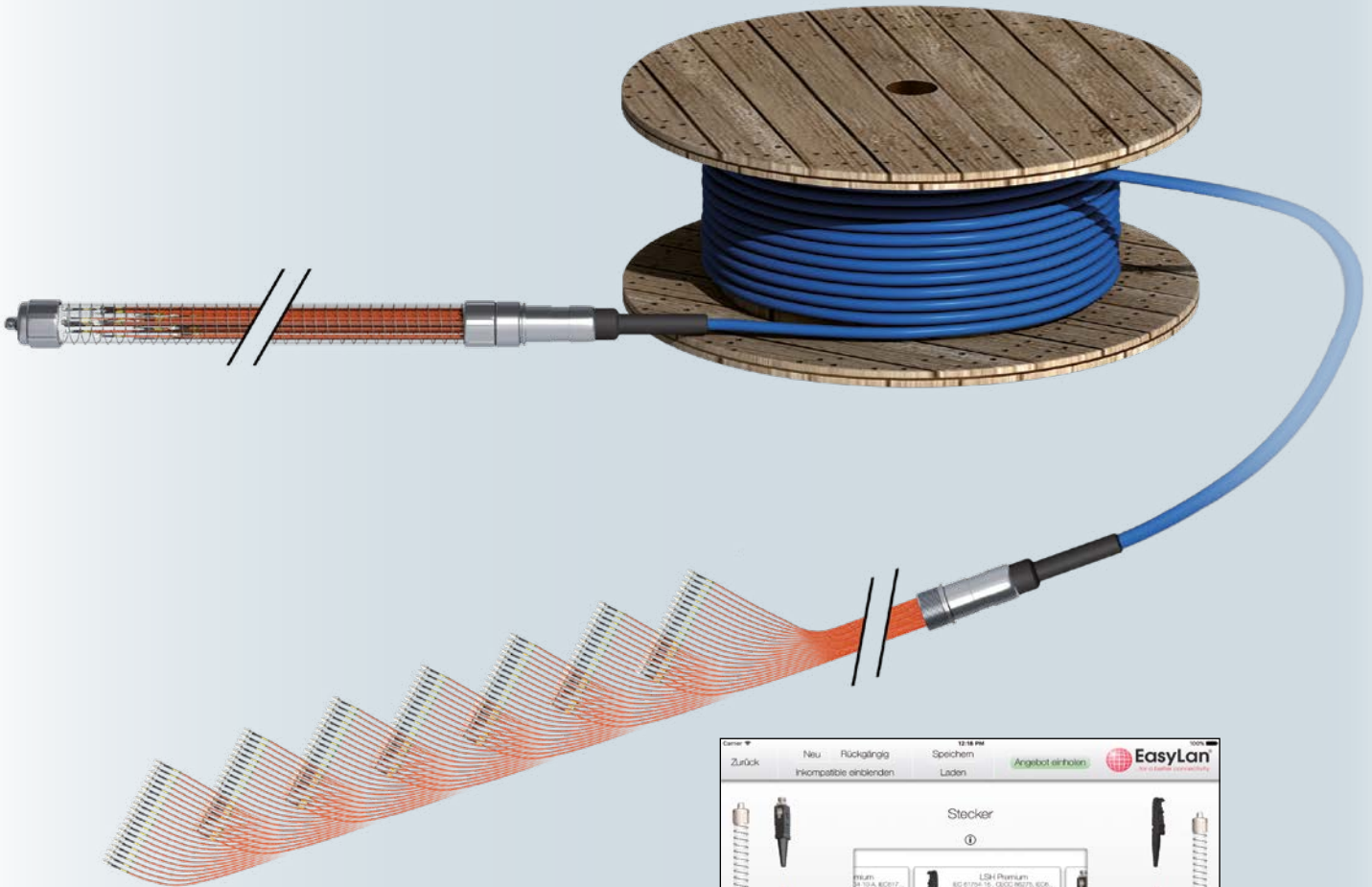
## Ordering information

Description	Type	Order No.
HARTING RJ Industrial® 10G Connector set, straight	CZSRF8GEVPE	<b>HEKSR6SI3G</b>
HARTING RJ Industrial® 10G Connector set, angled	CZSRF8WEVPE	<b>HEKSR6SI3W</b>
DualBoot® LED Color coding, <b>white</b>	CSZCWS	<b>HLEDCLIPW-</b>
DualBoot® LED Color coding, <b>gray</b>	CSZCGR	<b>HLEDCLIPG-</b>
DualBoot® LED Color coding, <b>yellow</b>	CSZCYE	<b>HLEDCLIPY-</b>
DualBoot® LED Color coding, <b>magenta</b>	CSZCMG	<b>HLEDCLIPM-</b>
DualBoot® LED Color coding, <b>red</b>	CSZCRD	<b>HLEDCLIPR-</b>
DualBoot® LED Color coding, <b>blue</b>	CSZCBL	<b>HLEDCLIPB-</b>
DualBoot® LED Color coding, <b>green</b>	CSZCGN	<b>HLEDCLIPU-</b>
DualBoot® LED Color coding, <b>brown</b>	CSZCBN	<b>HLEDCLIPE-</b>
DualBoot® LED Color coding, <b>black</b>	CSZCSW	<b>HLEDCLIPS-</b>
DualBoot® LED Color coding, <b>pink</b>	CSZCRS	<b>HLEDCLIPF-</b>
DualBoot® LED Color coding, <b>orange</b>	CSZCOR	<b>HLEDCLIPN-</b>
DualBoot® LED Color coding, <b>assortment box</b>	CSZC11BOX	<b>HLEDCLIP11</b>



# 5

## FO Trunk Cable



**Messprotokoll** *Muster*

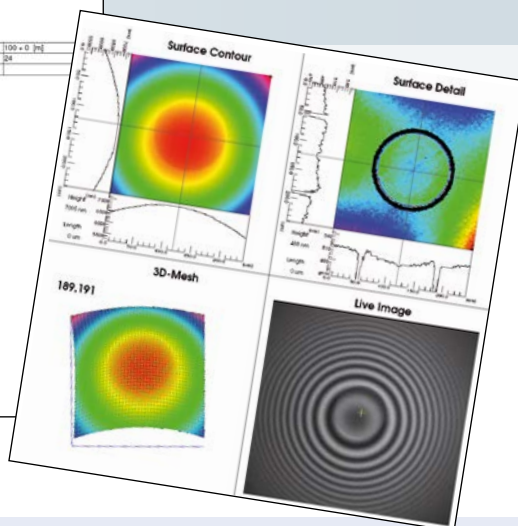
Prüfer: PA  
 Protokoll: FO\_DAT\_V1\_M  
 Datum: 05.11.2014  
 Kabel Charge: 17124

Messmethode: Trommel - ICH Meth. 6    Kabellänge: [100 x 0 [m]]  
 Faser-GR-Typ: SMP-16250    Faserindex: 20

WL1: 350 [nm]

Konnektion Seite A		Konnektion Seite B	
Stecker: O-FERRULE-MM		Stecker: O-FERRULE-MM	
Typ: Ferrul 0.9		Typ: Ferrul 0.9	
Bezeichnung: N/A		Bezeichnung: N/A	
Faser	A @ WL1		
1	IL	0.28	
2	IL	0.30	
3	IL	0.26	
4	IL	0.25	
5	IL	0.25	
6	IL	0.38	
7	IL	0.25	
8	IL	0.34	
9	IL	0.28	
10	IL	0.36	
11	IL	0.26	
12	IL	0.25	
13	IL	0.26	
14	IL	0.27	
15	IL	0.25	
16	IL	0.23	
17	IL	0.31	
18	IL	0.26	
19	IL	0.28	
20	IL	0.25	
21	IL	0.27	
22	IL	0.34	
23	IL	0.25	
24	IL	0.30	

05.11.2014



- FO Trunk Cable**
- ▶ 2 to 144 fibers
  - ▶ Various cable types
  - ▶ PC and APC polish
  - ▶ Tuned connectors
  - ▶ Gradations as desired
    - ▶ Up to IP67
    - ▶ etc.

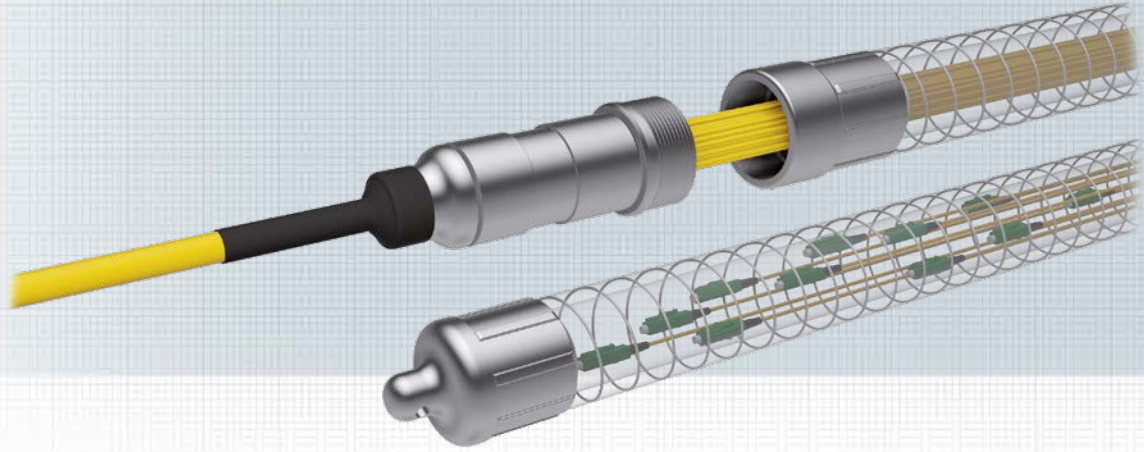
# 05 FO Trunk Cable

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# FO- Trunk Cable

# FODH/1 Fiber Optic Trunk Cable / Variant 1



The robust FO distribution system for industry and outdoor applications:

- corresponds to IP44 degree of protection and is optionally waterproof up to IP67
- for manual and mechanical pulling with tractive forces up to 500 N
- features cast aluminium distributor head
- with step-resistant, watertight corrugated cable tube which protects the assembly and also assists in pulling cable and as a buffer against jerky tensile loads
- protective hose is screwed onto distributor head yet not attached to the fibers

**Advantages:**

- ✓ Mounting in a housing opening
- ✓ Stepped whip length: 5cm each
- ✓ All common types of connectors like LC, SC, ST, FC or E2000®
- ✓ Available in PC or APC polish
- ✓ All types available with Kevlar reinforced 1.8mm Fan-outs or with 0.9mm Fan-outs FR-LSOH
- ✓ Kevlar reinforced colored Fan-outs: Fiber typical OS2: yellow; OM2: black; OM3: aqua; OM4: violet; Each with colored rings according to IEC60304
- ✓ Colored 0.9mm Fan-outs according to IEC60304
- ✓ Special designs according to customer specifications possible

**Dimensions and mounting data for SC, ST, FC, E2000, LC connectors:**

Fibers	2 – 12	24 – 48	60 – 92	120 – 144
Length of splitter	90 mm	101 mm	140 mm	140 mm
Ø Splitter	25 mm	33 mm	56 mm	56 mm
Ø Protective hose	33 mm	43 mm	56 mm	65 mm
Connector lengths*				
shortest fan-out	550 mm	550 mm	550 mm	550 mm
longest fan-out (for max. number of fibers)	800 mm	1300 mm	1700 mm	1700 mm

\* for standard length gradation of 50 mm, ensuring the most compact design possible. Special assemblies per customer specifications are available.

Dimensions are approximate figures.



Description	Type	Order No.
FODH/1 Fiber Optic Trunk Cable / Variant 1	on request	on request

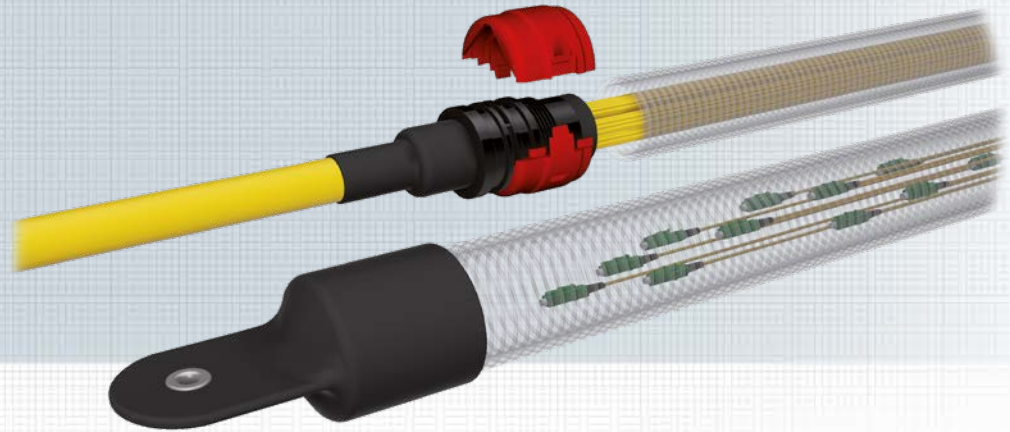
E2000® is a registered trademark of Diamond GmbH





# FODH/2

## Fiber Optic Trunk Cable / Variant 2



The FO distribution system for the widest variety of installations. The system is robust and known for its ease of installation: simply feed in the cable, open the red clip, remove the hose and connect the plug. Done!

- robust design handles the widest variety of installation environments
- IP20
- features aluminum distributor head
- up to 144 fibers
- protective hose disconnects via red attachment clip, which can be removed in seconds
- fan-outs are impervious to dust and are housed in non-bendable corrugated hose which also assists in feeding in cable and acts as a buffer against jerky tensile loads

### Advantages:

- ✓ Mounting in a housing opening
- ✓ Stepped whip length: 5cm each
- ✓ All common types of connectors like LC, SC, ST, FC or E2000®
- ✓ Available in PC or APC polish
- ✓ All types available with Kevlar reinforced 1.8mm Fan-outs or with 0.9mm Fan-outs FR-LSOH
- ✓ Kevlar reinforced colored Fan-outs: Fiber typical OS2: yellow; OM2: black; OM3: aqua; OM4: violet; Each with colored rings according to IEC60304
- ✓ Colored 0.9mm Fan-outs according to IEC60304
- ✓ Special designs according to customer specifications possible
- ✓ FODH/2 can be installed in the FODH component rack (special stepped 1.8m Fan-out) in subrack (page 126) by using the FODH slot module (page 127).

### Dimensions and installation data for FO connectors:

Fibers	2 – 24	36 – 72	96 – 144
Length of splitter	64 mm	64 mm	64 mm
Ø Red clip	36 mm	42 mm	50 mm
Ø Protective hose	28.5 mm	35 mm	42 mm
Connector lengths*			
shortest fan-out	550 mm	550 mm	550 mm
longest fan-out (for max. number of fibers)	800 mm	1400 mm	1700 mm

\* for standard length gradation of 50 mm, ensuring the most compact design possible. Special assemblies per customer specifications are available.

Dimensions are approximate figures.



Description	Type	Order No.
FODH/2 Fiber Optic Trunk Cable / Variant 2	on request	on request

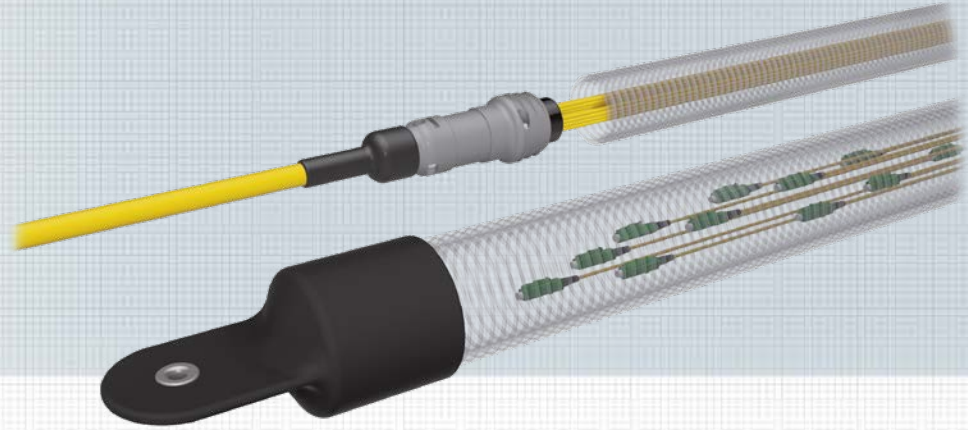
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**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

# FODH / E

## Fiber Optic Trunk Cable / Variant E



The FO distribution system for smaller installations and narrow feeds. This Eco variant is based on a plastic distribution head and is the slimmest and lightest in the EasyLan® product range.

- for small installation environments
- IP20
- plastic distribution head
- up to 24 fibers
- maximum diameter of 28.5 mm
- fan-outs fed in buckle-free corrugated hose

### Advantages:

- ✓ Mounting in a housing opening
- ✓ Stepped whip length: 5cm each
- ✓ All common types of connectors like LC, SC, ST, FC or E2000®
- ✓ Available in PC or APC polish
- ✓ All types available with Kevlar reinforced 1.8mm Fan-outs or with 0.9mm Fan-outs FR-LSOH
- ✓ Kevlar reinforced colored Fan-outs: Fiber typical OS2: yellow; OM2: black; OM3: aqua; OM4: violet; Each with colored rings according to IEC60304
- ✓ Colored 0.9mm Fan-outs according to IEC60304
- ✓ Special designs according to customer specifications possible
- ✓ FODH/2 can be installed in the FODH component rack (special stepped 1.8m Fan-out) in subrack (page 126) by using the FODH slot module (page 127).

### Dimensions and installation data for FO connectors:

Fibers	2 – 24
Length of splitter	69 mm
Ø Splitter	26.1 mm
Ø Protective hose	28.5 mm
Connector lengths*	
shortest fan-out	550 mm
longest fan-out (for max. number of fibers)	1100 mm

\* for standard length gradation of 50 mm, ensuring the most compact design possible. Special assemblies per customer specifications are available. Dimensions are approximate figures.

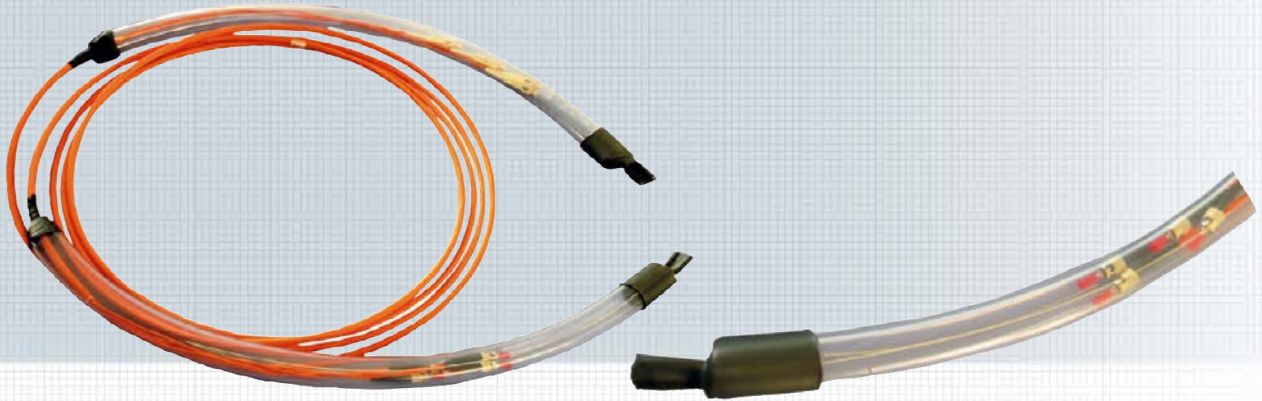


Description	Type	Order No.
FODH/3 Fiber Optic Trunk Cable / Variant E	on request	on request

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# FOCT Distribution System



Connectors assembled directly onto the cores, offering the following advantages: ease of follow-on handling, slim build and cost-effective. The pre-assembled cores can be quickly and securely connected with couplings, eliminating the need for splicing and on-site assembly. As with all our FO trunks, the manufacturing process is carried out under laboratory conditions using cutting-edge technology.

- PC and APC polish, plus tuned connectors
- Connectors: SC, ST, FC, E2000®, LS, etc.
- Break-out or mini break-out cable
- Extra-slim build
- Pre-assembled with all major connector types
- One-side / dual-side assembly
- Graduated fibers
- Up to 24 fibers
- Fiber To The Desk
- Fitted with transparent protective hose, depending on version
- Environmentally friendly transport packaging
- Additional labeling upon request (e.g. floor, room number etc.)

Optimal system packaging ensures safe transport. The roll can be left in the packaging during subsequent wiring efforts - simply open the perforated lid on the side of the box and use the box to assist in unrolling cable.



Upon request, trunk cables can be sorted per your specifications and packaged on a pallet.



Description	Type	Order No.
FOCT-Break-out Fiber Optic Trunk Cable / Variant Break-out	on request	on request

E2000® is a registered trademark of Diamond GmbH



**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

# MPO Cable



The MPO cables have been specially designed for the high demands placed on packing density, making reversible and space-saving FO cabling possible in data centers.

The various fiber quality levels are designated by different colored plugs.

#### Properties:

- 4, 8, 12 or 24 fibers
- Spring-loaded ferrules
- PushPull locking
- PC and APC polish
- Additional lettering on request (e.g. room number etc.)

#### Application:

- Data center
- Plug & Play fiber optic installation
- Backbone cabling

Description	Multimode	Multimode	Singlemode
<b>MTP Multifiber connector type</b>	<b>MTP Elite PC 0°</b>	<b>MTP Elite PC 0°</b>	<b>MTP Elite APC 8°</b>
Color MTP housing	turquoise	magenta	yellow
I L insertion loss	typ. 0.15 dB / max. 0.35 dB	typ. 0.15 dB / max. 0.35 dB	typ. 0.15 dB / max. 0.35 dB
R L return loss	typ. > 35 dB / min. 25 dB	typ. > 35 dB / min. 25 dB	typ. > 65 dB / min. 55 dB
Polarity	Method A / B / C	Method A / B / C	Method A / C
Color single plug housing	turquoise	magenta	Blue (LC) / green (LC APC)
Norm	IEC 61 754-7	IEC 61 754-7	IEC 61 754-7
Temperature range (°C)	-40 to +80	-40 to +80	-40 to +80
Mating cycles	1000	1000	1000

Description	Type	Order No.
MPO/MTP® Cable	on request	on request

MTP® is a registered trademark of US Conec Ltd.





# Service Reel



No company should be without a service reel to handle emergency situations and to bridge potential outages in the event of service work, maintenance and repair efforts. We offer you various configurations: from small hand rolls to convenient trolleys. A high-quality Fiber Optic Distribution Head (FODH) with graduated connector lengths is assembled on the roll-out side. Prior to installation, the connectors are protected from external influences in a waterproof (IP67) installation hose which protects against excessive pulling and lateral pressure. The internal cable end is connected to adapters and is assembled in a dust-impervious, bump-resistant housing (IP50). High-quality materials and the EasyLan distribution system ensure long service life. Custom solutions are developed according to your specifications.

### Range of Application:

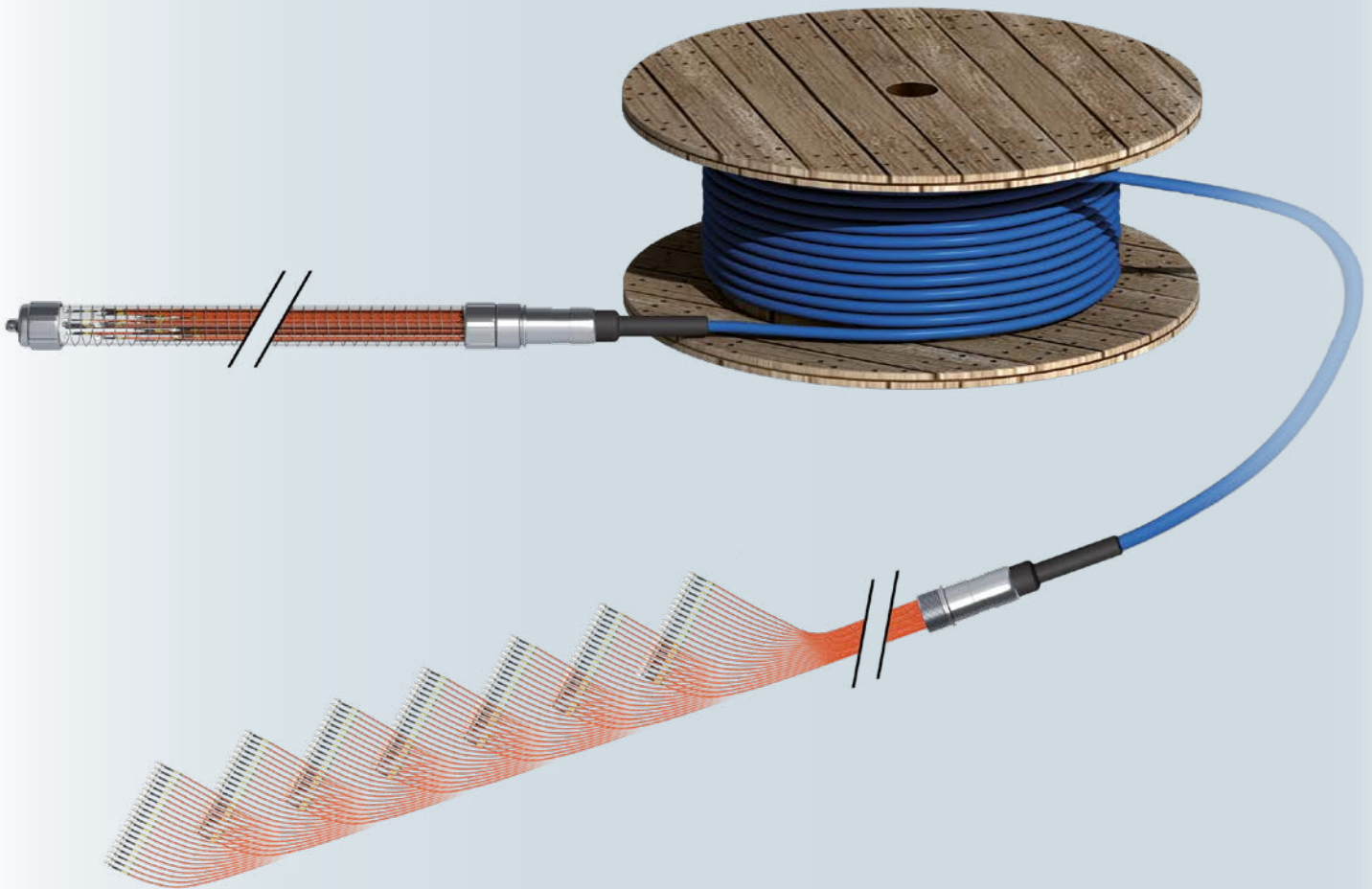
- Construction of replacement connection in the event that FOC links fail due to damage. Here, the reel is brought to the network distribution cabinet and the cable is drawn to the opposite end using the installation box. Active components are connected via FO adapter cables.
- In general, installation is possible in any logistics and manufacturing environment in which FO has been laid in ducts.

Description	Type	Order No.
Service Reel	on request	on request



# 6

## Fiber Optic Cable for confection



# 06 Fiber Optic Cable for confection

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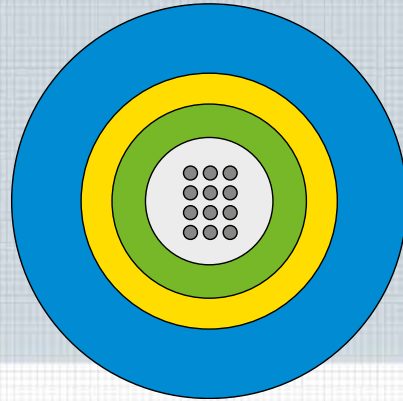
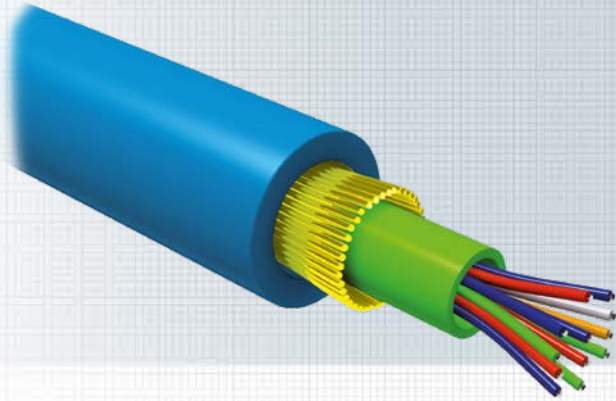
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Fiber Optic  
Cable

# Universal Central Tube Cable

## 2 - 24 fibers – for confection



This cable can be used for LAN and WAN backbones, tele-com access lines, fibre to business and fibre to the building drop connections as well as fibre to the home drop and access connections. With its FireBur® LSHF sheathing this cable is ideal for mixed indoor and outdoor installation. This cable features a high tensile strength and a degree of rodent protection, effective in many cases. It is equally suited for installation in ducts and on trays. The cable may be used for direct burial with proper sand back filling.

#### Standards:

ISO 11801 2<sup>nd</sup> edition, EN 50173-1:2002, IEC 60794-1

#### Flame resistance:

LSHF (LSOH): IEC 60332-1-2; IEC 60754-1; IEC 60754-2; IEC 61034-2;  
Class E<sub>ca</sub>

#### Caution:

**This cable is used exclusively for assembly of trunks and is not supplied by the meter!**

#### Description

UC-B FO Cable 6 fibers 9/125µm OS2/A2

UC-B FO Cable 8 fibers 9/125µm OS2/A2\*

UC-B FO Cable 12 fibers 9/125µm OS2/A2\*

UC-B FO Cable 24 fibers 9/125µm OS2/A2

UC-B FO Cable 6 fibers 50/125µm OM4

UC-B FO Cable 8 fibers 50/125µm OM4\*

UC-B FO Cable 12 fibers 50/125µm OM4\*

UC-B FO Cable 24 fibers 50/125µm OM4

OM3 and other fibers

\*In stock

**Only for ready-made trunks, not available by the meter!**

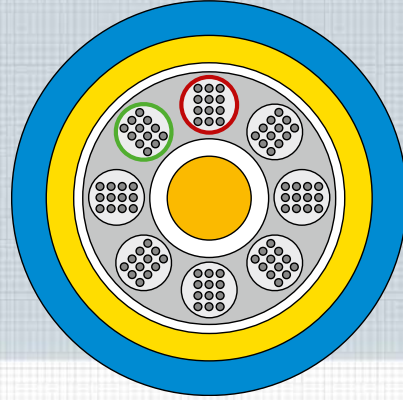
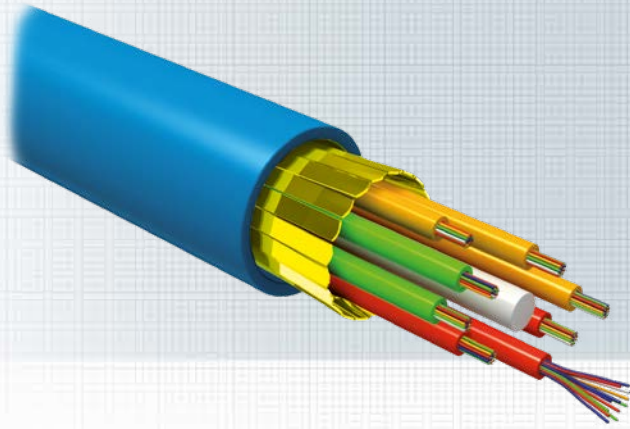


### Physical Properties

Attribute	IEC 60794-1-2 Method	Limits
Nominal outer diameter		2-16 fibres: 7.5 mm 24 fibres: 8.0 mm
Nominal weight		2-16 fibres: 55 kg/km 24 fibres: 60 kg/km
Maximum installation tensile strength	E1	1500 N (fibre strain less than 1/2 of proof test level)
Short term tensile strength	E1	1000 N (fibre strain less than 1/3 of proof test level)
Permanent tensile strength	E1	700 N (no attenuation change, fibre strain less than 1/4 of proof test level)
Compressive strength (crush)	E3	2000 N / 100m
Impact	E4	20 Nm (no attenuation change, no broken cable elements)
Torsion	E7	5 cycles ± 1 turns
Kink	E10	The cables do not form a kink when a loop is drawn together to a diameter of 200 mm
Min. bending radius, unloaded	E11	R = 60 mm
Min. bending radius,loaded		R = 100 mm
Temperature range	F1	Storage: -40°C to +60°C (short term up to 70°C) Installation: -15°C to +40°C Operation: -30°C to +70°C
Water penetration	F5B	no water on free end
Heath of combustion		2-16 fibres: 1100 MJ/km = 0.31 kWh/m 24 fibres: 1300 MJ/km = 0.36 kWh/m

# Universal Stranded Loose Tube Cable

## 48 - 144 fibers



- Universal indoor/outdoor cable for LAN, MAN and WAN backbones
- Directly installation in the ground
- Degree of rodent protection, effective in many cases

### Specifications:

Standards	ISO 11801 2 <sup>nd</sup> edition, IEC 60794-2, EN 50 173-1,
Flame Resistance	LSHF (FRNC): IEC 60332-1-2; IEC 60754-2; IEC 61034; Class E <sub>ca</sub>
Central strength member	ø2.5 mm FRP rod
Loose tube	ø2.3 mm gel-filled loose tubes, with 12 fibres each, up to 18 tubes in two layers, for lay-up refer to B04
Water blocking	The core is water blocked using swell able tape and tread
Wrapping	Polyester nonwoven
Reinforcement	Layer of glass fibre yarns as reinforcement and rodent protection
Ripcord	Polyester ripcord for easy slitting of the sheath
Sheath	1.5 mm FireBur® sheath, standard colour blue, halogen free, flame retardant, thermoplastic sheathing compound acc. to EN 50290-2-27, UV stabilised

### Caution:

**This cable is used exclusively for assembly of trunks and is not supplied by the meter!**

### Description

UC-B FO Cable 24 fibers 9/125µm OS2/A2*
UC-B FO Cable 48 fibers 9/125µm OS2/A2*
UC-B FO Cable 72 fibers 9/125µm OS2/A2*
UC-B FO Cable 96 fibers 9/125µm OS2/A2
UC-B FO Cable 144 fibers 9/125µm OS2/A2
UC-B FO Cable 24 fibers 50/125µm OM4*
UC-B FO Cable 48 fibers 50/125µm OM4*
UC-B FO Cable 72 fibers 50/125µm OM4*
UC-B FO Cable 96 fibers 50/125µm OM4
UC-B FO Cable 144 fibers 50/125µm OM4
OM3 and other fibers

\*In stock

**Only for ready-made trunks, not available by the meter!**



### Physical Properties

Attribute	IEC 60794-1-2 Method	Werte				
Fibre count		48	72	96	120	144
Nominal diameter [mm]			11.0	13.0	14.0	
Nominal weight [kg/km]			130	165	200	
Short term tensile strength (some days) [N]	E1	> 5000				
Permanent tensile strength [N]	E1	> 3500				
Crush (compressive strength) [N/100]	E3	3000				
Impact [J]	E4	20				
Torsion	E7	5 cycles ± 1 turns				
Kink	E10	The cables do not form a kink when a loop is drawn together to a diameter 12 times the cable nominal diameter				
Minimum bending radius, [mm]	E11		150	180	200	
Temperature range	F1	Installation: -40°C to +70°C Operation *): -40°C to +70°C Storage: -40°C to +70°C				
Water penetration	F5	no water on free end				
Heath of combustion [MJ/km] [kWh/m]			2000	2700	3500	
			0.56	0.75	0.97	

\*) The cables will operate without any attenuation variation ( $\leq 0.05$  dB) in the temperature interval  $-30^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$ .  
The cables will operate with a maximum attenuation variation of 0.1 dB/km in the temperature interval  $-40^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$ .

# 7

## Fiber Optic Patchcords





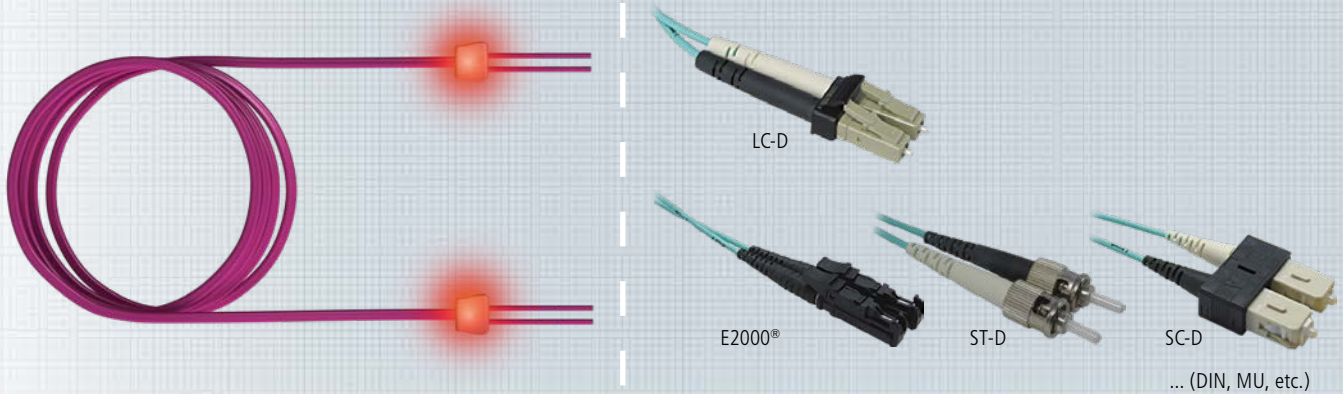
# 07 Fiber Optic Patchcords

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FO-  
Patchcord

# LC LED Duplex Patch and Adapter Cables



FO LED patchcords as connection or adapter cables. The standard version of the connection cable is crossover. For the SC / LC duplex, subsequent mutual rotation of the connectors is possible.

The FO LED patchcord has been developed especially for use in offices, industry and data centers. The cable design ensures that the optical transmission parameters offer a maximum of data security. The patented method that permits cable ends to be easily matched to one another significantly increases operational safety, and unintentional disconnection of patchcords is virtually impossible. After the detector makes contact with one end of the patchcord, both cable ends are electrically excited and light up. The FO LED patchcord can be ordered together with all standard FO connectors.

- SFF connectors for high packing density. Two connections in the size of one adapter
- One-piece design (optional)
- Short, rigid length of the connector
- Color codable
- Simple duplexing of simplex connectors

Use of a non-approved detector may result in permanent damage to the FO LED patchcord.

You can find the appropriate detector on page 152.

## Specification:

Norms	IEC 61 754-20, TIA 604-10-A
Technology	Ceramic ferrule (1.25mm)
Tuning	in 45° increments
Strain relief	100 N
Operating temperature	-10 °C to +70 °C
Material	flame-retardant acc. to UL 94 V-0
Service life	minimum 1000 mating cycles
Housing colors	per connector norm
Sheath	FRNC: IEC 60 332-1; IEC 50 754-2; IEC 61 034
Cable color	heather violet RAL 4003 (Multimode OM4) aqua RAL 6027 (Multimode OM3) yellow RAL 1021 (Singlemode OS2)
Build	I-V(ZN)HH
Packaging unit	individually packaged



LED Detector (p. 152)

## Ordering information

Description	Type	Order No.
LCD DIN E09/125 OS2, 1,0m	LSD07200010	<a href="#">HEL29LZ01L</a>
LCD DIN E09/125 OS2, 2,0m	LSD07200020	<a href="#">HEL29LZ02L</a>
LCD DIN E09/125 OS2, 3,0m	LSD07200030	<a href="#">HEL29LZ03L</a>
LCD DIN E09/125 OS2, 5,0m	LSD07200050	<a href="#">HEL29LZ05L</a>
LCD DIN E09/125 OS2, 7,5m	LSD07200075	<a href="#">HEL29LZ07L</a>
LCD DIN E09/125 OS2, 10,0m	LSD07200100	<a href="#">HEL29LZ10L</a>
LCD-APC DIN E09/125 OS2	LSD97200000	on request
LCD FC E09/125 OS2, 1,0m	LSD08200010	<a href="#">HEL29LF01L</a>
LCD FC E09/125 OS2, 2,0m	LSD08200020	<a href="#">HEL29LF02L</a>
LCD FC E09/125 OS2, 3,0m	LSD08200030	<a href="#">HEL29LF03L</a>
LCD FC E09/125 OS2, 5,0m	LSD08200050	<a href="#">HEL29LF05L</a>
LCD FC E09/125 OS2, 7,5m	LSD08200075	<a href="#">HEL29LF07L</a>
LCD FC E09/125 OS2, 10,0m	LSD08200100	<a href="#">HEL29LF10L</a>
LCD FC-APC E09/125 OS2	LSD98200000	on request
LCD-APC FC-APC E09/125 OS2	LSD98290000	on request
LCD LCD G50/125 OM3, 1,0m	LSD32200010	<a href="#">HEL23LL01L</a>
LCD LCD E09/125 OS2, 1,0m	LSD02200010	<a href="#">HEL29LL01L</a>
LCD LCD E09/125 OS2, 2,0m	LSD02200020	<a href="#">HEL29LL02L</a>
LCD LCD E09/125 OS2, 3,0m	LSD02200030	<a href="#">HEL29LL03L</a>
LCD LCD E09/125 OS2, 5,0m	LSD02200050	<a href="#">HEL29LL05L</a>
LCD LCD E09/125 OS2, 7,5m	LSD02200075	<a href="#">HEL29LL07L</a>
LCD LCD E09/125 OS2, 10,0m	LSD02200100	<a href="#">HEL29LL10L</a>
LCD LCD-APC E09/125 OS2	LSD92200000	on request
LCD-APC LCD-APC E09/125 OS2	LSD92290000	on request
LCD E2000® G50/125 OM3, 1,0m	LSD32400010	<a href="#">HEL23LE01L</a>
LCD E2000® G50/125 OM3, 2,0m	LSD32400020	<a href="#">HEL23LE02L</a>
LCD E2000® G50/125 OM3, 3,0m	LSD32400030	<a href="#">HEL23LE03L</a>
LCD E2000® G50/125 OM3, 5,0m	LSD32400050	<a href="#">HEL23LE05L</a>
LCD E2000® G50/125 OM3, 7,5m	LSD32400075	<a href="#">HEL23LE07L</a>
LCD E2000® G50/125 OM3, 10,0m	LSD32400100	<a href="#">HEL23LE10L</a>

E2000® is a registered trademark of Diamond GmbH



**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

# LC LED Duplex Patch and Adapter Cables – Continuation

## Ordering information

Description	Type	Order No.
LCD E2000® E09/125 OS2, 1,0m	LSD02400010	<a href="#">HEL29LE01L</a>
LCD E2000® E09/125 OS2, 2,0m	LSD02400020	<a href="#">HEL29LE02L</a>
LCD E2000® E09/125 OS2, 3,0m	LSD02400030	<a href="#">HEL29LE03L</a>
LCD E2000® E09/125 OS2, 5,0m	LSD02400050	<a href="#">HEL29LE05L</a>
LCD E2000® E09/125 OS2, 7,5m	LSD02400075	<a href="#">HEL29LE07L</a>
LCD E2000® E09/125 OS2, 10,0m	LSD02400100	<a href="#">HEL29LE10L</a>
LCD E2000®-APC E09/125 OS2	LSD92480000	<a href="#">on request</a>
LCD-APC E2000®-APC E09/125 OS2	LSD92490000	<a href="#">on request</a>
LCD MU G50/125 OM3, 1,0m	LSD32500010	<a href="#">HEL23LU01L</a>
LCD MU G50/125 OM3, 2,0m	LSD32500020	<a href="#">HEL23LU02L</a>
LCD MU G50/125 OM3, 3,0m	LSD32500030	<a href="#">HEL23LU03L</a>
LCD MU G50/125 OM3, 5,0m	LSD32500050	<a href="#">HEL23LU05L</a>
LCD MU G50/125 OM3, 7,5m	LSD32500075	<a href="#">HEL23LU07L</a>
LCD MU G50/125 OM3, 10,0m	LSD32500100	<a href="#">HEL23LU10L</a>
LCD MU E09/125 OS2, 1,0m	LSD02500010	<a href="#">HEL29LU01L</a>
LCD MU E09/125 OS2, 2,0m	LSD02500020	<a href="#">HEL29LU02L</a>
LCD MU E09/125 OS2, 3,0m	LSD02500030	<a href="#">HEL29LU03L</a>
LCD MU E09/125 OS2, 5,0m	LSD02500050	<a href="#">HEL29LU05L</a>
LCD MU E09/125 OS2, 7,5m	LSD02500075	<a href="#">HEL29LU07L</a>
LCD MU E09/125 OS2, 10,0m	LSD02500100	<a href="#">HEL29LU10L</a>
LCD-APC MU E09/125 OS2	LSD92500000	<a href="#">on request</a>
LCD SCD G50/125 OM3, 1,0m	LSD32100010	<a href="#">HEL23LC01L</a>
LCD SCD G50/125 OM3, 2,0m	LSD32100020	<a href="#">HEL23LC02L</a>
LCD SCD G50/125 OM3, 3,0m	LSD32100030	<a href="#">HEL23LC03L</a>
LCD SCD G50/125 OM3, 5,0m	LSD32100050	<a href="#">HEL23LC05L</a>
LCD SCD G50/125 OM3, 7,5m	LSD32100075	<a href="#">HEL23LC07L</a>
LCD SCD G50/125 OM3, 10,0m	LSD32100100	<a href="#">HEL23LC10L</a>
LCD SCD E09/125 OS2, 1,0m	LSD02100010	<a href="#">HEL29LC01L</a>
LCD SCD E09/125 OS2, 2,0m	LSD02100020	<a href="#">HEL29LC02L</a>
LCD SCD E09/125 OS2, 3,0m	LSD02100030	<a href="#">HEL29LC03L</a>
LCD SCD E09/125 OS2, 5,0m	LSD02100050	<a href="#">HEL29LC05L</a>
LCD SCD E09/125 OS2, 7,5m	LSD02100075	<a href="#">HEL29LC07L</a>
LCD SCD E09/125 OS2, 10,0m	LSD02100100	<a href="#">HEL29LC10L</a>
LCD SCD-APC E09/125 OS2, 1,0m	LSD02100010	<a href="#">HEL29LC01L</a>
LCD SCD-APC E09/125 OS2, 2,0m	LSD02100020	<a href="#">HEL29LC02L</a>
LCD SCD-APC E09/125 OS2, 3,0m	LSD02100030	<a href="#">HEL29LC03L</a>
LCD SCD-APC E09/125 OS2, 5,0m	LSD02100050	<a href="#">HEL29LC05L</a>
LCD SCD-APC E09/125 OS2, 7,5m	LSD02100075	<a href="#">HEL29LC07L</a>
LCD SCD-APC E09/125 OS2, 10,0m	LSD02100100	<a href="#">HEL29LC10L</a>
LCD-APC SCD-APC E09/125 OS2	LSD92190000	<a href="#">on request</a>

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## Ordering information

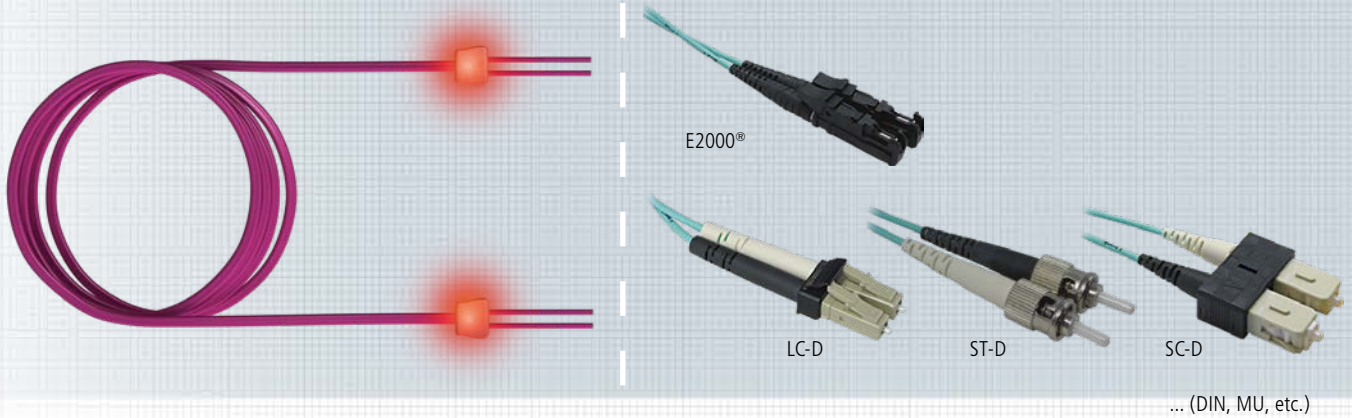
Description	Type	Order No.
LCD ST G50/125 OM3, 1,0m	LSD32300010	HEL23LT01L
LCD ST G50/125 OM3, 2,0m	LSD32300020	HEL23LT02L
LCD ST G50/125 OM3, 3,0m	LSD32300030	HEL23LT03L
LCD ST G50/125 OM3, 5,0m	LSD32300050	HEL23LT05L
LCD ST G50/125 OM3, 7,5m	LSD32300075	HEL23LT07L
LCD ST G50/125 OM3, 10,0m	LSD32300100	HEL23LT10L
LCD ST E09/125 OS2, 1,0m	LSD02300010	HEL29LT01L
LCD ST E09/125 OS2, 2,0m	LSD02300020	HEL29LT02L
LCD ST E09/125 OS2, 3,0m	LSD02300030	HEL29LT03L
LCD ST E09/125 OS2, 5,0m	LSD02300050	HEL29LT05L
LCD ST E09/125 OS2, 7,5m	LSD02300075	HEL29LT07L
LCD ST E09/125 OS2, 10,0m	LSD02300100	HEL29LT10L
LCD-APC ST E09/125 OS2	LSD92300000	on request
LCD LCD G50/125 OM4, 1,0m	LSD42200010	HEL24LL01L
LCD LCD G50/125 OM4, 2,0m	LSD42200020	HEL24LL02L
LCD LCD G50/125 OM4, 3,0m	LSD42200030	HEL24LL03L
LCD LCD G50/125 OM4, 5,0m	LSD42200050	HEL24LL05L
LCD LCD G50/125 OM4, 7,5m	LSD42200075	HEL24LL07L
LCD LCD G50/125 OM4, 10,0m	LSD42200100	HEL24LL10L
LCD E2000® G50/125 OM4, 1,0m	LSD42400010	HEL24LE01L
LCD E2000® G50/125 OM4, 2,0m	LSD42400020	HEL24LE02L
LCD E2000® G50/125 OM4, 3,0m	LSD42400030	HEL24LE03L
LCD E2000® G50/125 OM4, 5,0m	LSD42400050	HEL24LE05L
LCD E2000® G50/125 OM4, 7,5m	LSD42400075	HEL24LE07L
LCD E2000® G50/125 OM4, 10,0m	LSD42400100	HEL24LE10L
LCD MU G50/125 OM4, 1,0m	LSD42500010	HEL24LU01L
LCD MU G50/125 OM4, 2,0m	LSD42500020	HEL24LU02L
LCD MU G50/125 OM4, 3,0m	LSD42500030	HEL24LU03L
LCD MU G50/125 OM4, 5,0m	LSD42500050	HEL24LU05L
LCD MU G50/125 OM4, 7,5m	LSD42500075	HEL24LU07L
LCD MU G50/125 OM4, 10,0m	LSD42500100	HEL24LU10L
LCD SCD G50/125 OM4, 1,0m	LSD42100010	HEL24LC01L
LCD SCD G50/125 OM4, 2,0m	LSD42100020	HEL24LC02L
LCD SCD G50/125 OM4, 3,0m	LSD42100030	HEL24LC03L
LCD SCD G50/125 OM4, 5,0m	LSD42100050	HEL24LC05L
LCD SCD G50/125 OM4, 7,5m	LSD42100075	HEL24LC07L
LCD SCD G50/125 OM4, 10,0m	LSD42100100	HEL24LC10L
LCD ST G50/125 OM4, 1,0m	LSD42300010	HEL24LT01L
LCD ST G50/125 OM4, 2,0m	LSD42300020	HEL24LT02L
LCD ST G50/125 OM4, 3,0m	LSD42300030	HEL24LT03L
LCD ST G50/125 OM4, 5,0m	LSD42300050	HEL24LT05L
LCD ST G50/125 OM4, 7,5m	LSD42300075	HEL24LT07L
LCD ST G50/125 OM4, 10,0m	LSD42300100	HEL24LT10L

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**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

# E2000® LED Duplex Patch and Adapter Cables



FO LED patchcords as connection or adapter cables. The standard version of the connection cable is crossed. For the SC / LC duplex, subsequent mutual rotation of the connectors is possible.

The FO LED patchcord has been developed especially for use in offices, industry and data centers. The cable design ensures that the optical transmission parameters offer a maximum of data security. The patented method that permits cable ends to be easily matched to one another significantly increases operational safety, and unintentional disconnection of patchcords is virtually impossible. After the detector makes contact with one end of the patchcord, both cable ends are electrically excited and light up. The FO LED patchcord can be ordered together with all standard FO connectors.

- PushPull Connectors
- Integrated protective cap protects end surfaces against dirt and mechanical impairment and prevents emission of laser light when unplugged
- One-piece design
- Color-codable connectors and adapters
- Mechanical codable connectors
- Suitable for high-power applications

Use of a non-approved detector may result in permanent damage to the FO LED patchcord.

You can find the appropriate detector on page 152.

## Specification:

Norms	IEC 61 754-15, TIA 604-16
Technology	Ceramic ferrule (2.5 mm)
Tuning	in 60° increments
Strain relief	100 N
Operating temperature	-10 °C to +70 °C
Material	flame-retardant acc. to UL 94 V-0
Service life	minimum 1000 mating cycles
Housing colors	per connector norm
Sheath	FRNC: IEC 60 332-1; IEC 50 754-2; IEC 61 034
Cable color	heather violet RAL 4003 (Multimode OM4) aqua RAL 6027 (Multimode OM3) yellow RAL 1021 (Singlemode OS2)
Build	I-V(ZN)HH
Packaging unit	individually packaged



LED Detector (p. 152)

## Ordering information

Description	Type	Order No.
E2000® DIN E09/125 OS2, 1,0m	LSD07400010	<a href="#">HEL29EZ01L</a>
E2000® DIN E09/125 OS2, 2,0m	LSD07400020	<a href="#">HEL29EZ02L</a>
E2000® DIN E09/125 OS2, 3,0m	LSD07400030	<a href="#">HEL29EZ03L</a>
E2000® DIN E09/125 OS2, 5,0m	LSD07400050	<a href="#">HEL29EZ05L</a>
E2000® DIN E09/125 OS2, 7,5m	LSD07400075	<a href="#">HEL29EZ07L</a>
E2000® DIN E09/125 OS2, 10,0m	LSD07400100	<a href="#">HEL29EZ10L</a>
E2000®-APC DIN E09/125 OS2	LSD97400000	on request
E2000® FC E09/125 OS2, 1,0m	LSD08400010	<a href="#">HEL29EF01L</a>
E2000® FC E09/125 OS2, 2,0m	LSD08400020	<a href="#">HEL29EF02L</a>
E2000® FC E09/125 OS2, 3,0m	LSD08400030	<a href="#">HEL29EF03L</a>
E2000® FC E09/125 OS2, 5,0m	LSD08400050	<a href="#">HEL29EF05L</a>
E2000® FC E09/125 OS2, 7,5m	LSD08400075	<a href="#">HEL29EF07L</a>
E2000® FC E09/125 OS2, 10,0m	LSD08400100	<a href="#">HEL29EF10L</a>
E2000® FC-APC E09/125 OS2	LSD98400000	on request
E2000®-APC FC-APC E09/125 OS2	LSD98490000	on request
E2000® LCD G50/125 OM3, 1,0m	LSD32400010	<a href="#">HEL23LE01L</a>
E2000® LCD G50/125 OM3, 2,0m	LSD32400020	<a href="#">HEL23LE02L</a>
E2000® LCD G50/125 OM3, 3,0m	LSD32400030	<a href="#">HEL23LE03L</a>
E2000® LCD G50/125 OM3, 5,0m	LSD32400050	<a href="#">HEL23LE05L</a>
E2000® LCD G50/125 OM3, 7,5m	LSD32400075	<a href="#">HEL23LE07L</a>
E2000® LCD G50/125 OM3, 10,0m	LSD32400100	<a href="#">HEL23LE10L</a>
E2000® LCD E09/125 OS2, 1,0m	LSD02400010	<a href="#">HEL29LE01L</a>
E2000® LCD E09/125 OS2, 2,0m	LSD02400020	<a href="#">HEL29LE02L</a>
E2000® LCD E09/125 OS2, 3,0m	LSD02400030	<a href="#">HEL29LE03L</a>
E2000® LCD E09/125 OS2, 5,0m	LSD02400050	<a href="#">HEL29LE05L</a>
E2000® LCD E09/125 OS2, 7,5m	LSD02400075	<a href="#">HEL29LE07L</a>
E2000® LCD E09/125 OS2, 10,0m	LSD02400100	<a href="#">HEL29LE10L</a>
E2000® LCD-APC E09/125 OS2	LSD92480000	on request
E2000®-APC LCD-APC E09/125 OS2	LSD92490000	on request

E2000® is a registered trademark of Diamond GmbH



**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

# E2000® LED Duplex Patch and Adapter Cables – Continuation

## Ordering information

Description	Type	Order No.
E2000® E2000® G50/125 OM3, 1,0m	LSD34400010	<a href="#">HEL23EE01L</a>
E2000® E2000® G50/125 OM3, 2,0m	LSD34400020	<a href="#">HEL23EE02L</a>
E2000® E2000® G50/125 OM3, 3,0m	LSD34400030	<a href="#">HEL23EE03L</a>
E2000® E2000® G50/125 OM3, 5,0m	LSD34400050	<a href="#">HEL23EE05L</a>
E2000® E2000® G50/125 OM3, 7,5m	LSD34400075	<a href="#">HEL23EE07L</a>
E2000® E2000® G50/125 OM3, 10,0m	LSD34400100	<a href="#">HEL23EE10L</a>
E2000® E2000® E09/125 OS2, 1,0m	LSD04400010	<a href="#">HEL29EE01L</a>
E2000® E2000® E09/125 OS2, 2,0m	LSD04400020	<a href="#">HEL29EE02L</a>
E2000® E2000® E09/125 OS2, 3,0m	LSD04400030	<a href="#">HEL29EE03L</a>
E2000® E2000® E09/125 OS2, 5,0m	LSD04400050	<a href="#">HEL29EE05L</a>
E2000® E2000® E09/125 OS2, 7,5m	LSD04400075	<a href="#">HEL29EE07L</a>
E2000® E2000® E09/125 OS2, 10,0m	LSD04400100	<a href="#">HEL29EE10L</a>
E2000® E2000®-APC E09/125 OS2	LSD94400000	<a href="#">on request</a>
E2000®-APC E2000®-APC E09/125 OS2	LSD94490000	<a href="#">on request</a>
E2000® MU G50/125 OM3, 1,0m	LSD34500010	<a href="#">HEL23EU01L</a>
E2000® MU G50/125 OM3, 2,0m	LSD34500020	<a href="#">HEL23EU02L</a>
E2000® MU G50/125 OM3, 3,0m	LSD34500030	<a href="#">HEL23EU03L</a>
E2000® MU G50/125 OM3, 5,0m	LSD34500050	<a href="#">HEL23EU05L</a>
E2000® MU G50/125 OM3, 7,5m	LSD34500075	<a href="#">HEL23EU07L</a>
E2000® MU G50/125 OM3, 10,0m	LSD34500100	<a href="#">HEL23EU10L</a>
E2000® MU E09/125 OS2, 1,0m	LSD04500010	<a href="#">HEL29EU01L</a>
E2000® MU E09/125 OS2, 2,0m	LSD04500020	<a href="#">HEL29EU02L</a>
E2000® MU E09/125 OS2, 3,0m	LSD04500030	<a href="#">HEL29EU03L</a>
E2000® MU E09/125 OS2, 5,0m	LSD04500050	<a href="#">HEL29EU05L</a>
E2000® MU E09/125 OS2, 7,5m	LSD04500075	<a href="#">HEL29EU07L</a>
E2000® MU E09/125 OS2, 10,0m	LSD04500100	<a href="#">HEL29EU10L</a>
E2000®-APC MU E09/125 OS2	LSD94500000	<a href="#">on request</a>
E2000® SCD G50/125 OM3, 1,0m	LSD34100010	<a href="#">HEL23EC01L</a>
E2000® SCD G50/125 OM3, 2,0m	LSD34100020	<a href="#">HEL23EC02L</a>
E2000® SCD G50/125 OM3, 3,0m	LSD34100030	<a href="#">HEL23EC03L</a>
E2000® SCD G50/125 OM3, 5,0m	LSD34100050	<a href="#">HEL23EC05L</a>
E2000® SCD G50/125 OM3, 7,5m	LSD34100075	<a href="#">HEL23EC07L</a>
E2000® SCD G50/125 OM3, 10,0m	LSD34100100	<a href="#">HEL23EC10L</a>
E2000® SCD E09/125 OS2, 1,0m	LSD04100010	<a href="#">HEL29EC01L</a>
E2000® SCD E09/125 OS2, 2,0m	LSD04100020	<a href="#">HEL29EC02L</a>
E2000® SCD E09/125 OS2, 3,0m	LSD04100030	<a href="#">HEL29EC03L</a>
E2000® SCD E09/125 OS2, 5,0m	LSD04100050	<a href="#">HEL29EC05L</a>
E2000® SCD E09/125 OS2, 7,5m	LSD04100075	<a href="#">HEL29EC07L</a>
E2000® SCD E09/125 OS2, 10,0m	LSD04100100	<a href="#">HEL29EC10L</a>
E2000® SCD-APC E09/125 OS2	LSD94180000	<a href="#">on request</a>
E2000®-APC SCD-APC E09/125 OS2	LSD94190000	<a href="#">on request</a>

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## Ordering information

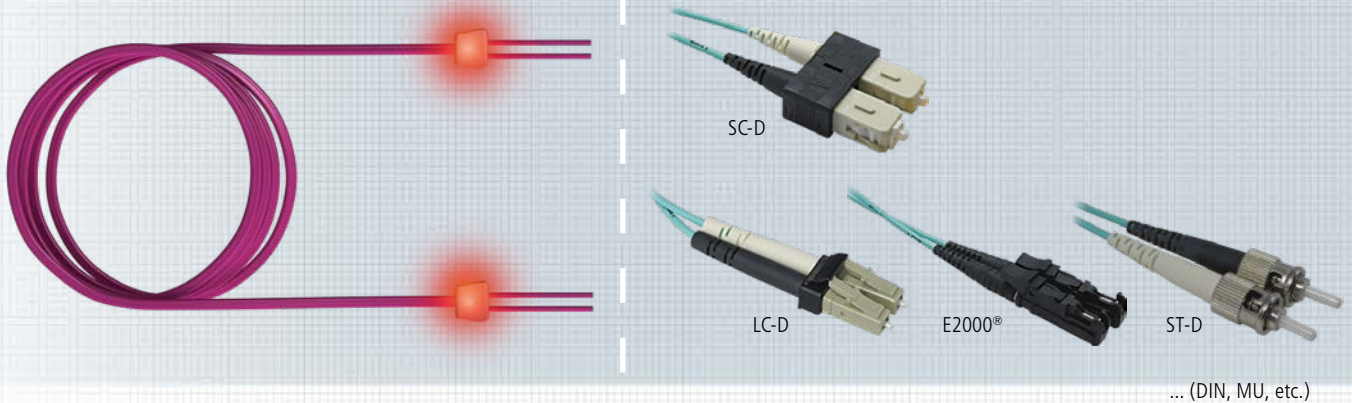
Description	Type	Order No.
E2000® ST G50/125 OM3, 1,0m	LSD34300010	<a href="#">HEL23ET01L</a>
E2000® ST G50/125 OM3, 2,0m	LSD34300020	<a href="#">HEL23ET02L</a>
E2000® ST G50/125 OM3, 3,0m	LSD34300030	<a href="#">HEL23ET03L</a>
E2000® ST G50/125 OM3, 5,0m	LSD34300050	<a href="#">HEL23ET05L</a>
E2000® ST G50/125 OM3, 7,5m	LSD34300075	<a href="#">HEL23ET07L</a>
E2000® ST G50/125 OM3, 10,0m	LSD34300100	<a href="#">HEL23ET10L</a>
E2000® ST E09/125 OS2, 1,0m	LSD04300010	<a href="#">HEL29ET01L</a>
E2000® ST E09/125 OS2, 2,0m	LSD04300020	<a href="#">HEL29ET02L</a>
E2000® ST E09/125 OS2, 3,0m	LSD04300030	<a href="#">HEL29ET03L</a>
E2000® ST E09/125 OS2, 5,0m	LSD04300050	<a href="#">HEL29ET05L</a>
E2000® ST E09/125 OS2, 7,5m	LSD04300075	<a href="#">HEL29ET07L</a>
E2000® ST E09/125 OS2, 10,0m	LSD04300100	<a href="#">HEL29ET10L</a>
E2000®-APC ST E09/125 OS2	LSD94300000	<a href="#">on request</a>
E2000® LCD G50/125 OM4, 1,0m	LSD42400010	<a href="#">HEL24LE01L</a>
E2000® LCD G50/125 OM4, 2,0m	LSD42400020	<a href="#">HEL24LE02L</a>
E2000® LCD G50/125 OM4, 3,0m	LSD42400030	<a href="#">HEL24LE03L</a>
E2000® LCD G50/125 OM4, 5,0m	LSD42400050	<a href="#">HEL24LE05L</a>
E2000® LCD G50/125 OM4, 7,5m	LSD42400075	<a href="#">HEL24LE07L</a>
E2000® LCD G50/125 OM4, 10,0m	LSD42400100	<a href="#">HEL24LE10L</a>
E2000® E2000® G50/125 OM4, 1,0m	LSD44400010	<a href="#">HEL24EE01L</a>
E2000® E2000® G50/125 OM4, 2,0m	LSD44400020	<a href="#">HEL24EE02L</a>
E2000® E2000® G50/125 OM4, 3,0m	LSD44400030	<a href="#">HEL24EE03L</a>
E2000® E2000® G50/125 OM4, 5,0m	LSD44400050	<a href="#">HEL24EE05L</a>
E2000® E2000® G50/125 OM4, 7,5m	LSD44400075	<a href="#">HEL24EE07L</a>
E2000® E2000® G50/125 OM4, 10,0m	LSD44400100	<a href="#">HEL24EE10L</a>
E2000® MU G50/125 OM4, 1,0m	LSD44500010	<a href="#">HEL24EU01L</a>
E2000® MU G50/125 OM4, 2,0m	LSD44500020	<a href="#">HEL24EU02L</a>
E2000® MU G50/125 OM4, 3,0m	LSD44500030	<a href="#">HEL24EU03L</a>
E2000® MU G50/125 OM4, 5,0m	LSD44500050	<a href="#">HEL24EU05L</a>
E2000® MU G50/125 OM4, 7,5m	LSD44500075	<a href="#">HEL24EU07L</a>
E2000® MU G50/125 OM4, 10,0m	LSD44500100	<a href="#">HEL24EU10L</a>
E2000® SCD G50/125 OM4, 1,0m	LSD44100010	<a href="#">HEL24EC01L</a>
E2000® SCD G50/125 OM4, 2,0m	LSD44100020	<a href="#">HEL24EC02L</a>
E2000® SCD G50/125 OM4, 3,0m	LSD44100030	<a href="#">HEL24EC03L</a>
E2000® SCD G50/125 OM4, 5,0m	LSD44100050	<a href="#">HEL24EC05L</a>
E2000® SCD G50/125 OM4, 7,5m	LSD44100075	<a href="#">HEL24EC07L</a>
E2000® SCD G50/125 OM4, 10,0m	LSD44100100	<a href="#">HEL24EC10L</a>
E2000® ST G50/125 OM4, 1,0m	LSD44300010	<a href="#">HEL24ET01L</a>
E2000® ST G50/125 OM4, 2,0m	LSD44300020	<a href="#">HEL24ET02L</a>
E2000® ST G50/125 OM4, 3,0m	LSD44300030	<a href="#">HEL24ET03L</a>
E2000® ST G50/125 OM4, 5,0m	LSD44300050	<a href="#">HEL24ET05L</a>
E2000® ST G50/125 OM4, 7,5m	LSD44300075	<a href="#">HEL24ET07L</a>
E2000® ST G50/125 OM4, 10,0m	LSD44300100	<a href="#">HEL24ET10L</a>

E2000® is a registered trademark of Diamond GmbH



**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

# SC LED Duplex Patch and Adapter Cables



FO LED patchcords as connection or adapter cables. The standard version of the connection cable is crossed. For the SC / LC duplex, subsequent mutual rotation of the connectors is possible.

The FO LED patchcord has been developed especially for use in offices, industry and data centers. The cable design ensures that the optical transmission parameters offer a maximum of data security. The patented method that permits cable ends to be easily matched to one another significantly increases operational safety, and unintentional disconnection of patchcords is virtually impossible. After the detector makes contact with one end of the patchcord, both cable ends are electrically excited and light up. The FO LED patchcord can be ordered together with all standard FO connectors.

- PushPull Connectors
- One-piece design
- High mechanical and thermal resilience per Telcordia GR-326-CORE
- IEC 60874-14 series

Use of a non-approved detector may result in permanent damage to the FO LED patchcord.

You can find the appropriate detector on page 152.

## Specification:

Norms	IEC 61754-15, TIA 604-16
Technology	Ceramic ferrule (2.5 mm)
Tuning	in 60° increments
Strain relief	100 N
Operating temperature	-10 °C to +70 °C
Material	flame-retardant acc. to UL 94 V-0
Service life	minimum 1000 mating cycles
Housing colors	per connector norm
Sheath	FRNC: IEC 60332-1; IEC 50754-2; IEC 61034
Cable color	heather violet RAL 4003 (Multimode OM4) aqua RAL 6027 (Multimode OM3) yellow RAL 1021 (Singlemode OS2)
Build	I-V(ZN)HH
Packaging unit	individually packaged



LED Detector (p. 152)

## Ordering information

Description	Type	Order No.
SCD DIN E09/125 OS2, 1,0m	LSD07100010	<a href="#">HEL29CZ01L</a>
SCD DIN E09/125 OS2, 2,0m	LSD07100020	<a href="#">HEL29CZ02L</a>
SCD DIN E09/125 OS2, 3,0m	LSD07100030	<a href="#">HEL29CZ03L</a>
SCD DIN E09/125 OS2, 5,0m	LSD07100050	<a href="#">HEL29CZ05L</a>
SCD DIN E09/125 OS2, 7,5m	LSD07100075	<a href="#">HEL29CZ07L</a>
SCD DIN E09/125 OS2, 10,0m	LSD07100100	<a href="#">HEL29CZ10L</a>
SCD-APC DIN E09/125 OS2	LSD87190000	on request
SCD FC E09/125 OS2, 1,0m	LSD08100010	<a href="#">HEL29CF01L</a>
SCD FC E09/125 OS2, 2,0m	LSD08100020	<a href="#">HEL29CF02L</a>
SCD FC E09/125 OS2, 3,0m	LSD08100030	<a href="#">HEL29CF03L</a>
SCD FC E09/125 OS2, 5,0m	LSD08100050	<a href="#">HEL29CF05L</a>
SCD FC E09/125 OS2, 7,5m	LSD08100075	<a href="#">HEL29CF07L</a>
SCD FC E09/125 OS2, 10,0m	LSD08100100	<a href="#">HEL29CF10L</a>
SCD FC-APC E09/125 OS2	LSD98100000	on request
SCD-APC FC-APC E09/125 OS2	LSD98190000	on request
SCD LCD G50/125 OM3, 1,0m	LSD32100010	<a href="#">HEL23LC01L</a>
SCD LCD G50/125 OM3, 2,0m	LSD32100020	<a href="#">HEL23LC02L</a>
SCD LCD G50/125 OM3, 3,0m	LSD32100030	<a href="#">HEL23LC03L</a>
SCD LCD G50/125 OM3, 5,0m	LSD32100050	<a href="#">HEL23LC05L</a>
SCD LCD G50/125 OM3, 7,5m	LSD32100075	<a href="#">HEL23LC07L</a>
SCD LCD G50/125 OM3, 10,0m	LSD32100100	<a href="#">HEL23LC10L</a>
SCD LCD E09/125 OS2, 1,0m	LSD02100010	<a href="#">HEL29LC01L</a>
SCD LCD E09/125 OS2, 2,0m	LSD02100020	<a href="#">HEL29LC02L</a>
SCD LCD E09/125 OS2, 3,0m	LSD02100030	<a href="#">HEL29LC03L</a>
SCD LCD E09/125 OS2, 5,0m	LSD02100050	<a href="#">HEL29LC05L</a>
SCD LCD E09/125 OS2, 7,5m	LSD02100075	<a href="#">HEL29LC07L</a>
SCD LCD E09/125 OS2, 10,0m	LSD02100100	<a href="#">HEL29LC10L</a>
SCD LCD-APC E09/125 OS2	LSD92100000	on request
SCD-APC LCD-APC E09/125 OS2	LSD92190000	on request

E2000® is a registered trademark of Diamond GmbH



**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

# SC LED Duplex Patch and Adapter Cables – Continuation

## Ordering information

Description	Type	Order No.
SCD E2000® G50/125 OM3, 1,0m	LSD34100010	HEL23EC01L
SCD E2000® G50/125 OM3, 2,0m	LSD34100020	HEL23EC02L
SCD E2000® G50/125 OM3, 3,0m	LSD34100030	HEL23EC03L
SCD E2000® G50/125 OM3, 5,0m	LSD34100050	HEL23EC05L
SCD E2000® G50/125 OM3, 7,5m	LSD34100075	HEL23EC07L
SCD E2000® G50/125 OM3, 10,0m	LSD34100100	HEL23EC10L
SCD E2000®-APC E09/125 OS2	LSD94100000	on request
SCD-APC E2000®-APC E09/125 OS2	LSD94190000	on request
SCD E2000®-APC E09/125 OS2	LSD94180000	on request
SCD MU G50/125 OM3, 1,0m	LSD35100010	HEL23CU01L
SCD MU G50/125 OM3, 2,0m	LSD35100020	HEL23CU02L
SCD MU G50/125 OM3, 3,0m	LSD35100030	HEL23CU03L
SCD MU G50/125 OM3, 5,0m	LSD35100050	HEL23CU05L
SCD MU G50/125 OM3, 7,5m	LSD35100075	HEL23CU07L
SCD MU G50/125 OM3, 10,0m	LSD35100100	HEL23CU10L
SCD MU E09/125 OS2, 1,0m	LSD05100010	HEL29CU01L
SCD MU E09/125 OS2, 2,0m	LSD05100020	HEL29CU02L
SCD MU E09/125 OS2, 3,0m	LSD05100030	HEL29CU03L
SCD MU E09/125 OS2, 5,0m	LSD05100050	HEL29CU05L
SCD MU E09/125 OS2, 7,5m	LSD05100075	HEL29CU07L
SCD MU E09/125 OS2, 10,0m	LSD05100100	HEL29CU10L
SCD-APC MU E09/125 OS2	LSD95100000	on request
SCD SCD G50/125 OM3, 1,0m	LSD31100010	HEL23CC01L
SCD SCD G50/125 OM3, 2,0m	LSD31100020	HEL23CC02L
SCD SCD G50/125 OM3, 3,0m	LSD31100030	HEL23CC03L
SCD SCD G50/125 OM3, 5,0m	LSD31100050	HEL23CC05L
SCD SCD G50/125 OM3, 7,5m	LSD31100075	HEL23CC07L
SCD SCD G50/125 OM3, 10,0m	LSD31100100	HEL23CC10L
SCD SCD E09/125 OS2, 1,0m	LSD01100010	HEL29CC01L
SCD SCD E09/125 OS2, 2,0m	LSD01100020	HEL29CC02L
SCD SCD E09/125 OS2, 3,0m	LSD01100030	HEL29CC03L
SCD SCD E09/125 OS2, 5,0m	LSD01100050	HEL29CC05L
SCD SCD E09/125 OS2, 7,5m	LSD01100075	HEL29CC07L
SCD SCD E09/125 OS2, 10,0m	LSD01100100	HEL29CC10L
SCD SCD-APC E09/125 OS2	LSD91100000	on request
SCD-APC SCD-APC E09/125 OS2	LSD91190000	on request
SCD ST G50/125 OM3, 1,0m	LSD31300010	HEL23CT01L
SCD ST G50/125 OM3, 2,0m	LSD31300020	HEL23CT02L
SCD ST G50/125 OM3, 3,0m	LSD31300030	HEL23CT03L
SCD ST G50/125 OM3, 5,0m	LSD31300050	HEL23CT05L
SCD ST G50/125 OM3, 7,5m	LSD31300075	HEL23CT07L
SCD ST G50/125 OM3, 10,0m	LSD31300100	HEL23CT10L

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## Ordering information

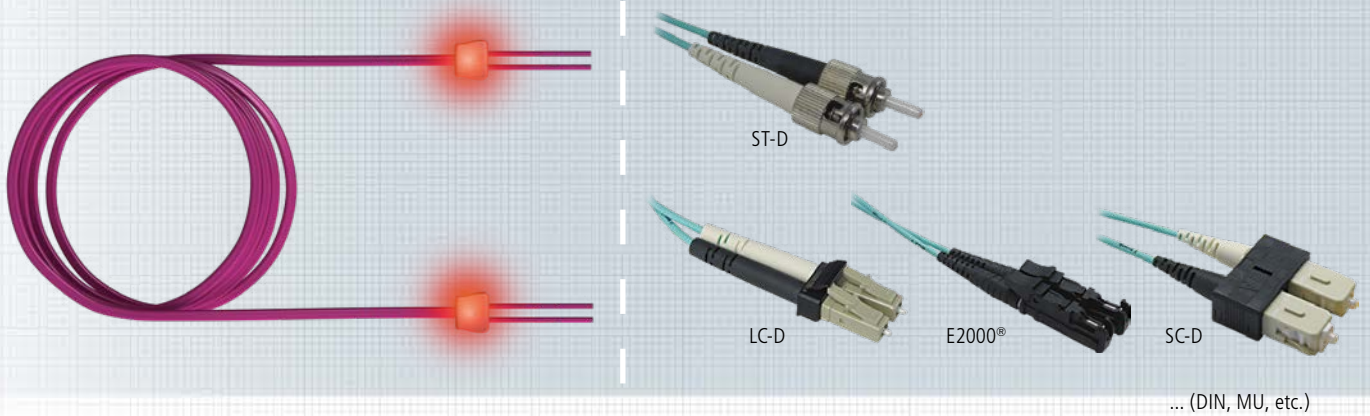
Description	Type	Order No.
SCD ST E09/125 OS2, 1,0m	LSD01300010	<a href="#">HEL29CT01L</a>
SCD ST E09/125 OS2, 2,0m	LSD01300020	<a href="#">HEL29CT02L</a>
SCD ST E09/125 OS2, 3,0m	LSD01300030	<a href="#">HEL29CT03L</a>
SCD ST E09/125 OS2, 5,0m	LSD01300050	<a href="#">HEL29CT05L</a>
SCD ST E09/125 OS2, 7,5m	LSD01300075	<a href="#">HEL29CT07L</a>
SCD ST E09/125 OS2, 10,0m	LSD01300100	<a href="#">HEL29CT10L</a>
SCD-APC ST E09/125 OS2	LSD91300000	on request
SCD LCD G50/125 OM4, 1,0m	LSD42100010	<a href="#">HEL24LC01L</a>
SCD LCD G50/125 OM4, 2,0m	LSD42100020	<a href="#">HEL24LC02L</a>
SCD LCD G50/125 OM4, 3,0m	LSD42100030	<a href="#">HEL24LC03L</a>
SCD LCD G50/125 OM4, 5,0m	LSD42100050	<a href="#">HEL24LC05L</a>
SCD LCD G50/125 OM4, 7,5m	LSD42100075	<a href="#">HEL24LC07L</a>
SCD LCD G50/125 OM4, 10,0m	LSD42100100	<a href="#">HEL24LC10L</a>
SCD E2000® G50/125 OM4, 1,0m	LSD44100010	<a href="#">HEL24EC01L</a>
SCD E2000® G50/125 OM4, 2,0m	LSD44100020	<a href="#">HEL24EC02L</a>
SCD E2000® G50/125 OM4, 3,0m	LSD44100030	<a href="#">HEL24EC03L</a>
SCD E2000® G50/125 OM4, 5,0m	LSD44100050	<a href="#">HEL24EC05L</a>
SCD E2000® G50/125 OM4, 7,5m	LSD44100075	<a href="#">HEL24EC07L</a>
SCD E2000® G50/125 OM4, 10,0m	LSD44100100	<a href="#">HEL24EC10L</a>
SCD MU G50/125 OM4, 1,0m	LSD45100010	<a href="#">HEL24CU01L</a>
SCD MU G50/125 OM4, 2,0m	LSD45100020	<a href="#">HEL24CU02L</a>
SCD MU G50/125 OM4, 3,0m	LSD45100030	<a href="#">HEL24CU03L</a>
SCD MU G50/125 OM4, 5,0m	LSD45100050	<a href="#">HEL24CU05L</a>
SCD MU G50/125 OM4, 7,5m	LSD45100075	<a href="#">HEL24CU07L</a>
SCD MU G50/125 OM4, 10,0m	LSD45100100	<a href="#">HEL24CU10L</a>
SCD SCD G50/125 OM4, 1,0m	LSD41100010	<a href="#">HEL24CC01L</a>
SCD SCD G50/125 OM4, 2,0m	LSD41100020	<a href="#">HEL24CC02L</a>
SCD SCD G50/125 OM4, 3,0m	LSD41100030	<a href="#">HEL24CC03L</a>
SCD SCD G50/125 OM4, 5,0m	LSD41100050	<a href="#">HEL24CC05L</a>
SCD SCD G50/125 OM4, 7,5m	LSD41100075	<a href="#">HEL24CC07L</a>
SCD SCD G50/125 OM4, 10,0m	LSD41100100	<a href="#">HEL24CC10L</a>
SCD ST G50/125 OM4, 1,0m	LSD41300010	<a href="#">HEL24CT01L</a>
SCD ST G50/125 OM4, 2,0m	LSD41300020	<a href="#">HEL24CT02L</a>
SCD ST G50/125 OM4, 3,0m	LSD41300030	<a href="#">HEL24CT03L</a>
SCD ST G50/125 OM4, 5,0m	LSD41300050	<a href="#">HEL24CT05L</a>
SCD ST G50/125 OM4, 7,5m	LSD41300075	<a href="#">HEL24CT07L</a>
SCD ST G50/125 OM4, 10,0m	LSD41300100	<a href="#">HEL24CT10L</a>

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**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

# ST LED Duplex Patch and Adapter Cables



FO LED patchcords as connection or adapter cables. The standard version of the connection cable is labeled as crossover. For the SC / LC duplex, subsequent mutual rotation of the connectors is possible.

The FO LED patchcord has been developed especially for use in offices, industry and data centers. The cable design ensures that the optical transmission parameters offer a maximum of data security. The patented method that permits cable ends to be easily matched to one another significantly increases operational safety, and unintentional disconnection of patchcords is virtually impossible. After the detector makes contact with one end of the patchcord, both cable ends are electrically excited and light up. The FO LED patchcord can be ordered together with all standard FO connectors.

- Bayonet lock
- One-piece design
- ST security with integrated strain relief

Use of a non-approved detector may result in permanent damage to the FO LED patchcord.

You can find the appropriate detector on page 152.

## Specification:

Norms	IEC 61 754-4, TIA 604-3
Technology	Ceramic ferrule (2.5 mm)
Tuning	in 60° increments
Strain relief	100 N
Operating temperature	-10 °C to +70 °C
Material	flame-retardant acc. to UL 94 V-0
Service life	minimum 1000 mating cycles
Housing colors	per connector norm
Sheath	FRNC: IEC 60 332-1; IEC 50 754-2; IEC 61 034
Cable color	heather violet RAL 4003 (Multimode OM4) aqua RAL 6027 (Multimode OM3) yellow RAL 1021 (Singlemode OS2)
Build	I-V(ZN)HH
Packaging unit	individually packaged



LED Detector (p. 152)

## Ordering information

Description	Type	Order No.
ST DIN E09/125 OS2, 1,0m	LSD07300010	<a href="#">HEL29TZ01L</a>
ST DIN E09/125 OS2, 2,0m	LSD07300020	<a href="#">HEL29TZ02L</a>
ST DIN E09/125 OS2, 3,0m	LSD07300030	<a href="#">HEL29TZ03L</a>
ST DIN E09/125 OS2, 5,0m	LSD07300050	<a href="#">HEL29TZ05L</a>
ST DIN E09/125 OS2, 7,5m	LSD07300075	<a href="#">HEL29TZ07L</a>
ST DIN E09/125 OS2, 10,0m	LSD07300100	<a href="#">HEL29TZ10L</a>
ST FC E09/125 OS2, 1,0m	LSD08300010	<a href="#">HEL29TF01L</a>
ST FC E09/125 OS2, 2,0m	LSD08300020	<a href="#">HEL29TF02L</a>
ST FC E09/125 OS2, 3,0m	LSD08300030	<a href="#">HEL29TF03L</a>
ST FC E09/125 OS2, 5,0m	LSD08300050	<a href="#">HEL29TF05L</a>
ST FC E09/125 OS2, 7,5m	LSD08300075	<a href="#">HEL29TF07L</a>
ST FC E09/125 OS2, 10,0m	LSD08300100	<a href="#">HEL29TF10L</a>
ST FC-APC E09/125 OS2	LSD98300000	on request
ST LCD G50/125 OM3, 1,0m	LSD32300010	<a href="#">HEL23LT01L</a>
ST LCD G50/125 OM3, 2,0m	LSD32300020	<a href="#">HEL23LT02L</a>
ST LCD G50/125 OM3, 3,0m	LSD32300030	<a href="#">HEL23LT03L</a>
ST LCD G50/125 OM3, 5,0m	LSD32300050	<a href="#">HEL23LT05L</a>
ST LCD G50/125 OM3, 7,5m	LSD32300075	<a href="#">HEL23LT07L</a>
ST LCD G50/125 OM3, 10,0m	LSD32300100	<a href="#">HEL23LT10L</a>
ST LCD E09/125 OS2, 1,0m	LSD02300010	<a href="#">HEL29LT01L</a>
ST LCD E09/125 OS2, 2,0m	LSD02300020	<a href="#">HEL29LT02L</a>
ST LCD E09/125 OS2, 3,0m	LSD02300030	<a href="#">HEL29LT03L</a>
ST LCD E09/125 OS2, 5,0m	LSD02300050	<a href="#">HEL29LT05L</a>
ST LCD E09/125 OS2, 7,5m	LSD02300075	<a href="#">HEL29LT07L</a>
ST LCD E09/125 OS2, 10,0m	LSD02300100	<a href="#">HEL29LT10L</a>

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**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

# ST LED Duplex Patch and Adapter Cables – Continuation

## Ordering information

Description	Type	Order No.
ST E2000®-APC E09/125 OS2	LSD94300000	on request
ST E2000® G50/125 OM3, 1,0m	LSD34300010	<b>HEL23ET01L</b>
ST E2000® G50/125 OM3, 2,0m	LSD34300020	<b>HEL23ET02L</b>
ST E2000® G50/125 OM3, 3,0m	LSD34300030	<b>HEL23ET03L</b>
ST E2000® G50/125 OM3, 5,0m	LSD34300050	<b>HEL23ET05L</b>
ST E2000® G50/125 OM3, 7,5m	LSD34300075	<b>HEL23ET07L</b>
ST E2000® G50/125 OM3, 10,0m	LSD34300100	<b>HEL23ET10L</b>
ST E2000® E09/125 OS2, 1,0m	LSD04300010	<b>HEL29ET01L</b>
ST E2000® E09/125 OS2, 2,0m	LSD04300020	<b>HEL29ET02L</b>
ST E2000® E09/125 OS2, 3,0m	LSD04300030	<b>HEL29ET03L</b>
ST E2000® E09/125 OS2, 5,0m	LSD04300050	<b>HEL29ET05L</b>
ST E2000® E09/125 OS2, 7,5m	LSD04300075	<b>HEL29ET07L</b>
ST E2000® E09/125 OS2, 10,0m	LSD04300100	<b>HEL29ET10L</b>
ST E2000®-APC E09/125 OS2	LSD94300000	on request
ST MU G50/125 OM3, 1,0m	LSD35300010	<b>HEL23TU01L</b>
ST MU G50/125 OM3, 2,0m	LSD35300020	<b>HEL23TU02L</b>
ST MU G50/125 OM3, 3,0m	LSD35300030	<b>HEL23TU03L</b>
ST MU G50/125 OM3, 5,0m	LSD35300050	<b>HEL23TU05L</b>
ST MU G50/125 OM3, 7,5m	LSD35300075	<b>HEL23TU07L</b>
ST MU G50/125 OM3, 10,0m	LSD35300100	<b>HEL23TU10L</b>
ST MU E09/125 OS2, 1,0m	LSD05300010	<b>HEL29TU01L</b>
ST MU E09/125 OS2, 2,0m	LSD05300020	<b>HEL29TU02L</b>
ST MU E09/125 OS2, 3,0m	LSD05300030	<b>HEL29TU03L</b>
ST MU E09/125 OS2, 5,0m	LSD05300050	<b>HEL29TU05L</b>
ST MU E09/125 OS2, 7,5m	LSD05300075	<b>HEL29TU07L</b>
ST MU E09/125 OS2, 10,0m	LSD05300100	<b>HEL29TU10L</b>
ST SCD G50/125 OM3, 1,0m	LSD31300010	<b>HEL23CT01L</b>
ST SCD G50/125 OM3, 2,0m	LSD31300020	<b>HEL23CT02L</b>
ST SCD G50/125 OM3, 3,0m	LSD31300030	<b>HEL23CT03L</b>
ST SCD G50/125 OM3, 5,0m	LSD31300050	<b>HEL23CT05L</b>
ST SCD G50/125 OM3, 7,5m	LSD31300075	<b>HEL23CT07L</b>
ST SCD G50/125 OM3, 10,0m	LSD31300100	<b>HEL23CT10L</b>
ST SCD E09/125 OS2, 1,0m	LSD01300010	<b>HEL29CT01L</b>
ST SCD E09/125 OS2, 2,0m	LSD01300020	<b>HEL29CT02L</b>
ST SCD E09/125 OS2, 3,0m	LSD01300030	<b>HEL29CT03L</b>
ST SCD E09/125 OS2, 5,0m	LSD01300050	<b>HEL29CT05L</b>
ST SCD E09/125 OS2, 7,5m	LSD01300075	<b>HEL29CT07L</b>
ST SCD E09/125 OS2, 10,0m	LSD01300100	<b>HEL29CT10L</b>
ST SCD-APC E09/125 OS2	LSD91300000	on request

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## Ordering information

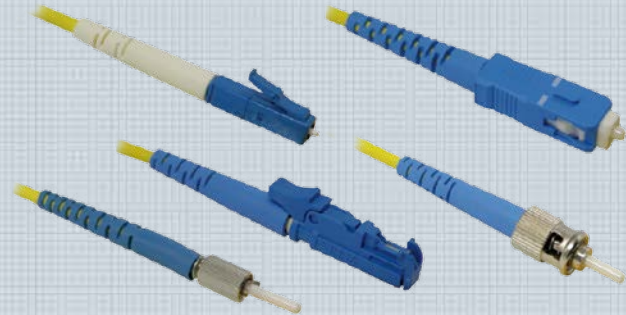
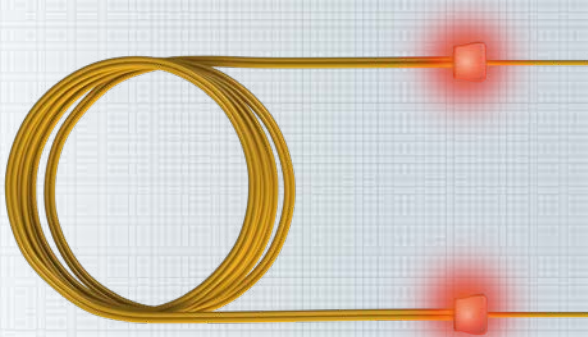
Description	Type	Order No.
ST ST G50/125 OM3, 1,0m	LSD33300010	HEL23TT01L
ST ST G50/125 OM3, 2,0m	LSD33300020	HEL23TT02L
ST ST G50/125 OM3, 3,0m	LSD33300030	HEL23TT03L
ST ST G50/125 OM3, 5,0m	LSD33300050	HEL23TT05L
ST ST G50/125 OM3, 7,5m	LSD33300075	HEL23TT07L
ST ST G50/125 OM3, 10,0m	LSD33300100	HEL23TT10L
ST ST E09/125 OS2, 1,0m	LSD03300010	HEL29TT01L
ST ST E09/125 OS2, 2,0m	LSD03300020	HEL29TT02L
ST ST E09/125 OS2, 3,0m	LSD03300030	HEL29TT03L
ST ST E09/125 OS2, 5,0m	LSD03300050	HEL29TT05L
ST ST E09/125 OS2, 7,5m	LSD03300075	HEL29TT07L
ST ST E09/125 OS2, 10,0m	LSD03300100	HEL29TT10L
ST LCD G50/125 OM4, 1,0m	LSD42300010	HEL24LT01L
ST LCD G50/125 OM4, 2,0m	LSD42300020	HEL24LT02L
ST LCD G50/125 OM4, 3,0m	LSD42300030	HEL24LT03L
ST LCD G50/125 OM4, 5,0m	LSD42300050	HEL24LT05L
ST LCD G50/125 OM4, 7,5m	LSD42300075	HEL24LT07L
ST LCD G50/125 OM4, 10,0m	LSD42300100	HEL24LT10L
ST E2000® G50/125 OM4, 1,0m	LSD44300010	HEL24ET01L
ST E2000® G50/125 OM4, 2,0m	LSD44300020	HEL24ET02L
ST E2000® G50/125 OM4, 3,0m	LSD44300030	HEL24ET03L
ST E2000® G50/125 OM4, 5,0m	LSD44300050	HEL24ET05L
ST E2000® G50/125 OM4, 7,5m	LSD44300075	HEL24ET07L
ST E2000® G50/125 OM4, 10,0m	LSD44300100	HEL24ET10L
ST MU G50/125 OM4, 1,0m	LSD45300010	HEL24TU01L
ST MU G50/125 OM4, 2,0m	LSD45300020	HEL24TU02L
ST MU G50/125 OM4, 3,0m	LSD45300030	HEL24TU03L
ST MU G50/125 OM4, 5,0m	LSD45300050	HEL24TU05L
ST MU G50/125 OM4, 7,5m	LSD45300075	HEL24TU07L
ST MU G50/125 OM4, 10,0m	LSD45300100	HEL24TU10L
ST SCD G50/125 OM4, 1,0m	LSD41300010	HEL24CT01L
ST SCD G50/125 OM4, 2,0m	LSD41300020	HEL24CT02L
ST SCD G50/125 OM4, 3,0m	LSD41300030	HEL24CT03L
ST SCD G50/125 OM4, 5,0m	LSD41300050	HEL24CT05L
ST SCD G50/125 OM4, 7,5m	LSD41300075	HEL24CT07L
ST SCD G50/125 OM4, 10,0m	LSD41300100	HEL24CT10L
ST ST G50/125 OM4, 1,0m	LSD43300010	HEL24TT01L
ST ST G50/125 OM4, 2,0m	LSD43300020	HEL24TT02L
ST ST G50/125 OM4, 3,0m	LSD43300030	HEL24TT03L
ST ST G50/125 OM4, 5,0m	LSD43300050	HEL24TT05L
ST ST G50/125 OM4, 7,5m	LSD43300075	HEL24TT07L
ST ST G50/125 OM4, 10,0m	LSD43300100	HEL24TT10L

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**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

# Simplex LED Patch and Adapter Cables



The FO LED patchcord has been developed especially for use in offices, industry and data centers. The cable design ensures that the optical transmission parameters offer a maximum of data security. The patented method that permits cable ends to be easily matched to one another significantly increases operational safety, and unintentional disconnection of patchcords is virtually impossible. After the detector makes contact with one end of the patchcord, both cable ends are electrically excited and light up. The FO LED patchcord can be ordered together with all standard FO connectors.

Use of a non-approved detector may result in permanent damage to the FO LED patchcord.

You can find the appropriate detector on page 152.

### Specification:

Norms	IEC 61 754-4, TIA 604-3
Technology	ceramic ferrule
Tuning	in 45° and 60° increments depending on connector build
Strain relief	100 N
Operating temperature	-10 °C to +70 °C
Material	flame-retardant acc. to UL 94 V-0
Service life	minimum 1000 mating cycles per connector norm
Housing colors	FRNC: IEC 60 332-1; IEC 50 754-2; IEC 61 034
Sheath	aqua RAL 6027 (Multimode OM3) yellow RAL 1021 (Singlemode OS2)
Cable color	I-VH
Build	
Packaging unit	individually packaged

Description	Type	Order No.
LC LC E09/125 OS2, 1,0m	LSS02200010	<a href="#">HEL19LL01L</a>
LC LC E09/125 OS2, 2,0m	LSS02200020	<a href="#">HEL19LL02L</a>
LC LC E09/125 OS2, 3,0m	LSS02200030	<a href="#">HEL19LL03L</a>
LC LC E09/125 OS2, 5,0m	LSS02200050	<a href="#">HEL19LL05L</a>
LC LC E09/125 OS2, 7,5m	LSS02200075	<a href="#">HEL19LL07L</a>
LC LC E09/125 OS2, 10,0m	LSS02200100	<a href="#">HEL19LL10L</a>
LC LC-APC E09/125 OS2	LSS92200000	<a href="#">on request</a>
LC-APC LC-APC E09/125 OS2	LSS92290000	<a href="#">on request</a>
LC E2000® E09/125 OS2, 1,0m	LSS02400010	<a href="#">HEL19LE01L</a>
LC E2000® E09/125 OS2, 2,0m	LSS02400020	<a href="#">HEL19LE02L</a>
LC E2000® E09/125 OS2, 3,0m	LSS02400030	<a href="#">HEL19LE03L</a>
LC E2000® E09/125 OS2, 5,0m	LSS02400050	<a href="#">HEL19LE05L</a>
LC E2000® E09/125 OS2, 7,5m	LSS02400075	<a href="#">HEL19LE07L</a>
LC E2000® E09/125 OS2, 10,0m	LSS02400100	<a href="#">HEL19LE10L</a>
LC E2000®-APC E09/125 OS2	LSS92480000	<a href="#">on request</a>
LC-APC E2000®-APC E09/125 OS2	LSS92490000	<a href="#">on request</a>

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OS2



LED Detector (p. 152)

## Ordering information

Description	Type	Order No.
LC MU E09/125 OS2, 1,0m	LSS02500010	<a href="#">HEL19LU01L</a>
LC MU E09/125 OS2, 2,0m	LSS02500020	<a href="#">HEL19LU02L</a>
LC MU E09/125 OS2, 3,0m	LSS02500030	<a href="#">HEL19LU03L</a>
LC MU E09/125 OS2, 5,0m	LSS02500050	<a href="#">HEL19LU05L</a>
LC MU E09/125 OS2, 7,5m	LSS02500075	<a href="#">HEL19LU07L</a>
LC MU E09/125 OS2, 10,0m	LSS02500100	<a href="#">HEL19LU10L</a>
LC-APC MU E09/125 OS2	LSS92500000	on request
LC SC E09/125 OS2, 1,0m	LSS02100010	<a href="#">HEL19LC01L</a>
LC SC E09/125 OS2, 2,0m	LSS02100020	<a href="#">HEL19LC02L</a>
LC SC E09/125 OS2, 3,0m	LSS02100030	<a href="#">HEL19LC03L</a>
LC SC E09/125 OS2, 5,0m	LSS02100050	<a href="#">HEL19LC05L</a>
LC SC E09/125 OS2, 7,5m	LSS02100075	<a href="#">HEL19LC07L</a>
LC SC E09/125 OS2, 10,0m	LSS02100100	<a href="#">HEL19LC10L</a>
LC SC-APC E09/125 OS2	LSS92180000	on request
LC-APC SC-APC E09/125 OS2	LSS92190000	on request
LC ST E09/125 OS2, 1,0m	LSS02300010	<a href="#">HEL19LT01L</a>
LC ST E09/125 OS2, 2,0m	LSS02300020	<a href="#">HEL19LT02L</a>
LC ST E09/125 OS2, 3,0m	LSS02300030	<a href="#">HEL19LT03L</a>
LC ST E09/125 OS2, 5,0m	LSS02300050	<a href="#">HEL19LT05L</a>
LC ST E09/125 OS2, 7,5m	LSS02300075	<a href="#">HEL19LT07L</a>
LC ST E09/125 OS2, 10,0m	LSS02300100	<a href="#">HEL19LT10L</a>
LC-APC ST E09/125 OS2	LSS92300000	on request
E2000® FC-PC E09/125 OS2, 1,0m	LSS08400010	<a href="#">HEL19EF01L</a>
E2000® FC-PC E09/125 OS2, 2,0m	LSS08400020	<a href="#">HEL19EF02L</a>
E2000® FC-PC E09/125 OS2, 3,0m	LSS08400030	<a href="#">HEL19EF03L</a>
E2000® FC-PC E09/125 OS2, 5,0m	LSS08400050	<a href="#">HEL19EF05L</a>
E2000® FC-PC E09/125 OS2, 7,5m	LSS08400075	<a href="#">HEL19EF07L</a>
E2000® FC-PC E09/125 OS2, 10,0m	LSS08400100	<a href="#">HEL19EF10L</a>
E2000® FC-APC E09/125 OS2	LSS98480000	on request
E2000®-APC FC-APC E09/125 OS2	LSS98490000	on request

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**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

# Simplex LED Patch and Adapter Cables – Continuation

## Ordering information

Description	Type	Order No.
E2000® E2000® E09/125 OS2, 1,0m	LSS04400010	HEL19EE01L
E2000® E2000® E09/125 OS2, 2,0m	LSS04400020	HEL19EE02L
E2000® E2000® E09/125 OS2, 3,0m	LSS04400030	HEL19EE03L
E2000® E2000® E09/125 OS2, 5,0m	LSS04400050	HEL19EE05L
E2000® E2000® E09/125 OS2, 7,5m	LSS04400075	HEL19EE07L
E2000® E2000® E09/125 OS2, 10,0m	LSS04400100	HEL19EE10L
E2000® E2000®-APC E09/125 OS2	LSS94400000	on request
E2000®-APC E2000®-APC E09/125 OS2	LSS94490000	on request
E2000® MU E09/125 OS2, 1,0m	LSS04500010	HEL19EU01L
E2000® MU E09/125 OS2, 2,0m	LSS04500020	HEL19EU02L
E2000® MU E09/125 OS2, 3,0m	LSS04500030	HEL19EU03L
E2000® MU E09/125 OS2, 5,0m	LSS04500050	HEL19EU05L
E2000® MU E09/125 OS2, 7,5m	LSS04500075	HEL19EU07L
E2000® MU E09/125 OS2, 10,0m	LSS04500100	HEL19EU10L
E2000®-APC MU E09/125 OS2	LSS94580000	on request
E2000® SC E09/125 OS2, 1,0m	LSS04100010	HEL19EC01L
E2000® SC E09/125 OS2, 2,0m	LSS04100020	HEL19EC02L
E2000® SC E09/125 OS2, 3,0m	LSS04100030	HEL19EC03L
E2000® SC E09/125 OS2, 5,0m	LSS04100050	HEL19EC05L
E2000® SC E09/125 OS2, 7,5m	LSS04100075	HEL19EC07L
E2000® SC E09/125 OS2, 10,0m	LSS04100100	HEL19EC10L
E2000® SC-APC E09/125 OS2	LSS94180000	on request
E2000®-APC SC-APC E09/125 OS2	LSS94190000	on request
E2000® ST E09/125 OS2, 1,0m	LSS04300010	HEL19ET01L
E2000® ST E09/125 OS2, 2,0m	LSS04300020	HEL19ET02L
E2000® ST E09/125 OS2, 3,0m	LSS04300030	HEL19ET03L
E2000® ST E09/125 OS2, 5,0m	LSS04300050	HEL19ET05L
E2000® ST E09/125 OS2, 7,5m	LSS04300075	HEL19ET07L
E2000® ST E09/125 OS2, 10,0m	LSS04300100	HEL19ET10L
E2000®-APC ST E09/125 OS2	LSS94300000	on request
SC FC-PC E09/125 OS2, 1,0m	LSS08100010	HEL19CF01L
SC FC-PC E09/125 OS2, 2,0m	LSS08100020	HEL19CF02L
SC FC-PC E09/125 OS2, 3,0m	LSS08100030	HEL19CF03L
SC FC-PC E09/125 OS2, 5,0m	LSS08100050	HEL19CF05L
SC FC-PC E09/125 OS2, 7,5m	LSS08100075	HEL19CF07L
SC FC-PC E09/125 OS2, 10,0m	LSS08100100	HEL19CF10L
SC FC-APC E09/125 OS2	LSS98100000	on request
SC-APC FC-APC E09/125 OS2	LSS98190000	on request
SC MU E09/125 OS2, 1,0m	LSS05100010	HEL19CU01L
SC MU E09/125 OS2, 2,0m	LSS05100020	HEL19CU02L
SC MU E09/125 OS2, 3,0m	LSS05100030	HEL19CU03L
SC MU E09/125 OS2, 5,0m	LSS05100050	HEL19CU05L
SC MU E09/125 OS2, 7,5m	LSS05100075	HEL19CU07L
SC MU E09/125 OS2, 10,0m	LSS05100100	HEL19CU10L
SC-APC MU E09/125 OS2	LSS95180000	on request

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## Ordering information

Description	Type	Order No.
SC SC E09/125 OS2, 1,0m	LSS01100010	HEL19CC01L
SC SC E09/125 OS2, 2,0m	LSS01100020	HEL19CC02L
SC SC E09/125 OS2, 3,0m	LSS01100030	HEL19CC03L
SC SC E09/125 OS2, 5,0m	LSS01100050	HEL19CC05L
SC SC E09/125 OS2, 7,5m	LSS01100075	HEL19CC07L
SC SC E09/125 OS2, 10,0m	LSS01100100	HEL19CC10L
SC SC-APC E09/125 OS2	LSS91100000	on request
SC-APC SC-APC E09/125 OS2	LSS91190000	on request
SC ST E09/125 OS2, 1,0m	LSS01300010	HEL19CT01L
SC ST E09/125 OS2, 2,0m	LSS01300020	HEL19CT02L
SC ST E09/125 OS2, 3,0m	LSS01300030	HEL19CT03L
SC ST E09/125 OS2, 5,0m	LSS01300050	HEL19CT05L
SC ST E09/125 OS2, 7,5m	LSS01300075	HEL19CT07L
SC ST E09/125 OS2, 10,0m	LSS01300100	HEL19CT10L
SC-APC ST E09/125 OS2	LSS91300000	on request
ST DIN E09/125 OS2, 1,0m	LSS07300010	HEL19TZ01L
ST DIN E09/125 OS2, 2,0m	LSS07300020	HEL19TZ02L
ST DIN E09/125 OS2, 3,0m	LSS07300030	HEL19TZ03L
ST DIN E09/125 OS2, 5,0m	LSS07300050	HEL19TZ05L
ST DIN E09/125 OS2, 7,5m	LSS07300075	HEL19TZ07L
ST DIN E09/125 OS2, 10,0m	LSS07300100	HEL19TZ10L
ST FC-PC E09/125 OS2, 1,0m	LSS08300010	HEL19TF01L
ST FC-PC E09/125 OS2, 2,0m	LSS08300020	HEL19TF02L
ST FC-PC E09/125 OS2, 3,0m	LSS08300030	HEL19TF03L
ST FC-PC E09/125 OS2, 5,0m	LSS08300050	HEL19TF05L
ST FC-PC E09/125 OS2, 7,5m	LSS08300075	HEL19TF07L
ST FC-PC E09/125 OS2, 10,0m	LSS08300100	HEL19TF10L
ST FC-APC E09/125 OS2	LSS98300000	on request
ST MU E09/125 OS2, 1,0m	LSS05300010	HEL19TU01L
ST MU E09/125 OS2, 2,0m	LSS05300020	HEL19TU02L
ST MU E09/125 OS2, 3,0m	LSS05300030	HEL19TU03L
ST MU E09/125 OS2, 5,0m	LSS05300050	HEL19TU05L
ST MU E09/125 OS2, 7,5m	LSS05300075	HEL19TU07L
ST MU E09/125 OS2, 10,0m	LSS05300100	HEL19TU10L
ST ST E09/125 OS2, 1,0m	LSS03300010	HEL19TT01L
ST ST E09/125 OS2, 2,0m	LSS03300020	HEL19TT02L
ST ST E09/125 OS2, 3,0m	LSS03300030	HEL19TT03L
ST ST E09/125 OS2, 5,0m	LSS03300050	HEL19TT05L
ST ST E09/125 OS2, 7,5m	LSS03300075	HEL19TT07L
ST ST E09/125 OS2, 10,0m	LSS03300100	HEL19TT10L

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**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!



# Accessories

## FO Patchcords



### FO LED Detector

Detector for feed into FO LED patchcords.

The detector is simply plugged into the contact pairs provided on the RJ45 connector. Repeatedly pressing the button allows the user to select between 4 operating modes, offering an individual setting for all lighting conditions.

Batteries: 4 x button cells LR41.

#### Properties:

Material	metal
Color	chrome
Application	Suitable for supplying power to all FO LED patchcords.

Packaging unit	1 piece
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### Laminated labels

Self-laminating label in white for marking and labeling patchcords.

#### Properties:

Material	PVC (laminated label)
Application	Marking and labeling patchcords

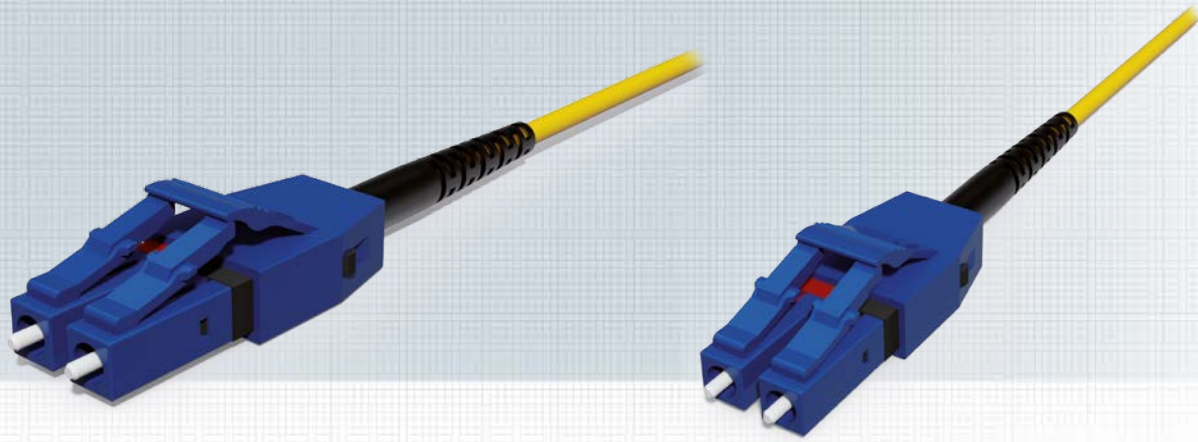
Packaging unit	1 piece
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Description	Type	Order No.
FO LED Detector	CPZLWLA1	<b>HLEDTOOL--</b>

Description	Type	Order No.
Laminated labels	on request	on request



# LC-Uniboot-Duplex Patch- and Adapter Cable



The LC-Uniboot duplex patch- and adapter cable is particularly suitable in data centers and High Density applications due to the use of extremely slim duplex round cables (outer diameter 2.1 mm). The LC Duplex Uniboot connector is a connector for 2 fibres with a marking for the current polarity status. The polarity can be changed at any time.

#### Parameters:

Connector	LC according to DIN EN 61754-20
Polish	PC (MM) / UPC (SM) / APC (SM)

#### Mechanical Properties:

Lifetime (500 mating cycles)	≤ 0,2 dB change FOTP-21
Storage temperature	-40°C ~ +85°C
Operating temperature	-40°C ~ +85°C

#### Ferrules Properties:

MM Inside diameter	126,0 +3/-0 µm
MM concentricity	≤ 3 µm
SM (UPC) Inside diameter	125,5 +1/-0 µm
SM (UPC) concentricity	≤ 0,8 µm
SM (APC) Inside diameter	125,5 +1/-0 µm
SM (APC) concentricity	≤ 0,8 µm

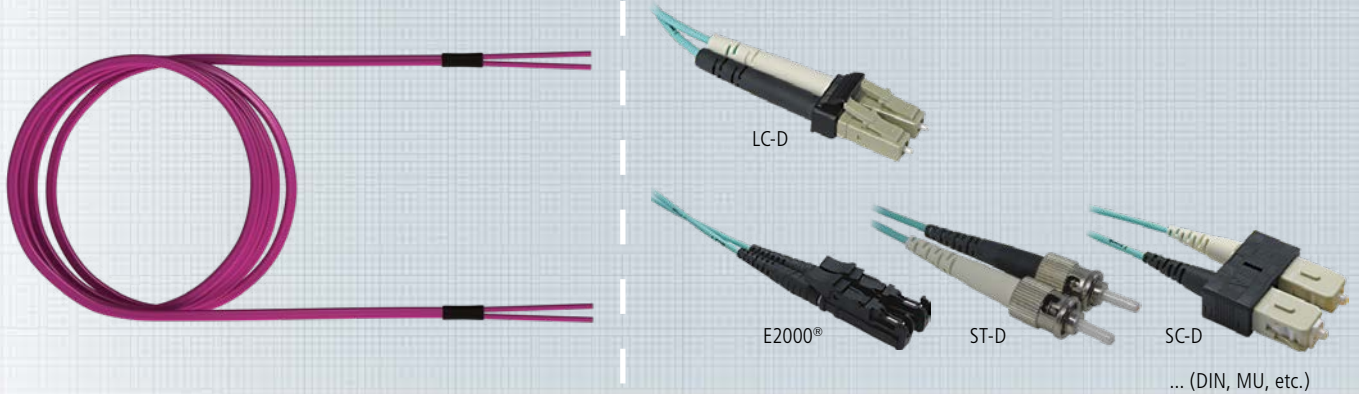
#### Optical Properties:

Insertion Loss MM (typ.)	0,20 dB
Insertion Loss MM (max.)	0,25 dB
Return Loss MM	≤ -35 dB
Insertion Loss SM UPC (typ.)	0,20 dB
Insertion Loss SM UPC (max.)	0,25 dB
Return Loss SM UPC	≤ -55 dB
Insertion Loss SM APC (typ.)	0,20 dB
Insertion Loss SM APC (max.)	0,25 dB
Return Loss SM APC	≤ -65dB

Description	Type	Order No.
LC-Uniboot-Duplex Patch- and Adapter Cable SM 2xLCD 1,0m	LUD02200010	<a href="#">HEL29LL01U</a>
LC-Uniboot-Duplex Patch- and Adapter Cable SM 2xLCD 2,0m	LUD02200020	<a href="#">HEL29LL02U</a>
LC-Uniboot-Duplex Patch- and Adapter Cable SM 2xLCD 3,0m	LUD02200030	<a href="#">HEL29LL03U</a>
LC-Uniboot-Duplex Patch- and Adapter Cable SM 2xLCD 5,0m	LUD02200050	<a href="#">HEL29LL05U</a>
LC-Uniboot-Duplex Patch- and Adapter Cable SM 2xLCD 7,5m	LUD02200075	<a href="#">HEL29LL07U</a>
LC-Uniboot-Duplex Patch- and Adapter Cable SM 2xLCD 10,0m	LUD02200100	<a href="#">HEL29LL10U</a>
LC-Uniboot-Duplex Patch- and Adapter Cable SM 2xLCD-APC	LUD09220000	on request
LC-Uniboot-Duplex Patch- and Adapter Cable MM 2xLCD OM3, 1,0m	LUD3220010	<a href="#">HEL23LL01U</a>
LC-Uniboot-Duplex Patch- and Adapter Cable MM 2xLCD OM3, 2,0m	LUD3220020	<a href="#">HEL23LL02U</a>
LC-Uniboot-Duplex Patch- and Adapter Cable MM 2xLCD OM3, 3,0m	LUD3220030	<a href="#">HEL23LL03U</a>
LC-Uniboot-Duplex Patch- and Adapter Cable MM 2xLCD OM3, 5,0m	LUD3220050	<a href="#">HEL23LL05U</a>
LC-Uniboot-Duplex Patch- and Adapter Cable MM 2xLCD OM3, 7,5m	LUD3220075	<a href="#">HEL23LL07U</a>
LC-Uniboot-Duplex Patch- and Adapter Cable MM 2xLCD OM3, 10,0m	LUD3220100	<a href="#">HEL23LL10U</a>
LC-Uniboot-Duplex Patch- and Adapter Cable MM 2xLCD OM4, 1,0m	LUD04220000	on request



# LC Duplex Patch and Adapter Cables



FO patchcords as connection or adapter cables.  
The standard version of the connection cable is crossover.  
For the SC / LC duplex, subsequent mutual rotation of the connectors is possible.

The FO patchcord has been developed especially for use in offices, industry and data centers.  
High-quality processing ensures that the optical transmission parameters offer a maximum of data security.

The FO patchcord can be ordered together with all standard FO connectors.

- SFF connectors for high packing density. Two connections in the size of one adapter
- One-piece design (optional)
- Short, rigid length of the connector
- Color codable
- Simple duplexing of simplex connectors

## Specification:

Norms	IEC 61 754-20, TIA 604-10-A
Technology	Ceramic ferrule (1.25mm)
Tuning	in 45° increments
Strain relief	100 N
Operating temperature	-10 °C to +70 °C
Material	flame-retardant acc. to UL 94 V-0
Service life	minimum 1000 mating cycles
Housing colors	per connector norm
Sheath	FRNC: IEC 60 332-1; IEC 50 754-2; IEC 61 034
Cable color	heather violet RAL 4003 (Multimode OM4) aqua RAL 6027 (Multimode OM3) yellow RAL 1021 (Singlemode OS2)
Build	I-V(ZN)HH
Packaging unit	individually packaged



## Ordering information

Description	Type	Order No.
LCD DIN E09/125 OS2-A1, 1,0m	LPD07200010	<a href="#">HEL29LZ01V</a>
LCD DIN E09/125 OS2-A1, 2,0m	LPD07200020	<a href="#">HEL29LZ02V</a>
LCD DIN E09/125 OS2-A1, 3,0m	LPD07200030	<a href="#">HEL29LZ03V</a>
LCD DIN E09/125 OS2-A1, 5,0m	LPD07200050	<a href="#">HEL29LZ05V</a>
LCD DIN E09/125 OS2-A1, 7,5m	LPD07200075	<a href="#">HEL29LZ07V</a>
LCD DIN E09/125 OS2-A1, 10,0m	LPD07200100	<a href="#">HEL29LZ10V</a>
LCD-APC DIN E09/125 OS2-A1	LPD97200000	on request
LCD FC E09/125 OS2-A1 1,0m	LPD08200010	<a href="#">HEL29LF01V</a>
LCD FC E09/125 OS2-A22,0m	LPD08200020	<a href="#">HEL29LF02V</a>
LCD FC E09/125 OS2-A33,0m	LPD08200030	<a href="#">HEL29LF03V</a>
LCD FC E09/125 OS2-A45,0m	LPD08200050	<a href="#">HEL29LF05V</a>
LCD FC E09/125 OS2-A57,5m	LPD08200075	<a href="#">HEL29LF07V</a>
LCD FC E09/125 OS2-A610,0m	LPD08200100	<a href="#">HEL29LF10V</a>
LCD FC-APC E09/125 OS2-A1	LPD98200000	on request
LCD-APC FC-APC E09/125 OS2-A1	LPD98290000	on request
LCD LCD G50/125 OM3, 1,0m	LPD32200010	<a href="#">HEL23LL01V</a>
LCD LCD G50/125 OM3, 2,0m	LPD32200020	<a href="#">HEL23LL02V</a>
LCD LCD G50/125 OM3, 3,0m	LPD32200030	<a href="#">HEL23LL03V</a>
LCD LCD G50/125 OM3, 5,0m	LPD32200050	<a href="#">HEL23LL05V</a>
LCD LCD G50/125 OM3, 7,5m	LPD32200075	<a href="#">HEL23LL07V</a>
LCD LCD G50/125 OM3, 10,0m	LPD32200100	<a href="#">HEL23LL10V</a>
LCD LCD E09/125 OS2-A1 1,0m	LPD02200010	<a href="#">HEL29LL01V</a>
LCD LCD E09/125 OS2-A1 2,0m	LPD02200020	<a href="#">HEL29LL02V</a>
LCD LCD E09/125 OS2-A1 3,0m	LPD02200030	<a href="#">HEL29LL03V</a>
LCD LCD E09/125 OS2-A1 5,0m	LPD02200050	<a href="#">HEL29LL05V</a>
LCD LCD E09/125 OS2-A1 7,5m	LPD02200075	<a href="#">HEL29LL07V</a>
LCD LCD E09/125 OS2-A1 10,0m	LPD02200100	<a href="#">HEL29LL10V</a>
LCD LCD-APC E09/125 OS2-A1	LPD92200000	on request
LCD-APC LCD-APC E09/125 OS2-A1	LPD92290000	on request

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**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

# LC Duplex Patch and Adapter Cables – Continuation

## Ordering information

Description	Type	Order No.
LCD E2000® G50/125 OM3, 1,0m	LPD32400010	<a href="#">HEL23LE01V</a>
LCD E2000® G50/125 OM3, 2,0m	LPD32400020	<a href="#">HEL23LE02V</a>
LCD E2000® G50/125 OM3, 3,0m	LPD32400030	<a href="#">HEL23LE03V</a>
LCD E2000® G50/125 OM3, 5,0m	LPD32400050	<a href="#">HEL23LE05V</a>
LCD E2000® G50/125 OM3, 7,5m	LPD32400075	<a href="#">HEL23LE07V</a>
LCD E2000® G50/125 OM3, 10,0m	LPD32400100	<a href="#">HEL23LE10V</a>
LCD E2000® E09/125 OS2-A1 1,0m	LPD02400010	<a href="#">HEL29LE01V</a>
LCD E2000® E09/125 OS2-A22,0m	LPD02400020	<a href="#">HEL29LE02V</a>
LCD E2000® E09/125 OS2-A33,0m	LPD02400030	<a href="#">HEL29LE03V</a>
LCD E2000® E09/125 OS2-A45,0m	LPD02400050	<a href="#">HEL29LE05V</a>
LCD E2000® E09/125 OS2-A57,5m	LPD02400075	<a href="#">HEL29LE07V</a>
LCD E2000® E09/125 OS2-A610,0m	LPD02400100	<a href="#">HEL29LE10V</a>
LCD E2000®-APC E09/125 OS2-A1	LPD92480000	<a href="#">on request</a>
LCD-APC E2000®-APC E09/125 OS2-A1	LPD92490000	<a href="#">on request</a>
LCD MU G50/125 OM3, 1,0m	LPD32500010	<a href="#">HEL23LU01V</a>
LCD MU G50/125 OM3, 2,0m	LPD32500020	<a href="#">HEL23LU02V</a>
LCD MU G50/125 OM3, 3,0m	LPD32500030	<a href="#">HEL23LU03V</a>
LCD MU G50/125 OM3, 5,0m	LPD32500050	<a href="#">HEL23LU05V</a>
LCD MU G50/125 OM3, 7,5m	LPD32500075	<a href="#">HEL23LU07V</a>
LCD MU G50/125 OM3, 10,0m	LPD32500100	<a href="#">HEL23LU10V</a>
LCD MU E09/125 OS2-A1 1,0m	LPD02500010	<a href="#">HEL29LU01V</a>
LCD MU E09/125 OS2-A22,0m	LPD02500020	<a href="#">HEL29LU02V</a>
LCD MU E09/125 OS2-A33,0m	LPD02500030	<a href="#">HEL29LU03V</a>
LCD MU E09/125 OS2-A45,0m	LPD02500050	<a href="#">HEL29LU05V</a>
LCD MU E09/125 OS2-A57,5m	LPD02500075	<a href="#">HEL29LU07V</a>
LCD MU E09/125 OS2-A610,0m	LPD02500100	<a href="#">HEL29LU10V</a>
LCD-APC MU E09/125 OS2-A1	LPD92500000	<a href="#">on request</a>
LCD SCD G50/125 OM3, 1,0m	LPD32100010	<a href="#">HEL23LC01V</a>
LCD SCD G50/125 OM3, 2,0m	LPD32100020	<a href="#">HEL23LC02V</a>
LCD SCD G50/125 OM3, 3,0m	LPD32100030	<a href="#">HEL23LC03V</a>
LCD SCD G50/125 OM3, 5,0m	LPD32100050	<a href="#">HEL23LC05V</a>
LCD SCD G50/125 OM3, 7,5m	LPD32100075	<a href="#">HEL23LC07V</a>
LCD SCD G50/125 OM3, 10,0m	LPD32100100	<a href="#">HEL23LC10V</a>
LCD SCD E09/125 OS2-A1 1,0m	LPD02100010	<a href="#">HEL29LC01V</a>
LCD SCD E09/125 OS2-A1 2,0m	LPD02100020	<a href="#">HEL29LC02V</a>
LCD SCD E09/125 OS2-A1 3,0m	LPD02100030	<a href="#">HEL29LC03V</a>
LCD SCD E09/125 OS2-A1 5,0m	LPD02100050	<a href="#">HEL29LC05V</a>
LCD SCD E09/125 OS2-A1 7,5m	LPD02100075	<a href="#">HEL29LC07V</a>
LCD SCD E09/125 OS2-A1 10,0m	LPD02100100	<a href="#">HEL29LC10V</a>
LCD SCD-APC E09/125 OS2-A1	LPD92180000	<a href="#">on request</a>
LCD-APC SCD-APC E09/125 OS2-A1	LPD92190000	<a href="#">on request</a>

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## Ordering information

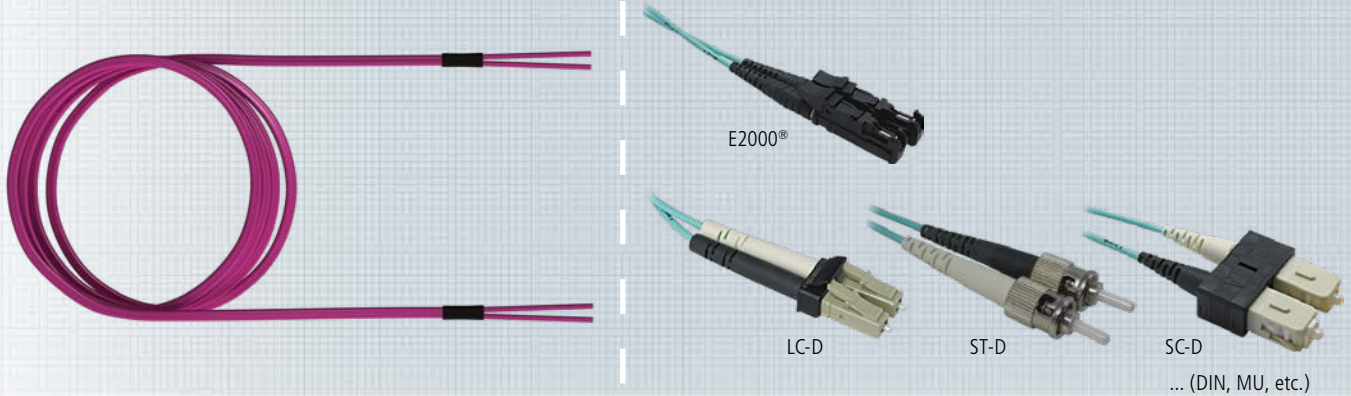
Description	Type	Order No.
LCD ST G50/125 OM3, 1,0m	LPD32300010	HEL23LT01V
LCD ST G50/125 OM3, 2,0m	LPD32300020	HEL23LT02V
LCD ST G50/125 OM3, 3,0m	LPD32300030	HEL23LT03V
LCD ST G50/125 OM3, 5,0m	LPD32300050	HEL23LT05V
LCD ST G50/125 OM3, 7,5m	LPD32300075	HEL23LT07V
LCD ST G50/125 OM3, 10,0m	LPD32300100	HEL23LT10V
LCD ST E09/125 OS2-A1 1,0m	LPD02300010	HEL29LT01V
LCD ST E09/125 OS2-A22,0m	LPD02300020	HEL29LT02V
LCD ST E09/125 OS2-A33,0m	LPD02300030	HEL29LT03V
LCD ST E09/125 OS2-A45,0m	LPD02300050	HEL29LT05V
LCD ST E09/125 OS2-A57,5m	LPD02300075	HEL29LT07V
LCD ST E09/125 OS2-A610,0m	LPD02300100	HEL29LT10V
LCD-APC ST E09/125 OS2-A1	LPD92300000	on request
LCD LCD G50/125 OM4, 1,0m	LPD42200010	HEL24LL01V
LCD LCD G50/125 OM4, 2,0m	LPD42200020	HEL24LL02V
LCD LCD G50/125 OM4, 3,0m	LPD42200030	HEL24LL03V
LCD LCD G50/125 OM4, 5,0m	LPD42200050	HEL24LL05V
LCD LCD G50/125 OM4, 7,5m	LPD42200075	HEL24LL07V
LCD LCD G50/125 OM4, 10,0m	LPD42200100	HEL24LL10V
LCD E2000® G50/125 OM4, 1,0m	LPD42400010	HEL24LE01V
LCD E2000® G50/125 OM4, 2,0m	LPD42400020	HEL24LE02V
LCD E2000® G50/125 OM4, 3,0m	LPD42400030	HEL24LE03V
LCD E2000® G50/125 OM4, 5,0m	LPD42400050	HEL24LE05V
LCD E2000® G50/125 OM4, 7,5m	LPD42400075	HEL24LE07V
LCD E2000® G50/125 OM4, 10,0m	LPD42400100	HEL24LE10V
LCD MU G50/125 OM4, 1,0m	LPD42500010	HEL24LU01V
LCD MU G50/125 OM4, 2,0m	LPD42500020	HEL24LU02V
LCD MU G50/125 OM4, 3,0m	LPD42500030	HEL24LU03V
LCD MU G50/125 OM4, 5,0m	LPD42500050	HEL24LU05V
LCD MU G50/125 OM4, 7,5m	LPD42500075	HEL24LU07V
LCD MU G50/125 OM4, 10,0m	LPD42500100	HEL24LU10V
LCD SCD G50/125 OM4, 1,0m	LPD42100010	HEL24LC01V
LCD SCD G50/125 OM4, 2,0m	LPD42100020	HEL24LC02V
LCD SCD G50/125 OM4, 3,0m	LPD42100030	HEL24LC03V
LCD SCD G50/125 OM4, 5,0m	LPD42100050	HEL24LC05V
LCD SCD G50/125 OM4, 7,5m	LPD42100075	HEL24LC07V
LCD SCD G50/125 OM4, 10,0m	LPD42100100	HEL24LC10V
LCD ST G50/125 OM4, 1,0m	LPD42300010	HEL24LT01V
LCD ST G50/125 OM4, 2,0m	LPD42300020	HEL24LT02V
LCD ST G50/125 OM4, 3,0m	LPD42300030	HEL24LT03V
LCD ST G50/125 OM4, 5,0m	LPD42300050	HEL24LT05V
LCD ST G50/125 OM4, 7,5m	LPD42300075	HEL24LT07V
LCD ST G50/125 OM4, 10,0m	LPD42300100	HEL24LT10V

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**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

# E2000® Duplex Patch and Adapter Cables



FO patchcords as connection or adapter cables.  
The standard version of the connection cable is crossover.  
For the SC / LC duplex, subsequent mutual rotation of the connectors is possible.

The FO patchcord has been developed especially for use in offices, industry and data centers.  
High-quality processing ensures that the optical transmission parameters offer a maximum of data security.

The FO patchcord can be ordered together with all standard FO connectors.

- PushPull Connectors
- Integrated protective cap protects end surfaces against dirt and mechanical impairment and prevents emission of laser light when unplugged
- One-piece design
- Color-codable connectors and adapters
- Mechanical codable connectors
- Suitable for high-power applications

## Specification:

Norms	IEC 61 754-15, TIA 604-16
Technology	Ceramic ferrule (2.5 mm)
Tuning	in 60° increments
Strain relief	100 N
Operating temperature	-10 °C to +70 °C
Material	flame-retardant acc. to UL 94 V-0
Service life	minimum 1000 mating cycles
Housing colors	per connector norm
Sheath	FRNC: IEC 60 332-1; IEC 50 754-2; IEC 61 034
Cable color	heather violet RAL 4003 (Multimode OM4) aqua RAL 6027 (Multimode OM3) yellow RAL 1021 (Singlemode OS2)
Build	I-V(ZN)HH
Packaging unit	individually packaged



## Ordering information

Description	Type	Order No.
E2000® DIN E09/125 OS2, 1,0m	LPD07400010	<a href="#">HEL29EZ01V</a>
E2000® DIN E09/125 OS2, 2,0m	LPD07400020	<a href="#">HEL29EZ02V</a>
E2000® DIN E09/125 OS2, 3,0m	LPD07400030	<a href="#">HEL29EZ03V</a>
E2000® DIN E09/125 OS2, 5,0m	LPD07400050	<a href="#">HEL29EZ05V</a>
E2000® DIN E09/125 OS2, 7,5m	LPD07400075	<a href="#">HEL29EZ07V</a>
E2000® DIN E09/125 OS2, 10,0m	LPD07400100	<a href="#">HEL29EZ10V</a>
E2000®-APC DIN E09/125 OS2	LPD97400000	on request
E2000® FC E09/125 OS2, 1,0m	LPD08400010	<a href="#">HEL29EF01V</a>
E2000® FC E09/125 OS2, 2,0m	LPD08400020	<a href="#">HEL29EF02V</a>
E2000® FC E09/125 OS2, 3,0m	LPD08400030	<a href="#">HEL29EF03V</a>
E2000® FC E09/125 OS2, 5,0m	LPD08400050	<a href="#">HEL29EF05V</a>
E2000® FC E09/125 OS2, 7,5m	LPD08400075	<a href="#">HEL29EF07V</a>
E2000® FC E09/125 OS2, 10,0m	LPD08400100	<a href="#">HEL29EF10V</a>
E2000® FC-APC E09/125 OS2	LPD98400000	on request
E2000®-APC FC-APC E09/125 OS2	LPD98490000	on request
E2000® LCD G50/125 OM3, 1,0m	LPD32400010	<a href="#">HEL23LE01V</a>
E2000® LCD G50/125 OM3, 2,0m	LPD32400020	<a href="#">HEL23LE02V</a>
E2000® LCD G50/125 OM3, 3,0m	LPD32400030	<a href="#">HEL23LE03V</a>
E2000® LCD G50/125 OM3, 5,0m	LPD32400050	<a href="#">HEL23LE05V</a>
E2000® LCD G50/125 OM3, 7,5m	LPD32400075	<a href="#">HEL23LE07V</a>
E2000® LCD G50/125 OM3, 10,0m	LPD32400100	<a href="#">HEL23LE10V</a>
E2000® LCD E09/125 OS2, 1,0m	LPD02400010	<a href="#">HEL29LE01V</a>
E2000® LCD E09/125 OS2, 2,0m	LPD02400020	<a href="#">HEL29LE02V</a>
E2000® LCD E09/125 OS2, 3,0m	LPD02400030	<a href="#">HEL29LE03V</a>
E2000® LCD E09/125 OS2, 5,0m	LPD02400050	<a href="#">HEL29LE05V</a>
E2000® LCD E09/125 OS2, 7,5m	LPD02400075	<a href="#">HEL29LE07V</a>
E2000® LCD E09/125 OS2, 10,0m	LPD02400100	<a href="#">HEL29LE10V</a>
E2000® LCD-APC E09/125 OS2	LPD92480000	on request
E2000®-APC LCD-APC E09/125 OS2	LPD92490000	on request

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**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

# E2000® Duplex Patch and Adapter Cables – Continuation

## Ordering information

Description	Type	Order No.
E2000® E2000® G50/125 OM3, 1,0m	LPD34400010	<a href="#">HEL23EE01V</a>
E2000® E2000® G50/125 OM3, 2,0m	LPD34400020	<a href="#">HEL23EE02V</a>
E2000® E2000® G50/125 OM3, 3,0m	LPD34400030	<a href="#">HEL23EE03V</a>
E2000® E2000® G50/125 OM3, 5,0m	LPD34400050	<a href="#">HEL23EE05V</a>
E2000® E2000® G50/125 OM3, 7,5m	LPD34400075	<a href="#">HEL23EE07V</a>
E2000® E2000® G50/125 OM3, 10,0m	LPD34400100	<a href="#">HEL23EE10V</a>
E2000® E2000® E09/125 OS2, 1,0m	LPD04400010	<a href="#">HEL29EE01V</a>
E2000® E2000® E09/125 OS2, 2,0m	LPD04400020	<a href="#">HEL29EE02V</a>
E2000® E2000® E09/125 OS2, 3,0m	LPD04400030	<a href="#">HEL29EE03V</a>
E2000® E2000® E09/125 OS2, 5,0m	LPD04400050	<a href="#">HEL29EE05V</a>
E2000® E2000® E09/125 OS2, 7,5m	LPD04400075	<a href="#">HEL29EE07V</a>
E2000® E2000® E09/125 OS2, 10,0m	LPD04400100	<a href="#">HEL29EE10V</a>
E2000® E2000®-APC E09/125 OS2	LPD94400000	<a href="#">on request</a>
E2000®-APC E2000®-APC E09/125 OS2	LPD94490000	<a href="#">on request</a>
E2000® MU G50/125 OM3, 1,0m	LPD34500010	<a href="#">HEL23EU01V</a>
E2000® MU G50/125 OM3, 2,0m	LPD34500020	<a href="#">HEL23EU02V</a>
E2000® MU G50/125 OM3, 3,0m	LPD34500030	<a href="#">HEL23EU03V</a>
E2000® MU G50/125 OM3, 5,0m	LPD34500050	<a href="#">HEL23EU05V</a>
E2000® MU G50/125 OM3, 7,5m	LPD34500075	<a href="#">HEL23EU07V</a>
E2000® MU G50/125 OM3, 10,0m	LPD34500100	<a href="#">HEL23EU10V</a>
E2000® MU E09/125 OS2, 1,0m	LPD04500010	<a href="#">HEL29EU01V</a>
E2000® MU E09/125 OS2, 2,0m	LPD04500020	<a href="#">HEL29EU02V</a>
E2000® MU E09/125 OS2, 3,0m	LPD04500030	<a href="#">HEL29EU03V</a>
E2000® MU E09/125 OS2, 5,0m	LPD04500050	<a href="#">HEL29EU05V</a>
E2000® MU E09/125 OS2, 7,5m	LPD04500075	<a href="#">HEL29EU07V</a>
E2000® MU E09/125 OS2, 10,0m	LPD04500100	<a href="#">HEL29EU10V</a>
E2000®-APC MU E09/125 OS2	LPD94500000	<a href="#">on request</a>
E2000® SCD G50/125 OM3, 1,0m	LPD34100010	<a href="#">HEL23EC01V</a>
E2000® SCD G50/125 OM3, 2,0m	LPD34100020	<a href="#">HEL23EC02V</a>
E2000® SCD G50/125 OM3, 3,0m	LPD34100030	<a href="#">HEL23EC03V</a>
E2000® SCD G50/125 OM3, 5,0m	LPD34100050	<a href="#">HEL23EC05V</a>
E2000® SCD G50/125 OM3, 7,5m	LPD34100075	<a href="#">HEL23EC07V</a>
E2000® SCD G50/125 OM3, 10,0m	LPD34100100	<a href="#">HEL23EC10V</a>
E2000® SCD E09/125 OS2, 1,0m	LPD04100010	<a href="#">HEL29EC01V</a>
E2000® SCD E09/125 OS2, 2,0m	LPD04100020	<a href="#">HEL29EC02V</a>
E2000® SCD E09/125 OS2, 3,0m	LPD04100030	<a href="#">HEL29EC03V</a>
E2000® SCD E09/125 OS2, 5,0m	LPD04100050	<a href="#">HEL29EC05V</a>
E2000® SCD E09/125 OS2, 7,5m	LPD04100075	<a href="#">HEL29EC07V</a>
E2000® SCD E09/125 OS2, 10,0m	LPD04100100	<a href="#">HEL29EC10V</a>
E2000® SCD-APC E09/125 OS2	LPD94180000	<a href="#">on request</a>
E2000®-APC SCD-APC E09/125 OS2	LPD94190000	<a href="#">on request</a>

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## Ordering information

Description	Type	Order No.
E2000® ST G50/125 OM3, 1,0m	LPD34300010	HEL23ET01V
E2000® ST G50/125 OM3, 2,0m	LPD34300020	HEL23ET02V
E2000® ST G50/125 OM3, 3,0m	LPD34300030	HEL23ET03V
E2000® ST G50/125 OM3, 5,0m	LPD34300050	HEL23ET05V
E2000® ST G50/125 OM3, 7,5m	LPD34300075	HEL23ET07V
E2000® ST G50/125 OM3, 10,0m	LPD34300100	HEL23ET10V
E2000® ST E09/125 OS2, 1,0m	LPD04300010	HEL29ET01V
E2000® ST E09/125 OS2, 2,0m	LPD04300020	HEL29ET02V
E2000® ST E09/125 OS2, 3,0m	LPD04300030	HEL29ET03V
E2000® ST E09/125 OS2, 5,0m	LPD04300050	HEL29ET05V
E2000® ST E09/125 OS2, 7,5m	LPD04300075	HEL29ET07V
E2000® ST E09/125 OS2, 10,0m	LPD04300100	HEL29ET10V
E2000®-APC ST E09/125 OS2	LPD94300000	on request
E2000® LCD G50/125 OM4, 1,0m	LPD42400010	HEL24LE01V
E2000® LCD G50/125 OM4, 2,0m	LPD42400020	HEL24LE02V
E2000® LCD G50/125 OM4, 3,0m	LPD42400030	HEL24LE03V
E2000® LCD G50/125 OM4, 5,0m	LPD42400050	HEL24LE05V
E2000® LCD G50/125 OM4, 7,5m	LPD42400075	HEL24LE07V
E2000® LCD G50/125 OM4, 10,0m	LPD42400100	HEL24LE10V
E2000® E2000® G50/125 OM4, 1,0m	LPD44400010	HEL24EE01V
E2000® E2000® G50/125 OM4, 2,0m	LPD44400020	HEL24EE02V
E2000® E2000® G50/125 OM4, 3,0m	LPD44400030	HEL24EE03V
E2000® E2000® G50/125 OM4, 5,0m	LPD44400050	HEL24EE05V
E2000® E2000® G50/125 OM4, 7,5m	LPD44400075	HEL24EE07V
E2000® E2000® G50/125 OM4, 10,0m	LPD44400100	HEL24EE10V
E2000® MU G50/125 OM4, 1,0m	LPD44500010	HEL24EU01V
E2000® MU G50/125 OM4, 2,0m	LPD44500020	HEL24EU02V
E2000® MU G50/125 OM4, 3,0m	LPD44500030	HEL24EU03V
E2000® MU G50/125 OM4, 5,0m	LPD44500050	HEL24EU05V
E2000® MU G50/125 OM4, 7,5m	LPD44500075	HEL24EU07V
E2000® MU G50/125 OM4, 10,0m	LPD44500100	HEL24EU10V
E2000® SCD G50/125 OM4, 1,0m	LPD44100010	HEL24EC01V
E2000® SCD G50/125 OM4, 2,0m	LPD44100020	HEL24EC02V
E2000® SCD G50/125 OM4, 3,0m	LPD44100030	HEL24EC03V
E2000® SCD G50/125 OM4, 5,0m	LPD44100050	HEL24EC05V
E2000® SCD G50/125 OM4, 7,5m	LPD44100075	HEL24EC07V
E2000® SCD G50/125 OM4, 10,0m	LPD44100100	HEL24EC10V
E2000® ST G50/125 OM4, 1,0m	LPD44300010	HEL24ET01V
E2000® ST G50/125 OM4, 2,0m	LPD44300020	HEL24ET02V
E2000® ST G50/125 OM4, 3,0m	LPD44300030	HEL24ET03V
E2000® ST G50/125 OM4, 5,0m	LPD44300050	HEL24ET05V
E2000® ST G50/125 OM4, 7,5m	LPD44300075	HEL24ET07V
E2000® ST G50/125 OM4, 10,0m	LPD44300100	HEL24ET10V

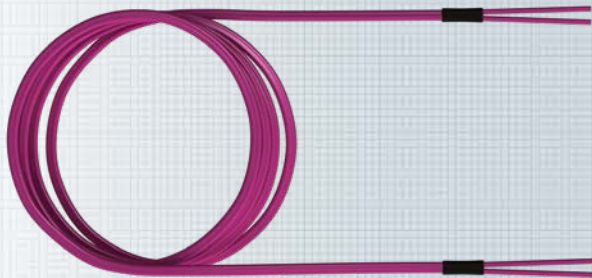
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**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!



# SC Duplex Patch and Adapter Cables



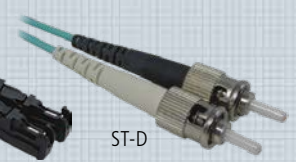
SC-D



LC-D



E2000®



ST-D

... (DIN, MU, etc.)

FO patchcords as connection or adapter cables.  
The standard version of the connection cable is crossover.  
For the SC / LC duplex, subsequent mutual rotation of the connectors is possible.

The FO patchcord has been developed especially for use in offices, industry and data centers.  
High-quality processing ensures that the optical transmission parameters offer a maximum of data security.

The FO patchcord can be ordered together with all standard FO connectors.

- PushPull Connectors
- One-piece design
- High mechanical and thermal resilience per Telcordia GR-326-CORE
- IEC 60 874-14 series

## Specification:

Norms	IEC 61 754-4, TIA 604-3
Technology	Ceramic ferrule (2.5 mm)
Tuning	in 60° increments
Strain relief	100 N
Operating temperature	-10° C to +70° C
Material	flame-retardant acc. to UL 94 V-0
Service life	minimum 1000 mating cycles
Housing colors	per connector norms
Sheath	FRNC: IEC 60 332-1; IEC 50 754-2; IEC 61 034
Cable color	heather violet RAL 4003 (Multimode OM4) aqua RAL 6027 (Multimode OM3) yellow RAL 1021 (Singlemode OS2)
Build	I-V(ZN)HH

Packaging unit individually packaged



## Ordering information

Description	Type	Order No.
SCD DIN E09/125 OS2, 1,0m	LPD07100010	<a href="#">HEL29CZ01V</a>
SCD DIN E09/125 OS2, 2,0m	LPD07100020	<a href="#">HEL29CZ02V</a>
SCD DIN E09/125 OS2, 3,0m	LPD07100030	<a href="#">HEL29CZ03V</a>
SCD DIN E09/125 OS2, 5,0m	LPD07100050	<a href="#">HEL29CZ05V</a>
SCD DIN E09/125 OS2, 7,5m	LPD07100075	<a href="#">HEL29CZ07V</a>
SCD DIN E09/125 OS2, 10,0m	LPD07100100	<a href="#">HEL29CZ10V</a>
SCD-APC DIN E09/125 OS2	LPD97180000	on request
SCD FC E09/125 OS2, 1,0m	LPD08100010	<a href="#">HEL29CF01V</a>
SCD FC E09/125 OS2, 2,0m	LPD08100020	<a href="#">HEL29CF02V</a>
SCD FC E09/125 OS2, 3,0m	LPD08100030	<a href="#">HEL29CF03V</a>
SCD FC E09/125 OS2, 5,0m	LPD08100050	<a href="#">HEL29CF05V</a>
SCD FC E09/125 OS2, 7,5m	LPD08100075	<a href="#">HEL29CF07V</a>
SCD FC E09/125 OS2, 10,0m	LPD08100100	<a href="#">HEL29CF10V</a>
SCD FC-APC E09/125 OS2	LPD98100000	on request
SCD-APC FC-APC E09/125 OS2	LPD98190000	on request
SCD LCD G50/125 OM3, 1,0m	LPD32100010	<a href="#">HEL23LC01V</a>
SCD LCD G50/125 OM3, 2,0m	LPD32100020	<a href="#">HEL23LC02V</a>
SCD LCD G50/125 OM3, 3,0m	LPD32100030	<a href="#">HEL23LC03V</a>
SCD LCD G50/125 OM3, 5,0m	LPD32100050	<a href="#">HEL23LC05V</a>
SCD LCD G50/125 OM3, 7,5m	LPD32100075	<a href="#">HEL23LC07V</a>
SCD LCD G50/125 OM3, 10,0m	LPD32100100	<a href="#">HEL23LC10V</a>
SCD LCD E09/125 OS2, 1,0m	LPD02100010	<a href="#">HEL29LC01V</a>
SCD LCD E09/125 OS2, 2,0m	LPD02100020	<a href="#">HEL29LC02V</a>
SCD LCD E09/125 OS2, 3,0m	LPD02100030	<a href="#">HEL29LC03V</a>
SCD LCD E09/125 OS2, 5,0m	LPD02100050	<a href="#">HEL29LC05V</a>
SCD LCD E09/125 OS2, 7,5m	LPD02100075	<a href="#">HEL29LC07V</a>
SCD LCD E09/125 OS2, 10,0m	LPD02100100	<a href="#">HEL29LC10V</a>
SCD LCD-APC E09/125 OS2	LPD92100000	on request
SCD-APC LCD-APC E09/125 OS2	LPD92190000	on request

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**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

# SC Duplex Patch and Adapter Cables – Continuation

## Ordering information

Description	Type	Order No.
SCD E2000® G50/125 OM3, 1,0m	LPD34100010	HEL23EC01V
SCD E2000® G50/125 OM3, 2,0m	LPD34100020	HEL23EC02V
SCD E2000® G50/125 OM3, 3,0m	LPD34100030	HEL23EC03V
SCD E2000® G50/125 OM3, 5,0m	LPD34100050	HEL23EC05V
SCD E2000® G50/125 OM3, 7,5m	LPD34100075	HEL23EC07V
SCD E2000® G50/125 OM3, 10,0m	LPD34100100	HEL23EC10V
SCD E2000® E09/125 OS2, 1,0m	LPD04100010	HEL29EC01V
SCD E2000® E09/125 OS2, 2,0m	LPD04100020	HEL29EC02V
SCD E2000® E09/125 OS2, 3,0m	LPD04100030	HEL29EC03V
SCD E2000® E09/125 OS2, 5,0m	LPD04100050	HEL29EC05V
SCD E2000® E09/125 OS2, 7,5m	LPD04100075	HEL29EC07V
SCD E2000® E09/125 OS2, 10,0m	LPD04100100	HEL29EC10V
SCD E2000® E09/125 OS2	LPD94190000	on request
SCD E2000®-APC E09/125 OS2	LPD94180000	on request
SCD MU G50/125 OM3, 1,0m	LPD35100010	HEL23CU01V
SCD MU G50/125 OM3, 2,0m	LPD35100020	HEL23CU02V
SCD MU G50/125 OM3, 3,0m	LPD35100030	HEL23CU03V
SCD MU G50/125 OM3, 5,0m	LPD35100050	HEL23CU05V
SCD MU G50/125 OM3, 7,5m	LPD35100075	HEL23CU07V
SCD MU G50/125 OM3, 10,0m	LPD35100100	HEL23CU10V
SCD MU E09/125 OS2, 1,0m	LPD05100010	HEL29CU01V
SCD MU E09/125 OS2, 2,0m	LPD05100020	HEL29CU02V
SCD MU E09/125 OS2, 3,0m	LPD05100030	HEL29CU03V
SCD MU E09/125 OS2, 5,0m	LPD05100050	HEL29CU05V
SCD MU E09/125 OS2, 7,5m	LPD05100075	HEL29CU07V
SCD MU E09/125 OS2, 10,0m	LPD05100100	HEL29CU10V
SCD-APC MU E09/125 OS2	LPD95100000	on request
SCD SCD G50/125 OM3, 1,0m	LPD31100010	HEL23CC01V
SCD SCD G50/125 OM3, 2,0m	LPD31100020	HEL23CC02V
SCD SCD G50/125 OM3, 3,0m	LPD31100030	HEL23CC03V
SCD SCD G50/125 OM3, 5,0m	LPD31100050	HEL23CC05V
SCD SCD G50/125 OM3, 7,5m	LPD31100075	HEL23CC07V
SCD SCD G50/125 OM3, 10,0m	LPD31100100	HEL23CC10V
SCD SCD E09/125 OS2, 1,0m	LPD01100010	HEL29CC01V
SCD SCD E09/125 OS2, 2,0m	LPD01100020	<b>HEL29CC02V</b>
SCD SCD E09/125 OS2, 3,0m	LPD01100030	HEL29CC03V
SCD SCD E09/125 OS2, 5,0m	LPD01100050	HEL29CC05V
SCD SCD E09/125 OS2, 7,5m	LPD01100075	HEL29CC07V
SCD SCD E09/125 OS2, 10,0m	LPD01100100	HEL29CC10V
SCD SCD-APC E09/125 OS2	LPD91100000	on request
SCD-APC SCD-APC E09/125 OS2	LPD91190000	on request

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## Ordering information

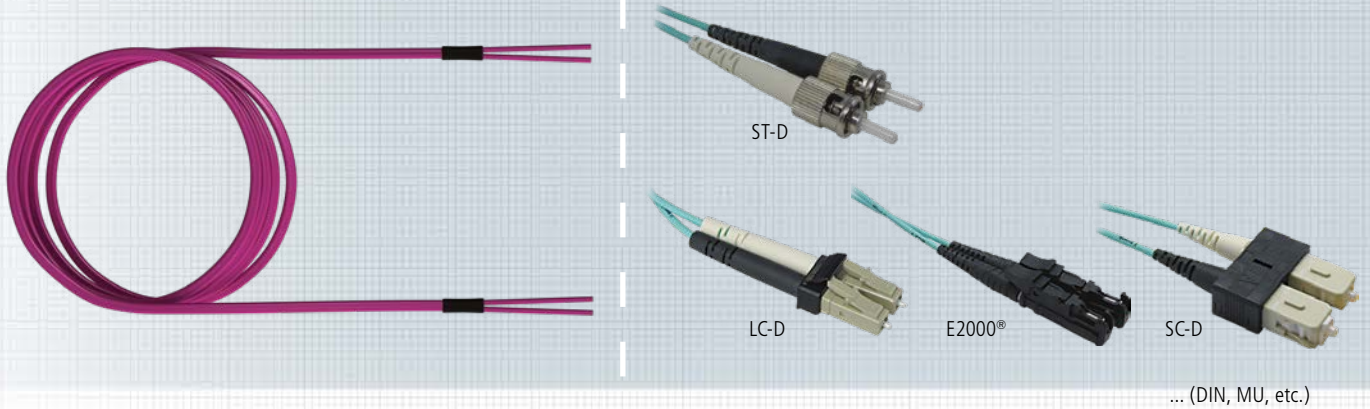
Description	Type	Order No.
SCD ST G50/125 OM3, 1,0m	LPD31300010	HEL23CT01V
SCD ST G50/125 OM3, 2,0m	LPD31300020	HEL23CT02V
SCD ST G50/125 OM3, 3,0m	LPD31300030	HEL23CT03V
SCD ST G50/125 OM3, 5,0m	LPD31300050	HEL23CT05V
SCD ST G50/125 OM3, 7,5m	LPD31300075	HEL23CT07V
SCD ST G50/125 OM3, 10,0m	LPD31300100	HEL23CT10V
SCD ST E09/125 OS2, 1,0m	LPD01300010	HEL29CT01V
SCD ST E09/125 OS2, 2,0m	LPD01300020	HEL29CT02V
SCD ST E09/125 OS2, 3,0m	LPD01300030	HEL29CT03V
SCD ST E09/125 OS2, 5,0m	LPD01300050	HEL29CT05V
SCD ST E09/125 OS2, 7,5m	LPD01300075	HEL29CT07V
SCD ST E09/125 OS2, 10,0m	LPD01300100	HEL29CT10V
SCD-APC ST E09/125 OS2	LPD91300000	on request
SCD LCD G50/125 OM4, 1,0m	LPD42100010	HEL24LC01V
SCD LCD G50/125 OM4, 2,0m	LPD42100020	HEL24LC02V
SCD LCD G50/125 OM4, 3,0m	LPD42100030	HEL24LC03V
SCD LCD G50/125 OM4, 5,0m	LPD42100050	HEL24LC05V
SCD LCD G50/125 OM4, 7,5m	LPD42100075	HEL24LC07V
SCD LCD G50/125 OM4, 10,0m	LPD42100100	HEL24LC10V
SCD E2000® G50/125 OM4, 1,0m	LPD44100010	HEL24EC01V
SCD E2000® G50/125 OM4, 2,0m	LPD44100020	HEL24EC02V
SCD E2000® G50/125 OM4, 3,0m	LPD44100030	HEL24EC03V
SCD E2000® G50/125 OM4, 5,0m	LPD44100050	HEL24EC05V
SCD E2000® G50/125 OM4, 7,5m	LPD44100075	HEL24EC07V
SCD E2000® G50/125 OM4, 10,0m	LPD44100100	HEL24EC10V
SCD MU G50/125 OM4, 1,0m	LPD45100010	HEL24CU01V
SCD MU G50/125 OM4, 2,0m	LPD45100020	HEL24CU02V
SCD MU G50/125 OM4, 3,0m	LPD45100030	HEL24CU03V
SCD MU G50/125 OM4, 5,0m	LPD45100050	HEL24CU05V
SCD MU G50/125 OM4, 7,5m	LPD45100075	HEL24CU07V
SCD MU G50/125 OM4, 10,0m	LPD45100100	HEL24CU10V
SCD SCD G50/125 OM4, 1,0m	LPD41100010	HEL24CC01V
SCD SCD G50/125 OM4, 2,0m	LPD41100020	HEL24CC02V
SCD SCD G50/125 OM4, 3,0m	LPD41100030	HEL24CC03V
SCD SCD G50/125 OM4, 5,0m	LPD41100050	HEL24CC05V
SCD SCD G50/125 OM4, 7,5m	LPD41100075	HEL24CC07V
SCD SCD G50/125 OM4, 10,0m	LPD41100100	HEL24CC10V
SCD ST G50/125 OM4, 1,0m	LPD41300010	HEL24CT01V
SCD ST G50/125 OM4, 2,0m	LPD41300020	HEL24CT02V
SCD ST G50/125 OM4, 3,0m	LPD41300030	HEL24CT03V
SCD ST G50/125 OM4, 5,0m	LPD41300050	HEL24CT05V
SCD ST G50/125 OM4, 7,5m	LPD41300075	HEL24CT07V
SCD ST G50/125 OM4, 10,0m	LPD41300100	HEL24CT10V

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**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

# ST Duplex Patch and Adapter Cables



FO patchcords as connection or adapter cables.  
The standard version of the connection cable is labeled as crossover.  
For the SC / LC duplex, subsequent mutual rotation of the connectors is possible.

The FO patchcord has been developed especially for use in offices, industry and data centers.  
High-quality processing ensures that the optical transmission parameters offer a maximum of data security.

The FO patchcord can be ordered together with all standard FO connectors.

- Bayonet lock
- One-piece design
- ST security with integrated strain relief

## Specification:

Norms	IEC 61 754-4, TIA 604-3
Technology	Ceramic ferrule (2.5 mm)
Tuning	in 60° increments
Strain relief	100 N
Operating temperature	-10 °C to +70 °C
Material	flame-retardant acc. to UL 94 V-0
Service life	minimum 1000 mating cycles
Housing colors	per connector norm
Sheath	FRNC: IEC 60 332-1; IEC 50 754-2; IEC 61 034
Cable color	heather violet RAL 4003 (Multimode OM4) aqua RAL 6027 (Multimode OM3) yellow RAL 1021 (Singlemode OS2)
Build	I-V(ZN)HH
Packaging unit	individually packaged





## Ordering information

Description	Type	Order No.
ST DIN E09/125 OS2, 1,0m	LPD07300010	<a href="#">HEL29TZ01V</a>
ST DIN E09/125 OS2, 2,0m	LPD07300020	<a href="#">HEL29TZ02V</a>
ST DIN E09/125 OS2, 3,0m	LPD07300030	<a href="#">HEL29TZ03V</a>
ST DIN E09/125 OS2, 5,0m	LPD07300050	<a href="#">HEL29TZ05V</a>
ST DIN E09/125 OS2, 7,5m	LPD07300075	<a href="#">HEL29TZ07V</a>
ST DIN E09/125 OS2, 10,0m	LPD07300100	<a href="#">HEL29TZ10V</a>
ST FC E09/125 OS2, 1,0m	LPD08300010	<a href="#">HEL29TF01V</a>
ST FC E09/125 OS2, 2,0m	LPD08300020	<a href="#">HEL29TF02V</a>
ST FC E09/125 OS2, 3,0m	LPD08300030	<a href="#">HEL29TF03V</a>
ST FC E09/125 OS2, 5,0m	LPD08300050	<a href="#">HEL29TF05V</a>
ST FC E09/125 OS2, 7,5m	LPD08300075	<a href="#">HEL29TF07V</a>
ST FC E09/125 OS2, 10,0m	LPD08300100	<a href="#">HEL29TF10V</a>
ST FC-APC E09/125 OS2	LPD98300000	on request
ST LCD G50/125 OM3, 1,0m	LPD32300010	<a href="#">HEL23LT01V</a>
ST LCD G50/125 OM3, 2,0m	LPD32300020	<a href="#">HEL23LT02V</a>
ST LCD G50/125 OM3, 3,0m	LPD32300030	<a href="#">HEL23LT03V</a>
ST LCD G50/125 OM3, 5,0m	LPD32300050	<a href="#">HEL23LT05V</a>
ST LCD G50/125 OM3, 7,5m	LPD32300075	<a href="#">HEL23LT07V</a>
ST LCD G50/125 OM3, 10,0m	LPD32300100	<a href="#">HEL23LT10V</a>
ST LCD E09/125 OS2, 1,0m	LPD02300010	<a href="#">HEL29LT01V</a>
ST LCD E09/125 OS2, 2,0m	LPD02300020	<a href="#">HEL29LT02V</a>
ST LCD E09/125 OS2, 3,0m	LPD02300030	<a href="#">HEL29LT03V</a>
ST LCD E09/125 OS2, 5,0m	LPD02300050	<a href="#">HEL29LT05V</a>
ST LCD E09/125 OS2, 7,5m	LPD02300075	<a href="#">HEL29LT07V</a>
ST LCD E09/125 OS2, 10,0m	LPD02300100	<a href="#">HEL29LT10V</a>
ST LCD-APC E09/125 OS2	LPD92300000	on request
SCD LCD E09/125 OS2, 10,0m	LPD02100100	<a href="#">HEL29LC10V</a>
SCD LCD-APC E09/125 OS2	LPD92100000	on request
SCD-APC LCD-APC E09/125 OS2	LPD92190000	on request

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**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

# ST Duplex Patch and Adapter Cables – Continuation

## Ordering information

Description	Type	Order No.
ST E2000® G50/125 OM3, 1,0m	LPD34300010	<a href="#">HEL23ET01V</a>
ST E2000® G50/125 OM3, 2,0m	LPD34300020	<a href="#">HEL23ET02V</a>
ST E2000® G50/125 OM3, 3,0m	LPD34300030	<a href="#">HEL23ET03V</a>
ST E2000® G50/125 OM3, 5,0m	LPD34300050	<a href="#">HEL23ET05V</a>
ST E2000® G50/125 OM3, 7,5m	LPD34300075	<a href="#">HEL23ET07V</a>
ST E2000® G50/125 OM3, 10,0m	LPD34300100	<a href="#">HEL23ET10V</a>
ST E2000® E09/125 OS2, 1,0m	LPD04300010	<a href="#">HEL29ET01V</a>
ST E2000® E09/125 OS2, 2,0m	LPD04300020	<a href="#">HEL29ET02V</a>
ST E2000® E09/125 OS2, 3,0m	LPD04300030	<a href="#">HEL29ET03V</a>
ST E2000® E09/125 OS2, 5,0m	LPD04300050	<a href="#">HEL29ET05V</a>
ST E2000® E09/125 OS2, 7,5m	LPD04300075	<a href="#">HEL29ET07V</a>
ST E2000® E09/125 OS2, 10,0m	LPD04300100	<a href="#">HEL29ET10V</a>
ST E2000®-APC E09/125 OS2	LPD94300000	<a href="#">on request</a>
ST MU G50/125 OM3, 1,0m	LSD35300010	<a href="#">HEL23TU01L</a>
ST MU G50/125 OM3, 2,0m	LSD35300020	<a href="#">HEL23TU02L</a>
ST MU G50/125 OM3, 3,0m	LSD35300030	<a href="#">HEL23TU03L</a>
ST MU G50/125 OM3, 5,0m	LSD35300050	<a href="#">HEL23TU05L</a>
ST MU G50/125 OM3, 7,5m	LSD35300075	<a href="#">HEL23TU07L</a>
ST MU G50/125 OM3, 10,0m	LSD35300100	<a href="#">HEL23TU10L</a>
ST MU E09/125 OS2, 1,0m	LSD05300010	<a href="#">HEL29TU01L</a>
ST MU E09/125 OS2, 2,0m	LSD05300020	<a href="#">HEL29TU02L</a>
ST MU E09/125 OS2, 3,0m	LSD05300030	<a href="#">HEL29TU03L</a>
ST MU E09/125 OS2, 5,0m	LSD05300050	<a href="#">HEL29TU05L</a>
ST MU E09/125 OS2, 7,5m	LSD05300075	<a href="#">HEL29TU07L</a>
ST MU E09/125 OS2, 10,0m	LSD05300100	<a href="#">HEL29TU10L</a>
ST SCD G50/125 OM3, 1,0m	LSD31300010	<a href="#">HEL23CT01L</a>
ST SCD G50/125 OM3, 2,0m	LSD31300020	<a href="#">HEL23CT02L</a>
ST SCD G50/125 OM3, 3,0m	LSD31300030	<a href="#">HEL23CT03L</a>
ST SCD G50/125 OM3, 5,0m	LSD31300050	<a href="#">HEL23CT05L</a>
ST SCD G50/125 OM3, 7,5m	LSD31300075	<a href="#">HEL23CT07L</a>
ST SCD G50/125 OM3, 10,0m	LSD31300100	<a href="#">HEL23CT10L</a>
ST SCD E09/125 OS2, 1,0m	LSD01300010	<a href="#">HEL29CT01L</a>
ST SCD E09/125 OS2, 2,0m	LSD01300020	<a href="#">HEL29CT02L</a>
ST SCD E09/125 OS2, 3,0m	LSD01300030	<a href="#">HEL29CT03L</a>
ST SCD E09/125 OS2, 5,0m	LSD01300050	<a href="#">HEL29CT05L</a>
ST SCD E09/125 OS2, 7,5m	LSD01300075	<a href="#">HEL29CT07L</a>
ST SCD E09/125 OS2, 10,0m	LSD01300100	<a href="#">HEL29CT10L</a>
ST SCD-APC E09/125 OS2	LSD91300000	<a href="#">on request</a>
SCD SCD E09/125 OS2, 10,0m	LPD01100100	<a href="#">HEL29CC10V</a>
SCD SCD-APC E09/125 OS2	LPD91100000	<a href="#">on request</a>
SCD-APC SCD-APC E09/125 OS2	LPD91190000	<a href="#">on request</a>

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## Ordering information

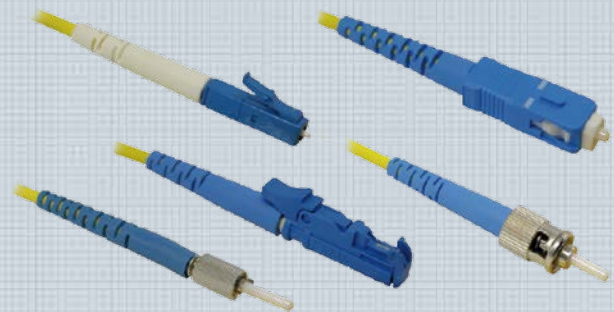
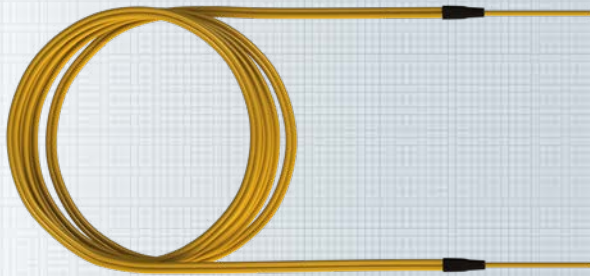
Description	Type	Order No.
ST ST G50/125 OM3, 1,0m	LSD33300010	HEL23TT01L
ST ST G50/125 OM3, 2,0m	LSD33300020	HEL23TT02L
ST ST G50/125 OM3, 3,0m	LSD33300030	HEL23TT03L
ST ST G50/125 OM3, 5,0m	LSD33300050	HEL23TT05L
ST ST G50/125 OM3, 7,5m	LSD33300075	HEL23TT07L
ST ST G50/125 OM3, 10,0m	LSD33300100	HEL23TT10L
ST ST E09/125 OS2, 1,0m	LSD03300010	HEL29TT01L
ST ST E09/125 OS2, 2,0m	LSD03300020	HEL29TT02L
ST ST E09/125 OS2, 3,0m	LSD03300030	HEL29TT03L
ST ST E09/125 OS2, 5,0m	LSD03300050	HEL29TT05L
ST ST E09/125 OS2, 7,5m	LSD03300075	HEL29TT07L
ST ST E09/125 OS2, 10,0m	LSD03300100	HEL29TT10L
ST LCD G50/125 OM4, 1,0m	LSD42300010	HEL24LT01L
ST LCD G50/125 OM4, 2,0m	LSD42300020	HEL24LT02L
ST LCD G50/125 OM4, 3,0m	LSD42300030	HEL24LT03L
ST LCD G50/125 OM4, 5,0m	LSD42300050	HEL24LT05L
ST LCD G50/125 OM4, 7,5m	LSD42300075	HEL24LT07L
ST LCD G50/125 OM4, 10,0m	LSD42300100	HEL24LT10L
ST E2000® G50/125 OM4, 1,0m	LSD44300010	HEL24ET01L
ST E2000® G50/125 OM4, 2,0m	LSD44300020	HEL24ET02L
ST E2000® G50/125 OM4, 3,0m	LSD44300030	HEL24ET03L
ST E2000® G50/125 OM4, 5,0m	LSD44300050	HEL24ET05L
ST E2000® G50/125 OM4, 7,5m	LSD44300075	HEL24ET07L
ST E2000® G50/125 OM4, 10,0m	LSD44300100	HEL24ET10L
ST MU G50/125 OM4, 1,0m	LSD45300010	HEL24TU01L
ST MU G50/125 OM4, 2,0m	LSD45300020	HEL24TU02L
ST MU G50/125 OM4, 3,0m	LSD45300030	HEL24TU03L
ST MU G50/125 OM4, 5,0m	LSD45300050	HEL24TU05L
ST MU G50/125 OM4, 7,5m	LSD45300075	HEL24TU07L
ST MU G50/125 OM4, 10,0m	LSD45300100	HEL24TU10L
ST SCD G50/125 OM4, 1,0m	LSD41300010	HEL24CT01L
ST SCD G50/125 OM4, 2,0m	LSD41300020	HEL24CT02L
ST SCD G50/125 OM4, 3,0m	LSD41300030	HEL24CT03L
ST SCD G50/125 OM4, 5,0m	LSD41300050	HEL24CT05L
ST SCD G50/125 OM4, 7,5m	LSD41300075	HEL24CT07L
ST SCD G50/125 OM4, 10,0m	LSD41300100	HEL24CT10L
ST ST G50/125 OM4, 1,0m	LSD43300010	HEL24TT01L
ST ST G50/125 OM4, 2,0m	LSD43300020	HEL24TT02L
ST ST G50/125 OM4, 3,0m	LSD43300030	HEL24TT03L
ST ST G50/125 OM4, 5,0m	LSD43300050	HEL24TT05L
ST ST G50/125 OM4, 7,5m	LSD43300075	HEL24TT07L
ST ST G50/125 OM4, 10,0m	LSD43300100	HEL24TT10L
SCD ST G50/125 OM4, 10,0m	LPD41300100	HEL24CT10V

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**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

# Simplex Patch and Adapter Cables



The FO patchcord has been developed especially for use in offices, industry and data centers. High-quality processing ensures that the optical transmission parameters offer a maximum of data security.

The FO patchcord can be ordered together with all standard FO connectors.

## Specification:

Norms	IEC 61 754-4, TIA 604-3
Technology	ceramic ferrule
Tuning	in 45° and 60° increments depending on connector build
Strain relief	100 N
Operating temperature	-10 °C to +70 °C
Material	flame-retardant acc. to UL 94 V-0
Service life	minimum 1000 mating cycles
Housing colors	per connector norm
Sheath	FRNC: IEC 60 332-1; IEC 50 754-2; IEC 61 034
Cable color	aqua RAL 6027 (Multimode OM3) yellow RAL 1021 (Singlemode OS2)
Build	I-VH
Packaging unit	individually packaged

Description	Type	Order No.
LC LC E09/125 OS2, 1,0m	LPS02200010	<a href="#">HEL19LL01V</a>
LC LC E09/125 OS2, 2,0m	LPS02200020	<a href="#">HEL19LL02V</a>
LC LC E09/125 OS2, 3,0m	LPS02200030	<a href="#">HEL19LL03V</a>
LC LC E09/125 OS2, 5,0m	LPS02200050	<a href="#">HEL19LL05V</a>
LC LC E09/125 OS2, 7,5m	LPS02200075	<a href="#">HEL19LL07V</a>
LC LC E09/125 OS2, 10,0m	LPS02200100	<a href="#">HEL19LL10V</a>
LC LC-APC E09/125 OS2	LPS92200000	<a href="#">on request</a>
LC-APC LC-APC E09/125 OS2	LPS92290000	<a href="#">on request</a>
LC E2000® E09/125 OS2, 1,0m	LPS02400010	<a href="#">HEL19LE01V</a>
LC E2000® E09/125 OS2, 2,0m	LPS02400020	<a href="#">HEL19LE02V</a>
LC E2000® E09/125 OS2, 3,0m	LPS02400030	<a href="#">HEL19LE03V</a>
LC E2000® E09/125 OS2, 5,0m	LPS02400050	<a href="#">HEL19LE05V</a>
LC E2000® E09/125 OS2, 7,5m	LPS02400075	<a href="#">HEL19LE07V</a>
LC E2000® E09/125 OS2, 10,0m	LPS02400100	<a href="#">HEL19LE10V</a>
LC E2000®-APC E09/125 OS2	LPS92480000	<a href="#">on request</a>
LC-APC E2000®-APC E09/125 OS2	LPS92490000	<a href="#">on request</a>

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OS2

## Ordering information

Description	Type	Order No.
LC MU E09/125 OS2, 1,0m	LPS02500010	<a href="#">HEL19LU01V</a>
LC MU E09/125 OS2, 2,0m	LPS02500020	<a href="#">HEL19LU02V</a>
LC MU E09/125 OS2, 3,0m	LPS02500030	<a href="#">HEL19LU03V</a>
LC MU E09/125 OS2, 5,0m	LPS02500050	<a href="#">HEL19LU05V</a>
LC MU E09/125 OS2, 7,5m	LPS02500075	<a href="#">HEL19LU07V</a>
LC MU E09/125 OS2, 10,0m	LPS02500100	<a href="#">HEL19LU10V</a>
LC-APC MU E09/125 OS2	LPS92580000	on request
LC SC E09/125 OS2, 1,0m	LPS02100010	<a href="#">HEL19LC01V</a>
LC SC E09/125 OS2, 2,0m	LPS02100020	<a href="#">HEL19LC02V</a>
LC SC E09/125 OS2, 3,0m	LPS02100030	<a href="#">HEL19LC03V</a>
LC SC E09/125 OS2, 5,0m	LPS02100050	<a href="#">HEL19LC05V</a>
LC SC E09/125 OS2, 7,5m	LPS02100075	<a href="#">HEL19LC07V</a>
LC SC E09/125 OS2, 10,0m	LPS02100100	<a href="#">HEL19LC10V</a>
LC SC-APC E09/125 OS2	LPS92180000	on request
LC-APC SC-APC E09/125 OS2	LPS92190000	on request
LC ST E09/125 OS2	LPS02300000	on request
LC-APC ST E09/125 OS2	LPS92300000	on request
E2000® FC-PC E09/125 OS2, 1,0m	LPS08400010	<a href="#">HEL19EF01V</a>
E2000® FC-PC E09/125 OS2, 2,0m	LPS08400020	<a href="#">HEL19EF02V</a>
E2000® FC-PC E09/125 OS2, 3,0m	LPS08400030	<a href="#">HEL19EF03V</a>
E2000® FC-PC E09/125 OS2, 5,0m	LPS08400050	<a href="#">HEL19EF05V</a>
E2000® FC-PC E09/125 OS2, 7,5m	LPS08400075	<a href="#">HEL19EF07V</a>
E2000® FC-PC E09/125 OS2, 10,0m	LPS08400100	<a href="#">HEL19EF10V</a>
E2000® FC-APC E09/125 OS2	LPS98400000	on request
E2000®-APC FC-APC E09/125 OS2	LPS98490000	on request

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**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!



# Simplex Patch and Adapter Cables – Continuation

## Ordering information

Description	Type	Order No.
E2000® E2000® E09/125 OS2, 1,0m	LPS04400010	HEL19EE01V
E2000® E2000® E09/125 OS2, 2,0m	LPS04400020	HEL19EE02V
E2000® E2000® E09/125 OS2, 3,0m	LPS04400030	HEL19EE03V
E2000® E2000® E09/125 OS2, 5,0m	LPS04400050	HEL19EE05V
E2000® E2000® E09/125 OS2, 7,5m	LPS04400075	HEL19EE07V
E2000® E2000® E09/125 OS2, 10,0m	LPS04400100	HEL19EE10V
E2000® E2000®-APC E09/125 OS2	LPS94400000	on request
E2000®-APC E2000®-APC E09/125 OS2	LPS94490000	on request
E2000® MU E09/125 OS2, 1,0m	LPS04500010	HEL19EU01V
E2000® MU E09/125 OS2, 2,0m	LPS04500020	HEL19EU02V
E2000® MU E09/125 OS2, 3,0m	LPS04500030	HEL19EU03V
E2000® MU E09/125 OS2, 5,0m	LPS04500050	HEL19EU05V
E2000® MU E09/125 OS2, 7,5m	LPS04500075	HEL19EU07V
E2000® MU E09/125 OS2, 10,0m	LPS04500100	HEL19EU10V
E2000®-APC MU E09/125 OS2	LPS94500000	on request
E2000® SC E09/125 OS2, 1,0m	LPS04100010	HEL19EC01V
E2000® SC E09/125 OS2, 2,0m	LPS04100020	HEL19EC02V
E2000® SC E09/125 OS2, 3,0m	LPS04100030	HEL19EC03V
E2000® SC E09/125 OS2, 5,0m	LPS04100050	HEL19EC05V
E2000® SC E09/125 OS2, 7,5m	LPS04100075	HEL19EC07V
E2000® SC E09/125 OS2, 10,0m	LPS04100100	HEL19EC10V
E2000® SC-APC E09/125 OS2	LPS94180000	on request
E2000®-APC SC-APC E09/125 OS2	LPS94190000	on request
E2000® ST E09/125 OS2, 1,0m	LPS04300010	HEL19ET01V
E2000® ST E09/125 OS2, 2,0m	LPS04300020	HEL19ET02V
E2000® ST E09/125 OS2, 3,0m	LPS04300030	HEL19ET03V
E2000® ST E09/125 OS2, 5,0m	LPS04300050	HEL19ET05V
E2000® ST E09/125 OS2, 7,5m	LPS04300075	HEL19ET07V
E2000® ST E09/125 OS2, 10,0m	LPS04300100	HEL19ET10V
E2000®-APC ST E09/125 OS2	LPS94300000	on request
SC FC-PC E09/125 OS2, 1,0m	LPS08100010	HEL19CF01V
SC FC-PC E09/125 OS2, 2,0m	LPS08100020	HEL19CF02V
SC FC-PC E09/125 OS2, 3,0m	LPS08100030	HEL19CF03V
SC FC-PC E09/125 OS2, 5,0m	LPS08100050	HEL19CF05V
SC FC-PC E09/125 OS2, 7,5m	LPS08100075	HEL19CF07V
SC FC-PC E09/125 OS2, 10,0m	LPS08100100	HEL19CF10V
SC FC-APC E09/125 OS2	LPS98100000	on request
SC-APC FC-APC E09/125 OS2	LPS98190000	on request

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## Ordering information

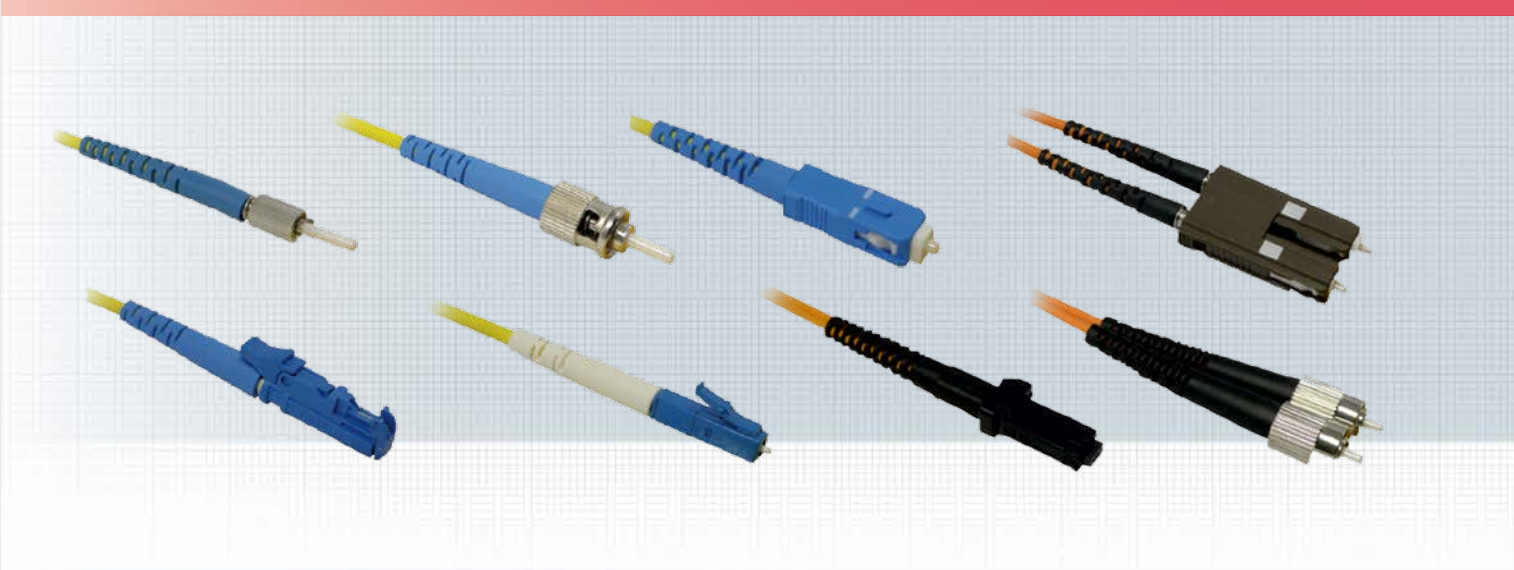
Description	Type	Order No.
SC MU E09/125 OS2, 1,0m	LPS05100010	HEL19CU01V
SC MU E09/125 OS2, 2,0m	LPS05100020	HEL19CU02V
SC MU E09/125 OS2, 3,0m	LPS05100030	HEL19CU03V
SC MU E09/125 OS2, 5,0m	LPS05100050	HEL19CU05V
SC MU E09/125 OS2, 7,5m	LPS05100075	HEL19CU07V
SC MU E09/125 OS2, 10,0m	LPS05100100	HEL19CU10V
SC-APC MU E09/125 OS2	LPS95180000	on request
SC SC E09/125 OS2, 1,0m	LPS01100010	HEL19CC01V
SC SC E09/125 OS2, 2,0m	LPS01100020	HEL19CC02V
SC SC E09/125 OS2, 3,0m	LPS01100030	HEL19CC03V
SC SC E09/125 OS2, 5,0m	LPS01100050	HEL19CC05V
SC SC E09/125 OS2, 7,5m	LPS01100075	HEL19CC07V
SC SC E09/125 OS2, 10,0m	LPS01100100	HEL19CC10V
SC SC-APC E09/125 OS2	LPS91100000	on request
SC-APC SC-APC E09/125 OS2	LPS91190000	on request
SC ST E09/125 OS2, 1,0m	LPS01300010	HEL19CT01V
SC ST E09/125 OS2, 2,0m	LPS01300020	HEL19CT02V
SC ST E09/125 OS2, 3,0m	LPS01300030	HEL19CT03V
SC ST E09/125 OS2, 5,0m	LPS01300050	HEL19CT05V
SC ST E09/125 OS2, 7,5m	LPS01300075	HEL19CT07V
SC ST E09/125 OS2, 10,0m	LPS01300100	HEL19CT10V
SC-APC ST E09/125 OS2	LPS91300000	on request
ST DIN E09/125 OS2, 1,0m	LPS07300010	HEL19TZ01V
ST DIN E09/125 OS2, 2,0m	LPS07300020	HEL19TZ02V
ST DIN E09/125 OS2, 3,0m	LPS07300030	HEL19TZ03V
ST DIN E09/125 OS2, 5,0m	LPS07300050	HEL19TZ05V
ST DIN E09/125 OS2, 7,5m	LPS07300075	HEL19TZ07V
ST DIN E09/125 OS2, 10,0m	LPS07300100	HEL19TZ10V
ST FC-PC E09/125 OS2, 1,0m	LPS08300010	HEL19TF01V
ST FC-PC E09/125 OS2, 2,0m	LPS08300020	HEL19TF02V
ST FC-PC E09/125 OS2, 3,0m	LPS08300030	HEL19TF03V
ST FC-PC E09/125 OS2, 5,0m	LPS08300050	HEL19TF05V
ST FC-PC E09/125 OS2, 7,5m	LPS08300075	HEL19TF07V
ST FC-PC E09/125 OS2, 10,0m	LPS08300100	HEL19TF10V
ST FC-APC E09/125 OS2	LPS98300000	on request
ST MU E09/125 OS2, 1,0m	LPS05300010	HEL19TU01V
ST MU E09/125 OS2, 2,0m	LPS05300020	HEL19TU02V
ST MU E09/125 OS2, 3,0m	LPS05300030	HEL19TU03V
ST MU E09/125 OS2, 5,0m	LPS05300050	HEL19TU05V
ST MU E09/125 OS2, 7,5m	LPS05300075	HEL19TU07V
ST MU E09/125 OS2, 10,0m	LPS05300100	HEL19TU10V
ST ST E09/125 OS2, 1,0m	LPS03300010	HEL19TT01V
ST ST E09/125 OS2, 2,0m	LPS03300020	HEL19TT02V
ST ST E09/125 OS2, 3,0m	LPS03300030	HEL19TT03V
ST ST E09/125 OS2, 5,0m	LPS03300050	HEL19TT05V
ST ST E09/125 OS2, 7,5m	LPS03300075	HEL19TT07V
ST ST E09/125 OS2, 10,0m	LPS03300100	HEL19TT10V

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**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

## FO Special Assemblies



FO patchcords as connection or adapter cables.

We offer a comprehensive product range of assembled FO connectors for custom applications.

In addition to standard connectors such as ST, SC, E2000®, LC, FC/PC, FC/APC, FDDI, ESCON and MTRJ, new connector generations such as MU and MPO in singlemode and multimode-applications are also included in our product lineup.

### Properties:

Operating temperature	-10° C to +70° C
Material	flame-retardant acc. to UL 94 V-0
Service life	minimum 1000 mating cycles
Housing colors	Singlemode blue Singlemode APC 8° green Multimode beige (black for E2000®)

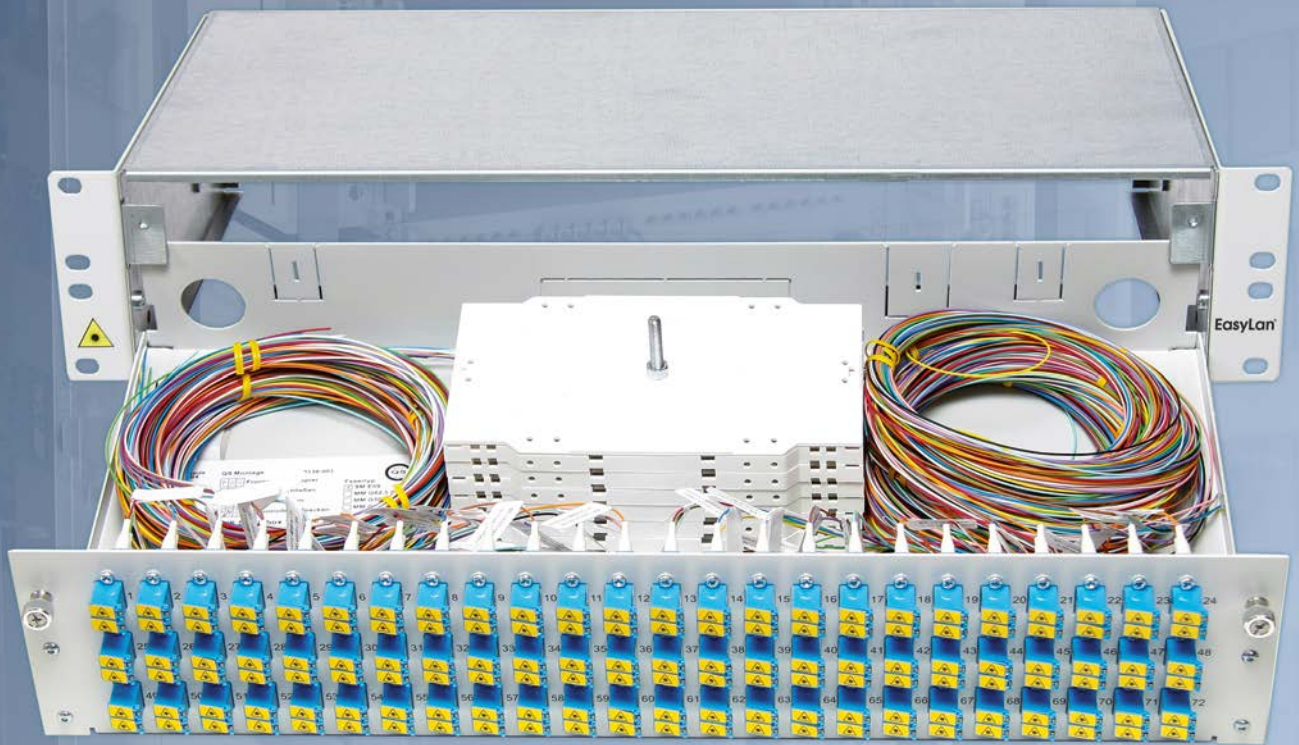
### Fiber optic connectors Delivery overview:

Connector	Norm	Locking	Diameter of ferrule (mm)	Ferrule material	End face
ST	IEC 60874-10	Bayonet	2.5	zirconia/ceramic	convex
SC	IEC 60874-14	Push/Pull	2.5	zirconia/ceramic	convex
FC/PC	IEC 60874-7	Screw	2.5	zirconia/ceramic	convex
LSA DIN	IEC 61754-3	Screw	2.5	zirconia/ceramic	convex
E2000®	IEC 61754-15	Push/Pull	2.5	zirconia/ceramic	convex
E2000®/APC	IEC 61754-15	Push/Pull	2.5	zirconia/ceramic	convex
LC	IEC 61754-20	Latch	1.25	zirconia/ceramic	convex
MU	IEC 61754-6	Push/Pull	1.25	zirconia/ceramic	convex
FSMA 905	IEC 60874-2	Screw	3.175	metal/zirconia/ceramic	flat
MT-RJ	IEC 61754-18	Latch	2.41 x 4.39	plastic	flat

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# 8

## Fiber Optic Distribution Systems





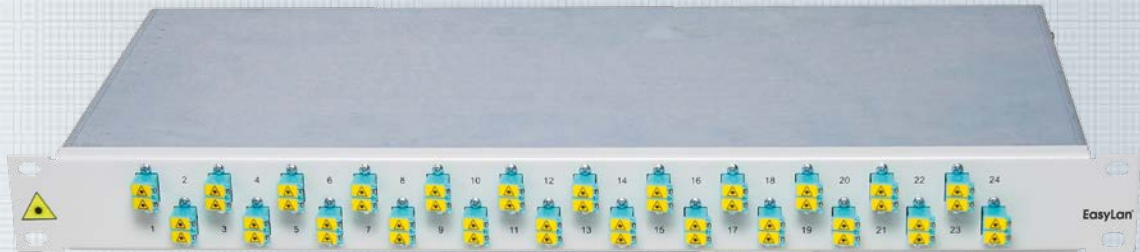
# 08 Fiber Optic Distribution Systems

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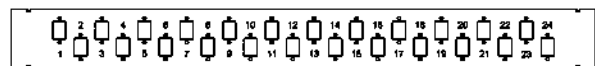
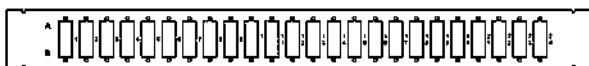
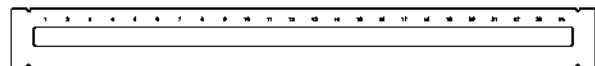
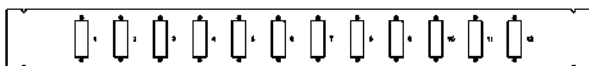
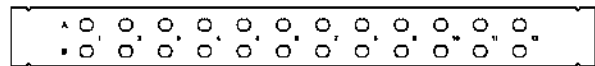
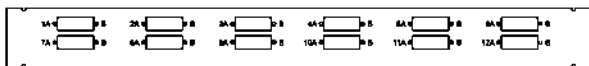
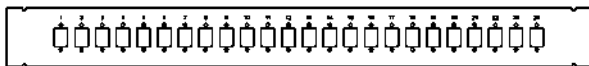
# FO-Distribution Systems

# FO Patch Panel Fixed OVB 19" 1U



FO patch panel for fixed installation for up to 48 fibers. For SC / LC and E2000® couplings the front panel is also supplied with screw holes in order to affix couplings. Cable entry is effected via a maximum of two cable glands or a fixture for break-out cable (each sold separately as special accessory). A breakout point is located on both sides on the back and serves as a holder for the FODH / FOCT distributor system.

- Full metal design
- Powder coated, color RAL 7035
- Cover metallic luster
- Centered bolt for attaching up to 4 splice cassettes
- Dimensions (HxWxD): 44.45 x 483 x 220 mm
- Weight: 2.4 kg
- Front panel with cut outs



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## Ordering information

Description	Type	Order No.
FO Patch Panel for FODH-System, 19", 1U, Fixed Installation 24x ST	LVB1C300000	<a href="#">HELLV24T--</a>
FO Patch Panel for FODH-System, 19", 1U, Fixed Installation 24x 24xSCS/LCD/E2000®	LVB1C200000	<a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 1U, Fixed Installation 12x SCD	LVB1B100000	<a href="#">HELLV24C--</a>
FO Patch Panel for FODH-System, 19", 1U, Fixed Installation 24x SCD	LVB1C100000	<a href="#">HELLV48C--</a>
<b>Break-out boxes 19" 1U fixed installation, loaded with installation adapter for FODH and FOCT systems</b>		
FO Patch Panel for FODH-System, 19", 1U, Fixed Installation 24xST MM	LVB2C303MMC	<a href="#">HELLV24MTF</a>
FO Patch Panel for FODH-System, 19", 1U, Fixed Installation 24xST SM	LVB2C303SMC	<a href="#">HELLV24STF</a>
FO Patch Panel for FODH-System, 19", 1U, Fixed Installation 24xLCD MM	LVB2C202MBC	<a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 1U, Fixed Installation 24xLCD SM	LVB2C202SBC	<a href="#">HELLV48SLF</a>
FO Patch Panel for FODH-System, 19", 1U, Fixed Installation 24xLCD-APC SM	LVB2C202ABC	<a href="#">HELLV48SMF</a>
FO Patch Panel for FODH-System, 19", 1U, Fixed Installation 24xE2000® MM	LVB2C204MBC	<a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 1U, Fixed Installation 24xE2000® SM	LVB2C204SBC	<a href="#">HELLV24SEF</a>
FO Patch Panel for FODH-System, 19", 1U, Fixed Installation 24xE2000®-APC SM	LVB2C204ABC	<a href="#">HELLV24SHF</a>
FO Patch Panel for FODH-System, 19", 1U, Fixed Installation 06xSCD MM	LVB2A101MBA	<a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 1U, Fixed Installation 06xSCD SM	LVB2A101SBA	<a href="#">HELLV12SCF</a>
FO Patch Panel for FODH-System, 19", 1U, Fixed Installation 06xSCD-APC SM	LVB2A101ABA	<a href="#">HELLV12SDF</a>
FO Patch Panel for FODH-System, 19", 1U, Fixed Installation 12xSCD MM	LVB2B101MBB	<a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 1U, Fixed Installation 12xSCD SM	LVB2B101SBB	<a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 1U, Fixed Installation 12xSCD-APC SM	LVB2B101ABB	<a href="#">HELLV24SCF</a>
FO Patch Panel for FODH-System, 19", 1U, Fixed Installation 24xSCD MM	LVB2C101MBC	<a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 1U, Fixed Installation 24xSCD SM	LVB2C101SBC	<a href="#">HELLV48SCF</a>
FO Patch Panel for FODH-System, 19", 1U, Fixed Installation 24xSCD-APC SM	LVB2C101ABC	<a href="#">HELLV48SDF</a>

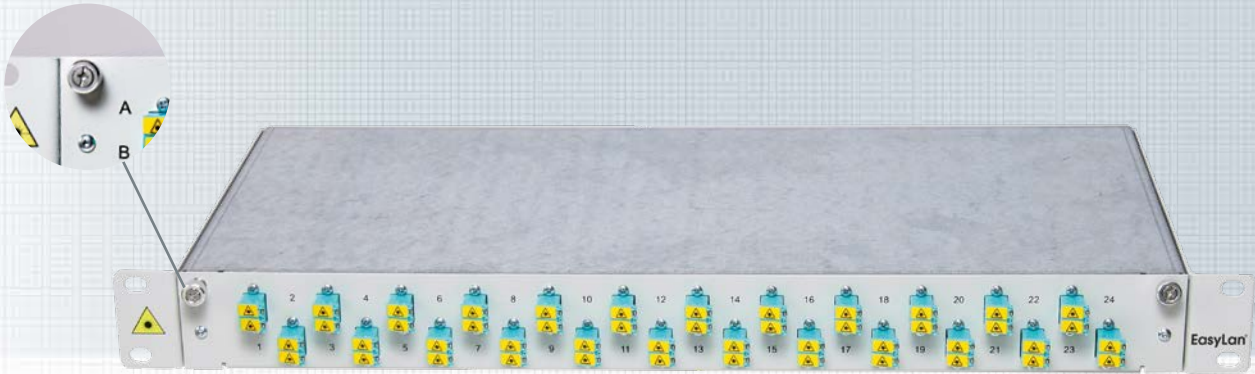
A break-out comb is also required for FOCT systems. Please order separately.

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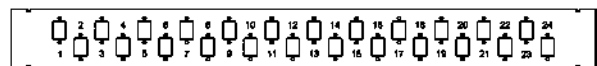
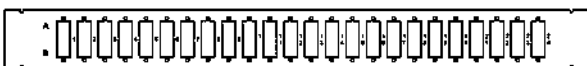
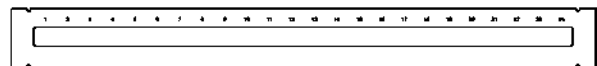
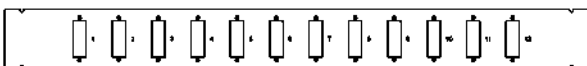
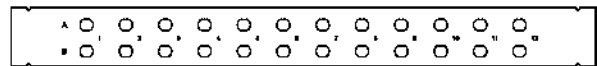
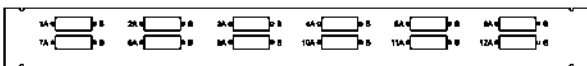
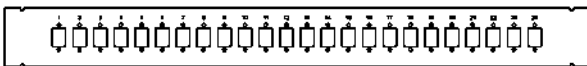
**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

# FO patch panel extendable OVA 19" 1U



FO patch panel extendable with quick lock and exchangeable front panel for up to 48 fibers. For SC / LC and E2000® couplings the front panel is also supplied with screw holes in order to affix couplings. The extendible depth of 200mm ensures comfortable access to the couplings. The box can also be offset by 40mm towards the rear. Cable entry is effected via a maximum of two cable glands or a fixture for break-out cable (each sold separately as special accessory). A breakout point is located on both sides on the back and serves as a holder for the FODH / FOCT distributor system.

- Full metal design
- 40 mm offsetable towards rear
- Powder coated, color RAL 7035
- Cover: metallic luster
- Centered bolt for attaching up to 4 splice cassettes
- Dimensions (HxWxD): 44.45 x 483 x 230 mm
- Weight: 2.7 kg
- When open, the box can be tilted downwards.



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## Ordering information

Description	Type	Order No.
FO Patch Panel for FODH-System, 19", 1U, Extensible 24x ST	LVA1C300000	<a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 1U, Extensible 24xSCS/LCD/E2000®	LVA1C200000	<a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 1U, Extensible 12xSCD	LVA1B100000	<a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 1U, Extensible 24xSCD	LVA1C100000	<a href="#">on request</a>
<b>Break-out boxes 19" 1U extendable, loaded with installation adapter for FODH and FOCT systems</b>		
FO Patch Panel for FODH-System, 19", 1U, Extensible 24xST MM	LVA2C303MMC	<a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 1U, Extensible 24xST SM	LVA2C303SMC	<a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 1U, Extensible 24xLCD MM	LVA2C202MBC	<a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 1U, Extensible 24xLCD SM	LVA2C202SBC	<a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 1U, Extensible	LVA2C202ABC	<a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 1U, Extensible 24xE2000® MM	LVA2C204MBC	<a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 1U, Extensible 24xE2000® SM	LVA2C204SBC	<a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 1U, Extensible 24xE2000® SM	LVA2C204ABC	<a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 1U, Extensible 06xSCD MM	LVA2A101MBA	<a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 1U, Extensible 06xSCD SM	LVA2A101SBA	<a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 1U, Extensible 06xSCD-APC SM	LVA2A101ABA	<a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 1U, Extensible 12xSCD MM	LVA2B101MBB	<a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 1U, Extensible 12xSCD SM	LVA2B101SBB	<a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 1U, Extensible 12xSCD-APC SM	LVA2B101ABB	<a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 1U, Extensible 24xSCD MM	LVA2C101MBC	<a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 1U, Extensible 24xSCD SM	LVA2C101SBC	<a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 1U, Extensible 24xSCD-APC SM	LVA2C101ABC	<a href="#">on request</a>

A break-out comb is also required for FOCT-Systems. Please order separately.

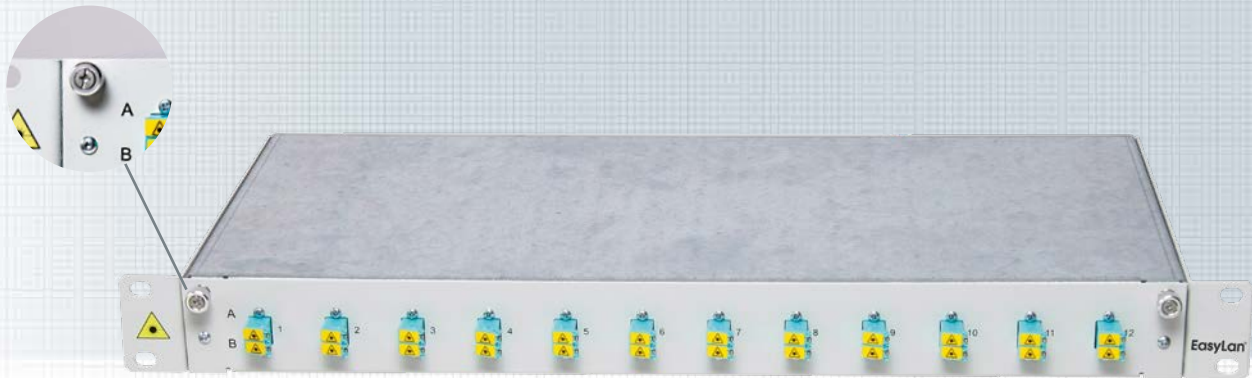
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**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!



# FO splice housing extendable OVA 19" 1U



FO patch panel extendable with quick lock and exchangeable front panel for up to 48 fibers. For SC / LC and E2000® couplings the front panel is also supplied with screw holes in order to affix couplings. The extendible depth of 200mm ensures comfortable access to the couplings. The splice cassette holder can be loaded with up to a maximum of 4 cassettes and secured with stud bolts. The splice protectors (crimp or fusion splice protector) and their holders are not included in delivery and must be ordered separately.

Our splice boxes are available in two different versions:  
In variant 1, the pigtails are inserted and loaded.  
In variant 2, the pigtails are ready for splicing, inserted and loaded.

The pigtails are dyed per VDE color coding in the primary and secondary coating. The box can also be offset by 40 mm towards the rear. Cable entry via cable gland (special accessory).

- Full metal design
- 40 mm offsetable towards rear
- Powder coated, color RAL 7035
- Cover metallic luster
- Dimensions (HxWxD): 44.45 x 483 x 230 mm
- When open, the box can be tilted downwards



## Ordering information

### OVA splice box 19" 1U extendable

fully loaded (without splice protection and holder) pigtailed mated and inserted (variant 1)

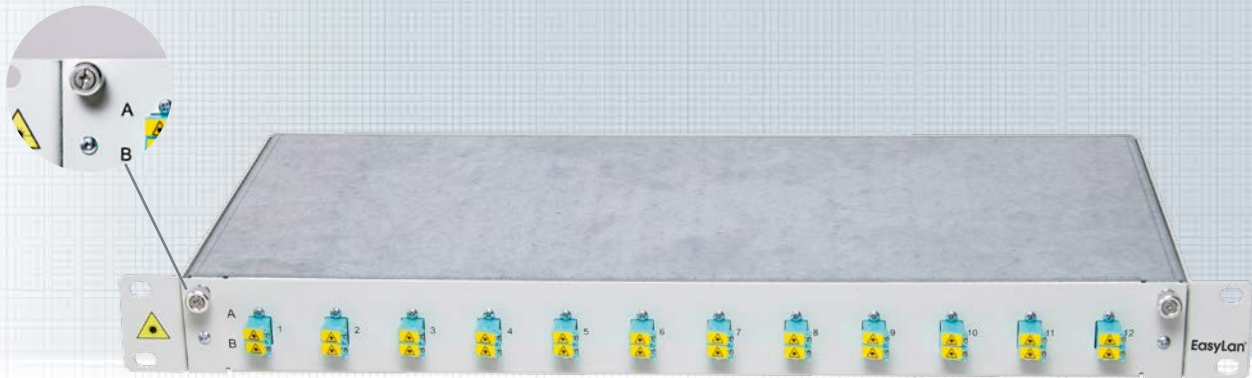
		Type	Order No.
24xST	G50/125 OM3	LVA6C3E33MC	<a href="#">on request</a>
24xST	G50/125 OM4	LVA6C3E34MC	<a href="#">on request</a>
24xST	E09/125	LVA6C3E30MC	<a href="#">on request</a>
12xLCD	G50/125 OM3	LVA6B2E23BB	<a href="#">on request</a>
12xLCD	G50/125 OM4	LVA6B2E24BB	<a href="#">on request</a>
12xLCD	E09/125	LVA6B2E20BB	<a href="#">on request</a>
12xLCD-ACP	E09/125	LVA6B2E29BB	<a href="#">on request</a>
24xLCD	G50/125 OM3	LVA6C2E23BC	<a href="#">on request</a>
24xLCD	G50/125 OM4	LVA6C2E24BC	<a href="#">on request</a>
24xLCD	E09/125	LVA6C2E20BC	<a href="#">on request</a>
24xLCD-APC	E09/125	LVA6C2E29BC	<a href="#">on request</a>
24xE2000®	G50/125 OM3	LVA6C2E43BC	<a href="#">on request</a>
24xE2000®	G50/125 OM4	LVA6C2E44BC	<a href="#">on request</a>
24xE2000®	E09/125	LVA6C2E40BC	<a href="#">on request</a>
24xE2000®-APC	E09/125	LVA6C2E49BC	<a href="#">on request</a>
06xSCD	G50/125 OM3	LVA6A1E13BA	<a href="#">on request</a>
06xSCD	G50/125 OM4	LVA6A1E14BA	<a href="#">on request</a>
06xSCD	E09/125	LVA6A1E10BA	<a href="#">on request</a>
06xSCD-APC	E09/125	LVA6A1E19BA	<a href="#">on request</a>
12xSCD	G50/125 OM3	LVA6B1E13BB	<a href="#">on request</a>
12xSCD	G50/125 OM4	LVA6B1E14BB	<a href="#">on request</a>
12xSCD	E09/125	LVA6B1E10BB	<a href="#">on request</a>
12xSCD-APC	E09/125	LVA6B1E19BB	<a href="#">on request</a>
24xSCD	G50/125 OM3	LVA6C1E13BC	<a href="#">on request</a>
24xSCD	G50/125 OM4	LVA6C1E14BC	<a href="#">on request</a>
24xSCD	E09/125	LVA6C1E10BC	<a href="#">on request</a>
24xSCD-APC	E09/125	LVA6C1E19BC	<a href="#">on request</a>

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**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

# FO splice housing extendable OVA 19" 1U – Continuation



## Ordering information

### OVA splice box 19" 1U extendable

fully loaded (without splice protector and holder), pigtails tied, mated and inserted ready for splicing (**variant 2**)

		Type	Order No.
24xST	G50/125 OM3	LVA6C3A33MC	on request
24xST	G50/125 OM4	LVA6C3A34MC	on request
24xST	E09/125	LVA6C3A30MC	on request
12xLCD	G50/125 OM3	LVA6B2A23BB	on request
12xLCD	G50/125 OM4	LVA6B2A24BB	on request
12xLCD	E09/125	LVA6B2A20BB	on request
12xLCD-APC	E09/125	LVA6B2A29BB	on request
24xLCD	G50/125 OM3	LVA6C2A23BC	on request
24xLCD	G50/125 OM4	LVA6C2A24BC	on request
24xLCD	E09/125	LVA6C2A20BC	on request
24xLCD-APC	E09/125	LVA6C2A29BC	on request
24xE2000®	G50/125 OM3	LVA6C2A43BC	on request
24xE2000®	G50/125 OM4	LVA6C2A44BC	on request
24xE2000®	E09/125	LVA6C2A40BC	on request
24xE2000®-APC	E09/125	LVA6C2A49BC	on request
06xSCD	G50/125 OM3	LVA6A1A13BA	on request
06xSCD	G50/125 OM4	LVA6A1A14BA	on request
06xSCD	E09/125	LVA6A1A10BA	on request
06xSCD-APC	E09/125	LVA6A1A19BA	on request
12xSCD	G50/125 OM3	LVA6B1A13BB	on request
12xSCD	G50/125 OM4	LVA6B1A14BB	on request
12xSCD	E09/125	LVA6B1A10BB	on request
12xSCD-APC	E09/125	LVA6B1A19BB	on request
24xSCD	G50/125 OM3	LVA6C1A13BC	on request
24xSCD	G50/125 OM4	LVA6C1A14BC	on request
24xSCD	E09/125	LVA6C1A10BC	on request
24xSCD-APC	E09/125	LVA6C1A19BC	on request

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## Ordering information

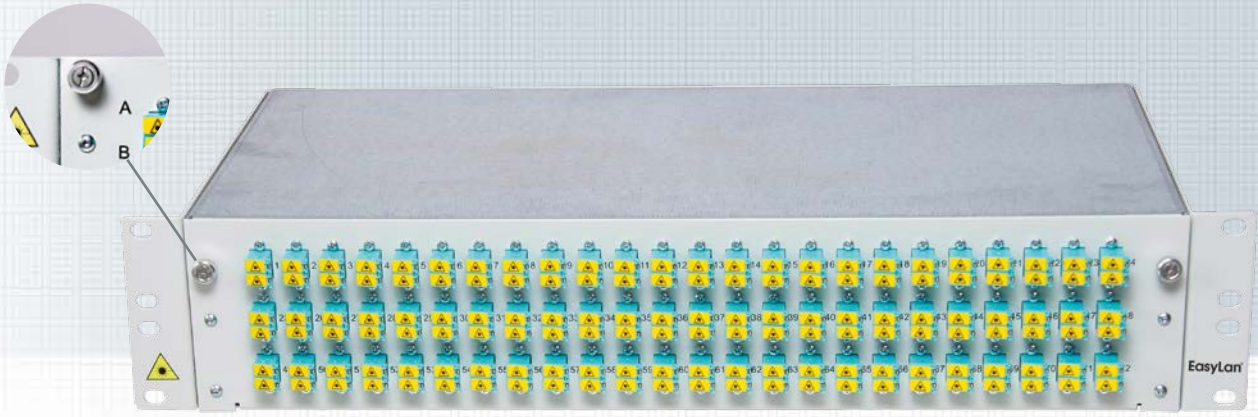
Description	Type	Order No.
Splice holder (crimp splice protector)	LVZX0003	<a href="#">on request</a>
Crimp splice protector	LVZX0005	<a href="#">on request</a>
Splice holder (fusion splice protector)	LVZX0004	<a href="#">on request</a>
Fusion Splice Protector	LVZX0006	<a href="#">on request</a>

Fusion splice protector and holder not included in delivery (please order separately).  
Additional loaded variants and connector systems on request

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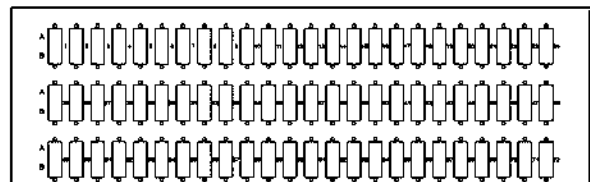
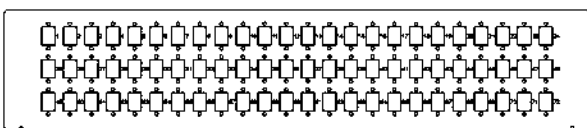
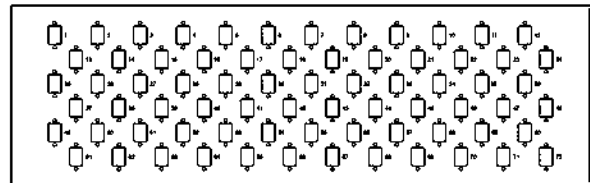
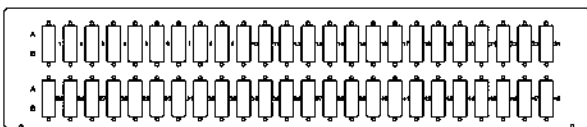
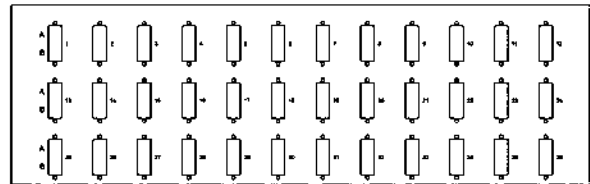
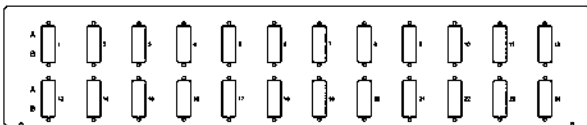


# FO patch panel extendable OVA 19" 2U/3U



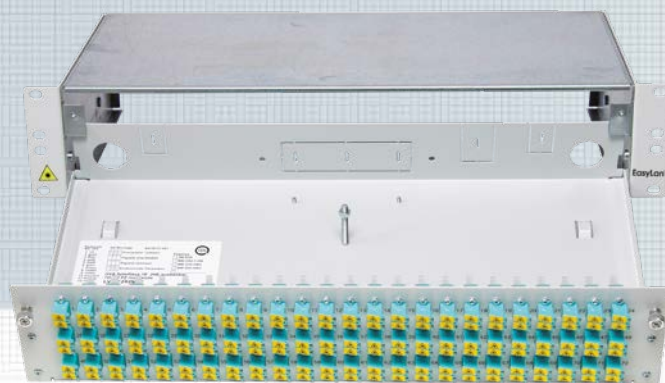
FO splice housing extendable with quick lock and exchangeable front panel for up to 144 fibers. For SC / LC and E2000® couplings the front panel is also supplied with screw holes in order to affix couplings. The extendible depth of 200mm ensures comfortable access to the couplings. The box can also be offset by 40mm towards the rear. Cable entry is effected via a maximum of two cable glands or a fixture for break-out cable (each sold separately as special accessory). A breakout point is located on both sides on the back and serves as a holder for the FODH / FOCT distributor system.

- Full metal design
- 40 mm offsettable towards rear
- Powder coated, color RAL 7035
- Cover metallic luster
- Dimensions (HxWxD): 88.90 x 483 x 230 mm (2U), 133.35 x 483 x 230 mm (3U)
- Weight: 3.6 kg (2U), 4.5 kg (3U)
- When open, the box can be tilted downwards.



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## Ordering information

Description	Type	Order No.
FO Patch Panel for FODH-System, 19", 2U, Extendable	48x ST	LV21E3X0000 <a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 2U, Extendable	72xSCS/LCD/E2000®	LV21F2X0000 <a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 2U, Extendable	24xSCD	LV21C1X0000 <a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 2U, Extendable	48xSCD	LV21E1X0000 <a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 3U, Extendable	72xSCS/LCD/E2000®	LV31F2X0000 <a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 3U, Extendable	36xSCD	LV31D1X0000 <a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 3U, Extendable	72xSCD	LV31F1X0000 <a href="#">on request</a>
<b>Break-out boxes 19" 2U and 3U extendable, loaded with installation adapter for FODH and FOCT systems</b>		
FO Patch Panel for FODH-System, 19", 2U, Extendable	48xST	MM LV22E3X3MME <a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 2U, Extendable	48xST	SM LV22E3X3SME <a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 3U, Extendable	72xLCD	MM LV33F2X2MAF <a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 3U, Extendable	72xLCD	SM LV33F2X2SAF <a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 3U, Extendable	72xLCD-APC	SM LV33F2X2AAF <a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 3U, Extendable	72xE2000®	MM LV32F2X4MBF <a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 3U, Extendable	72xE2000®	SM LV32F2X4SBF <a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 3U, Extendable	72xE2000®	SM LV32F2X4ABF <a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 2U, Extendable	24xSCD	MM LV23C1X1MBC <a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 2U, Extendable	24xSCD	SM LV23C1X1SBC <a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 2U, Extendable	24xSCD-APC	SM LV23C1X1ABC <a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 3U, Extendable	36xSCD	MM LV33D1X1MBC <a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 3U, Extendable	36xSCD	SM LV33D1X1SBC <a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 3U, Extendable	36xSCD-APC	SM LV33D1X1ABC <a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 3U, Extendable	72xSCD	MM LV32F1X1MBF <a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 3U, Extendable	72xSCD	SM LV32F1X1SBF <a href="#">on request</a>
FO Patch Panel for FODH-System, 19", 3U, Extendable	72xSCD-APC	SM LV32F1X1ABF <a href="#">on request</a>

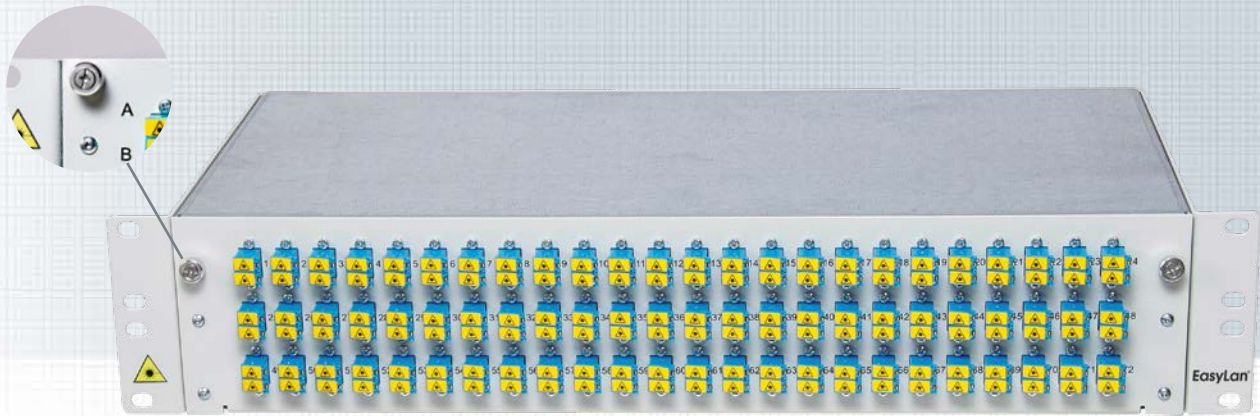
A break-out comb is also required for FOCT systems. Please order separately.

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**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

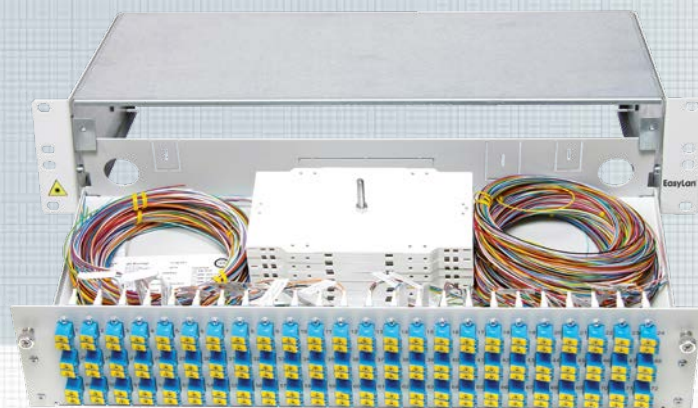
# FO splice housing extendable OVA 19" 2U/3U



FO splice housing extendable with quick lock and exchangeable front panel for up to 144 fibers. For SC / LC and E2000® couplings the front panel is also supplied with screw holes in order to affix couplings. The extendible depth of 200mm ensures comfortable access to the couplings. The splice cassette holder can be loaded with up to a maximum of 4 cassettes and secured with stud bolts. The splice protectors (crimp or fusion splice protector) and their holders are not included in delivery and must be ordered separately. Our splice boxes are available in two different versions: In variant 1, the pigtails are inserted and loaded. In variant 2, the pigtails are ready for splicing, inserted and loaded.

The pigtails are dyed per VDE color coding in the primary and secondary coating. The box can also be offset by 40 mm towards the rear. The cable entry is effected via cable glands (special accessory).

- Full metal design
- 40 mm offsetable towards rear
- Powder coated, color RAL 7035
- Cover metallic luster
- Dimensions (HxWxD): 88.90 x 483 x 230 mm (2U), 133.35 x 483 x 230 mm (3U)
- When open, the box can be tilted downwards.



## Ordering information

### OVA splice box 19" extendable

fully loaded (without splice protection and holder) pigtailed and inserted (variant 1)

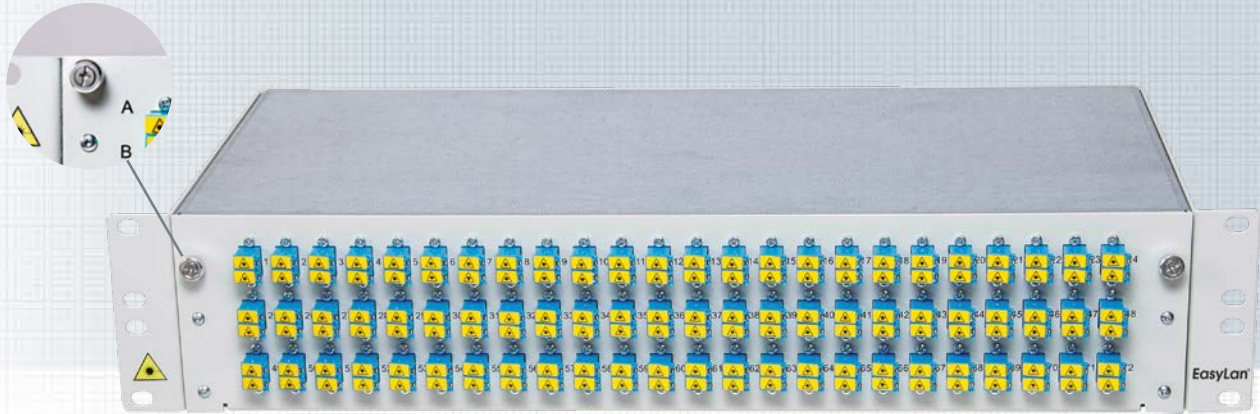
			Type	Order No.
2U	48xST	G50/125 OM3	LV26E3E33ME	on request
2U	48xST	G50/125 OM4	LV26E3E34ME	on request
2U	48xST	E09/125	LV26E3E30ME	on request
2U	72xLCD	G50/125 OM3	LV26F2E23BF	on request
2U	72xLCD	G50/125 OM4	LV26F2E24BF	on request
2U	72xLCD	E09/125	LV26F2E20BF	on request
2U	72xLCD-APC	E09/125	LV26F2E29BF	on request
3U	72xLCD	G50/125 OM3	LV36F2E23BF	on request
3U	72xLCD	G50/125 OM4	LV36F2E24BF	on request
3U	72xLCD	E09/125	LV36F2E20BF	on request
3U	72xLCD-APC	E09/125	LV36F2E29BF	on request
3U	72xE2000®	G50/125 OM3	LV36F2E43BF	on request
3U	72xE2000®	G50/125 OM4	LV36F2E44BF	on request
3U	72xE2000®	E09/125	LV36F2E40BF	on request
3U	72xE2000®-APC	E09/125	LV36F2E49BF	on request
2U	24xSCD	G50/125 OM3	LV26C1E13BC	on request
2U	24xSCD	G50/125 OM4	LV26C1E14BC	on request
2U	24xSCD	E09/125	LV26C1E10BC	on request
2U	24xSCD-APC	E09/125	LV26C1E19BC	on request
3U	36xSCD	G50/125 OM3	LV36D1E13BD	on request
3U	36xSCD	G50/125 OM4	LV36D1E14BD	on request
3U	36xSCD	E09/125	LV36D1E10BD	on request
3U	36xSCD-APC	E09/125	LV36D1E19BD	on request
3U	72xSCD	G50/125 OM3	LV36F1E13BF	on request
3U	72xSCD	G50/125 OM4	LV36F1E14BF	on request
3U	72xSCD	E09/125	LV36F1E10BF	on request
3U	72xSCD-APC	E09/125	LV36F1E19BF	on request

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**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

# FO splice housing extendable OVA 19" 2U/3U – Continuation



## Ordering information

### OVA splice box 19" extendable

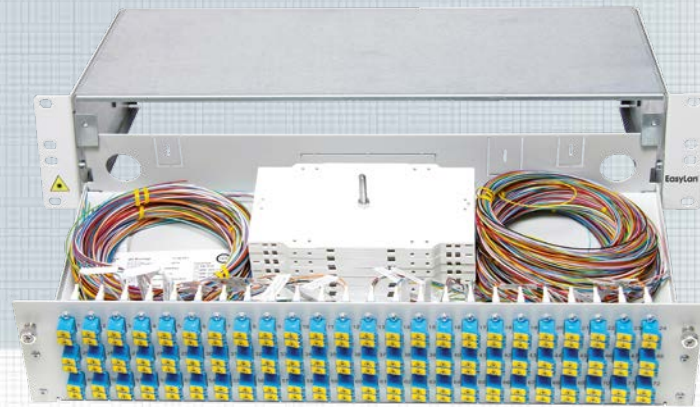
fully loaded (without splice protector and holder) pigtailed, mated and inserted ready for splicing (**variant 2**)

				Type	Order No.
2U	48xST	G50/125 OM3		LV26E3A33ME	on request
2U	48xST	G50/125 OM4		LV26E3A34ME	on request
2U	48xST	E09/125		LV26E3A30ME	on request
2U	72xLCD	G50/125 OM3		LV26F2A23BF	on request
2U	72xLCD	G50/125 OM4		LV26F2A24BF	on request
2U	72xLCD	E09/125		LV26F2A20BF	on request
2U	72xLCD-APC	E09/125		LV26F2A29BF	on request
3U	72xLCD	G50/125 OM3		LV36F2A23BF	on request
3U	72xLCD	G50/125 OM4		LV36F2A24BF	on request
3U	72xLCD	E09/125		LV36F2A20BF	on request
3U	72xLCD-APC	E09/125		LV36F2A29BF	on request
3U	72xE2000®	G50/125 OM3		LV36F2A43BF	on request
3U	72xE2000®	G50/125 OM4		LV36F2A44BF	on request
3U	72xE2000®	E09/125		LV36F2A40BF	on request
3U	72xE2000®-APC	E09/125		LV36F2A49BF	on request
2U	24xSCD	G50/125 OM3		LV26C1A13BC	on request
2U	24xSCD	G50/125 OM4		LV26C1A14BC	on request
2U	24xSCD	E09/125		LV26C1A10BC	on request
2U	24xSCD-APC	E09/125		LV26C1A19BC	on request
3U	36xSCD	G50/125 OM3		LV36D1A13BD	on request
3U	36xSCD	G50/125 OM4		LV36D1A14BD	on request
3U	36xSCD	E09/125		LV36D1A10BD	on request
3U	36xSCD-APC	E09/125		LV36D1A19BD	on request
3U	72xSCD	G50/125 OM3		LV36F1A13BF	on request
3U	72xSCD	G50/125 OM4		LV36F1A14BF	on request
3U	72xSCD	E09/125		LV36F1A10BF	on request
3U	72xSCD-APC	E09/125		LV36F1A19BF	on request

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## Ordering information

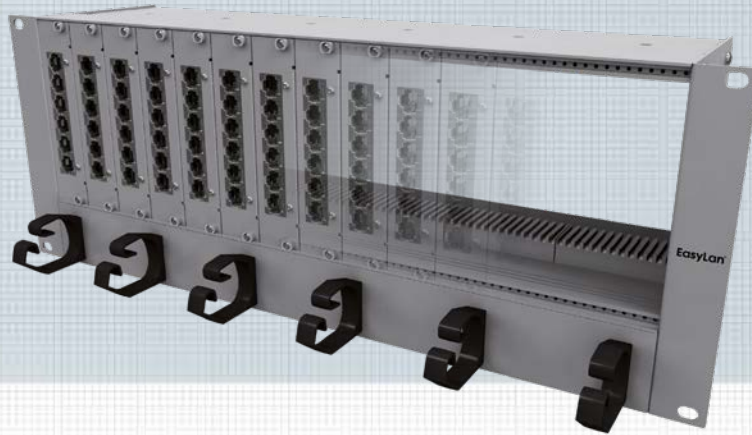
Description	Type	Order No.
Splice holder (crimp splice protector)	LVZX0003	<i>on request</i>
Crimp splice protector	LVZX0005	<i>on request</i>
Splice holder (fusion splice protector)	LVZX0004	<i>on request</i>
Fusion Splice Protector	LVZX0006	<i>on request</i>

Fusion splice protector and holder not included in delivery (please order separately).  
Additional loaded variants and connector systems on request





# Component rack empty with overlength box 19" 3+1U/84HP



Component rack for use of high fiber count cables and loose tube cables. Up to 144 fibers can be divided between 12 individual modules.

Cable reserves can be neatly arranged and stored in overlength box located underneath. Box can be conveniently pulled out towards the rear, allowing the fibers to remain neatly arranged in the event of expansion/upgrades or subsequent work. A patch panel is affixed to the front of the compartment via cable clamps in order to permit cable routing. The insertion modules can be completely pulled out. Mounting is done by using threaded strips. This enables simple and quick assembly. 1HP division means the modules can be combined as desired.

Cable feed takes place via M20 inlets on the reverse side of the overlength compartment. The component rack can be completely closed by using a cover (special accessory).

Add-on accessory: With the help of a BGT add-on set (consisting of 1 x component rack, 2 x plates and M20 glands), 2 component racks can be combined to form a 2x4U/168HP unit.

## Properties

Material	metal
Color	RAL 7035 cover: metallic luster
Fibers	for maximum of 144 fibers divided between 12 individual modules
Application	limited space available in cabinet, high flexibility, occasional expansion/upgrades, e.g. in data centers
Special accessories	<ul style="list-style-type: none"> <li>• Cover, short, for 3U or cover, long 7U for 2 connected component racks</li> <li>• Angled entry</li> <li>• Dummy plate / reverse</li> </ul>
	Special accessories sold separately.

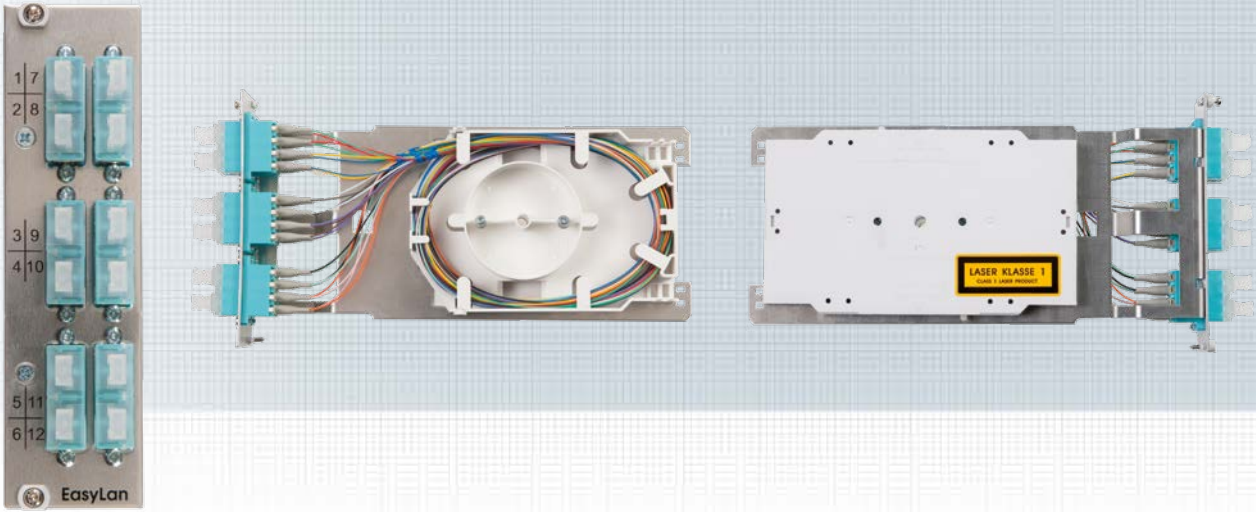
## Ordering information

Description	Type	Order No.
Modul Rack empty with overlength box (O-MR) 19" 3+1U, 7HP for max. 12x Slot Modules Cu and FO	AVM10000	<b>HEKB3712U-</b>



# Plug-in modules for component racks

## 19" 3U/7HP splice module



Couplings, splice cassette and overlengths are all housed in a minimal amount of space while complying with the minimum bending radius of > 50 mm.

All modules can be loaded with all common simplex and duplex couplings and are able to carry a maximum 24 fibers. Splice cassettes and overlength cassettes are assembled onto the module rack.

Unused breakouts can be covered with dummy plugs. Module fixing with captive screws.

### Properties

Material	Aluminum
Color	Metallic matte
Version	Modules supplied read for splicing or unloaded.
Use	Plugged into component rack
Front panels	
Dimensions	3U/7HP insertion system
Version	6 x SC duplex / 6 x LC duplex / 12 x LSH / 12 x ST

### Plug-in Modul for Modul Rack, 3U, 7HP

fully loaded, pigtailed, mated and inserted ready for splicing with Adapter

		Type	Order No.
6 x SCD	G50/125 OM3	LVE6A1E13BA	<a href="#">HELLM123CF</a>
6 x SCD	G50/125 OM4	LVE6A1E14BA	<a href="#">HELLM124CF</a>
6 x SCD	E09/125	LVE6A1E10BA	<a href="#">HELLM129CF</a>
6 x SCD-APC	E09/125	LVE6A1E19BA	<a href="#">HELLM129DF</a>
6 x LCD	G50/125 OM3	LVE6A2E23BA	<a href="#">HELLM123LF</a>
6 x LCD	G50/125 OM4	LVE6A2E24BA	<a href="#">HELLM124LF</a>
6 x LCD	E09/125	LVE6A2E20BA	<a href="#">HELLM129LF</a>
6 x LCD-APC	E09/125	LVE6A2E29BA	<a href="#">HELLM129MF</a>
12 x E2000®	G50/125 OM3	LVE6B2E43BB	<a href="#">HELLM123EF</a>
12 x E2000®	G50/125 OM4	LVE6B2E44BB	<a href="#">HELLM124EF</a>
12 x E2000®	E09/125	LVE6B2E40BB	<a href="#">HELLM129EF</a>
12 x E2000®-APC	E09/125	LVE6B2E49BB	<a href="#">HELLM129HF</a>
12 x ST	G50/125 OM3	LVE6B3E33MB	<a href="#">HELLM123TF</a>
12 x ST	G50/125 OM4	LVE6B3E34MB	<a href="#">HELLM124TF</a>
12 x ST	E09/125	LVE6B3E30MB	<a href="#">HELLM129TF</a>

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## Ordering information

### Plug-in Modul for Modul Rack, 3U, 7HP

fully loaded, pigtails mated and inserted, loaded with Adapter

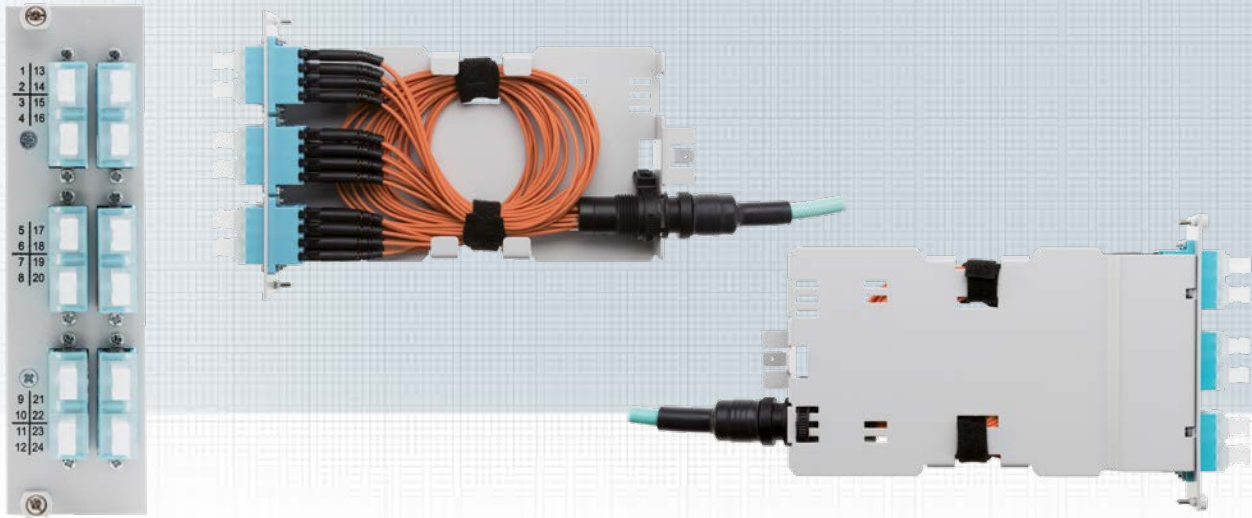
		Type	Order No.
6 x SCD	G50/125 OM3	LVE6A1A13BA	<b>HELLM123CC</b>
6 x SCD	G50/125 OM4	LVE6A1A14BA	HELLM124CC
6 x SCD	E09/125	LVE6A1A10BA	HELLM129CC
6 x SCD-APC	E09/125	LVE6A1A19BA	HELLM129DC
6 x LCD	G50/125 OM3	LVE6A2A23BA	HELLM123LC
6 x LCD	G50/125 OM4	LVE6A2A24BA	HELLM124LC
6 x LCD	E09/125	LVE6A2A20BA	HELLM129LC
6 x LCD-APC	E09/125	LVE6A2A29BA	HELLM129MC
12 x E2000®	G50/125 OM3	LVE6B2A43BB	HELLM123EC
12 x E2000®	G50/125 OM4	LVE6B2A44BB	HELLM124EC
12 x E2000®	E09/125	LVE6B2A40BB	HELLM129EC
12 x E2000®-APC	E09/125	LVE6B2A49BB	HELLM129HC
12 x ST	G50/125 OM3	LVE6B3A33MB	HELLM123TC
12 x ST	G50/125 OM4	LVE6B3A34MB	HELLM124TC
12 x ST	E09/125	LVE6B3A30MB	HELLM129TC

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**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

# FODH Slot module for FO trunk cable



FODH slot module for equipping module racks (pages 38-40, 126). The FODH slot module can be equipped with FODH variant 2 and variant 3. The slot modules are affixed to the module rack via 2 screws on the panel side. The cable is clamped directly on the insert module housing.

#### Properties

Material	Galvanized steel, painted RAL7035 (grey)
Color	RAL7035 (grey) / RAL9005 (schwarz)
Assembly	FODH version 2 and version 3
Use	small, tight cabinets, flexible usage, expandable, e.g. data centers
Packaging unit	1 piece per box

### FODH-Plug-in Modul for Modul Rack, 3U, 7HP

Front Panel empty:

	Type	Order No.
06xSC/LCD/E2000®-Adapter, Unloaded	LVE2A2X0000	<a href="#">HELLE12L01</a>
06xSCD/LCQ-Adapter, Unloaded	LVE2A1X0000	<a href="#">HELLE12L02</a>
12xE2000®-Adapter, Unloaded	LVE2B2X0000	<a href="#">HELLE12L03</a>
06xSC/LCD/E2000®-Adapter, Unloaded	LVE2B2X0000	<a href="#">HELLE12L03</a>

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## FODH-Plug-in Modul for Modul Rack, 3U, 7HP

Front Panel with Adapter:

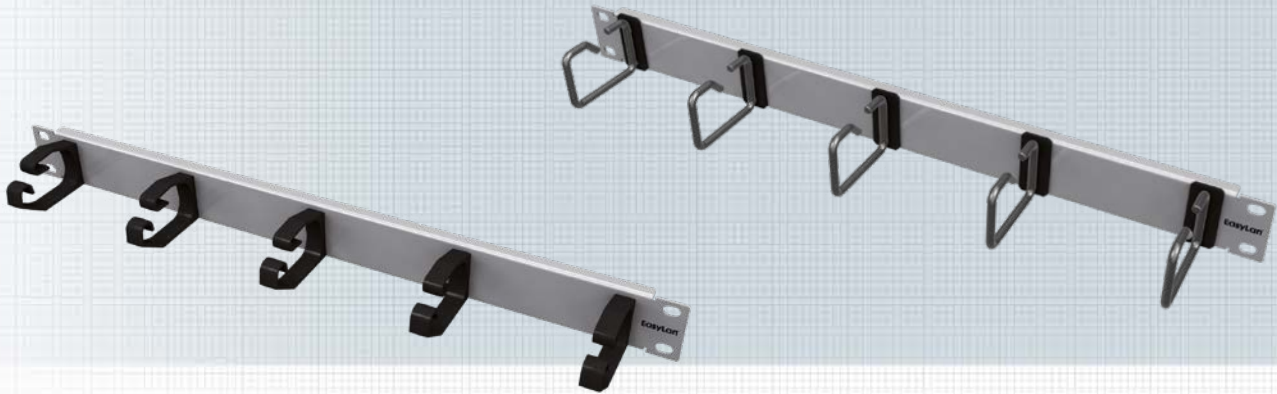
	Type	Order No.
06xLCD SM-Adapter, Unloaded	LVE2A220BA	<a href="#">HELLE12SL-</a>
06xLCD-APC SM-Adapter, Unloaded	LVE2A229BA	<a href="#">HELLE12SM-</a>
06xLCD OM3 MM-Adapter, Unloaded	LVE2A223BA	<a href="#">HELLE123L-</a>
06xLCD OM4 MM-Adapter, Unloaded	LVE2A224BA	<a href="#">HELLE124L-</a>
06xLCQ SM-Adapter, Unloaded	LVE2A1Q0AA	<a href="#">HELLE24SL-</a>
06xLCQ-APC SM-Adapter, Unloaded	LVE2A1Q9AA	<a href="#">HELLE24SM-</a>
06xLCQ OM3 MM-Adapter, Unloaded	LVE2A1Q3AA	<a href="#">HELLE243L-</a>
06xLCQ OM4 MM-Adapter, Unloaded	LVE2A1Q4AA	<a href="#">HELLE244L-</a>
06xSCD SM-Adapter, Unloaded	LVE2A110AA	<a href="#">HELLE24SC-</a>
06xSCD-APC SM-Adapter, Unloaded	LVE2A119AA	<a href="#">HELLE24SD-</a>
06xSCD OM3 MM-Adapter, Unloaded	LVE2A113AA	<a href="#">HELLE123C-</a>
06xSCD OM4 MM-Adapter, Unloaded	LVE2A114AA	<a href="#">HELLE244C-</a>
12xE2000® SM-Adapter, Unloaded	LVE2B240AB	<a href="#">HELLE48401</a>
12xE2000®-APC SM-Adapter, Unloaded	LVE2B249AB	<a href="#">HELLE48402</a>
12xE2000® OM3 MM-Adapter, Unloaded	LVE2B242AB	<a href="#">HELLE48403</a>
12xE2000® OM4 MM-Adapter, Unloaded	LVE2B330MB	<a href="#">HELLE12ST-</a>
6x LCD SM-Adapter, Unloaded	LVE2B332MB	<a href="#">HELLE12MT-</a>

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**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

# Routing Panel 19" with 5 cable clamps



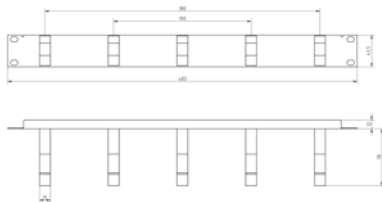
## Routing panel / Installation, 19" 1U

Routing panel / Installation, 19" 1U, 5 cable clamps of plastic

Routing panel for routing of jumpers in 19" cabinet – Built-in version

### Properties:

Material	Steel plate, powder coated
Color	Gray, RAL 7035 (standard) – other colors on request
Range of application	Installation in 19" Cabinet
Description	5 cable clamps of Plastic on Carrier panel 19"
Packaging unit	1 piece per box



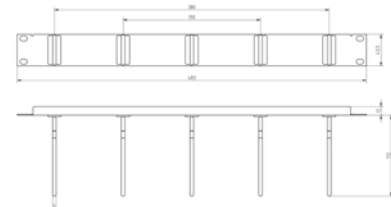
## Routing panel / Installation, 19" 1U

Routing panel / Installation, 19" 1U, 5 cable clamps of steel

Routing panel for routing of jumpers in 19" cabinet – Built-in version

### Properties:

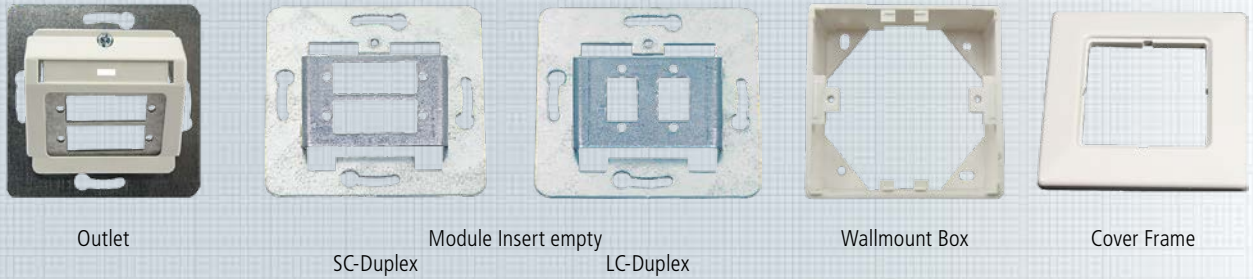
Material	Steel plate, powder coated
Color	Gray, RAL 7035 (standard) – other colors on request
Range of application	Installation in 19" Cabinet
Description	5 cable clamps of steel on Carrier panel 19"
Packaging unit	1 piece per box



Description	Type	Order No.
Routing panel / Installation, 19" 1U, 5 cable clamps of plastic	AVR5KSTB1E	<b>HEKDBK01--</b>
Routing panel / Installation, 19" 1U, 5 cable clamps of steel, 60 mm long	AVR5METB1E	HEKDBC01--
Routing panel / Installation, 19" 1U, 5 cable clamps of steel, 100 mm long	AVR5METC1E	HEKDBC02--



# FO Outlets



Easy to install Outlet included Module Insert for different plugs and copplers.

The equipment is customer-specific.

Cover Frame and Wallmount Box can be ordered as accessories.

Description	Type	Order No.
FO Outlet for 2x SCD with Cover Plate	LVD12100	<a href="#">HELD02C---</a>
FO Outlet for 2x LCD with Cover Plate	LVD12200	<a href="#">HELD02L---</a>
Wallmount Box	ADZ00001	<a href="#">on request</a>
Cover Frame	ADZ00002	<a href="#">on request</a>

# 9

## FO Accessories



# 09 FO Accessories

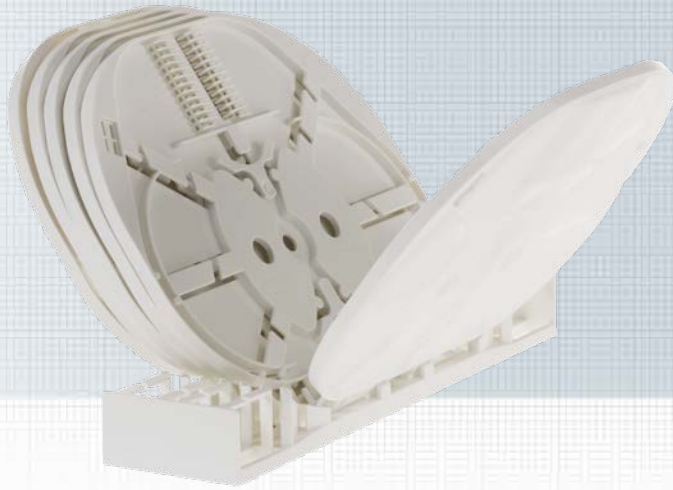
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FO  
Accessories



## FO Splice cassette set



Splice cassette set consisting of:

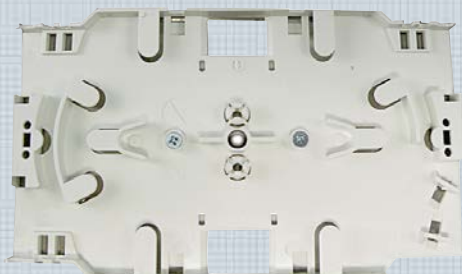
- 6x flip-through splice cassettes
- 1x cover on external splice cassette
- 1x base for holding the splice cassette

### Properties

- Simple and multifunctional installation of the splice cassette carrier
- Splice cassettes and the splice cassette carrier can be perfectly ordered one after another in series
- Individual splice trays can be removed from the splice cassette carrier and reused
- Crimp splice holder is integrated into the cassettes
- Integrated fibre management for excellent fibre feed in/feed out
- 12 splices per cassette, 6 cassettes per splice tray carrier

Description	Type	Order No.
FO splice cassette set with 6x browsable splice cassettes, Cover and Base	LVZSKC06	<a href="#">HELSP00005</a>

# FO Splice Cassette, Splice protector



## FO Splice Cassette

FO splice cassette without cover, stackable, for 12 (maximum 24) crimp splice protectors or 6 (maximum 12) fusion splice protectors used in conjunction with matching splice protector holder. Color: Blue green

## FO splice cassette cover

FO splice cassette cover for splice cassette. Color: Blue, green



## FO splice protector holder

FO splice protector holder for up to a maximum of 6 fusion splice protectors or 12 crimp splice protectors for splice cassettes.

Color: Black, white  
Packaging unit: 5 pieces of each

## FO splice protector 31 x 3 x 1mm; FO fusion splice protector 60mm or 40mm.

Color: Silver  
Packaging unit: 10 pieces of each

Description	Type	Order No.
FO splice cassette set without cover, stackable	LVZ0001	on request
FO splice protection holder, crimp	LVZ0003	on request
FO splice protection holder, fusion	LVZ0004	HELSP00008
FO splice protector 31 x 3 x 1 mm	LVZ0005	<b>HELSP00009</b>
FO splice protector fusion 40mm	LVZ0006	HELSP00010
FO splice protector fusion 60mm	LVZ0007	HELSP00011



# Accessories



## Screws and cage nuts

19" Fixation set M6 incl.

- 4x cage nuts
- 4x screws and rosette (outer diameter 12.5mm)

Packaging unit: set in polybag

## FO fixation screws GeFu M2.5x6

Fixation screws for metal and Polymer couplings M2.5x6 DIN 7985. The bulk of our couplings are equipped with a clip system. However, for fixation purposes we recommend additional attachment using screws. Please keep this in mind when ordering.

Units: 100 pieces/package



## FO dummy plate SC duplex / SC/LC / ST

Coupling dummy plugs Polymer for closing unused SC duplex/SC simplex and LC duplex/ST break-outs in front panels. Color: black.

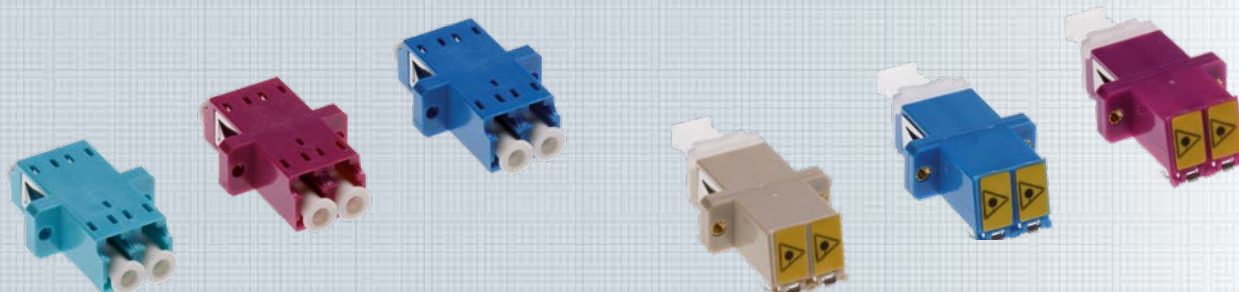
## Cable gland

M20 or M25 cable gland for mounting in patch panels and splice boxes.

Description	Type	Order No.
Screws and cage nuts, Set in Polybag a 4 pcs.	AVZ4SUKM	<b>DSSRA004--</b>
FO fixation screws GeFu M2.5x6, 100 pcs.	LVBFSGF	<b>HELKS00100</b>
Cable gland M20	LVZZKVS20	HELSP00012
Cable gland M25	LVZZKVS25	HELSP00013
FO Dummy Plate SC-Duplex	LZZ010DP	<b>HELSP00014</b>
FO Dummy Plate SC/LC	LZZ010SP	<b>HELSP00015</b>
FO Dummy Plate ST	LZZ030SP	<b>HLZPZKBT02</b>



# LC Couplings



## FO Coupling LC Duplex Polymer, Standard

FO coupling LC duplex Polymer in multimode, singlemode and singlemode APC versions.

Housing	Polymer
Sleeve	Ceramic or phosphorous bronze
Multimode	Color: blue green Sleeve: Pb
Singlemode	Color: blue Sleeve: cer
APC	Color: green Sleeve: cer

## FO Coupling LC Duplex Polymer, Premium

FO coupling LC duplex Polymer in multimode, singlemode and singlemode APC versions.

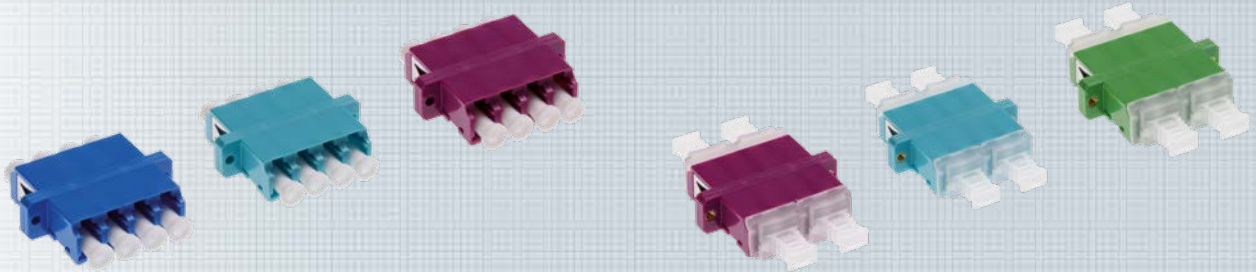
Housing	Polymer
Sleeve	Ceramic or phosphorous bronze
Multimode	Color: blue green Sleeve: Pb
Singlemode	Color: blue Sleeve: cer
APC	Color: green Sleeve: cer

Description	Type	Order No.
Standard LC-Duplex Coupling MM Polymer Phosphorbronze case beige	SLVZAM22DPBG	<a href="#">HELK000001</a>
Standard LC-Duplex Coupling MM Polymer Phosphorbronze case aqua	SLVZAM22DPAQ	<a href="#">HELK000002</a>
Standard LC-Duplex Coupling MM Polymer Phosphorbronze case violett	SLVZAM22DPEV	<a href="#">HELK000003</a>
Standard LC-Duplex Coupling SM Polymer Phosphorbronze case blue	SLVZAS22DPBL	<a href="#">HELK000004</a>
Standard LC-Duplex Coupling SM Polymer Phosphorbronze case green	SLVZAA22DPGN	<a href="#">HELK000005</a>
Premium LC-Duplex Coupling MM Polymer Phosphorbronze case beige	PLVZAM22DPBG	<a href="#">HELK000006</a>
Premium LC-Duplex Coupling MM Polymer Phosphorbronze case aqua	PLVZAM22DPAQ	<a href="#">HELK000007</a>
Premium LC-Duplex Coupling MM Polymer Phosphorbronze case violett	PLVZAM22DPEV	<a href="#">HELK000008</a>
Premium LC-Duplex Coupling SM Polymer Phosphorbronze case blue	PLVZAS22DPBL	<a href="#">HELK000009</a>
Premium LC-Duplex Coupling SM APC Polymer Phosphorbronze case green	PLVZAA22DPGN	<a href="#">HELK000010</a>





# LC Couplings



## FO Coupling LC Quad Polymer, Standard

FO coupling LC quad, Polymer, in multimode and single-mode versions.

Housing	Polymer
Sleeve	Ceramic or phosphorous bronze.
Multimode	Color: blue green Sleeve: Pb
Singlemode	Color: blue Sleeve: cer

## FO Coupling LC Quad Polymer, Premium

FO coupling LC quad, Polymer, in multimode and single-mode versions.

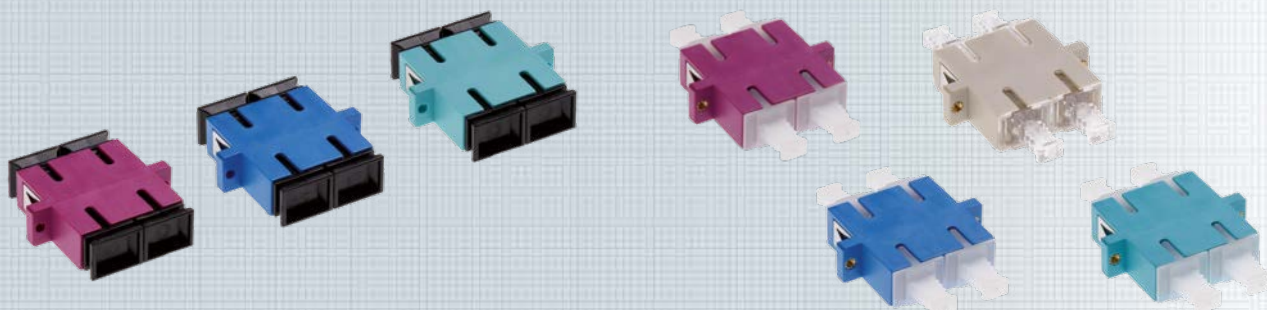
Housing	Polymer
Sleeve	Ceramic or phosphorous bronze.
Multimode	Color: blue green Sleeve: Pb
Singlemode	Color: blue Sleeve: cer

Description	Type	Order No.
Standard LC-Quad Coupling MM Polymer Phosphorbronze case beige	SLVZAM22QPBG	<a href="#">HELK000011</a>
Standard LC-Quad Coupling MM Polymer Phosphorbronze case aqua	SLVZAM22QPAQ	<a href="#">HELK000012</a>
Standard LC-Quad Coupling MM Polymer Phosphorbronze case violett	SLVZAM22QPEV	<a href="#">HELK000013</a>
Standard LC-Quad Coupling SM Polymer Phosphorbronze case blue	SLVZAS22QPBL	<a href="#">HELK000014</a>
Standard LC-Quad Coupling SM APC Polymer Phosphorbronze case green	SLVZAA22QPGN	<a href="#">HELK000015</a>
Premium LC-Quad Coupling MM Polymer Phosphorbronze case beige	PLVZAM22QPBG	<a href="#">HELK000016</a>
Premium LC-Quad Coupling MM Polymer Phosphorbronze case aqua	PLVZAM22QPAQ	<a href="#">HELK000017</a>
Premium LC-Quad Coupling MM Polymer Phosphorbronze case violett	PLVZAM22QPEV	<a href="#">HELK000018</a>
Premium LC-Quad Coupling SM Polymer Phosphorbronze case blue	PLVZAS22QPBL	<a href="#">HELK000019</a>
Premium LC-Quad Coupling SM APC Polymer Phosphorbronze case green	PLVZAA22QPGN	<a href="#">HELK000020</a>





# SC Couplings



## FO Coupling SC Duplex Polymer, Standard

FO coupling SC duplex metal in multimode, singlemode and singlemode APC versions.

Housing	Polymer
Sleeve	Ceramic or phosphorous bronze
Multimode	Color: blue green Sleeve: Pb
Singlemode	Color: blue Sleeve: cer
APC	Color: green Sleeve: cer

## FO Coupling SC Duplex Polymer, Premium

FO coupling SC duplex metal in multimode, singlemode and singlemode APC versions.

Housing	Polymer
Sleeve	Ceramic or phosphorous bronze
Multimode	Color: blue green Sleeve: Pb
Singlemode	Color: blue Sleeve: cer
APC	Color: green Sleeve: cer

Description	Type	Order No.
Standard SC-Duplex Coupling MM Polymer Phosphorbronze case beige	SLVZAM11DPBG	<a href="#">HELK000021</a>
Standard SC-Duplex Coupling MM Polymer Phosphorbronze case aqua	SLVZAM11DPAQ	<a href="#">HELK000022</a>
Standard SC-Duplex Coupling MM Polymer Phosphorbronze case violett	SLVZAM11DPEV	<a href="#">HELK000023</a>
Standard SC-Duplex Coupling MM Polymer Phosphorbronze case blue	SLVZAS11DPBL	<a href="#">HELK000024</a>
Standard SC-Duplex Coupling SM APC Polymer Phosphorbronze case green	SLVZAA11DPGN	<a href="#">HELK000025</a>
Premium SC-Duplex Coupling MM Polymer Phosphorbronze case beige	PLVZAM11DPBG	<a href="#">HELK000028</a>
Premium SC-Duplex Coupling MM Polymer Phosphorbronze case aqua	PLVZAM11DPAQ	<a href="#">HELK000029</a>
Premium SC-Duplex Coupling MM Polymer Phosphorbronze case violett	PLVZAM11DPEV	<a href="#">HELK000030</a>
Premium SC-Duplex Coupling SM Polymer Phosphorbronze case blue	PLVZAS11DPBL	<a href="#">HELK000031</a>
Premium SC-Duplex Coupling SM APC Polymer Phosphorbronze case green	PLVZAA11DPGN	<a href="#">HELK000032</a>



# ST, FC Couplings



## FO coupling ST simplex metal

FO coupling ST simplex, metal, in multimode and singlemode versions.

Housing	Metal
Sleeve	Ceramic or phosphorous bronze
Multimode	Color: black Sleeve: Pb
Singlemode	Color: green blue Sleeve: cer

## FO coupling FC/PC simplex metal

FO coupling FC/PC simplex, metal, in multimode and singlemode versions.

Housing	Metal
Sleeve	Ceramic or phosphorous bronze
Multimode	Color: black Sleeve: Pb
Singlemode	Color: green blue Sleeve: cer

Description	Type	Order No.
Standard ST-Simplex Coupling MM SW Polymer Phosphorbronze case	LVZAM33SM	<a href="#">HELK000026</a>
Standard ST-Simplex Coupling SM GB Polymer Phosphorbronze case	LVZAS33SM	<a href="#">HELK000027</a>
Premium FC/PC-Simplex Coupling MM SW Polymer Phosphorbronze	LVZAM88SM	<a href="#">HELK000033</a>
Premium FC/PC-Simplex Coupling SM GB Polymer Phosphorbronze	LVZAS88SM	<a href="#">HELK000034</a>



# E2000® Couplings



## FO coupling E2000® simplex Polymer

FO coupling E2000® simplex Polymer in multimode, singlemode and singlemode APC versions.

Housing	Polymer in 3 different colors
Multimode	Farbe: SW
Singlemode	Farbe: BL
Singlemode-APC	Farbe: GN

## FO coupling E2000® compact duplex Polymer

FO adapter E2000® compact duplex Polymer in multimode, singlemode and singlemode APC versions.

Housing	Polymer in 3 different colors
Multimode	Farbe: SW
Singlemode	Farbe: BL
Singlemode-APC	Farbe: GN

Description	Type	Order No.
FO-Coupling E2000®-Simplex Polymer Multimode	LZAM44SP	<a href="#">HELK000035</a>
FO-Coupling E2000®-Simplex Polymer Singlemode	LZAS44SP	<a href="#">HELK000036</a>
FO-Coupling E2000®-Simplex Polymer APC	LZAA44SP	<a href="#">HELK000037</a>
FO-Coupling E2000®-Compact-Duplex Polymer Multimode	LZAM44CP	<a href="#">HELK000041</a>
FO-Coupling E2000®-Compact-Duplex Polymer Singlemode	LZAS44CP	<a href="#">HELK000042</a>
FO-Coupling E2000®-Compact-Duplex Polymer Singlemode-APC	LZAA44CP	<a href="#">HELK000043</a>

E2000® is a registered trademark of Diamond GmbH



**Order No. blue fat:** on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

# MU Couplings



## FO coupling MU duplex Polymer

FO adapter MU duplex Polymer (mini SC duplex) in multimode and singlemode versions.

Housing	Polymer
Multimode	Color: blue green
Singlemode	Color: blue
Singlemode APC	Color: green

## FO coupling MU 8-fold Polymer

4 FO adapter MU duplex Polymer (mini SC duplex) in multimode and singlemode versions.

Housing	Polymer
Sleeve	Ceramic or phosphorous bronze
Multimode	Color: blue green Sleeve: Pb
Singlemode	Color: blue Sleeve: cer
Singlemode APC	Color: green Sleeve: cer

Description	Type	Order No.
FO-Coupling MU-Duplex Polymer Multimode	LZAM55DPH	<a href="#">on request</a>
FO-Coupling MU-Duplex Polymer Singlemode	LZAS55DPH	<a href="#">on request</a>
FO-Coupling MU-Duplex Polymer Singlemode-APC	LZAA55DPH	<a href="#">on request</a>
FO-Coupling MU-8-fach Polymer Multimode	LZAM55QPH	<a href="#">on request</a>
FO-Coupling MU-8-fach Polymer Singlemode	LZAS55QPH	<a href="#">on request</a>
FO-Coupling MU-8-fach Polymer Singlemode-APC	LZAA55QPH	<a href="#">on request</a>



# LC, SC-Shutters



## FO shutter SC duplex

Automatically closing dust protection for SC duplex adapter.

Housing	Polymer in 3 different colors
Multimode	Farbe: BG
Singlemode	Farbe: BL
Singlemode-APC	Farbe: GNn

## FO shutter SC/LC

Automatically closing dust protection for SC simplex and LC duplex adapter.

Housing	Polymer in 3 different colors
Multimode	Farbe: BG
Singlemode	Farbe: BL
Singlemode-APC	Farbe: GNn

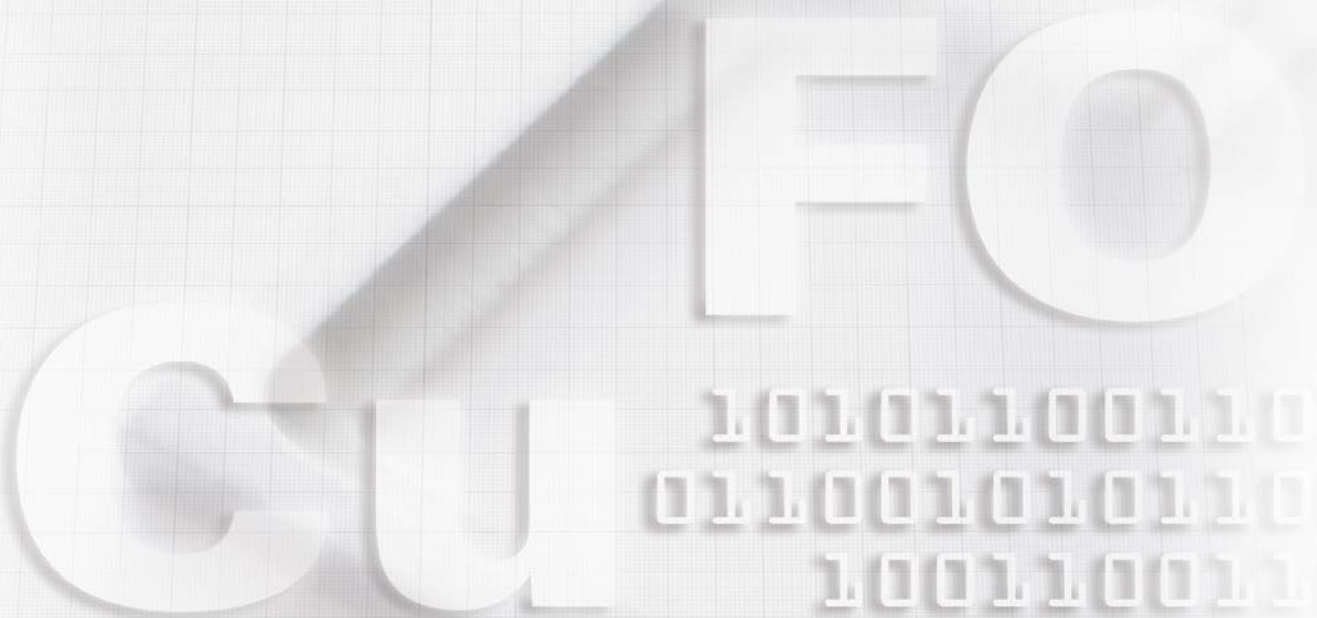
Description	Type	Order No.
FO-Shutter SC-Duplex Multimode	LZZM1XDPBG	<a href="#">HELKS00001</a>
FO-Shutter SC-Duplex Singlemode	LZZS1XDPBL	<a href="#">HELKS00002</a>
FO-Shutter SC-Duplex Singlemode-APC	LZZS1XDPGN	<a href="#">HELKS00003</a>
FO-Shutter SC/LC Multimode	LZZM1XSPBG	<a href="#">HELKS00004</a>
FO-Shutter SC/LC Singlemode	LZZS1XSPBL	<a href="#">HELKS00005</a>
FO-Shutter SC/LC Singlemode-APC	LZZS1XSPGN	<a href="#">HELKS00006</a>





10

Technical Informations  
Cu and FO Technology



# 10 Technical Informations Cu and FO Technology

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# Units of measurement and color codes for Cu Data Cable

## AWG Cable standards

**AWG** stands for **American Wire Gauge** and refers to the wire size. This number represents the diameter of cross-section of a wire.

### Calculation outer diameter [mm] in AWG [d/mm]:

$$D = 8.2515 \times 0.89053 \text{AWG [mm]}$$

### Calculation of AWG [d/mm] in outer diameter [mm]:

$$\text{AWG} = 18.2 - 8.62 \times \ln(d) \text{ [d/mm]}$$

AWG-Number	Outer diameter (Ø) in mm	Cross section in mm <sup>2</sup>
16	1.290	1.305
17	1.140	1.010
18	1.020	0.790
19	0.910	0.650
20	0.810	0.510
21	0.720	0.407
22	0.640	0.320
23	0.570	0.255
24	0.510	0.205
25	0.455	0.162
26	0.400	0.125
27	0.360	0.102
28	0.320	0.080
29	0.287	0.0646
30	0.254	0.0516

## Color codes for cable and protector

Color	Beige	White	Yellow	Orange	Red	Violet	Blue	Green	aqua	Gray	Black
Code	BG	WH	YE	OR	RD	VI	BL	GN	AQ	GR	BK
RAL	1001	9013	1021	2003	3000	4003	5015	6016	6027	7035	9005

# AWG wires and AWG stranded conductors

## Construction, cross-section, resistance and weight

AWG no.	AWG construction n x AWG	Conductor construction n x wire - Ø mm	Conductor cross- section mm <sup>2</sup>	Conductor outer - Ø mm	Conductor resis- tance Ohm/km	Conductor weight kg/km
36	solid	solid	0.013	0.127	1460.0	0.116
36	7/44	7 x 0.05	0.014	0.152	1271.0	0.125
34	solid	solid	0.020	0.160	918.0	0.178
34	7/42	7 x 0.064	0.022	0.192	777.0	0.196
32	solid	solid	0.032	0.203	571.0	0.284
32	7/40	7 x 0.078	0.034	0.203	538.0	0.30
32	19/44	19 x 0.05	0.037	0.229	448.0	0.33
30	solid	solid	0.051	0.254	365.0	0.45
30	7/38	7 x 0.102	0.057	0.305	339.0	0.507
30	19/42	19 x 0.064	0.061	0.305	286.7	0.543
28	solid	solid	0.080	0.330	232.0	0.71
28	7/36	7 x 0.127	0.087	0.381	213.0	0.774
28	19/40	19 x 0.078	0.091	0.406	186.0	0.81
27	7/35	7 x 0.142	0.111	0.457	179.0	0.988
26	solid	solid	0.128	0.409	143.0	1.14
26	10/36	10 x 0.127	0.127	0.533	137.0	1.13
26	19/38	19 x 0.102	0.155	0.508	113.0	1.38
26	7/34	7 x 0.160	0.141	0.483	122.0	1.25
24	solid	solid	0.205	0.511	89.4	1.82
24	7/32	7 x 0.203	0.227	0.610	76.4	2.02
24	10/34	10 x 0.160	0.201	0.582	85.6	1.79
24	19/36	19 x 0.127	0.241	0.610	69.2	2.14
24	41/40	41 x 0.078	0.196	0.582	84.0	1.74
22	solid	solid	0.324	0.643	55.3	2.88
22	7/30	7 x 0.254	0.355	0.762	48.4	3.16
22	19/34	19 x 0.160	0.382	0.787	45.1	3.40
22	26/36	26 x 0.127	0.330	0.762	52.3	2.94

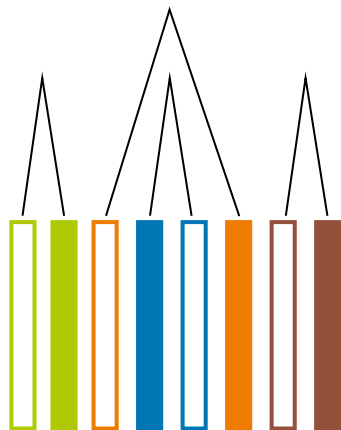
AWG no.	AWG construction n x AWG	Conductor construction n x wire - Ø mm	Conductor cross- section mm <sup>2</sup>	Conductor outer - Ø mm	Conductor resis- tance Ohm/km	Conductor weight kg/km
20	solid	solid	0.519	0.813	34.6	4.61
20	7/28	7 x 0.404	0.562	0.965	33.8	5.00
20	10/30	16 x 0.254	0.507	0.889	33.9	4.51
20	19/32	19 x 0.254	0.615	0.940	28.3	5.47
20	26/34	41 x 0.160	0.523	0.914	33.0	4.65
20	41/36	65 x 0.127	0.520	0.914	32.9	4.63
18	solid	solid	0.823	1.020	21.8	7.32
18	7/26	7 x 0.404	0.897	1.219	19.2	7.98
18	16/30	16 x 0.254	0.811	1.194	21.3	7.22
18	19/30	19 x 0.254	0.963	1.245	17.9	8.57
18	41/34	41 x 0.160	0.824	1.194	20.9	7.33
18	65/36	65 x 0.127	0.823	1.194	21.0	7.32
16	solid	solid	1.310	1.290	13.7	11.66
16	7/24	7 x 0.511	1.440	1.524	12.0	12.81
16	65/34	65 x 0.160	1.310	1.499	13.2	11.65
16	26/30	26 x 0.254	1.317	1.499	13.1	11.72
16	19/29	19 x 0.287	1.229	1.473	14.0	10.94
16	105/36	105 x 0.127	1.330	1.499	13.1	11.84
14	solid	solid	2.080	1.630	8.6	18.51
14	7/22	7 x 0.643	2.238	1.854	7.6	19.92
14	19/27	19 x 0.361	1.945	1.854	8.9	17.31
14	41/30	41 x 0.254	2.078	1.854	8.3	18.49
14	105/34	105 x 0.160	2.111	1.854	8.2	18.79

# Copper Technology: Classification of Modular Connectors

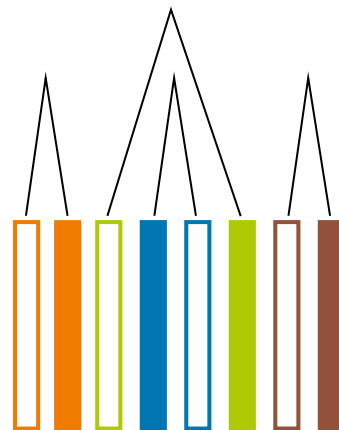
## Contact configuration for modular connectors

Network applications	Contacts 1 & 2	Contacts 3 & 6	Contacts 4 & 5	Contacts 7 & 8
PBX	Class A	Class A	Class A	Class A
X.21		Class A	Class A	
S0 Bus		Class B	Class B	
S1 / S2	Class B		Class B	
10Base-T	Class C	Class C		
100Base-T		Class C	Class C	
TR 16 Mbit/s		Class D	Class D	
TR 100 Mbit/s		Class D	Class D	
TP-PMD	Class D			Class D
ATM 155.52	Class D			Class D
1000 Base-T	Class D	Class D	Class D	Class D
ATM 1200	Class E	Class E	Class E	Class E
10 GBase-T	Class E <sub>A</sub>	Class E <sub>A</sub>	Class E <sub>A</sub>	Class E <sub>A</sub>

## Pair configuration for modular connectors



EIA/TIA 568A



EIA/TIA 568B



# Copper Technology: Scope of Standards

## International standards for symmetrical data cables • Scope of standards



The international standardization activities for application-neutral cabling systems began in 1991. The first draft of international standard ISO/IEC 11801 was issued in 1993, with publication taking place in 1995. This standard, and the largely identical standard EN 50173, are relevant for Europe. They define the scope for a site-expansion of up to 3 km and for an office area

of up to 1 million square meters, with 50 to 50,000 terminals. The standards support voice, data, text, image and video applications, and consequently contain the requirements for configuration, implementation, performance and compliance. In addition, they specify recommendations for general construction of a cabling system and classify the types of cables to be used and the end-to-end connections (link class).

**ISO/IEC 11801:2002** Information technology and application-neutral cabling systems

**IEC 61156** Multicore and symmetrical pair/quad cables for digital communications

**IEC 61156-1** Generic specification

**IEC 61156-2** General specification for floor wiring

**IEC 61156-3** Work area wiring - sectional specification

**IEC 61156-4** Distribution cable - sectional specification

**IEC 61156-5** Horizontal floor wiring up to 600 MHz - sectional specification

**IEC 61156-6** Work area wiring up to 600 MHz - sectional specification

**IEC 61156-7** Horizontal floor wiring up to 1200 MHz - sectional specification

**EN50173-1** Generic communications systems

**EN 50288** Multi-element metallic cables used in analog and digital communication and control

**EN 50288-1** Generic specification

**EN 50288-2-1** Sectional specification for screened cables characterized up to 100 MHz (Cat. 5) - Horizontal and building backbone cables.

**EN 50288-3-1** Sectional specification for unscreened cables characterized up to 100 MHz (Cat. 5) - Horizontal and building backbone cables.

**EN 50288-3-2** Sectional specification for unscreened cables characterized up to 100 MHz (Cat. 5) - Work area and patchcord cables.

**EN 50288-4-1** Sectional specification for screened cables characterized up to 600 MHz (Cat.7) - Horizontal and building backbone cables.

**EN 50288-4-2** Sectional specification for screened cables characterized up to 600 MHz (Cat.7) - Work area and patchcord cables

**EN 50288-5-1** Sectional specification for screened cables characterized up to 250 MHz (Cat.6) - Horizontal and building backbone cables.

**EN 50288-5-2** Sectional specification for screened cables characterized up to 250 MHz (Cat.6) - Work area and patchcord cables.

**EN 50288-6-1** Sectional specification for unscreened cables characterized up to 250 MHz (Cat.6) - Horizontal and building backbone cables.

**EN 50288-6-2** Sectional specification for unscreened cables characterized up to 250 MHz (Cat.6) - Work area and patchcord cables.

**EN 55022** EMC standard Office Environment



**ISO/IEC 11801** is valid worldwide



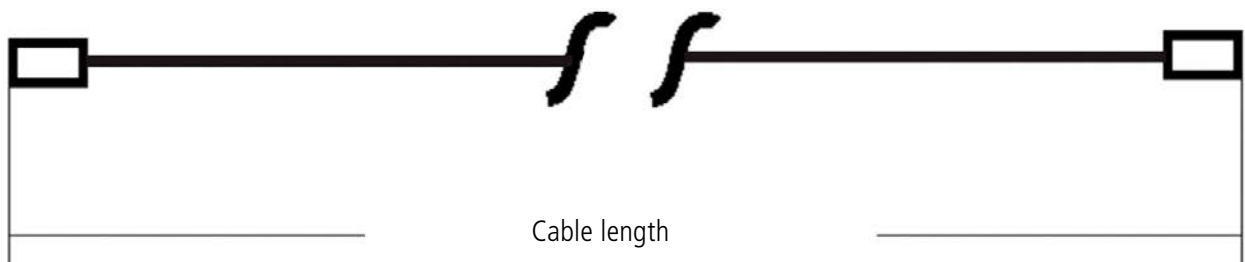
**EN 50173** is normative in Europe

# Cable Lengths

## Copper Patchcord • Pigtails



This cable data sheet is valid for all copper and fiber optic patchcord (unless different length tolerances are defined):



**Tolerance definition:**

Cable lengths < 5.01m    - 0.00m    + 0.07m

Cable lengths > 5.00m    +/- 1%

Cable length	Minimum lengt	Maximum length
0,50	0,50	0,57
1,00	1,00	1,07
1,50	1,50	1,57
2,00	2,00	2,07
2,50	2,50	2,57
3,00	3,00	3,07
4,00	4,00	4,07
5,00	5,00	5,07
	Length min. -1%	Length max. 1%
10,00	9,90	10,10
15,00	14,85	15,15
20,00	19,80	20,20

all figures in meters

This instruction set describes the ZVK standard and is valid for at least 98% of pre-assembled cables.

In addition, deviation permits may be granted when tolerances are exceeded. A deviation permit can be dispensed with if tolerances are exceeded by a maximum of 2cm in a maximum of 2% of cables.

Deviations from this data sheet must be defined in writing.

A written note must be included with all orders if a different definition or customer specifications is/are used.

# FO Technology: EasyLan Quality Standard (Premium and Standard Quality)

## Transmission parameter requirements for FO connectors:

The IEC 61753-1 standard defines the transmission parameters for FO singlemode connectors. It is divided into Class A through Class D for insertion loss, and Class 1 through Class 4 for return loss.

The above standard refers to singlemode, however it may also be applied to multimode with respect to insertion loss (IL).

EasyLan® Premium products achieve 97% compliance with the threshold values of Class B or Class MM2 or SM2. EasyLan® Standard products achieve 97% compliance with the Threshold values of Class C or Class MM3 or SM2. These high quality standards are only made possible by:

- UPC face design (i.e. -20dB less return loss than PC)
- Certification by the market leader in the field of FO connectors
- Cutting-edge assembly and polishing devices
- Exclusive use of premium fibers from the market leaders
- Interferometric supervision of production

## 1. Technical characteristics of FO connectors (Performance acc. to IEC 61753-1)

### 1.1 Insertion loss (IL):

Insertion loss (IL)	Class A	Class B	Class C	Class X acc. to EN 50173	Class D
Measurement acc. to IEC 61300-3-34					
Attenuation 97%	≤ 0.1dB	≤ 0.25dB	≤ 0.50dB	≤ 0.75dB	≤ 1.00dB
Typical attenuation	≤ 0.1dB	≤ 0.12dB	≤ 0.25dB	≤ 0.35dB	≤ 0.50dB

Class A is solely intended for SM, and in addition to special processing also requires connectors and fibers which are approved for Class A.

Class B can only be 100% achieved by fiber tuning. By using high quality fiber optic connectors, we currently achieve Class B with a probability of > 97%.

Class X reflects the requirements of EN 50173; values must not fall below this standard.

**Consequently, Class D is solely permitted for non-standard based applications, e.g. applications which involve sensors.**

## 1.2 Return loss (RL)

Return loss (RL) for singlemode (SM) Measurement acc. to IEC 61300-3-6	Class SM1	Class SM2	Class SM3	Class SM4	Class SMX acc. to EN 50173
Attenuation (RL)	> 65dB plugged in ≥ 15dB unplugged	> 45dB	> 35dB	> 26dB	> 20dB

Return loss (RL) for multimode (MM) Measurement acc. to IEC 61300-3-6	Class MM1	Class MM2	Class MM3	Class MM4	Class MMX acc. to EN 50173
Attenuation (RL)	--	> 40dB	> 35dB	> 30dB	≥ 20dB

Class SM1 is obtained only by angled polishing (8°). For classes 1 to 3 (SM and MM), additional surface treatment is necessary.

Class SMX reflects the requirements of EN 50173; values must not fall below this standard.

## 2. Technical characteristics of FO couplings - premium and standard couplings

(Performance according to IEC 61753-1)

Insertion loss (IL) Measurement acc. to IEC 61300-3-34	Class A	Class B	Class C	Class D	Class X acc. to EN 50173
Sleeve Material	N/A	Ceramic	Ceramic	Ceramic	Phosphorous Bronze
Maximum attenuation change	N/A	≤ 0.20dB	≤ 0.20dB	≤ 0.20dB	≤ 0.30dB

Class A is currently not defined in the IEC 61753-1 standard.

Class X reflects the requirements of EN 50173; values must not fall below this standard. Return loss must not vary during repeated plugging of the connector.

**Sources:** Norm IEC 61731-1-X, Norm IEC 61300-3-X, Norm EN 50173

**Status:** 10.2015

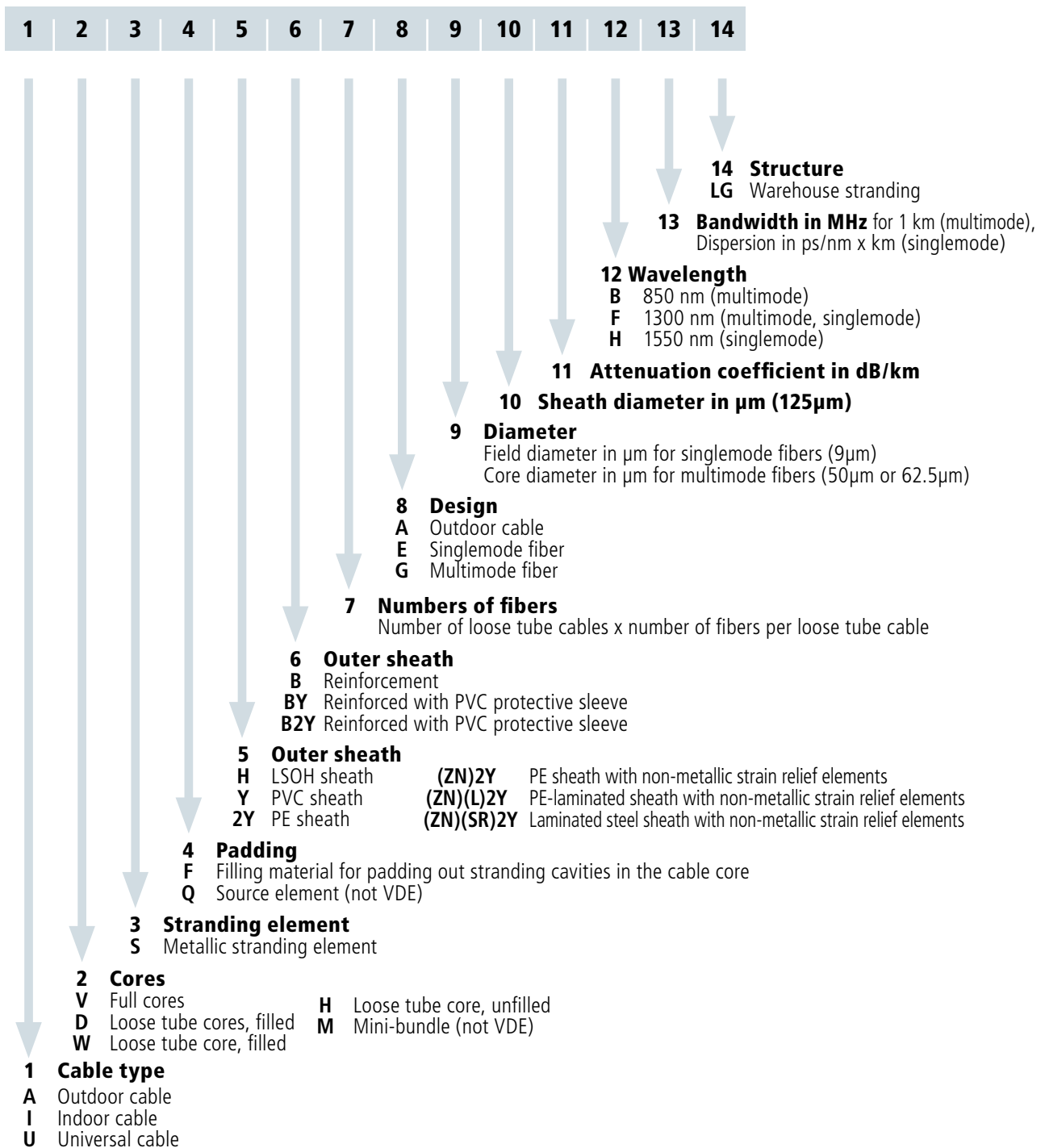


# FO Technology:

## Type abbreviation, classification of structural elements

### Type abbreviation

#### Classification of structural elements in FO cables acc. to IEC 0888



# FO Technology: Color Codes

## FO color code for loose tube cores acc. to VDE 0888

### Fiber color code acc. to IEC 60304

Fiber no.	Fiber color	Fiber no.	Fiber color/ Ring coloring
1	red	13	red/black
2	green	14	green/black
3	blue	15	blue/black
4	yellow	16	yellow/black
5	white	17	white/black
6	gray	18	gray/black
7	brown	19	brown/black
8	purple	20	purple/black
9	turquoise	21	turquoise/black
10	black	22	transparent/black
11	orange	23	orange/black
12	pink	24	pink/black

### Strand color code

Strand type	Color of cable bunch	RAL no.	Fiber type
Count strand	red	3020	all
Direction strand	green	6018	all
Follow strands	white	9016	E09 / 125
Follow strands	light green	6019	G50 / 125
Follow strands	blue	5015	G62 / 125
Filling elements	black	9005	9005

Optical fiber cables generally contain optical fibers with colored cladding or coating in order to permit them to be distinguished. IEC 60304 contains a color code for cables of up to 24 optical fibers, see table 1. There are

other schemes for color-based identification of optical fibers. If cables do not contain color-coded optical fibers, an optical identification system must be used to comply with requirements.

# Schrack Digital: Online Shop

## Detailed features of the Web Shop:

**DELIVERY TIMES  
AND QUANTITY IN  
STOCK AT A SINGLE  
GLANCE**



### Stay on top: access all your orders and related documents

Do you want to easily see all your order of the past twelve months?  
The menu item "My Account" gives you access to a clear overview of all invoices,  
delivery notes and purchase orders.



### Be the first to know: Track & Trace

Trace your shipment all the way.  
With Schrack you can be sure that all will be delivered perfectly on time.

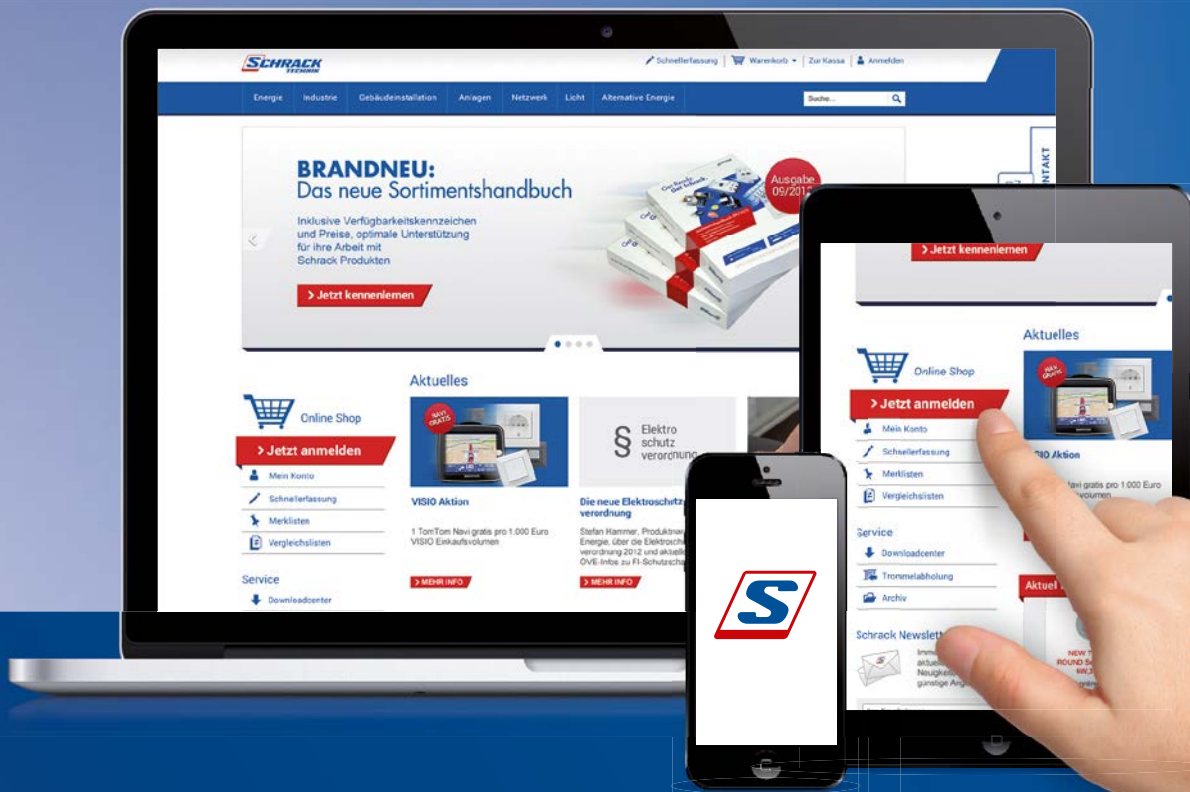


### Get in the fast lane: with your personal parts lists

The parts lists make it easy to co-ordinate and organise your orders in and orderly,  
professional way. The parts lists can be used as templates to quickly and efficiently  
compile the parts for future projects of similar scope and type.

# Schrack Digital

# Competent and personal



## www.schrack.com



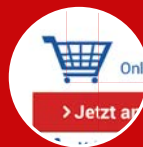
### Personal:

Your contact person is always available to you



### Competent:

Download data sheets, installation videos and detailed information on all products



### User friendly:

Two clicks to get to your product

Get Ready.  
Get Schrack.

**SCHRACK**  
TECHNIK



## General Terms of Delivery

issued by the Austrian Electrical and Electronics Industry Association (FEET)

### 1. Scope

- 1.1. These General Terms shall govern legal transactions between business enterprises, namely the delivery of commodities and, mutatis mutandis, the rendering of services. Software transactions are with precedence governed by the Software Conditions issued by the Austrian Electrical and Electronics Industry Association, assembly work by the Terms and Conditions for Assembly Work issued by the Austrian Power Current and Light Current Engineering Industry and/or (where applicable) the Terms and Conditions for the Assembly of Electrical Equipment used in Medicine issued by the Austrian Electrical and Electronics Industry (the current versions are available at [www.feet.at](http://www.feet.at)).
- 1.2. Any departure from the terms and conditions mentioned in 1.1 above shall be valid only if expressly accepted in writing by Seller.

### 2. Submission of offers

- 2.1. Seller's offers shall be deemed offers without engagement.
- 2.2. Tender documents and project documentation must not be duplicated nor made available to third parties without the permission of Seller. They may be claimed back at any time and shall be returned to Seller immediately if the order is placed elsewhere.

### 3. Conclusion of contract

- 3.1. The contract shall be deemed concluded upon written confirmation by Seller of an order received or upon dispatch of a delivery.
- 3.2. Particulars appearing in catalogues, folders etc. as well as any oral or written statements shall only be binding if Seller makes express reference to them in the confirmation of the order.
- 3.3. Subsequent amendments of or additions to the contract shall be subject to written confirmation.

### 4. Prices

- 4.1. Prices shall be quoted ex works or ex Seller's warehouse without VAT, packing and packaging, loading, disassembly, take-back and proper recycling and disposal of waste electrical and electronic equipment for commercial purposes as defined by the Ordinance Regulating the Handling of Waste Electrical Equipment. Buyer shall be liable for any and all charges, taxes or other duties levied in respect of delivery. If the terms of delivery include transport to a destination designated by Buyer, transport costs as well as the cost of any transport insurance desired by Buyer shall be borne by the latter. Delivery does not, however, include unloading and subsequent handling. Packaging materials will be taken back only by express agreement.
- 4.2. Seller reserves the right to modify prices if the order placed is not in accordance with the offer submitted.
- 4.3. Prices are based on costs obtaining at the time of the first quotation. In the event that the costs have increased by the time of delivery, Seller shall have the right to adjust prices accordingly.
- 4.4. In carrying out repair orders, Seller shall provide all services deemed expedient and shall charge Buyer for the same on the basis of the work input and/or expenditures required. The same holds for any services or additional services the expediency of which becomes apparent only as the repair order is executed. In such an event special notification of Buyer shall not be required.
- 4.5. Expenses for estimates of costs of repair and maintenance or for expert valuations shall be invoiced to Buyer.

### 5. Delivery

- 5.1. The period allowed for delivery shall commence at the latest of the following dates:
  - a) the date of order confirmation by Seller;
  - b) the date of fulfilment by Buyer of all the conditions, technical, commercial and other, for which he is responsible;
  - c) the date of receipt by Seller of a deposit or security due before delivery of the goods in question.
- 5.2. Buyer shall obtain whatever licences or approvals may be required from authorities or third parties for the construction of plant and equipment. If the granting of such licences or approvals is delayed for any reason the delivery period shall be extended accordingly.
- 5.3. Seller may carry out, and charge Buyer for, partial or advance deliveries. If delivery on call is agreed upon, the commodity shall be deemed called off at the latest one year after the order was placed.
- 5.4. In case of unforeseeable circumstances or circumstances beyond the parties control, such as all cases of force majeure, which impede compliance with the agreed period of delivery, the latter shall be extended in any case for the duration of such circumstances; these include in particular armed conflicts, official interventions and prohibitions, delays in transport or customs clearance, damages in transit, energy shortage and raw materials scarcity, labour disputes, and default on performance by a major component supplier who is difficult to replace. The aforesaid circumstances shall be deemed to prevail irrespective of whether they affect Seller or his subcontractor(s).
- 5.5. If a contractual penalty for default of delivery was agreed upon by contracting parties when the contract was concluded, it shall be executed as follows, and any deviations concerning individual items shall not affect the remaining provisions: Where delay in performance can be shown to have occurred solely through the fault of Seller, Buyer may claim for each completed week of delay an indemnity

of at most one half of one per cent, a total of no more than 5 %, however, of the value of that part of the goods to be delivered which cannot be used on account of Seller's failure to deliver an essential part thereof, provided the Buyer has suffered a damage to the aforesaid extent. Assertion of rights of damages exceeding this extent is precluded.

### 6. Passage of risk and place of performance

- 6.1. Unless otherwise agreed, the delivery of goods is considered sold EXW in accordance with INCOTERMS® 2010.
- 6.2. For services, the place of performance shall be the place indicated in the written order confirmation, secondary to that at which the service is actually rendered by Seller. The risk in respect of such services or any part thereof shall pass to Buyer at the time the services have been rendered.

### 7. Payment

- 7.1. Unless otherwise agreed, one third of the purchase price shall fall due at the time of receipt by Buyer of the order confirmation of Seller, one third after half the delivery period has elapsed and the balance at the time of delivery. Irrespective thereof the turnover tax comprised in the amount of the invoice shall be paid within 30 days of the invoice date. If bankruptcy proceedings are instituted against the assets of Buyer or if an application for bankruptcy proceedings is not granted for insufficiency of assets, deliveries shall only be made against cash in advance.
- 7.2. In the case of part settlements the individual part payments shall fall due upon receipt of the respective invoices. The same shall apply to amounts invoiced for additional deliveries or resulting from additional agreements beyond the scope of the original contract, irrespective of the terms of payment agreed upon for the principal delivery.
- 7.3. Payment shall be made without any discount free Seller's domicile in the agreed currency. Drafts and checks shall be accepted on account of payment only, with all interest, fees and charges in connection therewith (such as collection and discounting charges) to be borne by Buyer.
- 7.4. Buyer shall not be entitled to withhold or offset payment on the grounds of any warranty claims or other counterclaims.
- 7.5. Payment shall be deemed to have been effected on the date at which the amount in question is at Seller's disposal.
- 7.6. If Buyer fails to meet the terms of payment or any other obligation arising from this or other legal transactions, Seller may without prejudice to his other rights
  - a) suspend performance of his own obligations until payments have been made or other obligations fulfilled, and exercise his right to extend the period of delivery to a reasonable extent,
  - b) call in debts arisen from this or any other legal transactions and charge default interest amounting to 1.25 % per month plus turnover tax for these amounts beginning with the due dates, unless Seller proves costs exceeding this.
  - c) only perform other legal transactions against cash in advance in the case of qualified insolvency, in other words, following two delays in payment.In any case Seller has the right to invoice all expenses arising prior to a lawsuit, especially reminder charges and lawyer's fees.
- 7.7. Discounts or bonuses are subject to complete payment in due time.
- 7.8. Seller retains title to all goods delivered by him until receipt of all amounts invoiced including interests and charges. Buyer herewith assigns his claim out of a resale of conditional commodities, even if they are processed, transformed or combined with other commodities, to Seller to secure the latter's purchase money claim. In the case of resale granting respite Buyer shall have the power of disposal of the product under retention of ownership only with the proviso that upon reselling Buyer notifies the secondary buyer of the assignment for security or enters the assignment in his account books. Upon request Buyer has to notify the assigned claim and the debtor thereof to Seller, and to make all information and material required for his debt collection available and to notify the assignment to the third-party debtor. If the goods are attached or otherwise levied upon, Buyer shall draw attention to Seller's title and immediately inform Seller of the attachment or levy.

### 8. Warranty and acceptance of obligation to repair defects

- 8.1. Once the agreed terms of payment have been complied with, Seller shall, subject to the conditions hereunder, remedy any defect existing at the time of acceptance of the article in question whether due to faulty design, material or manufacture, that impairs the functioning of said article. From particulars appearing in catalogues, folders, promotional literature as well as written or oral statements which have not been included in the agreement no warranty obligations may be deduced.
- 8.2. Unless special warranty periods operate for individual items the warranty period shall be 12 months. These conditions shall also apply to any goods supplied, or services rendered in respect of goods supplied, that are firmly attached to buildings or the ground. The warranty period begins at the point of passage of risk acc. to paragraph 6.
- 8.3. For improved or exchanged parts, the warranty period shall start again, but shall end in any case 6 months after the original warranty period has expired.
- 8.4. If delivery or the performance of services is delayed for reasons outside the control of Seller, the warranty period shall begin 2 weeks after Seller is ready to deliver or perform services.



- 8.5. The foregoing warranty obligations are conditional upon the Buyer giving within a reasonable period notice in writing of any defects that have occurred and such notice reaching the Seller. Buyer shall prove within a reasonable period the presence of a defect, in particular he shall make available within a reasonable period to Seller all material and data in his possession. Upon receipt of such notice Seller shall, in the case of a defect covered by the warranty under 8.1 above, have the option to replace the defective goods or defective parts thereof or else to repair them on Buyer's premises or have them returned for repair, or to grant a fair and reasonable price reduction.
- 8.6. Any expenses incurred in connection with rectifying defects (e. g. expenses for assembly and disassembly, transport, waste disposal, travel and siteto-quarters time) shall be borne by Buyer. For warranty work on Buyer's premises Buyer shall make available free of charge any assistance, hoisting gear, scaffolding and sundry supplies and incidentals that may be required. Replaced parts shall become the property of Seller.
- 8.7. If an article is manufactured by Seller on the basis of design data, design drawings, models or other specifications supplied by Buyer, Seller's warranty shall be restricted to non-compliance with Buyers specifications.
- 8.8. Seller's warranty obligation shall not extend to any defects due to assembly and installation work not undertaken by Seller, inadequate equipment, or due to non-compliance with installation requirements and operating conditions, overloading of parts in excess of the design values stipulated by Seller, negligent or faulty handling or the use of inappropriate materials, nor for defects attributable to material supplied by Buyer. Nor shall Seller be liable for damage due to acts of third parties, atmospheric discharges. Excess voltage and chemical influences. The warranty does not cover the replacement of parts subject to natural wear and tear. Seller accepts no warranty for the sale of used goods.
- 8.9. The warranty shall lapse immediately if, without written consent of Seller, Buyer himself or a third party not expressly authorised undertakes modifications or repairs on any items delivered.
- 8.10. Claims acc. to § 933b ABGB are struck by the statute of limitation with lapse of the period mentioned under point 8.2.
- 8.11. The provisions of sub-paragraphs 8.1 to 8.10 shall apply, mutatis mutandis, to all cases where the obligation to repair defects has to be accepted for other reasons laid down by law.
- 9. Withdrawal from contract**
- 9.1. Buyer may withdraw from the contract only in the event of delays caused by gross negligence on the part of Seller and only after a reasonable period of grace has elapsed. Withdrawal from contract shall be notified in writing by registered mail.
- 9.2. Irrespective of his other rights Seller shall be entitled to withdraw from the contract
- if the execution of delivery or the inception or continuation of services to be rendered under the contract is made impossible for reasons within the responsibility of Buyer and if the delay is extended beyond a reasonable period of grace allowed;
  - if doubts have arisen as to Buyer's creditworthiness and if same fails, on Seller's request, to make an advance payment or to provide adequate security prior to delivery, or
  - if, for reasons mentioned in 5.4, the period allowed for delivery is extended by more than half of the period originally agreed or by at least 6 months, or
  - if Buyer does not or does not properly meet the obligations imposed as per paragraph 13.
- 9.3. For the reasons given above withdrawal from the contract shall also be possible in respect of any outstanding part of the delivery or service contracted for.
- 9.4. If bankruptcy proceedings are instituted against Buyer or an application for bankruptcy proceedings is not granted for insufficiency of assets, Seller may withdraw from the contract without allowing a period of grace. If this withdrawal is taken, it shall take effect immediately upon the decision that the business will not be continued. If the business will be continued, a withdrawal shall not take effect until 6 months after the institution of bankruptcy proceedings or after an application for bankruptcy proceedings has not been granted for insufficiency of assets. In any case, the contract shall be terminated immediately unless the bankruptcy law to which Buyer is subject conflicts with this or if termination of the contract is necessary to prevent significant damages to Seller.
- 9.5. Without prejudice to Seller's claim for damages including expenses arising prior to a lawsuit, upon withdrawal from contract any open accounts in respect of deliveries made or services rendered in whole or in part shall be settled according to contract. This provision also covers deliveries or services not yet accepted by Buyer as well as any preparatory acts performed by Seller. Seller shall, however, have the option alternatively to require the restitution of articles already delivered.
- 9.6. Withdrawal from contract shall have no consequences other than those stipulated above.
- 9.7. The assertion of claims on the ground of *laesio enormis*, error, or lapse of purpose by the Buyer is excluded.
- 10. Disposal of waste electrical and electronic equipment**
- 10.1. The Buyer of electrical/electronic equipment for commercial purposes, incorporated in Austria, is responsible for the financing of the collection and treatment of waste electrical and electronic equipment as defined by the Ordinance Regulating the Handling of Waste Electrical Equipment, if he is himself the user of the electrical/electronic equipment. If the Buyer is not the end user, he shall transfer the full financial commitment to his customer by agreement and furnish proof thereof to the Seller.
- 10.2. The Buyer incorporated in Austria shall ensure that the Seller is provided with all information necessary to meet the Seller's obligations as manufacturer/importer, particularly according to §§ 11 and 24 of the Ordinance Regulating the Handling of Waste Electrical Equipment and the Waste Management Act.
- 10.3. The Buyer incorporated in Austria is liable vis-à-vis the Seller for any damage and other financial disadvantages incurred by Seller due to Buyer's failure to meet or fully meet his financing commitment or any other obligations according to Article 10. The Buyer shall bear the burden of proof of performance of this obligation.
- 11. Seller's liability**
- 11.1. Outside the scope of the Product Liability Act, Seller shall be liable only if the damage in question is proved to be due to intentional acts or acts of gross negligence, within the limits of statutory provisions. Seller's total liability in cases of gross negligence is limited to the net value of the order or EUR 500,000, depending on which amount is lower.
- 11.2. For each incident of damage, Seller shall be liable for 25% of the net value of the order or EUR 125,000, depending on which amount is lower.
- 11.3. Seller shall not be liable for damage due to acts of ordinary negligence nor for consequential damages or damages for pure economic loss, indirect damages, loss of production, financing costs, costs for replacement energy, loss of energy, data or information, loss of profits, loss of savings or interest, or damage resulting from third-party claims against buyer.
- 11.4. Seller shall not be liable for damages in case of non-compliance with instructions for assembly, commissioning and operation (such as are contained in instructions for use) or non-compliance with licensing requirements.
- 11.5. Claims that exceed the contractual penalties that were agreed on are excluded from the respective title. The provisions of paragraph 11 apply exclusively for all claims by Buyer against Seller, regardless of the legal basis or entitlement, and also apply to all employees, subcontractors and subsuppliers of Seller.
- 12. Industrial property rights and copyrights**
- 12.1. Buyer shall indemnify Seller and hold him harmless against any claims for any infringement of industrial property rights raised against him if Seller manufactures an article pursuant to any design data, design drawings, models or other specifications made available to him by Buyer.
- 12.2. Design documents such as plans and drawings and other technical specifications as well as samples, catalogues, prospectuses, pictures and the like shall remain the intellectual property of Seller and are subject to the relevant statutory provisions governing reproduction, imitation, competition etc. The provisions of 2.2 above shall also cover design documents.
- 13. Compliance with export provisions**
- 13.1. When passing on goods delivered by Seller to third parties (as well as any related documentation, regardless of the method of provision or the services performed by Seller [including technical support of any kind]), Buyer must comply with the applicable regulations of national and international (re-)export provisions. In any case, Buyer must observe the (re-)export provisions of Seller's country of residence, the European Union and the United States of America.
- 13.2. If necessary for export controls, Buyer must provide Seller with all necessary information immediately after being requested to do so, for example, information about the final recipient, final destination and purpose of the goods or services.
- 14. General**
- Should individual provisions of the contract or of these provisions be invalid the validity of the other provisions shall not be affected. The invalid provision shall be replaced by a valid one, which comes as close to the target goal as possible.
- 15. Jurisdiction and applicable law**
- Any litigations arising under the contract including litigations over the existence or non-existence thereof shall fall within the exclusive jurisdiction of the competent court at Seller's domicile; the competent court of the Bezirksgericht Innere Stadt, Vienna, shall have exclusive jurisdiction if Seller is domiciled in Vienna. The contract is subject to Austrian law excluding the referral rules. Application of the UN Convention on Contracts for the International Sale of Goods is renounced.
- 16. Proviso**
- The execution of the contract by Seller is subject to the condition that there are no obstacles standing in the way of execution due to national or international (re-)export provisions, and especially no embargos and/or other sanctions.

Last revised in September 2011

# THE COMPANY

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