

BEST CONTACTS FOR YOUR SUCCESS



KARL GÄRTNER GMBH

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NETWORKING COMPONENTS

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COAXIAL CONNECTORS

---

CABLE ASSEMBLIES

---

PRECISION TURNED PARTS

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PLASTIC INJECTION MOULD PARTS

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INDUSTRIAL ELECTRONICS

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## DataVoice **Office**

Product Catalogue Data and Telecommunications



All products are shown in our  
**online catalogue**  
[www.telegaertner.com](http://www.telegaertner.com)

**Publisher**

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# Contents

2	Telegärtner DataVoice
15	The Telegärtner Group
23	Telegärtner Locations and Representation: National / International
27	Technical Information
45	Telegärtner Network Dictionary
61	Products
351	Mounting Dimensions
353	Index of Order Numbers

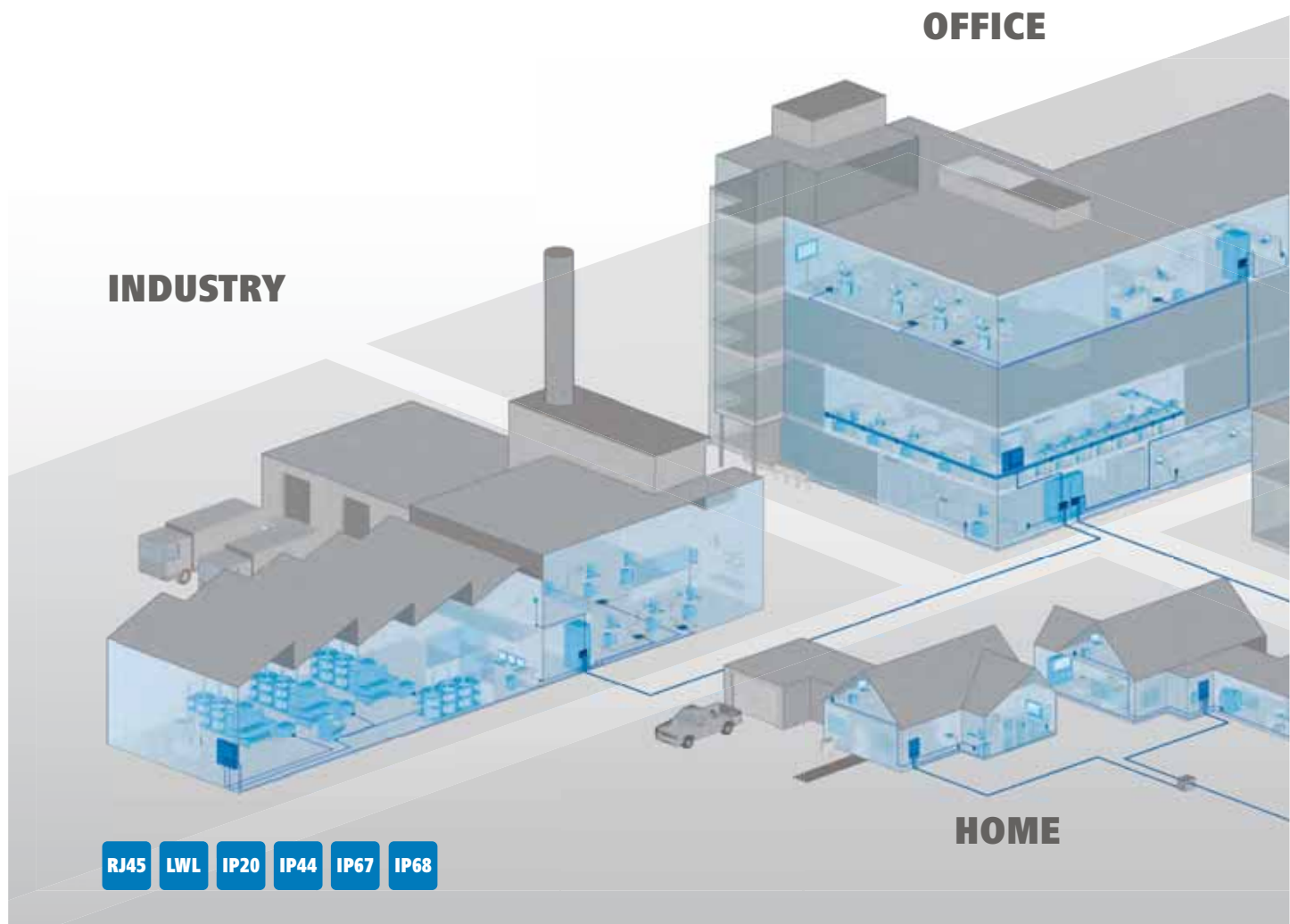
<b>RJ45 Components</b>		<b>A</b>
61	Outlets	<b>1</b>
75	Modular System AMJ-S / AMJ / UMJ	<b>2</b>
105	Patch Panels and Distributors	<b>3</b>
121	Connection Modules Cat.7 <sub>A</sub>	<b>4</b>
127	Modular Plugs	<b>5</b>
141	Defined Disconnect CP-Link	<b>6</b>
145	RJ45 Patch Cords	<b>7</b>
169	Copper Installation and Flexible Cables	<b>8</b>
177	RJ45 Surge Protection	<b>9</b>
181	UCT – Wiring Tester	<b>10</b>
<b>RJ45 and Fiber Optic Components</b>		<b>B</b>
185	TOC – Outdoor Connectors	<b>11</b>
197	Data Center Solutions	<b>12</b>
205	Fiber-To-The-x Solutions	<b>13</b>
213	Intelligent Patch Management System Owl	<b>14</b>
<b>Fiber Optic Components</b>		<b>C</b>
219	FO Connectors	<b>15</b>
231	FO Fiber Pigtails	<b>16</b>
237	FO Patch Cords	<b>17</b>
251	FO Ready-to-install Fiber Optic Links	<b>18</b>
261	FO MPO / MTP® Cabling System	<b>19</b>
273	FO Splice Cassette System SAM	<b>20</b>
279	FO Outlets	<b>21</b>
289	FO Patch Panels	<b>22</b>
314	FO Wall Boxes and Splice Boxes	<b>23</b>
331	FO Termination Tools and Accessories	<b>24</b>
<b>Telecommunication Components</b>		<b>D</b>
337	Connectors according to DIN 41 618 and DIN 41 622	<b>25</b>
343	LF Connectors 10-way according to MIL-C-10544	<b>26</b>
347	Binding Posts KL 58, KL 65	<b>27</b>

# Data Voice – The Cabling System with PLUS POINTS

## Professional Package System for Generic Building Cabling

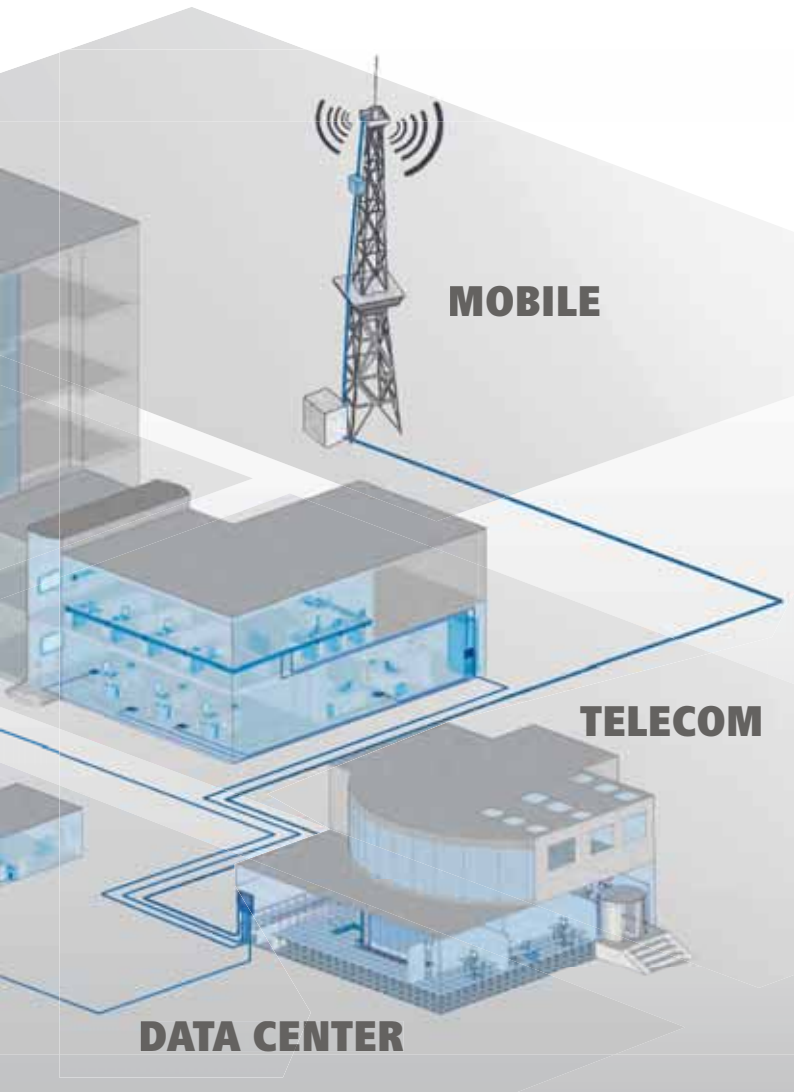
DataVoice is a reliable professional package for designers, fitters and users developed by Telegärtner to meet all generic cabling requirements in office buildings, production halls and machines. The DataVoice range includes components for copper and fiber optic cable networks and connectors

for industrial applications. The office product line ranges from connection and distribution components for optical transmission systems and preassembled optical fiber sections right through to powerful passive components for copper cable transmission.



Whether your requirements be for on the factory floor or for the wiring machinery: with our extremely reliable RJ45 wiring systems, DataVoice offers everything you require for modern gigabit-speed networks in the industrial environment of production areas and machinery wiring.

Our product offering is complemented with cable assemblies - for a complete generic building cabling system.



**+**

## DataVoice The Cabling System with PLUS POINTS for...

**...Power**  
Guaranteed transmission rates of up to 100 GBit with fiber optics and 10 Gbit with copper thanks to cutting-edge technology.

**...Practicality**  
Integrated system for office networks, production halls, machine and plant networks.

**...Availability**  
IP20 and IP68 protected housings for reliable connections for extreme demands in heavy-duty conditions.

**...User-friendliness**  
Easier to install thanks to pre-assembled components and cables.





# Telegärtner DataVoice

## Everything for Structured Building Cabling

With the DataVoice product portfolio, Telegärtner offers a reliable professional total system for everything to do with building wiring: from products for the complete wiring of copper and fiber optic networks to professional connectors for industry.

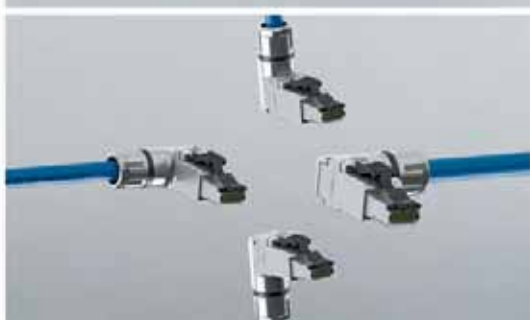
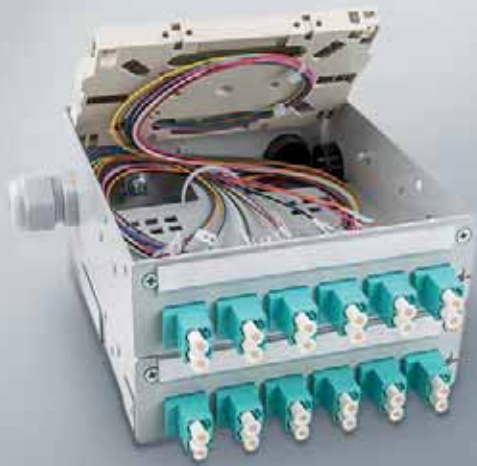
Telegärtner offers you a comprehensive program of high quality connection components for the data and telecommunications throughout the building. This kicks off with a complete FO program which can be delivered pre-assembled, continues in the office environment with extensive network solutions does not stop at the industrial environment with extremely reliable RJ45 connector systems for harsh ambient conditions.

In addition to high performance passive components for transmission by copper cable, you also get connection and distributor components for fiber optic technology from us.

This is all rounded off by our cable assembly for a complete, structured building cabling. The DataVoice range is enhanced by products for factory, machine and plant wiring: The Telegärtner industrial connectors of variant 1, variant 4, variant 5, variant 6 and variant 14 offer standard conformant solutions which can be flexibly combined – without annoying adaptations. Because the freely selectable inserts can easily be inserted into all IP67 housings. With the STX M12x1 IP67 connector series, Telegärtner offers solutions for the demand of the industry for consistent cabling of industrial communication networks in accordance with IEC 61918. There is nothing easier and at the same time more reliable for modern, gigabit fast hall, machine and plant networks.

Telegärtner DataVoice: All from one provider and always with that added Telegärtner quality and reliability – in every component.







# Telegärtner DataVoice

## Highlights

Telegärtner has been setting new standards in connection technology for decades. Over the years Telegärtner has developed numerous products for structured building wiring with which planners, installers and users can go about their daily tasks easier, more efficiently and with the promise of greater success.

### **Field-assembly RJ45 Plug MFP8-4x90 Cat.6A RJ45 connector**

The MFP8-4x90 Cat.6A is the logical extension of the field-assemblable RJ45 connector series. The advantages of the conventional MFP8 Cat.6A such as easy and fast assembly on all standard types of cable and for all networks up to 10 Gigabit Ethernet, have been extended by a variable 90° cable outlet. This offers unprecedented flexibility and saves time and money on installation, repairs and maintenance – in office buildings, in data centers, in industry or for home cabling.

### **Connection Module VM-Pro 8-8 Class F<sub>A</sub> IP67**

Due to its compact shape the VM-Pro is suitable for cable repairing, extensions or rerouting for use in confined spaces. Assembly requires no special tools and suits for the assembly of installation cables as well as patch cords. The connection module is fully shielded, safe from manipulation and enables reliable strain relief.

### **Modular Front Plate for 19" FO Patch Panels**

The growing number of different optical connectors in networks increasingly necessitates the use of mixed equipment in patch panels. Up to three 3 HU/7 TU front plates for ST, SC, LC and E2000 adaptors can be fitted. A maximum number of different connector faces can therefore be implemented on just one height unit.

### **Modular Wall Distributor SAM for FO Applications**

In the Modular Wall Distributors SAM (Splice Arranged Management) you can splice up to 8x4 fibers on SC cassettes or 4x12 fibers on SE cassettes. The SAM fiber management enables fibre overlengths to be laid and the 250 μ fibers to be laid safely and protected to the cassettes.

### **STX Mounting Rail Distributor TS24 for up to 24 optical fibers**

The range of STX Mounting Rail Distributors has been extended by a new version for up to 24 optical fibers. The TS24 can be ordered pre-loaded („ready to splice“). They come with pre-installed adaptors ST Duplex, SC Duplex or LC Duplex and coloured, stripped pigtails.

### **Distributor MPD24 FO for Surface Mounting**

The MPD24 modular distributor is available in a third housing version for equipping with up to three 3 HU/7 PU front panels for FO adaptors of the types SC, LC, E2000 and ST. Up to 72 fibers can be patched in the easy to install metal housing by the modular front plates. Mixed assembly of different adaptor types and different fibers is possible with the front plates. The lid can be snap-mounted or even removed without tools. The bottom part of the housing can be mounted on the wall flush with the plaster. The cable opening is protected against dust by brushes; the cables are secured by cable ties. The MPD24 is also available in the version MPD24 AMJ/UMJ (modular version) and MPD24-HS K Cat.6A with IDC termination and RJ45 jacks rated Cat.6A.



You will find other Telegärtner highlights from the DataVoice range on our Internet Web site under [www.telegaertner.com/datavoice](http://www.telegaertner.com/datavoice)

Products & Services  
Markets & Application Fields  
Information Material & Catalogues

- Catalogues
- Online Catalogue Cover
  - Online Catalogue DataVoice Office
  - Online Catalogue DataVoice Industry

Special Topics

Highlights

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- Coax-Configurator
- InfoScreen
- Online Catalogue DataVoice Office
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- Online Catalogue DataVoice **NEW**
- Face with Data-Correction-Program

## DataVoice Office Online catalogue

Download catalogue PDF  
Order catalogue by mail

### DataVoice Office



Shopping basket

Empty basket in the shopping basket  
Go to shopping basket

- Optics
- Modular System MIO/SIMULUM
- Patch Panels and Distribution
- Connection Modules Cat. 5
- Modular Patch
- Defined Disconnect DP-Line
- Active Patch Cards
- Copper Installation and Flexible Cables
- RJ45 Surge Protector
- UCC - Wiring Tester
- TOC - Ethernet Connectors
- PD Connectors
- PD Fiber Patches
- PD Patch Cards
- PD Ready-to-install Patch Cord Lines
- PD MPO/MTP8 Cabling System
- PD Static Discharge System Seal
- PD Outlets
- PD Patch Panels
- PD Wall Boxes and SplitBoxes
- PD Termination Tools and Accessories
- Connectors according to DIN 41 618
- MPO DIN 41 622
- U/C Connectors 10-way according to MIL-C-15444
- 2- and 3-way Connectors according to MIL-R-442, MIL-C-1841
- Binding Pairs 15, 18, 24, 30



## **Telegärtner Online**

**Visit us online!**

Get an insight into our extensive product spectrum and learn more about us. Thanks to our target group-orientated structuring you will quickly and easily find informative contents on different topics such as components for home wiring, for industrial applications or for wiring data centers.

Our online catalogue keeps you constantly informed on our complete product portfolio – always up-to-date. By using open navigation structure and integrated full text retrieval you are sure to find the products you are looking for quickly. Every product group is described in detail with corresponding technical parameters and special features. You can obtain extensive information on every product in picture and text, as well as you can download important information such as assembly instructions as PDF-file onto your computer.

**[www.telegaertner.com](http://www.telegaertner.com)**



**Telegärtner** Telegärtner worldwide | Company

Products & Services  
Systems & Application Fields  
Information Material & Catalogues  
Downloads & Tools

**Downloads & Tools**  
**Configurators and Tools**

- TCNET Configurator**  
Four efficient configurators for customer product configurations.
- COAX Configurator**  
For optimum online customization of pre-assembly cables.
- Cable Connector Finder**  
For the quick finding of RF connectors in the online catalogue by CAD dimensions.
- Cable Group Finder**  
For simple classification of unlisted cable series.
- Calculator: Millimeter - Inch**  
Unit Conversion: millimeter to inch.
- Calculator: Reflection Behavior**  
For the rapid calculation of reflection in parallel connectors.

**Footer:**  
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Social Networks and News  
Contact and Support: Telegärtner Call Center, Leipzig, DE

# Telegärtner Configurators

## for the online planning of RF cables, Cabling Components & Networks

You want to assemble RF cables with coaxial connectors individually and add cable cover, labelling and cable length according to your requirements? Or do you want to configure cables and connectors or an FO patch panel according to your requirements and send an inquiry immediately online? Or do you want to be able to schedule the structured cabling of a network and search for perfectly coordinated components such as modules/keystones, data outlets, patch panels, mini distributors or patch cords and installation cables, which you can put together according to your individual wishes and needs? Then our configurators are just what you need.



### TICNET-Configurator

For the optimum online planning of individual fiber optic patch panels and wall distributors, ready-to-install fiber optic links, fiber optic patch cords and pigtailed, RJ45 patch cords in protection class IP20 and IP67.

#### Advantages at a glance:

- 6 different configurators for a wide and diverse range of individual product combinations
- Detailed product information with images and technical data
- Clear breakdown of all relevant information incl. gross list prices
- Saving of your configurations for quick subsequent orders
- View your saved configurations at any time by entering security code

[www.telegaertner.com/go/ticnet](http://www.telegaertner.com/go/ticnet)



### Network-Configurator

For fast and easy online planning of a structured network incl. modules/keystones, outlets, patch panels, mini distributors, patch cords and installation cable.

#### Advantages at a glance:

- Two different view options (floor viewing for planning across several floors as well as room view for a simple planning of your individual network) for a easy and fast configuration
- Detailed parts lists with technical data and gross list prices in Excel or PDF format for downloading
- View saved configurations and edit at any time by entering security code

[www.telegaertner.com/go/network-config](http://www.telegaertner.com/go/network-config)



### COAX-Configurator

For the optimum online planning of individually assembled RF cables incl. coaxial connectors, cable cover, labelling and cable length.

#### Advantages at a glance:

- Detailed display of all products which you need for your personal configuration – with PDF data sheets for downloading
- Illustration on the connectors by photo and technical drawings
- All configuration parameters at a glance: for a simple and clear cable configuration in a few steps
- Your individual configuration as a clear specification in PDF format: for downloading and printing

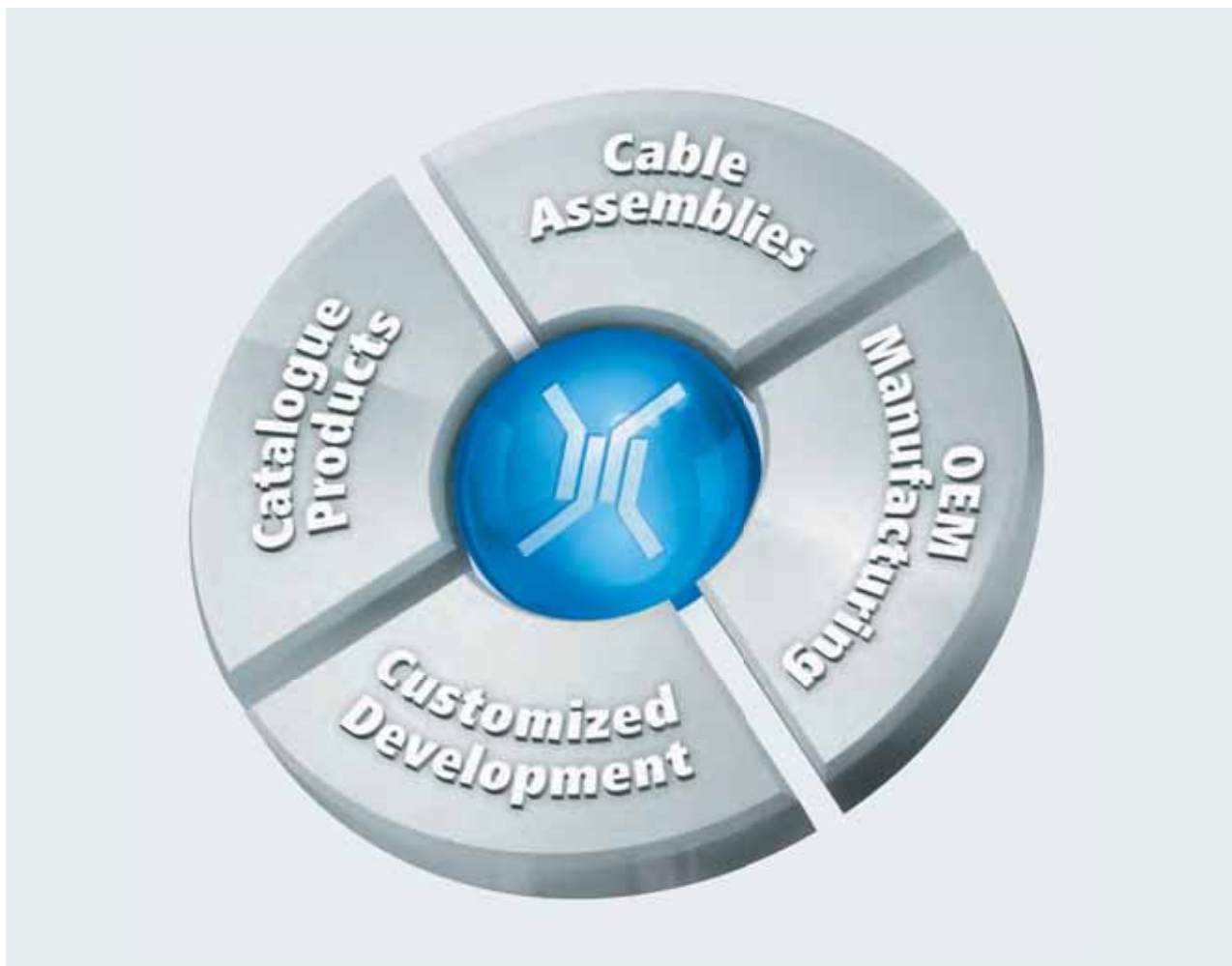
[www.telegaertner.com/go/coaxconfig](http://www.telegaertner.com/go/coaxconfig)

## The Right Solution for Every Requirement

### The Telegärtner Scope of Supply

All products in our portfolio were developed to transfer data and signals safely and reliably. Our extensive catalogue programme covers a wide range of applications. But since every application makes its own demands on the product, it is sometimes necessary to adapt individual products or modules. Telegärtner offers numerous product-accompanying and supplementary services especially for this – both for connecting components, network solutions, fiber optic products and RF connectors. Use our TICNET,

Network and Coax online configurators to configure cables, connectors, fiber optic patch panels, complete structured networks or coaxial connectors to meet your requirements and request them simply online. Benefit from our know-how from a number of customised products such as data outlets or distributors or from our OEM competence – for uncomplicated and structured wiring of halls, machines or plants or secure transmission of RF signals.



## Catalogue Products

Telegärtner offers an extensive range of high quality connecting components for data and telecommunications technology. In addition to high performance passive components for transmission via copper cables we also offer you connection and distributor components for fiber optic technology. This is all rounded off by cable pre-assembly – for comprehensive, structured building cabling. In addition to network components, you will also find a wide standard range of RF connectors in our portfolio for fast availability. With added Telegärtner quality and reliability in every product.



## Customised Development

In order to offer our customers uncomplicated and structured cabling of halls, machines or plants, we adapt individual products or modules such as data outlets or distributors to meet your individual requirements. Our development competence is demonstrated particularly in the coax field where we convince with a CAD database and more than 15,000 single parts and many thousands of implemented special developments – this individual customisation is invaluable especially for small and medium-sized series.



## OEM Manufacturing

Produced according to your technical and design specifications both as a built-in unit or a complete product: The tailor-made Telegärtner OEM products are used for data and signal transfer in many different branches. Thanks to short development times, fast and flexible sample production including housing construction as well as reliable order handling, Telegärtner is constantly able to supply customers in different telecommunications sectors with the right DataVoice or Coax solution: in the form of an OEM device which meets all requirements and helps them to successfully serve the market.



## Cable Assemblies

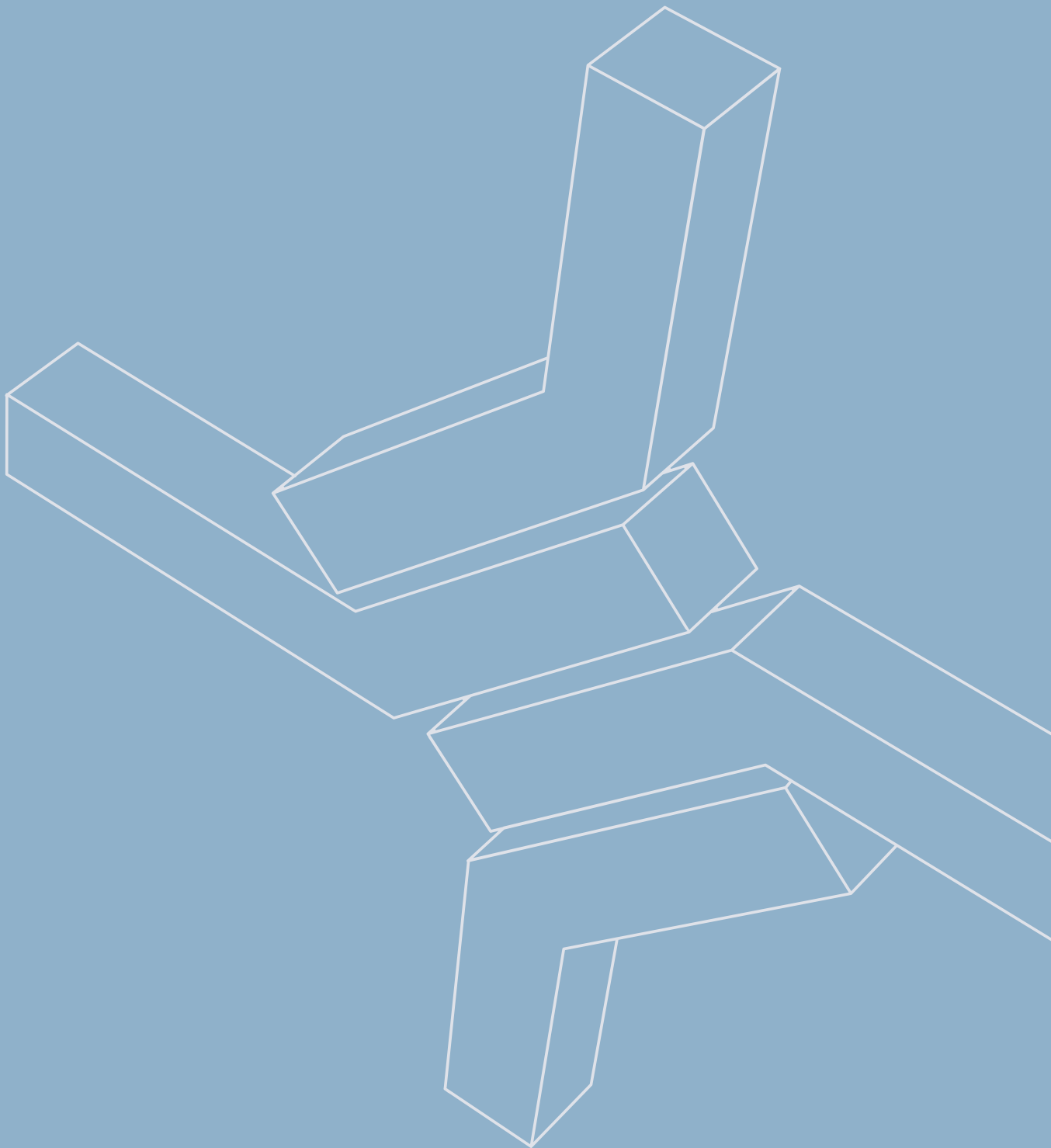
Do you want to configure cables and connectors or an FO patch panel according to your requirements and send an inquiry immediately online? Then the TICNET Configurator from Telegärtner is just the right tool for you. Four different configurators are available for different individual requirements. Each product that you configure is shown to you in detail – incl. illustrations and technical information. You can save your configurations and call them up again later as required. In addition to the TICNET Configurator we also offer you the Coax Configurator: With this you can also configure coaxial connectors with cables online.







# Telegärtner





**Telegärtner**



# Telegärtner

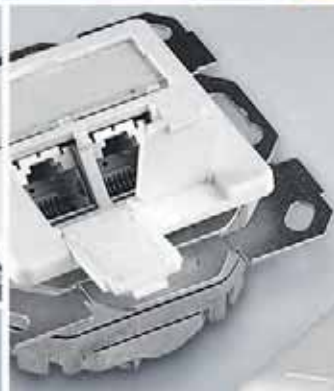
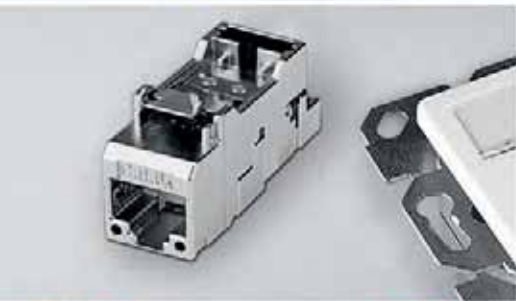
## Best Contacts for your Success

Telegärtner Karl Gärtner GmbH in Steinenbronn near Stuttgart is an internationally operative full provider for professional solutions in connection technology. The traditional company produces and sells RF coaxial connectors, networking solutions for structured building cabling for office and industrial environment.

In its more than 70 year history Telegärtner Karl Gärtner GmbH has evolved from a spare parts supplier for telephone installations for American barracks to one of the top addresses for coaxial connectors, network components and cable assembly. But this remarkable development was only possible because the demands of the traditional company have not changed in all these years. Telegärtner does not just want to produce good quality but to give customers excellent solutions with which they can work successfully.

Telegärtner meets high tech demands and satisfies conventional customer needs with great commitment. Regardless of whether a large or small series is required, Telegärtner is the ideal standard supplier and development partner for customers who demand and expect the best contacts for their success.

Detailed information about Telegärtner as well as our online catalogue you can find at:  
**[www.telegaertner.com](http://www.telegaertner.com)**



# Telegärtner Products

## Utilize the Contacts within the Telegärtner Group

The Telegärtner group offers you a complete and varied network of services. If you are already working successfully with Telegärtner in one of the following product areas, you can also profit from our outstanding performance in other areas – and exploit the resulting synergies. Please contact your authorised Telegärtner sales partner to receive additional catalogues and information material!

### Coaxial Connectors

Whether you require coaxial connectors for high power transfer in the area of transmission, subminiature connectors for dense packaging, or precision connectors for laboratory equipment, we can meet your every need with our extensive line of standard products – as well as, naturally, connectors specially designed to meet individual customer specifications.

### Networking Components

We offer you an extensive line of connection components for telecommunications and data transmission technology. On the one hand, high performance, active and passive components for transmission via copper cables and, on the other, connection and distribution components for fiber optics.

### Cable Assembly

On request, we can provide you ready-to-use coaxial and other cables which we assemble ourselves. The advantage: cable specific connectors together with reliable, low-loss RF cables. In addition to conventional coax cables, we also pre-assemble semi-rigid, semi-flex, and corrugated cables as well as RJ45 and FO cables with protection class from IP 20 to 68.

### Precision Turned Parts

Telegärtner Gerätebau GmbH manufactures complex precision turned parts and components in a diameter range of Ø 8 mm to Ø 65 mm made of brass, aluminium, steel and stainless steel. In cooperation with reliable partners we offer our customers all common finishing technologies (e. g. grinding and honing, galvanic and chemical coatings, deburring and heat treatment).

### Plastic Injection Mould Parts

Telegärtner Kunststofftechnik brings its comprehensive know-how to bear on complex material combinations, from product development right up to series production, from multi-component injection moulding, across in-mould and MID 3D techniques, to automation and clean room technologies.

### Industrial Electronics

Telegärtner Elektronik offers active/passive sub-assemblies for industrial electronics, telephone and entryway speaker systems as well as emergency call systems. We offer everything from development (hardware and software) based on customer specifications, to technical consultation and prototype testing and acceptance by the TÜV (the leading technical approval institution in Germany), up to production in small and large series. Device construction covers every aspect from PCB population and sub-assembly mounting, up to complete device manufacturing.

# CERTIFICATE



**Telegärtner**  
KARL GÄRTNER GMBH

ISO 9001:2008

DEKRA Certification GmbH hereby certifies that the company

**Telegärtner Karl Gärtner GmbH**

**Scope of certification:**  
Development, production and sales of connection devices  
for high-frequency engineering and telecommunication

**Certified location:**  
D-71144 Steinenbronn, Lerchenstraße 35



# Telegärtner Quality

## Connectors for highest demands

### **Policy on Quality**

Because we always want to offer you, our customers, the best contacts, our quality expectations go far beyond standard. Accordingly, we view ISO as merely a standard for quality – Telegärtner quality, on the other hand, is something we improve daily. It is with this in mind that we have instituted a quality assurance programme according to DIN EN ISO 9001:2008 und DIN EN ISO 14001:2004: from goods received, through manufacturing up to shipping and maintenance. A CAQ programme, the most up-to-date measuring and testing tools, optical and 3D measuring systems, quality consciousness by our employees and the continual optimisation of the Total Quality Management: That's what makes Telegärtner so unique.

### **Development and Manufacturing**

The products developed with CAD are optimized in our labs with the aid of network analysers and intermodulation test benches. A well-balanced ratio between fully automated, semi-automated and manual manufacturing processes guarantees a high level of flexibility. In addition to the wide range of standard types listed in this catalogue, a multitude of special designs are also available. Additional products can be – and are – developed and manufactured based on your specifications.

### **Delivery Service**

The Telegärtner brand stands for more than 70 years of pronounced customer orientation. Starting in the manufacturing, where we consider your requests up to the delivery, where we do more than necessary, to afford you the best contacts in the right place at the right time. A fully automated state-of-the-art warehouse with more than 28,000 containers assures, that you don't have to wait long for their goods. 24-hour delivery time ex warehouse: This is the figure against which you can measure the performance of our logistic department.

### **Responsibility for society and the environment**

Environmental protection at Telegärtner is not only considered in the development and manufacturing of products, but also in all entrepreneurial activities in the daily routine. The sparing use of resources has top priority. Our catalogues are printed CO<sub>2</sub> neutral, business and copying papers are FSC certified and 15% of our annual demand of electricity is produced by our own solar plant on the roof top of our company building.





# Subsidiaries and Agents



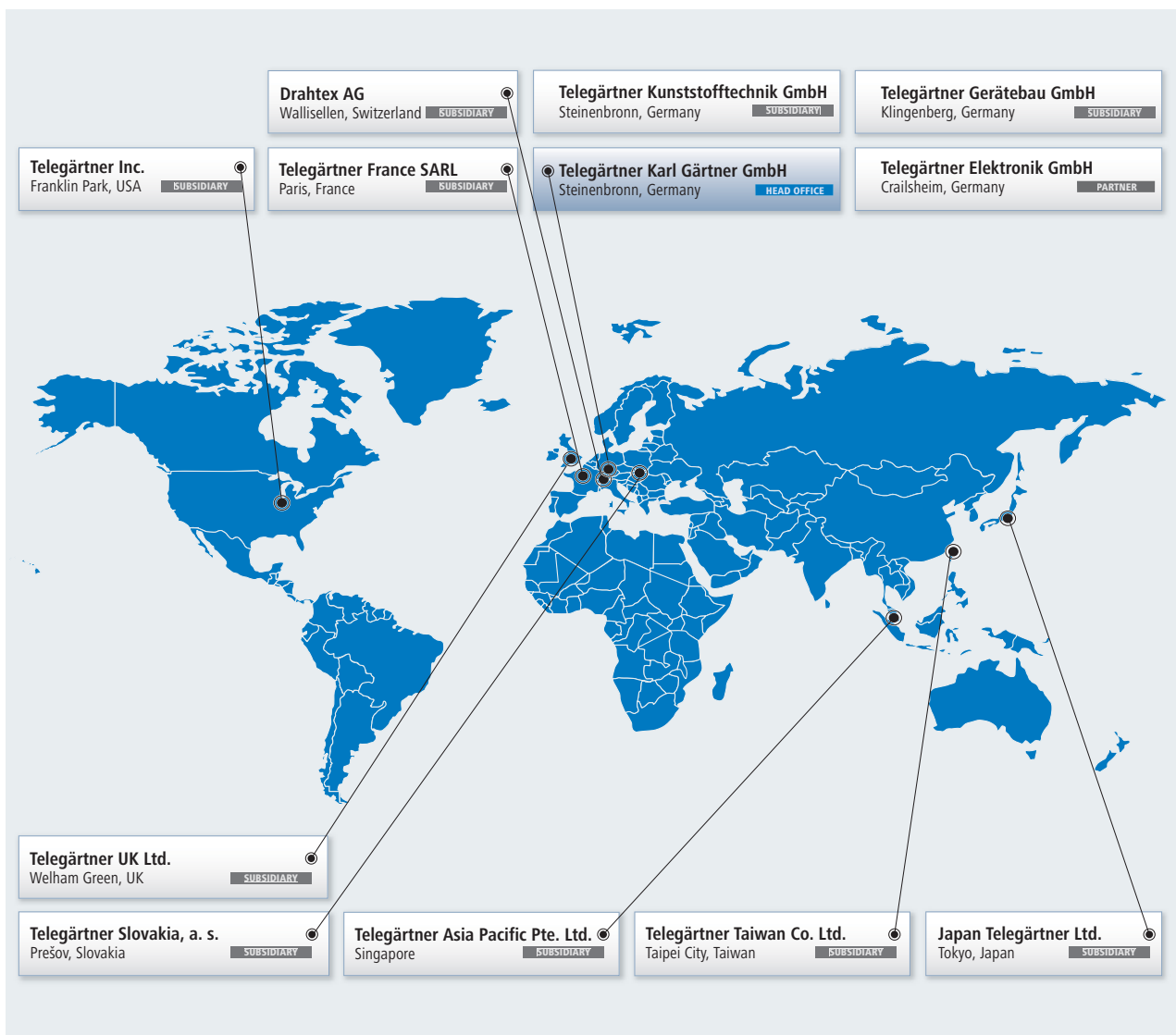
# The Telegärtner Group

## Worldwide there for you

The head office of the Telegärtner Group is located in Steinenbronn, Germany. It lies in the heart of the Stuttgart industrial region from where world-renowned companies such as Mercedes Benz, Porsche, or Bosch began their global triumphal march.

Telegärtner Germany manufactures networking compo-

nents and coaxial connectors for structured cabling as well as plastic injection moulded parts in Steinenbronn. Precision turned parts and components for fiber optic technology are produced in Höckendorf (near Dresden). Finally, active and passive electronic sub-assemblies are developed and manufactured in Crailsheim. Beyond this, we also have several overseas subsidiaries.



## Telegärtner Head Office and Worldwide Subsidiaries

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of Germany: in France, Japan, Singapore, Slovakia, Switzerland, Taiwan, UK, USA...



**Telegärtner worldwide**

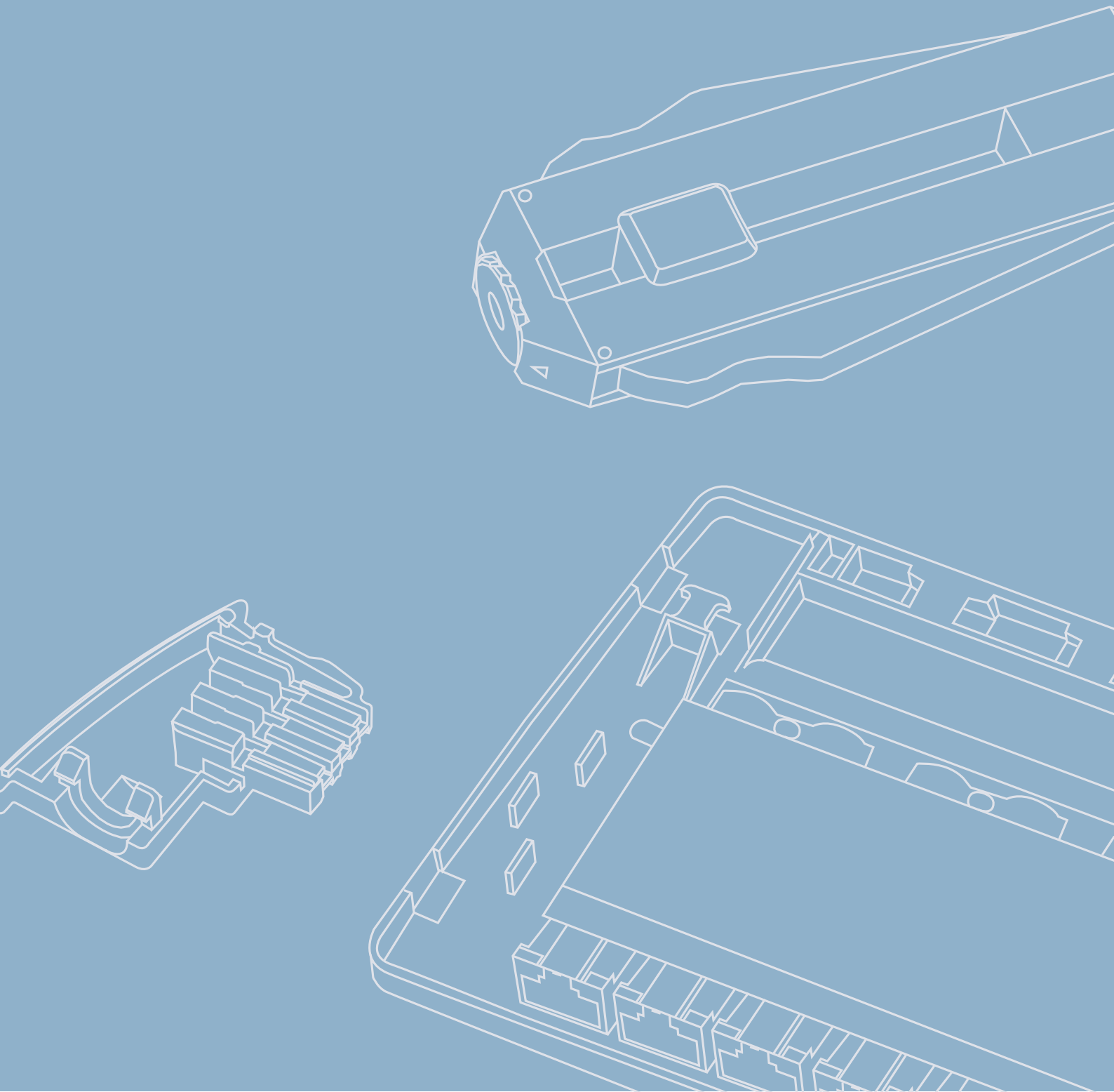
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# Technical Information



## General

The history of data communications is closely linked to the developments in cabling and connecting hardware. High performance data networks and local area networks (LANs) cannot perform well without appropriate cables and excellent connectors.

When we take a look at high-speed data networks like Gigabit and 10 Gigabit Ethernet, it's hard to imagine that data networks descended from telephone networks. Telegärtner has set quite some trends from the early beginnings.

The Ethernet version 10Base-2 was running over coaxial cable. With Telegärtner's uninterruptable EAD outlets, computers could be added or removed while the network is running. Soon, the screened version scEAD followed, and even 2015 there are still some coaxial networks with EAD/scEAD outlets in use.



EAD/scEAD



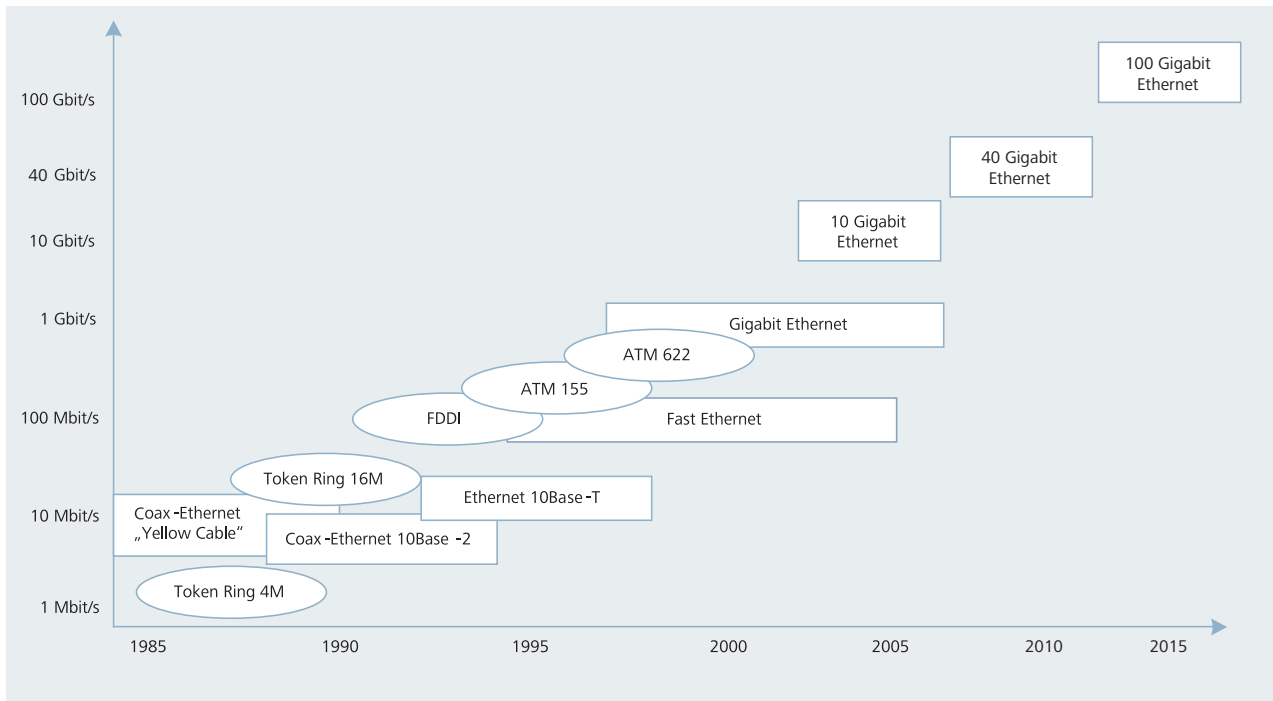
TAE Outlet



Plug



BNC Connector



**Evolution of LAN technologies:** Ethernet has become the dominant technology for local area networks (LANs). Most common are Fast Ethernet with 100 Mbps and Gigabit Ethernet with 1 Gbps. For high speed networks, 10 Gigabit Ethernet offers 10 Gbps, and 40 and 100 Gigabit Ethernet will soon offer even higher data rates.

# Copper Networks

## Structured Cabling

The demand for vendor independent and neutral cabling led to the international standard ISO/IEC 11801 with it's European version EN 50173. These standards define a structured cabling which shall be designed independent of the use or dedication of rooms or any network technology. The standards also contain performance specificatons for components and links, as well as appropriate testing methods.

Structured cabling consists of the horizontal cabling, the building backbone, and the campus backbone. The campus backbone runs between buildings on the same campus. Apart from telephone cables, only fiber optic cables are used to connect the buildings to a central campus distributor.

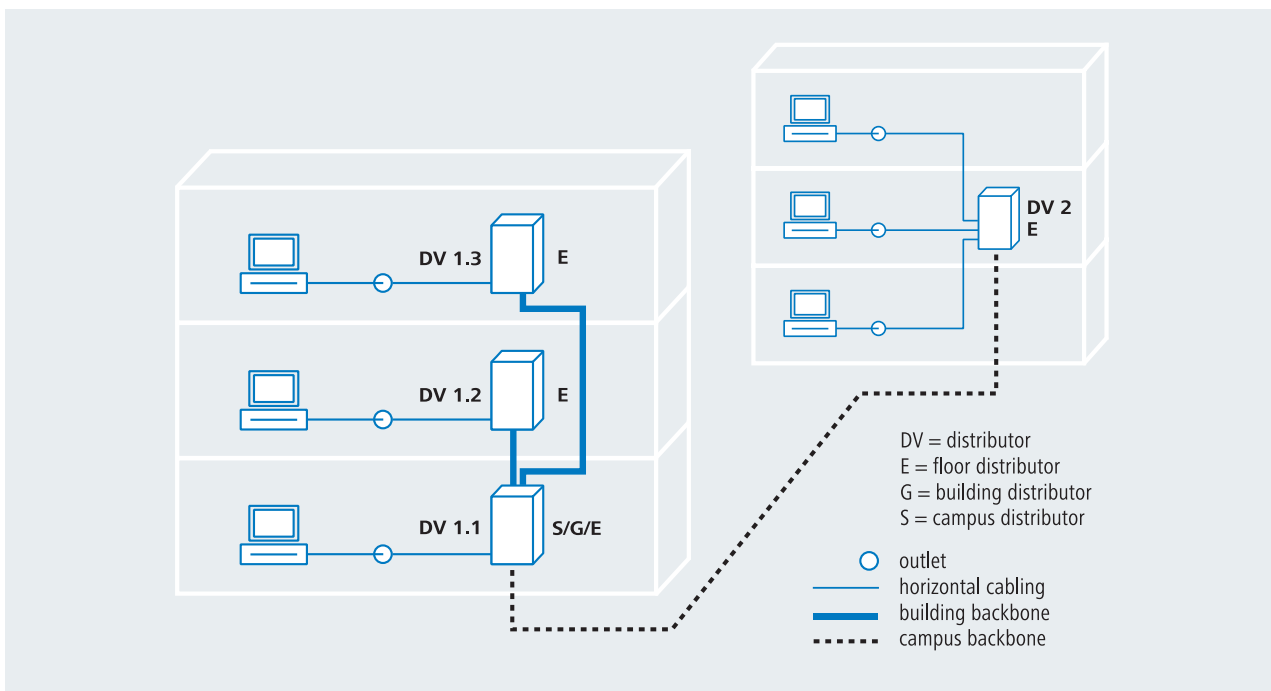
The cabling to connect the floor distributors to the building distributor following a star topology is called building backbone. According to the standards, each floor should have at least one floor distributor. However, it is also possible to use one floor distributor for several floors should they be sparsely populated.

The horizontal cabling runs from the floor distributor to the outlets. Mainly twisted-pair cabling is used here, but fiber optic cabling might offer some advantages depending on the size of the network and the details of the individual cabling project. In a lot of projects the data cabling is also used for telephony.

Telephones need another pin assignment than Ethernet, but when all pins of a jack are connected to the cable, the outlet can be used for either telephone or data. Telephone and data over the same cabling is called a converged network.



Example of RJ45 outlet from Telegärtner



An example of structured cabling

## DIN EN 50173

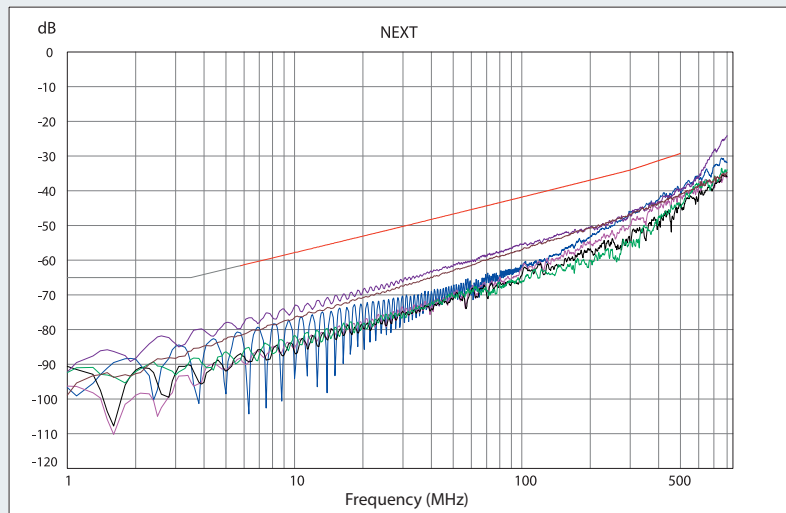
The first editions of ISO/IEC 11801 and EN 50173 were published in 1995. In 2000, addenda were published with the requirements for Gigabit Ethernet over copper cable.

The first editions and addenda of both standards defined systems up to 100 MHz (Class D/Cat.5). In the United States, EIA/TIA defined a Cat.5e for cabling supporting Gigabit Ethernet. New editions of the EN 50173 were published in 2003, 2007 and 2011.

Currently, components for 10 Gigabit Ethernet with a bandwidth of 500 MHz (Class E<sub>A</sub> / Category 6<sub>A</sub>) are used. DIN EN 50173 has become a series of six standards,

focusing on different environments and scenarios:

DIN EN 50173-1:2011	General requirements
DIN EN 50173-2:2011	Office premises
DIN EN 50173-3:2011	Industrial premises
DIN EN 50173-4:2011	Residential premises
DIN EN 50173-5:2011	Data centers
DIN EN 50173-6:2011	Distributed buildings



High system reserve of Telegärtner Cat.6<sub>A</sub> connection components measured in 90 m Class E<sub>A</sub> Permanent Link in accordance with ISO/IEC 11801

## TIA-568

Apart from ISO / IEC 11801, the American standard TIA-568 is very common in the United States. Currently, the fourth issue of TIA-568 is published as TIA-568-C, which replaces all preceding ones, including TIA-568-B.

Some specifications of TIA-568-C differ from the ones in ISO / IEC 11801 and thus EN 50173. TIA-568 applies only for North America unless explicitly stated in tenders and project descriptions.

The set of TIA-568-C consists of four parts:

- TIA-568-C.0-2: Generic Telecommunications Cabling for Customer Premises
- TIA-568-C.1-1: Commercial Building Telecommunications Standard
- TIA-568-C.2: Balanced Twisted-Pair Telecommunications Cabling and Components Standard
- TIA-568-C.3: Optical Fiber Cabling Components Standard



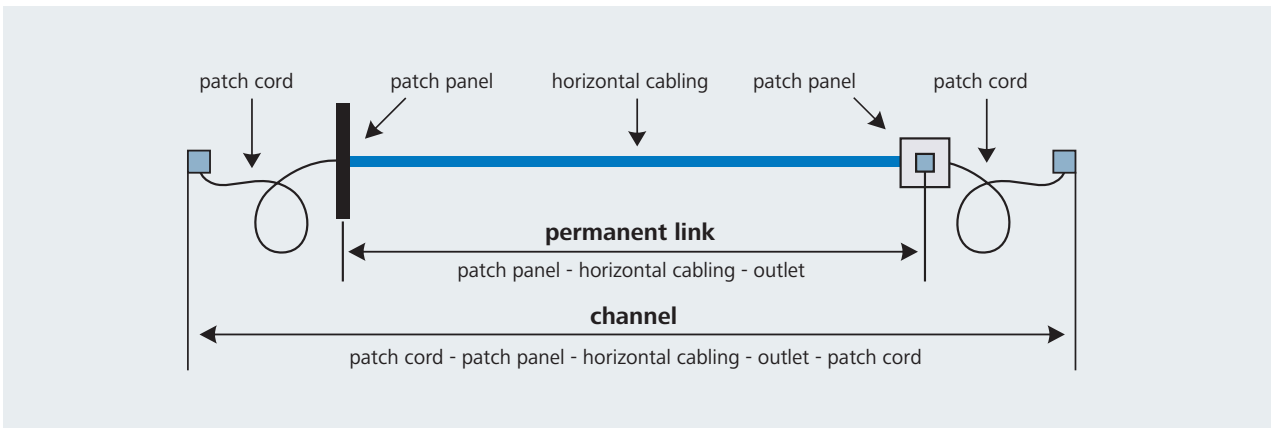
## Permanent Link and Channel

EN 50173 defines multiple performance levels. Some terms quickly: „Class“ always applies to the whole cabled link, of which permanent link and channel are two examples. The permanent link comprises the components that will stay permanently in place, so in most installations this means patch panel, horizontal cable, and outlet.

„Channel“ means the whole connection between two electronic devices like a PC and a switch, including all necessary patch cords (very often, the channel consists of the permanent link and the patch cords). In most cases, the channel will only be tested when problems have occurred to

make sure that the whole cabling is fine. After the installation is done, nearly always the permanent link is tested. The reason for this is simple: Following the test procedures for the channel would mean that all of the patch cords had to remain plugged into the outlets and patch panels.

**Telegärtner's tip:** Always check whether the permanent link or the channel has to be tested – they have different specs.



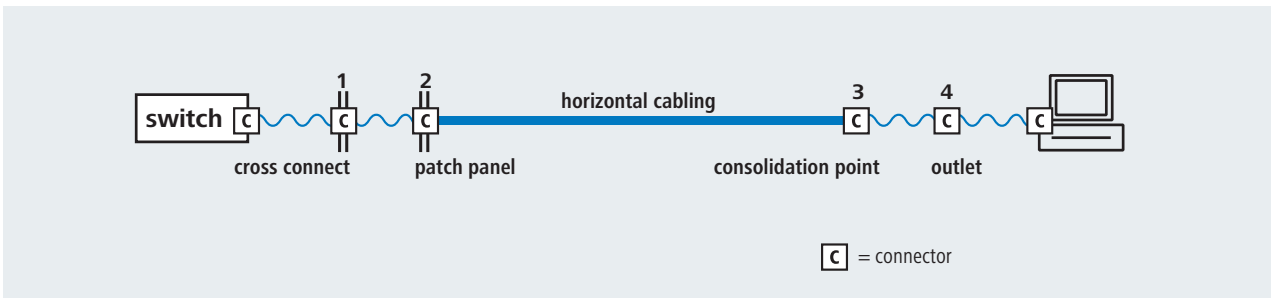
Permanent link and channel

## 2, 3 and 4 connector model

EN 50173 defines three different types of permanent links, depending on the amount of connectors used. The connections directly at the electronics like switches or at the equipment like PCs are not taken into consideration.

The simplest model is the 2 connector model: just one connection at the patch panel and one at the information outlet.

The most demanding model is the 4 connector model, which adds two more connections to the ones of the 2 connector model: a cross connect and a consolidation point. The 3 connector model just uses either a cross connect or a consolidation point.

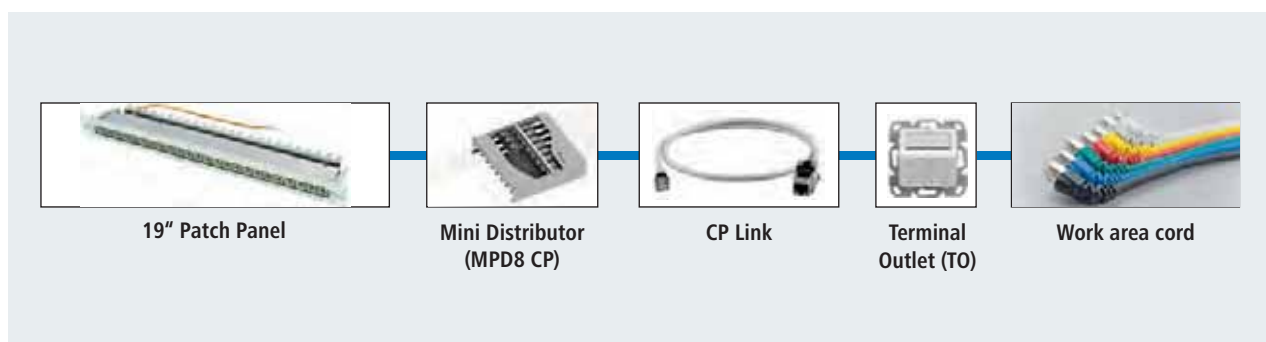


4 connector model

## Cablings with Consolidation Point

Sometimes it is useful to lay a bundle of horizontal cables between the floor distributor and a consolidation point, which is made of a group of outlets or a small distributor. From the consolidation point, cables are run to fixed or mobile outlets, to which PCs are connected. An example of a consolidation point is a small distributor, installed in suspended ceilings or cellular floors in open-plan offices or for industry solutions, where cover plates or utility columns provide flexibility. Floor outlets may also serve as consoli-

ation points when patch cords plugged in, which are not connected to PCs but to other outlets in desks or furniture. With a consolidation point, a link may contain up to four connections (4 connector model): Patch panel, consolidation point, outlet, and cross connect (mainly used in the USA, not very common in Europe). The connections at the networking devices (PC and switch/hub) are outside the scope of this model.



Cablings with consolidation point

## Class and Category

„Class“ means something completely different than „category“. The class (or category link in American English) always applies to the installed link, the category as such applies only to one single component, e.g. the cable or the outlet; the component is tested and verified by either the labs of the manufacturer or independent verification labs. The installed link is always tested according to classes (or category links).

### Cablings classes according to ISO/IEC 11801-1

- Class D: frequency range up to 100 MHz, for data rates up to 1 Gbps
- Class E: frequency range up to 250 MHz, for data rates up to 1 Gbps
- Class E<sub>A</sub>: frequency range up to 500 MHz, for data rates up to 10 Gbps
- Class F: frequency range up to 600 MHz, for multi-media applications
- Class F<sub>A</sub>: frequency range up to 1,000 MHz, for multi-media applications

### Cablings classes according to ISO/IEC 11801-5

The standards for the cabling classes I and II for 40 GBASE-T for copper data cables up to 30 m channel length for applications in high performance data centers are currently in preparation. They will have a frequency band up to 2,000 MHz. For the classes I and II there will be two component categories: Category 8.1 will be based on category 6<sub>A</sub>, will use the RJ45 connector and will be backwards compatible with categories 5/5e, 6 and 6<sub>A</sub>. Category 8.2 will be based on category 7<sub>A</sub>. It

will be backwards compatible to all categories including cat. 7 and 7<sub>A</sub> but will use non-RJ45 connectors.

Class I: up to 2,000 MHz, for 40GBASE-T at 30 m channel length (24 m permanent link, 2x3 m patch cords), based on components of the Category 8.1.

Class II: up to 2,000 MHz, for 40GBASE-T at 30 m channel length (24 m permanent link, 2x3 m patch cords), based on components of the Category 8.2.

### Component categories according to ISO/IEC 11801-1:

- Category 5: frequency range up to 100 MHz, for data rates up to 1 Gbps
- Category 6: frequency range up to 250 MHz, for data rates up to 1 Gbps
- Category 6<sub>A</sub>: frequency range up to 500 MHz, for data rates up to 10 Gbps
- Category 7: frequency range up to 600 MHz, for multi-media applications
- Category 7<sub>A</sub>: frequency range up to 1,000 MHz, for multi-media applications

### Component categories according to ISO/IEC 11801-5:

Category 8.1: RJ45 according to IEC 60603-7-81, up to 2,000 MHz, for 40 GBASE-T at 30 m channel length, backwards compatible to category 5, 6 and 6<sub>A</sub> for 10 GBASE-T at 100 m channel length

Category 8.2: TERA, GG45, ARJ45 nach IEC 60603-7-82, up to 2,000 MHz, for 40GBASE-T at 30 m channel length, backwards compatible to category 7 and 7<sub>A</sub> for 10GBASE-T at 100 m channel length

The correct spelling of Class E<sub>A</sub> and Category 6<sub>A</sub>: Originally, an „a“ in lower case was used. Later on, TIA and ISO agreed to use an „A“ in upper case. ISO (and thus Cenelec) use the „A“ in subscript (A), TIA uses it in the same level as „6“:

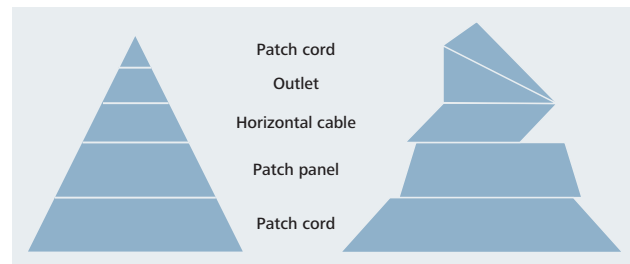
Link and Channel according to ISO: Class E<sub>A</sub>  
 Link and Channel according to TIA: Category 6A link  
 Components according to ISO: Category 6<sub>A</sub>  
 Components according to TIA: Category 6A

### Cabling systems versus Mix & Match

According to the 2007 editions of ISO/IEC 11801 and EN 50173, the selection of cabling components will be determined by the class of applications to be supported by the cabling. Cables and connections of different categories may be mixed within a channel. However, the resultant cabling performance will be determined by the category of the lowest performing component.

Even though the cabling standards were created to offer the possibility of using components from different vendors in the same link, standard compliant links („mix & match“) might lead to serious problems. The specifications allow large tolerances, and different vendors may use different ways of eliminating capacitive and inductive interference. It may well happen that components of standard compliant

systems cause reflections of the signal, which lead to high bit error rates. The system becomes slow and offers only poor performance.



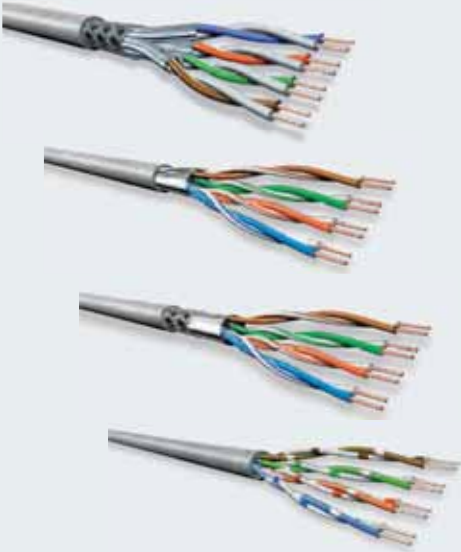
Cabling systems and mix & match

## Twisted pair cables

ISO developed a standardized, systematic naming for the different types of construction of twisted pair cables. The first letter stands for the overall screen, the second one – separated by a slash – stands for the element screen.

„S“ means braid screen, „F“ means foil screen. „TP“ stand for twisted pair, the balanced element.

**Different types of twisted pair cables**



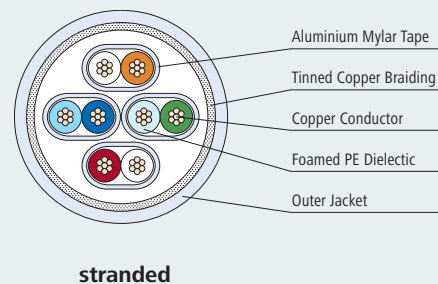
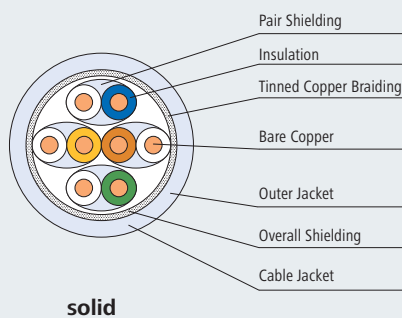
**S/FTP:**  
overall braid screen (S),  
elements foil screened (FTP)

**F/UTP:**  
overall foil screen (F),  
elements unscreened (UTP)

**SF/UTP:**  
overall braid and foil screen (SF),  
elements unscreened (UTP)

**U/UTP:**  
no overall screen (U),  
elements unscreened (UTP)

Twisted pair cables are available with solid and stranded conductors.

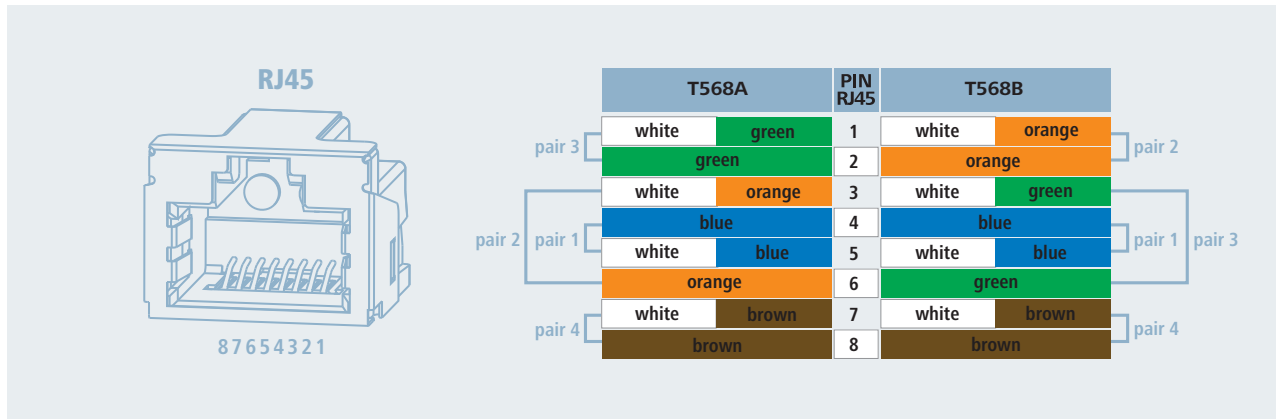


### Connecting hardware

The RJ45 has become the dominant connector for copper cabling. The term "RJ45" (or „RJ-45“) is not standardized, but it's widely used. The standard series EN 60603-7 (international: IEC 60603-7) specifies the RJ45 in both, shielded and unshielded versions, and from category 5 to category 6A.

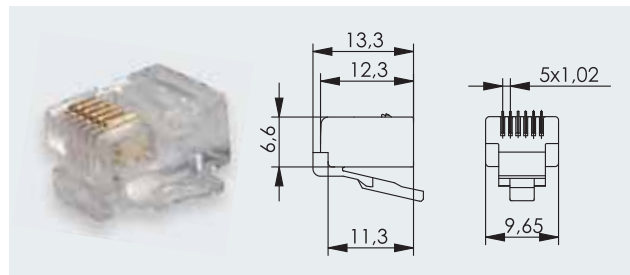
The American standard EIA/TIA 568 defines two different colour codings for RJ45 plugs and jacks. The colour coding T568A was originally developed for the military. T568B, which was developed for civil use, has become common for most installations by now.

The colour codings of EIA/TIA are not contradictory to EN 50173. EN 50173 points to EN 50174, which contains both coding schemes. Either one may be used, but both ends of the cable have to be connected in the same manner.

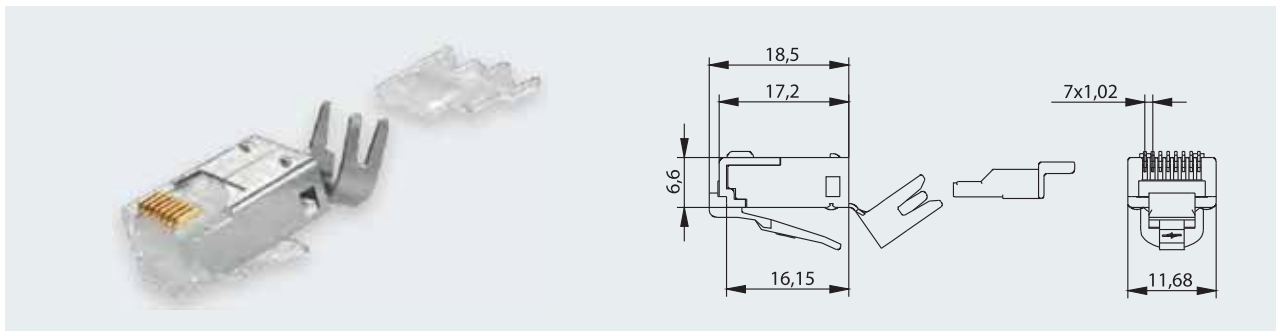


RJ45 pin assignment and colour coding

RJ45 jacks should have an integrated protection against overbending the contacts. When the cord of a telephone or a fax machine with an RJ11 or RJ12 connector is plugged into an RJ45 jack, the outer contacts (1/2 and 7/8) can be damaged. RJ11 and RJ12 connectors are similar to the RJ45, but they are a bit smaller. An integrated protection against overbending protects the contacts of the jack. Even after many "mispluggings", the jack can transmit high data rates without any problems.



RJ12



RJ45

### Outlets with boards or individual modules

The problems of ever growing data rates and at the same time cost pressure demanding shorter installation time were successfully solved by the modular design of the connecting hardware. In the old days, outlets contained small printed circuit boards to which the jacks were soldered.

Now the jacks are mounted directly on the end of the cable and just snapped into the frame of the outlet or the patch panels. Each cable is terminated on both ends with an individual jack. This leads to a much better electrical performance of the link and to an enormous time saving when terminating the cables and installing the connecting hardware. An additional benefit: Individual links can be added later at much lower costs.

Either concept works, and Telegärtner offers both, of course. The AMJ K Cat 6<sub>A</sub> was the first board based outlet with LSA+ contacts and Cat.6<sub>A</sub> performance verified by the independent test lab GHMT worldwide.



RJ45 outlets with board and individual modules, both Cat.6<sub>A</sub> compliant for 10 Gigabit Ethernet

Horizontal cables do not necessarily have to be terminated with a jack. When they are terminated with a plug, they can be inserted into an outdoor housing of an IP surveillance camera, for example. There is no need anymore for an outlet near the camera. This benefit is also welcome by industrial applications, and even in residential cabling the outlet can be omitted – in many installations there is no space for an outlet anyway. Good plugs can be mounted on site and can be used for any application, from analogue telephony up to 10 Gigabit Ethernet.



MFP8 connector by Telegärtner: Toollessly mounted on site in less than 60 seconds, and ready to transmit 10 Gigabit Ethernet

### Power over Ethernet (PoE)

With PoE, the devices can be powered using the data cable. The American standards body IEEE has specified PoE in the documents IEEE 802.3af and IEEE 802.3at:

Power over Ethernet	PoE	PoE+
Standard	IEEE 802.3af	IEEE 802.3at
Issued	June 2003	September 2009
Voltage	48 V DC	53 V DC
Maximum power at power sourcing equipment	15 W	30 W
Maximum power at powered device	12.95 W	24.6 W
Maximum current per pair	350 mA	600 mA

Source Treiber: Praxishandbuch Netzwerktechnik, courtesy of J. Schlembach Fachverlag

PoE and PoE + demand high quality connecting hardware as the small contacts have to transmit data and power at the same time.

**i Telegärtner's tip:** All Cat.6<sub>A</sub> jacks and plugs made by Telegärtner can be used for PoE and PoE + up to 30 W.

### De-embedded / Re-embedded

The cabling infrastructure of high speed data networks calls for high tech testing, especially when testing individual components. The de-embedded testing method was developed for Cat.6 components. It uses a reference jack which has to be tested with 12 different plugs to ensure it can cope with the complete spectrum of mix & match applications.

Of course, this leads to different margins with the different connectors, and all of them have to be standard compliant. De-embedded testing is precise enough for testing individual components of category 6 up to 250 MHz for data rates up to 1 Gbps. Despite of this effort, this testing method is not precise enough for testing Cat.6<sub>A</sub> components up to 500 MHz for data rates up to 10 Gbps. With de-embedded testing, a jack under test was tested as a single, stand-alone item. Re-embedded testing test the jack re-embedded into the board, it tests "the whole thing". Re-embedded testing

uses a reference plug with well-known margins. It also uses two test heads, which are connected to a network analyzer. One of this heads has a soldered receptacle for the reference plug; the jack to be tested is connected to the other test head using twisted pairs. Then the two test heads are connected and tested.

Re-embedded testing using multiple boards according to IEC 60512 is still not precise enough for Telegärtner: In the Telegärtner's test lab, the board with the reference jack is directly connected to the network analyzer using coaxial cables. This has the benefit of eliminating near-end crosstalk (NEXT) and effects caused by interference among the twisted pairs. The special testing procedure with coaxial cable enables higher precision than the procedure according to IEC 60512.

### Telegärtner Real-Time Re-Embedded Cat.6<sub>A</sub>

Using an 8-port network analyzer with implemented re-embedding calculation, the Real-Time Re-Embedded test procedure by Telegärtner makes real-time evaluation of connecting hardware possible. With this, effects of any changes of the device under test can be tracked in real-time. The time consuming testing of all pair combinations belongs to the past.



### Cat.6<sub>A</sub> Patch Cords

In many installations, patch cords are ignored – with unpleasant consequences, as the cabling infrastructure will not reach it's full performance when low-cost patch cords degrade the quality of the channel. But how can one tell that a specific patch cord is a high quality product?

Cat.6<sub>A</sub> components have been tested using the re-embedded test procedure for quite a while by now, but patch cords haven't – the physics made it next to impossible.

Once again, Telegärtner lead the way: The Telegärtner test lab was the fist test lab worldwide that was able to test Cat.6<sub>A</sub> patch cords. The test procedure is more advanced and more precise than specified by international standards. Telegärtner uses Real-Time / Re-Embedded testing, which tests all four pairs simultaneously with an 8-port network analyzer. This high-end test procedure without baluns leads to much more precise test results and sets the trend for

testing high-quality patch cords. This ensures that the channel can transmit the full data rate.



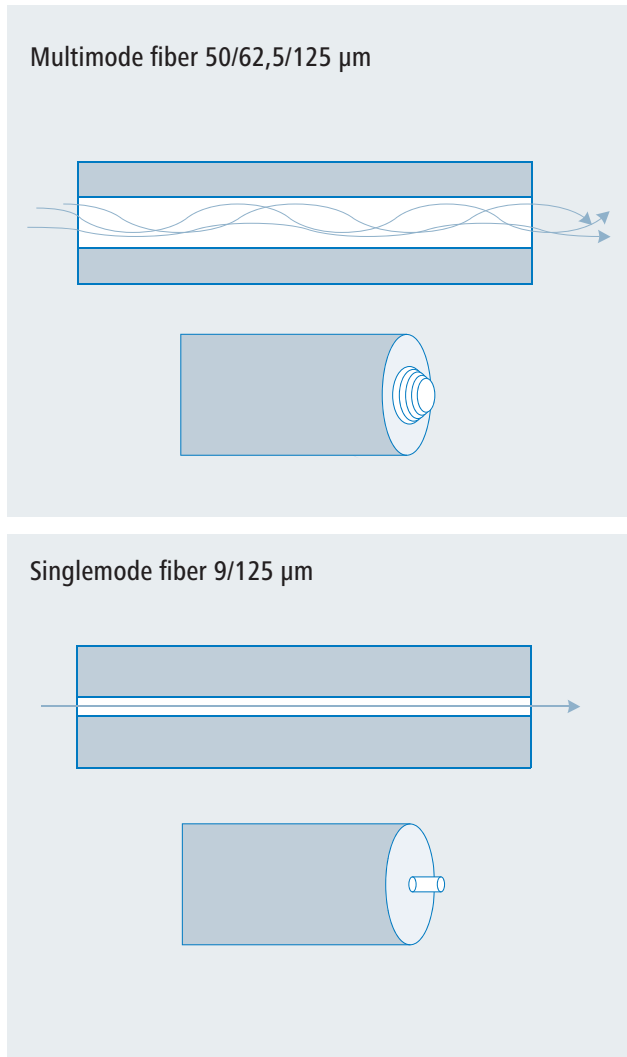
# Fiber Optic Networks

## Design of optical fiber

State of the art fiber optic cables contain multimode fibers with graded refraction index (marked with a „G“) or single-mode fiber (marked with an „E“). Loosely, one can assume that several rays of light (modes) travel along a multimode fiber in different ways, whereas in singlemode fibers only one of them does so (these „rays“ stand for the main distribution of electromagnetic energy that satisfies Maxwell’s equations and boundary conditions in guided wave propagation).

The light is guided in the inner part of the fiber. The outer part ensures that only light that doesn’t exceed a certain angle can enter the fiber, that it will be guided travelling along the fiber, and that light which left the inner part may not reenter causing signal irritation. The inner part of a fiber is called core, the outer part cladding. As core and cladding are made of glass with different refraction indices, light will be reflected at the border (total reflection).

Thus, a maximum of light will be guided through the fiber core. In Europe, multimode fibers with a core diameter of 50 µm are common, in the USA it’s mostly 62.5 µm. The two multimode fiber types may not be mixed in the same link, for that would lead to a heavy loss of light, especially when light travels from the 62.5 into the 50 µm fiber. The core diameter of singlemode fibers is typically 9 to 10 µm, depending on the fiber manufacturer. The outer diameter of all of the fiber types mentioned above is 125 µm.



Optical fiber (simplified)

## Optical fibers and their performance

ISO/IEC 11801 and EN 50173-1:2003 specify different performance categories for optical fibers. There are four of them for multimode fiber (OM1 to OM4) and two for singlemode (OS1 and OS2, with OS1 fibers being superseded by OS2 by now). LEDs usually work fine at transmission rates up to 100 Mbps. Gigabit and 10 Gigabit Ethernet use lasers, as LEDs can’t be switched on and off fast enough.

Cost-effective VCSELs (vertical cavity surface emitting lasers) work at 850 nm. For other wavelengths such as 1310 nm or 1550 nm, standard lasers have to be used.

Maximum attenuation in dB / km							
	Multimode OM1, OM2 and OM3		Multimode OM4		Singlemode OS2		
<b>Wavelength</b>	850 nm	1300 nm	850 nm	1300 nm	1310 nm	1383 nm	1550 nm
<b>Attenuation</b>	3.5 dB	1.5 dB	3.5 dB	1.5 dB	0.4 dB	0.4 dB	0.4 dB



		Min. modal bandwidth in MHz x km		
		Overfilled Launch Bandwidth		Effective Laser Launch Bandwidth
Wavelength		850 nm	1300 nm	850 nm
Fiber	Core diameter (µm)			
OM1	50 or 62.5	200	500	not specified
OM2	50	500	500	not specified
OM3	50	1500	500	2000
OM4	50	3500	500	4700

Source: Treiber: Praxishandbuch Netzwerktechnik, courtesy of J. Schlembach Fachverlag

**i Telegärtner’s tip:** Optical fibers should always be tested with the type of light source they will be used with for data transmission. Most optical testers (optical time domain reflectometer, OTDR) typically use standard lasers. However, depending on the type of Ethernet, LEDs and VCSELs are used with multi-mode fibers instead of standard lasers. The wrong source of light might lead to wrong test results.

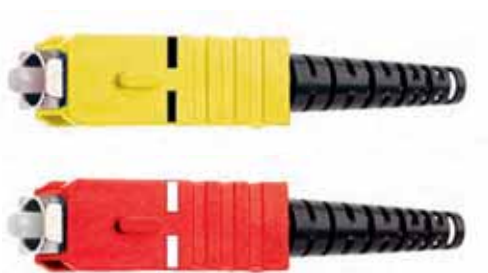
### Plastic optical fibers

Optical fibers do not necessarily have to be made of glass. They can partially or completely be made of plastic.

Polymeric optical fibers, also called plastic optical fibers or POF, are completely made of plastic. Unlike glass fibers, polymeric optical fibers cannot be fusion spliced together, as the plastic would just melt.

POFs are connected using connectors or clamps. With sharp knives, POFs can be cut precisely, and there is no need to polish the fiber ends.

Hard clad silica fibers (HCS), also called polymer clad fiber (PCF), have a core made of glass and a cladding made of plastic. Because of the glass core, HCS fibers offer higher bandwidth and longer link lengths than polymeric optical fibers, but they need a more sophisticated installation process than POFs do.



Connectors for polymeric optical fibers

### Bend-insensitive optical fibers

Bend-insensitive optical fibers have a lot of advantages in installations with very tight space. Such fibers can be laid in very narrow turns and still offer the full bandwidth. But not all of them are backwards compatible with common optical fibers.

Bend-insensitive singlemode fibers are specified in the ITU-T G.657 standard. Fibers of the G.657.A series are backwards compatible with standard singlemode fibers as specified in ITU-T G.652. Fibers of the G.657.B series in most cases aren't, but they have a smaller minimum bending radius than the ones of the A series.

Depending on the manufacturer, bend-insensitive multi-mode fibers (BIMMF) might be backwards compatible with conventional OM3 and OM4 fibers. A look at the data sheet is highly recommended, an explicit statement of the manufacturer will help best.

### WDM systems

Low waterpeak fibers are very important for WDM systems. WDM stands for wavelength division multiplexing. Where standard systems send light of only one wavelength along a singlemode fiber, WDM systems send multiple rays of light of different wavelengths simultaneously along one single fiber.

Each channel is assigned to an individual wavelength, and to ensure a constant transmission of all signals, the physical properties of the fiber must be the same for all of the channels, i.e. for all of the appropriate wavelengths. Today, WDM systems can only rarely be found in the LAN environment, but still low waterpeak fibers have to be minded when designing or installing new networks to ensure that the future migration towards WDM will be possible without changing the cables again.

### Fiber optic connectors

EN 50173 specifies the LC duplex fiber optic connector for the work area (outlets). In legacy installations where the older SC duplex connector is used, links with SC duplex can still be added. For any other area all other connectors specified by IEC standards are allowed.

**i Telegärtner's tip:** Never look into fiber optic connectors or jacks. VCSELs and standard lasers emit invisible infrared light which can cause serious health hazards.

Many manufacturers of networking devices have begun to use small form factor (SFF) connectors like the LC duplex as they consume not more space than RJ45 jacks. It has to be minded, though, that a high density of connectors in patch panels or consolidation points might prove to be disadvantageous as far as handling, robustness, and clearness are concerned.

In legacy installations, ST connectors can be found alongside with the SC duplex and the LC duplex.

To achieve best possible optical performance, connectors for singlemode fibers are also available in an angled version. Because of the sloping surface of the tip of the connector, reflected light cannot return into the mode field of the fiber but is reflected away from the connector end.

### Fiber optic connectors according to EN 50173:

Multimode: beige or black

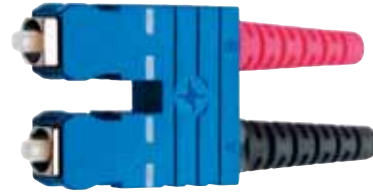
Singlemode PC, rectangular connector tip  
(PC = physical contact): blue

Singlemode APC, angled connector tip  
(APC = angled physical contact): green

Connectors and couplings for OM3 multimode fibers are often colored aqua as specified in the American TIA standard.



ST connectors



SC connectors



LC connectors

**i Telegärtner's tip:** Never plug connectors with a rectangular end (physical contact connector, PC) and connectors with a sloping surface (angled physical contact connectors, APC) into the same coupling. When using APC connectors make sure that slope of both connectors in one coupling has the same angle.

	Connector	Patch cord	Pre-assembled installation cable
OM1	beige	orange	orange
OM2	beige	orange	orange
OM3	aqua	aqua	orange
OM4	black	purple	orange
OS2 PC	blue	yellow	yellow
OS2 APC	green	yellow	yellow

Colour scheme: connectors, patch cords, pre-assembled installation cables

## Fiber to the Home (FTTH)

High speed internet, Triple Play (TV, telephone and internet via the same connection), video on demand or DSL links connecting company headquarters with subsidiaries need powerful infrastructures. Legacy cabling has grown over decades and very often can't compete anymore. It's only logical to extend the powerful fiber optic cabling of the wide area network and bring it closer to the end-user: fiber to the home.

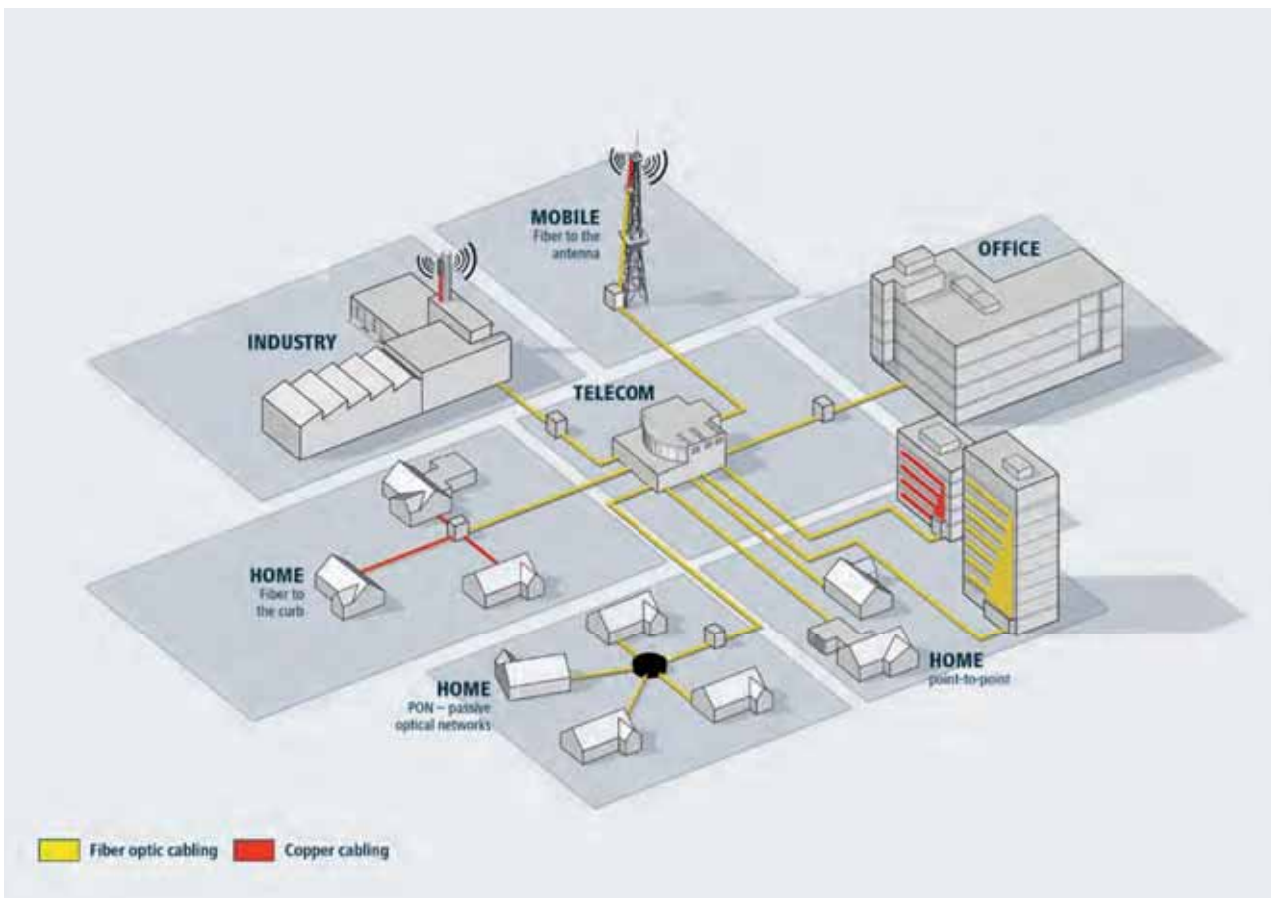


Optical coupler

FTTH calls for a large product portfolio of optical couplers, optical fibers, fiber optic connectors and even coaxial connectors and application-specific RJ45 connectors for office, home and industrial applications.

**Telegärtner's tip:** The expression „fiber to the ...“ is often used in different ways. It is recommended to add information on the network design (using fiber optic outlets, installation switches, etc.).

Contact us at [info@telegaertner.com](mailto:info@telegaertner.com)



Cabling solutions FTTx

## Data Center Infrastructure

In data centers, fiber optic cables for high data rates have become standard. Most commonly used are OM3 and OM4 fibers which can transmit data rates of 10, 40 and 100 Gbps according to the standard IEEE 802.3. Highest quality, flexibility and minimum disruptions at the same time are the demands for today's data center infrastructure.

To address this challenging environment, Telegärtner offers pre-terminated solutions. Cables with 12, 24, or 48 fibers are terminated with 12-fiber MPO connectors or with duplex LC or duplex SC connectors. A major benefit of pre-terminated cables is that they can be installed whenever data center processes allow, very often even during live operations. Whenever new servers, switches, or mainframes are installed or moved, the pre-terminated cables are already in place, ready for service. Time consuming cable cutting and stripping, connectorization, curing, and polishing belong to the past. Pulling grips protect the connectors during cable installation and guarantee factory-proven quality even under rough installation conditions.



### Pre-terminated cables

MTP®/ MPO – MTP®/ MPO (left) and MTP®/ MPO – duplex LC (right)

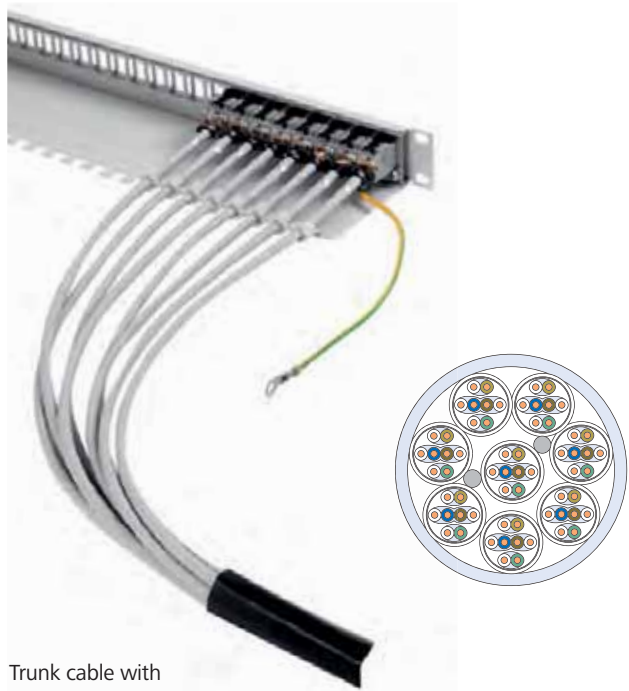
### Parallel Optics and 40/100 Gigabit Ethernet

The bandwidth of multimode fibers is much smaller than the one of singlemode fibers. For shorter link lengths, multimode fibers are used as the electronics for multimode application is much cheaper than the electronics for singlemode fibers.

With 40 and 100 Gigabit Ethernet, the data streams are divided into channels of 10 Gbps which are transmitted simultaneously ("parallel"), which led to the term parallel optics. 40 Gigabit Ethernet uses 8 optical fibers (4 fibers for transmitting, 4 fibers for receiving), 100 Gigabit Ethernet uses 20 of them (10 fibers for transmitting, 10 fibers for receiving). The MTP®/MPO connector, which is already used for pre-terminated cables, will also be used for parallel optics.

Contact us at [info@telegaertner.com](mailto:info@telegaertner.com)

Pre-terminated cabling systems are not limited to optical fibers. More and more pre-terminated copper solutions are used. Such solutions are available with RJ45 jacks for patch panels as well as with stranded cabling and RJ45 plugs as multi plug cables, which can save a lot of time when uses for large switches.



Trunk cable with AMJ module K Cat.6A



MTP®/MPO connector

**i Telegärtner's tip:** Pre-terminated cables can be installed whenever data center processes allow, very often even during live operations. Whenever new servers, switches, or mainframes are installed or moved, the pre-terminated cables are already in place, ready for service. Time consuming cable cutting and stripping, connectorization, curing, polishing or crimping. And the online configurator is at your service at any time.

# Industrial Ethernet

The harsh environments of plants and workshops put much more stress on the components than the office environment does: Dust, moisture, chemicals, mechanical stress, extreme temperatures and much higher electromagnetic interference lead to specifications which were unknown and unrivalled in the past. At the same time, plants and workshops demand highest possible reliability and availability, as even short service interruptions lead to high losses.

inevitably means losing enormous amounts of money. Especially in the industrial environment quality and reliability of the components – above all outlets and connectors – are exceptionally important and in most cases mission-critical. So it's no wonder that for industrial applications different standards apply, e.g. ISO/IEC 24702 for the cabling and IEC 61076-3-106 for the connectors.

One hour downtime of a PC in an office is annoying; one hour downtime of a production line is not acceptable as it



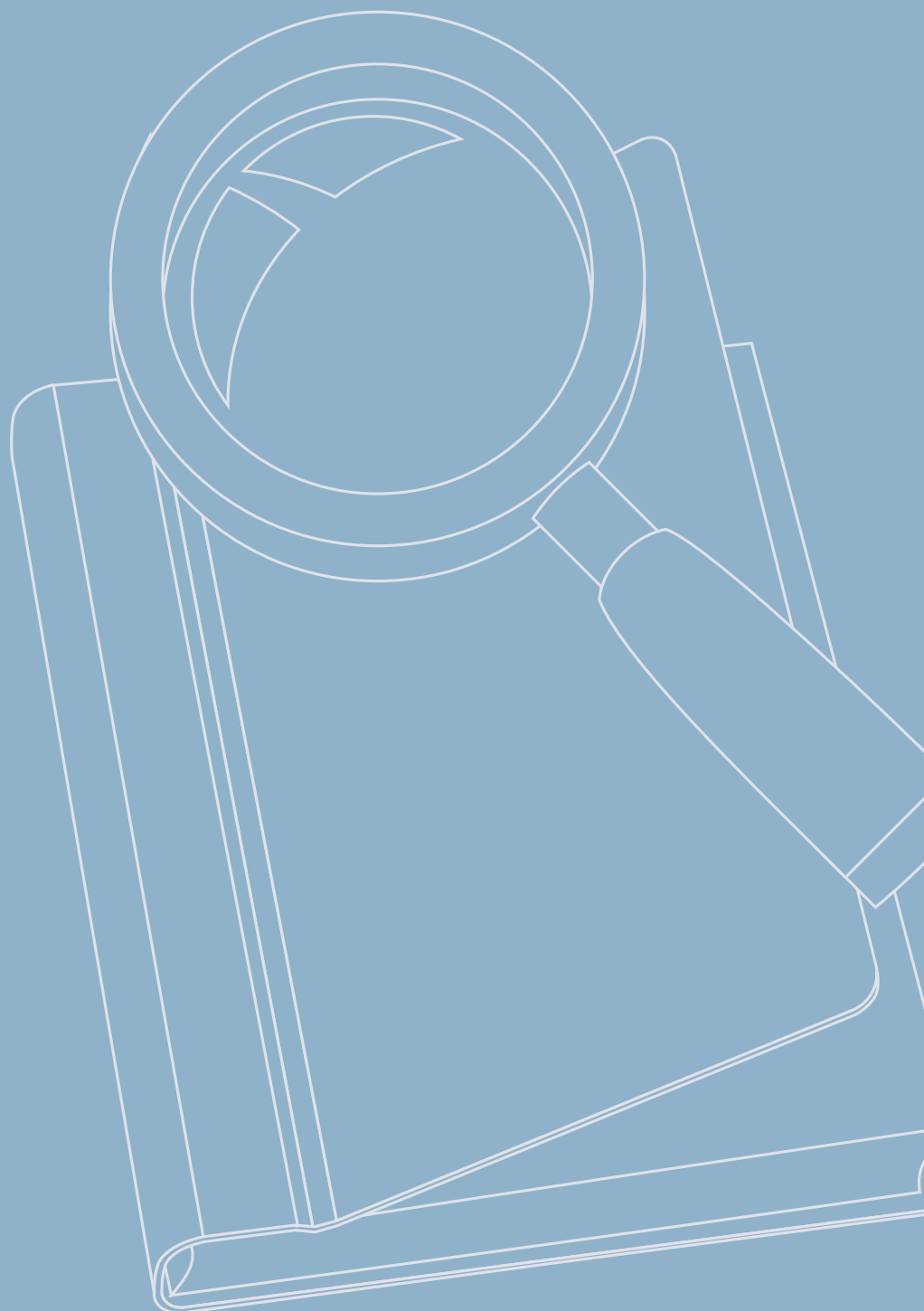
## Protection against foreign bodies Protection against water

Protection against touch and foreign bodies*		Protection against water*	
First Code Number	Description	Second Code Number	Description
0	No particular protection	0	No particular protection
1	Protection against ingress of solid foreign bodies with a diameter over 50 mm	1	Protection against dripping water
2	Protection against solid foreign bodies with a diameter over 12,5 mm Protection against vertically dripping	2	Protection against vertically dripping water. There must be no harmful effect on materials tipped (in a container) up to 15° from its normal position
3	Protection against ingress of solid foreign bodies with a diameter over 2,5 mm	3	Protection against fine water spray
4	Protection against ingress of solid foreign bodies with a diameter over 1,0 mm	4	Protection against water spray
5	Dust protected	5	Protection against water jet
6	Dust-proof	6	Protection against strong water spray jet
		7	Protection against water, when the material is immersed in water
		8	The material is suitable for continuous submersion in water

\* Definitions see IEC 60529



# Telegärtner Network Dictionary



# Telegärtner Network Dictionary: fiber optic technology

The most important terms regarding data and networking technology are as follows.

## Adaptors

Adaptors are used to align two fiber optic connectors. Optical fibers can't be fixed in jacks like copper wires. Two fibers are connected either by splicing them together or by pushing two connectors together. To do this, adaptors are needed to align the connectors precisely for minimum signal loss. "Fiber optic jacks" offered by some manufacturers do have some kind of connector and adaptor inside.

## APC – angled physical contact

Connectors with angled end-faces angle typically 8 degrees, other angles are also possible. Angled end-faces cause very low reflection, which results in excellent return loss margins. APC connectors always have to be connected to other APC connectors with the same angle. Connector and adaptor colour: green

## Attenuation

Travelling along an optical fiber or passing a connector, a signal loses some of its power. Attenuation is measured as the ratio of input power to output power.

## Backbone

A connection between networks or cabling areas, e.g. the cables that run between the distributors in a building or between buildings.

## Bandwidth

The range of frequencies that can be transmitted; e.g. lowest frequency = 10 MHz, highest frequency = 100 MHz, then the total bandwidth is 90 MHz (100 MHz – 10 MHz = 90 MHz). With optical fibers, the term bandwidth is often used for the product of frequency times length, i.e. MHz x km, which is constant. For example, a fiber with a usable bandwidth of 400 MHz x km means that a signal using a frequency range of 400 MHz can travel 1 km along the fiber, a signal using 800 MHz can only travel half a kilometer, a signal using 200 MHz can travel 2 km, and so on.

## Break-out cable

Multifiber cable with each fiber being individually buffered. Fibers of break-out cables can be routed away from the cable without the need for additional protection. Typical buffer diameters are 900 µm and 3 mm, so connectors can be mounted directly without having to use a buffer kit or splicing.



## Building backbone

EN 50173 specifies three main cabling areas:

**Campus backbone** = the cabling between buildings

**Building backbone** = the cabling between the floors in a building

**Horizontal cabling** = the cabling on a floor in a building, also referred to as "premises-specific cabling subsystem"

## Cabling layer

The ISO reference model for Open System Interconnection does not specify the cabling. On Layer 1, connectors and interfaces are specified, but the cabling itself is NOT specified in layer 1, even though many people think so. In order to have a relationship between the cabling and the ISO model, an artificial "cabling layer" ("layer 0") was introduced, but this layer is not part of the original ISO model.

## Campus backbone

EN 50173 specifies three main cabling areas:

**Campus backbone** = the cabling between buildings

**Building backbone** = the cabling between the floors in a building

**Horizontal cabling** = the cabling on a floor in a building, also referred to as "premises-specific cabling subsystem"

## Campusnet

The backbone network connecting the building / premises networks.

## Channel

Complete cabling between two electronic devices, e.g. between a switch and a PC, including the patch cords.

## Consolidation point link

Part of the cabling from the patch panel to the consolidation point, including the cable and the connecting hardware but not the patch cords.

## CWDM – Coarse Wavelength Division Multiplexing

Transmission technology using several optical signals of different wavelengths at the same time in one fiber. Channel spacing 20 nm.

## Delay

Measured in ns/km; the time a signal needs to pass a given length on a cable.

## DIN EN 60794-1-1

Standard defines the short terms for fiber optic outdoor and indoor cables in Germany, replaces the older standards DIN VDE 0888-3 and DIN VDE 0888-6

## DIN VDE 0888-3

Standard used to define the short terms for fiber optic outdoor cables in Germany, replaced by DIN EN 60794-1-1

## DIN VDE 0888-6

Standard used to define the short terms for fiber optic indoor cables in Germany, replaced by DIN EN 60794-1-1



### Dual-duplex connection

Connection with transmitting and receiving simultaneously using only one fiber.

### Duplex

“Double”; duplex connectors are used for two optical fibers. Depending on the connector type, two individual connectors can be put together using a clamp or a clip.

### Duplex connection

Connection with transmitting and receiving simultaneously.

### DWDM – Dense Wavelength Division Multiplexing

Transmission technology using several optical signals (typically 32) of different wavelengths at the same time in one fiber. The channels are much narrower or are much closer together when compared with CWDM.

### E-2000 connector

Very precise fiber optic connector with integrated shutter and laser protection flap; mainly used for WAN (wide area network) applications; registered trademark of Diamond; standardized as LSH connector; outer diameter of the ferrule is 2.5 mm.



### Easy strip fiber

Special kind of tight buffer construction for easy removing of the fiber buffer. Cables with easy strip fibers are the ideal choice when the same cable type shall be used for splicing as well as for direct connectorization.

### EN 50173

“Information technology – Generic cabling systems”; most important set of standards in Europe for structured cabling. EN 50 173 consists of five parts:

- part 1: General requirements
- part 2: Office premises
- part 3: Industrial premises
- part 4: Residential premises
- part 5: Data centers
- part 6: Distributed buildings

### FC/PC connector

Old fiber optic connector type with a union nut; nowadays used almost only in legacy cabling installations; FC stands for ferrule connector, PC for physical contact; outer diameter of the ferrule is 2.5 mm.



### Ferrule

Tube containing the optical fiber in a connector; made of zirconia, metal or plastic.

### FSMA connector

Old fiber optic connector type with a union nut; nowadays used almost only in legacy cabling installations; outer diameter of the ferrule is 2.5 mm.

### FTTA – Fiber to the antenna

Fiber optic cables run to wireless base stations.

### FTTA – Fiber to the amplifier

Fiber optic cables run to street cabinets containing electronic equipment like amplifiers.

### FTTB – Fiber to the building

Fiber optic cables run to a building (inside of the building, copper cabling is used);

→ See also FTTH – Fiber to the home

### FTTC – Fiber to the curb

Fiber optic cables run to street cabinets, located near the curb.

### FTTD – Fiber to the desk

Fiber optic cables run to desks people work at.

### FTTF – Fiber to the factory

Fiber optic cables run to factory buildings.

### FTTH – Fiber to the home

Fiber optic cables run to fiber optic wall outlets in homes.

### FTTL – Fiber to the loop

General term for fiber optic cabling in the access network.

### FTTM – Fiber to the machine

Fiber optic cables run to machines in a factory building.

### FTTN – Fiber to the node

Fiber optic cables run to nodes or distribution points; term is mainly used for passive optical networks (PON) with FTTH – Fiber to the home.

### FTTO – Fiber to the office

Fiber optic cables run to office blocks; similar to FTTH – Fiber to the home.

### FTTP – Fiber to the premises

Fiber optic cables run to buildings or the properties.

### FTTR – Fiber to the radio

Fiber optic cables run to transmitters of wireless base stations;

→ See also FTTA – Fiber to the antenna

### FTTT – Fiber to the terminal

Fiber optic cables run to workstations or terminals, e.g. to PCs.

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**FTTW – Fiber to the wall or Fiber to the workgroup**

Fiber optic cables run to small switches near groups of desks, e.g. mini switches in cable raceways.

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**Full-duplex connection**

Connection with transmitting and receiving simultaneously.

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**Graded-index fiber**

Multimode fiber with an index of refraction that progressively increases towards the center of the fiber. Graded-index fibers have become the only relevant type of multimode fiber.

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**Half-duplex connection**

Connection with alternate transmitting and receiving. Both, transmitting and receiving are possible, but only one at a time.

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**High return loss**

Connector with excellent return loss margins; can be achieved by special polishing or other methods.

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**Horizontal cabling**

EN 50173 specifies three main cabling areas:

**Campus backbone** = the cabling between buildings

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**Horizontal cabling** = the cabling on a floor in a building, also referred to as “premises-specific cabling subsystem”

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**HRL**

→ See *high return loss*

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**ISO**

International Organization for Standardization.

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**ISO model**

Also called “ISO reference model”. Communication in a telecommunications network is divided into seven logical layers according to ISO/IEC 7498-1.

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**ITU**

International Telecommunication Union.

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**LAN**

Acronym for local area network, a data network at a defined place, typically inside of a building.

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**Layer 0**

→ See *Cabling layer*

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**Layer 1**

→ See *Physical Layer*

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**LC connector**

Small form factor connector with excellent optical margins; preferred connector in new installations; duplex version for two fibers available, size and handling similar to the RJ45 connector used for twisted pair cabling; depending on the source, LC has different meanings; the most common ones are Lampert connector and Lucent connector; outer diameter of the ferrule is 1.25 mm, which makes a very small connector size possible.

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**LC duplex connector**

Connector for two optical fibers, combination of two individual LC connectors; the individual connectors can be either fixed together or just held together with a clip.

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**Link**

Cabling between two defined points in a channel, e.g. permanent link or consolidation point link, see there.

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**Local area network**

→ See *LAN*

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**Loose tube cable**

Special kind of cable construction, where the coated fibers lay in a plastic tube. As the fibers are not surrounded by an individual jacket (“buffer”), the fibers cannot be directly connectorized. Stripping is easy as there is no buffer. Typical coating diameter is 250 µm.

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**LSA connector**

Old fiber optic connector type with a union nut; nowadays used almost only in legacy cabling installations; also called DIN connector; outer diameter of the ferrule is 2.5 mm.

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**LSF/OH**

Acronym for low smoke and fume / zero halogen.

→ See *LSZH*

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**LSH connector**

Standardized term for the E-2000 connector, see there.

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**LSOH**

Acronym for low smoke zero halogen.

→ See *LSZH*

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**LSZH**

Acronym for low smoke and fume / zero halogen; cables with flame retardant jackets, which produce very low smoke and don't emit toxic halogens in the case of a fire.

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**MAN**

Acronym for metropolitan area network, the network that connects buildings or campuses across a city.

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**Mbit/s**

→ See *Mbps*

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**Mbps**

Acronym for Megabits per second, unit for the data rate; 1 Mbps

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= 1 million bits per second.

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**Metropolitan area network**

→ See MAN

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**MHz**

Acronym for Megahertz, unit for cycles per time;  
1 MHz = 1 million cycles per second.

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**MIC connector**

Rather large fiber optic connector; was used in old FDDI networks, hardly used anymore.

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**Moore's law**

There are several statements of Gordon Moore which have become famous as Moore's law. One of them is: "Every five years add a zero", which means that the bandwidth needed grows by the factor of 10 every five years.

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**MP connector**

Old term for MPO connector, see there.

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**MPO connector**

Multi-fiber connector for up to 72 optical fibers; most common is the version for 12 fibers. The fibers are arranged in parallel in a wide plastic ferrule; two connectors are aligned by metal pins in one connector which fit into the holes of the other connector, the acronym MPO stands for multi-fiber push on.

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**MT-RJ connector**

Duplex connector; the two fibers are arranged in parallel in a plastic ferrule; two connectors are aligned by metal pins in one connector which fit into the holes of the other connector; the acronym MT-RJ stands for mechanical transfer – registered jack.

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**MTP® connector**

Multi-fiber connector; "MTP®" is a registered trademark of US Conec; the MTP® connector is compatible (and nearly identical) with the MPO connector.

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**Multimode fiber**

Optical fiber that – simply explained – transmits multiple rays of light ("modes") simultaneously, whereas in a singlemode fiber only one ray ("mode") is transmitted. Singlemode fibers can be used for much longer distances than multimode, but the electronic equipment for singlemode applications is much more expensive than equipment for multimode applications. Typical link length with multimode fiber are several hundred meters compared to several kilometers with singlemode fibers.

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**NT – network termination**

Termination of the cables that run into a building.

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**OAN – optical access network**

Fiber optic network that connects buildings to street cabinets.

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**OLT – optical line termination**

Termination of a fiber optic cable that runs from a street cabinet into a building. Central electronic device in Passive Optical LAN (POL) networks.

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**ONT – optical network termination**

Termination of a fiber optic cable entering a building. Small electronic device near the end-user in Passive Optical LAN (POL) networks.

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**ONU – optical network unit**

Electronic equipment with fiber optic connection between the access network outside of and the LAN inside of a building.

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**PC-physical contact**

Acronym for physical contact, which means the end-faces of fiber optic connectors are plain and have physical contact to one another when the connectors are aligned in the adaptor. Connector and adaptor colour: blue

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**Permanent link**

End-to-end part of the cabling from patch panel to outlet, including the cable but not the patch cords.

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**Patch cord**

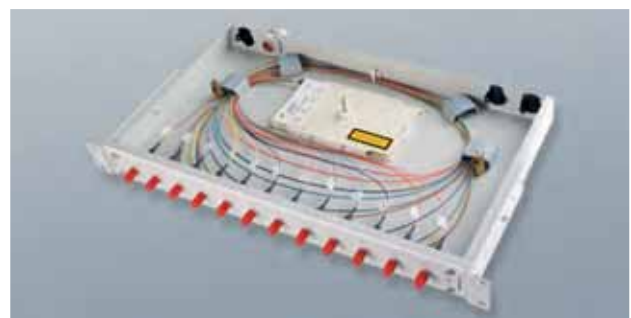
Flexible cord with connectors on both ends.

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**Patch panel**

Group of jacks arranged in a panel in a rack or cabinet to terminate cables.

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### Physical layer

Layer 1 in the ISO model, specifies connectors and interfaces. The cabling itself is NOT specified in layer 1, even though many people think so. In order to have a relationship between the cabling and the ISO model, an artificial "layer 0" ("cabling layer") was introduced, but this layer is not part of the original ISO model.

### Pigtail

A short piece of optical fiber of a few meters length with a factory-polished connector on one end. The other end is blunt to splice the pigtail to a fiber of a cable and thus terminate the cable's fiber.

### POL – passive optical LAN

Passive optical network in buildings. This technology was originally developed for wide area networks and uses singlemode fibers, APC connectors and optical splitters. It is not compatible with standard fiber optic Ethernet cabling.

### PON – passive optical network

Fiber optic access network with passive ("non-electric" / "non-electronic") equipment like splitters.

### Primary coating

Thin plastic coating that surrounds the glass of the optical fiber. The primary coating is applied immediately after the glass fiber is produced. The outer diameter of a glass fiber typically is 125  $\mu\text{m}$ , with primary coating it is 250  $\mu\text{m}$ .

### Quad adaptor

Space saving adaptor to accommodate four identical fiber optic connectors next to each other, e.g. LC quad adaptor for four individual LC connectors or two LC duplex connectors.

### SAN

Acronym for storage area network; the SAN is the network that connects storage devices with the servers using SAN switches.

### SC connector

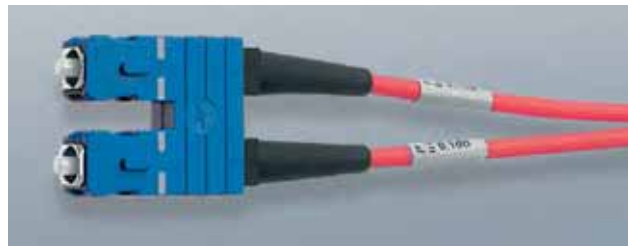
Very popular fiber optic connector; was used to replace the ST connector in many installations, but gets more and more replaced by the LC connector itself, as the LC is much smaller and offers better margins; duplex version for two fibers available; SC stands for subscriber connector; outer diameter of the ferrule is 2.5 mm.

### SC-DC connector

Fiber optic connector that looks like an SC connector but uses only one ferrule for two optical fibers; NOT compatible with the standard SC connector; SC-DC stands for SC Dual Contact; nowadays used almost only in legacy data center installations, in new installations the LC connector is preferred; outer diameter of the ferrule is 2.5 mm.

### SC duplex connector

Connector for two optical fibers, combination of two individual SC connectors; the individual connectors can be either fixed together or just held together with a clip.



### SC-QC connector

Fiber optic connector that looks like an SC connector but uses only one ferrule for four optical fibers; NOT compatible with the standard SC connector; SC-QC stands for SC Quad Contact or SC Quarto Contact; very rarely used in legacy installations, not used in new installations; outer diameter of the ferrule is 2.5 mm.

### Secondary coating

Plastic coating that covers the primary coating of an optical fiber.

### SFF – small form factor

General term for small fiber optic connectors; in most cases, the duplex version of such connectors is not larger than an RJ45 connector used for copper cabling.

### Signal

Physical realisation of information travelling along the media, e.g. a series of Zeros and Ones realized by different voltage levels or light pulses on a cable.

### Singlemode fiber

Optical fiber that – simply explained – transmits just one ray of light ("mode"), whereas in a multimode fiber only multiple rays ("modes") are transmitted simultaneously.

Singlemode fibers can be used for much longer distances than multimode fibers, but the electronic equipment for singlemode applications is much more expensive than the equipment for multimode applications.

### Splice

Permanent joint of two optical fibers. With a mechanical splice, the fibers are pushed together mechanically; with a fusion splice, the fibers are welded together.

### ST connector

Connector with a bayonet housing. The ST connector used to be very common, but it got replaced by the SC connector in most installations.

ST stands for straight tip; outer diameter of the ferrule is 2.5 mm.



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**Step index fiber**

Optical fiber with an index of refraction that increases in one large step towards the center of the fiber. With multimode fibers, the step index fiber has been replaced by graded-index fibers with a progressive increase, and for singlemode applications, fibers with a specially engineered index of refraction are preferred.

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**Storage area network**

→ *See SAN*

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**TIA**

TIA is an acronym for Telecommunications Industry Association, an American standards body that authors and publishes telecommunications and cabling standards in the USA.

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**Tight buffer**

Special kind of cable construction, where each fiber is surrounded by an individual jacket ("buffer"). As the buffer is very tight around the fiber, the fibers can be directly connectorized, but the fibers can be stripped only in short lengths.

Should the tight buffer cable be used for direct connectorization and splicing as well, easy strip fibers should be used, as for splicing larger parts of the buffer have to be removed. Typical buffer diameters are 900 µm and 3 mm.

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**Two way concept**

Cabling concept where two cables are routed in different ways between two points in order to increase availability by redundancy.

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**VF-45 connector**

Standardized term for the Volition connector, *see there*.

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**Volition connector**

Duplex connector; the two fibers are arranged in V-grooves and are pressed against the fibers in the jack when connected; registered trademark of 3M.

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**WAN**

Acronym for wide area network; the WAN is the network which connects other networks nationally and / or internationally.

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**Wavelength multiplexing**

Simultaneous transfer of multiple modes ("rays of light") of different wavelengths ("colors").

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**Wide area network**

→ *See WAN*

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**Note:** The use of brand names, registered trademarks, trade names, proprietary names, etc. in this glossary, even if not explicitly identified as such, does not constitute any entitlement to assume that such names, as defined in trademark protection legislation, are free of restrictions and can be used by anyone.

# Telegärtner Network Dictionary: copper technology

## ACR – attenuation to crosstalk ratio

The ratio of crosstalk attenuation to attenuation.

ACR represents the quality of a link much better than crosstalk attenuation or attenuation alone, because the ratio reflects a possible compensation far better, e.g. an excellent crosstalk attenuation compensates for a mediocre attenuation or vice versa.

## Alien NEXT – alien near end crosstalk attenuation

Crosstalk attenuation between two adjacent, similar cables. Alien crosstalk attenuation is a measure of how much signal from one cable is detected on another cable.

## American wire gauge

→ See AWG

## Attenuation

Travelling along a cable or passing a connector, a signal loses some of its power. Attenuation is measured as the ratio of input power to output power.

## Attenuation to crosstalk ratio

→ See ACR

## AWG – American wire gauge

American unit of measure for the cross-sectional area of a wire. The most important AWGs in the IT arena are (deviations possible!):

AWG (solid):	22	23	24	26
Cross-sectional area in mm <sup>2</sup> :	0.322	0.259	0.203	0.127
Outer diameter in mm:	0.643	0.574	0.511	0.404

## Backbone

A connection between networks or cabling areas, e.g. the cables that run between the distributors in a building or between buildings.

## Balanced cable

In balanced cables, the two conductors are similar. Twisted pair cables are the most important type of balanced cable. Because the conductors look alike, a balanced cable is also called a symmetrical cable. An example for an unbalanced (unsymmetrical) cable is a coaxial cable, with the two conductors differing a lot from each other. To connect balanced and unbalanced cables, a balun (acronym made of BALanced / UNbalanced) is needed.

## Balun

Acronym made of BALanced-UNbalanced for symmetrical (balanced) cables like twisted pair cables and unsymmetrical (unbalanced) coaxial cables. Baluns convert symmetrical signals into unsymmetrical ones and vice versa and act as an adaptor between twisted pair and coaxial cabling.

## Bandwidth

The range of frequencies that can be transmitted; e.g. lowest frequency = 10 MHz, highest frequency = 100 MHz, then the total bandwidth is 90 MHz (100 MHz – 10 MHz = 90 MHz).

## Building backbone

EN 50173 specifies three main cabling areas:

**Campus backbone** = the cabling between buildings

**Building backbone** = the cabling between the floors in a building

**Horizontal cabling** = the cabling on a floor in a building, also referred to as "premises-specific cabling subsystem"

## Cable sharing

With cable sharing, a four pair twisted pair cable is used for multiple outlets. Cable sharing was common with 10 and 100 Mbps Ethernet, as just two pairs were needed per link, and so one four pair cable could be used for a double outlet. As Gigabit and 10 Gigabit Ethernet use four pairs for one link, cable sharing is not common anymore.

## Cable terminology according to ISO/IEC 11801

ISO/IEC 11801 classifies cables according to the kind of shielding. The classification scheme is „x/yTP“, with „x“ meaning the overall screen, „y“ the shielding of the individual pairs.



**U/UTP:** unshielded twisted pair; no shielding at all



**F/UTP:** foil screened unshielded twisted pair; overall screen made of metal foil; also referred to as FTP cable



**U/FTP:** no overall screen, pairs are individually shielded by metal foil



**SF/UTP:** braid and foil screened unshielded twisted pair; overall screen made of braid and metal foil



**S/FTP:** braid screened shielded twisted pair; overall braid screen made, pairs individually shielded by metal foil. Most common type of shielded cable; also referred to as PiMF (pairs in metal foil).

### Cabling layer

The ISO reference model for Open System Interconnection does not specify the cabling. On Layer 1, connectors and interfaces are specified, but the cabling itself is NOT specified in layer 1, even though many people think so. In order to have a relationship between the cabling and the ISO model, an artificial "cabling layer" ("layer 0") was introduced, but this layer is not part of the original ISO model.

### Campus backbone

EN 50173 specifies three main cabling areas:

**Campus backbone** = the cabling between buildings

**Building backbone** = the cabling between the floors in a building

**Horizontal cabling** = the cabling on a floor in a building, also referred to as "premises-specific cabling subsystem"

### Campusnet

The backbone network connecting the building / premises networks.

### Cat. 5 / Cat. 5e

→ See *Category 5 / category 5E*

### Cat. 6

→ See *Category 6*

### Cat. 6<sub>A</sub> / Cat. 6A

→ See *Category 6<sub>A</sub>*

### Cat. 7

→ See *Category 7*

### Cat. 7<sub>A</sub>

→ See *Category 7<sub>A</sub>*

### Category

Components are classified by categories according to their performance, links and channels are classified by classes. At the moment, category 5 (100 MHz / 1 Gbps) up to category 7<sub>A</sub> (1000 MHz / 10 Gbps) are common.

### Category 5 / category 5E

Performance category for individual components for frequencies up to 100 MHz and data rates up to 1 Gbps. The international standard ISO/IEC 11801 specifies the requirements for Category 5 (Cat. 5), in Europe the standard series EN 50173 is used. ANSI EIA/TIA 568C specifies the requirements for Category 5e („enhanced category 5", also referred to as Category 5E), but they apply only in the USA and Canada; some requirements of TIA differ from the ones specified in ISO/IEC 11801 and EN 50173.

Categories are only used for individual components. ISO/IEC and EN classify the performance of permanent link and channel as classes, the terms in TIA differ from that:

EN: category 5  
ISO/IEC: category 5  
TIA: category 5e

### Permanent link (cabling between patch panel and outlet):

EN: class D permanent link  
ISO/IEC: class D permanent link  
TIA: category 5e permanent link

### Channel (entire cabling including patch cords):

EN: class D channel  
ISO/IEC: class D channel  
TIA: category 5e channel

### Category 6

Performance category for individual components for frequencies up to 250 MHz and data rates up to 1 Gbps. The international standard ISO/IEC 11801 specifies the requirements for Category 6 (Cat. 6), in Europe the standard series EN 50173 is used. ANSI EIA/TIA 568C also specifies the requirements for a Category 6, but they apply only in the USA and Canada; some requirements of TIA differ from the ones specified in ISO/IEC 11801 and EN 50173. Categories are only used for individual components. ISO/IEC and EN classify the performance of permanent link and channel as classes, the terms in TIA differ from that:

EN: category 6  
ISO/IEC: category 6  
TIA: category 6

### Permanent link (cabling between patch panel and outlet):

EN: class E permanent link  
ISO/IEC: class E permanent link  
TIA: category 6 permanent link

### Channel (entire cabling including patch cords):

EN: class E channel  
ISO/IEC: class E channel  
TIA: category 6 channel

### Category 6<sub>A</sub>

Performance category for individual components for frequencies up to 500 MHz and data rates up to 10 Gbps. The international standard ISO/IEC 11801 specifies the requirements for Category 6<sub>A</sub> (Cat. 6<sub>A</sub>), in Europe the standard series EN 50173 is used. ANSI EIA/TIA 568C specifies the requirements for Category 6A, but they apply only in the USA and Canada; some requirements of TIA differ from the ones specified in ISO/IEC 11801 and EN 50173. TIA uses the "A" in normal script, ISO/IEC an EN in subscript "A". Categories are only used for individual components.

ISO/IEC and EN classify the performance of permanent link and channel as classes, the terms in TIA differ from that:

EN: category 6<sub>A</sub>  
ISO/IEC: category 6<sub>A</sub>  
TIA: category 6A

### Permanent link (cabling between patch panel and outlet):

EN: class E<sub>A</sub> permanent link  
ISO/IEC: class E<sub>A</sub> permanent link  
TIA: category 6A permanent link

### Channel (entire cabling including patch cords):

EN: class E<sub>A</sub> channel  
ISO/IEC: class E<sub>A</sub> channel  
TIA: category 6A channel

### Category 7

Performance category for individual components for frequencies up to 600 MHz and data rates up to 10 Gbps. The international standard ISO/IEC 11801 specifies the requirements for Category 7 (Cat. 7), in Europe the standard series EN 50173 is used. The American ANSI EIA/TIA 568C specifies no requirements for a Category 7. Categories are only used for individual components. ISO/IEC and EN classify the performance of permanent link and channel as classes, the terms in TIA differ from that:

EN: category 7  
ISO/IEC: category 7  
TIA: not specified

#### Permanent link (cabling between patch panel and outlet):

EN: class F permanent link  
ISO/IEC: class F permanent link  
TIA: not specified

#### Channel (entire cabling including patch cords):

EN: class F channel  
ISO/IEC: class F channel  
TIA: not specified

### Category 7<sub>A</sub>

Performance category for individual components for frequencies up to 1,000 MHz and data rates up to 10 Gbps. The international standard ISO/IEC 11801 specifies the requirements for Category 7<sub>A</sub> (Cat. 7<sub>A</sub>), in Europe the standard series EN 50173 is used. The American ANSI EIA/TIA 568C specifies no requirements for a Category 7<sub>A</sub>. Categories are only used for individual components. ISO/IEC and EN classify the performance of permanent link and channel as classes, the terms in TIA differ from that:

EN: category 7<sub>A</sub>  
ISO/IEC: category 7<sub>A</sub>  
TIA: not specified

#### Permanent link (cabling between patch panel and outlet):

EN: class F<sub>A</sub> permanent link  
ISO/IEC: class F<sub>A</sub> permanent link  
TIA: not specified

#### Channel (entire cabling including patch cords):

EN: class F<sub>A</sub> channel  
ISO/IEC: class F<sub>A</sub> channel  
TIA: not specified

### Channel

Complete cabling between two electronic devices, e.g. between a switch and a PC, including the patch cords.

### Class

Components are classified by categories according to their performance, links and channels are classified by classes.

At the moment, category 5 (100 MHz / 1 Gbps) up to category 7 (600 MHz / 10 Gbps) are common.

### Class D

→ See Category 5 / category 5E

### Class E

→ See Category 6

### Class E<sub>A</sub>

→ See Category 6<sub>A</sub>

### Class F

→ See Category 7

### Class F<sub>A</sub>

→ See Category 7<sub>A</sub>

### Consolidation point link

Part of the cabling from the patch panel to the consolidation point, including the cable and the connecting hardware but not the patch cords.

### Crosstalk

Crosstalk means that the signal travelling along one pair of a cable can be detected on an adjacent pair as well. The term originally comes from the telephony systems, where crosstalk meant that one could listen to someone else talking over another cable pair.

### Delay

Measured in ns/km; the time a signal needs to pass a given length on a cable.

### Delay skew

Measured in ns; the time difference signals travelling along different pairs within the same cable arrive at the receiver.

### DIN VDE 0815

German standard specifying indoor telephony cables and their terminology.

### DIN VDE 0816

German standard specifying outdoor telephony cables and their terminology.

### Dual-duplex connection

Connection with transmitting and receiving simultaneously using only one pair.

### Duplex connection

Connection with transmitting and receiving simultaneously.

### EAD/scEAD Connector

Old connector design, used for uninterrupted sockets fitted with two BNC jacks in coaxial Ethernet wiring systems (10 Base-2). EAD is German and stands for Ethernet Access Socket; the TAE connector for wiring to telephone sockets has a similar design, however the EAD connector had two differently positioned mechanical codings (code „E“), which prevented any inadvertent connection with the



telephone connector. The subsequent, better screened successor to the EAD system was called the scEAD connector (scEAD = screened EAD connector), which used a metal sheet as screen. The inventor and developer of the EAD/scEAD connector was Telegärtner.



#### ELFEXT – equal level FEXT

A signal travelling along a cable gets attenuated. The crosstalk at the far end of the cable is much lower than it would be if the signal arrived at the receiver with its original strength. As field testers also measure the signal attenuation and the length of a cable, both can be taken into consideration as well when measuring FEXT, the far end crosstalk attenuation.

→ See *FEXT – far end crosstalk attenuation*

#### EN 50173

“Information technology – Generic cabling systems”; most important set of standards in Europe for structured cabling.

EN 50 173 consists of five parts:

- Part 1: General requirements
- part 2: Office premises
- part 3: Industrial premises
- part 4: Residential premises
- part 5: Data centers
- part 6: Distributed buildings

#### Enhanced Cat. 5

→ See *Category 5 / Category 5E*

#### Equal level FEXT

→ See *ELFEXT – equal level FEXT*

#### Far End ACR

ACR measured at the far end of a cable. → See *ACR – attenuation to crosstalk ratio*

#### Far end crosstalk attenuation

→ See *FEXT – far end crosstalk attenuation*

#### FEXT – far end crosstalk attenuation

Crosstalk attenuation at the far end of a cable. Crosstalk attenuation

is a measure of how much of a signal is detected on another pair. Crosstalk is unwanted, so it is suppressed by cable construction. The measure of its suppression (or attenuation) is called crosstalk attenuation.

#### FTP

Acronym for foil screened twisted pair; twisted pair cable with one or more shields made of metal foil. In most cases, there is just one overall foil screen; in some cables, the pairs are individually shielded by metal foil and the overall screen is omitted. Details like this are in the data sheet of the cable.

→ See also *Cable terminology according to ISO/IEC 11801*.

#### F/UTP

Acronym for foil screened unshielded twisted pair; a F/UTP cable has an overall foil screen, the pairs themselves are not shielded individually. Also referred to as FTP.

→ See also *Cable terminology according to ISO/IEC 11801*.

#### Full-duplex connection

Connection with transmitting and receiving simultaneously.

#### Half-duplex connection

Connection with alternate transmitting and receiving. Both, transmitting and receiving are possible, but only one at a time.

#### Horizontal cabling

EN 50173 specifies three main cabling areas:

**Campus backbone** = the cabling between buildings

**Building backbone** = the cabling between the floors in a building

**Horizontal cabling** = the cabling on a floor in a building, also referred to as “premises-specific cabling subsystem”

#### Impedance

Opposition a cabling component offers to an electromagnetic wave travelling along or crossing the component; impedance is frequency-dependant, i.e. the impedance of a component changes with frequency changes.

#### ISO

International Organization for Standardization.

#### ISO model

Also called “ISO reference model”. Communication in a telecommunications network is divided into seven logical layers according to ISO/IEC 7498-1.

#### LAN

Acronym for local area network, a data network at a defined place, typically inside of a building.

#### Layer 0

→ See *Cabling layer*

#### Layer 1

→ See *Physical Layer*

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**Link**

Cabling between two defined points in a channel, e.g. permanent link or consolidation point link, → *See there*.

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**local area network**

→ *See LAN*

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**LSF/OH**

Acronym for low smoke and fume / zero halogen, → *See LSZH*.

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**LSOH**

Acronym for low smoke zero halogen, → *See LSZH*.

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**LSZH**

Acronym for low smoke and fume / zero halogen; cables with flame retardent jackets, which produce very low smoke and don't emit toxic halogens in the case of a fire.

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**Mbit/s**

→ *See Mbps*

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**Mbps**

Acronym for Megabits per second, unit for the data rate;  
1 Mbps = 1 million bits per second.

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**MHz**

Acronym for Megahertz, unit for cycles per time;  
1 MHz = 1 million cycles per second.

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**Moore's law**

There are several statements of Gordon Moore which have become famous as Moore's law. One of them is: "Every five years add a zero", which means that the bandwidth needed grows by the factor of 10 every five years.

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**Near end crosstalk attenuation**

→ *See NEXT – near end crosstalk attenuation*

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**Network termination**

→ *See NT – network termination*

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**NEXT – near end crosstalk attenuation**

Crosstalk attenuation at the near end of a cable. Crosstalk attenuation is a measure of how much of a signal is detected on another pair. Crosstalk is unwanted, so it is suppressed by cable construction. The measure of its suppression (or attenuation) is called crosstalk attenuation.

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**NT – network termination**

Termination of an outside plant cable entering a building.

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**Patch cord**

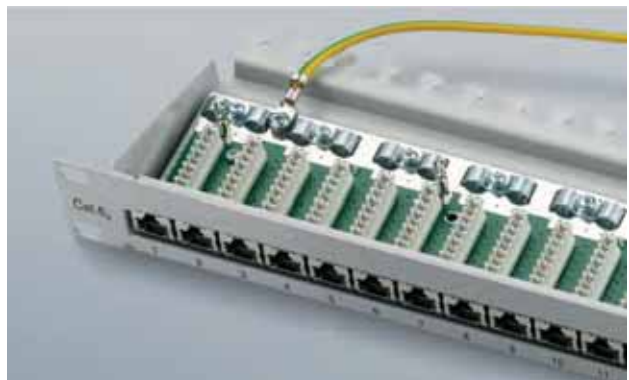
Flexible cord with connectors on both ends.

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**Patch panel**

Group of jacks arranged in a panel in a rack or cabinet to terminate cables.

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**Permanent link**

End-to-end part of the cabling from patch panel to outlet, including the cable but not the patch cords.

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**Physical layer**

Layer 1 in the ISO model, specifies connectors and interfaces. The cabling itself is NOT specified in layer 1, even though many people think so. In order to have a relationship between the cabling and the ISO model, an artificial "layer 0" ("cabling layer") was introduced, but this layer is not part of the original ISO model.

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**PiMF cable**

Acronym for pairs in metal foil; in a PiMF cable, the pairs are shielded individually by metal foil. The cable may or may not have overall screen, in most cases, it has one made of braid.

→ *See also Cable terminology according to ISO/IEC 11801*.

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**PowerSum ACR**

→ *See PSCAR – PowerSum ACR*

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**PowerSum ELFEXT**

→ *See PSELFEXT – PowerSum ELFEXT*

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**PowerSum NEXT**

→ *See PSNEXT – PowerSum NEXT*

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### PSACR – PowerSum ACR

High-speed data networks like Gigabit Ethernet and 10 Gigabit Ethernet use all four pairs of a cable simultaneously. All the noise between the pairs has to be summed up, as every pair has three adjacent pairs which cause interferences.

The term PowerSum stands for the summing-up of induced noise. PowerSum ACR stands for summing up all possible noise and interferences within one cable as far as ACR is concerned.

### PSELFEXT – PowerSum ELFEXT

High-speed data networks like Gigabit Ethernet and 10 Gigabit Ethernet use all four pairs of a cable simultaneously. All the noise between the pairs has to be summed up, as every pair has three adjacent pairs which cause interferences.

The term PowerSum stands for the summing-up of induced noise. PowerSum ELFEXT stands for summing up all possible noise and interferences within one cable as far as ELFEXT is concerned.

### PSNEXT – PowerSum NEXT

High-speed data networks like Gigabit Ethernet and 10 Gigabit Ethernet use all four pairs of a cable simultaneously. All the noise between the pairs has to be summed up, as every pair has three adjacent pairs which cause interferences.

The term PowerSum stands for the summing-up of induced noise. PowerSum NEXT stands for summing up all possible noise and interferences within one cable as far as NEXT is concerned.

### RJ10

The acronym RJ stands for registered jack, but it is often used without its formal relationship to USOC (Universal Service Ordering Code). The usual RJ10 connector has four pins and is often used for the small cable that connects the receiver to a standard telephone.

### RJ11

The acronym RJ stands for registered jack, but it is often used without its formal relationship to USOC (Universal Service Ordering Code). The usual RJ11 connector has six pins and is often used for the patch cord that connects a telephone or fax machine to an outlet. Very often, a patch cord with an RJ11 connector is plugged into an RJ45 jack.

The RJ45 jack is a bit larger than the RJ11 plug and has eight contacts, and so the outer contacts of the RJ45 jack get damaged by the edges of the smaller plug. Jacks made by Telegärtner have an integrated protection against overbending the contacts when a smaller connector like an RJ11 is plugged mistakenly into it.

### RJ12

The acronym RJ stands for registered jack, but it is often used without its formal relationship to USOC (Universal Service Ordering Code). The usual RJ12 connector has six pins and is often used for the patch cords that connects a telephone or fax machine to an outlet. Very often, a patch cord with an RJ12 connector is plugged into an RJ45 jack.



The RJ45 jack is a bit larger than the RJ12 plug and has eight contacts, and so the outer contacts of the RJ45 jack get damaged by the edges of the smaller plug. Jacks made by Telegärtner have an integrated protection against overbending the contacts when a smaller connector like an RJ12 is plugged mistakenly into it.

### RJ45

The acronym RJ stands for registered jack, but it is often used without its formal relationship to USOC (Universal Service Ordering Code). The RJ45 is specified by the IEC 60603-7 set of standards:

IEC 60603-7: Detail specification for 8-way, unshielded, free and fixed connectors

IEC 60603-7-1: Detail specification for 8-way, shielded, free and fixed connectors

IEC 60603-7-2: Connectors up to 100 MHz / Cat. 5, unshielded

IEC 60603-7-3: Connectors up to 100 MHz / Cat. 5, shielded

IEC 60603-7-4: Connectors up to 250 MHz / Cat. 6, unshielded

IEC 60603-7-41: Connectors up to 500 MHz / Cat. 6<sub>A</sub>, unshielded

IEC 60603-7-5: Connectors up to 250 MHz / Cat. 6, shielded

IEC 60603-7-51: Connectors up to 500 MHz / Cat. 6<sub>A</sub>, shielded

IEC 60603-7-7: Connectors up to 600 MHz / Cat. 7, shielded (*this standard specifies the GG45 connector; the jack is backwards compatible to the RJ45 plug, but the GG45 plug is NOT compatible to RJ45 jacks*)

IEC 60603-7-71: Connectors up to 1,000 MHz / Cat. 7<sub>A</sub>, shielded (*this standard specifies the GG45 connector; the jack is backwards compatible to the RJ45 plug, but the GG45 plug is NOT compatible to RJ45 jacks.*)

The RJ45 has become the dominant connector for the major types of data networks. Even older network types like Token Ring or TP-PMD (FDDI over copper) use the RJ45 – at least their later releases do so. The most important pin assignments are (source: Treiber: Praxishandbuch Netzwerktechnik, courtesy of J. Schlembach Fachverlag Wilburgstetten)

10Base-T:	1-2, 3-6
100Base-TX:	1-2, 3-6
1000Base-T:	1-2, 3-6, 4-5, 7-8
Token Ring:	3-6, 4-5
ISDN:	3-6, 4-5
ATM:	1-2, 7-8
TP-PMD:	1-2, 7-8

On the sides of the IDC blocks of the jacks color codes are printed to make pin assignment during installation easier. There are two options: T568A and T568B. Originally, T568A was invented for military and federal applications but has become common also for civil projects. More often, T568B is used. EN 50173 specifies only pin/pair assignment but does not specify any color codes.



Very often, a patch cord with an RJ11 or RJ12 connector is plugged into an RJ45 jack. The RJ45 jack is a bit larger than the RJ11 or RJ12 plug and has eight contacts, and so the outer contacts of the RJ45 jack get damaged by the edges of the smaller plug. Jacks made by Telegärtner have an integrated protection against overbending the contacts when a smaller connector like an RJ11 or an RJ12 is plugged mistakenly into it.

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#### **SAN**

Acronym for storage area network; the SAN is the network that connects storage devices with the servers using SAN switches.

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#### **SF/UTP**

Acronym for braid and foil screened unshielded twisted pair; an SF/UTP cable has two overall screens, one made of copper braid, one made of metal foil; the pairs themselves are not shielded individually.

→ See also *Cable terminology according to ISO/IEC 11801*.

---

#### **S/FTP**

Acronym for screened shielded twisted pair; an S/FTP cable has an overall braid screen, the pairs are shielded individually with metal foil. Most common type of shielded cable. Also referred to as PiMF (pairs in metal foil).

→ See also *Cable terminology according to ISO/IEC 11801*.

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#### **Signal**

Physical realisation of information travelling along the media, e.g. a series of Zeros and Ones realized by different voltage levels on a cable.

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#### **Storage area network**

→ See *SAN*

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#### **STP**

Acronym for shielded twisted pair; general term for shielded twisted pair cables. In most cases, the pairs of a shielded cable are shielded individually with metal foil.

There are also cables with only one overall foil screen, sometimes the overall screen is made of tinned copper braid. Details on this

can be found in the data sheet of the cable.

→ See also *Cable terminology according to ISO/IEC 11801*.

---

#### **TAE connector**

TAE is an acronym for the German words „Teilnehmer-Anschluss-Einheit“, which means “user connection unit”. The TAE connector is a common connector used to connect telephones and fax machines. A TAE connector can have up to 6 pins, but in most cases, only 4 of them are used. Guidance strips run along the connector on both sides, either in the middle of the connector (TAE-N) or at the bottom (TAE-F), which eliminates wrong connections. F coded connectors are used for telephones, N codes ones for non-telephone devices like answering or fax machines.

Typically, three position outlets like TAE-NFN are used to connect answering machine (left jack), telephone (middle) and fax machine (right jack) using just one faceplate. F connections are always superior to N connections. This makes it possible to answer a telephone call after the answering machine has already started recording. Telegärtner played a significant role in the development of the TAE connector.

---

#### **Thin Wire**

Old term for the coaxial Ethernet 10Base-2; the name comes from the thin coaxial cable which replaced the much thicker Yellow Cable in many installations.

---

#### **TIA**

TIA is an acronym for Telecommunications Industry Association, an American standards body that authors and publishes telecommunications and cabling standards in the USA.

---

#### **TIA/EIA 568A**

Complete title: ANSI/TIA/EIA-568-A

Set of American cabling standards; replaced the former standard TIA/EIA 568, got replaced by ANSI/TIA/EIA-568-B, which got replaced by ANSI/TIA/EIA-568-C itself.

---

#### **TIA/EIA 568B**

Complete title: ANSI/TIA/EIA-568-B

Set of American cabling standards; replaced the former standard ANSI/TIA/EIA-568-A, got replaced by ANSI/TIA/EIA-568-C.

---

#### **TIA 568C**

Complete title: ANSI/TIA-568-C. Set of American cabling standards, replaced the former standard ANSI/TIA/EIA-568-B. ANSI/TIA-568-C consists of four parts:

ANSI/TIA-568-C.0-2: Generic Telecommunications Cabling for Customer Premises

ANSI/TIA-568-C.1-1: Commercial Building Telecommunications Cabling Standard

ANSI/TIA-568-C-2: Balanced Twisted-Pair Telecommunication Cabling and Components Standard

ANSI/TIA-568-C-3: Optical Fiber Cabling and Components Standard

---

#### **Twisted pair**

Technical short term for data cables with twisted pairs.

---

---

**Two way concept**

Cabling concept where two cables are routed in different ways between two points in order to increase availability by redundancy.

---

**UTP**

Acronym for unshielded twisted pair; general term for twisted pair cables without shielding.

→ See also *Cable terminology according to ISO/IEC 11801*.

---

**U/FTP**

Acronym for unscreened foil shielded twisted pair; a U/FTP cable has no overall screen, but the pairs are shielded individually with metal foil.

→ See also *Cable terminology according to ISO/IEC 11801*.

---

**U/UTP**

Acronym for unscreened, unshielded twisted pair; a U/UTP cable has no shielding at all.

→ See also *Cable terminology according to ISO/IEC 11801*.

---

**Unbalanced cable**

In unbalanced cables, the two conductors differ from each other. Most important unbalanced cable type is coaxial cable.

Because the conductors do not look alike, an unbalanced cable is also called an unsymmetrical cable.

An example for a balanced (symmetrical) cable is a twisted pair cable, where the two conductors are similar. To connect balanced and unbalanced cables, a balun (acronym made of BALanced / UNbalanced) is needed.

---

**WLAN**

Acronym for wireless LAN, general term for data networks using radio technology to transmit data. The most important international WLAN types are standardized by IEEE 802.11.

---

**Yellow Cable**

Old term for the original coaxial Ethernet 10Base-5; the name comes from the thick, yellow coaxial cable which had to be used.

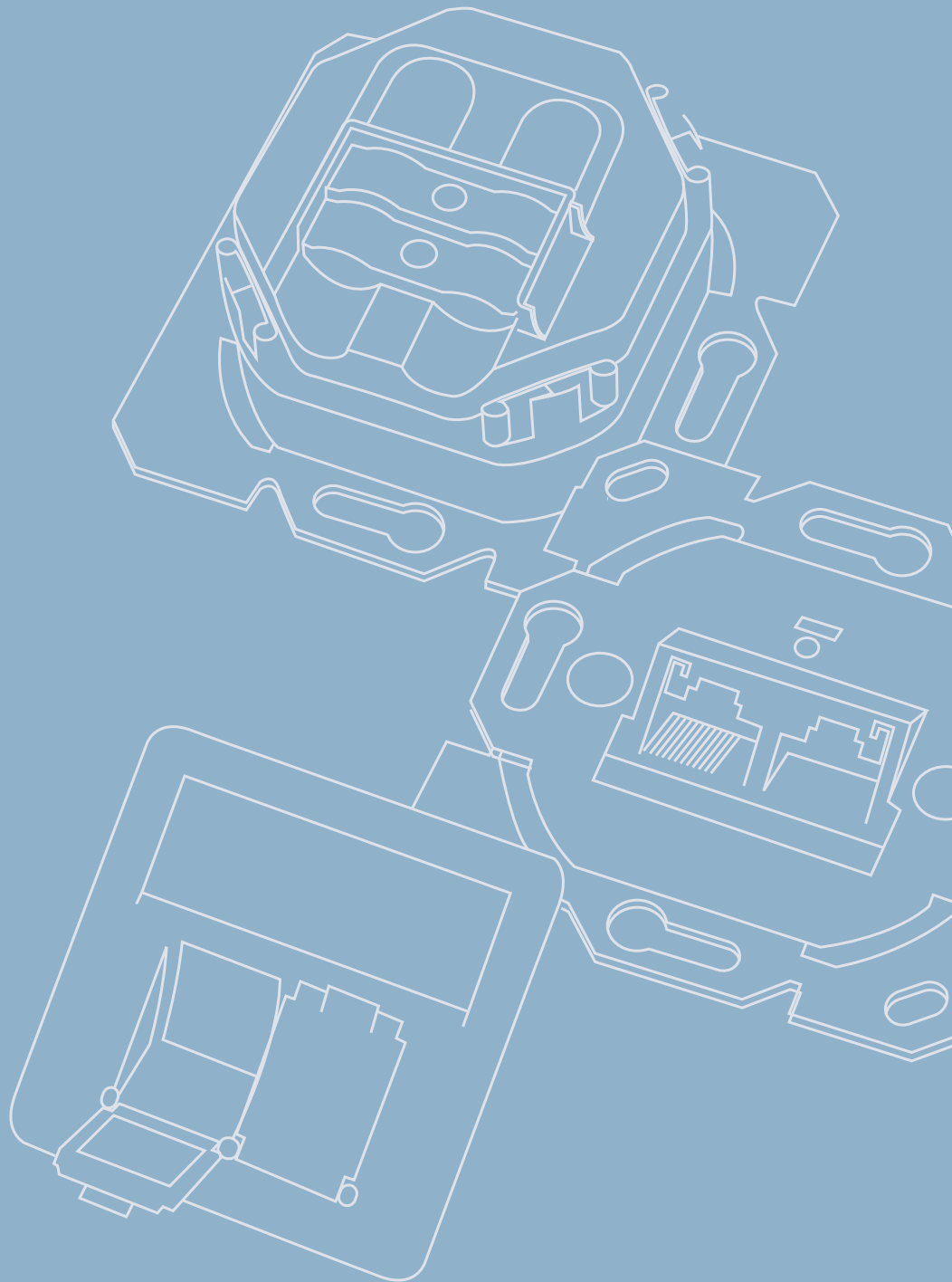
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**Note:** The use of brand names, registered trademarks, trade names, proprietary names, etc. in this glossary, even if not explicitly identified as such, does not constitute any entitlement to assume that such names, as defined in trademark protection legislation, are free of restrictions and can be used by anyone.



# 1

## Outlets





# 1

## Outlets

<b>1.1 Series AMJ45 K Cat.6<sub>A</sub>, Class E<sub>A</sub> 500, Cat.5e - shielded .....</b>	<b>64</b>
1.1.1 AMJ45 K Cat.6 <sub>A</sub> shielded for cable duct mounting .....	64
1.1.2 AMJ45/B K Cat.6 <sub>A</sub> shielded for subfloor mounting .....	65
1.1.3 AMJ45 K Cat.6 <sub>A</sub> AP shielded for surface mounting .....	66
1.1.4 AMJ45 K Class E <sub>A</sub> 500 shielded for cable duct mounting.....	67
1.1.5 AMJ45 Cat.5e shielded for cable duct mounting.....	68
<b>1.2 Series VAD® Class E<sub>A</sub> 500 - shielded .....</b>	<b>69</b>
<b>1.3 Cover Frames for Outlets .....</b>	<b>69</b>
<b>1.4 Faceplates for Telecommunications Outlets.....</b>	<b>70</b>
<b>1.5 Universal Equipment Mounting Set for Outlets in Cable Ducts .....</b>	<b>71</b>
<b>1.6 Surface Mounting Set for Outlets .....</b>	<b>71</b>
<b>1.7 Tools and Accessories for Outlets .....</b>	<b>72</b>



	AMJ45	VAD AP Compact
<b>Standards</b>		
Connectors	IEC 60603-7-51 / -7-3	IEC 60603-7-51
<b>Mechanical Characteristics</b>		
Insertion force	≤ 30 N	≤ 30 N
Life (mating cycles RJ45, RJ12, RJ11)	≥ 750	≥ 750
Material: housing	zinc diecast	ABS
Material: insulators	PA, PBT, ABS, PC	PBT, ABS, PC
Material: PCB	FR4	FR4
Material: PCB finish	tin plated	tin plated
Material: contact spring	CuSn, spring steel	CuSn, spring steel
Material: contact spring finish	min. 0,8 µm Au on 1,2 µm Ni	min. 0,8 µm Au on 1,2 µm Ni
Material: contact IDC termination	CuZn	CuZn
Material: IDC termination finish	tin plated	tin plated
LSA Plus: Cu conductor diameter	solid 0.41 - 0.64 mm AWG 26/1 - AWG 22/1	solid 0.41 - 0.64 mm AWG 26/1 - AWG 22/1
LSA Plus: Wire diameter	0.7 - 1.6 mm	0.7 - 1.6 mm
<b>Environmental Requirements</b>		
Ambient temperature	-40° C to + 70° C	-40° C to + 70° C
<b>Electrical Characteristics</b>		
Contact resistance	≤ 20 mΩ	≤ 20 mΩ
Insulation resistance	≥ 500 MΩ	≥ 500 MΩ
Voltage proof: contact-contact	≥ 1000 V, DC	≥ 1000 V, DC
Voltage proof: contact-shield	≥ 1500 V, DC	≥ 1500 V, DC
Current carrying capacity at 50°C	1 A	1 A
PoE+ acc to IEEE 802.3at	Cat.6A, Class E <sub>A</sub> 500	Class E <sub>A</sub> 500
PoE according to IEEE802.3af	Cat.5e	-
<b>Transmission Characteristics</b>		
Category 6 <sub>A</sub> (Component) for products Cat.6 <sub>A</sub>	ISO/IEC 11801, DIN EN 50173-1	-
Class E <sub>A</sub> (Permanent Link) for products Cat.6 <sub>A</sub> , Class E <sub>A</sub> 500	ISO/IEC 11801, DIN EN 50173-1	ISO/IEC 11801, DIN EN 50173-1
Class E <sub>A</sub> (Channel) for products Cat.6 <sub>A</sub> , Class E <sub>A</sub> 500	ISO/IEC 11801, DIN EN 50173-1	ISO/IEC 11801, DIN EN 50173-1
Category 5e	ISO/IEC 11801, DIN EN 50173-1	-
Gigabit Ethernet acc. to IEEE 802.3	for Cat.5e	-
10 Gigabit Ethernet acc. to IEEE 802.3an	for Cat.6 <sub>A</sub> , Class E <sub>A</sub> 500	for Class E <sub>A</sub> 500

### RJ45 pin colour coding acc. to EIA/TIA 568 A and B



## 1.1

Series AMJ45 K Cat.6<sub>A</sub>, Class E<sub>A</sub> 500, Cat.5e - shielded


## Performance Characteristics

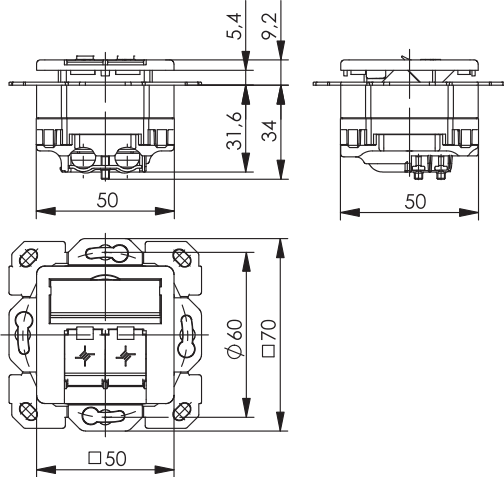
- transmission performance: Cat.6<sub>A</sub> acc. to ISO/IEC 11801; EN 50173-1
- fully shielded
- 360° shielding contact and strain relief by means of two (one in the case of Cat.5e) separate, captive screw clamps for the exterior cable jacket and shielding
- can be wired up from all directions, in 8x45° steps
- either horizontal or vertical installation in the cable duct as a result of variable cable inlet
- type offers low installation depth; problem-free installation in floor tanks as a result of cable inlet from the side within the subfloor mounting box
- option of plug-in ground connection at all four corners; according to DIN 46342-1; 6.3 mm
- can be combined with covers of a wide variety of switching programs
- simple wire presorting guarantees great transmission performance without damaging the wires
- faceplate can be retrofitted with a flip-up loss-proof, transparent label field
- protection flaps
- detachable vertical fixing rail of the four-hole bearer ring (e.g. for subfloor installation)
- overbend protection: 6- (RJ11/12) and 8-pin connectors (RJ45) can be used interchangeably in the outlets without additional installation kits




Note: Labelling masters for AMJ45 and UMJ45 and a cross-reference-list for switching programs of several manufacturers can be found on our homepage [www.telegaertner.com](http://www.telegaertner.com) - „Downloads“.

## 1.1.1


AMJ45 K Cat.6<sub>A</sub> shielded for cable duct mounting

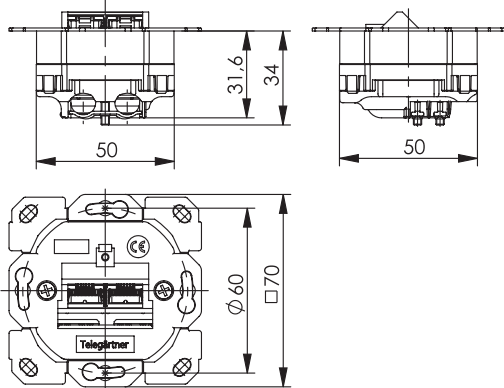







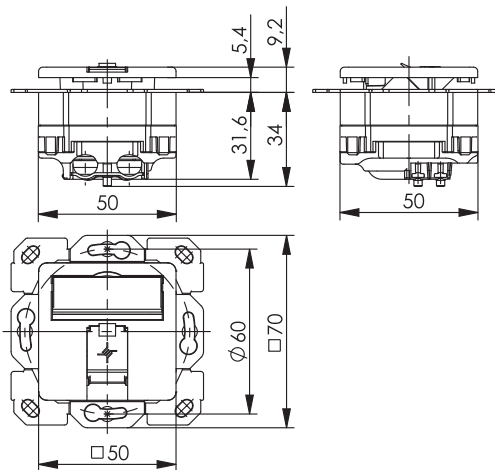
Order no.	Short name	Type	Colour
J00020A0500	AMJ45 8/8 K Up/50 Cat.6 <sub>A</sub>	cable duct mounting, 2xRJ45	alpine white



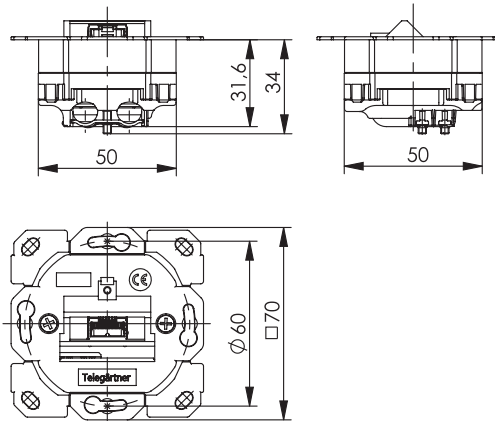


Order no.	Short name	Type	
J00020A0502	AMJ45 8/8 K Up/0 Cat.6 <sub>A</sub> without faceplate	cable duct mounting, 2xRJ45	

Cat.6<sub>A</sub>REAL-TIME  
RE-EMBEDDED

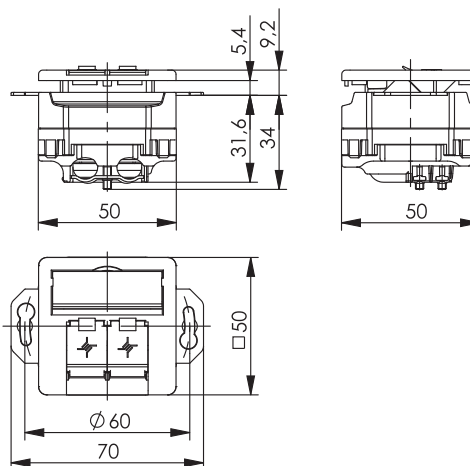
Order no.	Short name	Type	Colour
J00020A0505	AMJ45 8 K Up/50 Cat.6 <sub>A</sub>	cable duct mounting, 1xRJ45	alpine white

Cat.6<sub>A</sub>REAL-TIME  
RE-EMBEDDED

Order no.	Short name	Type
J00020A0506	AMJ45 8 K Up/0 Cat.6 <sub>A</sub> without faceplate	cable duct mounting, 1xRJ45

AMJ45/B K Cat.6<sub>A</sub> shielded for subfloor mounting

1.1.2

Cat.6<sub>A</sub>REAL-TIME  
RE-EMBEDDED

Order no.	Short name	Type	Colour
J00020A0503	AMJ45/B 8/8 K Up/50 Cat.6 <sub>A</sub>	subfloor mounting, 2xRJ45	alpine white

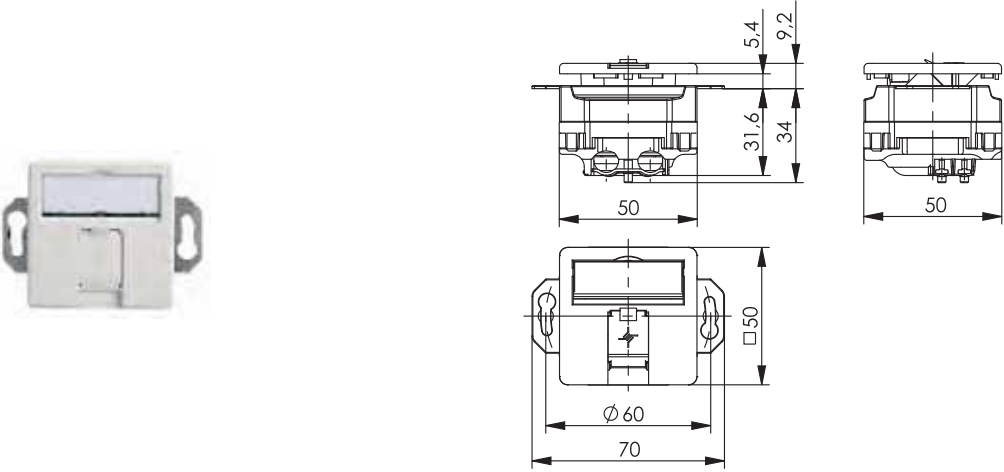
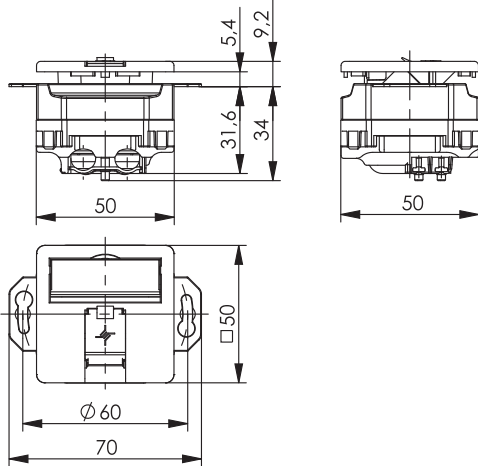
1.1

## Outlets

## 1.1

Series AMJ45 K Cat.6<sub>A</sub>, Class E<sub>A</sub> 500, Cat.5e - shielded

## 1.1.2

AMJ45/B K Cat.6<sub>A</sub> shielded for subfloor mounting



**Cat.6<sub>A</sub>**

**REAL-TIME RE-EMBEDDED**


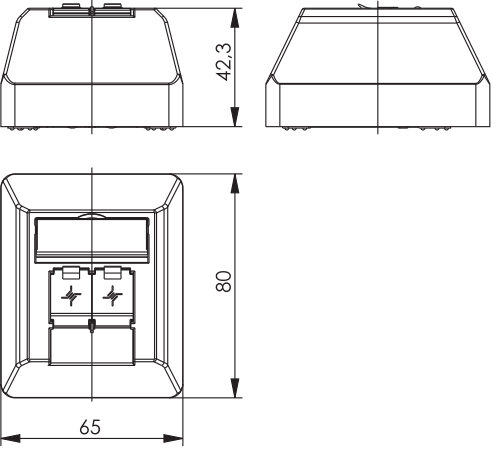
Order no.	Short name	Type	Colour
J00020A0507	AMJ45/B 8 K Up/50 Cat.6 <sub>A</sub>	subfloor mounting, 1xRJ45	alpine white

## 1.1.3

AMJ45 K Cat.6<sub>A</sub> AP shielded for surface mounting

## Performance Characteristics

- transmission performance: Cat.6<sub>A</sub> acc. to ISO/IEC 11801; EN 50173-1
- fully shielded
- 360° shielding contact and strain relief by means of screw clamp for the exterior cable jacket and shielding
- simple wire presorting guarantees great transmission performance without damaging the wires
- surface housing can be retrofitted with a flip-up loss-proof, transparent label field
- protection flaps
- rugged zinc diecast housing for surface mounting
- compact design
- cable entry selectable in 4x 90° steps

**Cat.6<sub>A</sub>**

**REAL-TIME RE-EMBEDDED**

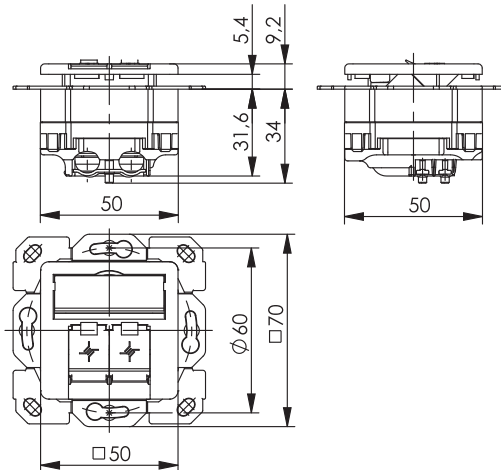
Order no.	Short name	Type	Colour
J00023A0204	AMJ45 8/8 K AP Cat.6 <sub>A</sub>	surface mounting, 2xRJ45	alpine white

## AMJ45 K Class EA 500 shielded for cable duct mounting

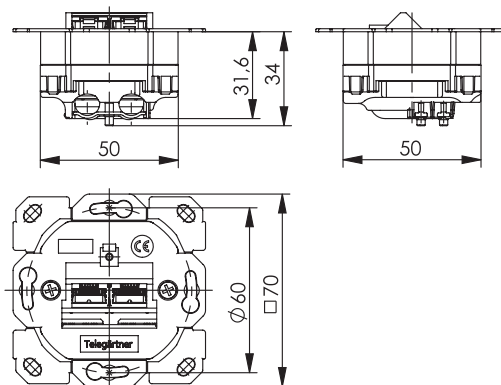
1.1.4

## Performance Characteristics

- transmission performance: PL Class E<sub>A</sub> 500 acc. to ISO/IEC 11801; EN 50173-1
- fully shielded
- 360° shielding contact and strain relief by means of two separate, captive screwclamps for the exterior cable jacket and shielding
- simple wire presorting guarantees great transmission performance without damaging the wires
- faceplate can be retrofitted with a flip-up loss-proof, transparent label field
- protection flaps



Order no.	Short name	Type	Colour
J00020A0393	AMJ45 K 8/8 Up/50 Class E <sub>A</sub> 500	cable duct mounting, 2xRJ45	alpine white



Order no.	Short name	Type
J00020A0395	AMJ45 K 8/8 Up/0 Class E <sub>A</sub> 500 without faceplate	cable duct mounting, 2xRJ45

1.1

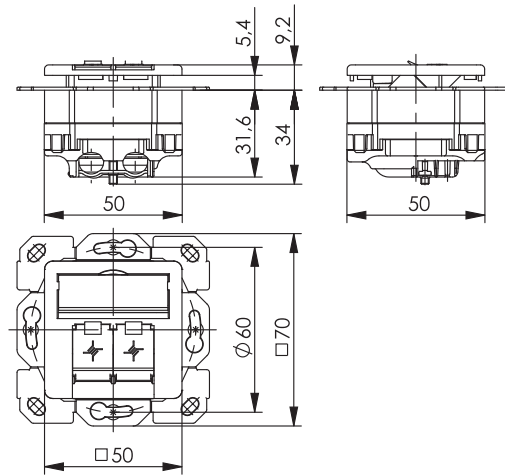
## Outlets

## 1.1

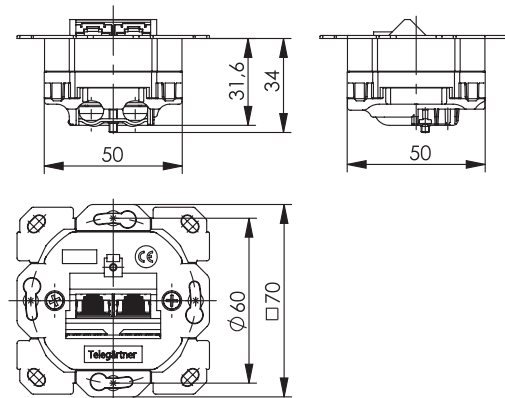
Series AMJ45 K Cat.6<sub>A</sub>, Class E<sub>A</sub> 500, Cat.5e - shielded

## 1.1.5

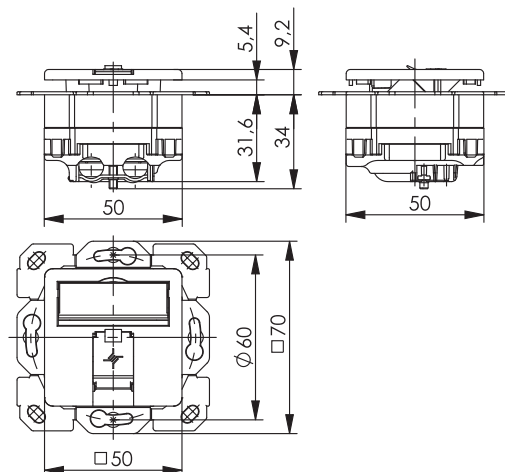
## AMJ45 Cat.5e shielded for cable duct mounting



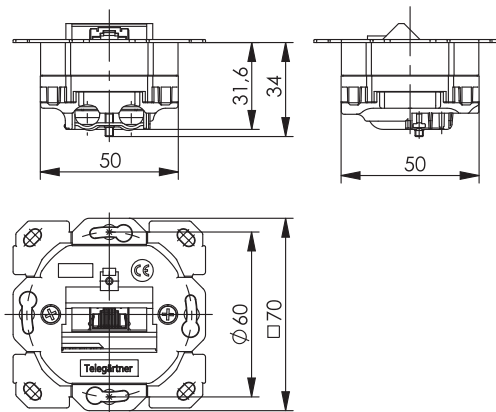
Order no.	Short name	Type	Colour
J00020A0389	AMJ45 8/8 Up/50 Cat.5e	cable duct mounting, 2xRJ45	alpine white



Order no.	Short name	Type
J00020A0388	AMJ45 8/8 Up/0 Cat.5e without faceplate	cable duct mounting, 2xRJ45



Order no.	Short name	Type	Colour
J00020A0419	AMJ45 8 Up/50 Cat.5e	cable duct mounting, 1xRJ45	alpine white



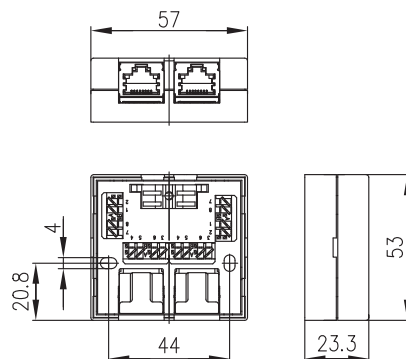
Order no.	Short name	Type
J00020A0420	AMJ45 8 Up/0 Cat.5e without faceplate	cable duct mounting, 1xRJ45

Series VAD® Class E<sub>A</sub> 500 - shielded

1.2

## Performance Characteristics

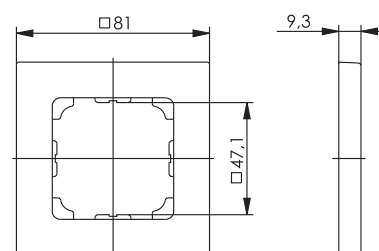
- suitable for 10 Gigabit Ethernet acc. to IEEE 802.3an
- Transmission performance: PL Class E<sub>A</sub> 500 acc. to ISO/IEC 11801; EN 50173-1
- surface housing can be retrofitted with a flip-up loss-proof, transparent label field
- the cables are terminated via IDC (LSA Plus) terminals with colour coding acc. to EIA/TIA 568A and B
- screw clamp for strain relief and shielding contact for incoming cables



Order no.	Short name	Type	Colour
J00023A0056	VAD 8/8 Ap Compact-S Class E <sub>A</sub> 500	shielded; surface mounting	pure white RAL 9010

## Cover Frames for Outlets

1.3



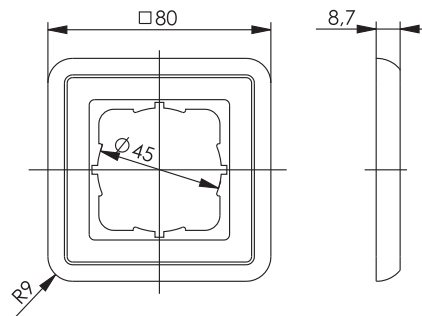
Order no.	Short name	Type	Series	Colour
B00004A0024	Cover frame	single, 81x81	AMJ45, UMJ45, Module System AMJ/UMJ, OAD/S	alpine white

1.3

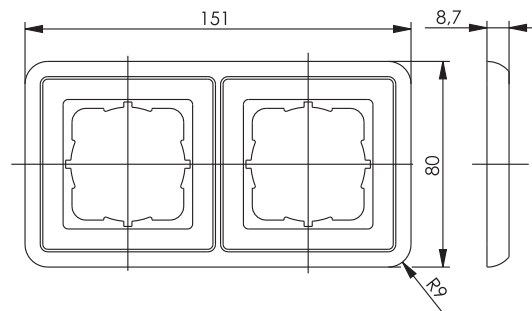
## Outlets

## 1.3

## Cover Frames for Outlets



Order no.	Short name	Type	Series	Remarks	Colour
B00004A0021	Cover frame	single, 80x80	AMJ45, UMJ45, Module System AMJ/UMJ, OAD/S	not suitable for J00020A0512 / J00020A0513	alpine white



Order no.	Short name	Type	Series	Remarks	Colour
B00005A0009	Cover frame	double, 80x151	AMJ45, UMJ45, Module System AMJ/UMJ, OAD/S	not suitable for J00020A0512 / J00020A0513	alpine white

## 1.4

## Faceplates for Telecommunications Outlets



AMJ-S

Order no.	Short name	Series	Colour
F00020A0113	Faceplate 50 x 50 mm for AMJ45 8/8 UP/0 and design capable module carrier AMJ-S; with screw, transparent label field, cover and 2 protection flaps	AMJ45; AMJ-S	alpine white



AMJ-S

Order no.	Short name	Series	Colour
F00020A0123	Faceplate 50 x 50 mm for AMJ45 8 UP/0 and design capable module carrier AMJ-S; with screw, transparent label field, cover and 1 protection flap	AMJ45; AMJ-S	alpine white

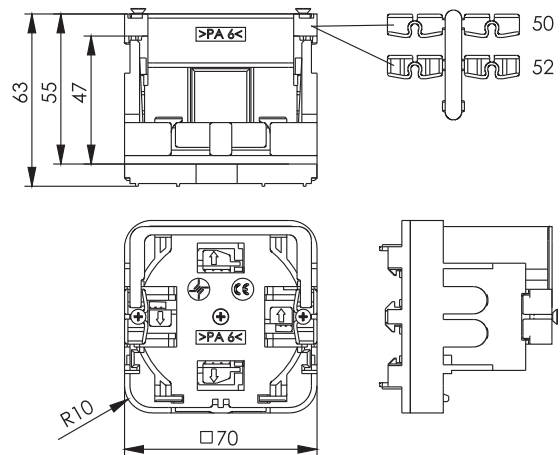


## Universal Equipment Mounting Set for Outlets in Cable Ducts

1.5

## Performance Characteristics

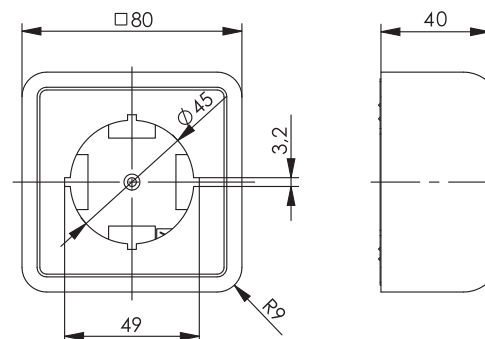
- suitable for cable duct systems with C-rails, top-hat rails, and Combi-rails with 35 mm fixings
- variable height compensation for cable ducts with internal heights of 47 mm, 50 mm, 52 mm, and 55 mm
- cable strain relief
- can be string-mounted, and therefore suitable for double, triple and multiple installations
- user-friendly installation and integration of outlets
- suitable for horizontal and vertical installation
- small stock diversity
- optimal cable runs inside the cable ducts
- quick, screw-free installation due to snap-in latches
- reduced installation times
- external dimensions (in mm): width = 70; height: variable 47, 50, 52, and 55



Order no.	Short name	Type
H02010B0013	Universal Equipment Mounting Set for installation of outlets AMJ45, UMJ45 in cable ducts for heights 47, 50, 52 and 55 mm and for top hat rails, C-rails, Combi-rails	with 1 half shell
H02010B0014	Universal Equipment Mounting Set for installation of outlets AMJ45, UMJ45 in cable ducts for heights 47, 50, 52 and 55 mm and for top hat rails, C-rails, Combi-rails	without half shell

## Surface Mounting Set for Outlets

1.6



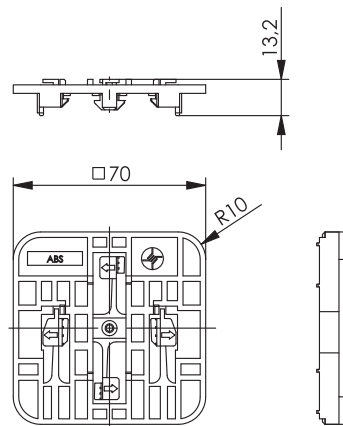
Order no.	Short name	Type	Colour
H02000C0027	Surface mounting set	80x80x40 mm	alpine white

1.6

## Outlets

## 1.6

## Surface Mounting Set for Outlets



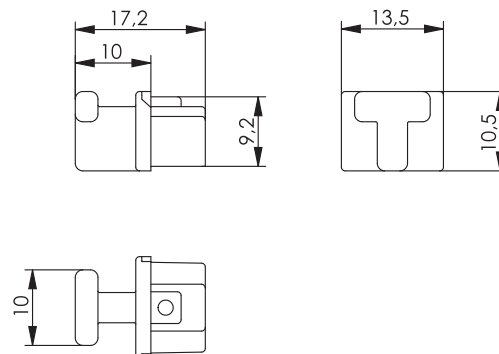
Order no.	Short name	Type
H02000A0054	Top hat rail adaptor for surface mounting set	for top hat rails DIN 60715

## 1.7

## Tools and Accessories for Outlets



Order no.	Short name	Colour
B00002A0014	protection flap for faceplate; for AMJ-S, AMJ, AMJ45	alpine white
B00002B0014	protection flap for faceplate; for AMJ-S, AMJ, AMJ45	red RAL 3020
B00002C0014	protection flap for faceplate; for AMJ-S, AMJ, AMJ45	green RAL 6017
B00002D0014	protection flap for faceplate; for AMJ-S, AMJ, AMJ45	blue RAL 5015
B00002E0014	protection flap for faceplate; for AMJ-S, AMJ, AMJ45	yellow RAL 1023
B00002F0014	protection flap for faceplate; for AMJ-S, AMJ, AMJ45	black RAL 9005



Order no.	Short name	Colour	Remarks
H00030A0014	protection cap for RJ45	alpine white	Material: TPR
H00030C0014	protection cap for RJ45	red RAL 3020	Material: TPR
H00030D0014	protection cap for RJ45	green RAL 6017	Material: TPR
H00030E0014	protection cap for RJ45	blue RAL 5015	Material: TPR
H00030F0014	protection cap for RJ45	black RAL 9005	Material: TPR



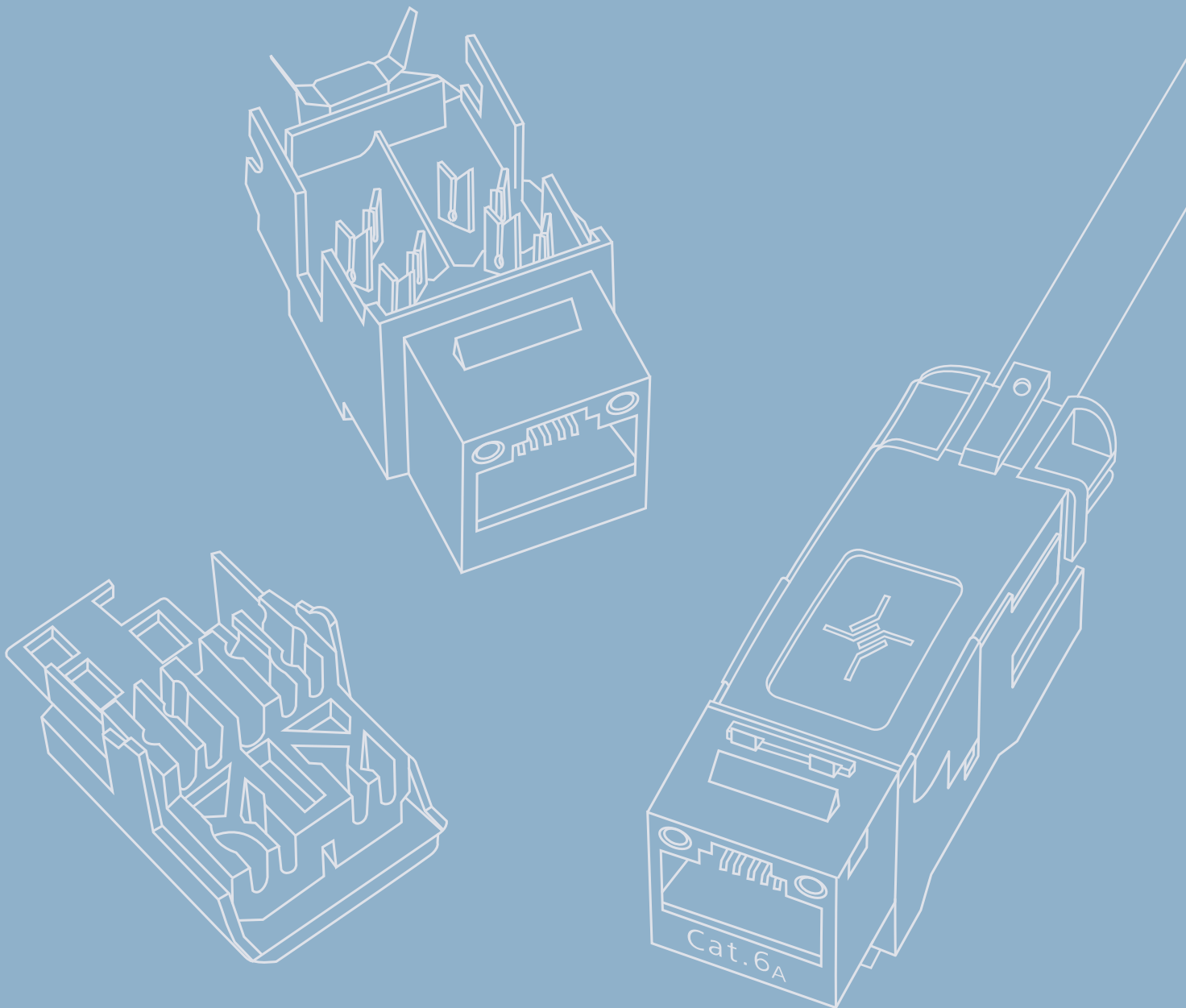
Order no.	Short name
N01002A0000	Tool for IDC termination (LSA Plus) without wire cutter



Order no.	Short name
N01002A0001	Insertion tool for IDC termination (LSA Plus) with wire cutter



## Modular System AMJ-S / AMJ / UMJ





# 2

## Modular System AMJ-S/AMJ/UMJ

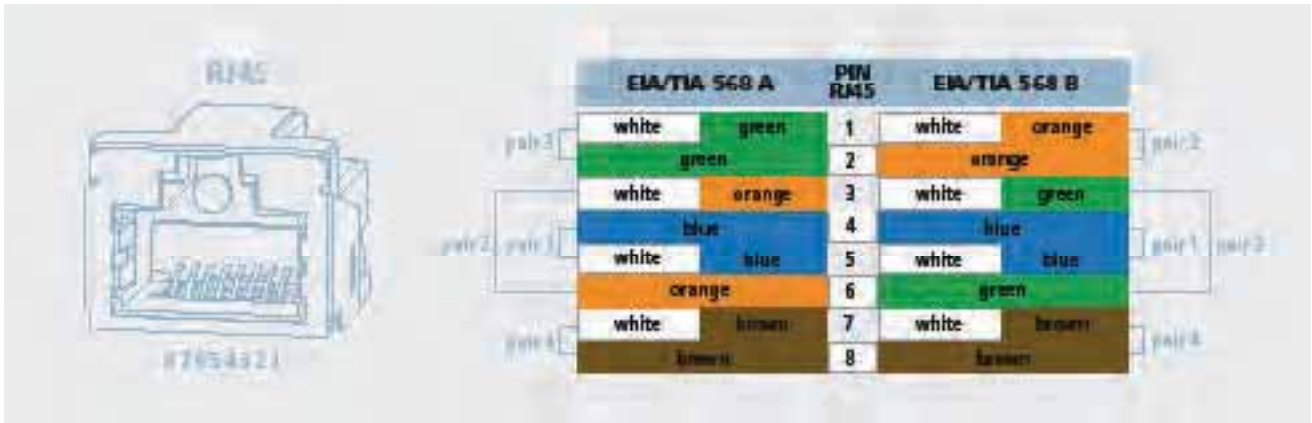
<b>2.1</b>	<b>AMJ-S Modules und AMJ-Modules/Coupler - shielded .....</b>	<b>78</b>
2.1.1	AMJ-S Module .....	78
2.1.2	AMJ Module K.....	79
2.1.3	AMJ Coupler K .....	80
<b>2.2</b>	<b>UMJ Modules/Coupler - unshielded .....</b>	<b>81</b>
2.2.1	UMJ Module K.....	81
2.2.2	UMJ Coupler K .....	82
<b>2.3</b>	<b>USB Coupler.....</b>	<b>83</b>
<b>2.4</b>	<b>Applications for AMJ-S Modules and AMJ/UMJ Modules/Coupler.....</b>	<b>84</b>
2.4.1	Cable Duct Mounting - suitable for switching programs.....	84
2.4.2	Cable Duct Mounting .....	87
2.4.3	Surface Mounting.....	92
2.4.4	19" Module Carrier without Modules/Coupler .....	95
2.4.5	Mini Distributor .....	97
2.4.6	19" Module Carrier with Modules/Coupler .....	98
2.4.7	3 HU / 7 PU Front Plate with Modules .....	100
2.4.8	Components for Mounting Rails .....	101
2.4.9	Accessories.....	102

# Modular System AMJ-S/AMJ/UMJ

	AMJ-S Module Cat.6A		AMJ Module K Cat.6A	AMJ Coupler Cat.6/Cat.5e	UMJ Module Class EA 500	UMJ Coupler Cat.6/Cat.5e
	AMJ-S 2G	AMJ-S				
<b>Standards</b>						
Connectors	IEC 60603-7-51		IEC 60603-7-51	IEC 60603-7-5 / -7-3	IEC 60603-7-41	IEC 60603-7-4 / -7-2
<b>Mechanical Characteristics</b>						
Insertion force	≤ 30 N	≤ 30 N	≤ 30 N	≤ 30 N	≤ 20 N	≤ 20 N
Life (mating cycles RJ45, RJ12, RJ11)	≥ 750	≥ 750	≥ 750	≥ 750	≥ 750	≥ 750
Material: housing	zinc diecast		zinc diecast	zinc diecast	PA white	PC UL94 V0 white
Material: insulating housing	-	-	-	ABS alpine white	-	-
Material: snap-fit	spring steel		PC UL94 V0 black	zinc diecast	PA white	PC UL94 V0 white
Material: shield	German silver		German silver	German silver	-	-
Material: insulators	PC UL94 V0		PBT	PA	PA, PBT	-
Material: PCB	FR4	FR4	FR4	FR4	FR4	FR4
Material: PCB finish	chem. tin-plated		chem. tin-plated	chem. tin-plated	chem. tin-plated	chem. tin-plated
Material: contact spring	spring steel		spring steel	spring steel	spring steel	spring steel
Material: contact spring finish			min. 0,8 µm (µin)	Au on 1,2 µm (50µin)	Ni	
Material: contact IDC termination	CuNi2Si	CuNi2Si	CuNi2Si	-	CuNi2Si	-
Material: IDC termination finish	min. 3-6 µm (120-240 µin) Sn		min. 3-6 µm (120-240 µin) Sn	-	min. 3-6 µm (120-240 µin) Sn	-
Material: cable ties	-	-	PA UL94 V2	-	-	-
Cu-Conductor diameter: solid	0.41 - 0.64 mm AWG 26/1 - AWG 22/1	0.41 - 0.64 mm AWG 26/1 - AWG 22/1	0.41 - 0.64 mm AWG 26/1 - AWG 22/1	-	0.41 - 0.64 mm AWG 26/1 - AWG 22/1	-
Cu-Conductor diameter: stranded	0.48 - 0.76 mm AWG 26/7 - AWG 22/7	0.46 - 0.76 mm AWG 27/7 - AWG 22/7	0.46 - 0.76 mm AWG 27/7 - AWG 22/7	-	0.46 - 0.76 mm AWG 27/7 - AWG 22/7	-
Insulation diameter	0.9 - 1.6 mm		0.9 - 1.6 mm	-	0.9 - 1.6 mm	
Material: cable clamp	PC UL94 V0		-	-	-	-
Cable diameter	max. 9 mm		max. 9 mm	-	max. 9 mm	
<b>Environmental Requirements</b>						
Ambient temperature	-40° C to +85° C		-40° C to +70° C	-40° C to +70° C	-40° C to +70° C	-40° C to +70° C
<b>Electrical Characteristics</b>						
Contact resistance	≤ 20 mΩ		≤ 20 mΩ	≤ 20 mΩ	≤ 20 mΩ	≤ 20 mΩ
Insulation resistance	≥ 500 MΩ		≥ 500 MΩ	≥ 500 MΩ	≥ 500 MΩ	≥ 500 MΩ
Voltage proof: contact-contact	≥ 1000 V, DC		≥ 1000 V, DC	≥ 1000 V, DC	≥ 1000 V, DC	≥ 1000 V, DC
Voltage proof: contact-shield	≥ 1500 V, DC		≥ 1500 V, DC	≥ 1500 V, DC		
Current carrying capacity at 50°C	1 A		1 A	1 A	1 A	1 A
PoE+ acc to IEEE 802.3at	Adequate for Power over Ethernet+					
<b>Transmission Characteristics</b>						
Category 6A (Component)	ISO/IEC 11801, DIN EN 50173-1		-	-	-	-
Class EA (Permanent Link)	ISO/IEC 11801, DIN EN 50173-1		-	-	ISO/IEC 11801, DIN EN 50173-1	-
Class EA (Channel)	ISO/IEC 11801, DIN EN 50173-1					
Class E (Channel with Coupler Cat.6)	-	-	-	ISO/IEC 11801, DIN EN 50173-1	-	ISO/IEC 11801, DIN EN 50173-1
Class D (Channel with Coupler Cat.5e)	-	-	-	ISO/IEC 11801, DIN EN 50173-1	-	ISO/IEC 11801, DIN EN 50173-1
Gigabit Ethernet acc. to IEEE 802.3	-	fulfilled	fulfilled	fulfilled	fulfilled	fulfilled
10 Gigabit Ethernet acc. to IEEE 802.3an	fulfilled	fulfilled	fulfilled	fulfilled by Cat.6	fulfilled	fulfilled by Cat.6
UL	-	fulfilled	-	-	-	-
PVP	fulfilled	-	-	-	-	-

# Modular System AMJ-S/AMJ/UMJ

RJ45 pin colour coding acc. to EIA/TIA 568 A and B



## 2.1 AMJ-S Modules and AMJ Modules/Coupler - shielded

### 2.1.1 AMJ-S Module

#### Performance Characteristics

- Cat.6<sub>A</sub> acc. to IEC 60603-7-51
- Cat.6<sub>A</sub> re-embedded tested acc. to IEC 60512-27-100
- link certificate: Class E<sub>A</sub> acc. to ISO/IEC 11801
- 10 Gigabit-Ethernet compliant (IEEE 802.3an)
- overbending protection: ≥750 mating cycles with RJ45/RJ11/RJ12 plugs
- suitable for PoE+ acc. to IEEE 802.3at
- suitable for switching programs from several manufacturers with design capable faceplate AMJ-S Up/0 flex
- integrated strain relief for cable O.D. to 9 mm
- universal, world-wide available installation dimension for mounting cut-outs: 19.3 x 14.7 mm
- optically monitored inspection of the RJ45 contact heights

**Cat.6<sub>A</sub>**

**AMJ-S**

REAL-TIME RE-EMBEDDED

Order no.	Short name	Remarks	Mount. dim.
J00029A3000	AMJ-S Module 2G Cat.6 <sub>A</sub> T568A	tool-free connectivity, suitable for RJ45/11/12 plugs	Z121
J00029A3001	AMJ-S Module 2G Cat.6 <sub>A</sub> T568B	tool-free connectivity, suitable for RJ45/11/12 plugs	Z121

**Cat.6<sub>A</sub>**

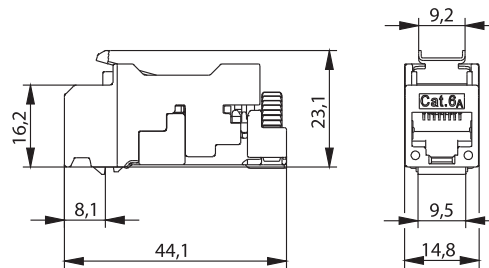
**AMJ-S**

REAL-TIME RE-EMBEDDED

Order no.	Short name	Type	Remarks	Mount. dim.
J00029A3110	AMJ-S Module 2G Cat.6 <sub>A</sub> T568A	blister package (24 pcs.)	tool-free connectivity, suitable for RJ45/11/12 plugs	Z121
J00029A3111	AMJ-S Module 2G Cat.6 <sub>A</sub> T568B	blister package (24 pcs.)	tool-free connectivity, suitable for RJ45/11/12 plugs	Z121



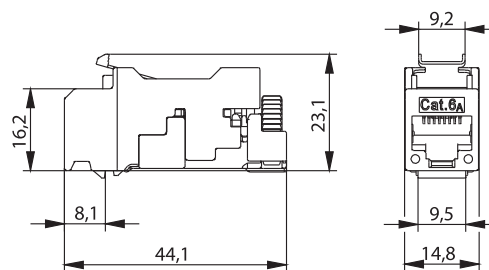
## Modular System AMJ-S/AMJ/UMJ

Cat.6<sub>A</sub>

AMJ-S

REAL-TIME  
RE-EMBEDDED

Order no.	Short name	Remarks	Mount. dim.
J00029A2000	AMJ-S Module Cat.6 <sub>A</sub> T568A	tool-free connectivity, suitable for RJ45/11/12 plugs	Z121
J00029A2001	AMJ-S Module Cat.6 <sub>A</sub> T568B	tool-free connectivity, suitable for RJ45/11/12 plugs	Z121

Cat.6<sub>A</sub>

AMJ-S

REAL-TIME  
RE-EMBEDDED

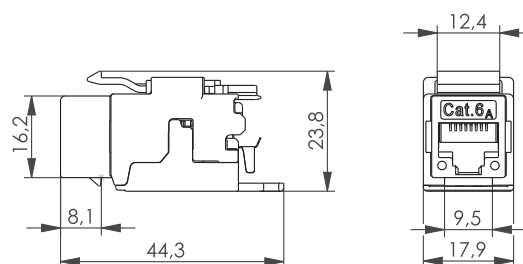
Order no.	Short name	Type	Remarks	Mount. dim.
J00029A2110	AMJ-S Module Cat.6 <sub>A</sub> T568A	blister package (24 pcs.)	tool-free connectivity, suitable for RJ45/11/12 plugs	Z121
J00029A2111	AMJ-S Module Cat.6 <sub>A</sub> T568B	blister package (24 pcs.)	tool-free connectivity, suitable for RJ45/11/12 plugs	Z121

## AMJ Module K

2.1.2

## Performance Characteristics

- Cat.6<sub>A</sub> acc. to IEC 60603-7-51
- link certificate: Class E<sub>A</sub> acc. to ISO/IEC 11801
- 10 Gigabit-Ethernet compliant (IEEE 802.3an)
- fully-automated production of Cat.6<sub>A</sub> RJ45 core to guarantee a uniformly high quality standard
- overbending protection:  $\geq 750$  mating cycles with RJ45/RJ11/RJ12 plugs
- suitable for POE+ (Power Over Ethernet Plus)
- universal, world-wide available installation dimension for mounting cut-outs: 19.3 x 14.7 mm
- optically monitored inspection of the RJ45 contact heights

Cat.6<sub>A</sub>

AMJ

REAL-TIME  
RE-EMBEDDED

Order no.	Short name	Remarks	Mount. dim.
J00029K0036	AMJ Module K Cat.6 <sub>A</sub> T568A	tool-free connectivity, suitable for RJ45/11/12 plugs	Z121
J00029A0077	AMJ Module K Cat.6 <sub>A</sub> T568B	tool-free connectivity, suitable for RJ45/11/12 plugs	Z121

2.1

# Modular System AMJ-S/AMJ/UMJ

## 2.1

## AMJ-S Modules and AMJ Modules/Coupler - shielded


## 2.1.2

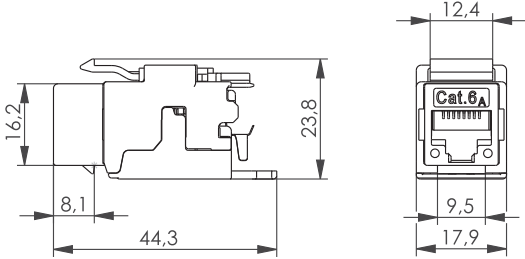
### AMJ Module K

**Cat.6<sub>A</sub>**

**AMJ-S**

**REAL-TIME RE-EMBEDDED**






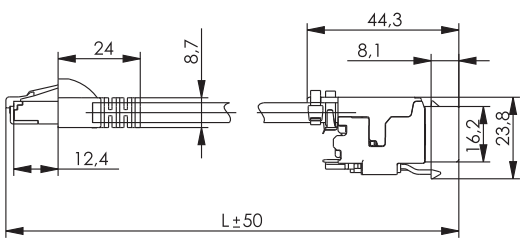
Order no.	Short name	Type	Remarks	Mount. dim.
J00029L0036	AMJ Module K Cat.6 <sub>A</sub> T568A	blister package (24 pcs.)	tool-free connectivity, suitable for RJ45/11/12 plugs	Z121
J00029B0077	AMJ Module K Cat.6 <sub>A</sub> T568B	blister package (24 pcs.)	tool-free connectivity, suitable for RJ45/11/12 plugs	Z121

**Cat.6<sub>A</sub>**

**AMJ-S**

**REAL-TIME RE-EMBEDDED**




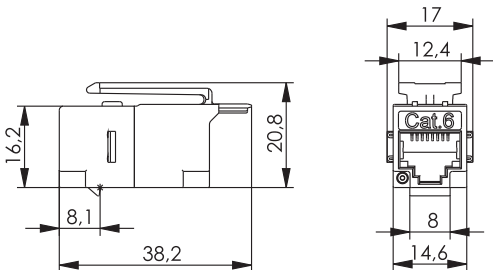


Order no.	Short name	Length	Cable type	Colour
L00002A0194	AMJ Cat.6 <sub>A</sub> CP-Link	3,0 m	S/FTP 4x2xAWG27/7 Cat.7 LSZH	grey
L00003A0145	AMJ Cat.6 <sub>A</sub> CP-Link	5,0 m	S/FTP 4x2xAWG27/7 Cat.7 LSZH	grey
L00004A0128	AMJ Cat.6 <sub>A</sub> CP-Link	7,5 m	S/FTP 4x2xAWG27/7 Cat.7 LSZH	grey
L00005A0102	AMJ Cat.6 <sub>A</sub> CP-Link	10,0 m	S/FTP 4x2xAWG27/7 Cat.7 LSZH	grey
L00006A0185	AMJ Cat.6 <sub>A</sub> CP-Link	15,0 m	S/FTP 4x2xAWG27/7 Cat.7 LSZH	grey

## 2.1.3

### AMJ Coupler K

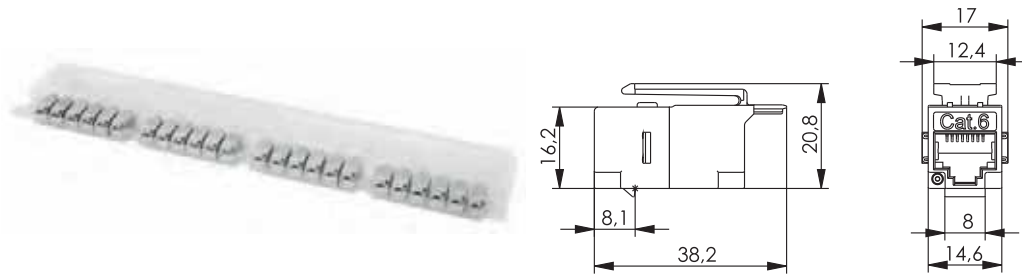




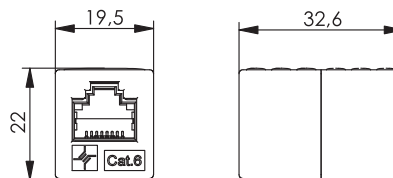
Order no.	Short name	Description	Remarks	Mount. dim.
J00029A0061	AMJ Coupler K Cat.6, f-f	suitable for Class E <sub>A</sub> Channel, 10 Gigabit Ethernet	suitable for RJ45/11/12 plugs	Z121
J00029K0051	AMJ Coupler K Cat.5e, f-f	suitable for Class E Channel, 1 Gigabit Ethernet	suitable for RJ45/11/12 plugs	Z121

# Modular System AMJ-S/AMJ/UMJ

2



Order no.	Short name	Description	Type	Remarks	Mount. dim.
J00029B0061	AMJ Coupler K Cat.6, f-f	suitable for Class E <sub>A</sub> Channel, 10 Gigabit Ethernet	blister package (24 pcs.)	suitable for RJ45/11/12 plugs	Z121
J00029L0051	AMJ Coupler K Cat.5e, f-f	suitable for Class E Channel, 1 Gigabit Ethernet	blister package (24 pcs.)	suitable for RJ45/11/12 plugs	Z121



Order no.	Short name	Description	Remarks	Colour
J00029A0062	AMJ Coupler K Cat.6, insulated, f-f*	suitable for Class E <sub>A</sub> Channel, 10 Gigabit Ethernet	suitable for RJ45/11/12 plugs	alpine white
J00029K0052	AMJ Coupler K Cat.5e, insulated, f-f*	suitable for Class E Channel, 1 Gigabit Ethernet	suitable for RJ45/11/12 plugs	alpine white

\*) loose Coupler for patch cords, no snap-in mounting

## UMJ Modules/Coupler - unshielded

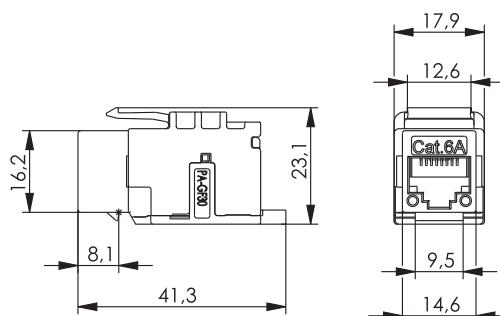
2.2

### Performance Characteristics

- Class E<sub>A</sub> Permanent Link acc. to ISO/IEC 11801/ EN 50173-1 (except Cat.5e and USB)
- unshielded
- universal, world-wide available installation dimension for mounting cut-outs: 19.3 x 14.7 mm
- 10 Gigabit Ethernet compliant (IEEE 802.3an)
- fully-automated production of Class E<sub>A</sub> 500 RJ45 core to guarantee a uniformly high quality standard (transmission characteristic values)
- optically monitored inspection of the RJ45 contact heights

### UMJ Module K

2.2.1



Order no.	Short name	Remarks	Mount. dim.
J00029K0050	UMJ Module K Class E <sub>A</sub> 500 T568A	tool-free connectivity, suitable for RJ45/11/12 plugs	Z121
J00029K0078	UMJ Module K Class E <sub>A</sub> 500 T568B	tool-free connectivity, suitable for RJ45/11/12 plugs	Z121

2.2

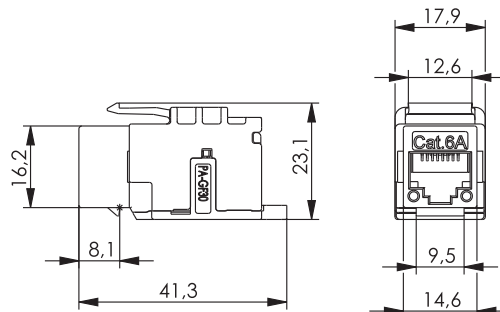
# Modular System AMJ-S/AMJ/UMJ

## 2.2

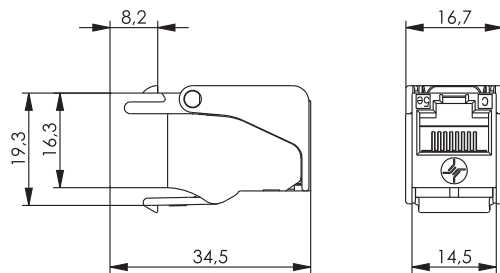
## UMJ Modules/Coupler - unshielded

## 2.2.1

### UMJ Module K



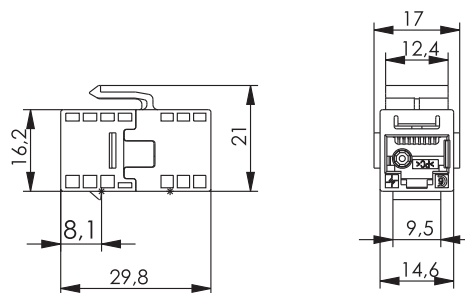
Order no.	Short name	Type	Remarks	Mount. dim.
J00029L0050	UMJ Module K Class E <sub>A</sub> 500 T568A	blister package (24 pcs.)	tool-free connectivity, suitable for RJ45/11/12 plugs	Z121
J00029L0078	UMJ Module K Class E <sub>A</sub> 500 T568B	blister package (24 pcs.)	tool-free connectivity, suitable for RJ45/11/12 plugs	Z121



Order no.	Short name	Remarks	Mount. dim.
J00029A0088	RJ45 Keystone 90° Cat.5e	unshielded, tool-free connectivity	Z121

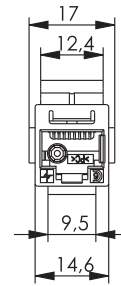
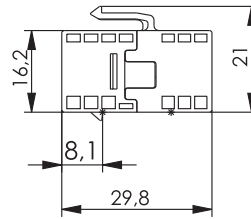
## 2.2.2

### UMJ Coupler K



Order no.	Short name	Remarks	Mount. dim.
J00029A0064	UMJ Coupler K Cat.6, f-f	suitable for RJ45/11/12 plugs	Z121
J00029K0054	UMJ Coupler K Cat.5e, f-f	suitable for RJ45/11/12 plugs	Z121

# Modular System AMJ-S/AMJ/UMJ



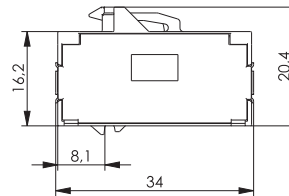
Order no.	Short name	Type	Remarks	Mount. dim.
J00029B0064	UMJ Coupler K Cat.6, f-f	blister package (24 pcs.)	suitable for RJ45/11/12 plugs	Z121
J00029L0054	UMJ Coupler K Cat.5e, f-f	blister package (24 pcs.)	suitable for RJ45/11/12 plugs	Z121

## USB Coupler

2.3

### Performance Characteristics

- Connector interface acc. to IEC 61076-3-107
- Universal Serial Bus Specification 3.0



Order no.	Short name	Type	Mount. dim.
J00029A0108	USB Keystone Type A	USB 3.0; f-f	Z121

# Modular System AMJ-S/AMJ/UMJ

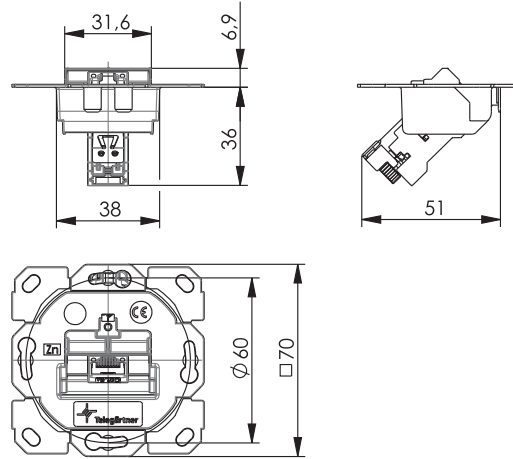
## 2.4

## Applications for AMJ-S Modules and AMJ/UMJ Modules/Coupler

Telegärtner offers a wide range of various applications in which AMJ and UMJ Modules and Couplers can be installed for flexible use.

## 2.4.1

### Cable Duct Mounting - suitable for switching programs

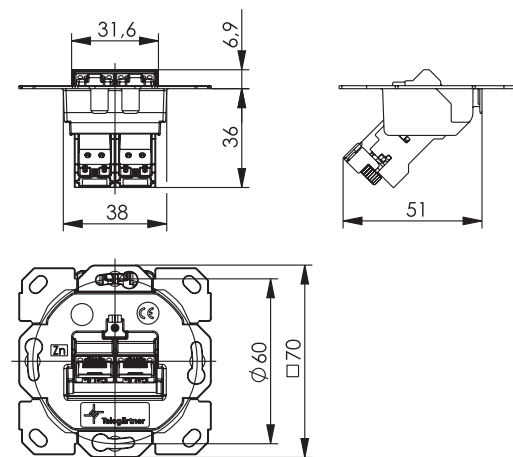
Cat.6<sub>A</sub>

AMJ-S

REAL-TIME  
RE-EMBEDDED

Order no.	Short name	Type	Remarks	Series
J00020A0514	Design capable module carrier AMJ-S single gang UP/0 flex	module carrier incl. 1 AMJ-S Module Cat.6 <sub>A</sub> T568A, suitable for switching programs of several manufacturers*	for cable duct and underfloor, for flush-mounting installation special electronics boxes are required; mating direction 45°	AMJ-S
J00020A0515	Design capable module carrier AMJ-S single gang UP/0 flex	module carrier incl. 1 AMJ-S Module Cat.6 <sub>A</sub> T568B, suitable for switching programs of several manufacturers*	for cable duct and underfloor, for flush-mounting installation special electronics boxes are required; mating direction 45°	AMJ-S

\*an overview with suitable switching programs of several manufacturers can be found at [www.telegaertner.com](http://www.telegaertner.com) / Downloads

Cat.6<sub>A</sub>

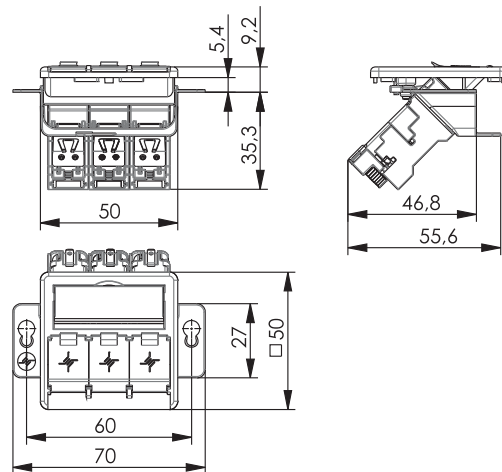
AMJ-S

REAL-TIME  
RE-EMBEDDED

Order no.	Short name	Type	Remarks	Series
J00020A0510	Design capable module carrier AMJ-S double gang UP/0 flex	module carrier incl. 2 AMJ-S Modules Cat.6 <sub>A</sub> T568A, suitable for switching programs of several manufacturers*	for cable duct and underfloor, for flush-mounting installation special electronics boxes are required; mating direction 45°	AMJ-S
J00020A0511	Design capable module carrier AMJ-S double gang UP/0 flex	module carrier incl. 2 AMJ-S Modules Cat.6 <sub>A</sub> T568B, suitable for switching programs of several manufacturers*	for cable duct and underfloor, for flush-mounting installation special electronics boxes are required; mating direction 45°	AMJ-S

\*an overview with suitable switching programs of several manufacturers can be found at [www.telegaertner.com](http://www.telegaertner.com) / Downloads

## Modular System AMJ-S/AMJ/UMJ

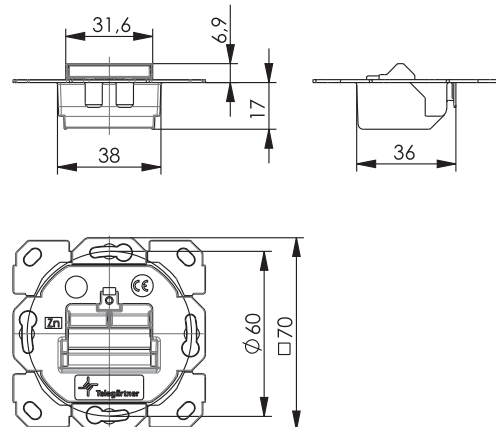


Cat.6A

AMJ-S

REAL-TIME  
RE-EMBEDDED

Order no.	Short name	Type	Remarks	Series
J00020A0512	Design capable module carrier AMJ-S triple gang UP/50 flex	module carrier incl. 3 AMJ-S Modules Cat.6 <sub>A</sub> T568A, suitable for switching programs of several manufacturers*	for cable duct and underfloor, not for use in flush-mounting boxes with installation opening of 58 mm; mating direction 45°	AMJ-S
J00020A0513	Design capable module carrier AMJ-S triple gang UP/50 flex	module carrier incl. 3 AMJ-S Modules Cat.6 <sub>A</sub> T568B, suitable for switching programs of several manufacturers*	for cable duct and underfloor, not for use in flush-mounting boxes with installation opening of 58 mm; mating direction 45°	AMJ-S



AMJ-S

Order no.	Short name	Type	Remarks	Series
H02010B0085	Design capable single and double gang module carrier AMJ-S UP/0 flex	single and double gang module carrier without AMJ-S Modules; suitable with switching programs from several manufacturers*	without AMJ-S Modules; for cable duct, mating direction 45°	AMJ-S

2.4

\*an overview with suitable switching programs of several manufacturers can be found at [www.telegaertner.com](http://www.telegaertner.com) / Downloads

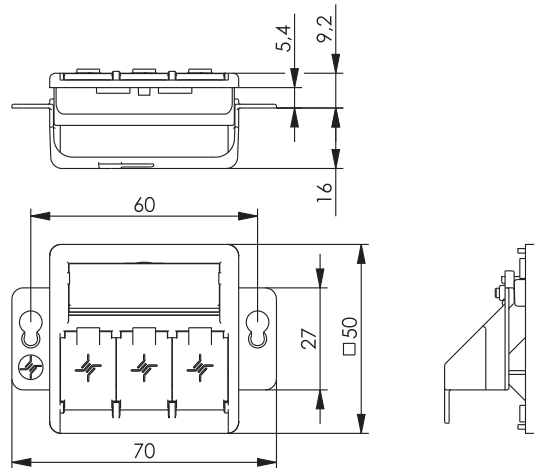
# Modular System AMJ-S/AMJ/UMJ

## 2.4

## Applications for AMJ-S Modules and AMJ/UMJ Modules/Coupler

## 2.4.1

### Cable Duct Mounting - suitable for switching programs



AMJ-S

Order no.	Short name	Remarks	Series
H02010A0086	Design capable tribble gang module carrier AMJ-S UP/50 flex without AMJ-S Modules	for cable duct and underfloor, not for use in flush-mounting boxes with installation opening of 58 mm; mating direction 45°	AMJ-S



AMJ-S

Order no.	Short name	Series	Colour
F00020A0123	Faceplate 50 x 50 mm for AMJ45 8 UP/0 and design capable module carrier AMJ-S; with screw, transparent label field, cover and 1 protection flap	AMJ45; AMJ-S	alpine white



AMJ-S

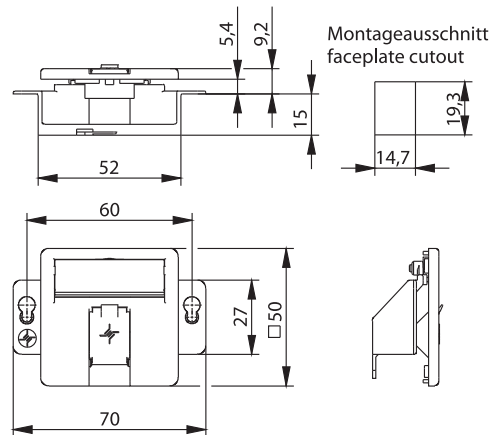
Order no.	Short name	Series	Colour
F00020A0113	Faceplate 50 x 50 mm for AMJ45 8/8 UP/0 and design capable module carrier AMJ-S; with screw, transparent label field, cover and 2 protection flaps	AMJ45; AMJ-S	alpine white



## Modular System AMJ-S/AMJ/UMJ

## Cable Duct Mounting

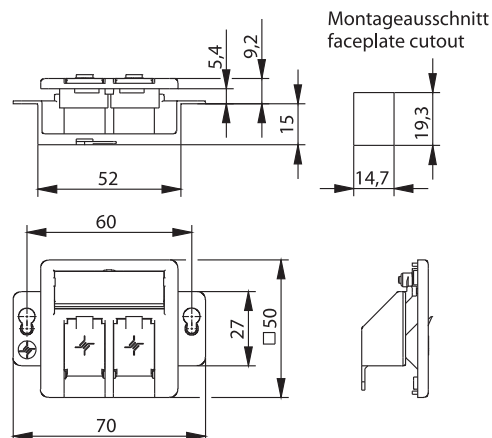
2.4.2



AMJ-S

AMJ

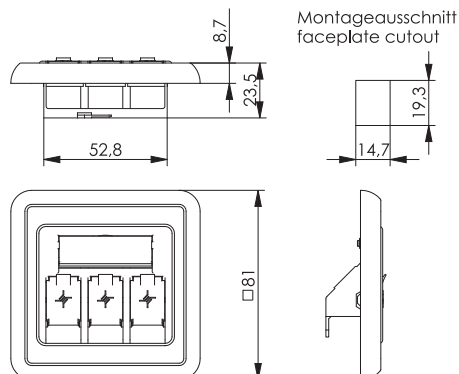
Order no.	Short name	Type	Remarks	Series	Colour
H02010A0079	Faceplate 50x50	Single gang UP/50 incl. module carrier, label field and shutter, without Module/Coupler	for cable duct and underfloor, for flush-mounting installation special electronics boxes are required; mating direction 45°	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	alpine white



AMJ-S

AMJ

Order no.	Short name	Type	Remarks	Series	Colour
H02010A0081	Faceplate 50x50	Double gang UP/50 incl. Module Carrier, label field and shutter, without Module/Coupler	for cable duct and underfloor, for flush-mounting installation special electronics boxes are required; mating direction 45°	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	alpine white



AMJ-S

AMJ

Order no.	Short name	Type	Remarks	Series	Colour
H02010A0053	Faceplate 80x80	Triple gang UP incl. module carrier, label field and shutter, without Module/Coupler	for cable duct, mating direction 45°	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	alpine white

2.4

# Modular System AMJ-S/AMJ/UMJ

## 2.4


## Applications for AMJ-S Modules and AMJ/UMJ Modules/Coupler

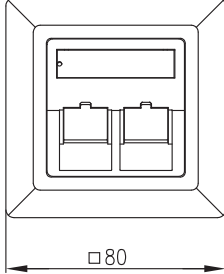
## 2.4.2

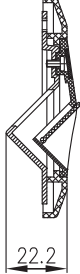
### Cable Duct Mounting

AMJ-S

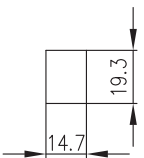
AMJ








Montageausschnitt  
faceplate cutout

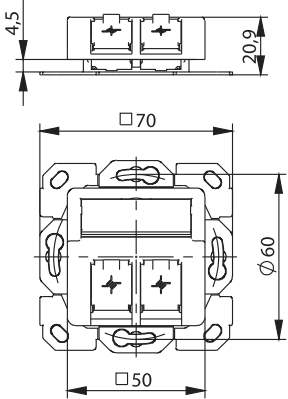


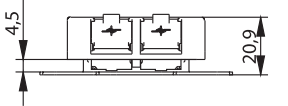
Order no.	Short name	Type	Remarks	Series	Colour
H02010A0040	Faceplate 80x80	Double gang UP, without Module/ Coupler, mating direction 45°	without frame also suitable for UP/50 cable duct	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	alpine white

AMJ-S


AMJ








Montageausschnitt  
faceplate cutout

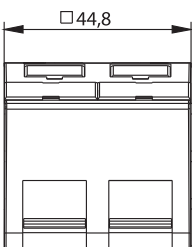


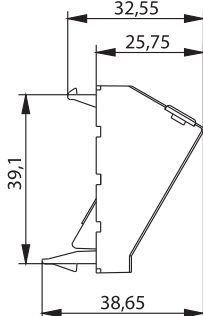
Order no.	Short name	Type	Remarks	Series	Colour
H02010A0083	Faceplate 50x50, projecting	Double gang UP/50 incl. Module Carrier, label field and shutter, without Module/Coupler	for flush mounting and cavity wall outlets acc. to DIN 49073, mating direction 30°	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	alpine white

AMJ-S

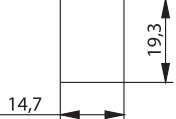
AMJ





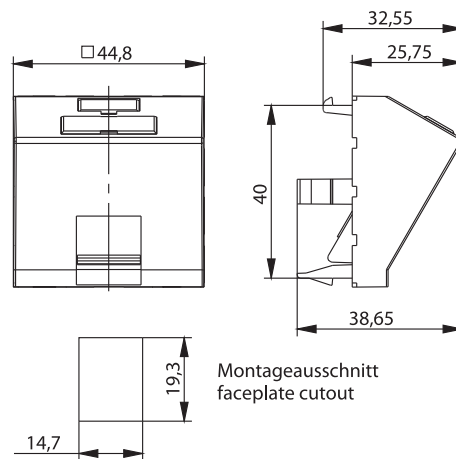


Montageausschnitt  
faceplate cutout



Order no.	Short name	Type	Remarks	Series	Colour
H02010C0063	Faceplate 45x45, french style	Double gang incl. label field, icon and shutter, without Module/Coupler	for cable duct	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	white

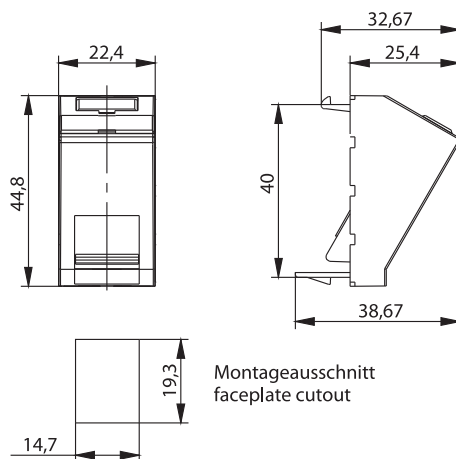
## Modular System AMJ-S/AMJ/UMJ



AMJ-S

AMJ

Order no.	Short name	Type	Remarks	Series	Colour
H02010C0064	Faceplate 45x45, french style	Single gang incl. label field, icon and shutter, without Module/Coupler	for cable duct	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	white



AMJ-S

AMJ

Order no.	Short name	Type	Remarks	Series	Colour
H02010C0065	Faceplate 22,5x45, french style	Single gang incl. label field, icon and shutter, without Module/Coupler	for cable duct	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	white

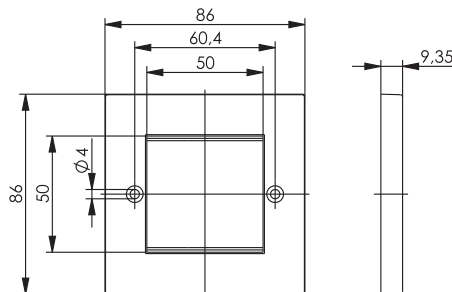
# Modular System AMJ-S/AMJ/UMJ

## 2.4

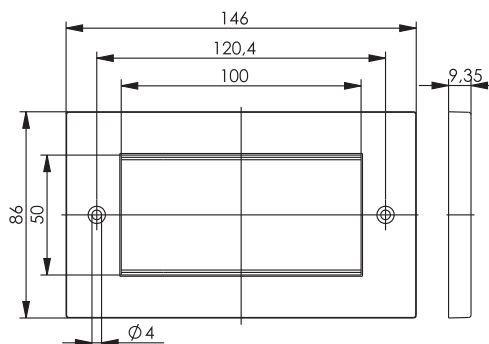
## Applications for AMJ-S Modules and AMJ/UMJ Modules/Coupler

## 2.4.2

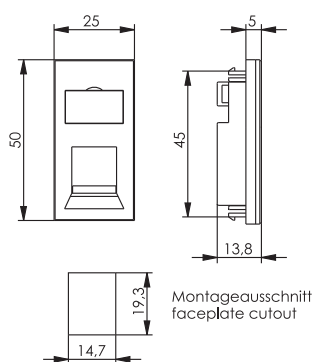
### Cable Duct Mounting



Order no.	Short name	Type	Series	Colour
B00005A0011	cover frame 86x86	double gang	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	white

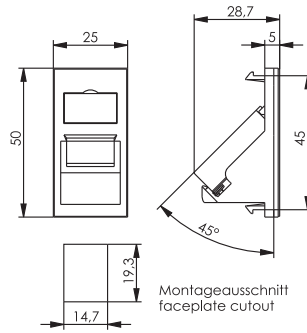


Order no.	Short name	Type	Series	Colour
B00005A0012	cover frame 86x146	quad gang	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	white



Order no.	Short name	Type	Remarks	Series	Colour
H02010A0068	Faceplate 25x50 UK-Style	Single gang incl. label field and Shutter, w/o Modules	mating direction 180°	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	white

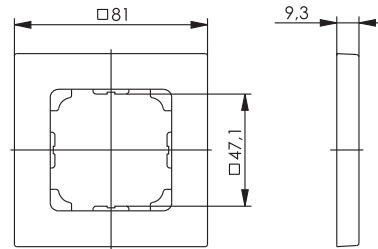
# Modular System AMJ-S/AMJ/UMJ



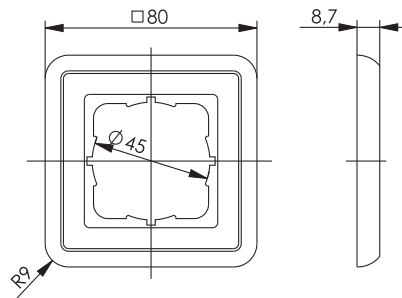
AMJ-S

AMJ

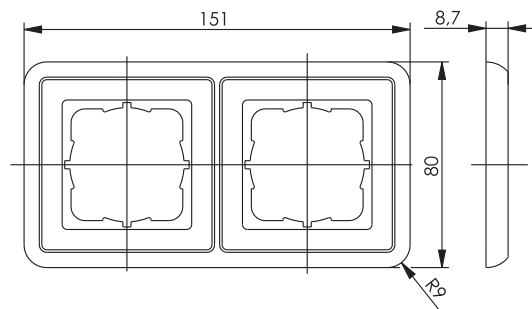
Order no.	Short name	Type	Remarks	Series	Colour
H02010A0069	Faceplate 25x50 UK-Style	Single gang incl. label field and Shutter, w/o Modules	mating direction 45°	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	white



Order no.	Short name	Type	Series	Colour
B00004A0024	Cover frame	Single, 81x81	AMJ45, UMJ45, Modular System AMJ/UMJ, OAD/S	alpine white



Order no.	Short name	Type	Series	Remarks	Colour
B00004A0021	Cover frame	Single, 80x80	AMJ45, UMJ45, Modular System AMJ/UMJ, OAD/S	not suitable for J00020A0512 / J00020A0513	alpine white



Order no.	Short name	Type	Series	Remarks	Colour
B00005A0009	Cover frame	Double, 80x151	AMJ45, UMJ45, Modular System AMJ/UMJ, OAD/S	not suitable for J00020A0512 / J00020A0513	alpine white


# Modular System AMJ-S/AMJ/UMJ

## 2.4

## Applications for AMJ-S Modules and AMJ/UMJ Modules/Coupler

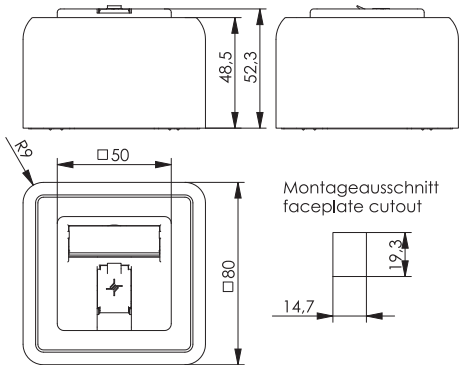
## 2.4.3

### Surface Mounting




AMJ-S

AMJ



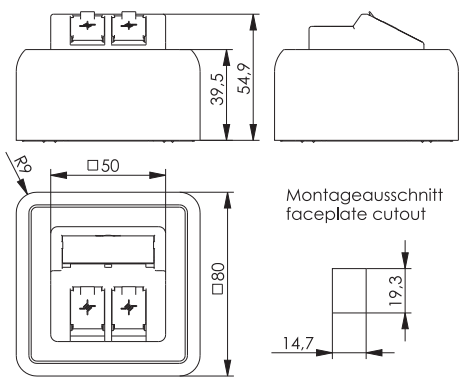
Montageausschnitt  
faceplate cutout

Order no.	Short name	Type	Remarks	Series	Colour
H02000A0090	Faceplate 80x80	Single gang AP incl. module carrier, label field and shutter, without Module/Coupler	mating direction 45°	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	alpine white




AMJ-S

AMJ

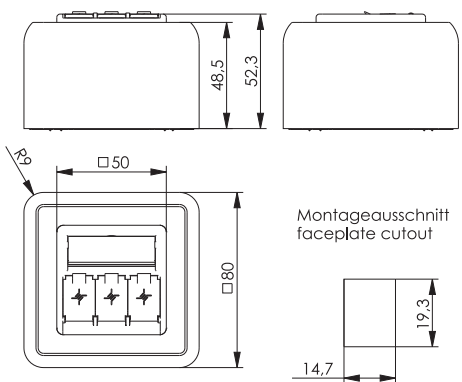


Montageausschnitt  
faceplate cutout

Order no.	Short name	Type	Remarks	Series	Colour
H02000A0092	Faceplate 80x80, projecting	Double gang AP incl. Module Carrier, label field and shutter, without Module/Coupler	mating direction 30°	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	alpine white



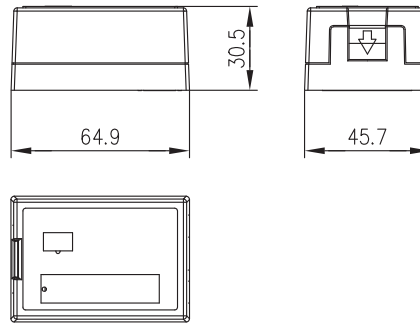
AMJ-S



Montageausschnitt  
faceplate cutout

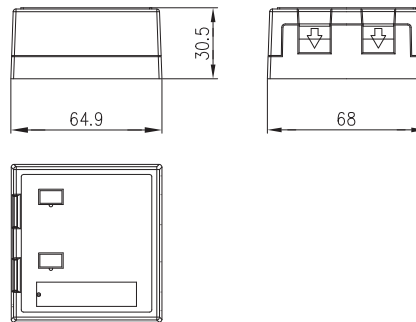
Order no.	Short name	Type	Remarks	Series	Colour
H02000A0096	Faceplate 80x80	Triple gang AP incl. Module Carrier, label field and shutter, without Module/Coupler	mating direction 45°	AMJ-S	alpine white

## Modular System AMJ-S/AMJ/UMJ



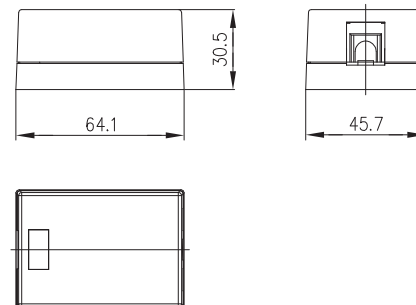
AMJ

Order no.	Short name	Type	Series	Colour
H02000A0071	Outlet 46x64	Single gang surface mounting box incl. label field and shutter, without Module/Coupler	AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	alpine white



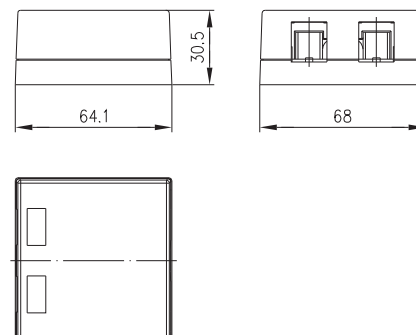
AMJ

Order no.	Short name	Type	Series	Colour
H02000A0072	Outlet 68x64	Double gang surface mounting box incl. label field and shutter, without Module/Coupler	AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	alpine white



AMJ

Order no.	Short name	Type	Series	Colour
H02000A0064	Outlet 46x64	Single gang surface mounting box, without Module/Coupler	AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	alpine white



AMJ

AMJ-S

Order no.	Short name	Type	Series	Colour
H02000B0065	Outlet 68x64	Double gang surface mounting box, without Modules/Coupler	AMJ-S Module; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	alpine white

# Modular System AMJ-S/AMJ/UMJ

## 2.4

## Applications for AMJ-S Modules and AMJ/UMJ Modules/Coupler

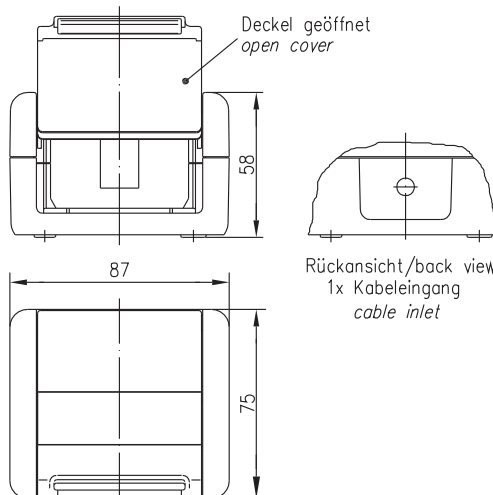
## 2.4.3

### Surface Mounting



AMJ-S

AMJ

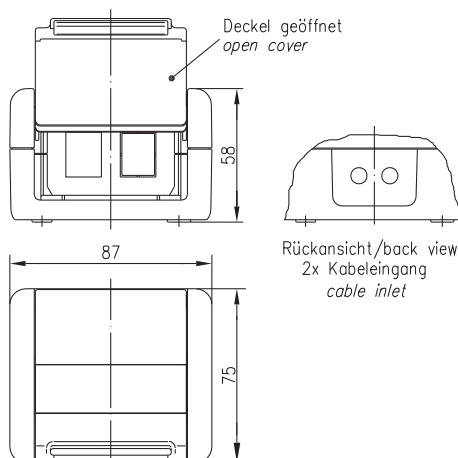


Order no.	Short name	Type	Remarks	Series	Colour
H02000A0069	Outlet IP44 AP	Single gang surface mounting box, without Module/Coupler	for AMJ/ UMJ Modules /Coupler	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	grey



AMJ-S

AMJ

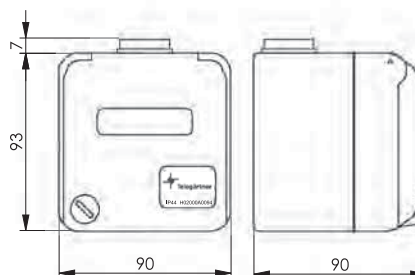


Order no.	Short name	Type	Remarks	Series	Colour
H02000A0070	Outlet IP44 AP	Double gang surface mounting box, without Module/Coupler	for AMJ/ UMJ Modules/ Coupler	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	grey



AMJ-S

AMJ



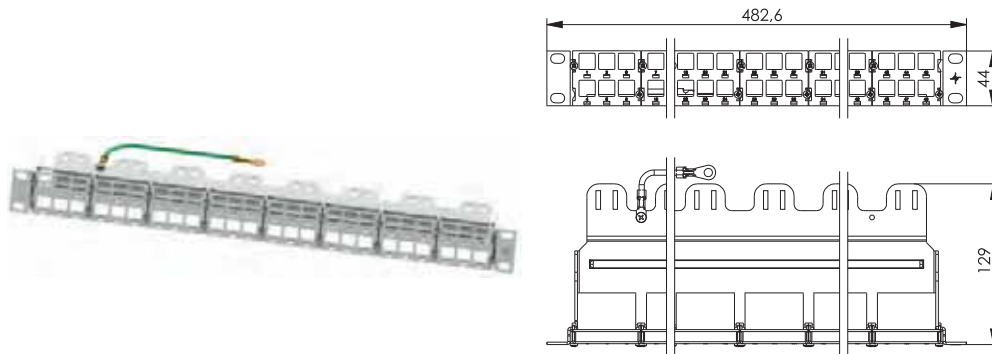
Bestell-Nr.	Short name	Type	Remarks
H02000A0094	Outlet IP44 AP with lock	Double gang surface mounting box, without Module/Coupler	lockable
H01011A0051	Cable gland M25x1,5; 2x8		for 2 cables 3-8 mm, grey



## Modular System AMJ-S/AMJ/UMJ

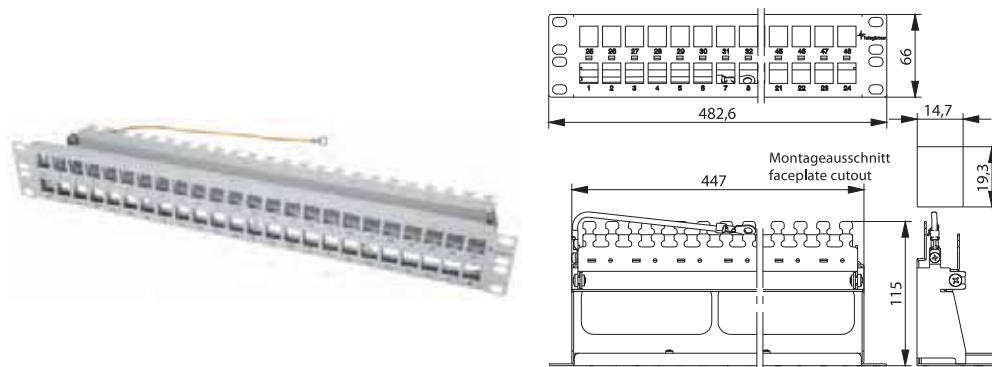
## 19" Module Carrier without Modules/Couplers

2.4.4



AMJ-S

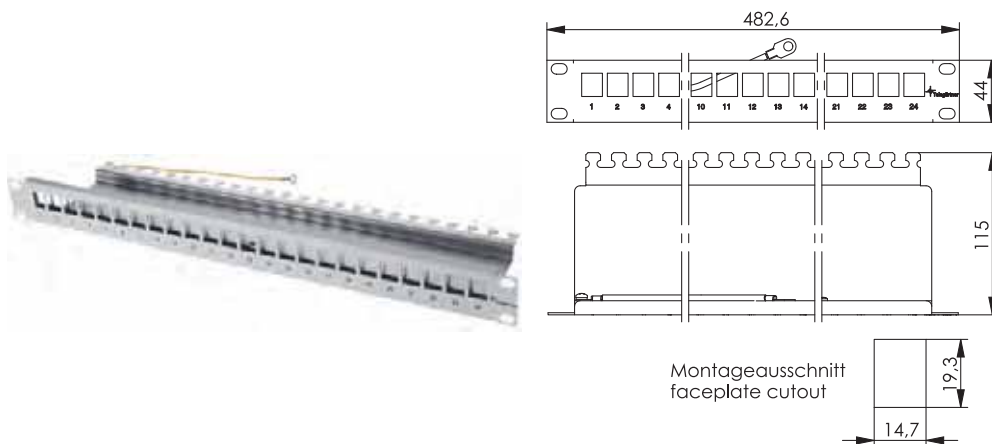
Order no.	Short name	Type	Remarks	Series	Colour
H02025A0236	19" Frontplate 1 HU for 48 AMJ-S Modules	incl. cable strain relief and bonding kit, without Module/Coupler	48 Ports	AMJ-S	sheet steel zinc-plated



AMJ-S

AMJ

Order no.	Short name	Type	Remarks	Series	Colour
H02025A0171	19" Frontplate 1,5 HU	incl. cable strain relief and bonding kit, without Module/Coupler	48 Ports	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	light grey RAL 7035
H02025A0241	19" Frontplate 1,5 HU	incl. cable strain relief and bonding kit, without Module/Coupler	48 Ports	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	black



AMJ-S

AMJ

Order no.	Short name	Type	Remarks	Series	Colour
H02025A0167	19" Frontplate 1 HU	incl. cable strain relief and bonding kit, without Module/Coupler	24 ports	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	light grey RAL 7035
H02025A0220	19" Frontplate 1 HU	incl. cable strain relief and bonding kit, without Module/Coupler	24 ports	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	black

2.4

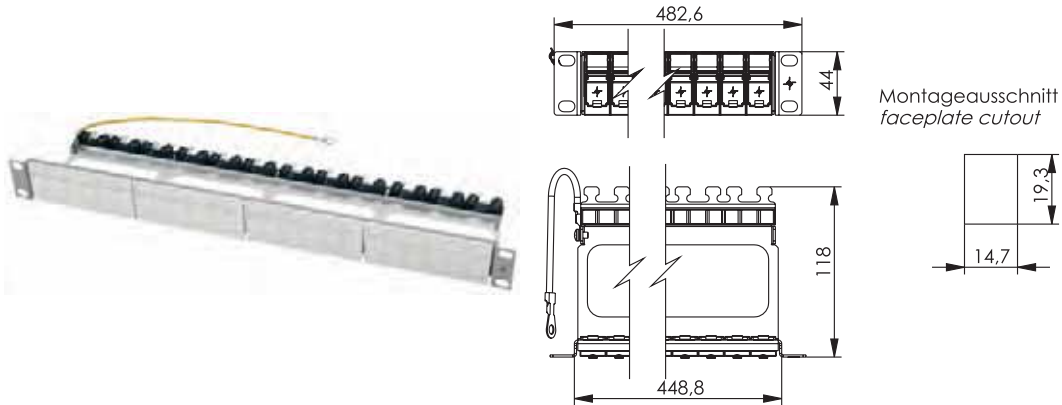
# Modular System AMJ-S/AMJ/UMJ

## 2.4

## Applications for AMJ-S Modules and AMJ/UMJ Modules/Coupler

## 2.4.4

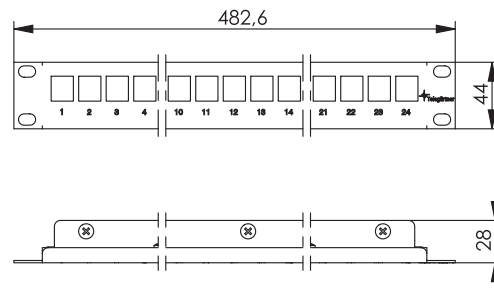
### 19" Module Carrier without Modules/Couplers



AMJ-S

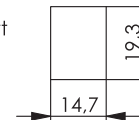
AMJ

Order no.	Short name	Type	Remarks	Series	Colour
H02025A0234	19" Frontplate Flex 1 HU	incl. 24 snap-in bezels, cable management, cable strain relief and bonding kit, without Module/Coupler	24 ports	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	frontplate light grey RAL 7035/ faceplate alpine white
H02025A0199	19" Frontplate Flex 1 HU	incl. 24 snap-in bezels, cable management, cable strain relief and bonding kit, without Module/Coupler	24 ports	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	frontplate light grey RAL 7035/ faceplate alpine white



AMJ-S

AMJ

Montageausschnitt  
faceplate cutout

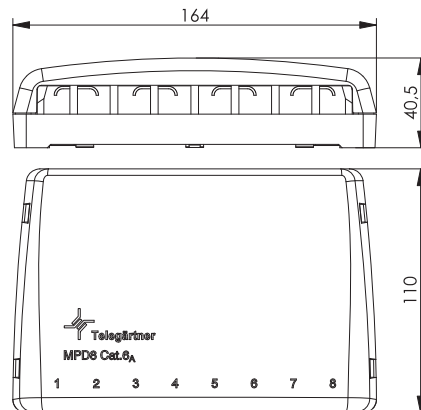
Order no.	Short name	Type	Remarks	Series	Colour
H02025A0197	19" Frontplate 1 HU	without cable strain relief and bonding kit, without Module/Coupler	24 ports	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	light grey RAL 7035
H02025A0221	19" Frontplate 1 HU	without cable strain relief and bonding kit, without Module/Coupler	24 ports	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	black

## Modular System AMJ-S/AMJ/UMJ

## 2

## Mini Distributor

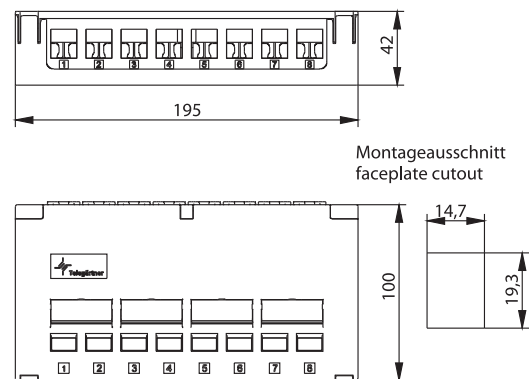
2.4.5



AMJ-S

AMJ

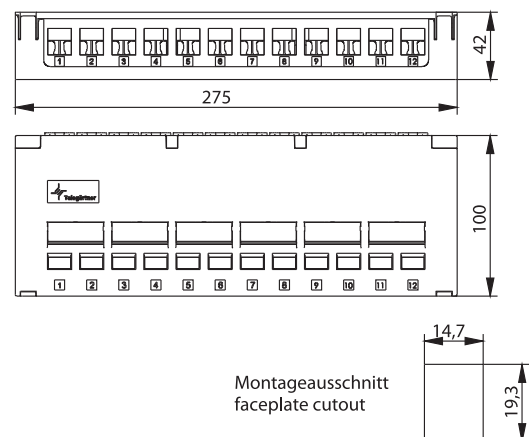
Order no.	Short name	Type	Remarks	Series	Colour
H02000A0103	MPD8 AMJ/UMJ TH35/AP	Mini Distributor without module/coupler	8 Ports, mounting onto DIN Rail TH35 without adapter	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	alpine white



AMJ-S

AMJ

Order no.	Short name	Type	Remarks	Series	Colour
H02000A0080	MPD8 AMJ/UMJ	Mini Distributor without Module/Coupler	8 ports, hinged lip for easy installation	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	alpine white



AMJ-S

AMJ

Order no.	Short name	Type	Remarks	Series	Colour
H02000A0081	MPD12 AMJ/ UMJ	Mini Distributor without Module/Coupler	12 ports, hinged lip for easy installation	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	alpine white

2.4


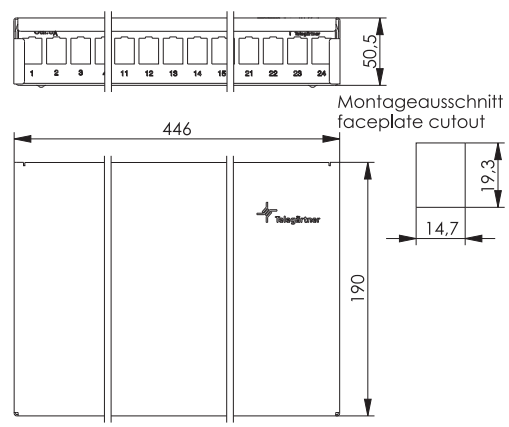
# Modular System AMJ-S/AMJ/UMJ

## 2.4

## Applications for AMJ-S Modules and AMJ/UMJ Modules/Coupler

## 2.4.5

### Mini Distributor

Montageausschnitt  
faceplate cutout

446

190

50.5

14.7

19.3

1 2 3 11 12 13 14 15 21 22 23 24

Telegärtner


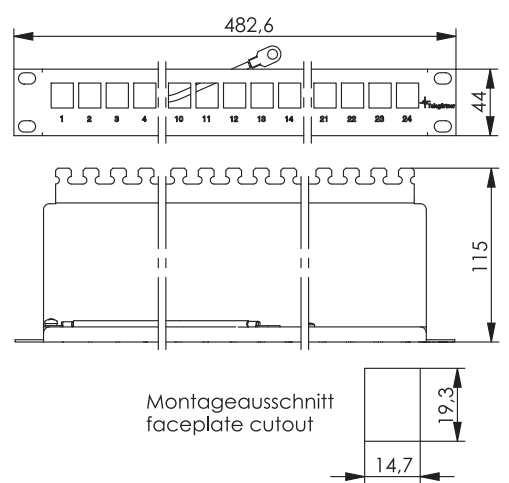
AMJ

AMJ-S

Order no.	Short name	Type	Remarks	Series	Colour
H02025A0260	MPD24 AMJ/UMJ	Mini distributor without Module/Coupler	24 Ports, inclusive cable strain relief	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K	pure white RAL 9010

## 2.4.6

### 19" Module Carrier with Modules/Couplers

Montageausschnitt  
faceplate cutout

482,6

115

44

14,7

19,3

1 2 3 4 10 11 12 13 14 21 22 23 24

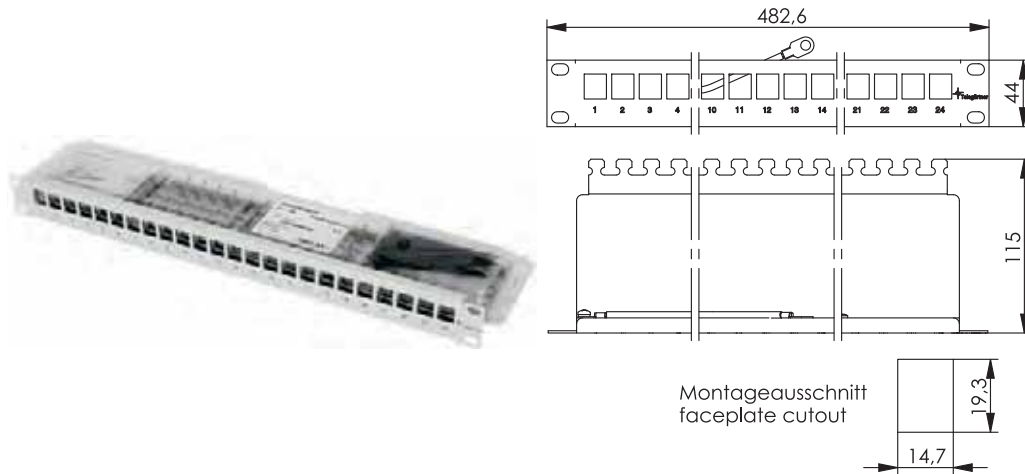
Cat.6A

AMJ-S

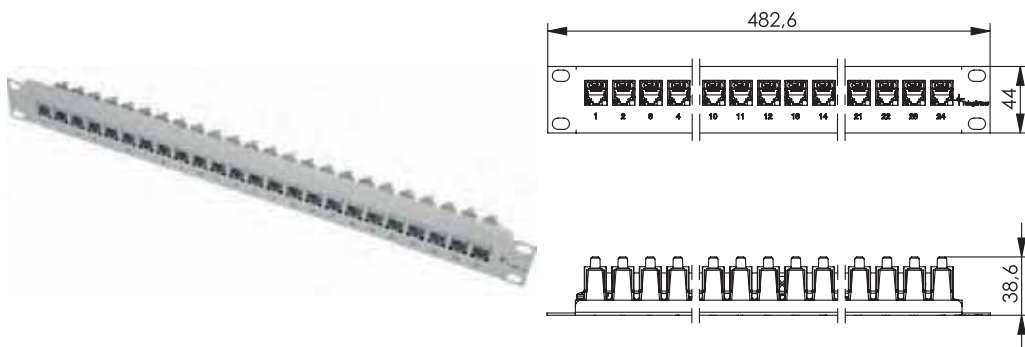
REAL-TIME RE-EMBEDDED

Order no.	Short name	Type	Remarks	Colour
J02023A0039	19" Frontplate 1 HU	incl. 24 AMJ-S Modules Cat.6 <sub>A</sub> T568A, cable strain relief and bonding kit	tool-free connectivity, suitable for RJ45/11/12 plugs	light grey RAL 7035
J02023A0040	19" Frontplate 1 HU	incl. 24 AMJ-S Modules Cat.6 <sub>A</sub> T568B, cable strain relief and bonding kit	tool-free connectivity, suitable for RJ45/11/12 plugs	light grey RAL 7035

# Modular System AMJ-S/AMJ/UMJ



Order no.	Short name	Type	Remarks	Colour
J02023K0027	19" Frontplate 1 HU	incl. 24 AMJ Modules K Cat.6 <sub>A</sub> T568A, cable strain relief and bonding kit	tool-free connectivity, suitable for RJ45/11/12 plugs	light grey RAL 7035
J02023A0033	19" Frontplate 1 HU	incl. 24 AMJ Modules K Cat.6 <sub>A</sub> T568A, cable strain relief and bonding kit	tool-free connectivity, suitable for RJ45/11/12 plugs	black
J02023A0034	19" Frontplate 1 HU	incl. 24 AMJ Modules K Cat.6 <sub>A</sub> T568B, cable strain relief and bonding kit	tool-free connectivity, suitable for RJ45/11/12 plugs	light grey RAL 7035
J02023A0035	19" Frontplate 1 HU	incl. 24 AMJ Modules K Cat.6 <sub>A</sub> T568B, cable strain relief and bonding kit	tool-free connectivity, suitable for RJ45/11/12 plugs	black



Order no.	Short name	Type	Remarks	Colour
J02023A0026	19" Frontplate 1 HU	incl. 24 AMJ coupler K Cat.6, bonding kit, without cable strain relief	suitable for Class E <sub>A</sub> Channel, suitable for RJ45/11/12 plug	light grey RAL 7035
J02023K0025	19" Frontplate 1 HU	incl. 24 AMJ Coupler K Cat.5e, bonding kit, without cable strain relief	suitable for Class E Channel suitable for RJ45/11/12 plug	light grey RAL 7035

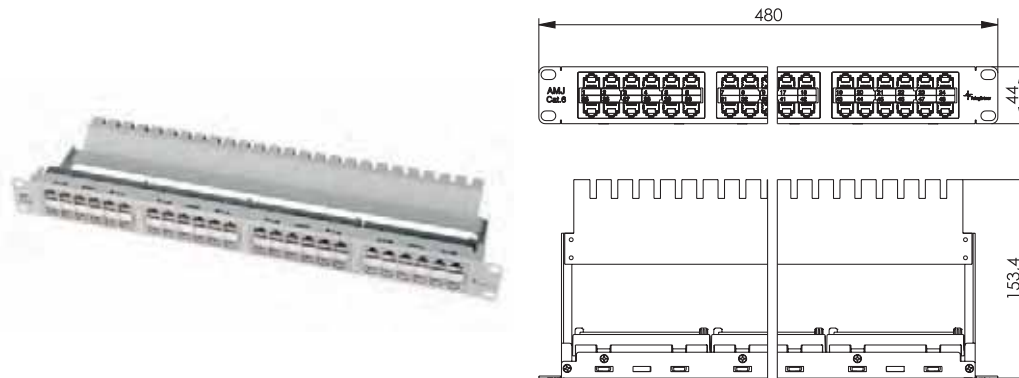
# Modular System AMJ-S/AMJ/UMJ

## 2.4

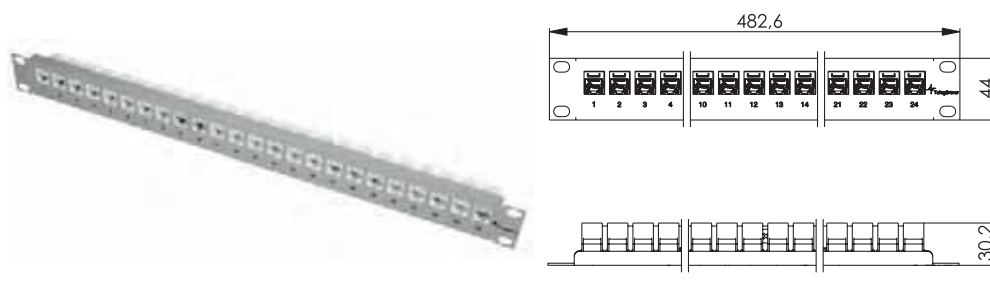
## Applications for AMJ-S Modules and AMJ/UMJ Modules/Coupler

## 2.4.6

### 19" Module Carrier with Modules/Couplers



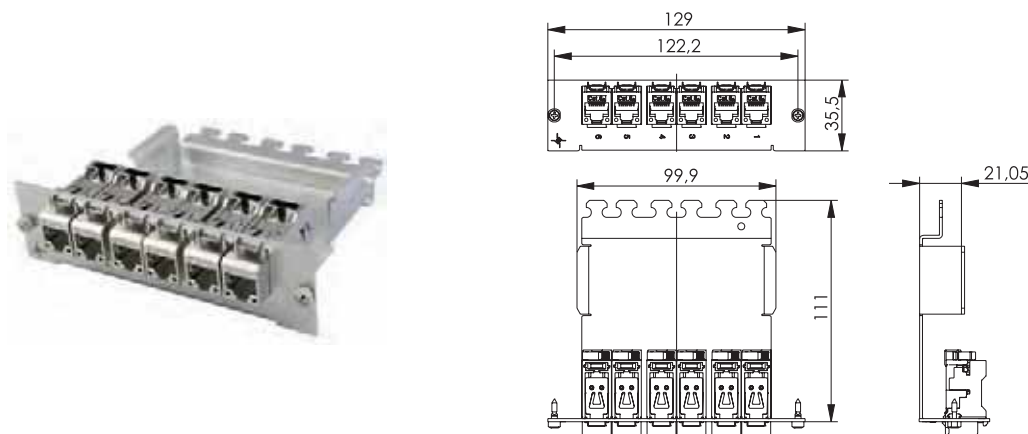
Order no.	Short name	Type	Remarks	Colour
J02024A0007	19" Feedthrough panel, 1 HU	incl. 48 AMJ Coupler K Cat.6 (4x12), cable strain relief and bonding kit	suitable for RJ45/11/12 plugs	light grey RAL 7035
J02024C0007	19" Feedthrough panel, 1 HU	incl. 48 AMJ Coupler K Cat.6 (4x12), cable strain relief and bonding kit	suitable for RJ45/11/12 plugs	black



Order no.	Short name	Type	Remarks	Colour
J02023A0030	19" Frontplate 1 HU	incl. 24 UMJ Coupler K Cat.6, without cable strain relief	suitable for RJ45/11/12 plugs	light grey RAL 7035
J02023K0029	19" Frontplate 1 HU	incl. 24 UMJ Coupler K Cat.5e, without cable strain relief	suitable for RJ45/11/12 plugs	light grey RAL 7035

## 2.4.7

### 3 HU / 7 PU Frontplate with Modules

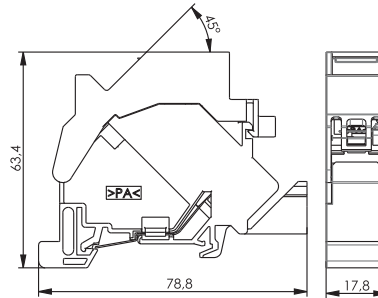


Order no.	Short name	Type	Remarks	Colour
J02021A0037	3 HU / 7 PU Frontplate	incl. 6 AMJ-S Modules Cat.6 <sub>A</sub> T568A	suitable for RJ45/11/12 plugs	aluminium

## Modular System AMJ-S/AMJ/UMJ

## Components for Mounting Rails

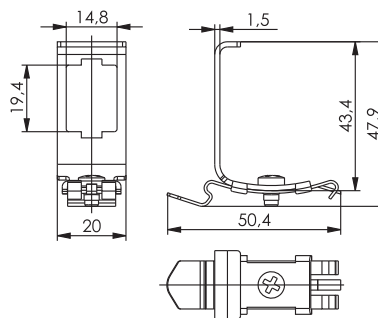
2.4.8

Cat.6<sub>A</sub>

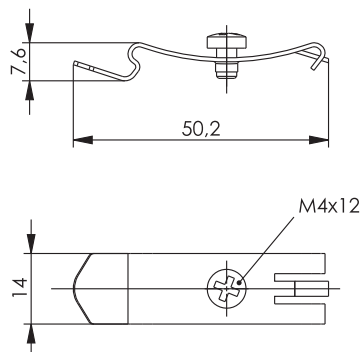
AMJ-S

REAL-TIME  
RE-EMBEDDED

Order no.	Short name	Type	Remarks	Colour
J00023A0205	Mounting rail outlet TS45 AMJ-S	incl. AMJ-S Module Cat.6 <sub>A</sub> T568A	for mounting rail TH35	light grey RAL 7035
J00023A0206	Mounting rail outlet TS45 AMJ-S	incl. AMJ-S Module Cat.6 <sub>A</sub> T568B	for mounting rail TH35	light grey RAL 7035
H02000A0086	Mounting rail outlet TS45 AMJ-S	empty	for mounting rail TH35	light grey RAL 7035



Order no.	Short name	Type	Remarks	Series
H06000B0045	Mounting rail adaptor	metal, without Module/Coupler	for mounting rail TH35	AMJ-S; AMJ Module K; AMJ Coupler K; UMJ Module K; UMJ Coupler K



Order no.	Short name	Type	Remarks
H06000A0056	Mounting set for mounting rail adaptor	metal	for mounting rail TH35, e.g. for MPD6, MPD8, MPD12

2.4

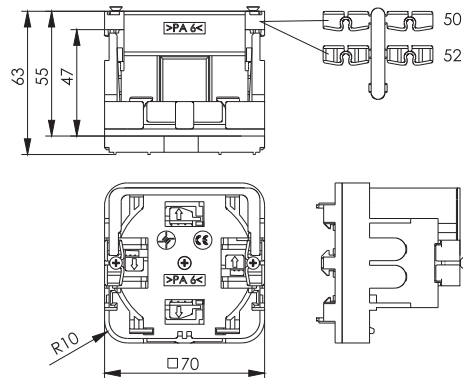
# Modular System AMJ-S/AMJ/UMJ

## 2.4

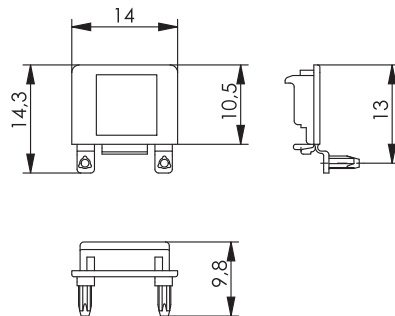
## Applications for AMJ-S Modules and AMJ/UMJ Modules/Coupler

## 2.4.9

### Accessories



Order no.	Short name	Type
H02010B0014	Universal Equipment Mounting Set for installation of outlets AMJ45, UMJ45 in cable ducts for heights 47, 50, 52 and 55 mm and for top hat rails, C-rails, Combi-rails	without half shell
H02010B0013	Universal Equipment Mounting Set for installation of outlets AMJ45, UMJ45 in cable ducts for heights 47, 50, 52 and 55 mm and for top hat rails, C-rails, Combi-rails	with 1 half shell



Order no.	Short name	Colour	Remarks
B00001A0016	protection flap for AMJ-S, AMJ	black RAL 9005	contents 100 pcs.
B00001B0016	protection flap for AMJ-S, AMJ	orange RAL 2009	contents 100 pcs.
B00001C0016	protection flap for AMJ-S, AMJ	green RAL 6017	contents 100 pcs.
B00001D0016	protection flap for AMJ-S, AMJ	blue RAL 5015	contents 100 pcs.
B00001E0016	protection flap for AMJ-S, AMJ	yellow RAL 1023	contents 100 pcs.



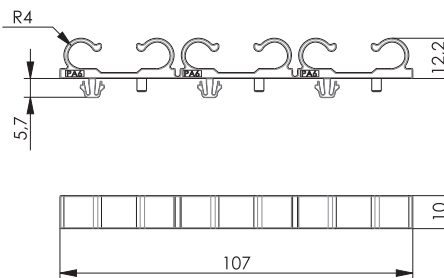
Order no.	Short name	Colour
B00002A0014	protection flap for faceplate; for AMJ-S, AMJ, AMJ45	alpine white
B00002B0014	protection flap for faceplate; for AMJ-S, AMJ, AMJ45	red RAL 3020
B00002C0014	protection flap for faceplate; for AMJ-S, AMJ, AMJ45	green RAL 6017
B00002D0014	protection flap for faceplate; for AMJ-S, AMJ, AMJ45	blue RAL 5015
B00002E0014	protection flap for faceplate; for AMJ-S, AMJ, AMJ45	yellow RAL 1023
B00002F0014	protection flap for faceplate; for AMJ-S, AMJ, AMJ45	black RAL 9005



## Modular System AMJ-S/AMJ/UMJ



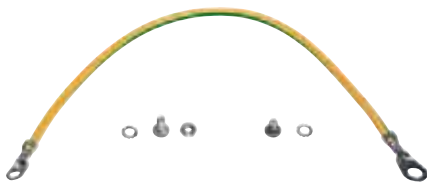
Order no.	Short name	Type
N00000A0013	Plier wrench 1 3/8 inch	auxiliary tool for AMJ, STX and UMJ Module; MFP8/UF8 assembly, 2 in 1 tool: gripper and spanner



Order no.	Short name	Type	Colour
H01011A0048	Cable guiding set for 24 cables	suitable for frontplate H02025A0171, H02025A0241, H02025A0260	black



Order no.	Short name	Type
N00000B0020	Parallel pressing tool	auxiliary tool for AMJ, UMJ, STX Module and MFP8/UF8 plug assembly



Order no.	Short name	Type
L00040A0009	Bonding kit	L=0,3 m, for MPD/MPP

Order no.	Short name
B05002A0012	Marking strip 12 x 430 mm self-adhesive

# Modular System AMJ-S/AMJ/UMJ

## 2.4

## Applications for AMJ-S Modules and AMJ/UMJ Modules/Coupler

## 2.4.9

### Accessories



Order no.	Short name
H06000A0001	Fixing set for patch panels (4 screws M6x16 with nuts)



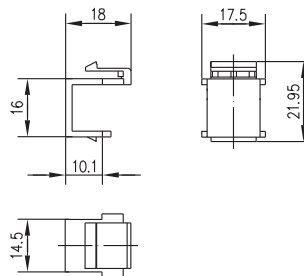
Order no.	Short name
B06013A0010	Cable management bar for 19" patch panels



Order no.	Short name
H02025A0343	19" Patch panel with 5 cable guide bars (plastic)

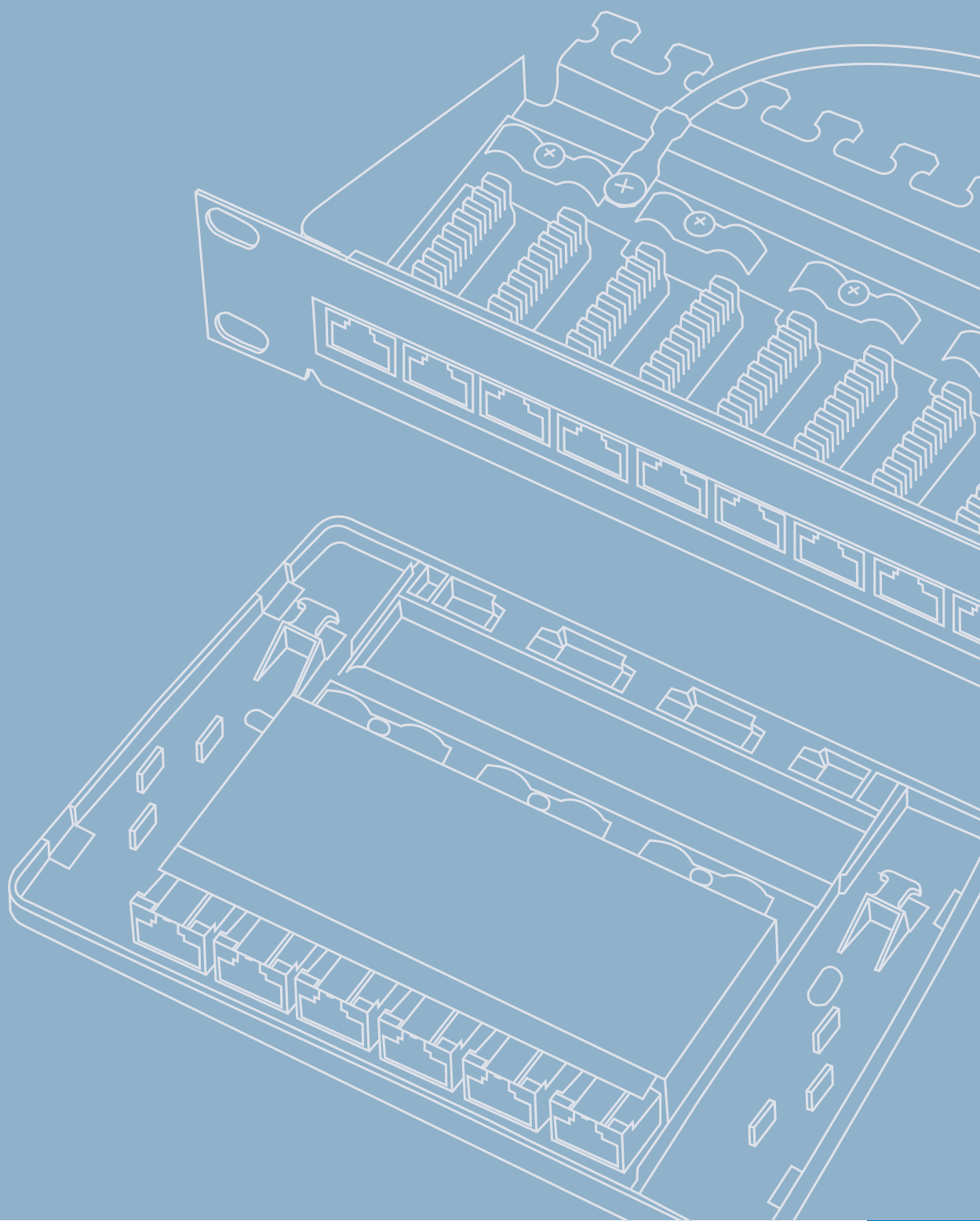


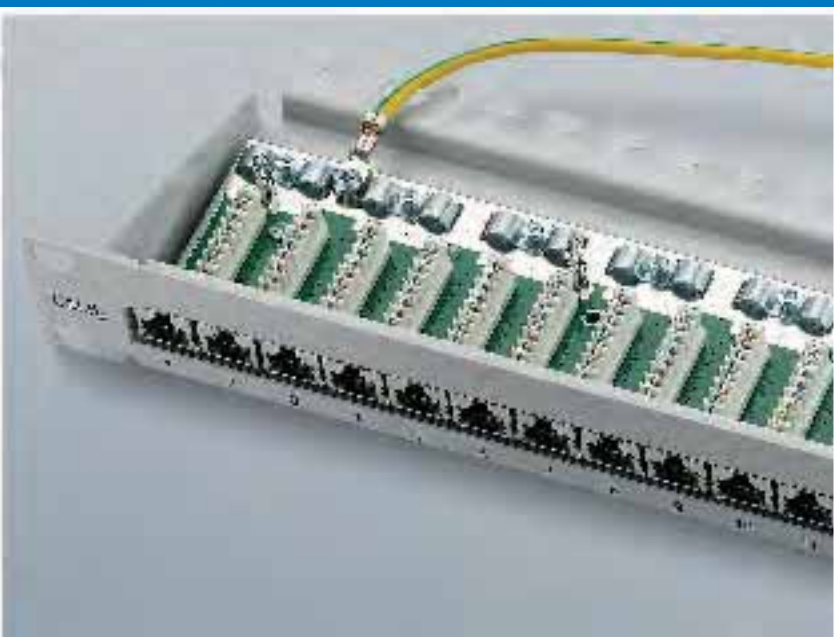
Order no.	Short name
H02025A0116	Cable management plate for 19" patch panels 1 HU



Order no.	Short name	Colour	Mount. dim.
H00030A0008	Blind cover for 19" module carrier and surface mounting boxes	black	Z131

## Patch Panels and Distributors





# 3

## Patch Panels and Distributors

<b>3.1</b>	<b>19" Patch Panels K Cat.6<sub>A</sub>, Cat.6A &amp; Cat.6</b> .....	<b>108</b>
3.1.1	MPP24 K Cat.6 <sub>A</sub> & Cat.6A .....	108
3.1.2	MPP16 K Cat.6 <sub>A</sub> .....	108
3.1.3	19" Feedthrough Panel Cat.6.....	109
<b>3.2</b>	<b>19" Patch Panels K Class E<sub>A</sub> 500</b> .....	<b>109</b>
3.2.1	MPP24 K Class E <sub>A</sub> 500.....	109
<b>3.3</b>	<b>19" Patch Panels Cat.5e</b> .....	<b>110</b>
3.3.1	MPP24 Cat.5e .....	110
<b>3.4</b>	<b>19" Cross Connect Panel</b> .....	<b>110</b>
<b>3.5</b>	<b>10" Mini Patch Panel K Cat.6<sub>A</sub></b> .....	<b>111</b>
<b>3.6</b>	<b>19" ISDN/Tel. Patch Panels Cat.3</b> .....	<b>111</b>
3.6.1	MPP125 Cat.3 .....	111
3.6.2	MPP150 Cat.3 .....	112
<b>3.7</b>	<b>Mini Distributor</b> .....	<b>113</b>
3.7.1	Mini Distributor MPD6 K Cat.6 <sub>A</sub> & Cat.6A.....	113
3.7.2	Mini Distributor MPD8 K Cat.6 <sub>A</sub> .....	115
3.7.3	Mini Distributor MPD12 K Cat.6 <sub>A</sub> & Cat.6A.....	115
3.7.4	Mini Distributor MPD24-HS K Cat.6 <sub>A</sub> .....	116
3.7.5	Accessories for Mini Distributor .....	116
<b>3.8</b>	<b>Adaptors</b> .....	<b>117</b>
3.8.1	T-Adaptors.....	117
3.8.2	Adaptors ISDN/Tel. ....	118
<b>3.9</b>	<b>Tools and Accessories for Patch Panels and Mini Distributors</b> .....	<b>119</b>

## Patch Panels and Distributors

	19" Patch Panels 10" Patch Panels	19" Patch Panels ISDN/Tel.	Mini Distributor
	Cat.6A, Cat.6A Class EA 500 Cat.5e		Cat.6A, Cat.6A
<b>Standards</b>			
Connectors	IEC 60603-7-51 / -7-5 / -7-3 / -7-41	IEC 60603-7	IEC 60603-7-51 / -7-41
<b>Mechanical Characteristics</b>			
Insertion force	≤ 30 N	≤ 20 N	≤ 30 N
Durability (mating cycles)	≥ 750	≥ 750	≥ 750
Material: housing	sheet steel powder coated	sheet steel powder coated	-
Material: housing mini distributor	-	-	ABS
Material: housing mini distributor 3HU	-	-	stainless sheet steel
Material: cover (shielded type)	stainless sheet steel	-	stainless sheet steel
Material: insulators	PA, PBT, PBP, PE	PBT, PPO, PVC	PBT
Material: PCB	FR4	FR4	FR4
Material: PCB finish	tin plated	tin plated	tin plated
Material: contact spring	CuSn, spring steel	CuSn	spring steel
Material: contact spring finish		min. 0,8 µm Au on 1,2 µm Ni	
Material: contact IDC termination	CuZn	CuZn	CuZn
Material: IDC termination finish	tin plated	tin plated	tin plated
LSA Plus: Cu conductor diameter	solid 0.41 - 0.64 mm AWG 26/1 - AWG 22/1		
LSA Plus: Wire diameter	0.7 - 1.6 mm	0.7 - 1.6 mm	0.7 - 1.6 mm
<b>Environmental Requirements</b>			
Ambient temperature	-40° C to + 70° C	-40° C to + 70° C	-40° C to + 70° C
<b>Electrical Characteristics</b>			
Contact resistance	≤ 20 mΩ	≤ 20 mΩ	≤ 20 mΩ
Insulation resistance	≥ 500 MΩ	≥ 500 MΩ	≥ 500 MΩ
Voltage proof: contact-contact	≥ 1000 V, DC	≥ 1000 V, DC	≥ 1000 V, DC
Voltage proof: contact-shield	≥ 1500 V, DC		≥ 1500 V, DC
Current carrying capacity at 50°C	1 A	1 A	1 A
PoE+ acc to IEEE 802.3at	Cat.6A, Cat.6A; Class EA: PoE+; Cat.5e: PoE	-	Cat.6A, Cat.6A: PoE+
<b>Transmission Characteristics</b>			
Category 6A (Component) for products Cat.6A	ISO/IEC 11801, DIN EN 50173-1	-	ISO/IEC 11801, DIN EN 50173-1
Class EA (Permanent Link) for products Cat.6A, Cat.6A, Class EA 500	ISO/IEC 11801, DIN EN 50173-1	-	ISO/IEC 11801, DIN EN 50173-1
Class EA (Channel) for products Cat.6A, Cat.6A, Class EA 500	ISO/IEC 11801, DIN EN 50173-1	-	ISO/IEC 11801, DIN EN 50173-1
Category 5e	ISO/IEC 11801, DIN EN 50173-1	-	-
Category 3	-	ISO/IEC 11801, DIN EN 50173-1	-
Gigabit Ethernet acc. to IEEE 802.3	fulfilled	-	-
10 Gigabit Ethernet acc. to IEEE 802.3an	for Cat.6A, Cat.6A, Class EA 500	-	for Cat.6A

## RJ45 pin colour coding acc. to EIA/TIA 568 A and B


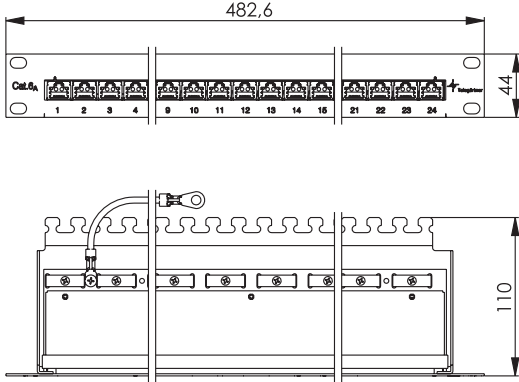


## Patch Panels and Distributors


3.1 19" Patch Panels K Cat.6<sub>A</sub>, Cat.6A & Cat.63.1.1 MPP24 K Cat.6<sub>A</sub> & Cat.6A

## Performance Characteristics

- 19"/10" rack mount unit 1 HU with 12, 16 or 24 RJ45 jacks assembled on one common PCB
- no special tooling required for mounting of cover (shielded type)
- printed circuit board is mounted horizontally
- bonding with the enclosed bonding kit (shielded types)
- cables are terminated via IDC (LSA Plus) terminals with colour coding acc. to EIA/TIA 568 A and B
- 360° shielding can be connected directly on the PCB on a large contact spot using screw clamps, without need of twisting the shielding braid (shielded type)
- limit of 13 mm max. of untwisted length of wires can be easily achieved without restricting an easy installation
- risk of short-circuit between screening braid and wires is minimized due to sufficient space between data terminals and screening contact
- enclosed cable ties for strain relief of the cables without need of screws and special tools
- modular jacks are numbered on the front panel
- housing is made of steel and powder-laminated in light grey (RAL 7035) or black; the cover is made of stainless steel
- Cat.6<sub>A</sub>, Class E<sub>A</sub> 500 & Cat.6A types with overbending protection: >750 mating cycles with RJ45/RJ11/RJ12 plugs


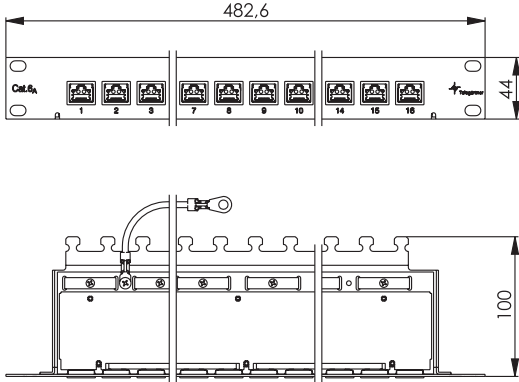



Cat.6<sub>A</sub>




REAL-TIME  
RE-EMBEDDED

Order no.	Short name	Type	Colour
J02023A0050	MPP24-HS K Cat.6 <sub>A</sub>	24 x RJ45 shielded	light grey RAL 7035
J02023S0050	MPP24-HS K Cat.6 <sub>A</sub>	24 x RJ45 shielded	black
J02023A0051	MPP24-H K Cat.6A	24 x RJ45 unshielded, without cover	light grey RAL 7035
J02023S0051	MPP24-H K Cat.6A	24 x RJ45 unshielded, without cover	black

3.1.2 MPP16 K Cat.6<sub>A</sub>



Cat.6<sub>A</sub>



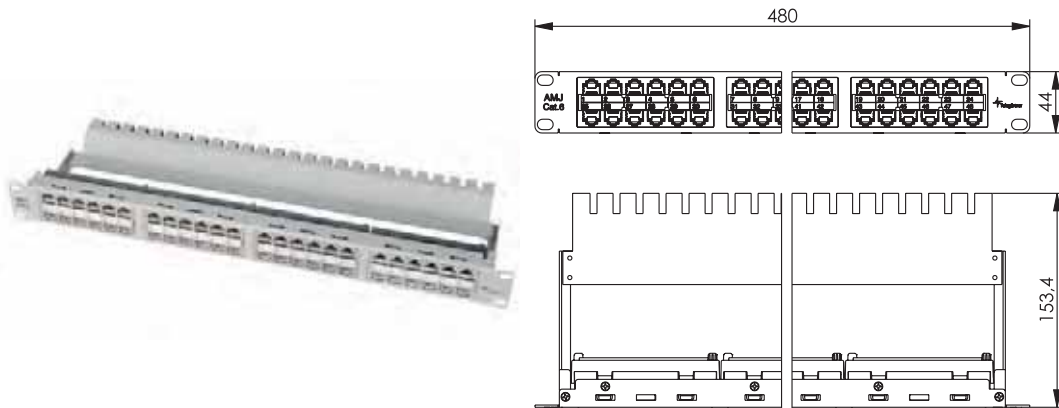
REAL-TIME  
RE-EMBEDDED

Order no.	Short name	Type	Colour
J02022A0050	MPP16-HS K Cat. 6 <sub>A</sub>	16xRJ45 shielded	light grey RAL 7035

## Patch Panels and Distributors

## 19" Feedthrough Panel Cat.6

3.1.3



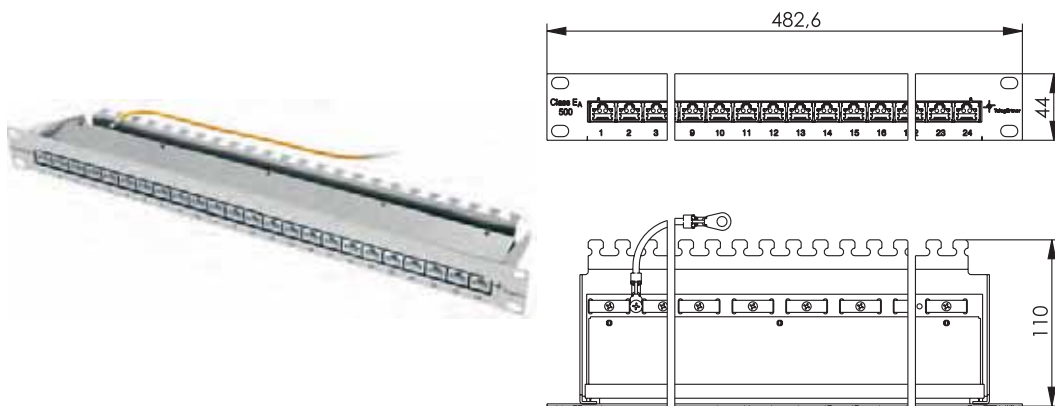
Order no.	Short name	Type	Remarks	Colour
J02024A0007	19" Feedthrough panel, 1 HU	incl. 48 AMJ Coupler K Cat.6 (4x12), cable strain relief and bonding kit	suitable for RJ45/11/12 plugs	light grey RAL 7035
J02024C0007	19" Feedthrough panel, 1 HU	incl. 48 AMJ Coupler K Cat.6 (4x12), cable strain relief and bonding kit	suitable for RJ45/11/12 plugs	black

19" Patch Panels K Class E<sub>A</sub> 500

3.2

MPP24 K Class E<sub>A</sub> 500

3.2.1



Order no.	Short name	Type	Colour
J02023A0052	MPP24-HS K Class E <sub>A</sub> 500	24 x RJ45 shielded	light grey RAL 7035

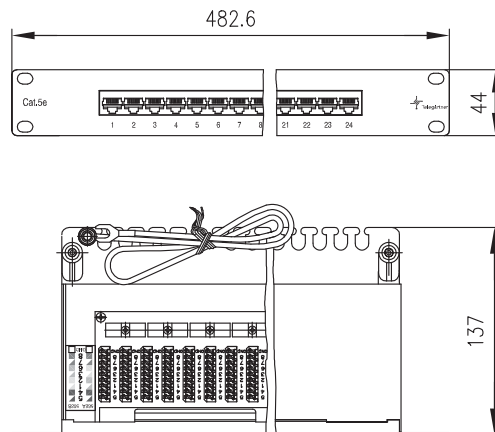
## Patch Panels and Distributors

## 3.3

## 19" Patch Panels Cat.5e

## 3.3.1

## MPP24 Cat.5e



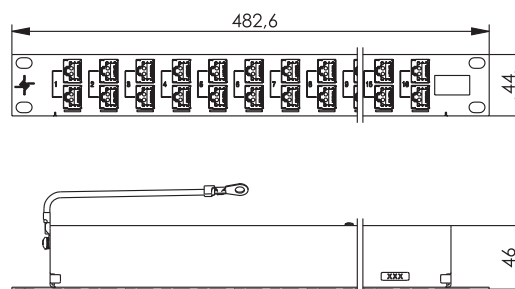
Order no.	Short name	Type	Colour
J02023B0017	MPP24-HS Cat.5e	24 x RJ45 shielded	light grey RAL 7035
J02023B0018	MPP24-H Cat.5e	24 x RJ45 unshielded, without cover	light grey RAL 7035
J02023S0018	MPP24-H Cat.5e	24 x RJ45 unshielded, without cover	black

## 3.4

## 19" Cross Connect Panel

## Performance Characteristics

- 19" Cross Connect Panel – CCP32 with 16 plated-through RJ45 ports
- transmission performance acc. to Class E<sub>A</sub> ISO/IEC 11801
- transmission performance acc. to Cat.6A ANSI/TIA/EIA-568-C.2
- suitable for PoE+ acc. to IEEE 802.3at
- 32 RJ45 jacks suitable for RJ45/11/12/45 plugs
- mating cycles  $\geq$  750
- operating temperature: -40° C to +70° C
- current carrying capacity: 1A @ 50° C
- housing: sheet steel, fully shielded incl. bonding set
- front plate black RAL 9005, screen cover stainless steel zinc-plated
- ports numbered: 1-16
- dimensions: 19", 1 HU, depth: 46 mm

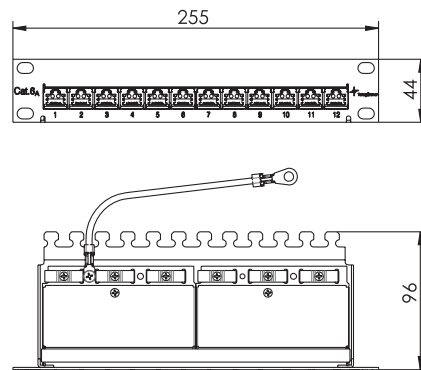
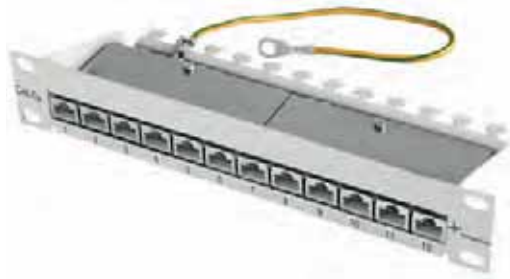


Order no.	Short name	Type	Remarks	Colour
J02022A0059	16 Port Cross Connect Panel CCP32, 1 HU	19", 16 Ports: 32x RJ45, 10 Gigabit Ethernet	suitable for RJ45/11/12 plugs	black



## 10" Mini Patch Panels K Cat.6A

3.5



Cat.6A

Order no.	Short name	Type	Colour
J02022A0057	10" MPP12-HS K Cat.6A	12 x RJ45 shielded	light grey RAL 7035

## 19" ISDN/Telephone Patch Panels Cat.3

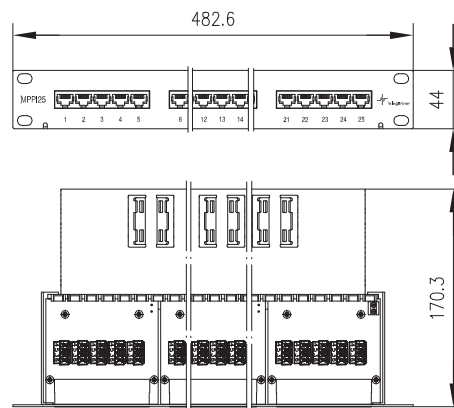
3.6

## Performance Characteristics

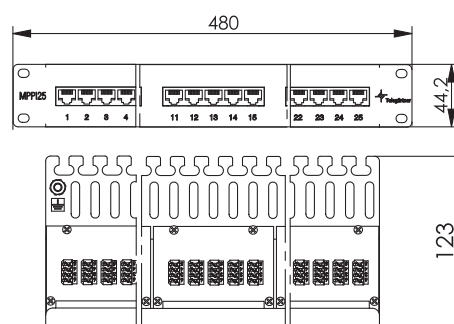
- 19" rack mount unit 1 HU with 25, 30 or 50 RJ45 jacks assembled on one common PCB
- wire termination via IDC (LSA-Plus) terminals
- modular jacks are numbered on the front panel
- strain relief by common cable ties (not included) without need of screws and special tools
- housing made of steel, light grey (RAL 7035) powder-laminated

## MPPI25 Cat.3

3.6.1



Order no.	Short name	Type	Colour
J02023C0014	MPPI25-H	25xRJ45 unshielded, with wire management	light grey RAL 7035



Order no.	Short name	Type	Colour
J02023L0014	MPPI25-H	25xRJ45 unshielded, without wire management	light grey RAL 7035

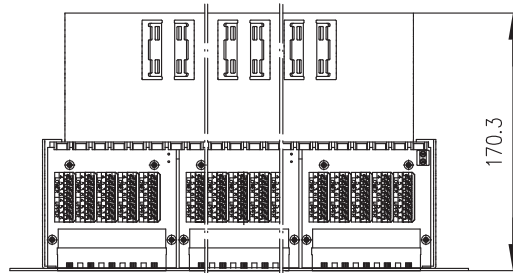
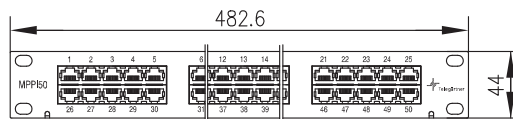
3.6

## 3.6

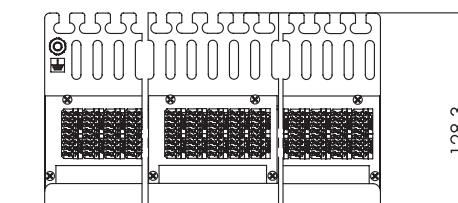
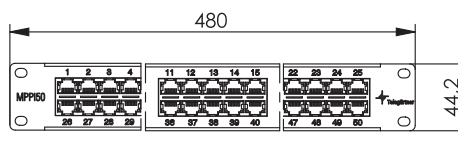
## 19" ISDN/Telephone Patch Panels Cat.3

## 3.6.2

## MPPI50 Cat.3



Order no.	Short name	Type	Colour
J02024C0002	MPPI50-H	50xRJ45 unshielded, with wire management	light grey RAL 7035



Order no.	Short name	Type	Colour
J02024L0002	MPPI50-H	50xRJ45 unshielded, without wire management	light grey RAL 7035

## Mini Distributor

3.7

Networks which have a small number of subscribers require simple and cost-effective distributors without 19" racks and separate EDP rooms. For this purpose we have developed distributors which are suitable as cable distributors or as connection devices for groups of participants at their workdesk.

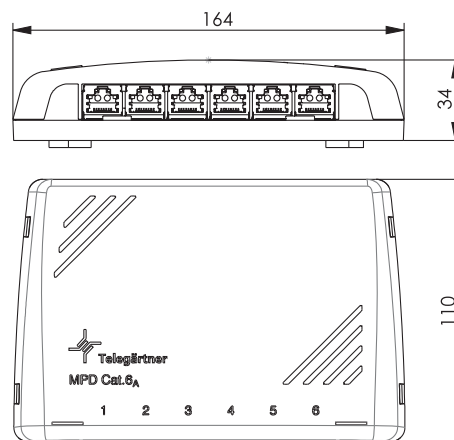
Up to 12 subscribers can be connected using shielded or unshielded installation cabling. The cables can be led into the housing from behind or from below. The distributor can be affixed to the wall, in a cable duct or simply placed on to the desk. A 19" rack mount version (with 3 HU) is also available.

## Performance Characteristics

- Mini distributor MPD6, MPD8, MPD12 with 6, 8 or 12 RJ 45 jacks assembled on one common PCB
- Mini distributors MPD8 AMJ/UMJ and MPD12 AMJ/UMJ for 8 resp. 12 AM-S/AMJ/UMJ modules or couplers
- printed circuit board is mounted horizontally in the housing, shielded versions are provided inside with a metal shielding cover; in addition, a bonding cable can be connected to the PCB (with screw M4)
- no special tooling required for mounting of cover (shielded type)
- enclosed cable ties for strain relief of the cables without need of screws and special tools
- 360 degrees shielding of MPD-HS can be connected directly on the PCB on a large contact spot using a screw clamp without need of twisting the braid
- cables are terminated via IDC (LSA Plus) terminals with colour coding acc. to EIA/TIA 568A and B
- limit of 13 mm max. of untwisted length of wires can be easily achieved without restricting an easy installation
- housing made of thermoplastic, halogene-free, with non-slip bumpers
- shielding cover made of stainless steel
- 19" rack-mount design size 3 HU/7 PU with 6xRJ45 and 3 HU/10 PU with 12xRJ45 available, front plate anodized aluminium
- Cat.6A- & Cat.6A types with overbending protection: suitable for 6- (RJ11/12) and 8-pin connectors (RJ45); can be used in the modular jack without additional installation kits.

## Mini Distributor MPD6 K Cat.6A &amp; Cat.6A

3.7.1



Order no.	Short name	Type	Colour
J02021A0051	MPD6-HS K Cat.6 <sub>A</sub>	shielded	light grey RAL 7035
J02021A0050	MPD6-HS K Cat.6 <sub>A</sub>	shielded	alpine white
J02021A0053	MPD6-H K Cat.6A	unshielded, without cover, also suitable for ISDN/Telephone	light grey RAL 7035


3.7

## Patch Panels and Distributors

## 3.7

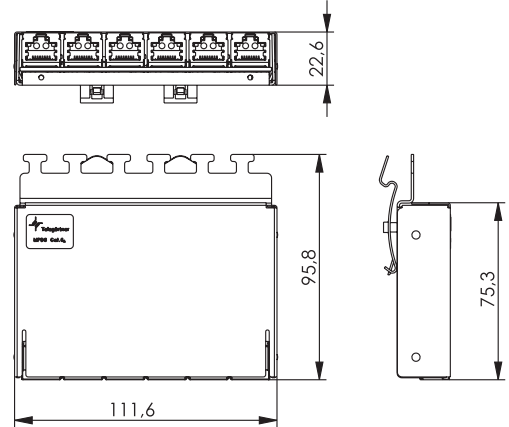
## Mini Distributor

## 3.7.1


Mini Distributor MPD6 K Cat.6<sub>A</sub> & Cat.6A


**Cat.6<sub>A</sub>**

**REAL-TIME RE-EMBEDDED**

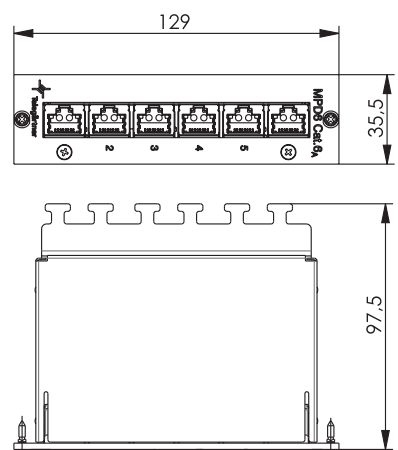


Order no.	Short name	Type	Remarks
J02021A0055	MPD6-HS K Cat.6 <sub>A</sub>	6-port mini distributor metal incl. 2 mounting rail adaptor	suitable for RJ45/11/12 plugs, mounting rail TH35



**Cat.6<sub>A</sub>**

**REAL-TIME RE-EMBEDDED**

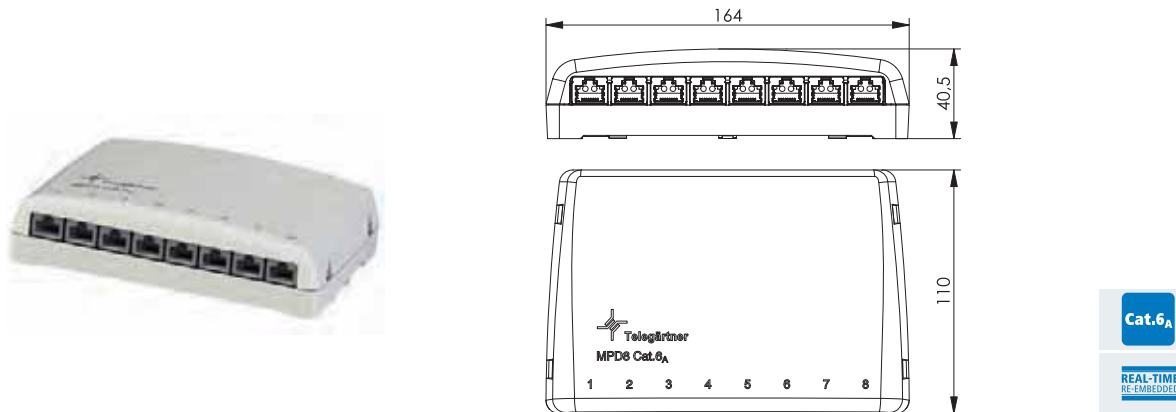


Order no.	Short name	Type	Colour
J02021A0054	MPD6-HS K Cat.6 <sub>A</sub> 3 HU / 7 PU	shielded, 6x RJ45, 3 HU / 7 PU	front panel anodized aluminium

## Patch Panels and Distributors

Mini Distributor MPD8 K Cat.6<sub>A</sub>

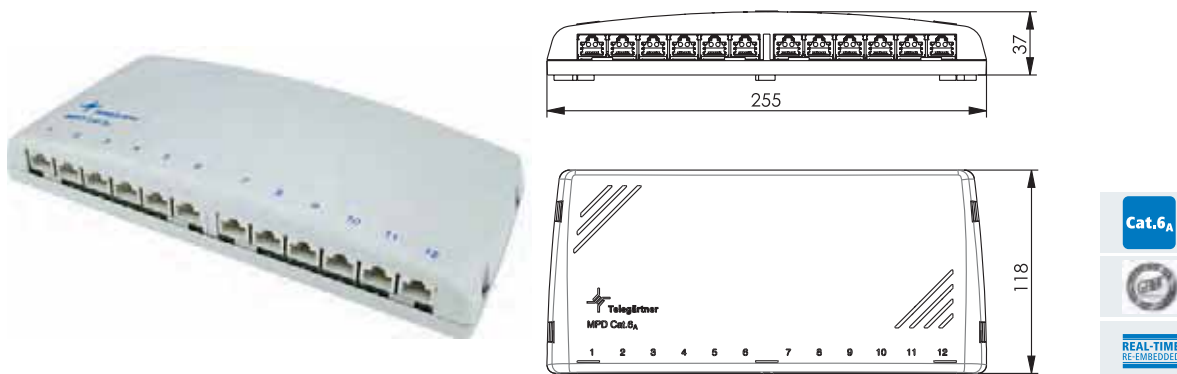
3.7.2

Cat.6<sub>A</sub>REAL-TIME  
RE-EMBEDDED

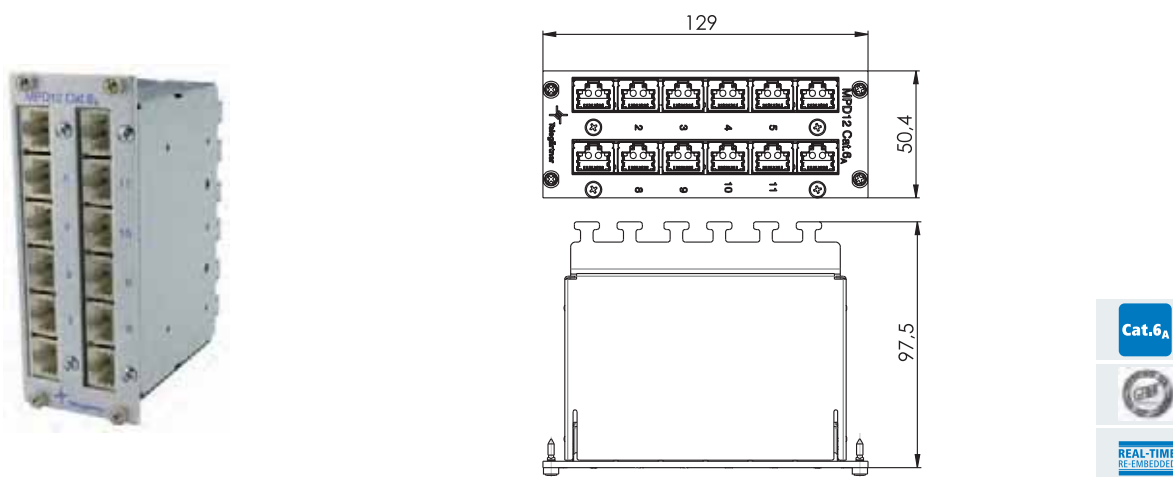
Order no.	Short name	Type	Colour
J02021A0030	MPD8-HS K Cat.6 <sub>A</sub>	shielded, mounting onto mounting rail TH35 without adaptor	alpine white

Mini Distributor MPD12 K Cat.6<sub>A</sub>, Cat.6A

3.7.3

Cat.6<sub>A</sub>REAL-TIME  
RE-EMBEDDED

Order no.	Short name	Type	Colour
J02022A0053	MPD12-HS K Cat.6 <sub>A</sub>	shielded	light grey RAL 7035
J02022A0052	MPD12-HS K Cat.6 <sub>A</sub>	shielded	alpine white
J02022A0054	MPD12-H K Cat.6A	unshielded, without cover, also suitable for ISDN/Telephone	light grey RAL 7035

Cat.6<sub>A</sub>REAL-TIME  
RE-EMBEDDED

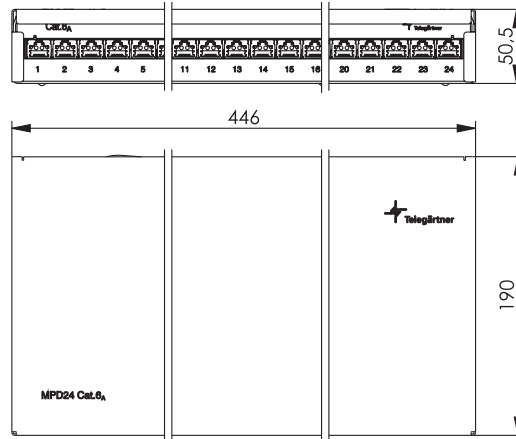
Order no.	Short name	Type	Colour
J02022A0055	MPD12-HS K Cat.6 <sub>A</sub> 3 HU / 10 PU	shielded, 12x RJ45, 3 HU / 10 PU	front panel anodized aluminium
J02022A0056	MPD12-H K Cat.6A - 3 HU / 10 PU	unshielded, without cover, also suitable for ISDN/Telephone	front panel anodized aluminium

3.7

## 3.7

## Mini Distributor

## 3.7.4

Mini Distributor MPD24-HS K Cat.6<sub>A</sub>Cat.6<sub>A</sub>

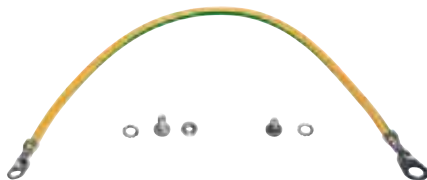
Order no.	Short name	Type	Colour
J02023A0053	Mini distributor MPD24-HS K Cat.6 <sub>A</sub>	shielded, including cable management	pure white RAL 9010

## 3.7.5

## Accessories for Mini Distributors



Order no.	Short name	Type
H02032A0021	19" Module carrier with flange 3 HU / 84 PU	anodized aluminum, completely pre-assembled for 19" rack



Order no.	Short name	Type
L00040A0009	Bonding kit	L=0,3 m, for MPD/MPP

## Adaptor

3.8

## T-Adaptors

3.8.1

When all of the available connections in a data network are occupied problems arise to be sure, as soon as new subscribers are added. One solution would be to lay additional cables as well as to install further distribution panels and boxes. But this sometimes proves to be very difficult and costly because of poor accessibility to installation ducts.

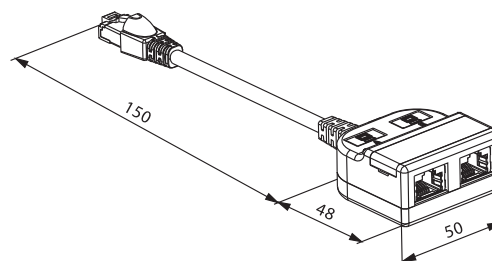
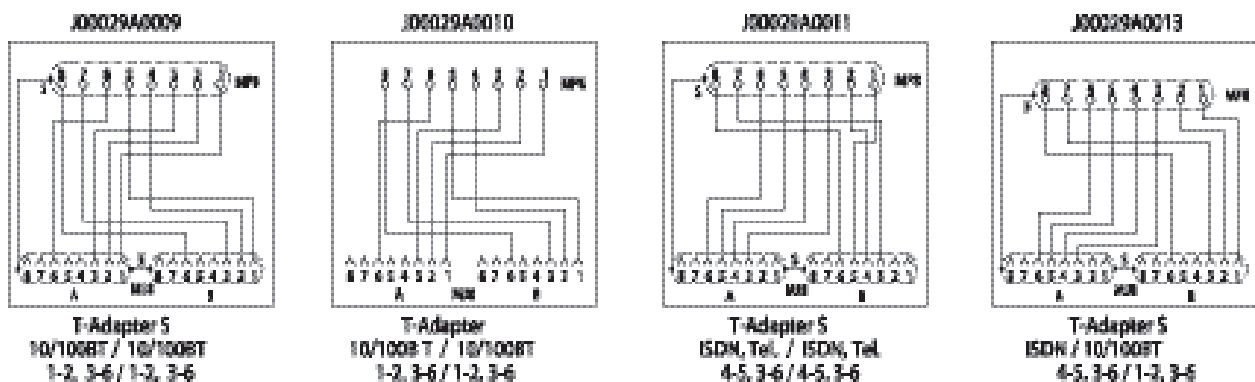
The Modular T-Adaptors make it possible to duplicate connections without having to intervene in the existing network structures with cable sharing. This solution is available for the network topologies Ethernet, Token Ring and Ethernet/ISDN combinations in different versions shielded or unshielded. Important: Each adaptor has to be connected to the patch panel (2 inputs from the hub) and to the data outlet (2 output to the terminals)!

The adaptor, which is built into a plastic housing, divides an attached 8-wire RJ45 output into two sockets, each of which then has 4-wire pin assignment. The 15 cm long connecting cable is provided with an RJ45 plug which is inserted into the output of the box and/or the distributor. The connecting cables to the subscriber and/or to the next distributor socket are then inserted into the two RJ45 sockets at the adaptor output. The outputs to the subscribers are marked by coloured mounting symbols for data and/or telephone connections. A labelling plate under a transparent cover offers space for marking the outputs. On the bottom side of the adaptor housing there is a label with information on the pin assignment so that the distributor structure can be precisely traced in case additional action is required.

## Performance Characteristics

- for the partitioning of an 8-wire RJ45 jack to 4-wire applications such as 2x10/100BaseT, 2xToken Ring and 10/100BT/ISDN
- shielded and unshielded
- connection lead 150 mm with strain relieve, RJ45-plug with latch bar protection
- moulded cable boot
- plastic housing, halogen-free, colour light grey RAL 7035
- indication of the output by plug-in symbols for data and telephone application
- marking label with transparent plastic cover
- label with wiring scheme at the bottom

## Connection Diagrams



Order no.	Remarks	Type	Colour
J00029A0009	T-Adaptor S, 2x10/100BT	shielded, output 2x10/100BaseT	light grey RAL 7035
J00029A0010	T-Adaptor, 2x10/100BT	unshielded, output 2x10/100BaseT	light grey RAL 7035
J00029A0011	T-Adaptor S, 2xISDN	shielded, output 2x ISDN, Tel.	light grey RAL 7035
J00029A0013	T-Adaptor S, 10/100BT/ISDN	shielded, output 1x 10/100BaseT / 1xISDN	light grey RAL 7035

3.8

With the ISDN/Telephone T-Adaptors structured wiring systems (Cat. 5) with star topology, which are already installed in many offices and buildings, can be used for setting up ISDN bus wiring. Laying new cables for an ISDN system is no longer necessary. Once the adaptors are removed then the star structure of all ports is restored.

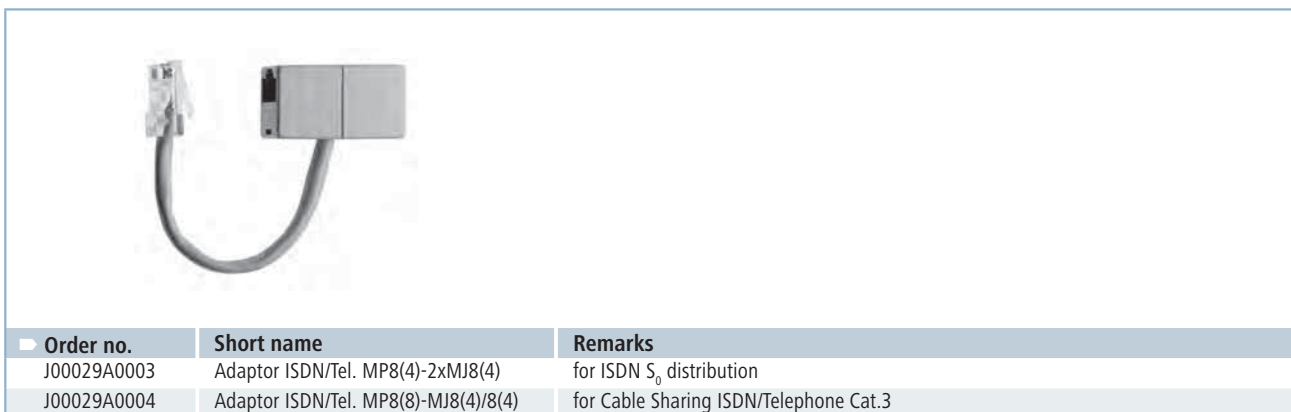
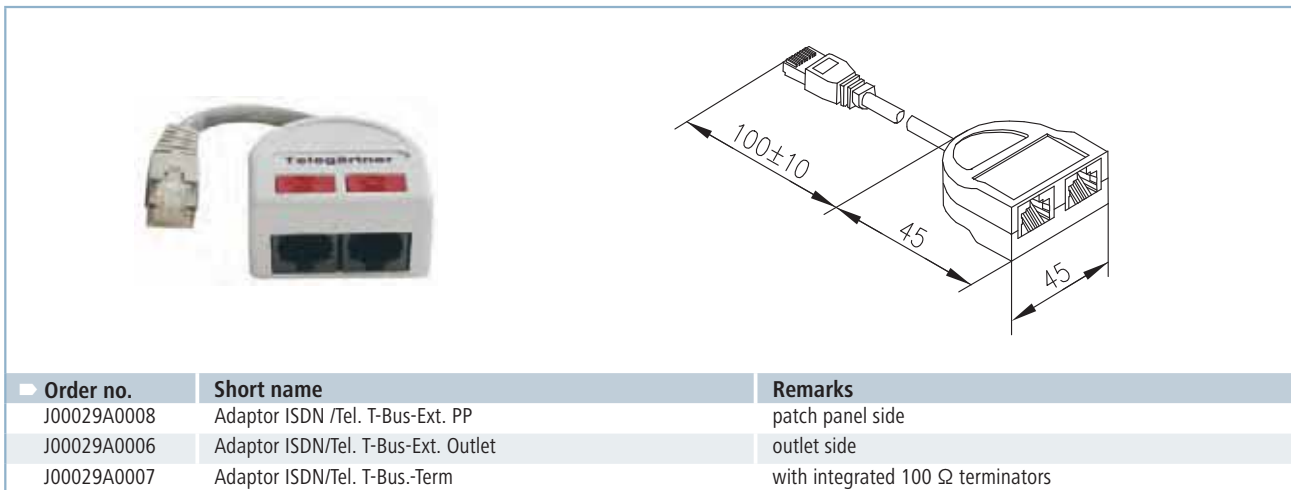
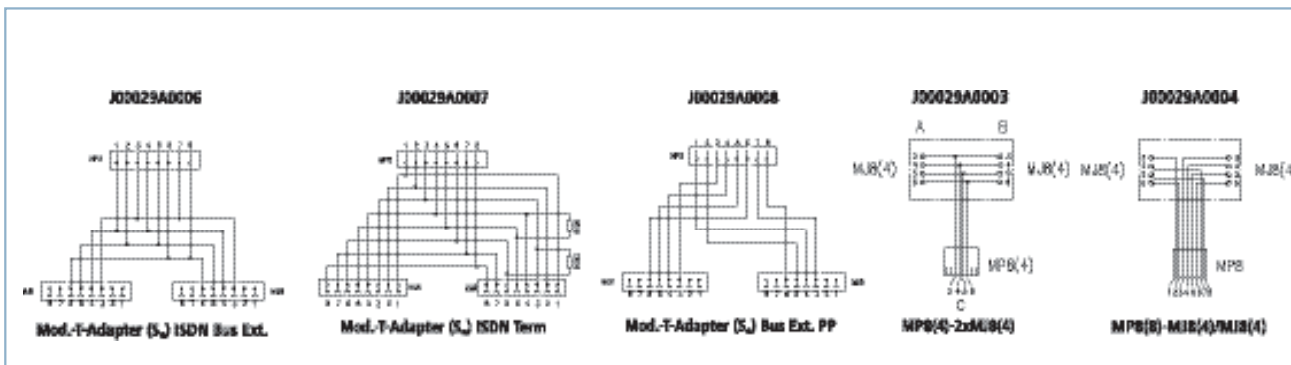
The T-Adaptor is available in three different versions for connection to the 19" Patch Panel and the wall outlets: the T-Bus-Ext. PP for the Patch Panel side, the T-Bus-Ext. Outlet

for the socket side and the T-Bus Term with an integrated 100  $\Omega$  terminating resistor. In order to realise the parallel  $S_0$  bus the adaptors for the Patch Panel side are inserted into the panel ports and connected with each other using patch cable.

The ISDN Basic Access (NT) is connected to the first adaptor on the patch panel. If T-Adaptors are also put into the outlets, the number of connection possibilities even doubles.

### Performance Characteristics

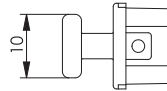
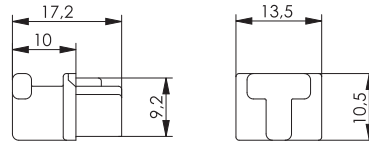
- for conversion of a star network configurations to  $S_0$  bus structure for ISDN/Telephone
- different types for complete configuration
- connection cable 100 mm long with moulded connector
- indication of the outputs by plug-in telephone symbols
- label with wiring scheme underside of the housing
- halogen-free plastic housing, grey





## Tools and Accessories for Patch Panels and Mini Distributors

3.9



Order no.	Short name	Colour	Remarks
H00030A0014	Protection cap for RJ45	alpine white	Material: TPR
H00030C0014	Protection cap for RJ45	red RAL 3020	Material: TPR
H00030D0014	Protection cap for RJ45	green RAL 6017	Material: TPR
H00030E0014	Protection cap for RJ45	blue RAL 5015	Material: TPR
H00030F0014	Protection cap for RJ45	black RAL 9005	Material: TPR

Order no.	Short name
B05002A0012	Marking strip 12 x 430 mm self-adhesive



Order no.	Short name
H06000A0001	Fixing set for patch panels (4 screws M6x16 with nuts)



Order no.	Short name
B06013A0010	Cable management bar for 19" patch panels



Order no.	Short name
H02025A0343	19" patch panel with 5 cable guide bars (plastic)



Order no.	Short name
H02025A0116	Cable management plate for 19" patch panels 1 HU

3.9

## Patch Panels and Distributors

## 3.9

## Tools and Accessories for Patch Panels and Mini Distributors



Order no.	Short name
H02025A0084	19" Dummy plate 1 HE



Order no.	Short name
H10000A0000	Carrier with marking strip for 19" front plates, screw mounting



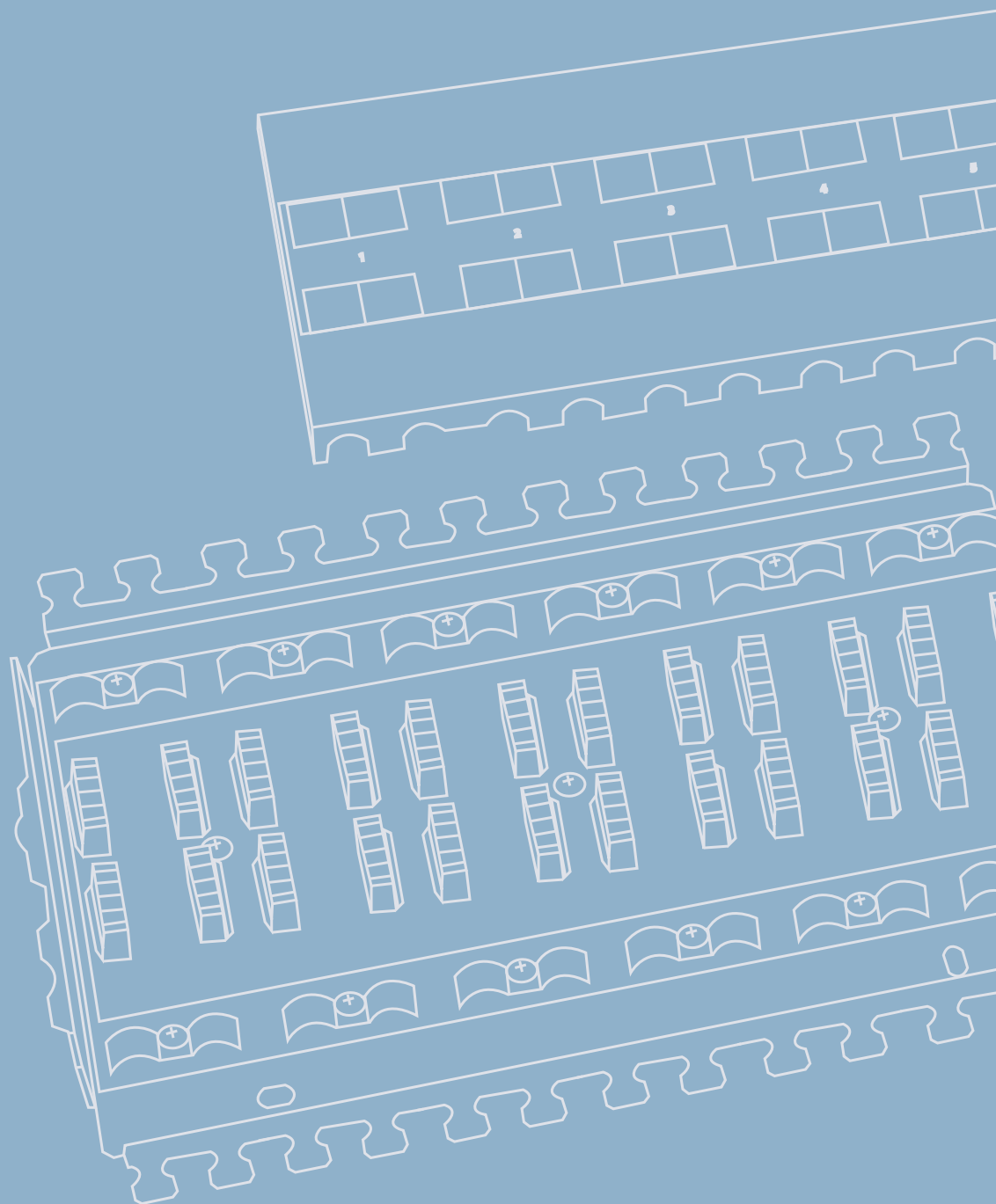
Order no.	Short name
N01002A0001	Insertion tool for IDC termination (LSA Plus) with wire cutter



Order no.	Short name
N01002A0000	Tool for IDC termination (LSA Plus) without wire cutter

# 4

## Connection Modules Cat.7A





# 4

## Connection Modules Cat.7<sub>A</sub>

4.1	VM-Pro 8-8 Class F <sub>A</sub> IP67 .....	124
4.2	Connection Module Cat.7 <sub>A</sub> .....	124
4.3	19" 1/2 HU Multi Connection Module Cat.7 <sub>A</sub> .....	125
4.4	Multi Connection Module Cat.7 <sub>A</sub> for Wall Mounting .....	126

# Connection Modules Cat.7<sub>A</sub>

# 4

The VM 8-8 modules are employed as connections and extensions of commercially available, shielded and unshielded twisted-pair installation cables (Cat.5e/ Cat.6/Cat.6<sub>A</sub>/Cat.7/ Cat.7<sub>A</sub>) in the following applications: transition point/ consolidation point, cable extensions, damaged cables, cable rerouting.

When VM 8-8 modules are used, the cable segments in a

structured wiring system do not need to be laid out again. This reduces the expenses for alterations and the overall costs to a minimum. Depending on the connection module type, up to 12 incoming and 12 outgoing 8-wire cables can be permanently connected together without any significant reduction in the transmission characteristics or limitation of the maximum link lengths.

## Performance Characteristics

- connection via LSA Plus terminals on a common PCB
- colour coding acc. to EIA/TIA 568A and B
- connection of 4-pair shielded/unshielded installation and patch cords from AWG 27-22
- pairs can be brought directly up to the terminal without untwisting the pairs
- secure shielded contact using screw-on terminals directly on the PCB
- variable cable feeds
- cable strain relief using commercially available cable ties (VM 8-8 Cat.7<sub>A</sub>)
- tool-free installation of shielding cover made of stainless steel (19" and wall mount version)
- surface mount (AP) type: incoming and outgoing cables in the same direction
- surface mount, 19", and basic (for loose connection) version: incoming and outgoing cables offset by 180 degrees
- bonding connection option directly on the PCB (M4 screw)
- EMC compatible in accordance with DIN EN 61000-6-1 and 61000-6-2

	VM 8-8 Cat.7 <sub>A</sub>	6x VM 8-8 Cat.7 <sub>A</sub>	12x VM 8-8 Cat.7 <sub>A</sub>	VM-Pro 8-8 Class F <sub>A</sub> IP67
<b>Mechanical Characteristics</b>				
Material: housing	ABS non halogen, UL94 V0 black	sheet steel 1,5 mm, powder-laminated, light grey RAL 7035		PA UL94 V0 black
Material: shield	EMC plating aluminium	stainless sheet steel	stainless sheet steel	zinc diecast
Material: PCB	FR4	FR4	FR4	-
Material: PCB finish	Cu 35/35 zinc-plated	Cu 35/35 zinc-plated	Cu 35/35 zinc-plated	-
Material: cable ties	PA 6.6 UL94 V2	PA6.6 UL94 V2	PA 6.6 UL94 V2	-
LSA Plus: Cu conductor diameter	0,41 - 0,64 mm AWG 26/1 - AWG 22/1			solid: 0,51 - 0,64 mm AWG 24/1 - AWG 22/1 stranded: 0,48 - 0,76 mm AWG26/7-AWG22/7
LSA Plus: Wire diameter	0,7 - 1,6 mm	0,7 - 1,6 mm	0,7 - 1,6 mm	0,85 - 1,6
<b>Climatic Characteristics</b>				
Temperature range [°C]	-40 °C to +70 °C	-40 °C to +70 °C	-40 °C to +70 °C	-40 °C to +85 °C
<b>Electrical Characteristics</b>				
Working current at 50° C	1 A	1 A	1 A	1 A
Voltage proof: contact-contact	≥ 1000 DC	≥ 1000 DC	≥ 1000 DC	≥ 1000 DC
Voltage proof: contact-shield	≥ 1500 DC	≥ 1500 DC	≥ 1500 DC	≥ 1500 DC
<b>Transmission Characteristics</b>				
Cat.7 <sub>A</sub>	Category 7 <sub>A</sub> acc. to ISO/IEC 11801; EN 50173-1			-
Klasse F <sub>A</sub>	ISO/IEC 11801; DIN EN 50173-1			
Cat.6 <sub>A</sub>	ISO/IEC 11801; DIN EN 50173-1			
IP Protection class	IP20	IP20	IP20	IP67
EMV	DIN EN 61000-6-1; DIN EN 61000-6-2			

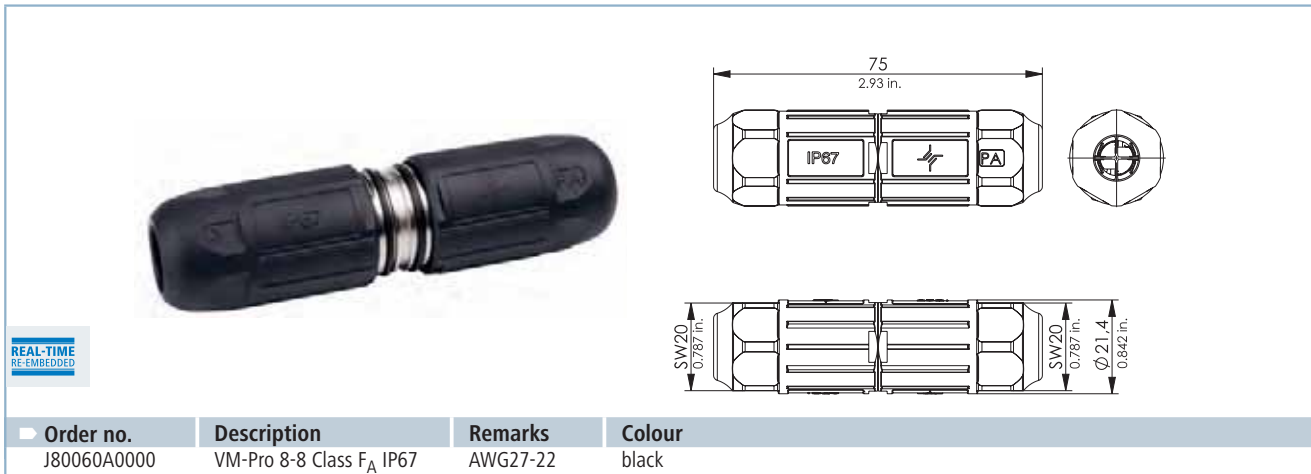
# Connection Modules Cat.7<sub>A</sub>

## 4.1

## VM-Pro 8-8 Class F<sub>A</sub> IP67

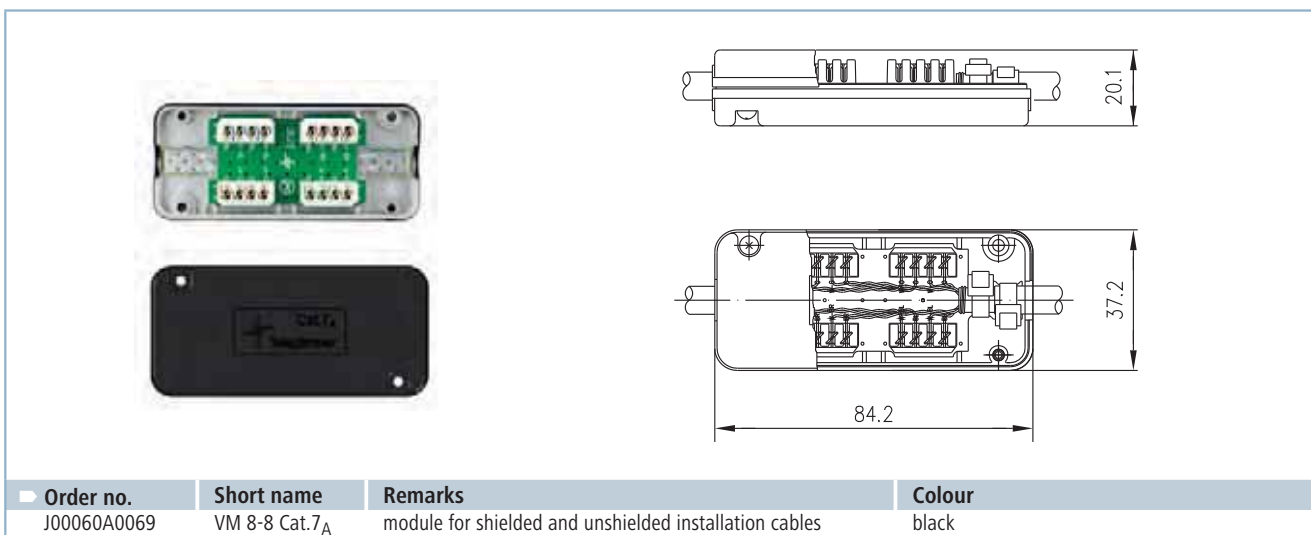
### Performance Characteristics

- Class F<sub>A</sub> (1000 MHz)
- real-time re-embedded
- suitable for 100 / 250 / 500 / 1000 MHz installation and patch cords
- connection via IDC termination
- isolated construction
- Cable diameter: 5.5 - 9.0 mm
- connection of 4-pair shielded/unshielded installation and patch cords from AWG 27-22
- pairs can be brought directly up to the terminal without untwisting the pairs
- EMC tested acc. to DIN EN 61000-6-1 and DIN EN 61000-6-2



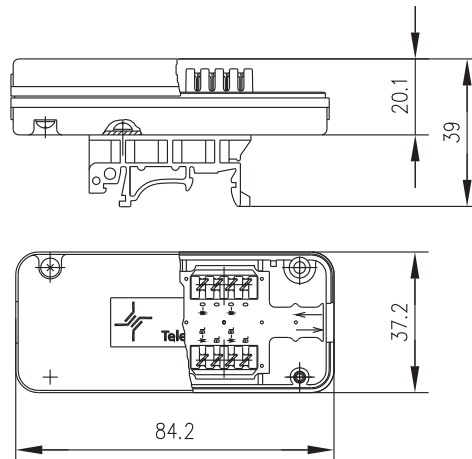
## 4.2

## Connection Module Cat.7<sub>A</sub>



Connection Modules Cat.7<sub>A</sub>

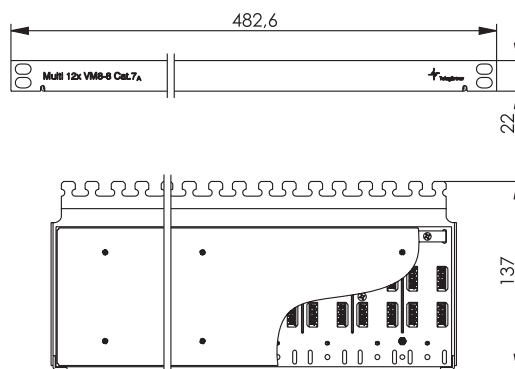
## 4



Order no.	Short name	Remarks	Colour
J00060B0069	VM 8-8 Cat.7 <sub>A</sub> with Mounting Rail Adaptor	module for shielded and unshielded installation cables, with mounting rail adaptor	black

19" 1/2 HU Multi Connection Module Cat.7<sub>A</sub>

## 4.3

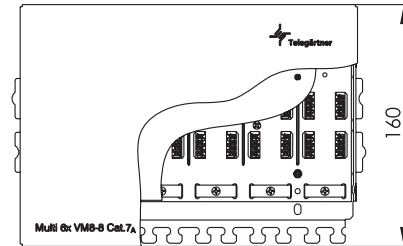
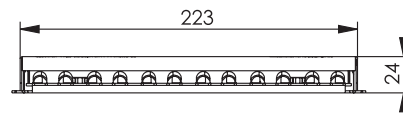


Order no.	Short name	Remarks	Colour
J00060A0072	Multi 12x VM 8-8 Cat.7 <sub>A</sub>	19" 1/2 HE multi connection module for 12 shielded and unshielded installation cables	light grey RAL 7035

# Connection Modules Cat.7<sub>A</sub>

## 4.4

## Multi Connection Module Cat.7<sub>A</sub> for Wall Mounting

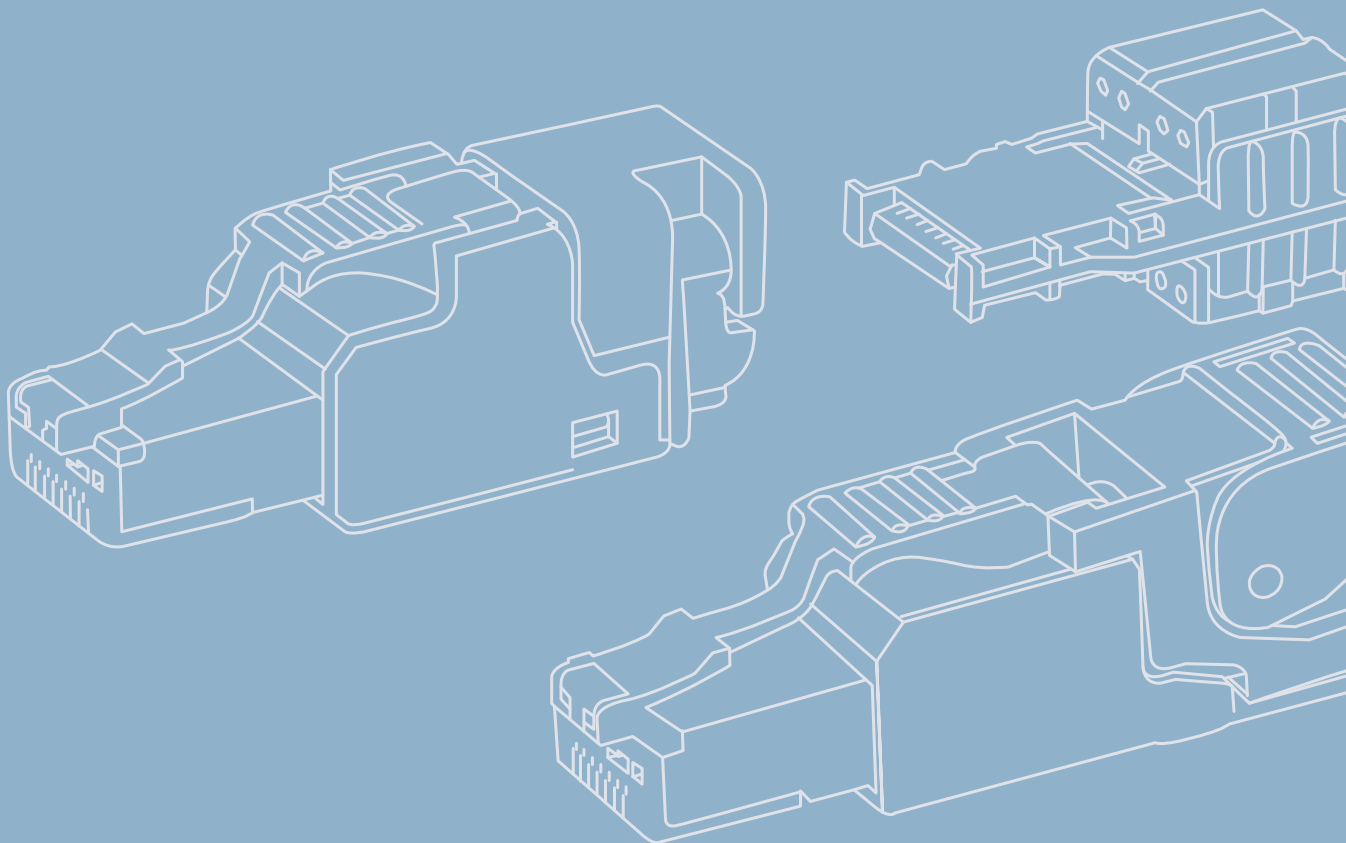


Order no.	Short name	Remarks	Colour
J00060A0071	Multi 6x VM 8-8 Cat.7 <sub>A</sub>	wall box for 6 shielded and unshielded installation cables	light grey RAL 7035



# 5

## Modular Plugs





# 5

## Modular Plugs

<b>5.1 RJ45 plugs (shielded and unshielded)</b> .....	<b>129</b>
5.1.1 MFP8 Cat.6A, shielded .....	131
5.1.2 UFP8 Cat.6A unshielded .....	134
5.1.3 MP8 shielded and unshielded .....	135
5.1.4 MP6 unshielded.....	136
<b>5.2 Cable Boots</b> .....	<b>136</b>
<b>5.3 Crimp Tools and Crimp Dies for Modular Plugs</b> .....	<b>138</b>
<b>5.4 RJ45 Terminator 100 Ω for ISDN Applications</b> .....	<b>139</b>

For the assembly of RJ45 patch cords Telegärtner offers RJ45 plugs using no special tools as well as for crimp termination. The RJ45 connectors acc. to IEC 60603-7 are available in several designs. The 8-way Cat.6<sub>A</sub> MFP8 connector for stranded and solid wire cables can easily be assembled onsite without any special tools. The maximum cable diameter is 9.0 mm. The connector features the T568 A/B or PROFINET pin assignment and a 360° shielding connection. An unshielded version of the 8-way Cat.6<sub>A</sub> UFP8 connector for stranded AWG27/7-22/7 or solid wire cables AWG24/1-22/1 can easily be assembled onsite without any special tools. The maximum cable diameter is 8.5

mm. The 8-way Cat.6<sub>A</sub> connector MP8 FS for stranded and solid wire cables completes the product line. Assembled with a crimp tool it offers shielding connection and a wire presorting for easy handling, too. The strain relief pressure is thereby absorbed by the cable jacket. This avoids deformation of wires. 1-part and 2-part cable boots in different colours are available additionally. Suitable crimp tools, one for less frequent usage (> 1.000 operations), the other for professional application (> 10.000 operations) round-off the product range. All connectors are capable for use in multiport-applications such as patch panels, switches, etc.

### RJ45 Plugs (shielded and unshielded)

5.1

	Plug MFP8 Cat.6 <sub>A</sub> AWG27-22	Plug MFP8 Cat.6 <sub>A</sub> AWG27-24
<b>Standards</b>		
Connectors	IEC 60603-7-51	IEC 60603-7-51
<b>Mechanical Characteristics</b>		
Insertion force	≤ 30 N	≤ 30 N
Durability (mating cycles)	≥ 750	≥ 750
Reusable contacts	≤ 4 cycles	≤ 4 cycles
Material: contacts	spring steel	spring steel
Material: contact finish	Ni1,2Au0,8	Ni1,2Au0,8
Material: connector housing	PC UL94 V0	PC UL94 V0
Material: PCB	FR4 UL 94 V0	FR4 UL 94 V0
Material: piercing contacts	phosphor bronze tinned	phosphor bronze tinned
Material: shield contact	brass, nickel-plated	brass, nickel-plated
Material: wire pair presorting	PC UL94 V0 white	PC UL94 V0 grey
Material: uplock hook	PBT UL94 V0	PBT UL94 V0
Material: shielding housing	zinc diecast, nickel-plated	zinc diecast, nickel-plated
Material: cable clamp	PBT UL94 V0	PBT UL94 V0
Material: protection cap	PBT UL94 V0	PBT UL94 V0
Mating Requirements Cu-Conductor diameter: solid	0.51 - 0.64 mm (AWG24/1-22/1)	0.41 - 0.51 mm (AWG26/1-24/1)
Mating Requirements Cu-Conductor diameter: stranded	0.46 - 0.76 mm (AWG27/7-22/7)	0.46 - 0.61 mm (AWG27/7-24/7)
Mating Requirements Cu-Conductor diameter: stranded*	0.61 - 0.78 mm (AWG24-22/19)	0.51 mm (AWG26/19)
Core Diameter	1.0 - 1.6 mm	0.85 - 1.1 mm
Overall cable diameter	5.0 - 9.0 mm	5.0 - 9.0 mm
<b>Climatic Characteristics</b>		
Temperature range [°C]	-40°C to +85°C	-40°C to +85°C
UL	E244889	E244889
<b>Electrical Characteristics</b>		
Current carrying capacity at 50°C	1 A	1 A
PoE+ acc to IEEE 802.3at	Adequate for Power over Ethernet+	Adequate for Power over Ethernet+
<b>Transmission Characteristics</b>		
10 Gigabit Ethernet acc. to IEEE 802.3an	Adequate for 10 Gigabit Ethernet	Adequate for 10 Gigabit Ethernet

5.1

\*approval of cable by Telegärtner Karl Gärtner GmbH required

## Modular Plugs

## 5.1

## RJ45 Plugs (shielded and unshielded)

	Plugs MFP84x90 Cat.6A	Plugs MFP8 IE Cat.6A
<b>Standards</b>		
Connectors	IEC 60603-7-51	IEC 60603-7-51
<b>Mechanical Characteristics</b>		
Insertion force	≤ 30 N	≤ 30 N
Durability (mating cycles)	≥ 750	≥ 750
Reusable contacts	≤ 4 cycles	≤ 4 cycles
Material: contacts	spring steel	spring steel
Material: contact finish	Ni1,2Au0,8	Ni1,2Au0,8
Material: connector housing	Zinkdruckguss vernickelt	Zinkdruckguss vernickelt
Material: PCB	FR4 UL 94 V0	FR4 UL 94 V0
Material: piercing contacts	phosphor bronze tinned	phosphor bronze tinned
Material: shield contact	brass, nickel-plated	brass, nickel-plated
Material: wire pair presorting	PC UL94 V0 white	PC UL94 V0 white
Material: uplock hook	PBT UL94 V0	PBT UL94 V0
Material: shielding housing	zinc diecast, nickel-plated	zinc diecast, nickel-plated
Material: protection cap	PBT UL94 V0	PBT UL94 V0
Mating Requirements Cu-Conductor diameter: solid	0.51 - 0.64 mm (AWG24/1-22/1)	0.51 - 0.64 mm (AWG24/1-22/1)
Mating Requirements Cu-Conductor diameter: stranded	0.46 - 0.76 mm (AWG27/7-22/7)	0.46 - 0.76 mm (AWG27/7-22/7)
Mating Requirements Cu-Conductor diameter: stranded*	0.61 - 0.78 mm (AWG24-22/19)	0.61 - 0.78 mm (AWG24-22/19)
Core Diameter	1.0 - 1.6 mm	1.0 - 1.6 mm
Overall cable diameter	5.5 - 10.0 mm	6.0 - 10.0 mm
<b>Climatic Characteristics</b>		
Temperature range [°C]	-40°C to +85°C	-40°C to +85°C
UL	E244889	E244889
<b>Electrical Characteristics</b>		
Current carrying capacity at 50°C	1 A	1 A
PoE+ acc to IEEE 802.3at	Adequate for Power over Ethernet+	Adequate for Power over Ethernet+
<b>Transmission Characteristics</b>		
10 Gigabit Ethernet acc. to IEEE 802.3an	Adequate for 10 Gigabit Ethernet	Adequate for 10 Gigabit Ethernet

	Plugs UFP8 Cat.6A AWG27-23	Plugs UFP8 Cat.6A AWG23-22
<b>Standards</b>		
Connectors	IEC 60603-7-41	IEC 60603-7-41
<b>Mechanical Characteristics</b>		
Insertion force	≤ 20 N	≤ 20 N
Durability (mating cycles)	≥ 750	≥ 750
Reusable contacts	≤ 4 cycles	≤ 4 cycles
Material: contacts	spring steel	spring steel
Material: contact finish	Ni1,2Au0,8	Ni1,2Au0,8
Material: connector housing	PC UL94 V0	PC UL94 V0
Material: PCB	FR4 UL 94 V0	FR4 UL 94 V0
Material: piercing contacts	phosphor bronze tinned	phosphor bronze tinned
Material: wire pair presorting	PC UL94 V0 grey	PC UL94 V0 grey
Material: uplock hook	PBT UL94 V0	PBT UL94 V0
Material: cable clamp	PC UL94 V0	PC UL94 V0
Material: protection cap	PBT UL94 V0	PBT UL94 V0
Mating Requirements Cu-Conductor diameter: solid	0.51 - 0.57 mm (AWG24/1-23/1)	0.57 - 0.64 mm (AWG23/1-22/1)
Mating Requirements Cu-Conductor diameter: stranded	0.46 - 0.65 mm (AWG27/7-23/7)	0.65 - 0.76 mm (AWG23/7-22/7)
Mating Requirements Cu-Conductor diameter: stranded*	0.51 mm (AWG26/19)	0.61 - 0.78 mm (AWG24-22/19)
Core Diameter	0.85 - 1.1 mm	1.1 - 1.6 mm
Overall cable diameter	5.5 - 8.5 mm	5.5 - 8.5 mm
<b>Climatic Characteristics</b>		
Temperature range [°C]	-40°C to +70°C	-40°C to +70°C
<b>Electrical Characteristics</b>		
Current carrying capacity at 50°C	1 A	1 A
PoE+ acc to IEEE 802.3at	Adequate for Power over Ethernet+	Adequate for Power over Ethernet+
<b>Transmission Characteristics</b>		
10 Gigabit Ethernet acc. to IEEE 802.3an	Adequate for 10 Gigabit Ethernet	Adequate for 10 Gigabit Ethernet

\*approval of cable by Telegärtner Karl Gärtner GmbH required

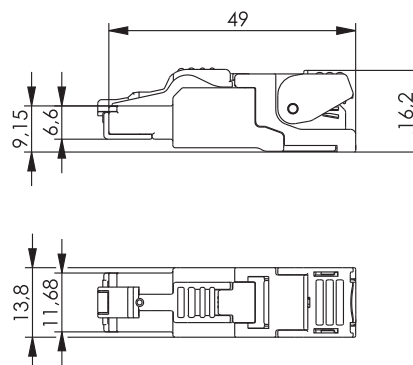
	Plugs MP8(8)FS Cat.6A	Plugs MP8(8) Cat.6	Plugs MP6(6)
<b>Standards</b>			
Connectors	IEC 60603-7-51	IEC 60603-7-2	IEC 60603-7
<b>Mechanical Characteristics</b>			
Insertion force	≤ 30 N	≤ 20 N	≤ 20 N
Durability (mating cycles)	≥ 750	≥ 750	≥ 750
Material: contacts	phosphor bronze	phosphor bronze	phosphor bronze
Material: contact finish	Ni2.54Au0.8	Ni2.54Au0.8	Ni2.54Au0.8
Material: connector housing	PC UL94 V0	PC UL94 V0	PC UL94 V0
Material: insertion	PC UL94 V0	PC UL94 V0	PC UL94 V0
Material: shielding housing	0.5 mm brass, 2 µm Ni	-	-
Material: cable boot	PVC UL94 V0 (Ø 6.3 mm / Ø 7.0 mm); PA6 UL94 V0 (Ø 6.0 mm)	PVC UL94 V0 (Ø 5.5 mm)	PP Ø4,0
Mating Requirements Cu-Conductor diameter: solid	0.36 - 0.51 mm (AWG27/1 - 24/1)	0.4 - 0.51 mm (AWG26/1 - 24/1)	0.4-0.51 mm (AWG26/1 - 24/1)
Mating Requirements Cu-Conductor diameter: stranded	0.46 - 0.61 mm (AWG27/7 - 24/7)	0.46 - 0.61 mm (AWG27/7 - 24/7)	0.46 - 0.61 mm (AWG27/7 - 24/7)
Core Diameter	0.85 - 1.05 mm	0.85 - 1.02 mm	0.85 - 1.02 mm
Overall cable diameter	5.5 - 7.3 mm	3.-2 - 5.5 mm	2 mm - 3.5 mm
Crimp tool	N00001A0002	N00001A0011	N00001A0006
<b>Climatic Characteristics</b>			
Temperature range [°C]	-40°C to 70°C	-40°C to 70°C	-40°C to 70°C
UL	E244889	-	-
<b>Electrical Characteristics</b>			
Current carrying capacity at 50°C	1 A	1 A	1 A
PoE+ acc to IEEE 802.3at	Adequate for Power over Ethernet+		-
<b>Transmission Characteristics</b>			
Gigabit Ethernet acc. to IEEE 802.3	-	Adequate for Gigabit Ethernet	-
10 Gigabit Ethernet acc. to IEEE 802.3an	Adequate for Gigabit Ethernet	-	-

## MFP8 Cat.6A, shielded

5.1.1

## Performance Characteristics

- pre-assembled protection cap
- robust zinc diecast housing
- 360° shielding
- full metal shielding between pairs of wires
- three strain relief settings (cable diameters 5.0 mm to 9.0 mm)
- can be assembled in 60 seconds without any special tools
- optimised for the field, including demanding applications
- secure transmission even with outside interference
- four-chamber wire manager (available with colour code T568A or T568B and PROFINET)
- suitable for cabling in office buildings, data centers, industrial facilities and home networks
- supreme reliability
- ideal for network repairs, special lengths and extensions
- piercing contacts suitable for solid and stranded conductors



Cat.6A



REAL-TIME RE-EMBEDDED

Order no.	Short name	Remarks
J00026A2000	MFP8 T568 A Cat.6A	AWG 24/1-22/1, AWG 27/7-22/7, incl. pre-assembled protection cap
J00026A2001	MFP8 T568 B Cat.6A	AWG 24/1-22/1, AWG 27/7-22/7, incl. pre-assembled protection cap
J00026A2002	MFP8 PROFINET	AWG 24/1-22/1, AWG 27/7-22/7, incl. pre-assembled protection cap
J00026A2004	MFP8 T568 A Cat.6A	AWG 26/1-24/1, AWG 27/7-24/7, incl. pre-assembled protection cap
J00026A2003	MFP8 T568 B Cat.6A	AWG 26/1-24/1, AWG 27/7-24/7, incl. pre-assembled protection cap

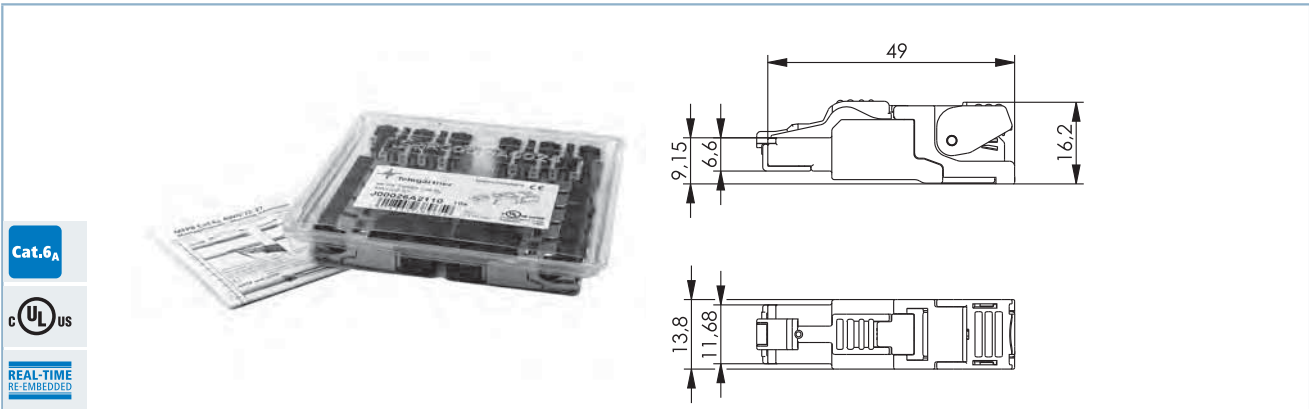
5.1

## Modular Plugs

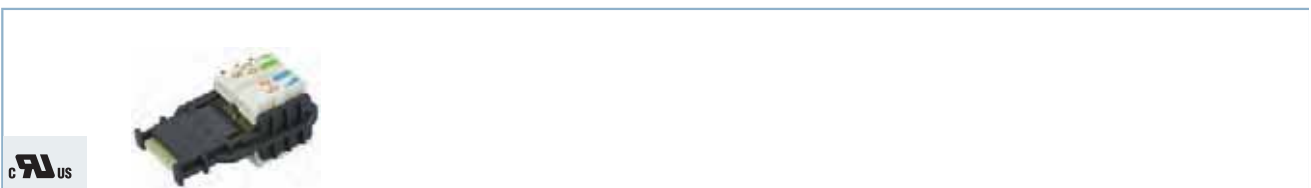
## 5.1

## RJ45 Plugs (shielded and unshielded)

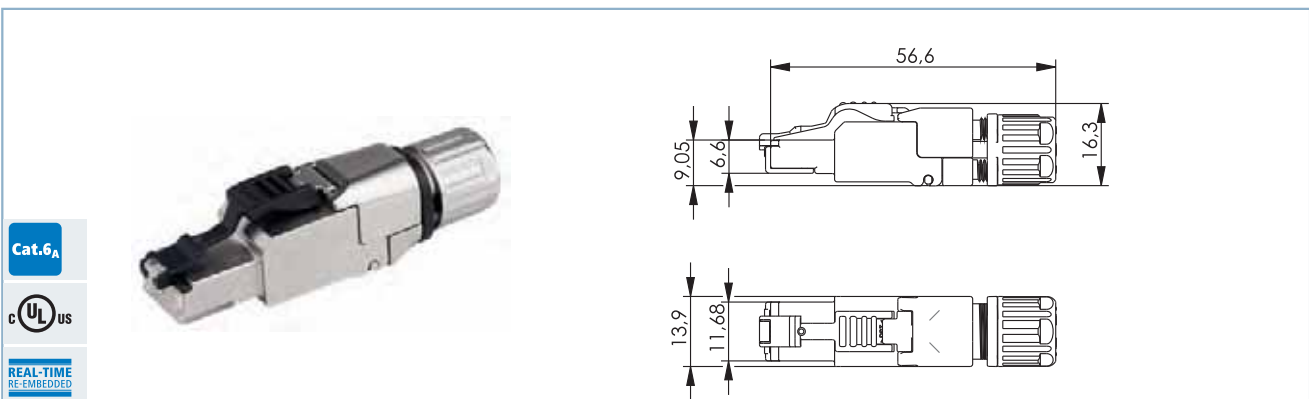
## 5.1.1

MFP8 Cat.6<sub>A</sub>, shieldedCat.6<sub>A</sub>REAL-TIME  
RE-EMBEDDED

Order no.	Short name	Remarks	Type
J00026A2110	MFP8 T568 A Cat.6 <sub>A</sub>	AWG 24/1-22/1, AWG 27/7-22/7, incl. pre-assembled protection cap	blister package (10 pcs.)
J00026A2111	MFP8 T568 B Cat.6 <sub>A</sub>	AWG 24/1-22/1, AWG 27/7-22/7, incl. pre-assembled protection cap	blister package (10 pcs.)
J00026A2112	MFP8 PROFINET	AWG 24/1-22/1, AWG 27/7-22/7, incl. pre-assembled protection cap	blister package (10 pcs.)
J00026A2114	MFP8 T568 A Cat.6 <sub>A</sub>	AWG 26/1-24/1, AWG 27/7-24/7, incl. pre-assembled protection cap	blister package (10 pcs.)
J00026A2113	MFP8 T568 B Cat.6 <sub>A</sub>	AWG 26/1-24/1, AWG 27/7-24/7, incl. pre-assembled protection cap	blister package (10 pcs.)



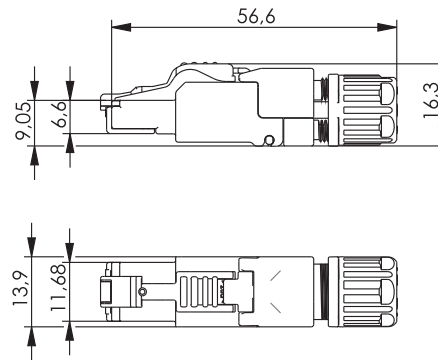
Order no.	Short name	Remarks	Type
F00020A2130	MFP8 wire manager T568A	AWG24/1-AWG22/1, AWG27/7-AWG22/7	blister package (30 pcs.)
F00020A2131	MFP8 wire manager T568B	AWG24/1-AWG22/1, AWG27/7-AWG22/7	blister package (30 pcs.)
F00020A2132	MFP8 PROFINET	AWG24/1-AWG22/1, AWG27/7-AWG22/7	blister package (30 pcs.)
F00020A2134	MFP8 wire manager T568A	AWG26/1-AWG24/1, AWG27/7-AWG24/7	blister package (30 pcs.)
F00020A2133	MFP8 wire manager T568B	AWG26/1-AWG24/1, AWG27/7-AWG24/7	blister package (30 pcs.)

Cat.6<sub>A</sub>REAL-TIME  
RE-EMBEDDED

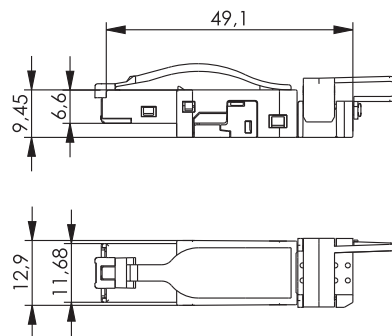
Order no.	Short name	Remarks
J00026A5000	MFP8 IE T568 A Cat.6 <sub>A</sub>	AWG 24/1-22/1, AWG 27/7-22/7, incl. pre-assembled protection cap
J00026A5001	MFP8 IE T568 B Cat.6 <sub>A</sub>	AWG 24/1-22/1, AWG 27/7-22/7, incl. pre-assembled protection cap
J00026A5002	MFP8 IE PROFINET	AWG 24/1-22/1, AWG 27/7-22/7, incl. pre-assembled protection cap
J00026A5004	MFP8 IE T568 A Cat.6 <sub>A</sub>	AWG 26/1-24/1, AWG 27/7-24/7, incl. pre-assembled protection cap
J00026A5003	MFP8 IE T568 B Cat.6 <sub>A</sub>	AWG 26/1-24/1, AWG 27/7-24/7, incl. pre-assembled protection cap

## Modular Plugs

## 5

Cat.6<sub>A</sub>cUL<sub>US</sub>REAL-TIME  
RE-EMBEDDED

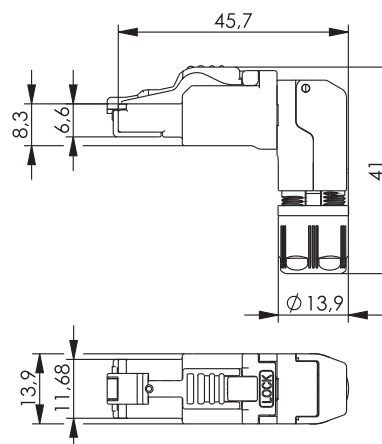
Order no.	Short name	Remarks	Type
J00026A5110	MFP8 IE T568 A Cat.6 <sub>A</sub>	AWG 24/1-22/1, AWG 27/7-22/7, incl. pre-assembled protection cap	blister package (10 pcs.)
J00026A5111	MFP8 IE T568 B Cat.6 <sub>A</sub>	AWG 24/1-22/1, AWG 27/7-22/7, incl. pre-assembled protection cap	blister package (10 pcs.)
J00026A5112	MFP8 IE PROFINET	AWG 24/1-22/1, AWG 27/7-22/7, incl. pre-assembled protection cap	blister package (10 pcs.)
J00026A5114	MFP8 IE T568 A Cat.6 <sub>A</sub>	AWG 26/1-24/1, AWG 27/7-24/7, incl. pre-assembled protection cap	blister package (10 pcs.)
J00026A5113	MFP8 IE T568 B Cat.6 <sub>A</sub>	AWG 26/1-24/1, AWG 27/7-24/7, incl. pre-assembled protection cap	blister package (10 pcs.)

cUL<sub>US</sub>

G

GREEN

Order no.	Short name	Remarks
J80026A0003	STX IP20 RJ45 plug Cat.6 Class E <sub>A</sub>	AWG22-26, pin assignment T568A, T568B and PROFINET, field assembly
J80026A0045	STX IP20 RJ45 plug Cat.6 Class E <sub>A</sub>	AWG22-26, with printed wire presorting acc. to T568A, field assembly
J80026A0046	STX IP20 RJ45 plug Cat.6 Class E <sub>A</sub>	AWG22-26, with printed wire presorting acc. to T568B, field assembly
J80026A0047	STX IP20 RJ45 plug Cat.6 Class E <sub>A</sub>	AWG22-26, with printed wire presorting acc. to PROFINET, field assembly

Cat.6<sub>A</sub>cUL<sub>US</sub>REAL-TIME  
RE-EMBEDDED

Order no.	Short name	Remarks
J00026A4000	MFP8-4x90 T568A Cat.6 <sub>A</sub>	AWG 24/1-22/1, AWG 27/7-22/7, incl. pre-assembled protection cap
J00026A4001	MFP8-4x90 T568B Cat.6 <sub>A</sub>	AWG 24/1-22/1, AWG 27/7-22/7, incl. pre-assembled protection cap
J00026A4002	MFP8-4x90 PROFINET	AWG 24/1-22/1, AWG 27/7-22/7, incl. pre-assembled protection cap
J00026A4004	MFP8-4x90 T568A Cat.6 <sub>A</sub>	AWG 26/1-24/1, AWG 27/7-24/7, incl. pre-assembled protection cap
J00026A4003	MFP8-4x90 T568A Cat.6 <sub>A</sub>	AWG 26/1-24/1, AWG 27/7-24/7, incl. pre-assembled protection cap

# Modular Plugs

## 5.1

## RJ45 Plugs (shielded and unshielded)

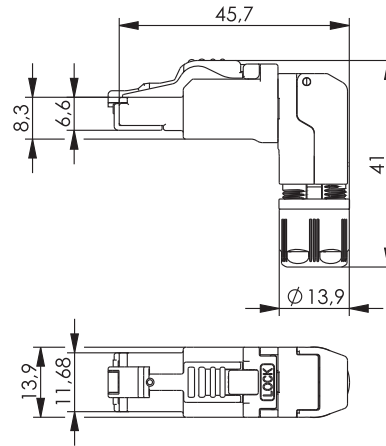
## 5.1.1

### MFP8 Cat.6<sub>A</sub>, shielded



REAL-TIME  
RE-EMBEDDED

Cat.6<sub>A</sub>



Order no.	Short name	Remarks	Type
J00026A4110	MFP8-4x90 T568A Cat.6 <sub>A</sub>	AWG 24/1-22/1, AWG 27/7-22/7, incl. pre-assembled protection cap	blister package (10 pcs.)
J00026A4111	MFP8-4x90 T568B Cat.6 <sub>A</sub>	AWG 24/1-22/1, AWG 27/7-22/7, incl. pre-assembled protection cap	blister package (10 pcs.)
J00026A4112	MFP8-4x90 PROFINET	AWG 24/1-22/1, AWG 27/7-22/7, incl. pre-assembled protection cap	blister package (10 pcs.)
J00026A4114	MFP8-4x90 T568A Cat.6 <sub>A</sub>	AWG 26/1-24/1, AWG 27/7-24/7, incl. pre-assembled protection cap	blister package (10 pcs.)
J00026A4113	MFP8-4x90 T568B Cat.6 <sub>A</sub>	AWG 26/1-24/1, AWG 27/7-24/7, incl. pre-assembled protection cap	blister package (10 pcs.)

## 5.1.2

### UFP8 Cat.6<sub>A</sub>, unshielded

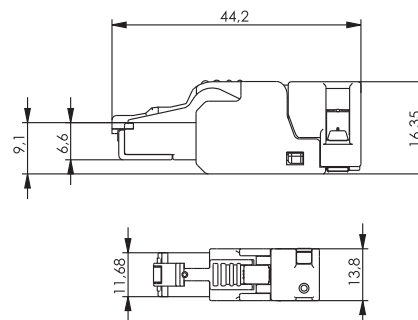
#### Performance Characteristics

- pre-assembled protection cap
- robust plastic housing
- full metal shielding between pairs of wires
- can be assembled in 60 seconds without any special tools
- optimised for the field, including demanding applications
- four-chamber wire manager (available with colour code T568A or T568B)
- suitable for cabling in office buildings, data centers, industrial facilities and home networks
- supreme reliability
- ideal for network repairs, special lengths and extensions



REAL-TIME  
RE-EMBEDDED

Cat.6<sub>A</sub>

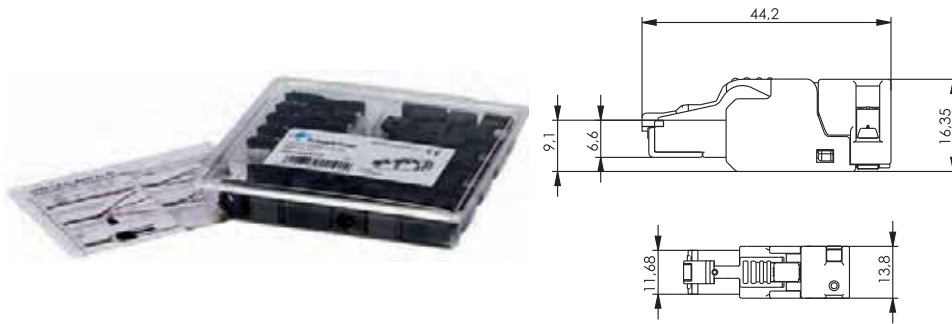


Order no.	Short name	Remarks
J00026A3000	UFP8 T568A Cat.6 <sub>A</sub>	AWG 24/1-23/1, AWG 27/7-23/7, with pre-assembled protection cap
J00026A3001	UFP8 T568B Cat.6 <sub>A</sub>	AWG 24/1-23/1, AWG 27/7-23/7, with pre-assembled protection cap
J00026A3002	UFP8 T568A Cat.6 <sub>A</sub>	AWG 23/1-22/1, AWG 23/7-22/7, with pre-assembled protection cap
J00026A3003	UFP8 T568B Cat.6 <sub>A</sub>	AWG 23/1-22/1, AWG 23/7-22/7, with pre-assembled protection cap



## Modular Plugs

## 5



Cat.6A

REAL-TIME  
RE-EMBEDDED

c UL US

Order no.	Short name	Remarks	Type
J00026A3110	UFP8 T568A Cat.6A	AWG 24/1-23/1, AWG 27/7-23/7, with pre-assembled protection cap	blister package (10 pcs.)
J00026A3111	UFP8 T568B Cat.6A	AWG 24/1-23/1, AWG 27/7-23/7, with pre-assembled protection cap	blister package (10 pcs.)
J00026A3112	UFP8 T568A Cat.6A	AWG 23/1-22/1, AWG 23/7-22/7, with pre-assembled protection cap	blister package (10 pcs.)
J00026A3113	UFP8 T568B Cat.6A	AWG 23/1-22/1, AWG 23/7-22/7, with pre-assembled protection cap	blister package (10 pcs.)

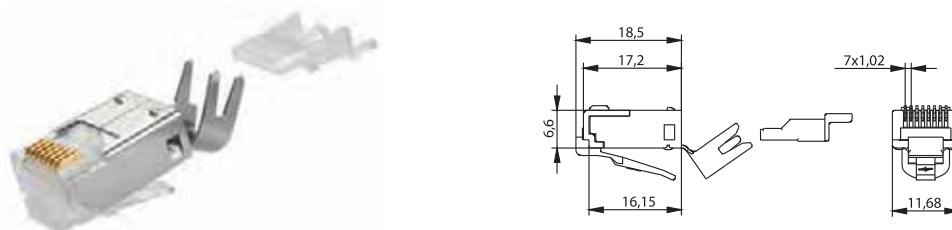


c UL US

Order no.	Short name	Remarks	Type
F00020A3130	UFP8 wire manager T568A	AWG24/1-AWG23/1; AWG27/7-AWG23/7	blister package (30 pcs.)
F00020A3131	UFP8 Adermanager T568B	AWG24/1-AWG23/1; AWG27/7-AWG23/7	blister package (30 pcs.)
F00020A3132	UFP8 wire manager T568A	AWG23/1-AWG22/1; AWG23/7-AWG22/7	blister package (30 pcs.)
F00020A3133	UFP8 Adermanager T568B	AWG23/1-AWG22/1; AWG23/7-AWG22/7	blister package (30 pcs.)

## MP8, shielded and unshielded

5.1.3

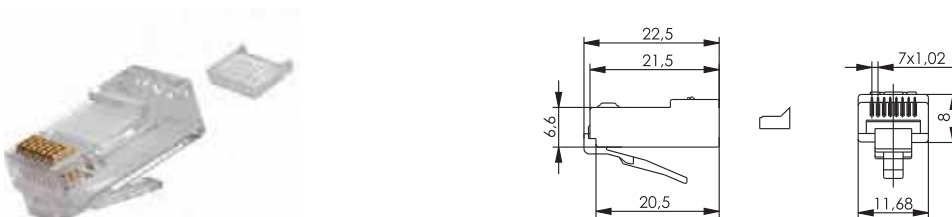


Cat.6A

REAL-TIME  
RE-EMBEDDED

c UL US

Order no.	Short name	Remarks
J00026A0165	RJ45 plug MP8(8) FS Cat.6A	8-way fully shielded with wire presorting; AWG 24-27 (stranded and solid); please order cable boot separately



Order no.	Short name	Remarks
J00026A0182	MP8(8) Cat.6, short wire presorting	8-way, unshielded with wire presorting; AWG 24-26 (stranded and solid); please order cable boot separately

5.1

# Modular Plugs

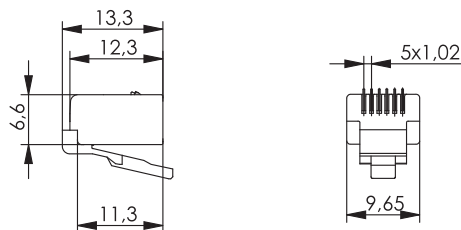
## 5.1 RJ45 Plugs (shielded and unshielded)

### 5.1.3 MP8, shielded and unshielded



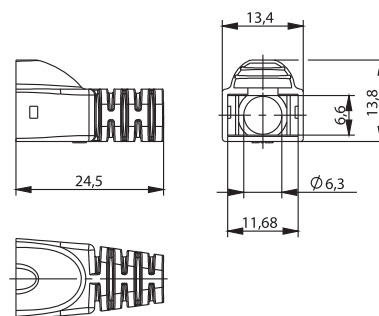
Order no.	Short name	Type
M06000A0067	Check gauge for RJ45 MP8(8) FS plug	contact height minimum dimension
M06000A0068	Check gauge for RJ45 MP8(8) FS plug	contact height maximum dimension

### 5.1.4 MP6, unshielded



Order no.	Short name	Remarks
J00026A0183	Modular plug MP6(6)	6-way, unshielded; AWG 24-26 (stranded)

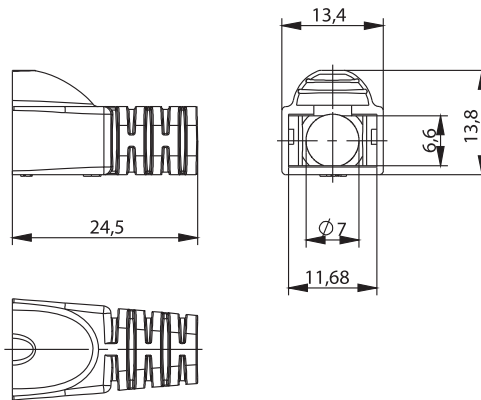
## 5.2 Cable Boots



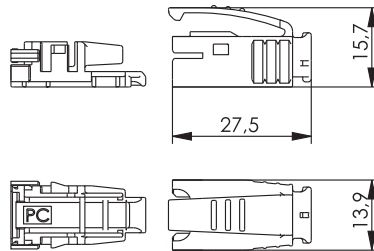
Order no.	Short name	Remarks
B00080A0089	Cable boot for MP8 FS (J00026A0165)	grey RAL 7035, Ø 6,3 mm, with latch protection
B00080B0089	Cable boot for MP8 FS (J00026A0165)	red RAL 3017, Ø 6,3 mm, with latch protection
B00080C0089	Cable boot for MP8 FS (J00026A0165)	blue RAL 5015, Ø 6,3 mm, with latch protection
B00080D0089	Cable boot for MP8 FS (J00026A0165)	yellow RAL 1021, Ø 6,3 mm, with latch protection
B00080E0089	Cable boot for MP8 FS (J00026A0165)	green RAL 6016, Ø 6,3 mm, with latch protection
B00080F0089	Cable boot for MP8 FS (J00026A0165)	black RAL 9011, Ø 6,3 mm, with latch protection

## Modular Plugs

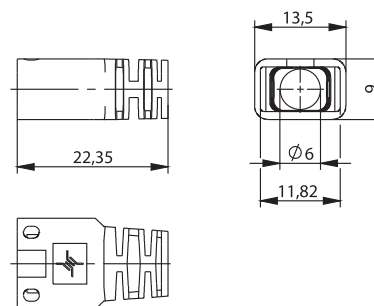
## 5



Order no.	Short name	Remarks
B00080A0090	Cable boot for MP8 FS (J00026A0165)	grey RAL 7035, Ø 7,0 mm, with latch protection
B00080B0090	Cable boot for MP8 FS (J00026A0165)	red RAL 3017, Ø 7,0 mm, with latch protection
B00080C0090	Cable boot for MP8 FS (J00026A0165)	blue RAL 5015, Ø 7,0 mm, with latch protection
B00080D0090	Cable boot for MP8 FS (J00026A0165)	yellow RAL 1021, Ø 7,0 mm, with latch protection
B00080E0090	Cable boot for MP8 FS (J00026A0165)	green RAL 6016, Ø 7,0 mm, with latch protection
B00080F0090	Cable boot for MP8 FS (J00026A0165)	black RAL 9011, Ø 7,0 mm, with latch protection



Order no.	Short name	Remarks	Colour
H86011A0000	STX cable boot for STX IP20 RJ45 plug (J80026A0000; J00026A0165)	for cable diameter 5.0 - 7.3 mm	white
H86011A0001	STX cable boot for STX IP20 RJ45 plug (J80026A0000; J00026A0165)	for cable diameter 5.0 - 7.3 mm	grey
H86011A0002	STX cable boot for STX IP20 RJ45 plug (J80026A0000; J00026A0165)	for cable diameter 5.0 - 7.3 mm	orange
H86011A0003	STX cable boot for STX IP20 RJ45 plug (J80026A0000; J00026A0165)	for cable diameter 5.0 - 7.3 mm	blue
H86011A0004	STX cable boot for STX IP20 RJ45 plug (J80026A0000; J00026A0165)	for cable diameter 5.0 - 7.3 mm	yellow
H86011A0005	STX cable boot for STX IP20 RJ45 plug (J80026A0000; J00026A0165)	for cable diameter 5.0 - 7.3 mm	green
H86011A0006	STX cable boot for STX IP20 RJ45 plug (J80026A0000; J00026A0165)	for cable diameter 5.0 - 7.3 mm	black

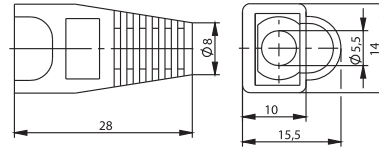


Order no.	Short name	Remarks
B00081A0031	Cable boot for MP8 FS (J00026A0165)	Cable boot, black RAL 9011, Ø 6.0 mm, without latch protection
B00081B0031	Cable boot for MP8 FS (J00026A0165)	Cable boot, red RAL 3017, Ø 6.0 mm, without latch protection
B00081C0031	Cable boot for MP8 FS (J00026A0165)	Cable boot, blue RAL 5015, Ø 6.0 mm, without latch protection
B00081D0031	Cable boot for MP8 FS (J00026A0165)	Cable boot, yellow RAL 1021, Ø 6.0 mm, without latch protection
B00081E0031	Cable boot for MP8 FS (J00026A0165)	Cable boot, green RAL 6016, Ø 6.0 mm, without latch protection

# Modular Plugs

## 5.2

## Cable Boots



Order no.	Short name	Remarks
B00081A0036	Cable boot for MP8 (J00026A0182)	Cable boot, grey RAL 7035, Ø 5.5 mm, with latch protection
B00081B0036	Cable boot for MP8 (J00026A0182)	Cable boot, red RAL 3017, Ø 5.5 mm, with latch protection
B00081C0036	Cable boot for MP8 (J00026A0182)	Cable boot, blue RAL 5015, Ø 5.5 mm, with latch protection
B00081D0036	Cable boot for MP8 (J00026A0182)	Cable boot, yellow RAL 1021, Ø 5.5 mm, with latch protection
B00081E0036	Cable boot for MP8 (J00026A0182)	Cable boot, green RAL 6016, Ø 5.5 mm, with latch protection
B00081F0036	Cable boot for MP8 (J00026A0182)	Cable boot, black, Ø 5.5 mm, with latch protection

## 5.3

## Crimp Tools and Crimp Dies for Modular Plugs



Order no.	Short name	Type
N00001A0002	Crimp Tool Professional (for frequent use) with insert for shielded MP8(8) FS plug; diameter of screen crimp die=5.5 mm; for cable diameter=5.5 - 6.2 mm; life ≥ 10.000 crimping operations	for MP8(8) FS plug (J80026A0000, J80026A0001, J00026A0165, J80026A0002, J00026A0165)



Order no.	Description	Remarks
N00001A0011	Crimp tool with insert for unshielded MP8(8)-plug; life ≥ 1.000 crimping operations	for MP8(8) plug (J00026A0182)



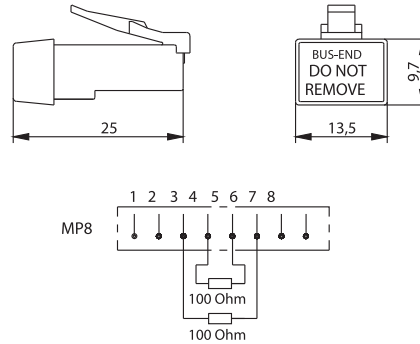
Order no.	Description	Remarks
N00001A0006	Crimp tool with insert for unshielded MP6(6) plug; life ≥ 1.000 crimping operations	for MP6(6) plug (J00026A0183)



Order no.	Short name	Type
N00000B0020	Parallel pressing tool	auxiliary tool for AMJ, UMJ, STX Module and MFP8/UPP8 plug assembly

### RJ45 Terminator 100 Ωs for ISDN applications

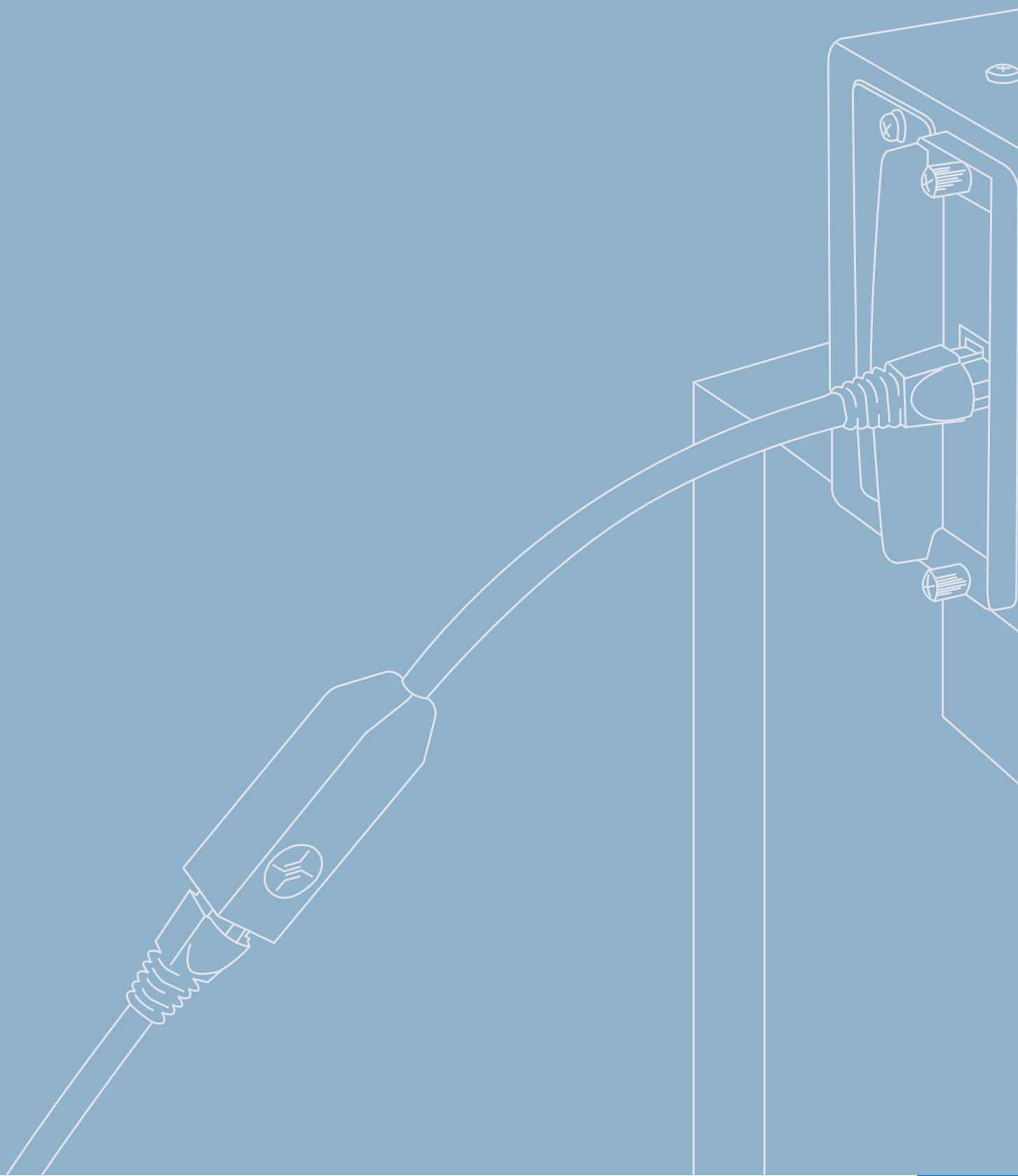
5.4

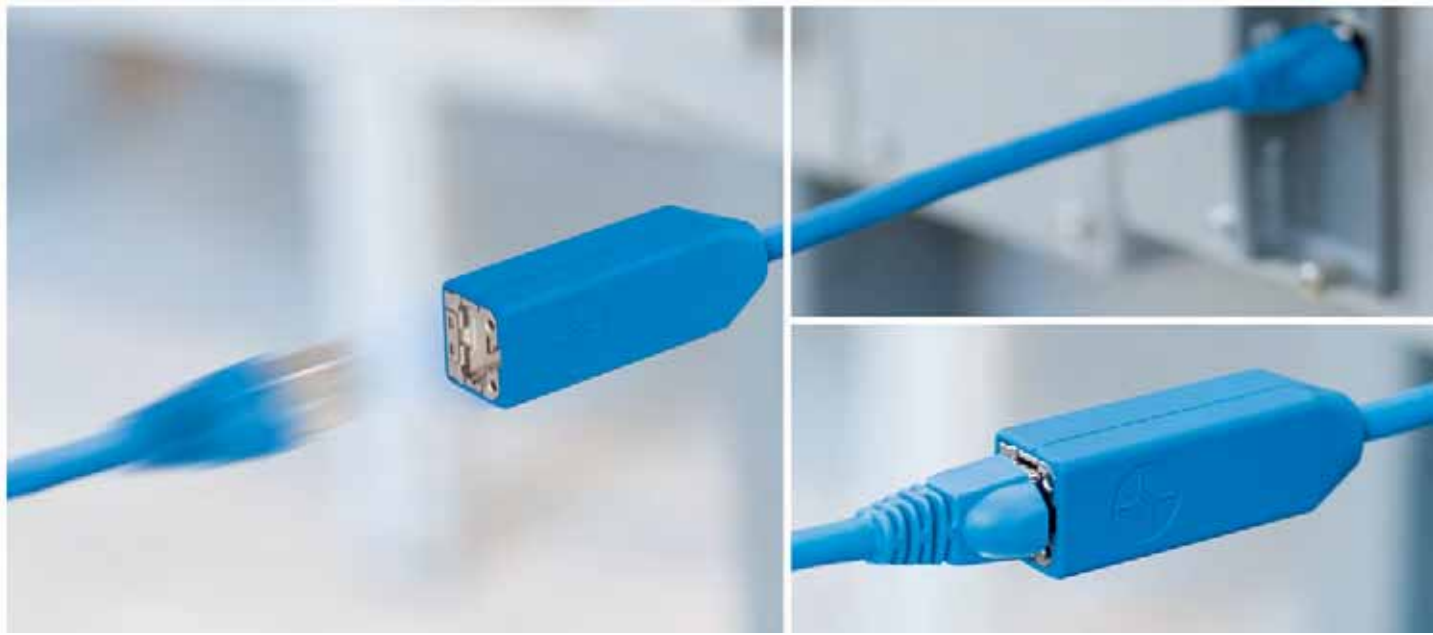


Order no.	Remarks
J00026A0142	RJ45 Terminator 100 Ω for ISDN applications



## Defined Disconnect CP-Link





# 6

## Defined Disconnect CP-Link



# Defined Disconnect CP-Link

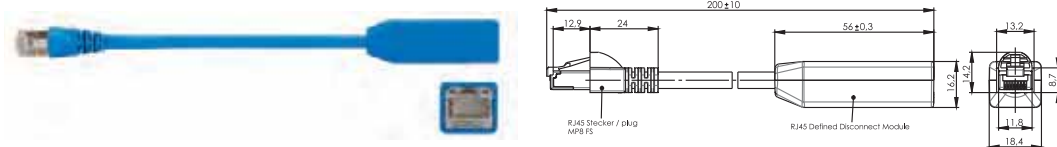
The DDCP-Link offers users and network administrators an easy way to protect expensive and mobile IT equipment with LAN access from damage. If the mobile IT equipment is moved in a bigger radius than the connected RJ45 cable allows, the DDCP-Link disconnects the connection when a certain pull-out force is reached. This prevents damage of the expensive boards of the IT equipment such as damaged contacts or complete loss of RJ45 jacks for the network connection. Therefore, an expensive repair is a thing of the past. The connection between

RJ45 trunk and DDCP-Link disconnects first because the pull-out force is designed to be lower than the standardized specification for RJ45 plugs and jacks according to IEC 60603-7. Nevertheless the DDCP offers enough insertion and pull-out force to prevent an accidental release of the connection under small pull-out forces. The DDCP can be integrated into existing structures with little effort, for example, if it is connected between telecommunication outlets, connection cable and in front of active devices.

## Performance Characteristics

- Plug and Jack: IEC 60603-7-51 compliant
- Life:  $\geq 750$  mating cycles
- Connection diagram 1:1; pin assignment T568B
- Protected release latch
- Contact finish material: Ni1.2Au0.8
- Shielding housing material of jack: diecast nickel-plated zinc
- Outer diameter of cable: 5.8 mm ( $\pm 0.2$  mm)
- Temperature range:  $-40^{\circ}$  C to  $70^{\circ}$  C
- High Power over Ethernet plus (PoE+) acc. to IEEE 802.3at
- Housing cover material: ABS blue
- Cable: S/FTP 4x2xAWG27/7 Cat.7 LSZH

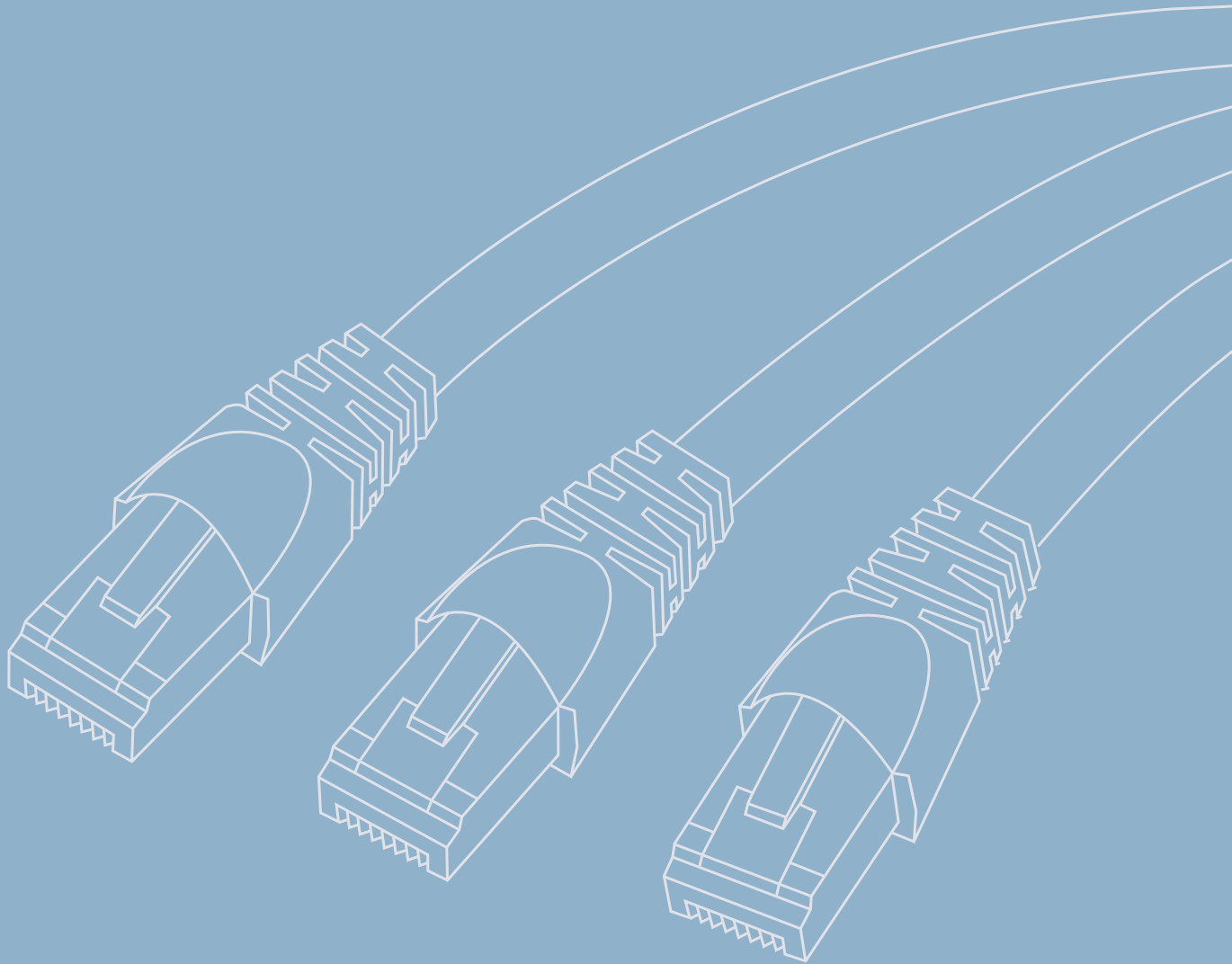
## Application Field



Order no.	Description	Colour
L00000A0274	Defined Disconnect CP-Link	blue



## RJ45 Patch Cords





# 7

## RJ45 Patch Cords

<b>7.1</b>	<b>Cat.6<sub>A</sub> - Wiring 1:1 - S/FTP (LSZH) - shielded .....</b>	<b>148</b>
7.1.1	Cat.6 <sub>A</sub> - Wiring 1:1 - S/FTP (LSZH).....	148
7.1.2	Cat.6 <sub>A</sub> - Wiring 1:1 - S/FTP (LSZH) 1x90° - 1x180° Cable Boot.....	152
7.1.3	Cat.6 <sub>A</sub> - Wiring 1:1 - S/FTP (LSZH) 1x270° - 1x180° Cable Boot.....	155
<b>7.2</b>	<b>Cat.6<sub>A</sub> Mini Patch Cords - Wiring 1:1 - S/FTP (LSZH) - shielded .....</b>	<b>155</b>
<b>7.3</b>	<b>Cat.6<sub>A</sub> - Measuring Cable Wiring 1:1 - S/FTP (LSZH) - shielded .....</b>	<b>156</b>
<b>7.4</b>	<b>Cat.6<sub>A</sub> - Crossover - S/FTP (LSZH) - shielded.....</b>	<b>156</b>
<b>7.5</b>	<b>Cat.5e - Wiring 1:1 - F/UTP (LSZH) - shielded .....</b>	<b>157</b>
7.5.1	Cat.5e - Wiring 1:1 - F/UTP (LSZH) .....	157
7.5.2	Cat.5e - Wiring 1:1 - F/UTP (LSZH) - short boot.....	160
<b>7.6</b>	<b>Cat.6<sub>A</sub> - Wiring 1:1 - U/UTP (LSZH) - unshielded .....</b>	<b>161</b>
<b>7.7</b>	<b>Cat.6 - Wiring 1:1 - U/UTP (LSZH) - unshielded .....</b>	<b>161</b>
<b>7.8</b>	<b>Cat.5e - Wiring 1:1 - U/UTP (PVC) - unshielded .....</b>	<b>165</b>
<b>7.9</b>	<b>Coupler for Patch Cords - shielded.....</b>	<b>168</b>
<b>7.10</b>	<b>Coupler for Patch Cords - unshielded.....</b>	<b>168</b>

# RJ45 Patch Cords

# 7

## Performance Characteristics

- pin assignment acc. to EIA/TIA 568B
- 90° / 180° / 270° moulded boot with latch protection
- Colours: grey, green, red, blue, yellow, black, white, purple
- Variants with very short boot

	Patch Cords shielded 500 MHz/Cat.6 <sub>A</sub> S/FTP LSZH	Mini Patch Cords shielded 500 MHz/ Cat.6 <sub>A</sub> S/FTP LSZH	Patch Cords shielded 100 MHz/Cat.5e F/UTP LSZH
<b>Standards</b>			
Connectors	IEC 60603-7-51	IEC 60603-7-51	IEC 60603-7-3
<b>Mechanical Characteristics</b>			
Cable structure	Li02YSCH 4x2xAWG 27/7 PIMF	Li02YSCH 4x2xAWG 30/7 LSZH	Li2Y(ST)H 4x2xAWG 26/7
Stranded wire	AWG 27 (7/0.14 mm)	AWG 30 (7/0.1 mm)	AWG 26 (7/0.16mm)
Insulation	PE, Ø 1.02 mm (±0.05 mm)	PE, Ø 0.73 (±0.05 mm)	PE, Ø 0.92 mm (±0.05 mm)
Pair shielding	Al-foil, outside conducting	Al-laminated plastic foil	-
Overall shielding	tin plated copper braid	tin plated copper braid	Al-foil, inside conducting
Outer jacket	5.8 mm (±0.2 mm)	4.9 mm (±0.3 mm)	5.5 (±0.2 mm)
<b>Climatic Characteristics</b>			
flame-retardant test	IEC 60332-1	IEC 60332-1	IEC 60332-1
UL	E244889	E244889	
Operating temperature in °C	-40°C to 75°C	-40°C to 75°C	-20° C to 60° C
<b>Electrical Characteristics</b>			
Current carrying capacity at 50°C	1 A	1 A	1 A
PoE+ acc to IEEE 802.3at	Adequate for Power over Ethernet+		
<b>Transmission Characteristics</b>			
10 Gigabit Ethernet acc. to IEEE 802.3an	Adequate for 10 Gigabit Ethernet		-
Gigabit Ethernet acc. to IEEE 802.3	-	-	Adequate for Gigabit Ethernet

	Patch Cords unshielded 500 MHz/Cat.6 <sub>A</sub> U/UTP LSZH	Patch Cords unshielded 250 MHz/Cat.6 U/UTP LSZH	Patch Cords unshielded 100 MHz/Cat.5e U/UTP PVC
<b>Standards</b>			
Connectors	IEC 60603-7-41	IEC 60603-7-4	IEC 60603-7-2
<b>Mechanical Characteristics</b>			
Cable structure	Li2YH 4x2xAWG 24/7	Li2YH 4x2xAWG 24/7	Li2YY 4x2xAWG 24/7
Stranded wire	AWG 24 (7/0.2 mm)	AWG 24 (7/0.2 mm)	AWG 24 (7/0.2 mm)
Insulation	PE; Ø 1.0 mm (±0.05 mm)	PE; Ø 1.0 mm (±0.05 mm)	PE; Ø 0.96 (±0.05 mm)
Outer jacket	5.4 mm (±0.2 mm)	5.4 mm (±0.2 mm)	5.4 mm (±0.2 mm)
<b>Climatic Characteristics</b>			
flame-retardant test	IEC 60332-1	IEC 60332-1	IEC 60332-1
Operating temperature in °C	-20° C to 75° C	-20° C to 60° C	-20° C to 60° C
UL	E244889	-	UL 1581 FT2 (horizontal flame test)
<b>Electrical Characteristics</b>			
Current carrying capacity at 50°C	1 A	1 A	1 A
PoE+ acc to IEEE 802.3at	Adequate for Power over Ethernet+		
<b>Transmission Characteristics</b>			
Gigabit Ethernet acc. to IEEE 802.3	Adequate for Gigabit Ethernet		
10 Gigabit Ethernet acc. to IEEE 802.3an	Adequate for 10 Gigabit Ethernet	-	-

## Tolerances of Lengths

Length (mm)	<500	≥500	>1500	>2500	>5000	>8000	>15000	>20000	>50000	>100000
Tolerance (mm)	±10	±20	±25	±40	±60	±100	±200	±300	±500	±500


## RJ45 Patch Cords

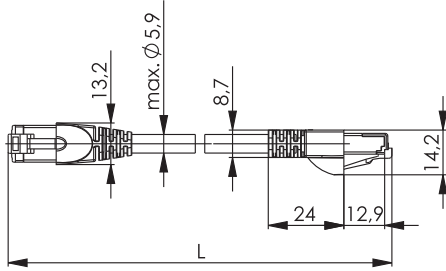
## 7.1

## Cat.6A- Wiring 1:1 - S/FTP (LSZH) - shielded

## 7.1.1

## Cat.6A - Wiring 1:1 - S/FTP (LSZH)






**Cat.6A**

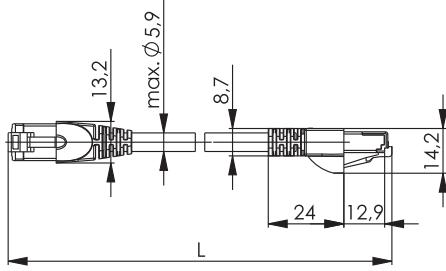
REAL-TIME RE-EMBEDDED

SHIELD

UL US

Order no.	Short name	Length	Colour
L00000A0230	MP8 FS 500 LSZH-0,25	0,25 m	grey
L00000A0072	MP8 FS 500 LSZH-0,5	0,5 m	grey
L00000A0081	MP8 FS 500 LSZH-1,0	1,0 m	grey
L00001A0090	MP8 FS 500 LSZH-1,5	1,5 m	grey
L00001A0084	MP8 FS 500 LSZH-2,0	2,0 m	grey
L00002A0112	MP8 FS 500 LSZH-3,0	3,0 m	grey
L00003A0055	MP8 FS 500 LSZH-5,0	5,0 m	grey
L00004A0054	MP8 FS 500 LSZH-7,5	7,5 m	grey
L00005A0027	MP8 FS 500 LSZH-10,0	10,0 m	grey
L00006A0033	MP8 FS 500 LSZH-15,0	15,0 m	grey
L00006A0036	MP8 FS 500 LSZH-20,0	20,0 m	grey
L00006A0034	MP8 FS 500 LSZH-25,0	25,0 m	grey
L00006A0035	MP8 FS 500 LSZH-50,0	50,0 m	grey





**Cat.6A**

REAL-TIME RE-EMBEDDED

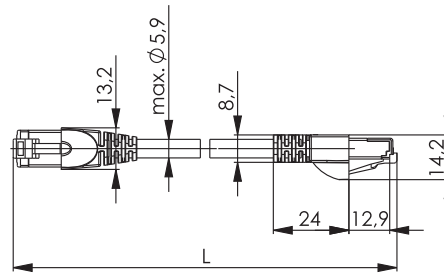
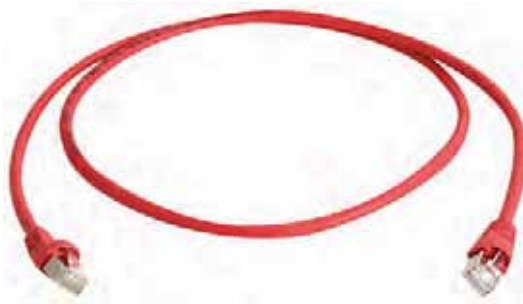
SHIELD

UL US

Order no.	Short name	Length	Colour
L00000A0231	MP8 FS 500 LSZH-0,25	0,25 m	green
L00000A0073	MP8 FS 500 LSZH-0,5	0,5 m	green
L00000A0082	MP8 FS 500 LSZH-1,0	1,0 m	green
L00001A0085	MP8 FS 500 LSZH-2,0	2,0 m	green
L00002A0113	MP8 FS 500 LSZH-3,0	3,0 m	green
L00003A0056	MP8 FS 500 LSZH-5,0	5,0 m	green
L00004A0055	MP8 FS 500 LSZH-7,5	7,5 m	green
L00005A0028	MP8 FS 500 LSZH-10,0	10,0 m	green
L00006A0037	MP8 FS 500 LSZH-15,0	15,0 m	green
L00006A0038	MP8 FS 500 LSZH-20,0	20,0 m	green
L00006A0039	MP8 FS 500 LSZH-25,0	25,0 m	green
L00006A0040	MP8 FS 500 LSZH-50,0	50,0 m	green

## RJ45 Patch Cords

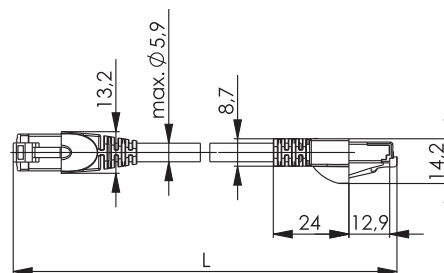
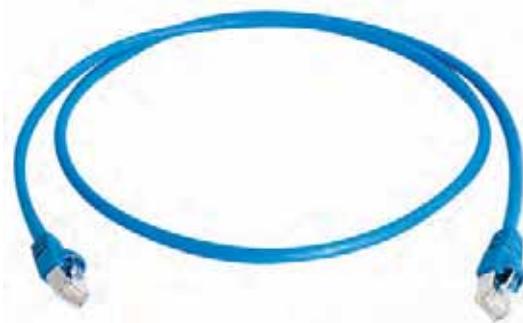
## 7



Cat.6A

REAL-TIME  
RE-EMBEDDED

Order no.	Short name	Length	Colour
L00000A0232	MP8 FS 500 LSZH-0,25	0,25 m	red
L00000A0074	MP8 FS 500 LSZH-0,5	0,5 m	red
L00000A0083	MP8 FS 500 LSZH-1,0	1,0 m	red
L00001A0086	MP8 FS 500 LSZH-2,0	2,0 m	red
L00002A0114	MP8 FS 500 LSZH-3,0	3,0 m	red
L00003A0057	MP8 FS 500 LSZH-5,0	5,0 m	red
L00004A0056	MP8 FS 500 LSZH-7,5	7,5 m	red
L00005A0029	MP8 FS 500 LSZH-10,0	10,0 m	red
L00006A0041	MP8 FS 500 LSZH-15,0	15,0 m	red
L00006A0042	MP8 FS 500 LSZH-20,0	20,0 m	red
L00006A0043	MP8 FS 500 LSZH-25,0	25,0 m	red
L00006A0044	MP8 FS 500 LSZH-50,0	50,0 m	red



Cat.6A

REAL-TIME  
RE-EMBEDDED

Order no.	Short name	Length	Colour
L00000A0233	MP8 FS 500 LSZH-0,25	0,25 m	blue
L00000A0075	MP8 FS 500 LSZH-0,5	0,5 m	blue
L00000A0084	MP8 FS 500 LSZH-1,0	1,0 m	blue
L00001A0087	MP8 FS 500 LSZH-2,0	2,0 m	blue
L00002A0115	MP8 FS 500 LSZH-3,0	3,0 m	blue
L00003A0058	MP8 FS 500 LSZH-5,0	5,0 m	blue
L00004A0057	MP8 FS 500 LSZH-7,5	7,5 m	blue
L00005A0030	MP8 FS 500 LSZH-10,0	10,0 m	blue
L00006A0045	MP8 FS 500 LSZH-15,0	15,0 m	blue
L00006A0046	MP8 FS 500 LSZH-20,0	20,0 m	blue
L00006A0047	MP8 FS 500 LSZH-25,0	25,0 m	blue
L00006A0048	MP8 FS 500 LSZH-50,0	50,0 m	blue

7.1


# RJ45 Patch Cords

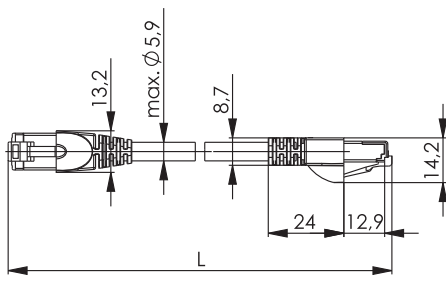
## 7.1





## Cat.6A - Wiring 1:1 - S/FTP (LSZH) - shielded

## 7.1.1


### Cat.6A - Wiring 1:1 - S/FTP (LSZH)

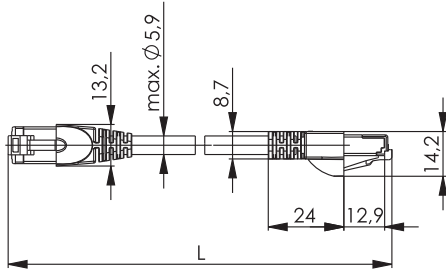








Order no.	Short name	Length	Colour
L00000A0234	MP8 FS 500 LSZH-0,25	0,25 m	yellow
L00000A0076	MP8 FS 500 LSZH-0,5	0,5 m	yellow
L00000A0085	MP8 FS 500 LSZH-1,0	1,0 m	yellow
L00001A0088	MP8 FS 500 LSZH-2,0	2,0 m	yellow
L00002A0116	MP8 FS 500 LSZH-3,0	3,0 m	yellow
L00003A0059	MP8 FS 500 LSZH-5,0	5,0 m	yellow
L00004A0058	MP8 FS 500 LSZH-7,5	7,5 m	yellow
L00005A0031	MP8 FS 500 LSZH-10,0	10,0 m	yellow
L00006A0049	MP8 FS 500 LSZH-15,0	15,0 m	yellow
L00006A0050	MP8 FS 500 LSZH-20,0	20,0 m	yellow
L00006A0051	MP8 FS 500 LSZH-25,0	25,0 m	yellow
L00006A0052	MP8 FS 500 LSZH-50,0	50,0 m	yellow





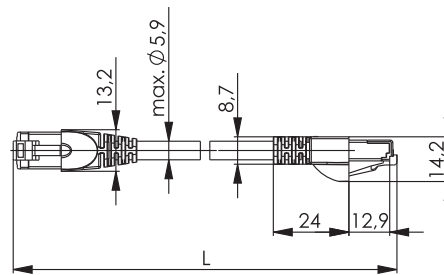





Order no.	Short name	Length	Colour
L00000A0235	MP8 FS 500 LSZH-0,25	0,25 m	black
L00000A0077	MP8 FS 500 LSZH-0,5	0,5 m	black
L00000A0086	MP8 FS 500 LSZH-1,0	1,0 m	black
L00001A0089	MP8 FS 500 LSZH-2,0	2,0 m	black
L00002A0117	MP8 FS 500 LSZH-3,0	3,0 m	black
L00003A0060	MP8 FS 500 LSZH-5,0	5,0 m	black
L00004A0060	MP8 FS 500 LSZH-7,5	7,5 m	black
L00005A0032	MP8 FS 500 LSZH-10,0	10,0 m	black
L00006A0053	MP8 FS 500 LSZH-15,0	15,0 m	black
L00006A0054	MP8 FS 500 LSZH-20,0	20,0 m	black
L00006A0055	MP8 FS 500 LSZH-25,0	25,0 m	black
L00006A0056	MP8 FS 500 LSZH-50,0	50,0 m	black



## RJ45 Patch Cords

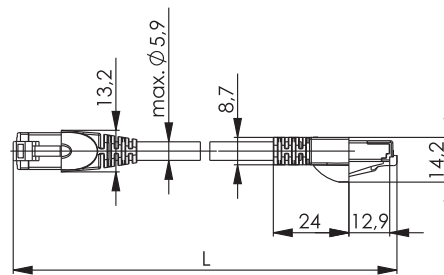
## 7



Cat.6A

REAL-TIME  
RE-EMBEDDED

Order no.	Short name	Length	Colour
L00000A0236	MP8 FS 500 LSZH-0,25	0,25 m	white
L00000A0130	MP8 FS 500 LSZH-0,5	0,5 m	white
L00000A0131	MP8 FS 500 LSZH-1,0	1,0 m	white
L00001A0123	MP8 FS 500 LSZH-2,0	2,0 m	white
L00002A0141	MP8 FS 500 LSZH-3,0	3,0 m	white
L00003A0085	MP8 FS 500 LSZH-5,0	5,0 m	white
L00004A0071	MP8 FS 500 LSZH-7,5	7,5 m	white
L00005A0051	MP8 FS 500 LSZH-10,0	10,0 m	white



Cat.6A

REAL-TIME  
RE-EMBEDDED

Order no.	Short name	Length	Colour
L00000A0237	MP8 FS 500 LSZH-0,25	0,25 m	purple
L00000A0238	MP8 FS 500 LSZH-0,5	0,5 m	purple
L00000A0226	MP8 FS 500 LSZH-1,0	1,0 m	purple
L00001A0194	MP8 FS 500 LSZH-2,0	2,0 m	purple
L00002A0195	MP8 FS 500 LSZH-3,0	3,0 m	purple
L00003A0147	MP8 FS 500 LSZH-5,0	5,0 m	purple
L00004A0134	MP8 FS 500 LSZH-7,5	7,5 m	purple
L00005A0103	MP8 FS 500 LSZH-10,0	10,0 m	purple

7.1


# RJ45 Patch Cords

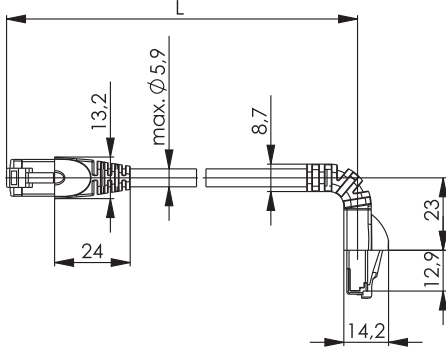
## 7.1




## Cat.6A - Wiring 1:1 - S/FTP (LSZH) - shielded

## 7.1.2


### Cat.6A - Wiring 1:1 - S/FTP (LSZH) 1x90° - 1x180° Cable Boot

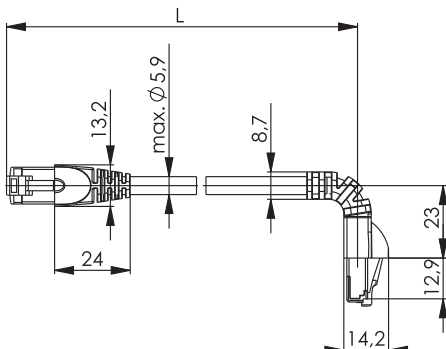







Order no.	Short name	Length	Colour	Remarks
L00000A0189	MP8 FS 500 LSZH-0,5	0,5 m	grey	1x90° - 1x180° cable boot
L00000A0192	MP8 FS 500 LSZH-1,0	1,0 m	grey	1x90° - 1x180° cable boot
L00001A0154	MP8 FS 500 LSZH-1,5	1,5 m	grey	1x90° - 1x180° cable boot
L00001A0155	MP8 FS 500 LSZH-2,0	2,0 m	grey	1x90° - 1x180° cable boot
L00002A0173	MP8 FS 500 LSZH-3,0	3,0 m	grey	1x90° - 1x180° cable boot
L00003A0119	MP8 FS 500 LSZH-5,0	5,0 m	grey	1x90° - 1x180° cable boot
L00004A0109	MP8 FS 500 LSZH-7,5	7,5 m	grey	1x90° - 1x180° cable boot
L00005A0080	MP8 FS 500 LSZH-10,0	10,0 m	grey	1x90° - 1x180° cable boot



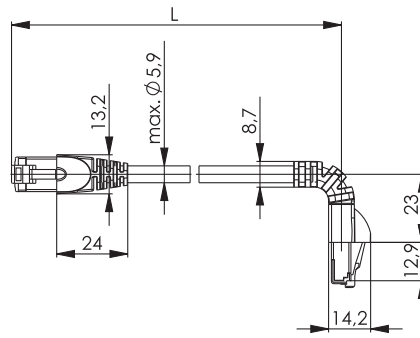


Order no.	Short name	Length	Colour	Remarks
L00000A0193	MP8 FS 500 LSZH-0,5	0,5 m	green	1x90° - 1x180° cable boot
L00000A0194	MP8 FS 500 LSZH-1,0	1,0 m	green	1x90° - 1x180° cable boot
L00001A0156	MP8 FS 500 LSZH-2,0	2,0 m	green	1x90° - 1x180° cable boot
L00002A0174	MP8 FS 500 LSZH-3,0	3,0 m	green	1x90° - 1x180° cable boot
L00003A0121	MP8 FS 500 LSZH-5,0	5,0 m	green	1x90° - 1x180° cable boot
L00004A0111	MP8 FS 500 LSZH-7,5	7,5 m	green	1x90° - 1x180° cable boot
L00005A0081	MP8 FS 500 LSZH-10,0	10,0 m	green	1x90° - 1x180° cable boot

## RJ45 Patch Cords

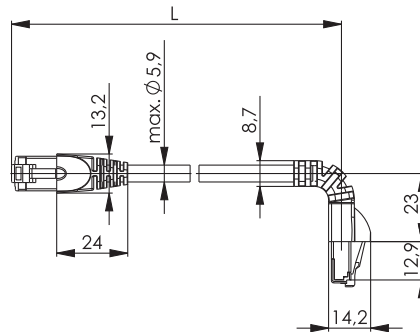
## 7



Cat.6A

REAL-TIME  
RE-EMBEDDED

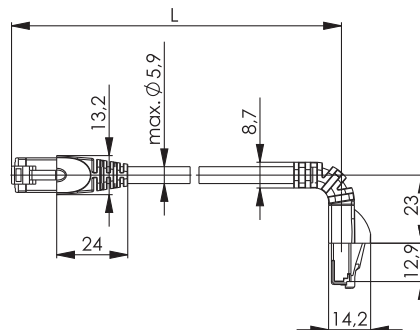
Order no.	Short name	Length	Colour	Remarks
L00000A0195	MP8 FS 500 LSZH-0,5	0,5 m	red	1x90° - 1x180° cable boot
L00000A0196	MP8 FS 500 LSZH-1,0	1,0 m	red	1x90° - 1x180° cable boot
L00001A0157	MP8 FS 500 LSZH-2,0	2,0 m	red	1x90° - 1x180° cable boot
L00002A0176	MP8 FS 500 LSZH-3,0	3,0 m	red	1x90° - 1x180° cable boot
L00003A0123	MP8 FS 500 LSZH-5,0	5,0 m	red	1x90° - 1x180° cable boot
L00004A0112	MP8 FS 500 LSZH-7,5	7,5 m	red	1x90° - 1x180° cable boot
L00005A0082	MP8 FS 500 LSZH-10,0	10,0 m	red	1x90° - 1x180° cable boot



Cat.6A

REAL-TIME  
RE-EMBEDDED

Order no.	Short name	Length	Colour	Remarks
L00000A0197	MP8 FS 500 LSZH-0,5	0,5 m	blue	1x90° - 1x180° cable boot
L00000A0198	MP8 FS 500 LSZH-1,0	1,0 m	blue	1x90° - 1x180° cable boot
L00001A0159	MP8 FS 500 LSZH-2,0	2,0 m	blue	1x90° - 1x180° cable boot
L00002A0177	MP8 FS 500 LSZH-3,0	3,0 m	blue	1x90° - 1x180° cable boot
L00003A0124	MP8 FS 500 LSZH-5,0	5,0 m	blue	1x90° - 1x180° cable boot
L00004A0113	MP8 FS 500 LSZH-7,5	7,5 m	blue	1x90° - 1x180° cable boot
L00005A0083	MP8 FS 500 LSZH-10,0	10,0 m	blue	1x90° - 1x180° cable boot



Cat.6A

REAL-TIME  
RE-EMBEDDED

Order no.	Short name	Length	Colour	Remarks
L00000A0199	MP8 FS 500 LSZH-0,5	0,5 m	yellow	1x90° - 1x180° cable boot
L00000A0200	MP8 FS 500 LSZH-1,0	1,0 m	yellow	1x90° - 1x180° cable boot
L00001A0162	MP8 FS 500 LSZH-2,0	2,0 m	yellow	1x90° - 1x180° cable boot
L00002A0179	MP8 FS 500 LSZH-3,0	3,0 m	yellow	1x90° - 1x180° cable boot
L00003A0125	MP8 FS 500 LSZH-5,0	5,0 m	yellow	1x90° - 1x180° cable boot
L00004A0114	MP8 FS 500 LSZH-7,5	7,5 m	yellow	1x90° - 1x180° cable boot
L00005A0084	MP8 FS 500 LSZH-10,0	10,0 m	yellow	1x90° - 1x180° cable boot


## RJ45 Patch Cords

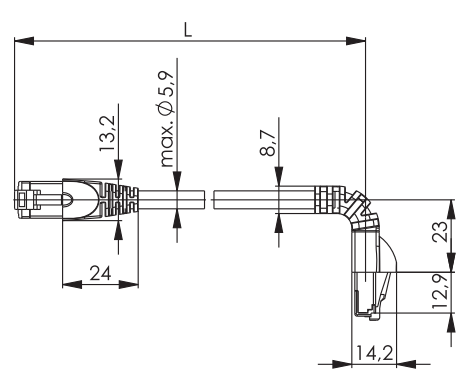
## 7.1





## Cat.6A - Wiring 1:1 - S/FTP (LSZH) - shielded

## 7.1.2


## Cat.6A - Wiring 1:1 - S/FTP (LSZH) 1x90° - 1x180° Cable Boot

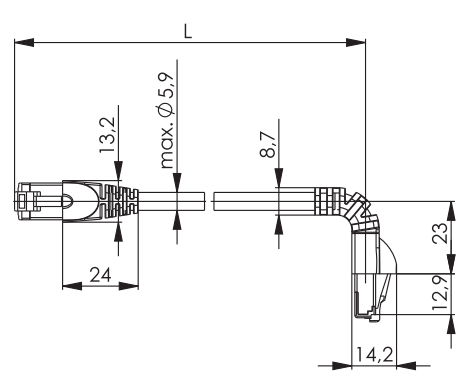








Order no.	Short name	Length	Colour	Remarks
L00000A0201	MP8 FS 500 LSZH-0,5	0,5 m	black	1x90° - 1x180° cable boot
L00000A0202	MP8 FS 500 LSZH-1,0	1,0 m	black	1x90° - 1x180° cable boot
L00001A0163	MP8 FS 500 LSZH-2,0	2,0 m	black	1x90° - 1x180° cable boot
L00002A0175	MP8 FS 500 LSZH-3,0	3,0 m	black	1x90° - 1x180° cable boot
L00003A0126	MP8 FS 500 LSZH-5,0	5,0 m	black	1x90° - 1x180° cable boot
L00004A0115	MP8 FS 500 LSZH-7,5	7,5 m	black	1x90° - 1x180° cable boot
L00005A0085	MP8 FS 500 LSZH-10,0	10,0 m	black	1x90° - 1x180° cable boot





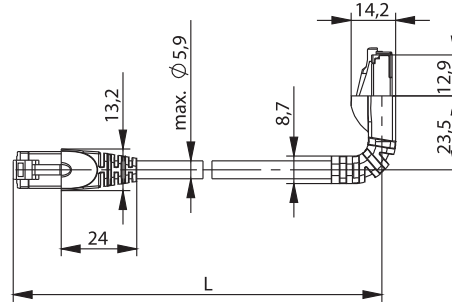
Order no.	Short name	Length	Colour	Remarks
L00000A0203	MP8 FS 500 LSZH-0,5	0,5 m	white	1x90° - 1x180° cable boot
L00000A0204	MP8 FS 500 LSZH-1,0	1,0 m	white	1x90° - 1x180° cable boot
L00001A0164	MP8 FS 500 LSZH-2,0	2,0 m	white	1x90° - 1x180° cable boot
L00002A0180	MP8 FS 500 LSZH-3,0	3,0 m	white	1x90° - 1x180° cable boot
L00003A0127	MP8 FS 500 LSZH-5,0	5,0 m	white	1x90° - 1x180° cable boot
L00004A0116	MP8 FS 500 LSZH-7,5	7,5 m	white	1x90° - 1x180° cable boot
L00005A0086	MP8 FS 500 LSZH-10,0	10,0 m	white	1x90° - 1x180° cable boot

# RJ45 Patch Cords

# 7

## Cat.6A - Wiring 1:1 - S/FTP (LSZH) 1x270° - 1x180° Cable Boot

7.1.3



Cat.6A

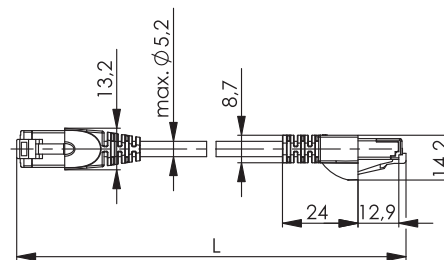
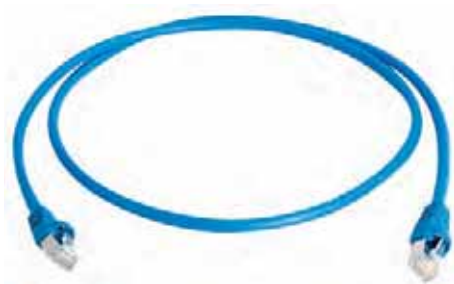
REAL-TIME RE-EMBEDDED



Order no.	Short name	Length	Colour	Remarks
L00000A0253	MP8 FS 500 LSZH-0,5	0,5 m	grey	1x270° - 1x180° boot
L00000A0254	MP8 FS 500 LSZH-1,0	1,0 m	grey	1x270° - 1x180° boot
L00001A0199	MP8 FS 500 LSZH-2,0	2,0 m	grey	1x270° - 1x180° boot
L00002A0203	MP8 FS 500 LSZH-3,0	3,0 m	grey	1x270° - 1x180° boot
L00003A0157	MP8 FS 500 LSZH-5,0	5,0 m	grey	1x270° - 1x180° boot
L00004A0145	MP8 FS 500 LSZH-7,5	7,5 m	grey	1x270° - 1x180° boot
L00005A0113	MP8 FS 500 LSZH-10,0	10,0 m	grey	1x270° - 1x180° boot

## Cat.6A Mini Patch Cords - Wiring 1:1 - S/FTP (LSZH) - shielded

7.2



Cat.6A

REAL-TIME RE-EMBEDDED



Order no.	Short name	Length	Colour
L00000A0376	Mini Patch Cord MP8 FS 500 LSZH-0,5	0.5 m	blue
L00000A0377	Mini Patch Cord MP8 FS 500 LSZH-1,0	1.0 m	blue
L00001A0288	Mini Patch Cord MP8 FS 500 LSZH-1,5	1.5 m	blue
L00001A0289	Mini Patch Cord MP8 FS 500 LSZH-2,0	2.0 m	blue
L00002A0282	Mini Patch Cord MP8 FS 500 LSZH-2,5	2.5 m	blue
L00002A0283	Mini Patch Cord MP8 FS 500 LSZH-3,0	3.0 m	blue
L00003A0250	Mini Patch Cord MP8 FS 500 LSZH-5,0	5.0 m	blue
L00004A0225	Mini Patch Cord MP8 FS 500 LSZH-7,5	7.5 m	blue
L00005A0176	Mini Patch Cord MP8 FS 500 LSZH-10,0	10.0 m	blue

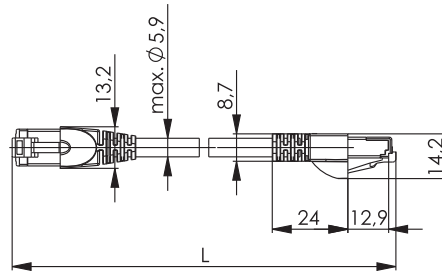
# RJ45 Patch Cords

## 7.3

## Cat.6A - Measuring Cable Wiring 1:1 - S/FTP (LSZH) - shielded



Cat.6A

REAL-TIME  
RE-EMBEDDED

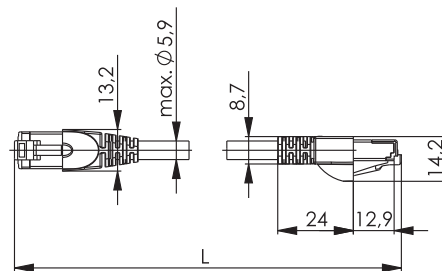
Order no.	Short name	Remarks	Length	Colour
L00003A0049	MP8 FS 500 LSZH-5,0	Telegärtner test cable for channel adapter Class E <sub>A</sub>	5,0 m	blue

## 7.4

## Cat.6A - Crossover - S/FTP (LSZH) - shielded



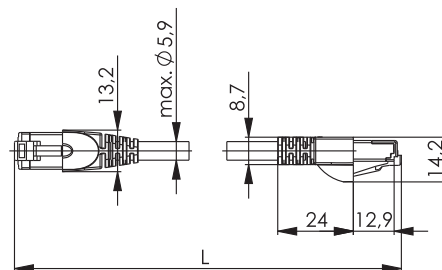
Cat.6A

REAL-TIME  
RE-EMBEDDED

Order no.	Short name	Length	Cable boot colour	Colour
L00000A0102	MP8 FS 500 LSZH Crossover 10/100/1000 BT-0,5	0,5 m	yellow	grey
L00000A0103	MP8 FS 500 LSZH Crossover 10/100/1000 BT-1,0	1,0 m	yellow	grey
L00001A0099	MP8 FS 500 LSZH Crossover 10/100/1000 BT-2,0	2,0 m	yellow	grey
L00002A0120	MP8 FS 500 LSZH Crossover 10/100/1000 BT-3,0	3,0 m	yellow	grey
L00003A0067	MP8 FS 500 LSZH Crossover 10/100/1000 BT-5,0	5,0 m	yellow	grey
L00004A0064	MP8 FS 500 LSZH Crossover 10/100/1000 BT-7,5	7,5 m	yellow	grey
L00005A0035	MP8 FS 500 LSZH Crossover 10/100/1000 BT-10,0	10,0 m	yellow	grey



Cat.6A

REAL-TIME  
RE-EMBEDDED

Order no.	Short name	Length	Colour
L00000A0118	MP8 FS 500 LSZH Crossover 10/100/1000 BT-0,5	0,5 m	red
L00000A0120	MP8 FS 500 LSZH Crossover 10/100/1000 BT-1,0	1,0 m	red
L00001A0117	MP8 FS 500 LSZH Crossover 10/100/1000 BT-2,0	2,0 m	red
L00002A0139	MP8 FS 500 LSZH Crossover 10/100/1000 BT-3,0	3,0 m	red
L00003A0078	MP8 FS 500 LSZH Crossover 10/100/1000 BT-5,0	5,0 m	red
L00005A0104	MP8 FS 500 LSZH Crossover 10/100/1000 BT-10,0	10,0 m	red

## RJ45 Patch Cords

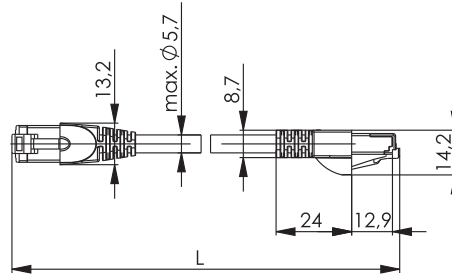
## 7

## Cat.5e - Wiring 1:1 - F/UTP (LSZH) - shielded

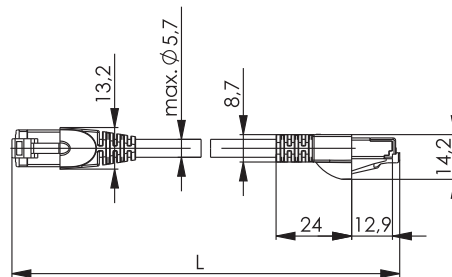
7.5

## Cat.5e - Wiring 1:1 - F/UTP (LSZH)

7.5.1



Order no.	Short name	Length	Colour
L00000D0017	MP8 FS 100 LSZH-0,25	0,25 m	grey
L00000D0035	MP8 FS 100 LSZH-0,5	0,5 m	grey
L00000D0026	MP8 FS 100 LSZH-1,0	1,0 m	grey
L00001D0036	MP8 FS 100 LSZH-2,0	2,0 m	grey
L00002D0080	MP8 FS 100 LSZH-3,0	3,0 m	grey
L00003D0030	MP8 FS 100 LSZH-5,0	5,0 m	grey
L00004D0041	MP8 FS 100 LSZH-7,5	7,5 m	grey
L00005D0035	MP8 FS 100 LSZH-10,0	10,0 m	grey
L00006D0078	MP8 FS 100 LSZH-15,0	15,0 m	grey
L00006D0079	MP8 FS 100 LSZH-20,0	20,0 m	grey
L00006D0080	MP8 FS 100 LSZH-25,0	25,0 m	grey
L00006D0081	MP8 FS 100 LSZH-50,0	50,0 m	grey



Order no.	Short name	Length	Colour
L00000D0034	MP8 FS 100 LSZH-0,5	0,5 m	green
L00000D0025	MP8 FS 100 LSZH-1,0	1,0 m	green
L00001D0035	MP8 FS 100 LSZH-2,0	2,0 m	green
L00002D0079	MP8 FS 100 LSZH-3,0	3,0 m	green
L00003D0029	MP8 FS 100 LSZH-5,0	5,0 m	green
L00004D0040	MP8 FS 100 LSZH-7,5	7,5 m	green
L00005D0036	MP8 FS 100 LSZH-10,0	10,0 m	green
L00006D0082	MP8 FS 100 LSZH-15,0	15,0 m	green
L00006D0083	MP8 FS 100 LSZH-20,0	20,0 m	green
L00006D0084	MP8 FS 100 LSZH-25,0	25,0 m	green
L00006D0085	MP8 FS 100 LSZH-50,0	50,0 m	green

7.5

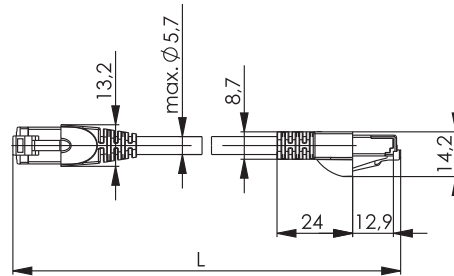
# RJ45 Patch Cords

## 7.5

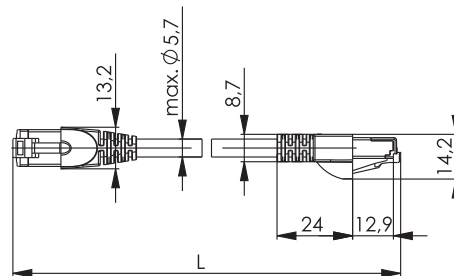
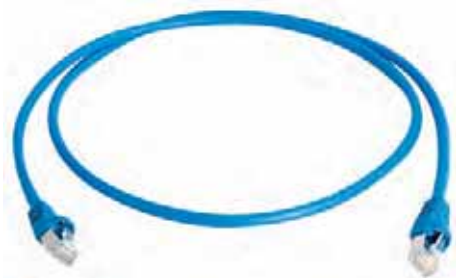
## Cat.5e - Wiring 1:1 - F/UTP (LSZH) - shielded

## 7.5.1

### Cat.5e - Wiring 1:1 - F/UTP (LSZH)



Order no.	Short name	Length	Colour
L00000D0031	MP8 FS 100 LSZH-0,5	0,5 m	red
L00000D0022	MP8 FS 100 LSZH-1,0	1,0 m	red
L00001D0032	MP8 FS 100 LSZH-2,0	2,0 m	red
L00002D0076	MP8 FS 100 LSZH-3,0	3,0 m	red
L00003D0026	MP8 FS 100 LSZH-5,0	5,0 m	red
L00004D0037	MP8 FS 100 LSZH-7,5	7,5 m	red
L00005D0037	MP8 FS 100 LSZH-10,0	10,0 m	red
L00006D0086	MP8 FS 100 LSZH-15,0	15,0 m	red
L00006D0087	MP8 FS 100 LSZH-20,0	20,0 m	red
L00006D0088	MP8 FS 100 LSZH-25,0	25,0 m	red
L00006D0089	MP8 FS 100 LSZH-50,0	50,0 m	red

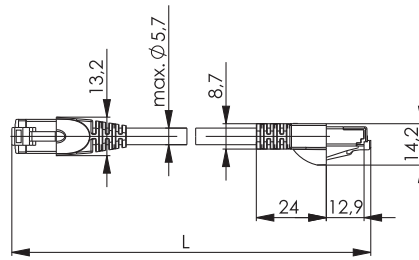


Order no.	Short name	Length	Colour
L00000D0032	MP8 FS 100 LSZH-0,5	0,5 m	blue
L00000D0023	MP8 FS 100 LSZH-1,0	1,0 m	blue
L00001D0033	MP8 FS 100 LSZH-2,0	2,0 m	blue
L00002D0077	MP8 FS 100 LSZH-3,0	3,0 m	blue
L00003D0027	MP8 FS 100 LSZH-5,0	5,0 m	blue
L00004D0038	MP8 FS 100 LSZH-7,5	7,5 m	blue
L00005D0038	MP8 FS 100 LSZH-10,0	10,0 m	blue
L00006D0090	MP8 FS 100 LSZH-15,0	15,0 m	blue
L00006D0091	MP8 FS 100 LSZH-20,0	20,0 m	blue
L00006D0092	MP8 FS 100 LSZH-25,0	25,0 m	blue
L00006D0093	MP8 FS 100 LSZH-50,0	50,0 m	blue

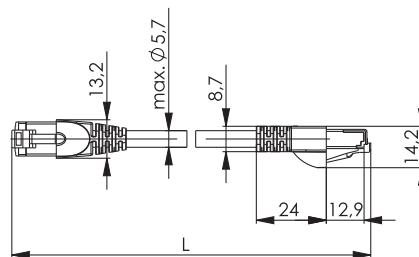


## RJ45 Patch Cords

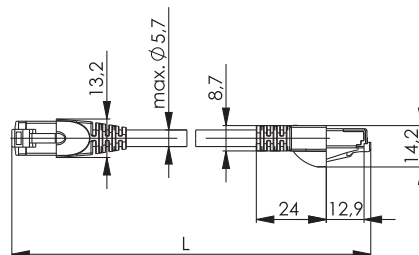
## 7



Order no.	Short name	Length	Colour
L00000D0033	MP8 FS 100 LSZH-0,5	0,5 m	yellow
L00000D0024	MP8 FS 100 LSZH-1,0	1,0 m	yellow
L00001D0034	MP8 FS 100 LSZH-2,0	2,0 m	yellow
L00002D0078	MP8 FS 100 LSZH-3,0	3,0 m	yellow
L00003D0028	MP8 FS 100 LSZH-5,0	5,0 m	yellow
L00004D0039	MP8 FS 100 LSZH-7,5	7,5 m	yellow
L00005D0039	MP8 FS 100 LSZH-10,0	10,0 m	yellow
L00006D0094	MP8 FS 100 LSZH-15,0	15,0 m	yellow
L00006D0095	MP8 FS 100 LSZH-20,0	20,0 m	yellow
L00006D0096	MP8 FS 100 LSZH-25,0	25,0 m	yellow
L00006D0097	MP8 FS 100 LSZH-50,0	50,0 m	yellow



Order no.	Short name	Length	Colour
L00000D0089	MP8 FS 100 LSZH-0,5	0,5 m	black
L00000D0090	MP8 FS 100 LSZH-1,0	1,0 m	black
L00001D0095	MP8 FS 100 LSZH-2,0	2,0 m	black
L00002D0123	MP8 FS 100 LSZH-3,0	3,0 m	black
L00003D0062	MP8 FS 100 LSZH-5,0	5,0 m	black
L00004D0062	MP8 FS 100 LSZH-7,5	7,5 m	black
L00005D0040	MP8 FS 100 LSZH-10,0	10,0 m	black
L00006D0098	MP8 FS 100 LSZH-15,0	15,0 m	black
L00006D0099	MP8 FS 100 LSZH-20,0	20,0 m	black
L00006D0100	MP8 FS 100 LSZH-25,0	25,0 m	black
L00006D0101	MP8 FS 100 LSZH-50,0	50,0 m	black



Order no.	Short name	Length	Colour
L00000D0004	MP8 FS 100 LSZH-0,5	0,5 m	white
L00000D0005	MP8 FS 100 LSZH-1,0	1,0 m	white
L00001D0003	MP8 FS 100 LSZH-2,0	2,0 m	white
L00002D0002	MP8 FS 100 LSZH-3,0	3,0 m	white
L00003D0004	MP8 FS 100 LSZH-5,0	5,0 m	white
L00004D0004	MP8 FS 100 LSZH-7,5	7,5 m	white
L00005D0004	MP8 FS 100 LSZH-10,0	10,0 m	white

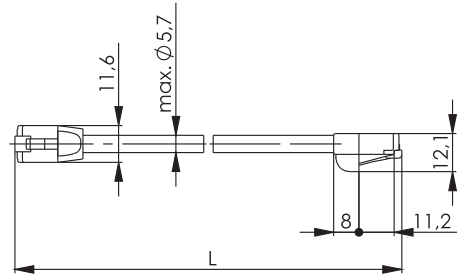
# RJ45 Patch Cords

## 7.5

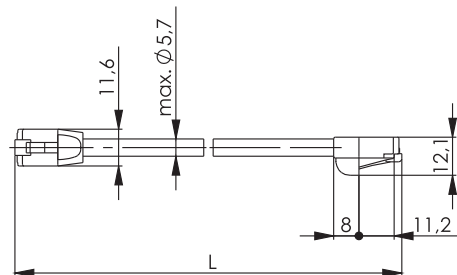
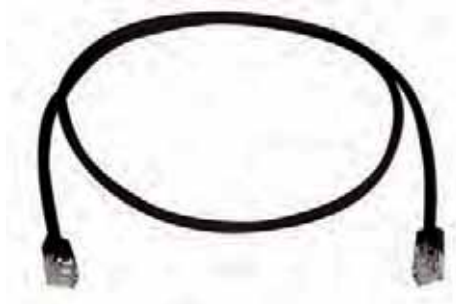
## Cat.5e - Wiring 1:1 - F/UTP (LSZH) - shielded

## 7.5.2

### Cat.5e - Wiring 1:1 - F/UTP (LSZH) - short boot



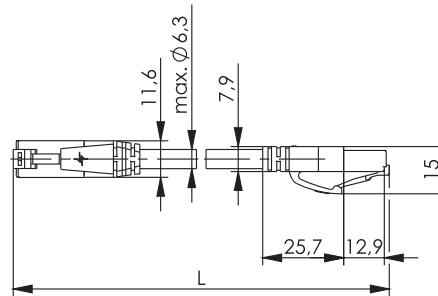
Order no.	Short name	Length	Colour	Remarks
L00000A0307	MP8 FS 100-0,25	0,25 m	grey	short boot
L00000A0308	MP8 FS 100-0,5	0,5 m	grey	short boot
L00000A0309	MP8 FS 100-1,0	1,0 m	grey	short boot
L00001A0244	MP8 FS 100-2,0	2,0 m	grey	short boot
L00002A0244	MP8 FS 100-3,0	3,0 m	grey	short boot
L00003A0217	MP8 FS 100-5,0	5,0 m	grey	short boot
L00004A0189	MP8 FS 100-7,5	7,5 m	grey	short boot
L00005A0138	MP8 FS 100-10,0	10,0 m	grey	short boot



Order no.	Short name	Length	Colour	Remarks
L00000A0310	MP8 FS 100-0,25	0,25 m	black	short boot
L00000A0311	MP8 FS 100-0,5	0,5 m	black	short boot
L00000A0312	MP8 FS 100-1,0	1,0 m	black	short boot
L00001A0245	MP8 FS 100-2,0	2,0 m	black	short boot
L00002A0245	MP8 FS 100-3,0	3,0 m	black	short boot
L00003A0218	MP8 FS 100-5,0	5,0 m	black	short boot
L00004A0191	MP8 FS 100-7,5	7,5 m	black	short boot
L00005A0139	MP8 FS 100-10,0	10,0 m	black	short boot

## Cat.6A - Wiring 1:1 - U/UTP (LSZH) - unshielded

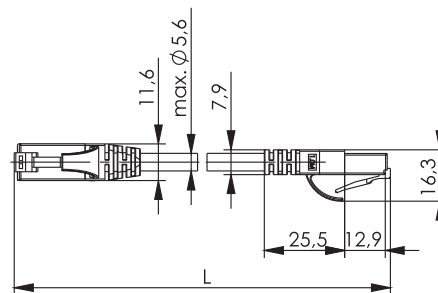
7.6



Order no.	Short name	Length	Colour
L00000A0340	MP8 500 LSZH-0,5	0,5 m	blue
L00000A0341	MP8 500 LSZH-1,0	1,0 m	blue
L00001A0264	MP8 500 LSZH-2,0	2,0 m	blue
L00002A0259	MP8 500 LSZH-3,0	3,0 m	blue
L00003A0230	MP8 500 LSZH-5,0	5,0 m	blue
L00004A0206	MP8 500 LSZH-7,5	7,5 m	blue
L00005A0153	MP8 500 LSZH-10,0	10,0 m	blue
L00006A0358	MP8 500 LSZH-15,0	15,0 m	blue
L00006A0359	MP8 500 LSZH-20,0	20,0 m	blue
L00006A0360	MP8 500 LSZH-25,0	25,0 m	blue

## Cat.6 - Wiring 1:1 - U/UTP (LSZH) - unshielded

7.7



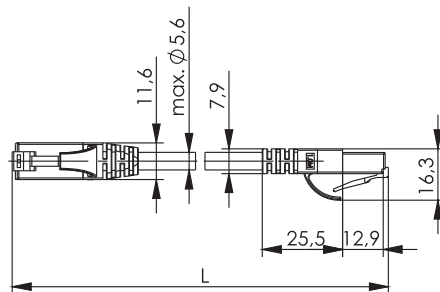
Order no.	Short name	Length	Colour
L00000A0287	MP8 250-0,5	0,5 m	grey
L00000A0273	MP8 250-1,0	1,0 m	grey
L00001A0228	MP8 250-2,0	2,0 m	grey
L00002A0219	MP8 250-3,0	3,0 m	grey
L00003A0204	MP8 250-5,0	5,0 m	grey
L00004A0178	MP8 250-7,5	7,5 m	grey
L00005A0129	MP8 250-10,0	10,0 m	grey
L00006A0321	MP8 250-15,0	15,0 m	grey
L00006A0322	MP8 250-20,0	20,0 m	grey
L00006A0323	MP8 250-25,0	25,0 m	grey

7.7

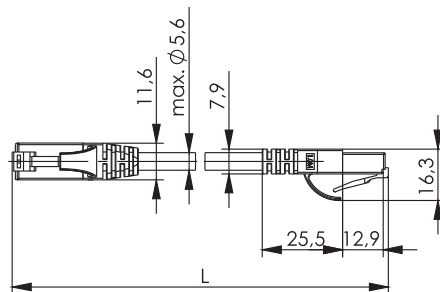
## RJ45 Patch Cords

## 7.7

## Cat.6 - Wiring 1:1 - U/UTP (LSZH) - unshielded



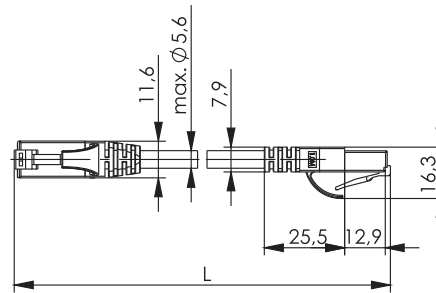
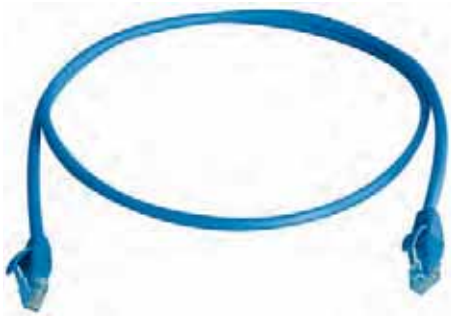
Order no.	Short name	Length	Colour
L00000A0288	MP8 250-0,5	0,5 m	green
L00000A0289	MP8 250-1,0	1,0 m	green
L00001A0230	MP8 250-2,0	2,0 m	green
L00002A0231	MP8 250-3,0	3,0 m	green
L00003A0205	MP8 250-5,0	5,0 m	green
L00004A0179	MP8 250-7,5	7,5 m	green
L00005A0130	MP8 250-10,0	10,0 m	green
L00006A0324	MP8 250-15,0	15,0 m	green
L00006A0325	MP8 250-20,0	20,0 m	green
L00006A0326	MP8 250-25,0	25,0 m	green



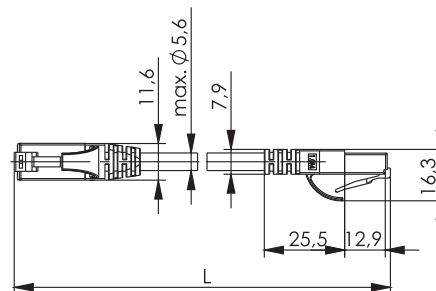
Order no.	Short name	Length	Colour
L00000A0290	MP8 250-0,5	0,5 m	red
L00000A0291	MP8 250-1,0	1,0 m	red
L00001A0232	MP8 250-2,0	2,0 m	red
L00002A0233	MP8 250-3,0	3,0 m	red
L00003A0206	MP8 250-5,0	5,0 m	red
L00004A0181	MP8 250-7,5	7,5 m	red
L00005A0131	MP8 250-10,0	10,0 m	red
L00006A0327	MP8 250-15,0	15,0 m	red
L00006A0328	MP8 250-20,0	20,0 m	red
L00006A0329	MP8 250-25,0	25,0 m	red

## RJ45 Patch Cords

## 7



Order no.	Short name	Length	Colour
L00000A0292	MP8 250-0,5	0,5 m	blue
L00000A0293	MP8 250-1,0	1,0 m	blue
L00001A0234	MP8 250-2,0	2,0 m	blue
L00002A0235	MP8 250-3,0	3,0 m	blue
L00003A0207	MP8 250-5,0	5,0 m	blue
L00004A0182	MP8 250-7,5	7,5 m	blue
L00005A0132	MP8 250-10,0	10,0 m	blue
L00006A0330	MP8 250-15,0	15,0 m	blue
L00006A0331	MP8 250-20,0	20,0 m	blue
L00006A0332	MP8 250-25,0	25,0 m	blue



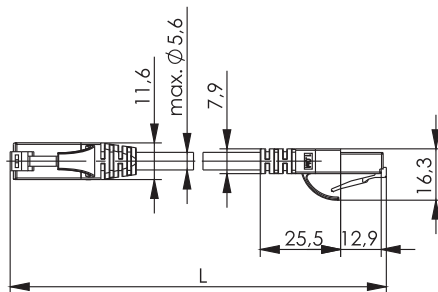
Order no.	Short name	Length	Colour
L00000A0294	MP8 250-0,5	0,5 m	yellow
L00000A0295	MP8 250-1,0	1,0 m	yellow
L00001A0236	MP8 250-2,0	2,0 m	yellow
L00002A0237	MP8 250-3,0	3,0 m	yellow
L00003A0208	MP8 250-5,0	5,0 m	yellow
L00004A0183	MP8 250-7,5	7,5 m	yellow
L00005A0133	MP8 250-10,0	10,0 m	yellow
L00006A0333	MP8 250-15,0	15,0 m	yellow
L00006A0334	MP8 250-20,0	20,0 m	yellow
L00006A0335	MP8 250-25,0	25,0 m	yellow

7.7

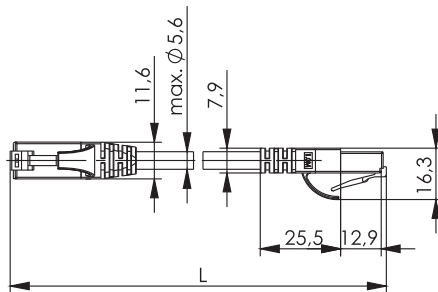
## RJ45 Patch Cords

## 7.7

## Cat.6 - Wiring 1:1 - U/UTP (LSZH) - unshielded



Order no.	Short name	Length	Colour
L00000A0296	MP8 250-0,5	0,5 m	black
L00000A0297	MP8 250-1,0	1,0 m	black
L00001A0238	MP8 250-2,0	2,0 m	black
L00002A0239	MP8 250-3,0	3,0 m	black
L00003A0209	MP8 250-5,0	5,0 m	black
L00004A0185	MP8 250-7,5	7,5 m	black
L00005A0134	MP8 250-10,0	10,0 m	black
L00006A0336	MP8 250-15,0	15,0 m	black
L00006A0337	MP8 250-20,0	20,0 m	black
L00006A0338	MP8 250-25,0	25,0 m	black



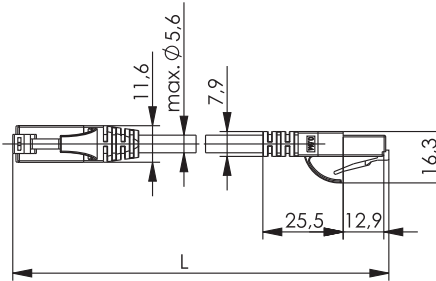
Order no.	Short name	Length	Colour
L00000A0303	MP8 250-0,5	0,5 m	white
L00000A0304	MP8 250-1,0	1,0 m	white
L00001A0243	MP8 250-2,0	2,0 m	white
L00002A0243	MP8 250-3,0	3,0 m	white
L00003A0216	MP8 250-5,0	5,0 m	white
L00004A0186	MP8 250-7,5	7,5 m	white
L00005A0137	MP8 250-10,0	10,0 m	white
L00006A0341	MP8 250-15,0	15,0 m	white
L00006A0342	MP8 250-20,0	20,0 m	white
L00006A0343	MP8 250-25,0	25,0 m	white

## RJ45 Patch Cords

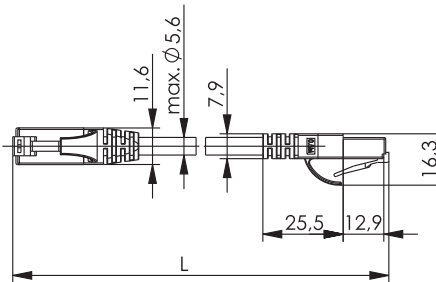
## 7

## Cat.5e - Wiring 1:1 - U/UTP (PVC) - unshielded

7.8



Order no.	Short name	Length	Colour
L00000E0010	MP8 100-0,5	0,5 m	grey
L00000E0011	MP8 100-1,0	1,0 m	grey
L00001E0007	MP8 100-1,5	1,5 m	grey
L00001E0005	MP8 100-2,0	2,0 m	grey
L00002E0004	MP8 100-3,0	3,0 m	grey
L00003E0003	MP8 100-5,0	5,0 m	grey
L00004E0003	MP8 100-7,5	7,5 m	grey
L00005E0003	MP8 100-10,0	10,0 m	grey
L00006E0015	MP8 100-15,0	15,0 m	grey
L00006E0019	MP8 100-25,0	25,0 m	grey
L00006E0020	MP8 100-50,0	50,0 m	grey



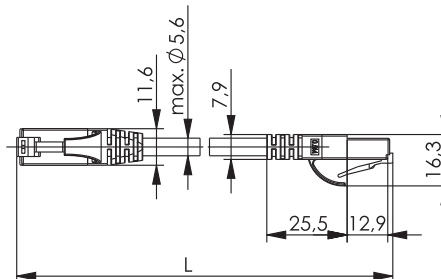
Order no.	Short name	Length	Colour
L00000E0003	MP8 100-0,25	0,25 m	green
L00000E0064	MP8 100-0,5	0,5 m	green
L00000E0069	MP8 100-1,0	1,0 m	green
L00001E0068	MP8 100-2,0	2,0 m	green
L00002E0102	MP8 100-3,0	3,0 m	green
L00003E0049	MP8 100-5,0	5,0 m	green
L00004E0052	MP8 100-7,5	7,5 m	green
L00005E0026	MP8 100-10,0	10,0 m	green

7.8

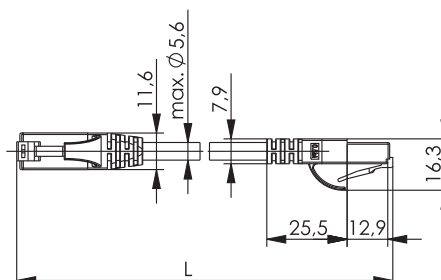
## RJ45 Patch Cords

## 7.8

## Cat.5e - Wiring 1:1 - U/UTP (PVC) - unshielded



Order no.	Short name	Length	Colour
L00000E0065	MP8 100-0,5	0,5 m	red
L00000E0070	MP8 100-1,0	1,0 m	red
L00001E0069	MP8 100-2,0	2,0 m	red
L00002E0103	MP8 100-3,0	3,0 m	red
L00003E0050	MP8 100-5,0	5,0 m	red
L00004E0053	MP8 100-7,5	7,5 m	red
L00005E0027	MP8 100-10,0	10,0 m	red

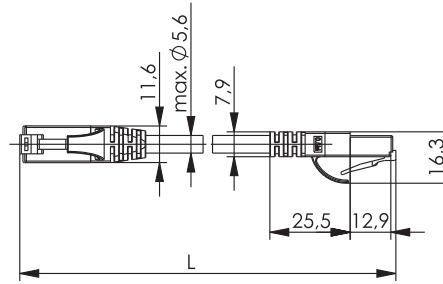


Order no.	Short name	Length	Colour
L00000E0063	MP8 100-0,5	0,5 m	blue
L00000E0068	MP8 100-1,0	1,0 m	blue
L00001E0067	MP8 100-2,0	2,0 m	blue
L00002E0101	MP8 100-3,0	3,0 m	blue
L00003E0048	MP8 100-5,0	5,0 m	blue
L00004E0051	MP8 100-7,5	7,5 m	blue
L00005E0025	MP8 100-10,0	10,0 m	blue

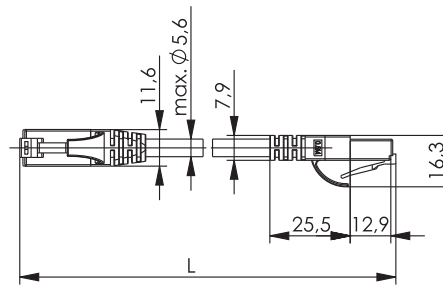


## RJ45 Patch Cords

## 7



Order no.	Short name	Length	Colour
L00000E0066	MP8 100-0,5	0,5 m	yellow
L00000E0071	MP8 100-1,0	1,0 m	yellow
L00001E0070	MP8 100-2,0	2,0 m	yellow
L00002E0104	MP8 100-3,0	3,0 m	yellow
L00003E0051	MP8 100-5,0	5,0 m	yellow
L00004E0054	MP8 100-7,5	7,5 m	yellow
L00005E0028	MP8 100-10,0	10,0 m	yellow

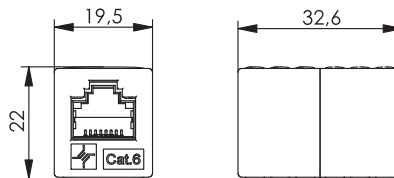


Order no.	Short name	Length	Colour
L00000E0000	MP8 100-0,5	0,5 m	black
L00000E0001	MP8 100-1,0	1,0 m	black
L00001E0000	MP8 100-2,0	2,0 m	black
L00002E0000	MP8 100-3,0	3,0 m	black
L00003E0000	MP8 100-5,0	5,0 m	black
L00004E0000	MP8 100-7,5	7,5 m	black
L00005E0000	MP8 100-10,0	10,0 m	black

# RJ45 Patch Cords

## 7.9

## Coupler for Patch Cords - shielded

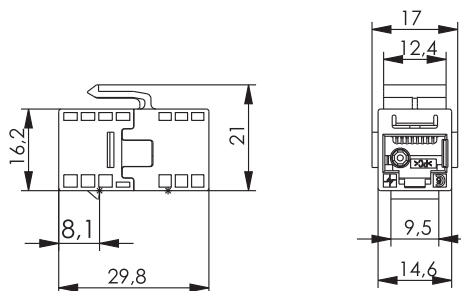


Order no.	Short name	Description	Remarks	Colour
J00029A0062	AMJ Coupler K Cat.6, insulated, f-f*	suitable for Class E <sub>A</sub> Channel, 10 Gigabit Ethernet	suitable for RJ45/11/12 plugs	alpine white
J00029K0052	AMJ Coupler K Cat.5e, insulated, f-f*	suitable for Class E Channel, 1 Gigabit Ethernet	suitable for RJ45/11/12 plugs	alpine white

\*) loose Coupler for patch cords, no snap-in mounting

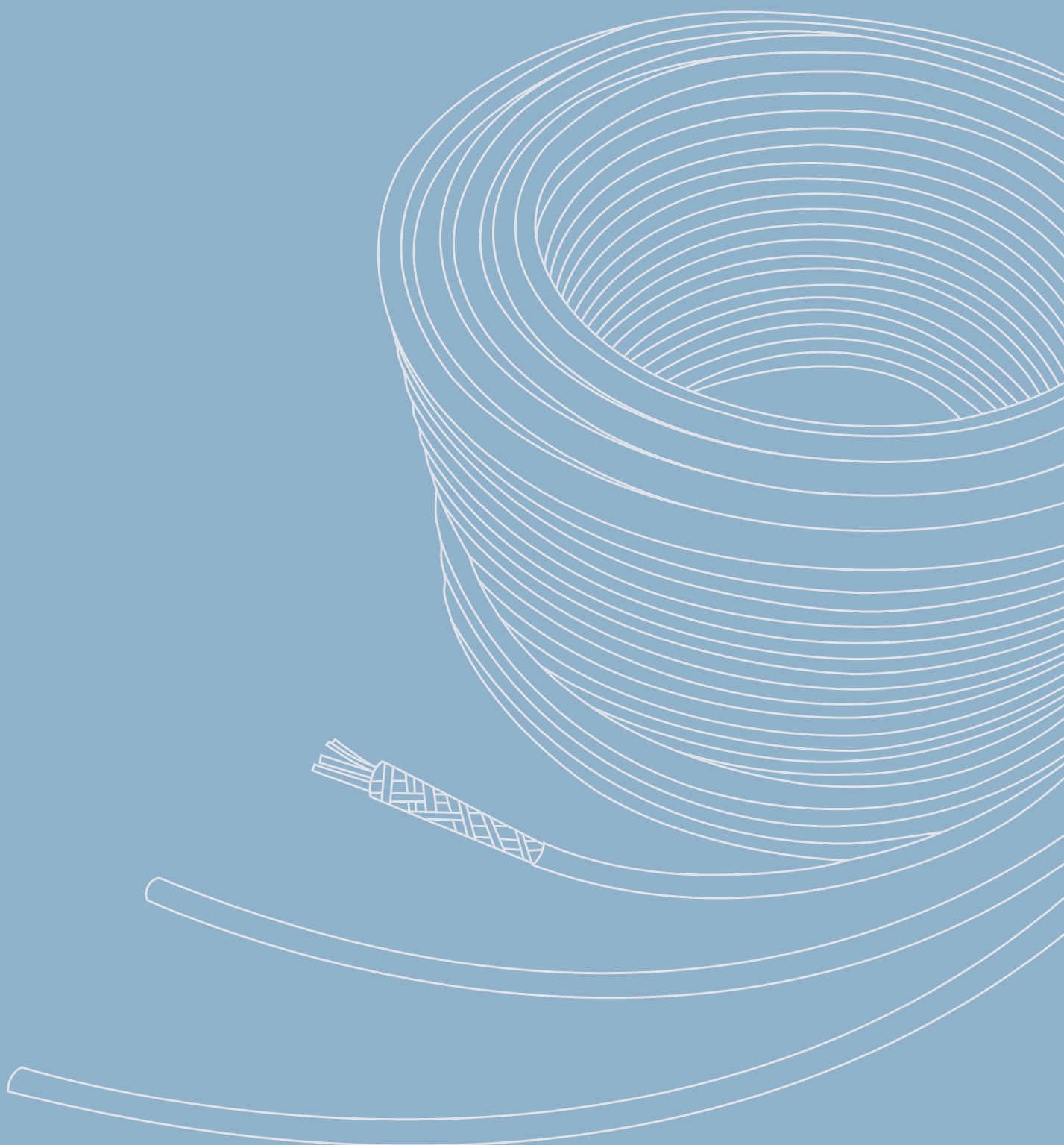
## 7.10

## Coupler for Patch Cords - unshielded



Order no.	Short name	Remarks	Mount. dim.
J00029A0064	UMJ Coupler K Cat.6, f-f	suitable for RJ45/11/12 plugs	Z121
J00029K0054	UMJ Coupler K Cat.5e, f-f	suitable for RJ45/11/12 plugs	Z121

## Copper Installation and Flexible Cables





# 8

## Copper Installation and Flexible Cables

<b>8.1 S/FTP Cable.....</b>	<b>171</b>
8.1.1 S/FTP AWG23 .....	171
8.1.2 S/FTP AWG26 .....	171
8.1.3 S/FTP AWG27 .....	172
<b>8.2 F/UTP Cable.....</b>	<b>172</b>
8.2.1 F/UTP AWG23 .....	172
8.2.2 F/UTP AWG24 .....	173
8.2.3 F/UTP AWG26 .....	173
<b>8.3 U/FTP Cable.....</b>	<b>173</b>
8.3.1 U/FTP AWG23 .....	173
<b>8.4 U/UTP Cable .....</b>	<b>174</b>
8.4.1 U/UTP AWG23.....	174
8.4.2 U/UTP AWG24.....	175

# Copper Installation and Flexible Cables

## 8

### S/FTP Cables

#### 8.1

In accordance with EN 50173-1 the designation S/FTP describes a cable with an individual pair shield of aluminium foil surrounded by a mesh as a total shield. These cables with LSZH sheath are mainly used in buildings to provide the horizontal cabling infrastructure.

Other cables with cable sheaths such as PE or PUR are installed for applications with higher ambient demands or special

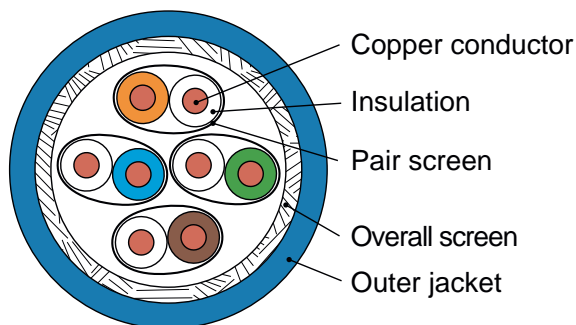
mechanical application conditions.

Cables with flexible wires are used as raw material for assemblies or in installations with a low range.

S/FTP cables have very slight runtime differences between the pairs and are ideally suitable for transferring very high data rates.

### S/FTP AWG23

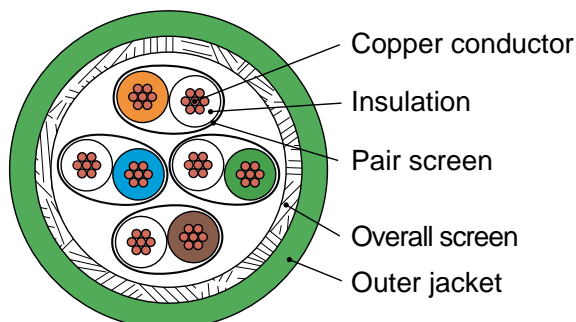
#### 8.1.1



Order no.	Description	Structure	Category	Colour	Length
L02002A0183	AMJ 1300	S/FTP 4x2xAWG23/1 LSZH	Cat.7 <sub>A</sub>	blue	1.000 m
L02002A0184	AMJ 1300	S/FTP 4x2xAWG23/1 LSZH	Cat.7 <sub>A</sub>	blue	500 m
L02002A0185	AMJ 1300	S/FTP 2X(4x2xAWG23/1) LSZH	Cat.7 <sub>A</sub>	blue	500 m
L02002A0180	AMJ 1000	S/FTP 4x2xAWG23/1 LSZH	Cat.7	blue	1.000 m
L02002A0181	AMJ 1000	S/FTP 4x2xAWG23/1 LSZH	Cat.7	blue	500 m
L02002A0182	AMJ 1000	S/FTP 2X(4x2xAWG23/1) LSZH	Cat.7	blue	500 m
L02002A0146	AMJ 900	S/FTP 4x2xAWG23/1 PE	Cat.7	black	500 m
L02002A0175	TOC 900	S/FTP 4x2xAWG23/1 LSZH-FR MUD	Cat.7	grey	500 m
L02002A0143	STX 900	S/FTP 4x2xAWG23/1 PUR	Cat.7	green	500 m

### S/FTP AWG26

#### 8.1.2



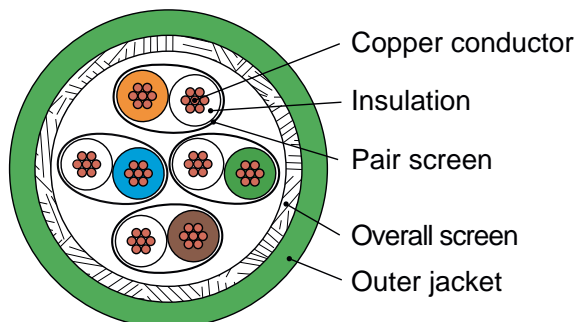
Order no.	Description	Structure	Category	Colour	Length	UL listed
L02002C0074	STX 600	S/FTP 4x2xAWG26/7 PUR	Cat.7	green	305 m	E344985
L02002C0073	STX 600	S/FTP 4x2xAWG26/7 PVC	Cat.7	green	305 m	-

#### 8.1

# 8 Copper Installation and Flexible Cables

## 8.1 S/FTP Cables

### 8.1.3 S/FTP AWG27



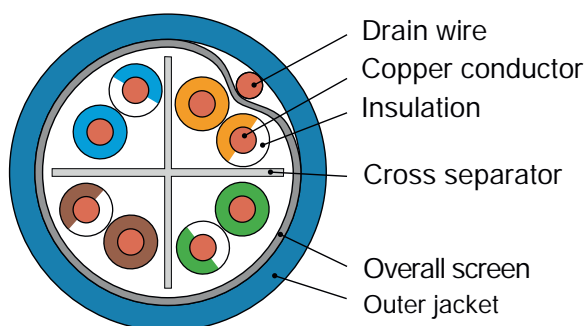
Order no.	Description	Structure	Category	Colour	Length	UL listed
L02002A0061	AMJ600	S/FTP 4x2xAWG27/7 LSZH	Cat.7	grey	305 m	E344985
L02002B0061	AMJ600	S/FTP 4x2xAWG27/7 LSZH	Cat.7	green	305 m	E344985
L02002C0061	AMJ600	S/FTP 4x2xAWG27/7 LSZH	Cat.7	red	305 m	E344985
L02002D0061	AMJ600	S/FTP 4x2xAWG27/7 LSZH	Cat.7	blue	305 m	E344985
L02002E0061	AMJ600	S/FTP 4x2xAWG27/7 LSZH	Cat.7	yellow	305 m	E344985
L02002F0061	AMJ600	S/FTP 4x2xAWG27/7 LSZH	Cat.7	black	305 m	E344985
L02002C0071	STX 600	S/FTP 4x2xAWG27/7 PVC	Cat.7	green	305 m	
L02002C0072	STX 600	S/FTP 4x2xAWG27/7 PUR	Cat.7	green	305 m	E344985

## 8.2 F/UTP Cables

F/UTP cables carry 4 twisted wire pairs surrounded by aluminium foil as a total shield. Cables with LSZH material are used mainly in buildings to provide the horizontal infrastructure. Cables with a PVC cable sheath are used mainly for special demands on the ambient

or installation conditions. This cable structure is suitable for medium to high data transfer rates due to the different lay lengths of the wire pairs and the related runtime differences between the pairs.

### 8.2.1 F/UTP AWG23



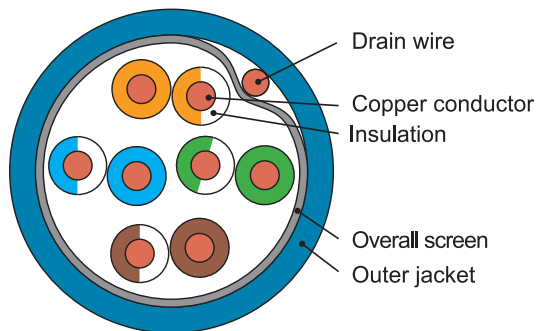
Order no.	Description	Structure	Category	Colour	Length
L02002A0156	AMJ 300	F/UTP 4x2xAWG23/1 LSZH	Cat.6	blue	500 m

# Copper Installation and Flexible Cables

## 8

F/UTP AWG24

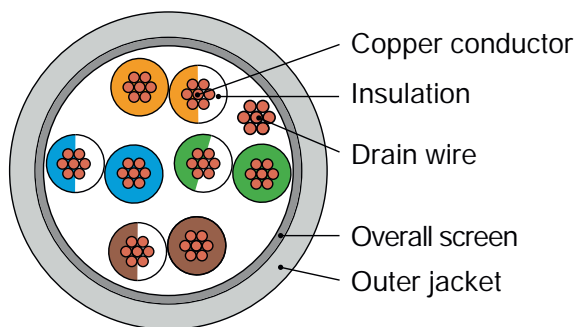
8.2.2



Order no.	Description	Structure	Category	Colour	Length
L02002B0086	AMJ 200	F/UTP 4x2xAWG24/1 LSZH	Cat.5	blue	500 m

F/UTP AWG26

8.2.3



Order no.	Description	Structure	Category	Colour	Length
L02002A0042	AMJ 150	F/UTP 4x2xAWG26/7 PVC	Cat.5	grey	305 m
L02002A0043	AMJ 150	F/UTP 4x2xAWG26/7 PVC	Cat.5	grey	100 m

U/FTP Cable

8.3

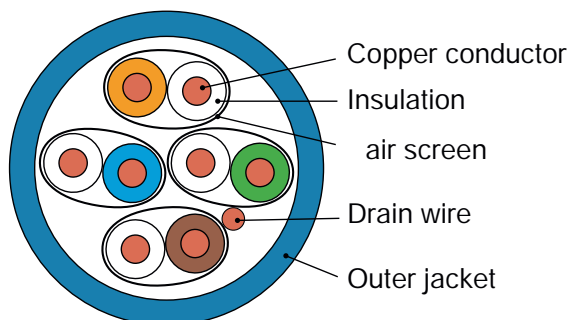
The advantages of the individual pair shield and the approximately equal lay length of the wire pairs make these cables suitable for high to very high data transfer rates.

The omission of a total shield gives these cables a thinner

mechanical design so that the demands on the bending radii are less. These cables are therefore ideal for use especially in cable duct systems with small dimensions.

U/FTP AWG23

8.3.1



Order no.	Description	Structure	Category	Colour	Length
L02002A0200	AMJ 500	U/FTP 4x2xAWG23/1 LSZH	Cat.6A	blue	1.000 m
L02002A0198	AMJ 500	U/FTP 4x2xAWG23/1 LSZH	Cat.6A	blue	500 m
L02002A0199	AMJ 500	U/FTP 2x(4x2xAWG23/1) LSZH	Cat.6A	blue	500 m

# 8 Copper Installation and Flexible Cables

## 8.4

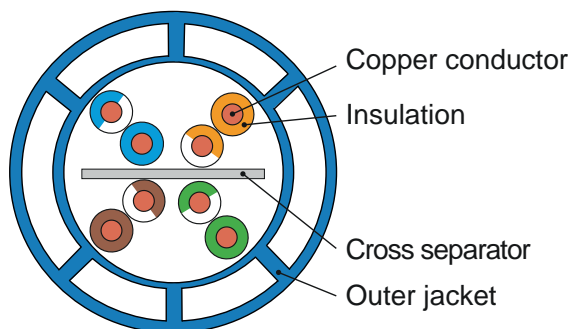
## U/UTP Cable

Special applications and installation environments make it necessary to omit an individual pair shielding or a total shield now and again. The responsibility for compliance with the EMC must be met by trimming out the symmetry of every line, by laying in shielded cable laying systems or

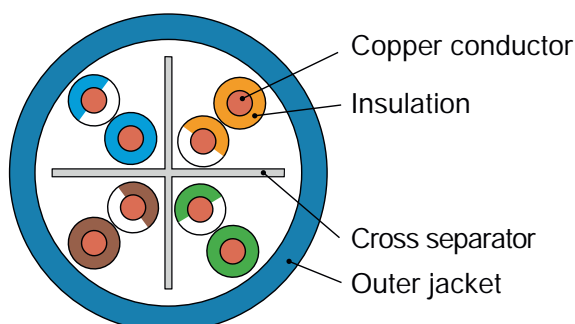
by other measures. U/UTP cables are especially thin in the outer dimensions and can therefore be accommodated in very narrow cable duct systems. The demand for low cable weights also make it advisable to use U/UTP cables.

## 8.4.1

## U/UTP AWG23



Order no.	Description	Structure	Category	Colour	Length
L02002A0176	UMJ 500	U/UTP 4x2xAWG23/1 LSZH	Cat.6A	blue	305 m



Order no.	Description	Structure	Category	Colour	Length
L02002A0095	UMJ 300	U/UTP 4x2xAWG23/1 LSZH	Cat.6	blue	1.000 m
L02002A0094	UMJ 300	U/UTP 4x2xAWG23/1 LSZH	Cat.6	blue	500 m
L02002A0150	UMJ 300	U/UTP 4x2xAWG23/1 LSZH	Cat.6	blue	500 m
L02002A0057	UMJ 300	U/UTP 4x2xAWG23/1 PVC	Cat.6	grey	305 m
L02002B0057	UMJ 300	U/UTP 4x2xAWG23/1 PVC	Cat.6	grey	305 m
L02002C0057	UMJ 300	U/UTP 4x2xAWG23/1 PVC	Cat.6	blue	305 m

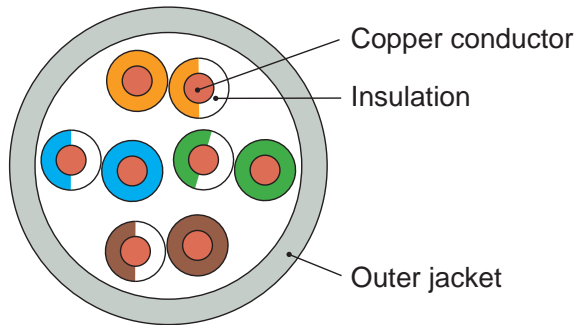


## Copper Installation and Flexible Cables

## 8

U/UTP AWG24

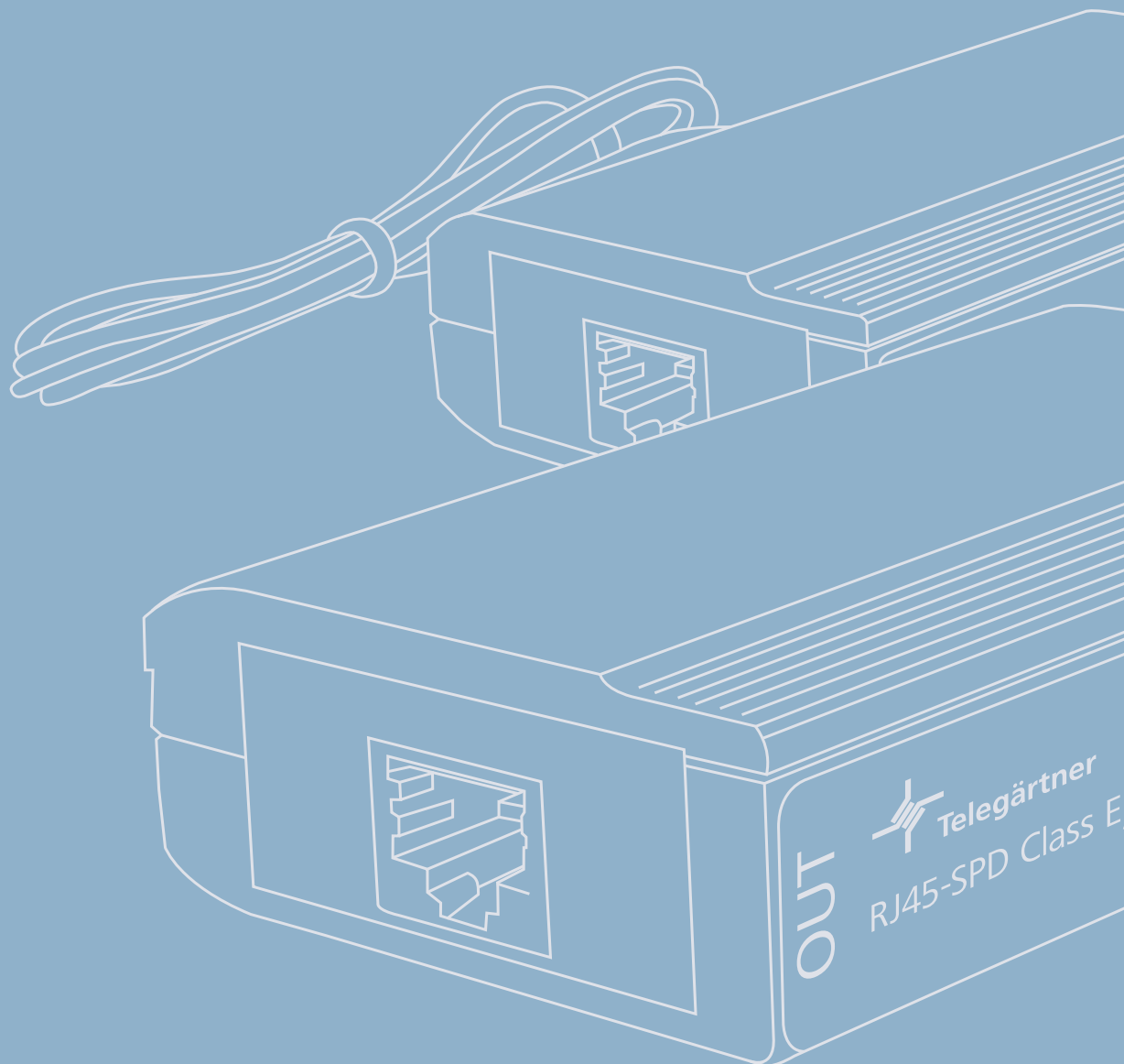
8.4.2



Order no.	Description	Structure	Category	Colour	Length
L02002A0062	UMJ 250	U/UTP 4x2xAWG24/7 PVC	Cat.6	grey RAL 7035	305 m
L02002A0036	UMJ 150	U/UTP 4x2xAWG24/1 PVC	Cat.5	grey RAL 7035	305 m
L02002B0036	UMJ 150	U/UTP 4x2xAWG24/1 PVC	Cat.5	blue RAL 5005	305 m
L02002C0036	UMJ 150	U/UTP 4x2xAWG24/1 PVC	Cat.5	grey RAL 7000	305 m
L02002A0040	UMJ 150	U/UTP 4x2xAWG24/7 PVC	Cat.5	grey RAL 7035	305 m
L02002A0041	UMJ 150	U/UTP 4x2xAWG24/7 PVC	Cat.5	grey RAL 7035	100 m
L02002A0051	UMJ 150	U/UTP 4x2xAWG24/7 PVC	Cat.5	yellow RAL 1021	100 m
L02002A0053	UMJ 150	U/UTP 4x2xAWG24/7 PVC	Cat.5	blue RAL 5015	100 m
L02002A0054	UMJ 150	U/UTP 4x2xAWG24/7 PVC	Cat.5	green RAL 6016	100 m
L02002A0055	UMJ 150	U/UTP 4x2xAWG24/7 PVC	Cat.5	red RAL 3017	100 m
L02002A0056	UMJ 150	U/UTP 4x2xAWG24/7 PVC	Cat.5	black RAL 9011	100 m



## RJ45 Surge Protection





# 9

## RJ45 Surge Protection

9.1 RJ45-SPD Class E <sub>A</sub> .....	179
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Structured cabling with RJ45 connecting hardware is a vital part of today's telecommunication. 100 % uptime is mandatory for seamless data transmission with data rates up to 10 Gigabits per second. However, galvanic, inductive and capacitive coupling as well as potential differences may cause enormous problems

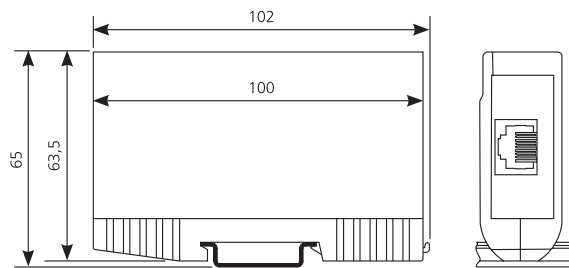
and hazards for any electronics connected to such a network. To protect the electronic equipment, an appropriate RJ45 surge protection with proper grounding has to be implemented in the cabling link.

RJ45-SPD Class E<sub>A</sub>

9.1

## Performance Characteristics

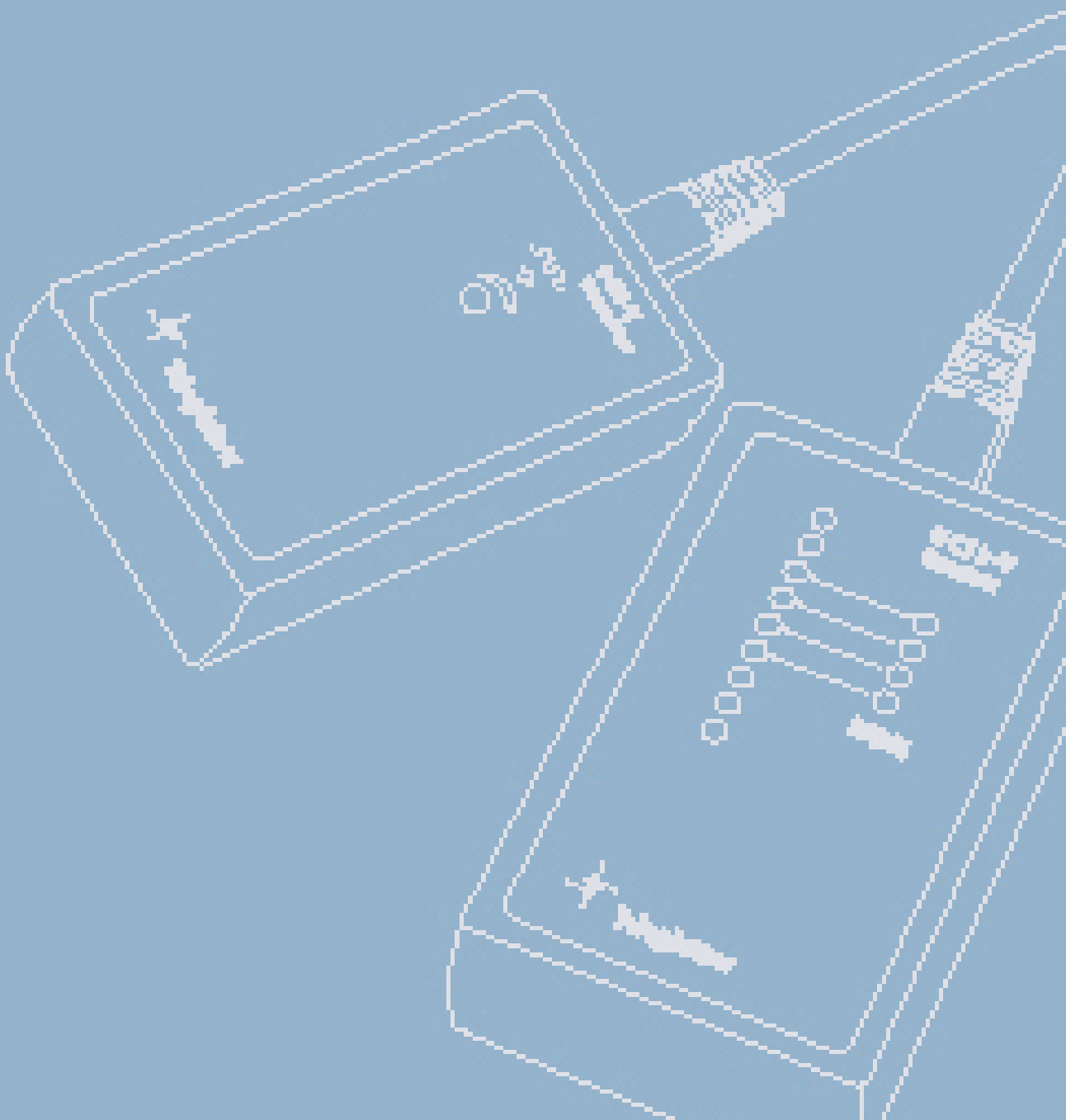
- Protection class: IP20
- Connection IN/OUT: RJ45/RJ11/RJ12
- mating cycles  $\geq 750$
- Dimension (H/W/D): 103/25/63 mm
- PoE acc. to IEEE 802.3at
- Class E<sub>A</sub> (Permanent/Channel Link): ISO/IEC 11801, DIN EN 50173-1
- Surge protection acc. to DIN EN 61643-21
- operating temperature: -40° C to +70° C
- Mounting rail TH35

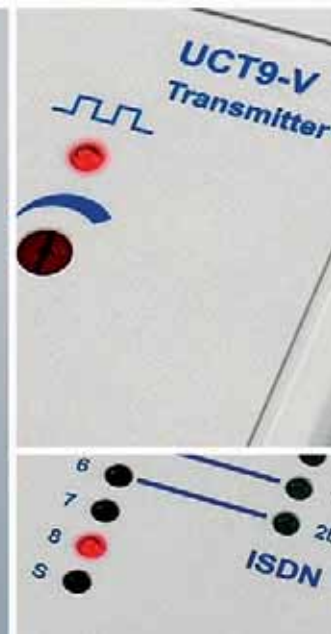


Order no.	Description	Type
J00029A0116	Surge Protection Device RJ45-SPD Class E <sub>A</sub>	suitable for RJ45/11/12 plugs



## UCT – Wiring Tester





10

## UCT - Wiring Tester



The UCT9 Type II Test Set, comprising separate transmit and receive modules, makes it possible for one person to check the wiring of a Twisted Pair local network has been connected up correctly.

Depending on the selected test-speed, it takes the UTC9 just 2 to 3 seconds to test fully automatically a 9 core shielded cable run (including screen), or an 8-core unshielded cable run, for cable breaks, crossed wires, or shorts. Faults located in the LAN wiring system are shown on a 9 digit LED-display, and

are repeatedly displayed until stopped by the user. Since it has become common practice to distribute ISDN-S<sub>0</sub>-Bus via LAN, Telegärtner has integrated an S<sub>0</sub>-Bus test facility in a single unit at an attractive price-performance ratio. ISDN-S<sub>0</sub>-Bus wiring faults can be checked using the receiver module only, and a 4 digit LED-display.

It is imperative that the ISDN wiring is checked if more than one piece of ISDN equipment is used in the network – in such a configuration, none of the wires may be crossed.

### Performance Characteristics

- attractive price-performance ratio for a 2 in 1 device (LAN and ISDN)
- simple to operate and simple interpretation of the most common wiring faults: short-circuits, crossed-wires, cable breaks
- automatic test operation and repetition of fault display until the fault is rectified
- adjustable test-speed
- standard 4 pair RJ45 patch cable (shielded or unshielded) interface to wiring system
- fool-proof battery connection
- external voltage proof up to 60 V
- fault display for each individual conductor

### Scope of Delivery

- transmitter with adjustable test speed
- receiver with error display (LED)
- 9 V battery
- instruction manual

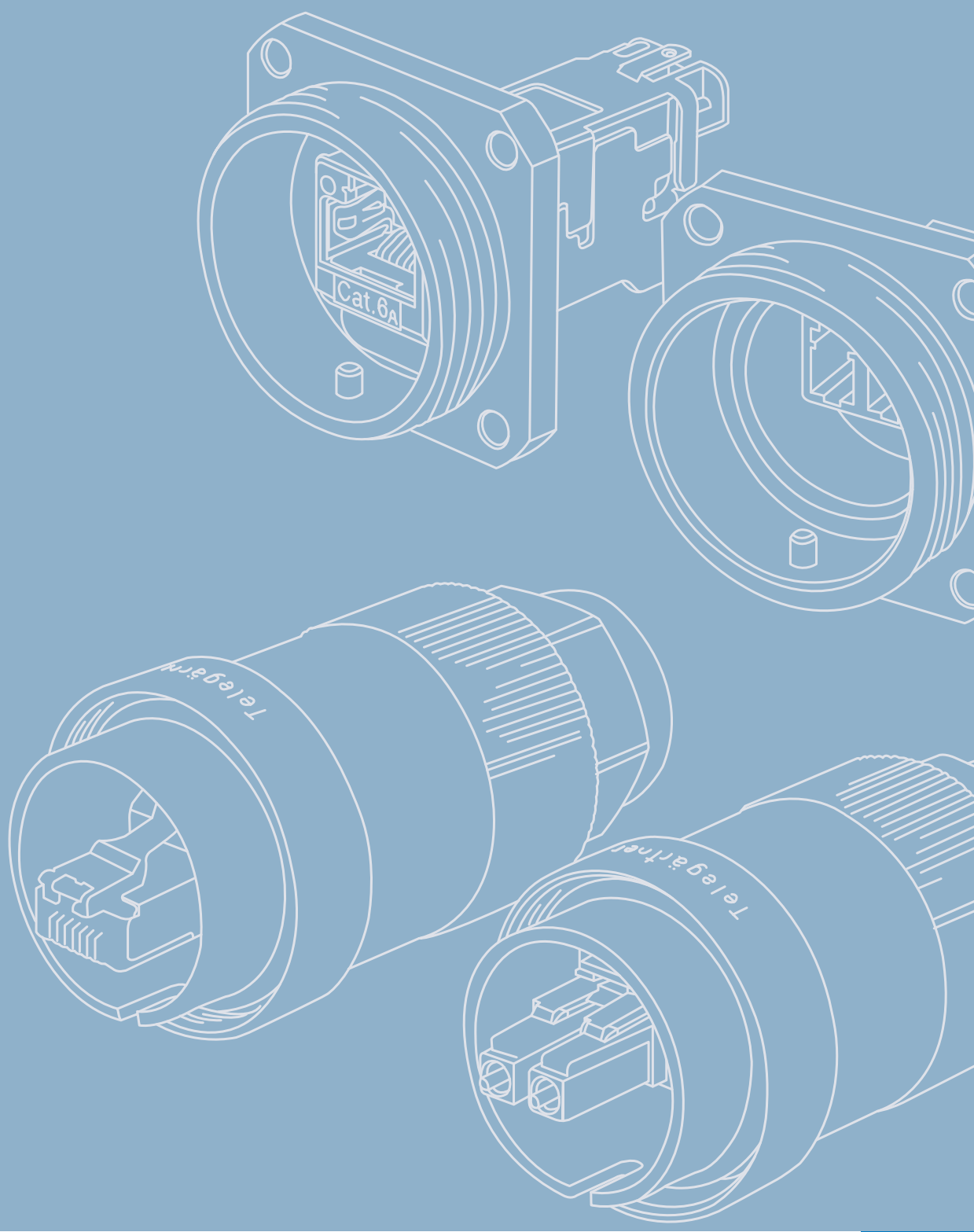
Please find the instruction manual for UCT9 Type II on our homepage [www.telegaertner.com](http://www.telegaertner.com)



Order no.	Description	Colour
M06010A0017	Wiring Tester UCT9 Type II	grey



## TOC – Outdoor Connectors





# 11

## TOC – Outdoor Connectors

<b>11.1 TOC Series RJ45 .....</b>	<b>187</b>
11.1.1 TOC Plug Set IP68 MFP8 T568B Cat.6A .....	188
11.1.2 TOC Bulkhead Set IP68 .....	189
11.1.3 TOC Coupler IP68 AMJ Coupler K .....	190
11.1.4 TOC Bulkhead Outlet IP68 .....	190
<b>11.2 TOC Series LC Duplex .....</b>	<b>191</b>
11.2.1 TOC Plug Set IP68 LC Duplex .....	192
11.2.2 TOC Bulkhead Set IP68 LC Duplex .....	192
11.2.3 TOC Coupler IP68 LC Duplex .....	193
<b>11.3 TOC Series MPO/MTP® .....</b>	<b>193</b>
11.3.1 TOC Plug Set IP68 MPO/MTP® .....	194
11.3.2 TOC Bulkhead Set IP68 MPO/MTP® .....	194
11.3.3 TOC Coupler IP68 MPO/MTP® .....	195
<b>11.4 Accessories for TOC Series .....</b>	<b>195</b>

# TOC – Outdoor Connectors

# 11

TOC stands for Telecommunications Outdoor Connectors and offers cabling professionals the reliability and flexibility they need for toughest applications. The handy, easy to install, TOC connectors are used for data- and telecommunications in mobile radio, process-, utility- and traffic automation, or security applications but also in the harsh environment of machine and plant engineering. The TOC series is available in nickel-plated brass for RJ45 Cat.6<sub>A</sub>, FO LC Duplex and MPO/MTP®

connectors. Compliance with the specifications of protection class IP68 and due to its excellent material properties, the TOC series can be installed even in harsh conditions within a temperature range from -40°C to 85°C. To lock, relief of strain and seal the connection, one turning movement is necessary and no further procedures are required. Customers benefit: a fast, error free and easy installation, high transmission reliability and resilience and more flexibility in the network design.

## TOC Series RJ45

## 11.1

The TOC series RJ45 coming with the newly available field assembly RJ45 plug MFP8 Cat.6<sub>A</sub> and RJ45 keystone AMJ-S Module Cat.6<sub>A</sub> is available as a set. They can be attached to solid and stranded conductor cables with cable outer diameter

max. 9.5 mm on site without the need for any special tools. For line extensions, the TOC Coupler IP68 is your first choice. It can be easily integrated with no negative effects on performance of the connection.

### Performance Characteristics

- suitable for 10 Gigabit Ethernet acc. to IEEE 802.3an
- suitable for PoE+ acc. to IEEE 802.3at
- 360° shielding
- temperature range: -40° to +85°C
- protection class IP68 acc. to IEC 60529
- protection cap with protection class IP68

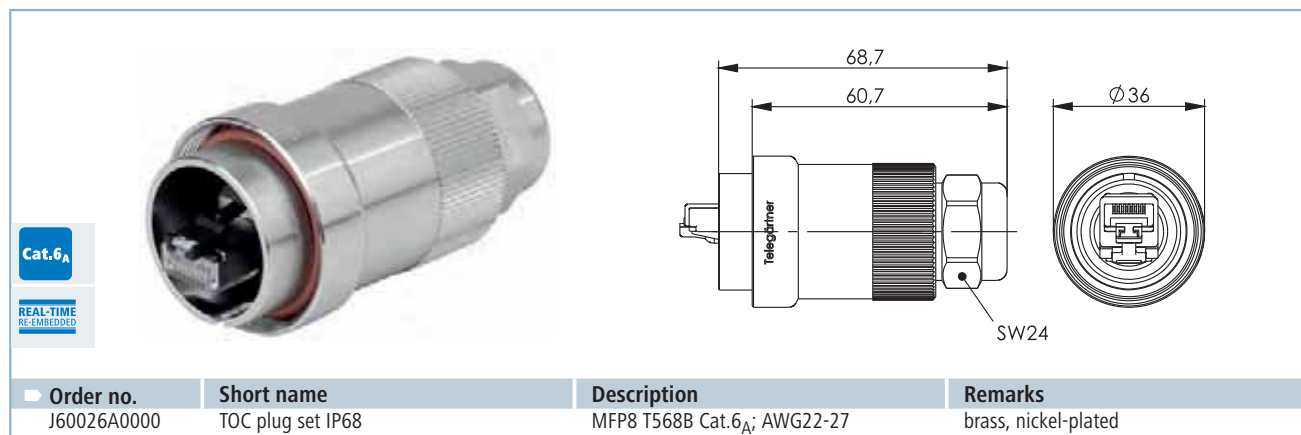
	TOC plug set MFP8	TOC bulkhead set AMJ-S Module	TOC bulkhead set AMJ Coupler	TOC Coupler AMJ Coupler
<b>Standards</b>				
Connectors	IEC 60603-7-51	IEC 60603-7-51	IEC 60603-7-51	IEC 60603-7-51
Generic cabling systems	ANSI/TIA/EIA-568-C.2; ISO/IEC 11801; DIN EN 50173-1			
Degrees of protection provided by enclosures (IP code)	IEC 60529	IEC 60529	IEC 60529	IEC 60529
<b>Mechanical Characteristics</b>				
Insertion force	≤ 30 N	≤ 30 N	≤ 30 N	≤ 30 N
Durability (mating cycles)	≥ 100	≥ 100	≥ 100	≥ 100
Material: screw	-	-	-	Stainless steel
Material: snap-fit	-	spring steel stainless	-	-
Material: snap arm for cable trap	-	PC UL94 V0 black	-	-
Material: slide for shield contact	-	PC UL94 V0 black	-	-
Material: shield	-	German silver	German silver	German silver
Material: insulating plate	-	PC UL94 V0 white	-	-
Material: insulation body	-	PC UL94 V0 white	PA UL94 V2 pure white	PA UL94 V2 pure white
Material: PCB finish	-	chem. tin-plated	chem. tin-plated	chem. tin-plated
Material: contact IDC termination	-	CuNi2Si	-	-
Material: IDC termination finish	-	min. 3-6 μm Sn	min. 3-6 μm Sn	min. 3-6 μm Sn
Material: adaptor housing	-	-	zinc diecast	zinc diecast
Material: housing	brass, 5 μm Ni plated			
Material: contact housing	PC UL94 V0 crystal clear	-	-	-
Material: RJ45 insert	zinc diecast, nickel-plated	zinc diecast, nickel-plated	-	-
Material: Coupling nut	brass, 5 μm Ni plated	-	-	-
Material: O-ring	silicone red	silicone red	silicone red	silicone red
Material: sealing insert	silicone transparent	-	-	-

## 11.1

	TOC plug set MFP8	TOC bulkhead set AMJ-S Module	TOC bulkhead set AMJ Coupler	TOC Coupler AMJ Coupler
<b>Mechanical Characteristics</b>				
Material: wire pair presorting	PC UL94 V0 white	PBT UL94 V0 nature	-	-
Material: hook	PBT UL94 V0 black	-	-	-
Material: cable clamp	PBT UL94 V0 black	-	-	-
Material: protection cap	PBT UL94 V0 black	-	-	-
Material: PCB	FR4 UL94 V0	FR4 UL94 V0	FR4 UL94 V0	FR4 UL94 V0
Material: piercing contacts	Sn plated, min. 3-6 µm	-	-	-
Material: shield contact	brass; 2.5 µm Ni plated	-	-	-
Material: contacts	spring steel	spring steel	spring steel	spring steel
Material: contact finish	min. 0,8 µm Au on 1,2 µm Ni			
Material: protection cap IP68	brass, 5 µm Ni plated			
Cu-Conductor diameter: solid	0.51 - 0.64 mm AWG 24/1 - AWG 22/1	0.41 - 0.64 mm AWG 26/1 - AWG 22/1	-	-
Cu-Conductor diameter: stranded	0.46 - 0.76 mm AWG 27/7 - AWG 22/7	0.46 - 0.76 mm AWG 27/7 - AWG 22/7	-	-
Insulation diameter	1.0 - 1.6 mm	1.0 - 1.6 mm	-	-
Cable diameter	4.0 - 9.5 mm	4.0 - 9.5 mm	-	-
<b>Environmental Requirements</b>				
Ambient temperature	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
<b>Electrical Characteristics</b>				
Current carrying capacity at 50°C	1 A	1 A	1 A	1 A
PoE+ acc to IEEE 802.3at	Adequate for Power over Ethernet+			
<b>Transmission Characteristics</b>				
Class E <sub>A</sub> (Channel)	-	-	ISO/IEC 11801, DIN EN 50173-1	
Category 6	-	-	ISO/IEC 11801, DIN EN 50173-1	
10 Gigabit Ethernet acc. to IEEE 802.3an	Adequate for 10 Gigabit Ethernet			
Category 6 <sub>A</sub>	ISO/IEC 11801, DIN EN 50173-1			
Class E <sub>A</sub>	ISO/IEC 11801, DIN EN 50173-1			
Category 6A	ANSI/TIA/EIA-568-C.2			

### Performance Characteristics

- RJ45 plug MFP8 Cat.6<sub>A</sub> acc. to IEC 60603-7-51 (500 MHz)
- RJ45 plug MFP8 Cat.6<sub>A</sub> UL listed (E244889)
- Cu-conductor:
  - solid 0.41 - 0.64 mm (AWG24/1 – AWG22/1);
  - stranded 0.46 - 0.76 mm (AWG27/7 – AWG22/7)
- insulation diameter: 1.0 - 1.6 mm
- cable outer diameter: 4 - 9.5 mm
- RJ45 plug MFP8 Cat.6<sub>A</sub> UL listed (E244889)



## TOC – Outdoor Connectors

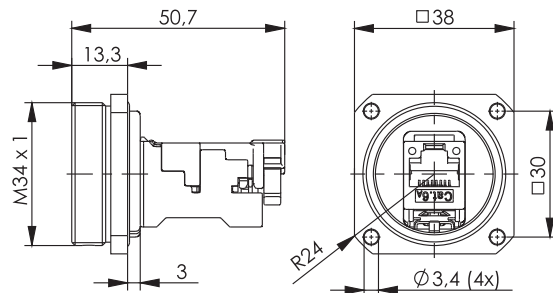
## 11

## TOC Bulkhead Set IP68

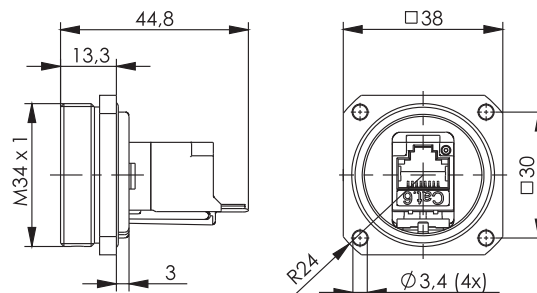
## 11.1.2

## Performance Characteristics

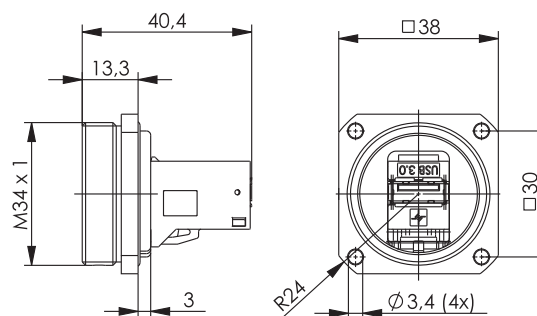
- RJ45 AMJ-S Module Cat.6<sub>A</sub> or AMJ Coupler K Cat.6 Class E<sub>A</sub> acc. to IEC 60603-7-51
- Cu-conductor:  
solid 0.4 - 0.64 mm (AWG26/1 – AWG22/1);  
stranded 0.46 - 0.76 mm (AWG27/7 – AWG22/7)
- USB-Keystone 3.0 (f-f) Type A
- insulation diameter: 0.9 - 1.6 mm
- 4-hole mounting, mounting cut out  $\varnothing$  30.5 mm
- AMJ-S Module: UL listed (E244889)

Cat.6<sub>A</sub>REAL-TIME  
RE-EMBEDDED

Order no.	Short name	Description	Remarks
J60020A0000	TOC Bulkhead Set IP68	AMJ-S Module Cat.6 <sub>A</sub> T568B	brass, nickel-plated



Order no.	Short name	Description	Remarks
J60020A0002	TOC Bulkhead Set IP68	AMJ Coupler K Cat.6 Class E <sub>A</sub>	brass, nickel-plated



Order no.	Short name	Description	Remarks
J60020A0004	TOC Bulkhead Set IP68	USB-Keystone 3.0 (f-f) Type A	brass, nickel-plated

11.1

## 11.1

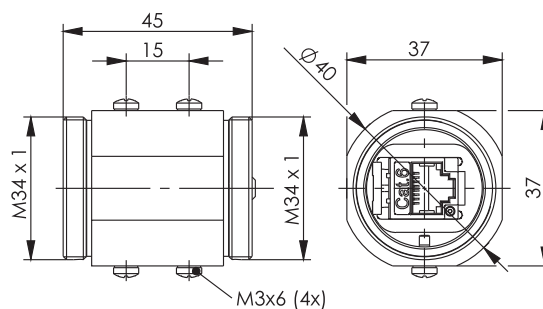
## TOC-Serie RJ45

## 11.1.3

## TOC coupler IP68 AMJ Coupler K

## Performance Characteristics

- RJ45 AMJ Coupler K acc. to IEC 60603-7-51 (500 MHz)
- RJ45 jack to RJ45 jack
- suitable for TOC plug set RJ45 IP68
- mounting on DIN rail TH35 by means of adaptor (J06000A0056)



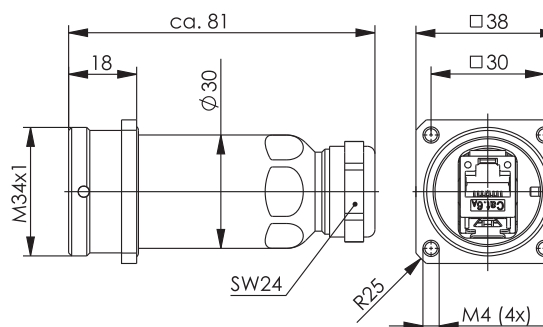
Order no.	Short name	Description	Remarks
J60029A0000	TOC Coupler IP68	AMJ Coupler K Cat.6 Class E <sub>A</sub>	brass, nickel-plated

## 11.1.4

## TOC Bulkhead Outlet IP68

## Performance Characteristics

- RJ45 jack to RJ45 jack
- Cu-conductor:  
solid 0.41 - 0.64 mm (AWG24/1 – AWG22/1);  
stranded 0.46 - 0.76 mm (AWG27/7 – AWG22/7)
- insulation diameter: 0.9 - 1.6 mm
- optional with bracket for top hat rail and surface mounting (H06000A0074)
- RJ45 AMJ-S Module Cat.6<sub>A</sub> UL listed (E244889)



Order no.	Short name	Description	Remarks
J60023A0000	TOC Bulkhead Outlet IP68	AMJ-S Module Cat.6 <sub>A</sub> T568B	brass, nickel-plated



Order no.	Short name	Remarks
H06000A0074	TOC bracket	gauge 38 mm and TH35



# TOC – Outdoor Connectors

# 11

## TOC Series LC Duplex

11.2

The TOC series with LC Duplex plugs captivates due to its flexibility and ease of installation. Customers can choose whether they work with pre-terminated cables feed into TOC plug housing from the backside or they terminate the LC plugs themselves on site. The enclosed LC holding frame with elongated release latch accepts the LC plugs firmly and offers an additional tool free strain relief. By means of the elongated release latch the LC plugs can be mated & unmated into SFP+

transceivers or LC Duplex adaptors effortlessly even in confined installation environments. In addition, the several installation positions of SFP+ transceivers no longer form a problem as the holding frame incorporating the LC plugs easily adjusts to them. For line extensions, the TOC Coupler IP68 LC Duplex is your first choice. It can be easily integrated with no negative effects on performance of the connection.

### Performance Characteristics

- plug & adaptor acc. to IEC 61754-20 (circonia ceramics)
- Singlemode/Multimode (PC) & Singlemode (APC) types
- temperature range: -40° to +85°C
- Insertion Loss: plug Multimode max. 0.4 dB, Singlemode max. 0.5 dB
- Return Loss: plug: Multimode min. 30 dB, Singlemode PC min. 40 dB, APC min. 60 dB
- protection class IP68 acc. to IEC 60529
- protection cap with protection class IP68

	TOC LC plug set	TOC LC bulkhead set	TOC LC coupler
<b>Standards</b>			
Generic cabling systems		ISO/IEC 11801, EN 50173-1	
Connectors		IEC 61754-20; EN 50377-7	
Degrees of protection provided by enclosures (IP code)		IEC 60529	
Fiber optic interconnecting devices and passive components- Basic test and measurement procedures		IEC61300-2-x; IEC61300-3-x	
<b>Mechanical Characteristics</b>			
Material: screw	-	-	Stainless steel
Material: adaptor housing	-	-	Plastic (PEI UL94 V-0) blue
Material: flange housing	-	brass, 5 µm Ni plated	-
Material: adaptor housing	-	plastic (PEI UL94 V-0)	brass, 5 µm Ni plated
Material: split sleeve	-	Zirconia ceramic	Zirconia ceramic
Material: bulkhead protective cap IP68	-	brass, 5 µm Ni plated	brass, 5 µm Ni plated
Durability (mating cycles)	≥ 100	≥ 100	≥ 100
Material: cap nut, sleeve	brass, 5 µm Ni plated	-	-
Material: O-ring	silicone red	silicone red	silicone red
Material: sealing insert	silicone transparent	-	-
Material: protection cap IP68	brass, 5 µm Ni plated	-	-
Material: body	PBT UL94 V0 black	-	-
Material: crimp sleeve	Copper nickel-plated	-	-
Material: ferrule	Multimode: zirconia 127 µm -0/+4 µm; Singelmode: zirconia 125.5 µm -0/+1 µm	-	-
Material: protection cap	plastic	plastic	plastic
buffered optical fiber diameter	0.9 mm	-	-
Subcable diameter	1.8 - 2.0 mm	-	-
Overall cable diameter	4.0 - 9.5 mm	-	-
<b>Environmental Requirements</b>			
Strength of coupling mechanism	-	40 N	40 N
Ambient temperature	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
<b>Optical Characteristics</b>			
Reproducibility insertion loss	max. 0.1 dB	max. 0.1 dB	max. 0.1 dB

11.2

## 11.2

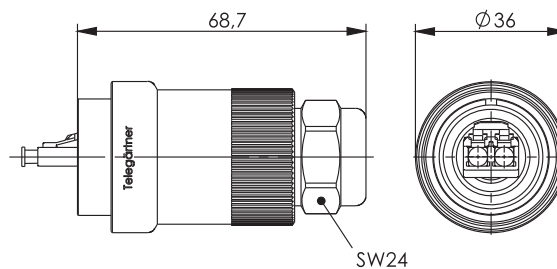
## TOC Series LC Duplex

## 11.2.1

## TOC plug set IP68 LC Duplex

## Performance Characteristics

- single cable diameter: 2.0 mm
- cable outer diameter: 4 - 9.5 mm
- LC holding frame with elongated release latch and strain relief



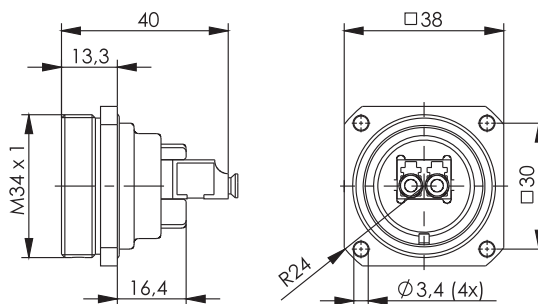
Order no.	Short name	Description	Remarks
J68070A0000	TOC plug set IP68	LC Duplex Multimode	brass, nickel-plated
J68070A0001	TOC plug set IP68	LC/APC Duplex Singlemode	brass, nickel-plated
J68070A0008	TOC plug set IP68	LC Duplex, Singlemode	brass, nickel-plated

## 11.2.2

## TOC Bulkhead Set IP68 LC Duplex

## Performance Characteristics

- 4-hole mounting, mounting cut out Ø 30.5 mm
- optional for SFP+ Transceiver



Order no.	Short name	Description	Remarks
J68071A0000	TOC Bulkhead Set IP68	LC Duplex adaptor Singlemode/Multimode	brass, nickel-plated
J68071A0001	TOC Bulkhead Set IP68	LC/APC Duplex adaptor, Singlemode	brass, nickel-plated

# TOC – Outdoor Connectors

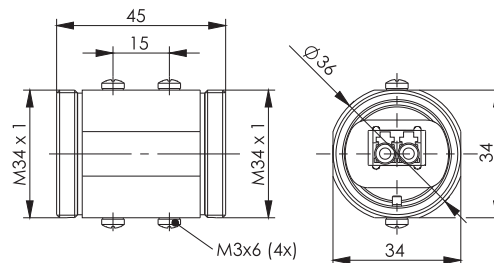
# 11

## TOC Coupler IP68 LC Duplex

11.2.3

### Performance Characteristics

- suitable for TOC plug set IP68 LC Duplex
- mounting on DIN rail TH35 by means of adaptor (J06000A0056)



Order no.	Short name	Description	Remarks
J68071A0004	TOC Coupler IP68	LC Duplex adaptor Singlemode/Multimode	brass, nickel-plated

## TOC Series MPO/MTP®

11.3

The TOC Series using MPO/MTP® connectors and adaptors go down extremely well due to their ease of handling and flexibility when installing numerous fibers in an IP68 connection. The best solution is to insert factory made MPO/MTP® assemblies (either male or female designs) into the TOC housing. The extended release pin enables problem-free engagement and disengagement of the MPO/MTP® connectors with QSFP/SFP

transceivers or with MPO/MTP® adaptors even in the tightest of installations. Furthermore, the varying mounting positions of the SFP transceivers can be balanced on all axes. The TOC connector housing is designed for cables with outer diameters up to 9.5 mm. For cable extensions, the TOC adaptor using MPO/MTP® bulkhead adaptors can be integrated into the wiring structure.

### Performance Characteristics

- plug & adaptor acc. to IEC 61755-3-1
- Singlemode/Multimode (PC) & Singlemode (APC) types
- Insertion Loss: plug: Multimode max. 0.5 dB (typ. 0.2), Singlemode APC max. 0.7 dB (typ. 0.25)
- temperature range: -25° to +55°C
- Return Loss: plug: Multimode min. 30 dB, Singlemode PC min. 40 dB, APC min. 60 dB
- protection class IP68 acc. to IEC 60529
- protection cap with protection class IP68

	TOC plug set	TOC bulkhead set	TOC coupler
<b>Standards</b>			
Generic cabling systems		ISO/IEC 11801, EN 50173-1	
Connectors		IEC 61755-3-31	
Degrees of protection provided by enclosures (IP code)		IEC 60529	
Fiber optic interconnecting devices and passive components- Basic test and measurement procedures		IEC61300-2-x; IEC61300-3-x	
<b>Mechanical Characteristics</b>			
Durability (mating cycles)	≥ 100	≥ 100	≥ 100
Material: adaptor housing	-	-	brass, 5 µm Ni plated
Material: screw	-	-	Stainless steel
Material: adaptor housing	-	-	Plastic black
Material: flange housing	-	brass, 5 µm Ni plated	-
Material: protective cap IP68	brass, 5 µm Ni plated	brass, 5 µm Ni plated	brass, 5 µm Ni plated
Material: cap nut, sleeve	brass, 5 µm Ni plated	-	-
Material: O-ring	silicone red	silicone red	silicone red
Material: sealing insert	silicone transparent	-	-
Material: body	plastic	-	-
Material: crimp sleeve	brass	-	-
Material: ferrule	PPS	-	-
Material: protection cap	plastic	plastic	plastic
buffered optical fiber diameter	0.9 mm	-	-
Subcable diameter	1.8 - 2.0 mm	-	-
Overall cable diameter	4.0 - 9.5 mm	-	-
Ambient temperature	-25° C to +55° C	-25° C to +55° C	-25° C to +55° C

11.3

## 11.3

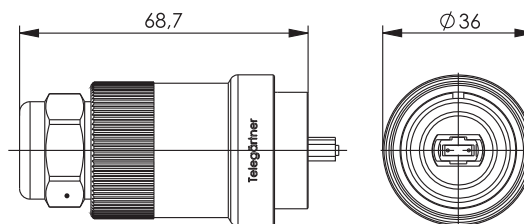
## TOC Series MPO/MTP®

## 11.3.1

## TOC Plug Set IP68 MTP/MPO®

## Performance Characteristics

- single cable diameter: 3,0 mm
- cable outer diameter: 4 - 9.5 mm
- MPO/MTP® holding frame with elongated lock-out release



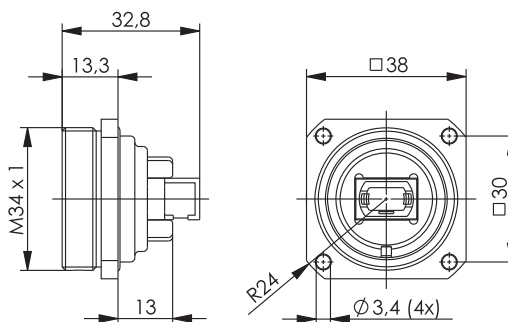
Order no.	Short name	Description	Remarks
J68070A0004	TOC plug set IP68	MPO/MTP® male, Multimode	brass, nickel-plated
J68070A0005	TOC plug set IP68	MPO/MTP® male, APC Singlemode	brass, nickel-plated
J68070A0006	TOC plug set IP68	MPO/MTP® female, Multimode	brass, nickel-plated
J68070A0007	TOC plug set IP68	MPO/MTP® female, APC Singlemode	brass, nickel-plated

## 11.3.2

## TOC Bulkhead Set IP68 MPO/MTP®

## Performance Characteristics

- 4-hole mounting, mounting cut out  $\varnothing$  30.5 mm
- optional for SFP+ Transceiver



Order no.	Short name	Description	Remarks
J68071A0006	TOC Bulkhead Set IP68	MPO/MTP® adaptor Singlemode/Multimode	brass, nickel-plated

## TOC – Outdoor Connectors

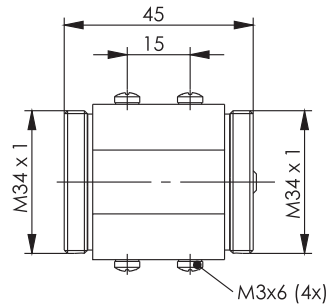
11

## TOC Coupler IP68 MPO/MTP®

11.3.3

## Performance Characteristics

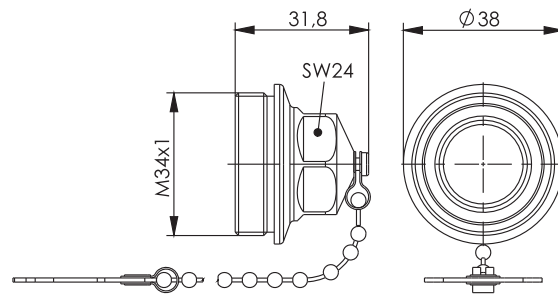
- suitable for TOC plug set IP68 MPO/MTP®
- mounting on DIN rail TH35 by means of adaptors (J06000A0056)



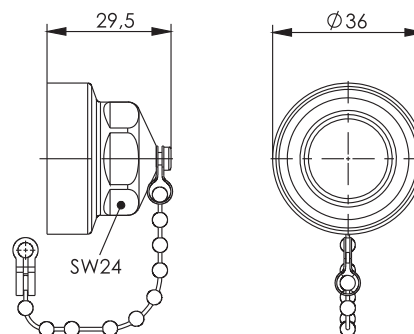
Order no.	Short name	Description	Remarks
J68071A0007	TOC Coupler IP68	MPO/MTP® adaptor Singlemode/Multimode	brass, nickel-plated

## Accessories for TOC Series

11.4



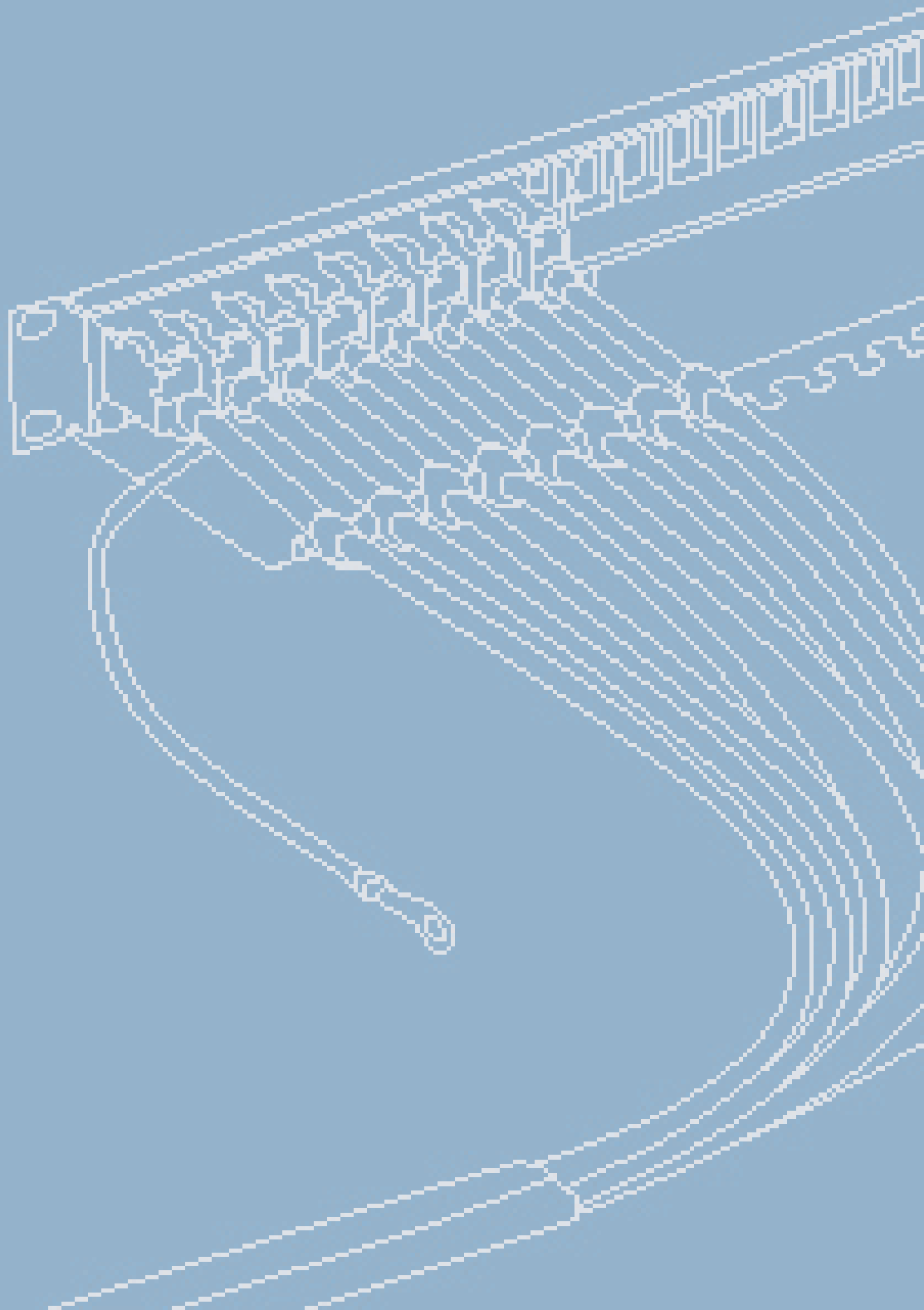
Order no.	Short name	Remarks
H60030A0001	TOC plug protection cap IP68	nickel-plated brass; with chain

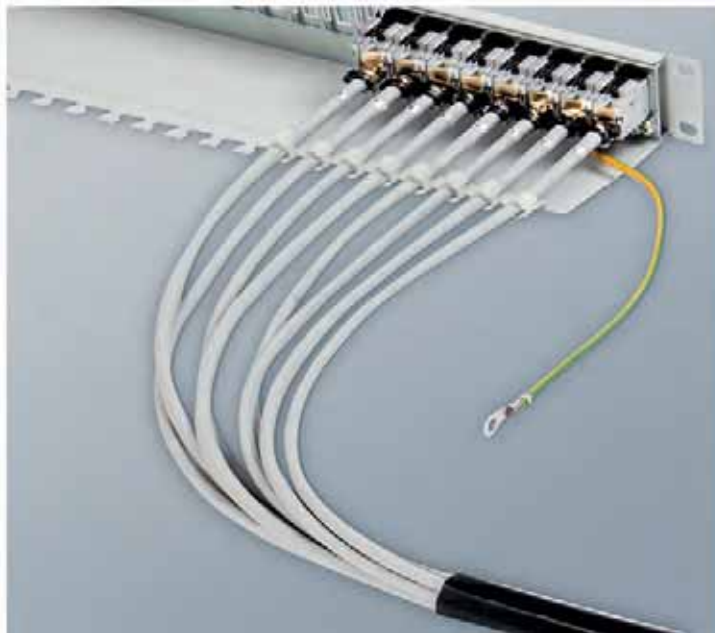


Order no.	Short name	Remarks
H60030A0000	TOC bulkhead protection cap IP68	nickel-plated brass; with chain



## Data Center Solutions





# 12

## Data Center Solutions



The cabling infrastructure of a data center has to take special conditions into consideration. Limited space makes high density solutions necessary, whilst at the same time



highest possible performance, availability, and flexibility are needed. All this leads to a long list of parameters which have to be met 100 percent.



## Availability

- Short installation time
- Plug & play solutions
- Reliability due to own manufacturing plants, including documentation
- Customer specific solutions
- Different kinds of bonding and grounding

## Performance

- RJ45 components Cat.6<sub>A</sub> up to 500 MHz
- 360° fully shielded
- High quality twisted pair cables
- High quality patch cords Cat.6<sub>A</sub> for 10 GBE
- Factory pre-terminated fiber optic cables with e.g. MPO/MTP®, SC, LC connectors
- Low insertion loss, high return loss
- High quality pre-terminated connections singlemode OS2 / G.657.x, multimode OM3 / OM4
- For applications at 10 Gbps, 40 Gbps, or 100 Gbps
- Ethernet, Fiber Channel (FCoE)

## MACs (moves, adds, and changes)

- Scalability
- Components optimized for real-life installations
- Simple use due to pulling aids
- Pre-terminated solutions
- Minimum disruptions at rebuilds, adds, and new constructions

## High density

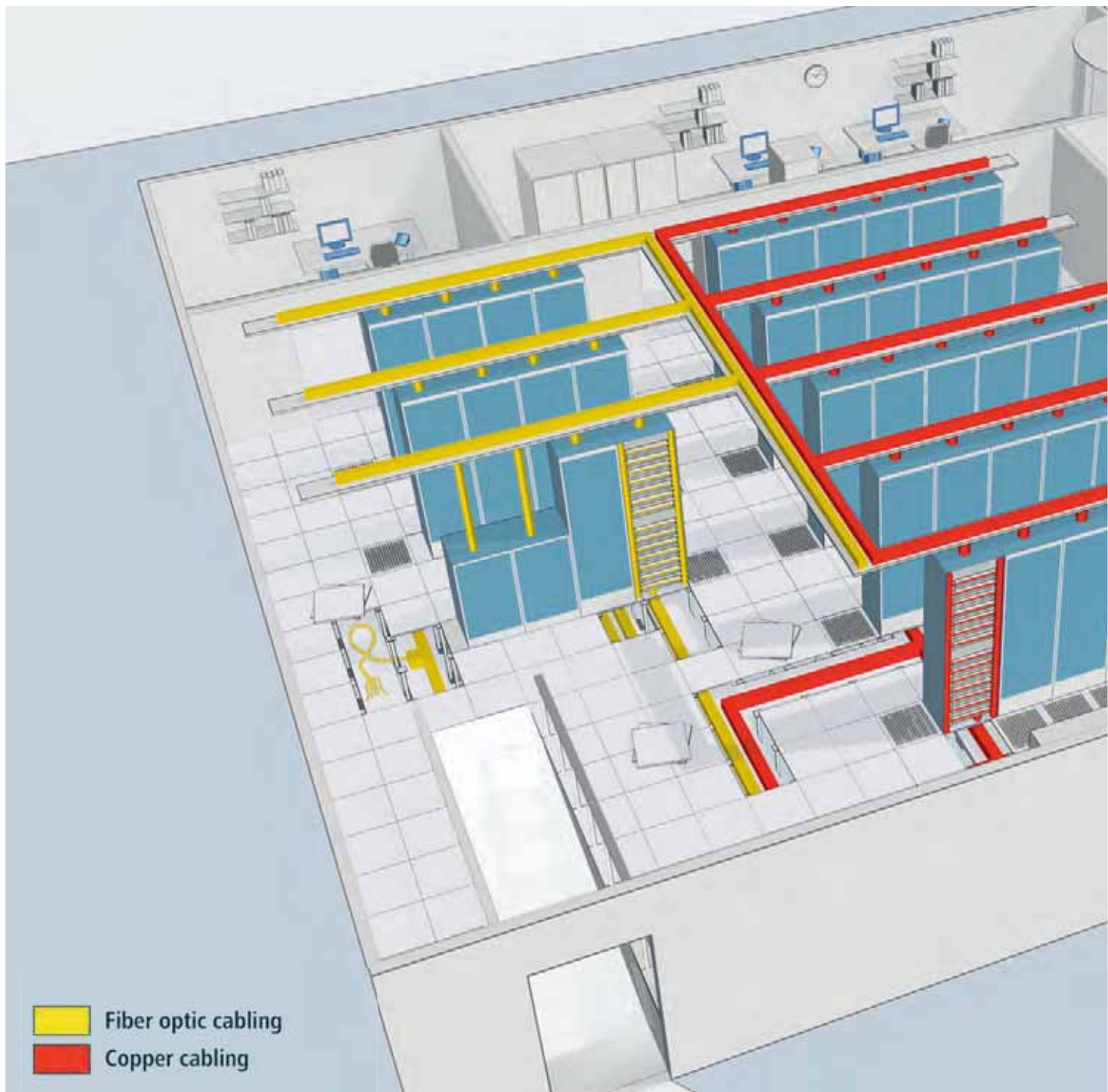
- Standard compliant components
- SFF – small form factor
- MPO/MTP® connector
- High density RJ45 modules, 48 ports using just 1 HU
- High density fiber optic modules, 48 ports/96 fibers using just 1 HU
- Hybrid solutions with copper and fiber optic modules

## Data Center Solutions

Highest quality, flexibility and a minimum of disruptions at the same time are the demands for today's data center infrastructure. To address this challenging environment, Telegärtner offers pre-terminated solutions. A major benefit of pre-terminated cables is that they can be installed whenever data center processes allow, very often even during live operations. Whenever new servers, switches, or mainframes are installed or moved, the pre-terminated cables are already in place, ready for service.

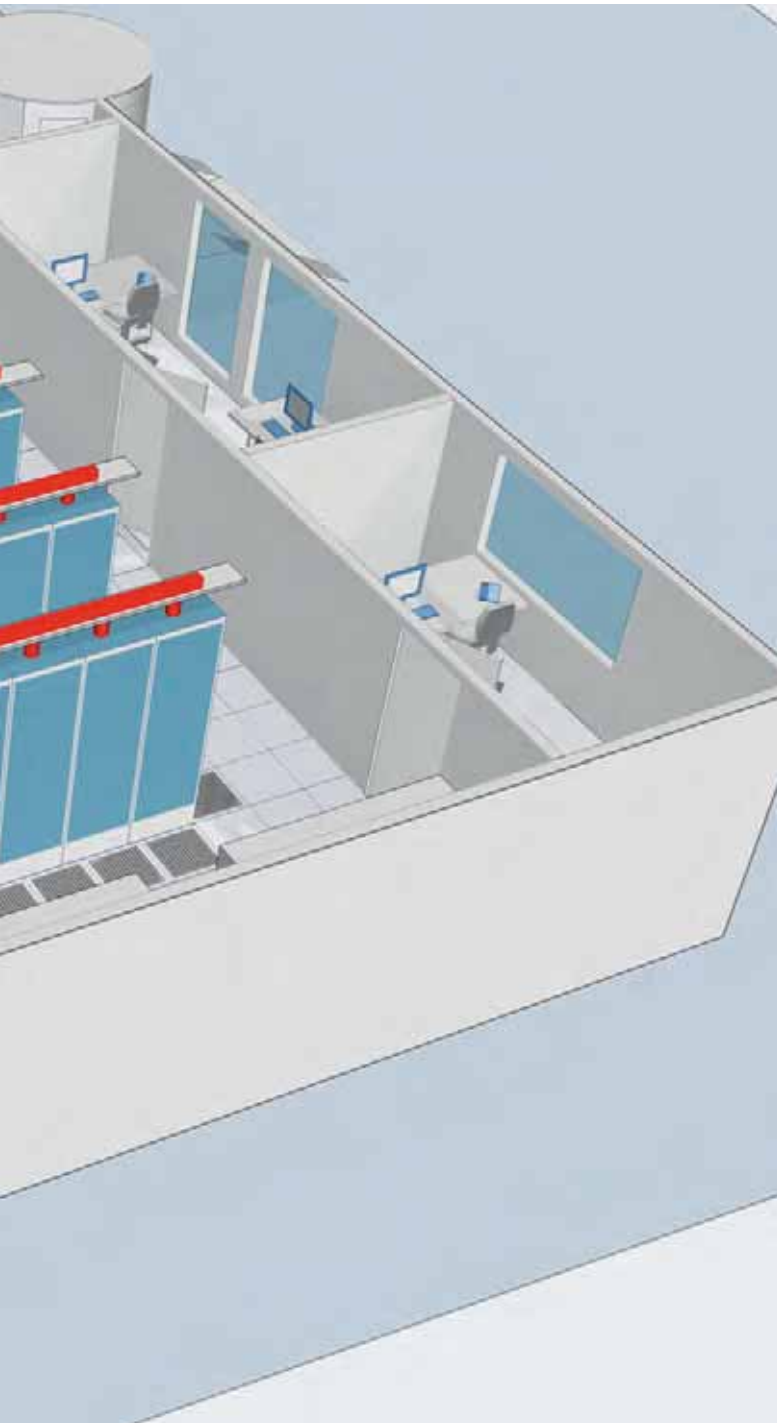
Time consuming cable cutting and stripping, terminating, curing, and polishing belong to the past. Pulling grips protect the connectors during cable installation and guarantee factory-proven quality even under rough installation conditions. Singlemode fiber and OM3/OM4 multimode fiber for data rates up to 10/40/100 Gbps are most recommendable. Cables with 12, 24, or 48 fibers are terminated with 12-fiber MPO/MTP® connectors or with duplex LC or duplex SC connectors.

### Data center cabling



For shorter distances, high-quality copper trunk cable solutions, which offer 10 Gbps over distances up to 80 m, can be used as well. Telegärtner's trunk cables are available with RJ45 AMJ / AMJ-S modules for patch panels and with RJ45 plugs as fan-out patch cables, which saves a lot of time when connecting larger amounts of switch ports.

Detailed information is available at [www.telegaertner.com](http://www.telegaertner.com)



## Trunk Cable

With its extended range of trunk cables, Telegärtner offers its customers individual solution possibilities for factory-assembled copper data cables in countless combinations. The factory assembly of the trunk cables is based on the requirements and conditions on site and is performed especially according to these. Depending on the requirements for the cabling structure, different cables, RJ45 plugs and

modules with various cable types in shielded or unshielded version can be selected and transfer rates of up to 10 Gbit/s in accordance with IEEE 802.3an can be achieved. The trunk cables enable simple „plug & play“ installation and offer the user easy, time-saving cabling and reduced assembly costs.



### Performance Characteristics

- Individually configurable both-end assembly
- Different cable types - shielded and unshielded; different copper wire diameters
- Selection of RJ45 plugs and modules for best possible cabling flexibility
- Coloured port numbering for clear identification
- Cables coiled with spun rayon fabric tape
- Delivery includes measuring report as a PDF on CD on request
- Pin assignment T568B
- Individual cable length up to max. 80 m / 50 m (solid/stranded) possible:  
from 1 m to 10 m in 0.5 m steps  
from 11 m to 99 m in 1.0 m steps

### Cable Harness Diameter

Cable	Order no.	Cable Harness Diameter max. (mm)			
		1-fold	4-fold	6-fold	8-fold
AMJ 1300 S/FTP Cat.7 <sub>A</sub> 4x2xAWG 23/1 LSZH blue	L02002A0183	7.5	22	25	27
AMJ 1000 S/FTP Cat.7 4x2xAWG 23/1 LSZH blue	L02002A0180	7	20	23	25
S/FTP Cat.7 4x2xAWG 27/7 LSZH grey	L02002A0061	5.8	17	20	22
AMJ 500 U/FTP Cat.6 <sub>A</sub> 4x2xAWG 23/1 LSZH blue	L02002A0200	7	20	23	25
UMJ 500 U/UTP Cat.6 <sub>A</sub> 4x2xAWG 23/1 LSZH blue	L02002A0176	7.9	22	26	29
U/UTP Cat.6 4x2xAWG 24/1 LSZH blue	L02002A0158	5.3	15	17	19

The trunk cables can be assembled according to customer specifications for 1/4/6 and 8-fold cables, at one or both ends and with a max. length of 80 m. There is a free choice of different

trunk variants and lengths. The range includes uniform trunks with lengths of 30 cm, 50 cm and 70 cm as well as stepped trunks with step direction selection.

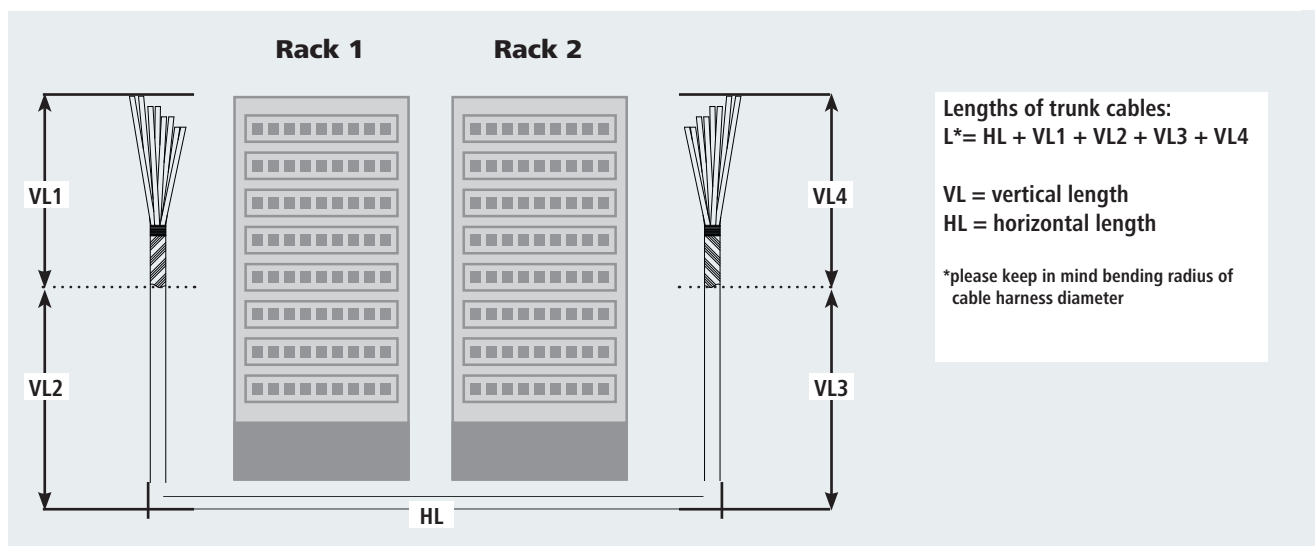
Cable	No. Cable	Trunk	Plugs/Modules
AMJ 1000 (1300) S/FTP Cat.7 (7 <sub>A</sub> ) 4x2xAWG 23/1 LSZH blue	1-fold	uniform trunks Length in cm: 30 / 50 / 70	RJ45 plugs Module
S/FTP Cat.7 4x2xAWG 27/7 LSZH grey	4-fold		MP8(8) FS Cat.6 <sub>A</sub> AMJ-S Module Cat.6 <sub>A</sub>
AMJ 500 U/FTP Cat.6 <sub>A</sub> 4x2xAWG 23/1 LSZH blue	6-fold	stepped trunks 1 - n	MFP8 Cat.6 <sub>A</sub> AMJ Module K Cat.6 <sub>A</sub>
UMJ 500 U/UTP Cat.6 <sub>A</sub> 4x2xAWG 23/1 LSZH blue	8-fold		UFP8 Cat.6 <sub>A</sub> UMJ Module K Class E <sub>A</sub> 500
U/UTP Cat.6 4x2xAWG 24/1 LSZH blue		stepped trunks n - 1	

Other cable types on request

### Possible Combinations

	AMJ-S Module	AMJ Module K	MFP8 plug	MP8 FS plug	UFP8 plug	UMJ Module
AMJ-S Module	X		X	X		
AMJ Module K		X	X	X		
MFP8 plug	X	X	X	X		
MP8 FS plug	X	X	X	X		
UFP8 plug					X	X
UMJ Module					X	X

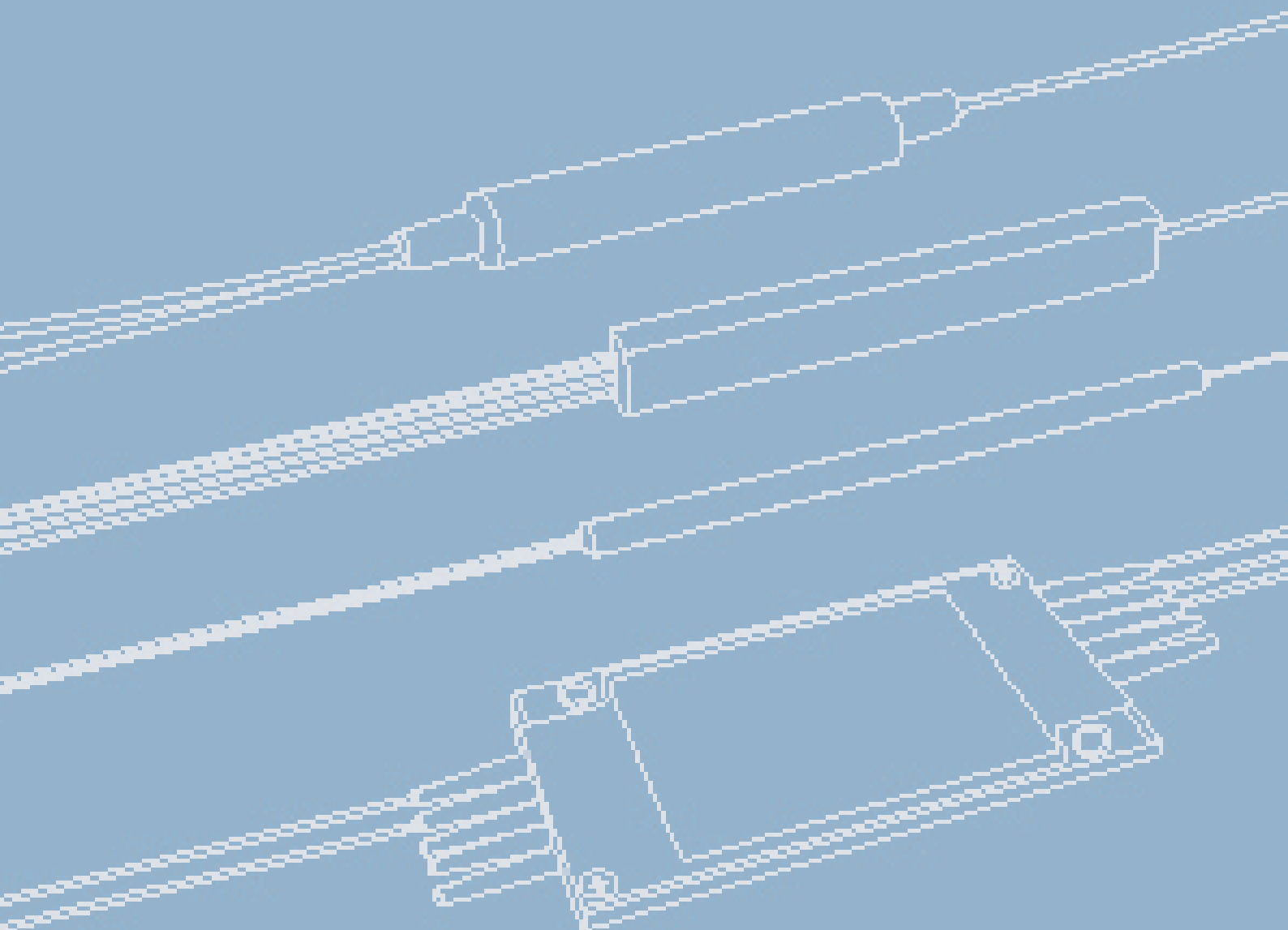
### Calculation of Trunk Cable Lengths



All trunk cables of 15 m and more in length are measured 100 % as permanent link. The measuring results are recorded and provided to the customer on request.



## Fiber-To-The-x Solutions





# 13

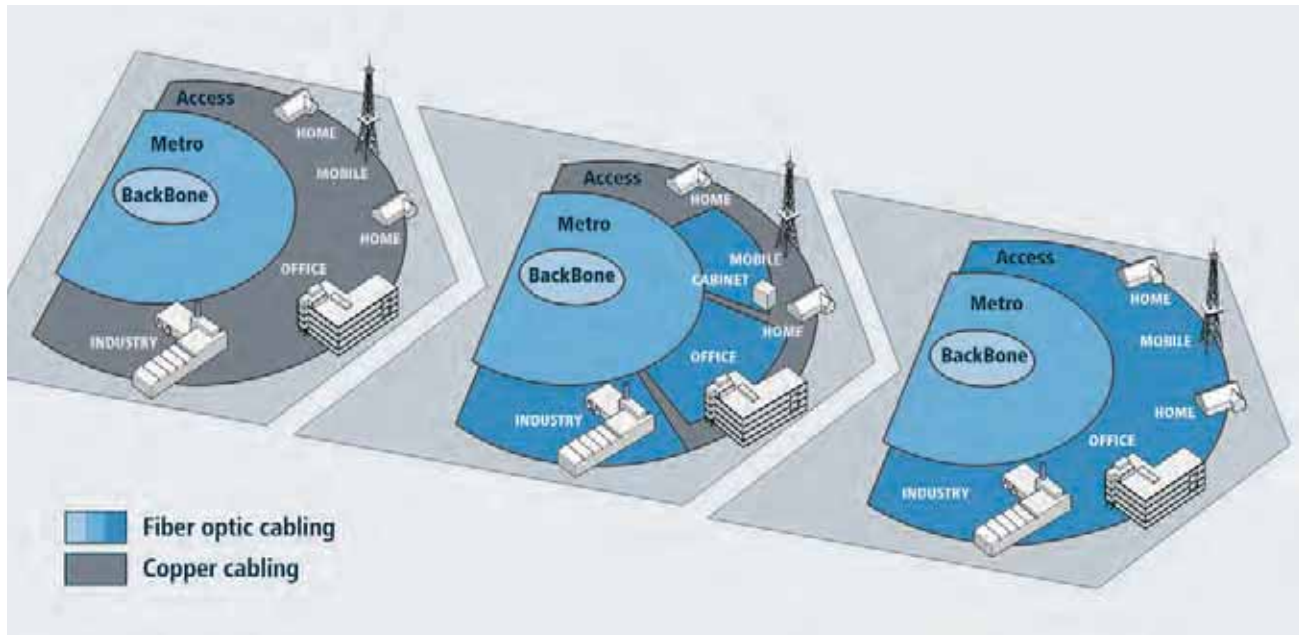
## Fiber-To-The-x Solutions



The ever growing demands for higher data rates and more bandwidth, especially from private users, are pushing the existing networks to their limits. To establish future-proof solutions, the option of extending optical networks is indispensable.

To achieve this, cabling components which fulfil all the demands of availability, performance and high-density, are an absolute must.

## Migration from copper to FTTx (Fiber-To-The-...) networks



### Availability

- IP rating IP20, IP67 (RJ45 / fiber optic), IP68/69k (coax / RJ45 / fiber optic)
- Customer-specific solutions
- Development, manufacturing and quality assurance by Telegärtner
- External audits and proofs by independent labs

### High density

- Optical fibers optimized for tight bending radius ( $\geq 15$  mm)
- RJ45 and fiber optic connecting hardware for electrical fuse boxes

### Performance

- Transmission performance
 

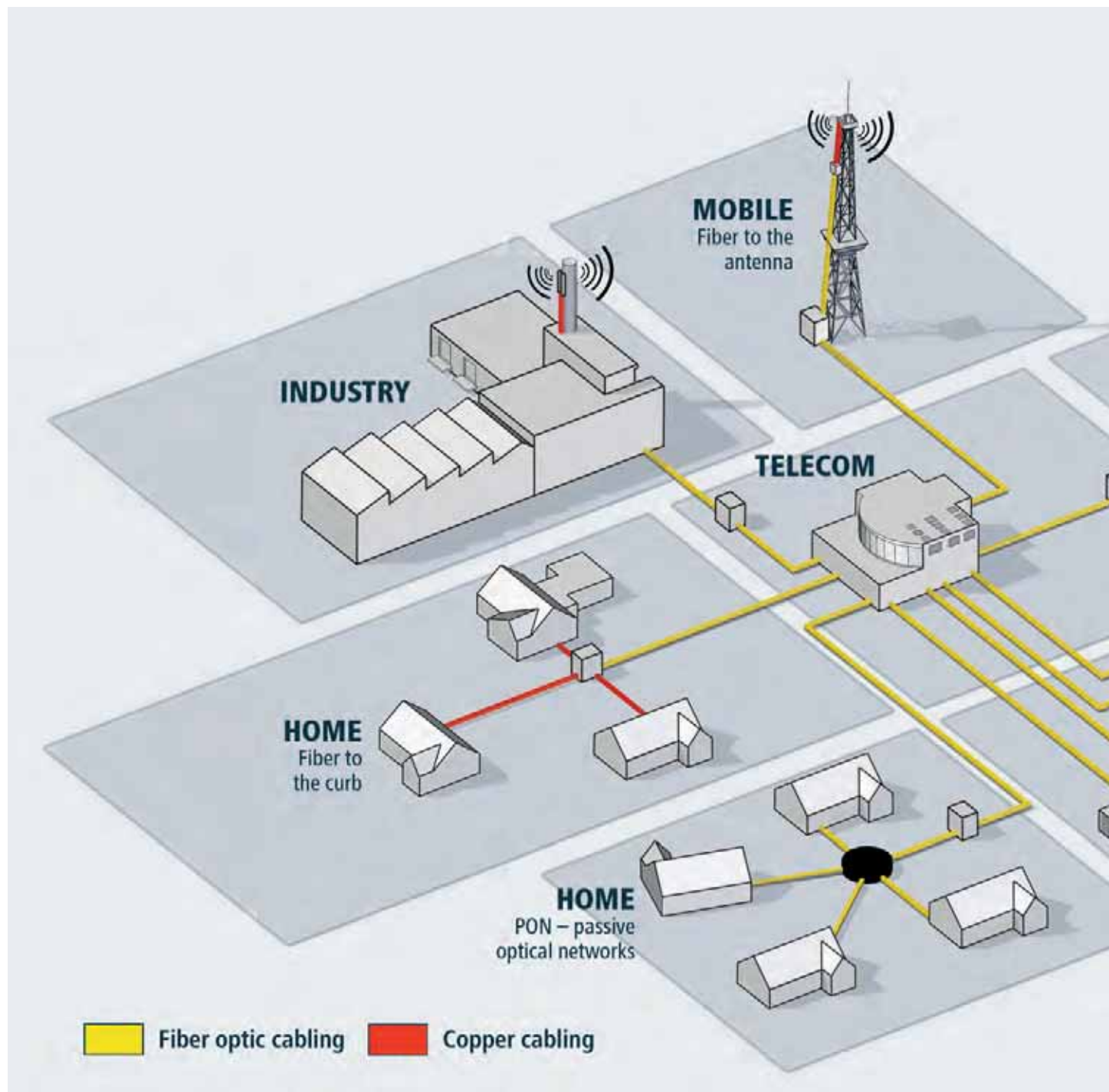
Coax	900 / 1800 MHz (GSM)
	2.3 / 4 GHz (UMTS)
	2.7 GHz (LTE)
	3.5 GHz (Wimax)
RJ45	up to 500 MHz (Cat.6A)
Fiber optic	OS2, G.657Ax
- Access net solutions for high bit rates with well-established coaxial, RJ45 and fiber optic connecting hardware
- Short installation times through easy installation

## Fiber-To-The-x Solutions

When the existing infrastructure of the access network, which has grown over the last decades, can not cope anymore with the continuously growing demands, it is only logical to bring the high-performance fiber optical networks closer to the end-user – whether this might be a company or a private person.

The technical demands can not always be fulfilled easily, as the technical solutions have to be as individually designed as the cities and urban areas are. It is good to rely on a manufacturer who can look back on decades of experience and who has been a partner for technological development

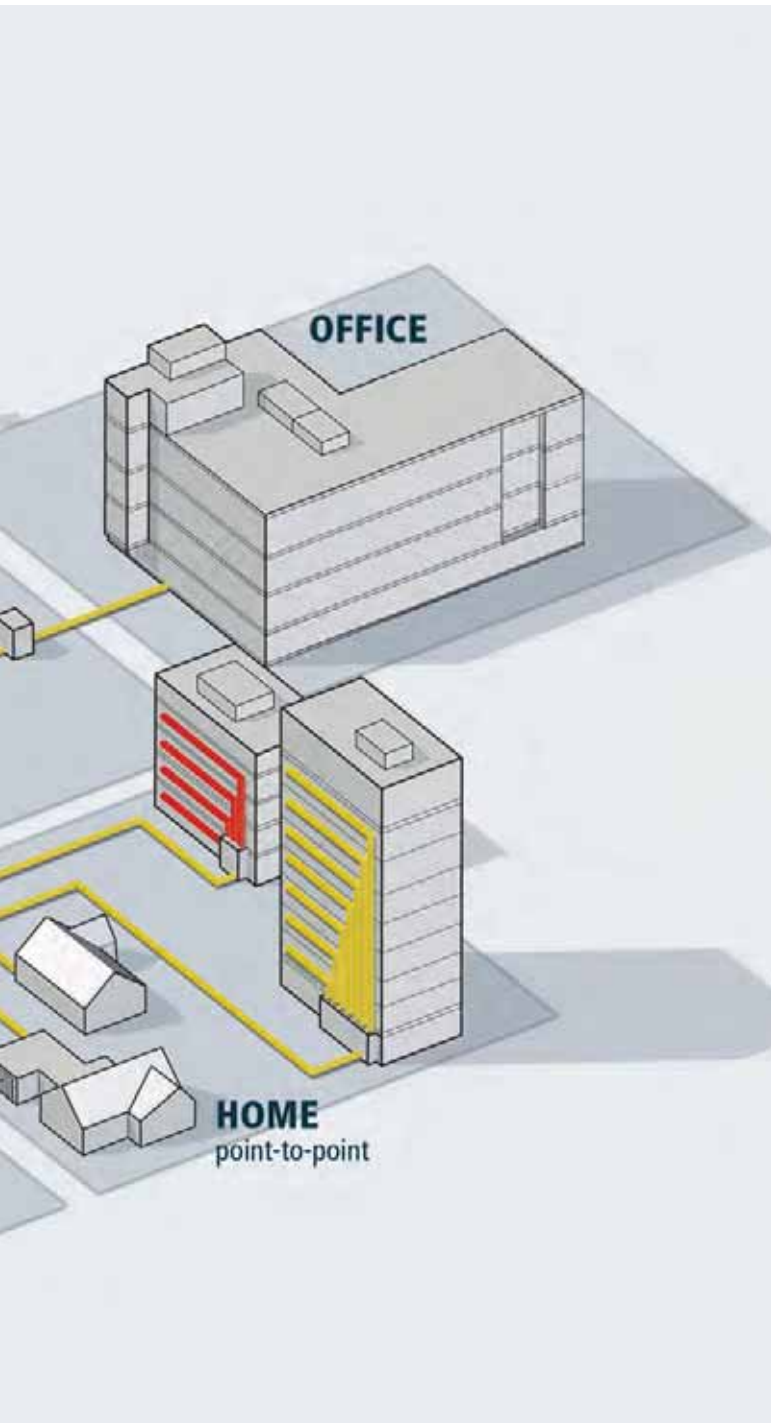
### FTTx (Fiber-To-The-...) Cabling Solutions



# Fiber-To-The-x Solutions

ever since. Telegärtner offers a wide variety of Fiber-to-the-... solutions for all the different types of access networks, from optical couplers/wavelength multiplexers, enclosures, fiber optic and coaxial connectors.

Detailed information is available at [www.telegaertner.com](http://www.telegaertner.com)



## Cabling solutions FTTA (Fiber-To-The-Antenna)

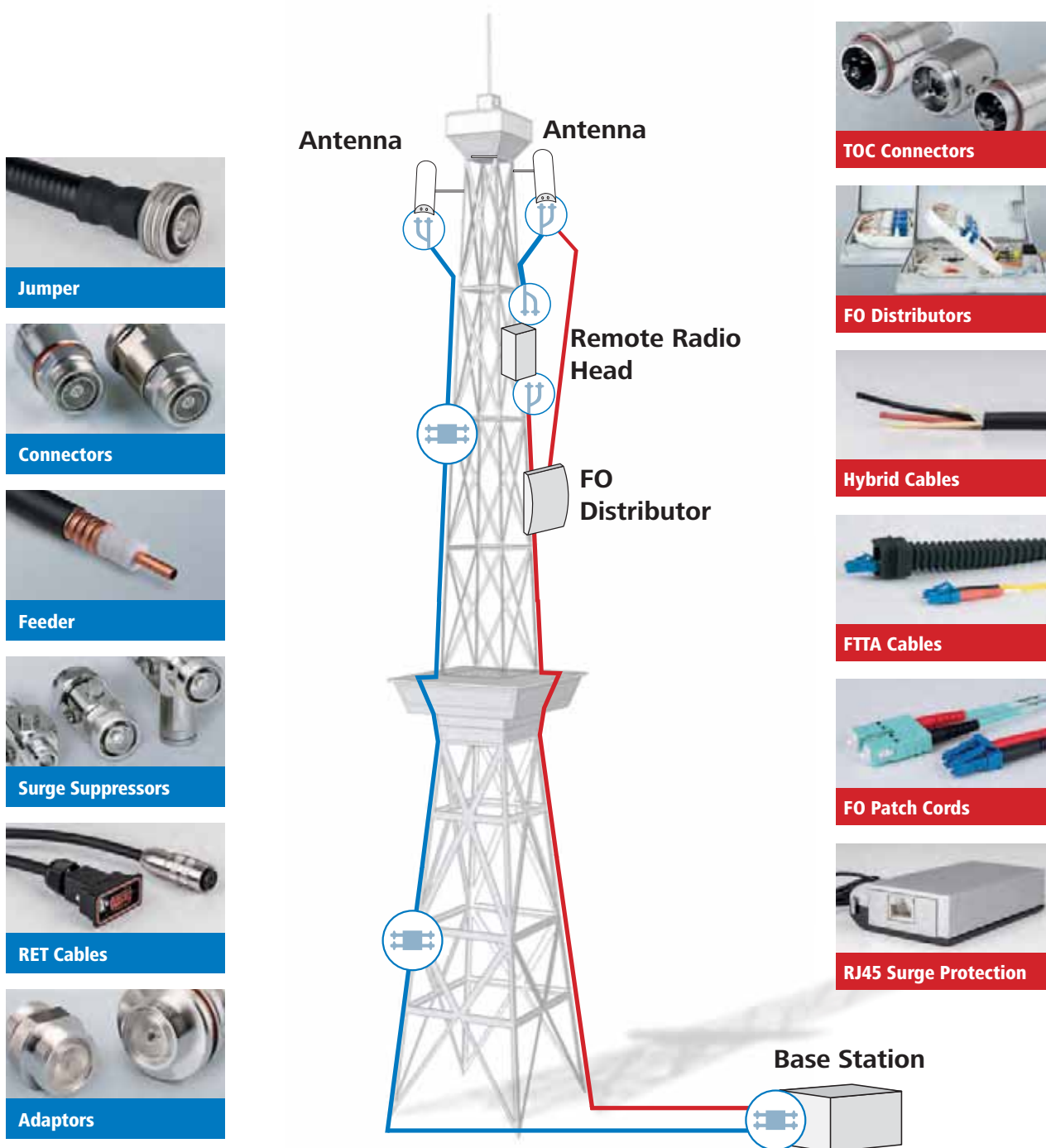
The need for increasingly large data volumes in mobile radio networks is increasing constantly and immensely. LTE will be receivable by smartphones, tablets and PCs in the future even in regions that were previously under-supplied in terms of broadband. Where just a few years ago a few Mbps were transferred in the first mobile radio networks, this is now 100 Mbps and more on modern 4G/LTE and 5G networks. In addition, radio cells in areas of high population density are getting increasingly smaller and therefore the number of aerials greater.

In order to increase the transfer speeds, the changeover to a complete glass fiber infrastructure in the whole mobile radio

network is the logical consequence. For this, base stations are connected by glass fiber cables for the transfer of higher data rates and optical cables are laid closer to the antenna.

The optical components must be designed for continuous outdoor use so that they are able to meet the high environmental demands (resistance to weather, UV resistance).

For the gradual expansion of the mobile radio networks, hybrid cables, i.e. with copper pairs for the power supply and glass fibers for the data transfer, are laid as well as outdoor twisted-pair cables with field assemblable RJ45 plugs. This enables a transfer rate of up to 10 Gbps as well as the power supply to terminating equipment by means of PoE+.



Jumper



Connectors



Feeder



Surge Suppressors



RET Cables



Adaptors



TOC Connectors



FO Distributors



Hybrid Cables



FTTA Cables



FO Patch Cords



RJ45 Surge Protection

## Cabling Infrastructure for FITH (Fiber-In-The-Home)

IP-TV, Video on Demand and Triple Play (TV, telephone and internet via the same connection) increase the demand for bandwidth in the metropolitan network and in the access net of cities and communities. With a growing number of FTTH (fiber-to-the-home) and FTTB (fiber-to-the-building) projects, optical fibers are drawing nearer to the buildings. Users are offered higher bandwidth – but very often the cabling infrastructure within the buildings can not cope with that any more.

Especially in residential buildings only voice grade cabling had been installed over the last decades. This was good enough for the demands of the past, but the demands have changed. Performance and reliability of the internet services largely depend on the cabling infrastructure. Only high-quality fiber optic or twisted pair cables, outlets and patch panels ensure that the high data rate „from outside“ reaches the end user.

This starts with the OLT (optical line termination), the demarcation point down in the cellar. It terminates the provider's optical fiber that enters the building and provides a low-loss transition to the building network. From the OLT, fiber optic indoor cables run to the flats. In detached houses twisted pair cables run directly to the outlets. In the building, new generation fiber optic cables with bend-insensitive optical fibers are recommended as they offer very small bending radii. Mini cables with such optimized fibers can even be installed without the need to open any wall.



## Optical TO

The optical telecommunication outlet OAD/S terminates the optical fiber of the premises cabling in FTTH and FTTB networks. This FITH outlet can hold up to four fibers with pre-terminated LC/APC connectors. The faceplate can hold up to two LC/APC duplex adaptors with integrated metallic laser protection flaps and comes with captive dust covers. The outlet's height is adjustable and the dimensions of the faceplate guarantee a seamless integration into all relevant types of cover frames. The outlet can be surface mounted as well as flush mounted.

Thanks to the innovative and recyclable packaging, the pre-term cable can be pulled out of the box already connected to the outlet. This eliminates the need for time consuming measuring of cable length's on site, minimizing installation time in the flat.

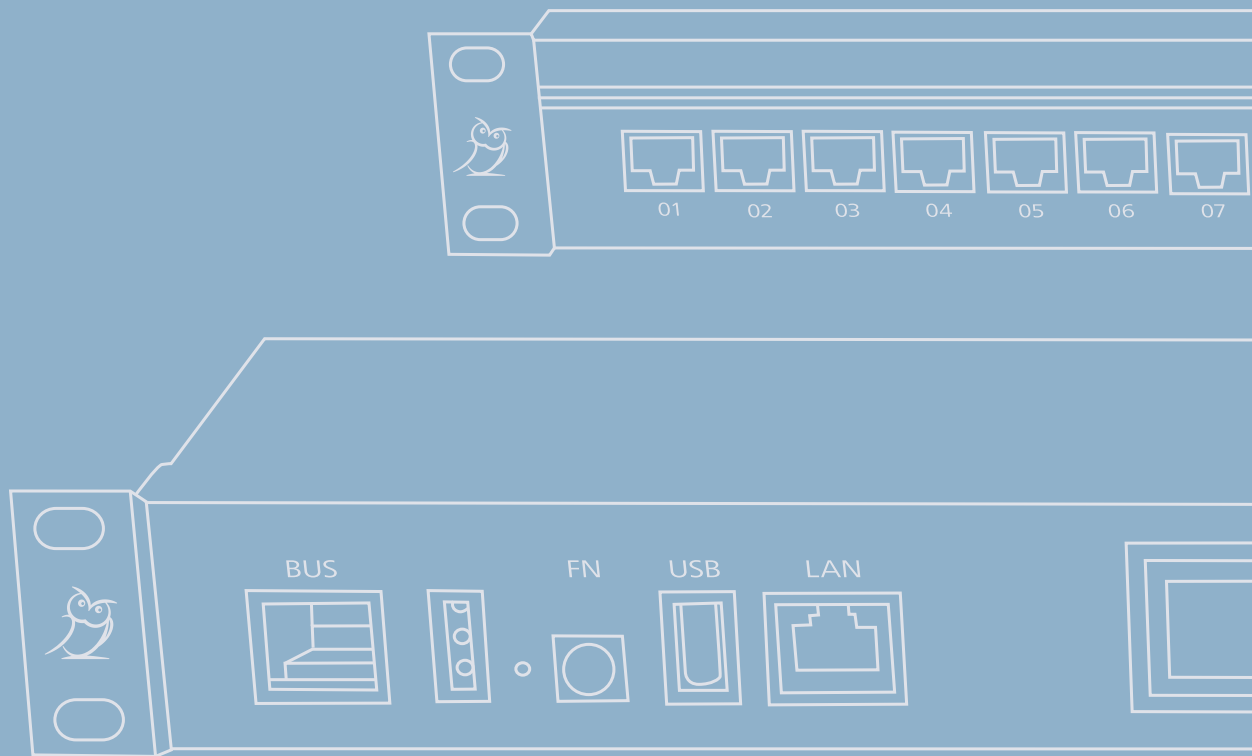
### Performance Characteristics

- FITH fiber optic outlet with cable reel for pre-terminated fiber optical cable; integrates in any cover frame with 50 x 50 mm cutout
- Comes with two LC/APC adaptors with dust cover and laser protection installed
- Comes with four pre-terminated LC/APC connectors installed
- Comes with four G657.A2 single mode fibers
- „Ready-to-install“ pre-term solution eliminates the need for measuring cable length or splicing optical fibers
- Installation „out of the box“ thanks to the innovative packaging



Order no.	Description	Type	Length	Remarks
H02082A0001	FITH OAD/S outlet, pre-assembled with 2 pcs. LC/APC Duplex adaptors and 4 LC/APC plugs	cable 4 fibers Singlemode	25 m	ready-to-install
H02082A0002	FITH OAD/S outlet, pre-assembled with 2 pcs. LC/APC Duplex adaptors and 4 LC/APC plugs	cable 4 fibers Singlemode	50 m	ready-to-install
H02082A0003	FITH OAD/S outlet, pre-assembled with 2 pcs. LC/APC Duplex adaptors and 4 LC/APC plugs	cable 4 fibers Singlemode	75 m	ready-to-install
H02082A0004	FITH OAD/S outlet, pre-assembled with 2 pcs. LC/APC Duplex adaptors and 4 LC/APC plugs	cable 4 fibers Singlemode	100 m	ready-to-install

## Intelligent Patch Management System Owl





**14**

## **Intelligent Patch Management System Owl**



# Intelligent Patch Management System Owl

14

The intelligent patch management system Owl is Telegärtner's solution to planning and documentation in IT cabling. The system components of Owl are the basis for a functioning Automated Infrastructure Management (AIM). The goal is to combine information about the cabling infrastructure with other sections from facility management. The scope of performance of an AIM is being communicated world-wide and has now become part of VDE0800-174-1.

With AIM daily tasks, such as relocations of departments and persons, the associated connection orders and the required new documentations, can be performed more efficiently and documented in real time. Every change of a defined status can be reported to the responsible persons in real time. Once a status has been defined, it can be restored after an unauthorized change by simply following the instructions on the digital display of the Owl Display Rack Device (DRD).



## Advantages

The economic and administrative advantages of operation with AIM will soon become clear to the operator. Existing setups can be retrofitted easily; the investment costs are straightforward.

Owl offers reliability, the operator and decision maker always retains control. The far-sighted decision for only two standard components allow the operator to additionally equip his network with Owl and upgrade it to AIM at any time and according to his possibilities.

## Areas of application

For IT networks which are spread out over locations, complex data centers, the Owl system components form the basis for immediate or later upgrading to an AIM.

The possibility of exemplary retrofitting antennas to patch panels and equipping patch cords with transponders, reduce the operators' risks and corresponds ideally to the desires of every IT responsible person: never change a running system.

# Intelligent Patch Management System Owl

## Mode of operation

Owl can be operated independently or it can communicate with the software of other providers via an open, integrated interface (API). Therefore it offers the operators full convenience with little effort.

Antennas on the patch panels clearly detect the plugged connecting cables and pass on the information to the Owl-DRD via an internal bus system. This, in turn, provides the information to the authorised and responsible persons in the



# Intelligent Patch Management System Owl

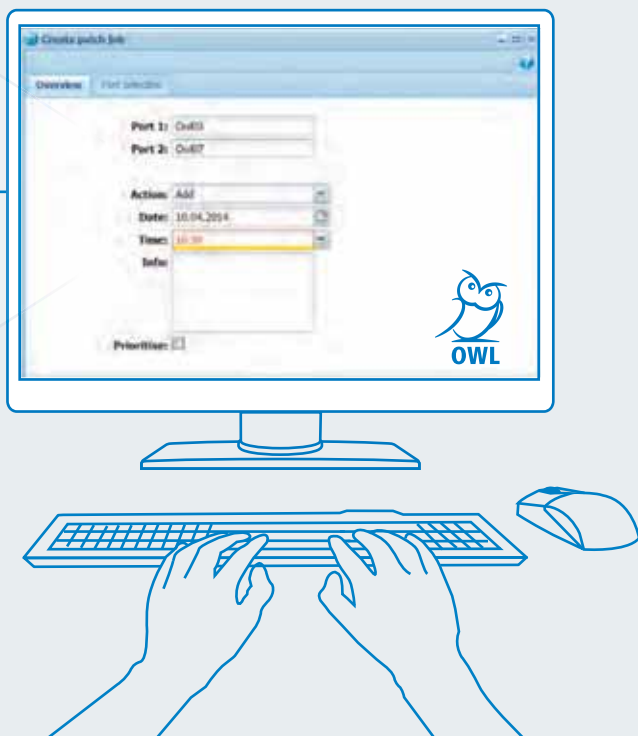
14

IT network. The guideline of Owl is to provide an AIM with standard cabling components to the operator according to EN 50173-x.

Sensor cables or adaptors allow, to integrate the ports of

active network devices into the AIM although no antennas are fitted directly to these.

The intelligent Patch Management System includes hardware components as well as software for monitoring and signalling faults in IT cabling and for controlling changes in the building infrastructure. The software will allow users to plan future changes in advance, monitor them during their execution and document them reliably and permanently. Owl can also incorporate decentralized distributed locations.



Owl Display Rack Device



Owl Front Plate Copper / Fiber



Upgrade Set Copper / Fiber



System Rack Lamp



Upgrade Clip Fiber



Upgrade Clip Copper



Bus Connector



Bus Termination

# Intelligent Patch Management System Owl

## Upgrade possibilities

Previously impossible solutions can now be implemented easily thanks to Owl. There are so many different possibilities that are represented here by just four examples:

### How frequently is every patch cord replugged?

The plugs on patch cords have a limited lifetime and expectation. To rule out failures due to wear in advance, the number of pluggings for every single patch cord can be detected and recorded. An obvious contribution to quality enhancement.

### Do fans have to run forever?

Temperature sensors accommodated in the antennas can be evaluated and linked with threshold values. Fans are then only activated when cooling is necessary. Unlike conventional, external threshold value switches, temperature curves of the service cabinet can be generated and occurrences can be saved. A contribution to cost and material reduction.

### When is which area upgraded?

The decision when and where to upgrade is made according to economical considerations and technical necessity. The Owl upgrade option offers ideal support here.

### Is the property of every component still known after years?

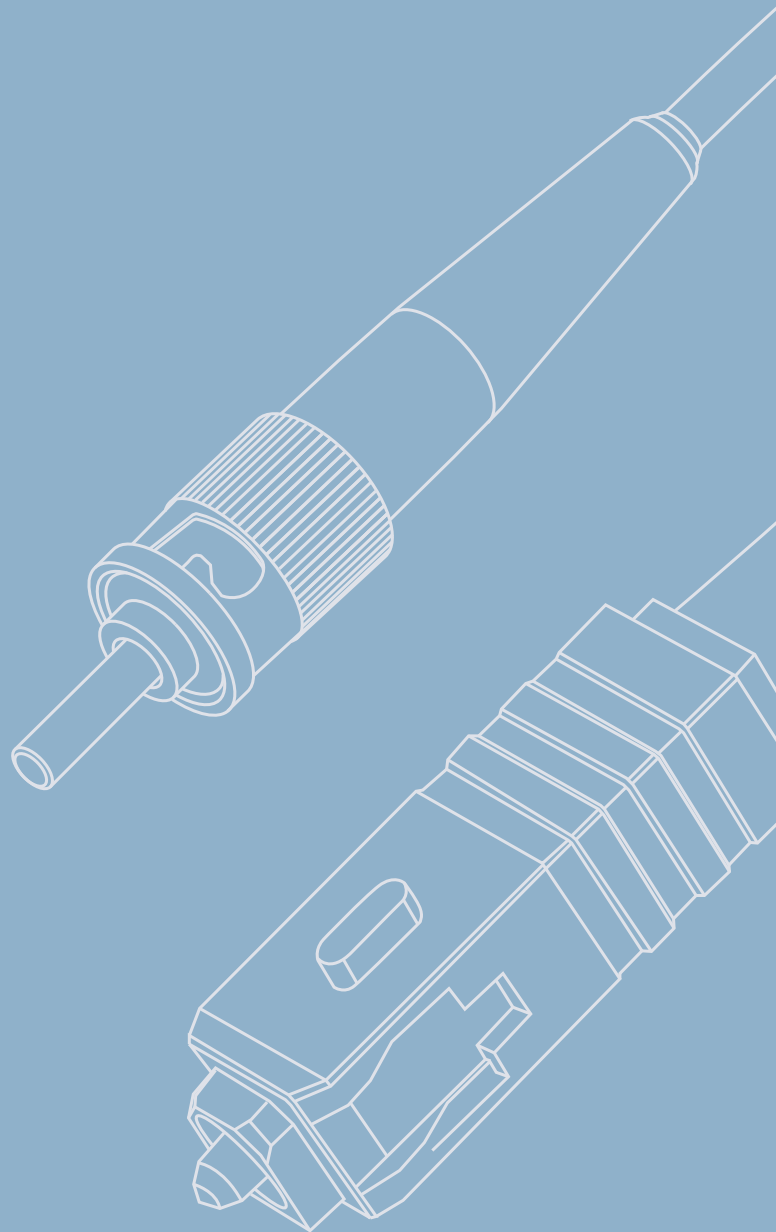
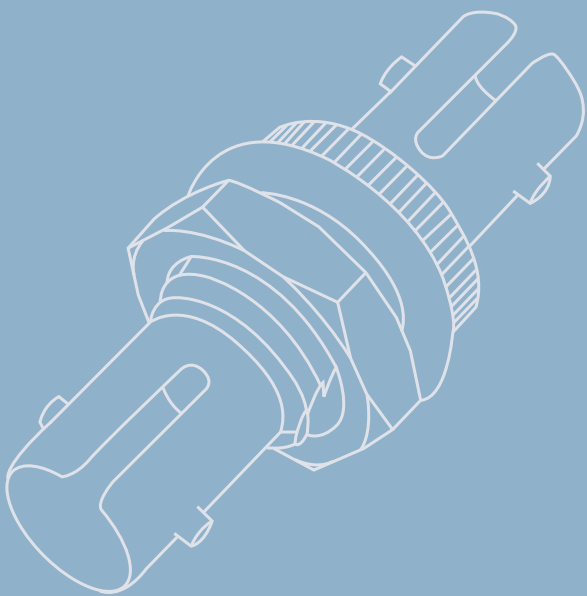
During the long lifetime of networks, further developments lead to different qualities of installation cables (FO and copper) being used. Only the combination of the ideal fiber and cable qualities of installation cables and patch cords guarantee optimum transmission properties.

The stored data in the transponders can be evaluated for plausibility. So-called impact points cause repeated requesting of data packets and destroy the transmission quality. The data of the Owl components stored on the transponder contribute towards keeping the networks constantly at „high speed“.



# 15

## FO Connectors





# 15

## FO Connectors

<b>15.1</b>	<b>ST Connectors</b> .....	<b>221</b>
15.1.1	ST Plugs.....	221
15.1.2	ST Adaptors.....	222
<b>15.2</b>	<b>SC Connectors</b> .....	<b>222</b>
15.2.1	SC Plugs .....	223
15.2.2	SC Adaptors .....	223
<b>15.3</b>	<b>LC Connectors</b> .....	<b>225</b>
15.3.1	LC Plugs.....	225
15.3.2	LC Plugs EasyGrip .....	226
15.3.3	LC Adaptors.....	226
<b>15.4</b>	<b>E2000 Adaptors</b> .....	<b>227</b>
<b>15.5</b>	<b>FC Adaptors</b> .....	<b>228</b>
<b>15.6</b>	<b>F-SMA Adaptors</b> .....	<b>228</b>
<b>15.7</b>	<b>ST/SC Duplex Adaptors</b> .....	<b>228</b>
<b>15.8</b>	<b>FO Attenuators</b> .....	<b>229</b>

Durable, precise and reliable: Telegärtner fiber optic connectors with ferrule and coupling sleeve made of zirconia ceramics exceed the specifications of the relevant international

standards. The APC types (Angled Physical Contact) with 8° angled polished ferrules offer return loss values of more than 60 dB and meet highest expectations.

### Performance Characteristics

- Available for Singlemode and Multimode
- For 0.9 mm fibers and 3.2 mm cordage
- Multimode 50  $\mu$ , 62,5  $\mu$ , 200  $\mu$  and 980  $\mu$
- Singlemode 9  $\mu$

## ST Connectors

15.1

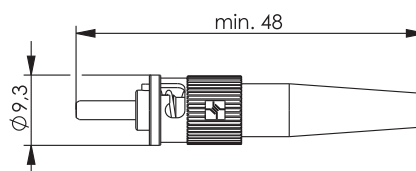
	ST Connectors	ST Connectors for POF / PCF
<b>Mechanical Characteristics</b>		
Type	BFOC/2,5 acc. to IEC 61754-2	BFOC/2,5 similar IEC 61754-2
Durability (mating cycles)	$\geq 1000$	$\geq 500$
Hex crimp size for strain relief	3.4/4.52 x 10 mm; 3.65/4.52 mm	3.4/4.52 x 10 mm (3.25 for cable $\varnothing$ 2.2)
Strain relief	$\geq 100$ N	$\geq 100$ N ( $\varnothing$ 3.6); $\geq 60$ N ( $\varnothing$ 2.2)
Material: connector ferrule	Zirconia ceramic	POF: brass nickel-plated / PCF: nickel
Material: adaptor split sleeve	Zirconia ceramic or phosphor bronze	phosphor bronze
Material: connector body, fixing parts for adaptor	brass, nickel-plated	brass, nickel-plated
Material: bayonet coupling nut, connector body, adaptor housing	zinc diecast, nickel-plated	zinc diecast, nickel-plated
Material: crimp sleeve	copper, nickel-plated	copper, nickel-plated
Material: cable boot, dust caps	elastomer, flame retardant, non halogen	elastomer, flame retardant, non halogen
<b>Climatic Characteristics</b>		
Operating temperature in °C	-20° to 80° C	-20° to 80° C
Storage temperature in °C	-40° to 90° C	-40° to 90° C
<b>Optical Characteristics</b>		
Insertion loss: Plug (factory assembly)	Multimode: max. 0.4 dB <sup>1</sup> ; Singlemode: max. 0.5 dB <sup>1</sup>	POF: max. 1.5 dB; PCF: max. 1.0 dB
Insertion loss: Adaptor (ceramic)	Multimode/Singlemode: max. 0.2 dB <sup>1</sup>	-
Insertion loss: Adaptor (phosphor bronze)	Multimode: max. 0.2 dB <sup>1</sup>	-
Return loss	Multimode: min. 30 dB <sup>2</sup> ; Singlemode: min. 40 dB <sup>2</sup>	-

1) Measurement procedure acc. to IEC 61300-3-4

2) Measurement procedure acc. to IEC 61300-3-6

## ST Plugs

15.1.1



Order no.	Description	Fiber type	Remarks
J08010A0036	ST Connector Singlemode, ceramic/metal	E9/125	for cable $\varnothing$ 1.8 - 2.2 mm
J08010A0008	ST Connector Singlemode, ceramic/metal	E9/125	for cable $\varnothing$ 2.6 - 3.2 mm
J08010A0005	ST Connector Multimode, ceramic/metal	G50/125, G62,5/125	for fibers with secondary coating $\varnothing$ 0.9 mm
J08010A0035	ST Connector Multimode, ceramic/metal	G50/125, G62,5/125	for cable $\varnothing$ 1.8 - 2.2 mm
J08010A0007	ST Connector Multimode, ceramic/metal	G50/125, G62,5/125	for cable $\varnothing$ 2.6 - 3.2 mm
J08010A0056	ST Connector for PCF, metal	PCF, S200/230	for cable $\varnothing$ 1.8 - 2.2 mm and 2.6 - 3.2 mm
J08010A0016	ST Connector for POF, metal	POF, S980/1000	for cables $\varnothing$ 2.2 mm without strain relief or $\varnothing$ 3.6 mm with strain relief

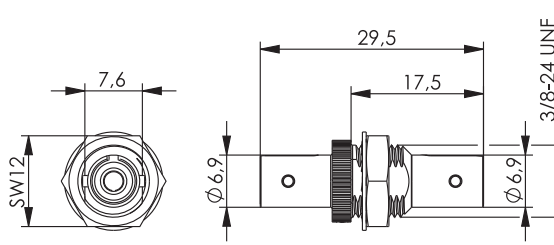
15.1

## 15.1

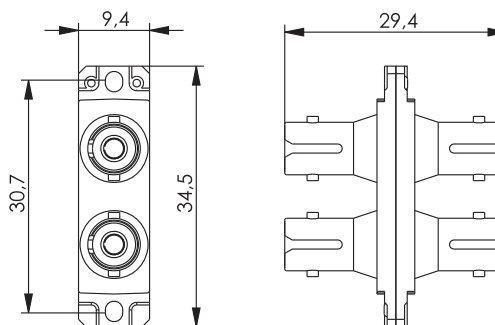
## ST Connectors

## 15.1.2

## ST Adaptors



Order no.	Description	Installation	Mount. dim.
J08011A0002	ST Adaptor, Multimode and Singlemode, ceramic sleeve, metal housing	single hole mounting	Z64
J08011A0003	ST Adaptor, Multimode, phosphor bronze sleeve, metal housing	single hole mounting	Z64



Order no.	Description	Installation	Mount. dim.
J08011A0017	ST-Duplex Adaptor, Multimode and Singlemode, Ceramic sleeve, metal housing, incl. tapping screws	Flange mounting	Z93
J08011A0014	ST-Duplex Adaptor, Multimode, phosphor bronze sleeve, Plastic housing, incl. tapping screws	Flange mounting	Z93

## 15.2

## SC Connectors

## Mechanical Characteristics

Type	Connector type SC acc. to IEC 61754-4
Durability (mating cycles)	≥ 1000; POF/PCF: ≥ 500
Hex crimp size for strain relief	4.52 x 10 mm
Strain relief	≥ 100 N
Material: connector ferrule	Zirkonia ceramic, POF: german silver, PCF: nickel
Material: adaptor split sleeve	Zirkonia ceramic or phosphor bronze
Material: connector body	copper alloy, nickel-plated
Material: plug housing, boot, dust caps	thermoplastic, flame retardant, non halogen
Material: adaptor housing	thermoplastic, flame retardant, non halogen, or zinc diecast, nickel-plated
Material: retaining clip (adaptor)	stainless steel
Colour: connector housing / adaptor housing	Multimode: beige, blue, aqua, black, purple; Singlemode: blue; Singlemode APC: green; POF: yellow; PCF: red

## Climatic Characteristics

Operating temperature in °C	-20° to 80° C
Storage temperature in °C	-40° to 90° C

## Optical Characteristics

Insertion loss: plug (factory assembly)	Multimode: max. 0.4 dB <sup>1</sup> ; Singlemode/Singlemode APC: max. 0.5 dB <sup>1</sup> ; POF: 1.5 dB; PCF: 1.0 dB
Insertion loss: adaptor	Multimode/Singlemode: max. 0.2 dB <sup>1</sup> ; Singlemode APC: 0.2 dB <sup>1</sup>
Return loss: plug (factory assembly)	Multimode: min. 30 dB <sup>2</sup> ; Singlemode: min. 40 dB <sup>2</sup> ; Singlemode APC: min. 60 dB <sup>2</sup>

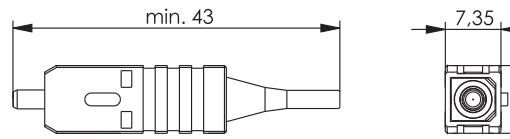
1) Measurement procedure acc. to IEC 61300-3-4

2) Measurement procedure acc. to IEC 61300-3-6

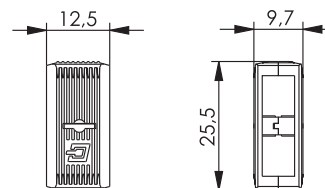


## SC Plugs

15.2.1



Order no.	Description	Fiber type	Remarks	Housing Colour
J08080A0006	SC Connector Singlemode, ceramic	E9/125	for fibers with secondary coating $\varnothing$ 0.9 mm	blue
J08080A0018	SC Connector Singlemode, ceramic	E9/125	for cable $\varnothing$ 1.8 - 2.2 mm	blue
J08080A0005	SC Connector Singlemode, ceramic	E9/125	for cable $\varnothing$ 2.6 - 3.2 mm	blue
J08080A0002	SC Connector Multimode, ceramic	G50/125, G62,5/125	for fibers with secondary coating $\varnothing$ 0.9 mm	blue
J08080A0016	SC Connector Multimode, ceramic	G50/125, G62,5/125	for cable $\varnothing$ 1.8 - 2.2 mm	blue
J08080A0001	SC Connector Multimode, ceramic	G50/125, G62,5/125	for cable $\varnothing$ 2.6 - 3.2 mm	blue
J08080A0037	SC Connector Multimode, ceramic	G50/125, G62,5/125	for fibers with secondary coating $\varnothing$ 0.9 mm	beige
J08080A0043	SC Connector Multimode, ceramic	G50/125, G62,5/125	for cable $\varnothing$ 1.8 - 2.2 mm	beige
J08080A0036	SC Connector Multimode, ceramic	G50/125, G62,5/125	for cable $\varnothing$ 2.6 - 3.2 mm	beige
J08080A0048	SC Connector Multimode, ceramic	G50/125 OM3	for fibers with secondary coating $\varnothing$ 0.9 mm	aqua
J08080A0047	SC Connector Multimode, ceramic	G50/125 OM3	for cable $\varnothing$ 1.8 - 2.2 mm	aqua
J08080A0046	SC Connector Multimode, ceramic	G50/125 OM3	for cable $\varnothing$ 2.6 - 3.2 mm	aqua
J08080A0052	SC Connector Multimode, ceramic	G50/125 OM4	for fibers with secondary coating $\varnothing$ 0.9 mm	black
J08080A0053	SC Connector Multimode, ceramic	G50/125 OM4	for cable $\varnothing$ 1.8 - 2.2 mm	black
J08080A0051	SC Connector Multimode, ceramic	G50/125 OM4	for cable $\varnothing$ 2.6 - 3.2 mm	black
J88080A0008	STX IP20 SC Connector	PCF, S200/230	for cable $\varnothing$ 2.6 - 3.2 mm	red
J88080A0000	STX IP20 SC Connector	POF, S980/1000	for cable $\varnothing$ 2.2 mm	yellow



Order no.	Description	Remarks	Colour
B00042A0103	Clamp for SC connector (spacing acc. to SC Duplex)	packaging unit 10 pcs.	blue
B00042A0102	Clamp for SC connector (spacing acc. to SC Duplex)	packaging unit 10 pcs.	green
B00042A0101	Clamp for SC connector (spacing acc. to SC Duplex)	packaging unit 10 pcs.	beige
B00042A0159	Clamp for SC connector (spacing acc. to SC Duplex)	packaging unit 10 pcs.	aqua
B00042A0105	Clamp for SC connector (spacing acc. to SC Duplex)	packaging unit 10 pcs.	yellow
B00042A0107	Clamp for SC connector (spacing acc. to SC Duplex)	packaging unit 10 pcs.	red
B00042A0104	Clamp for SC connector (spacing acc. to SC Duplex)	packaging unit 10 pcs.	black

## SC Adaptors

15.2.2



Order no.	Description	Housing Colour
B00012A0018	protection flap, self-closing, for SC Duplex adaptor	blue

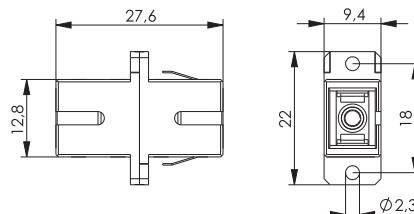
15.2

## 15.2

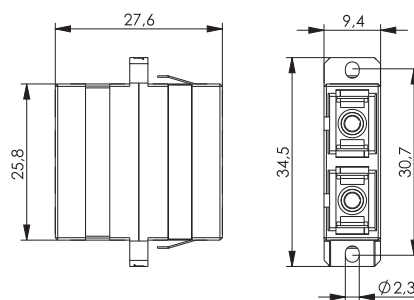
## SC Connectors

## 15.2.2

## SC Adaptors



Order no.	Description	Installation	Mount. dim.	Housing Colour
J08081A0000	SC Adaptor, Multimode and Singlemode, Ceramic sleeve, Plastic housing, incl. tapping screws	Snap-in or screw mounting	Z77	blue
J08081A0010	SC/APC Adaptor, Singlemode, Ceramic sleeve, plastic housing, incl. tapping screws	Snap-in or screw mounting	Z77	green
J08081A0014	SC adaptor, Multimode, ceramic sleeve, plastic housing, incl. tapping screws	Snap-in or screw mounting	Z77	beige
J08081A0032	SC adaptor, Multimode, ceramic sleeve, plastic housing, incl. tapping screws	Snap-in or screw mounting	Z77	aqua
J08081A0036	SC adaptor, Multimode, ceramic sleeve, plastic housing, incl. tapping screws	Snap-in or screw mounting	Z77	black



Order no.	Description	Installation	Mount. dim.	Housing Colour
J08081A0002	SC Duplex Adaptor, Multimode and Singlemode, Ceramic sleeve, Plastic housing, incl. tapping screws	Snap-in or screw mounting	Z93	blue
J08081A0006	SC Duplex Adaptor, Multimode and Singlemode, Ceramic sleeve, metal housing, incl. tapping screws	Snap-in or screw mounting	Z93	metal
J08081A0011	SC/APC Duplex Adaptor, Singlemode, Ceramic sleeve, plastic housing, incl. tapping screws	Snap-in or screw mounting	Z93	green
J08081A0016	SC Duplex adaptor, multimode, ceramic sleeve, plastic housing, incl. tapping screws	Snap-in or screw mounting	Z93	beige
J08081A0017	SC Duplex Adaptor, Multimode, phosphor bronze sleeve, Plastic housing, incl. tapping screws	Snap-in or screw mounting	Z93	beige
J08081A0034	SC Duplex adaptor, multimode, ceramic sleeve, plastic housing, incl. tapping screws	Snap-in or screw mounting	Z93	aqua
J08081A0035	SC Duplex Adaptor, Multimode, phosphor bronze sleeve, Plastic housing, incl. tapping screws	Snap-in or screw mounting	Z93	aqua
J08081A0037	SC Duplex adaptor, multimode, ceramic sleeve, plastic housing, incl. tapping screws	Snap-in or screw mounting	Z93	black
J08081A0038	SC Duplex Adaptor, Multimode, phosphor bronze sleeve, Plastic housing, incl. tapping screws	Snap-in or screw mounting	Z93	black
J08081A0040	SC Duplex adaptor, multimode, ceramic sleeve, plastic housing, incl. tapping screws	Snap-in or screw mounting	Z93	violet
J08081A0041	SC Duplex Adaptor, Multimode, phosphor bronze sleeve, Plastic housing, incl. tapping screws	Snap-in or screw mounting	Z93	violet

## LC Connectors

15.3

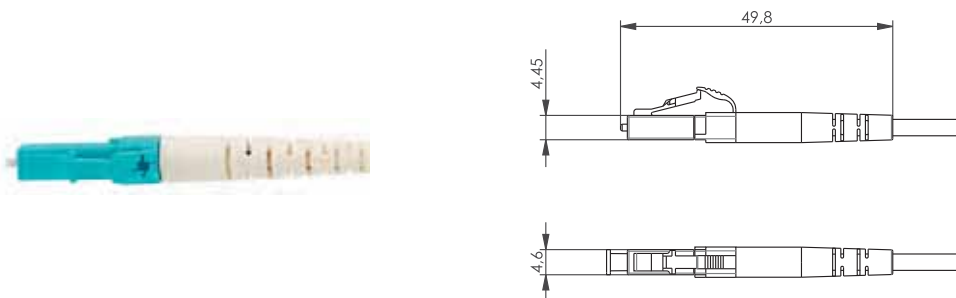
Mechanical Characteristics	
Type	connector type LC acc. to IEC 61754-20
Durability (mating cycles)	≥ 1000
Hex crimp size for strain relief	3.24 x 10 mm
Strain relief	≥ 100 N
Material: connector ferrule	Zirkonia ceramic
Material: adaptor split sleeve	Zirkonia ceramic
Material: plug housing, boot, dust caps	thermoplastic, flame retardant, non halogen
Material: adaptor housing	thermoplastic, flame retardant, non halogen
Colour: Connector housing / adaptor housing	Multimode: beige, blue, aqua, black, purple; Singlemode: blue; Singlemode APC: green
Climatic Characteristics	
Operating temperature in °C	-20° to 80° C
Storage temperature in °C	-40° to 90° C
Optical Characteristics	
Insertion loss: Plug (factory assembly)	Multimode: max. 0.4 dB <sup>1</sup> ; Singlemode/Singlemode APC: max. 0.5 dB <sup>1</sup>
Insertion loss: Adaptor	Multimode/Singlemode: max. 0.2 dB <sup>1</sup> ; Singlemode APC: 0.5 dB <sup>1</sup>
Return loss: plug (factory assembly)	Multimode: min. 30 dB <sup>2</sup> ; Singlemode: min. 40 dB <sup>2</sup> ; Singlemode APC: min. 60 dB <sup>2</sup>

1) Measurement procedure acc. to IEC 61300-3-4

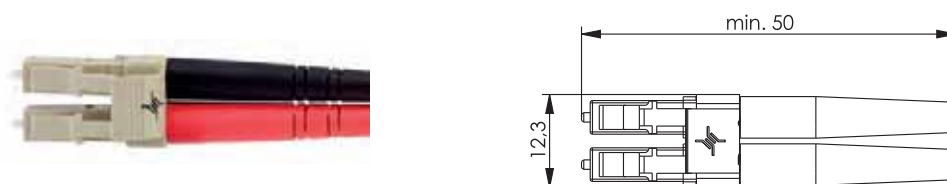
2) Measurement procedure acc. to IEC 61300-3-6

## LC Connector

15.3.1



Order no.	Description	Fiber type	Remarks	Housing Colour
J08070A0005	LC Connector, Singlemode, ceramic	E9/125	for cable Ø 1.8 - 2,2 mm	blue
J08070A0007	LC Connector, Multimode, ceramic	G50/125; G62,5/125	for cable Ø 1.8 - 2,2 mm	beige
J08070A0035	LC Connector, Multimode, ceramic	G50/125 OM3	for cable Ø 1.8 - 2,2 mm	aqua
J08070A0047	LC Connector, Multimode, ceramic	G50/125 OM4	for cable Ø 1.8 - 2,2 mm	black



Order no.	Description	Fiber type	Remarks	Housing Colour
J08070A0000	LC Duplex Connector, Singlemode, ceramic	E9/125	for cable Ø 1.8 - 2.2 mm	blue
J08070A0009	LC Duplex Connector, Singlemode, ceramic	E9/125	for cable Ø 2.6 - 3.2 mm	blue
J08070A0002	LC Duplex Connector, Multimode, ceramic	G50/125; G62,5/125	for cable Ø 1.8 - 2.2 mm	beige
J08070A0010	LC Duplex Connector, Multimode, ceramic	G50/125; G62,5/125	for cable Ø 2.6 - 3.2 mm	beige
J08070A0034	LC Duplex Connector, Multimode, ceramic	G50/125 OM3	for cable Ø 1.8 - 2.2 mm	aqua
J08070A0033	LC Duplex Connector, Multimode, ceramic	G50/125 OM3	for cable Ø 2.6 - 3.2 mm	aqua
J08070A0044	LC Duplex Connector, Multimode, ceramic	G50/125 OM4	for cable Ø 1.8 - 2.2 mm	black
J08070A0043	LC Duplex Connector, Multimode, ceramic	G50/125 OM4	for cable Ø 2.6 - 3.2 mm	black

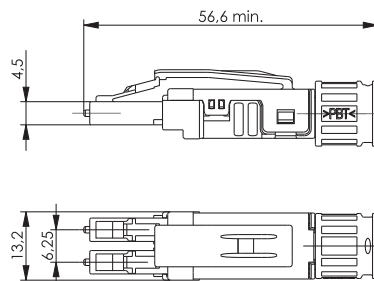
15.3

## 15.3

## LC Connectors

## 15.3.2

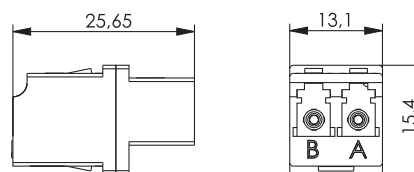
## LC Plug EasyGrip



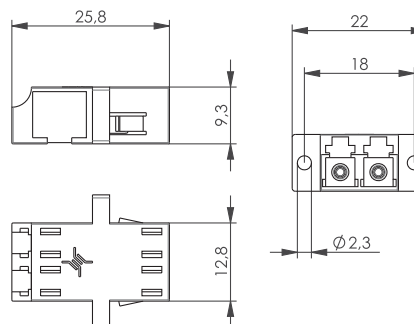
Order no.	Description	Fiber type	Remarks	Housing Colour	Clamp colour
J08070A0055	LC Duplex plug EasyGrip	E9/125	for cable Ø 1.8 - 2.2 mm and 2.6 - 3.2 mm	blue	black
J08070A0056	LC/APC Duplex plug EasyGrip	E9/125	for cable Ø 1.8 - 2.2 mm and 2.6 - 3.2 mm	green	black
J08070A0057	LC Duplex plug EasyGrip	G50/125; G62,5/125	for cable Ø 1.8 - 2.2 mm and 2.6 - 3.2 mm	beige	black
J08070A0058	LC Duplex plug EasyGrip	G50/125 OM3	for cable Ø 1.8 - 2.2 mm and 2.6 - 3.2 mm	aqua	black
J08070A0059	LC Duplex plug EasyGrip	G50/125 OM4	for cable Ø 1.8 - 2.2 mm and 2.6 - 3.2 mm	black	black

## 15.3.3

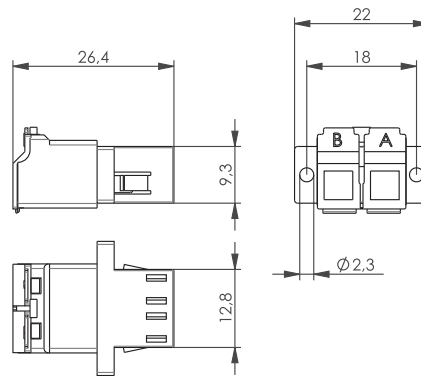
## LC Adaptors



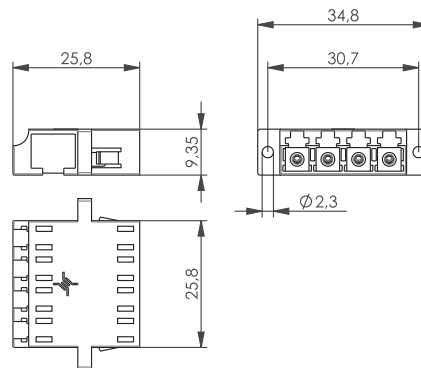
Order no.	Description	Installation	Mount. dim.	Housing Colour
J08071A0000	LC Duplex adaptor, Multimode and Singlemode, ceramic sleeve, plastic housing	Snap-in mounting	Z99	blue
J08071A0004	LC/APC Duplex adaptor, Singlemode, ceramic sleeve, plastic housing	Snap-in mounting	Z99	green
J08071A0002	LC Duplex adaptor, Multimode, ceramic sleeve, plastic housing	Snap-in mounting	Z99	beige
J08071A0017	LC Duplex adaptor, Multimode, ceramic sleeve, plastic housing	Snap-in mounting	Z99	aqua
J08071A0030	LC Duplex adaptor, Multimode, ceramic sleeve, plastic housing	Snap-in mounting	Z99	black
J08071A0048	LC Duplex adaptor, Multimode, ceramic sleeve, plastic housing	Snap-in mounting	Z99	violet



Order no.	Description	Installation	Mount. dim.	Housing Colour
J08071A0005	LC Duplex adaptor, Multimode and Singlemode, ceramic sleeve, plastic housing	Snap-in or screw mounting	Z77	blue
J08071A0021	LC/APC Duplex adaptor, Singlemode, ceramic sleeve, plastic housing	Snap-in or screw mounting	Z77	green
J08071A0010	LC Duplex adaptor, Multimode, ceramic sleeve, plastic housing	Snap-in or screw mounting	Z77	beige
J08071A0028	LC Duplex adaptor, Multimode, ceramic sleeve, plastic housing	Snap-in or screw mounting	Z77	aqua
J08071A0034	LC Duplex adaptor, Multimode, ceramic sleeve, plastic housing	Snap-in or screw mounting	Z77	black
J08071A0052	LC Duplex adaptor, Multimode, ceramic sleeve, plastic housing	Snap-in or screw mounting	Z77	violet



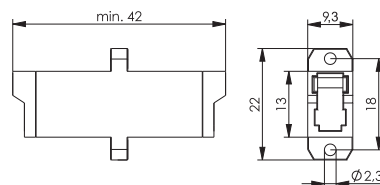
Order no.	Description	Installation	Mount. dim.	Housing Colour
J08071A0042	LC/APC Duplex adaptor, singlemode, ceramic sleeve, plastic housing with dust and laser protection cover	Snap-in or screw mounting	Z77	green



Order no.	Description	Installation	Mount. dim.	Housing Colour
J08071A0019	LC Quad adaptor, Multimode and Singlemode, ceramic sleeve, plastic housing	Snap-in or screw mounting	Z93	blue
J08071A0029	LC/APC Quad adaptor, Singlemode, ceramic sleeve, plastic housing	Snap-in or screw mounting	Z93	green
J08071A0018	LC Quad adaptor, Multimode, ceramic sleeve, plastic housing	Snap-in or screw mounting	Z93	beige
J08071A0020	LC Quad adaptor, Multimode, ceramic sleeve, plastic housing	Snap-in or screw mounting	Z93	aqua
J08071A0031	LC Quad adaptor, Multimode, ceramic sleeve, plastic housing	Snap-in or screw mounting	Z93	black
J08071A0044	LC Quad adaptor, Multimode, ceramic sleeve, plastic housing	Snap-in or screw mounting	Z93	violet

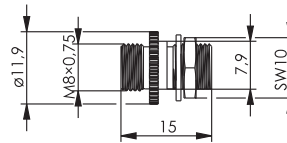
## E 2000 Adaptors

15.4



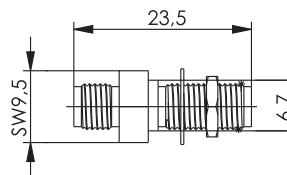
Order no.	Description	Installation	Mount. dim.	Housing Colour
J08051A0012	E2000/APC adaptor, Singlemode, ceramic sleeve, plastic housing, incl. screws M2	screw mounting	Z66	green

## 15.5 FC Adaptors



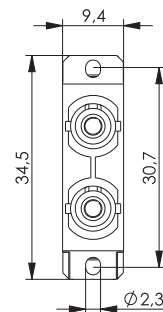
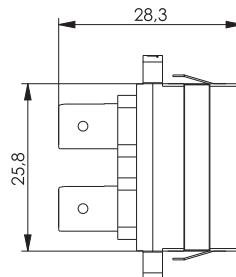
Order no.	Description	Installation	Mount. dim.
J08021A0002	FC adaptor, Singlemode and Multimode, cermic sleeve, metal housing	single hole mounting	Z73

## 15.6 F-SMA Adaptor



Order no.	Description	Installation	Mount. dim.
J08001A0002	F-SMA adaptor, Multimode, metal housing	single hole mounting	Z27

## 15.7 ST/SC Duplex Adaptors



Order no.	Description	Installation	Mount. dim.	Housing Colour
J08082A0002	ST/SC Duplex adaptor, Multimode and Singlemode, ceramic sleeve, plastic housing, incl. tapping screws	Snap-in or screw mounting	Z93	blue
J08082A0010	ST/SC Duplex adaptor, Multimode, phosphor bronze sleeve, plastic housing, incl. tapping screws	Snap-in or screw mounting	Z93	beige
J08082A0012	ST/SC Duplex adaptor, Multimode, phosphor bronze sleeve, plastic housing, incl. tapping screws	Snap-in or screw mounting	Z93	aqua
J08082A0007	ST/SC Duplex adaptor, Multimode and Singlemode, ceramic sleeve, metal housing, incl. tapping screws	Snap-in or screw mounting	Z93	metal

## FO Attenuators

15.8

Attenuators are used to adapt the transmitted light power to the characteristics of the implanted receiver. The Telegärtner SC and LC singlemode inline attenuator brings together the benefits of an attenuation performed using special doped fiber and the innovative features of the SC and LC connector system.

Different insertion loss values are achieved using specially doped fibers, thus ensuring availability over the full range of

wavelengths from 1250 to 1360 nm and 1480 to 1580 nm. The standard product range includes attenuators in 5 dB and 10 dB; max. 30 dB with 1 dB increments are also available on request.

Telegärtner attenuators are characterized by low tolerance, constant attenuation values over the entire service life, a robust design with metal housing and by simple, economic handling.

Climatic Characteristics	
Operating temperature in °C	-5° to 70° C
Storage temperature in °C	-25° to 80° C
Optical Characteristics	
Connector type: Singlemode PC/APC	SC, LC
Fiber	9/125 µm
Wavelength	1250 nm - 1360 nm; 1480 nm - 1580 nm
Attenuation	for 5 dB, 10 dB, 15 dB, 20 dB, 25 dB, 30 dB, on request in 1 dB steps
Maximal attenuation tolerance	for 1-5 dB: ±0.5 dB <sup>1</sup> ; for 6-10: ±1 dB <sup>1</sup> ; for 11-20 dB: ±1.5 dB <sup>1</sup> ; for 21-30 dB: ±2 dB <sup>1</sup>
Durability (mating cycles)	≥ 500
Return loss: Singlemode APC	≥ 65 dB <sup>2</sup>
Return loss: Singlemode PC	≥ 43 dB <sup>2</sup>
Ferrule split sleeve	ceramic, slotted sleeve

1) Measurement procedure acc. to IEC 61300-3-4

2) Measurement procedure acc. to IEC 61300-3-6



Order no.	Description	Insertion loss
J08093A0205	Attenuator SC, E9/125, 1310/1550 nm	5 dB
J08093A0210	Attenuator SC, E9/125, 1310/1550 nm	10 dB
J08093A1205	Attenuator SC/APC, E9/125, 1310/1550 nm	5 dB
J08093A1210	Attenuator SC/APC, E9/125, 1310/1550 nm	10 dB

Minimum order quantity 10 pcs. (different types possible)



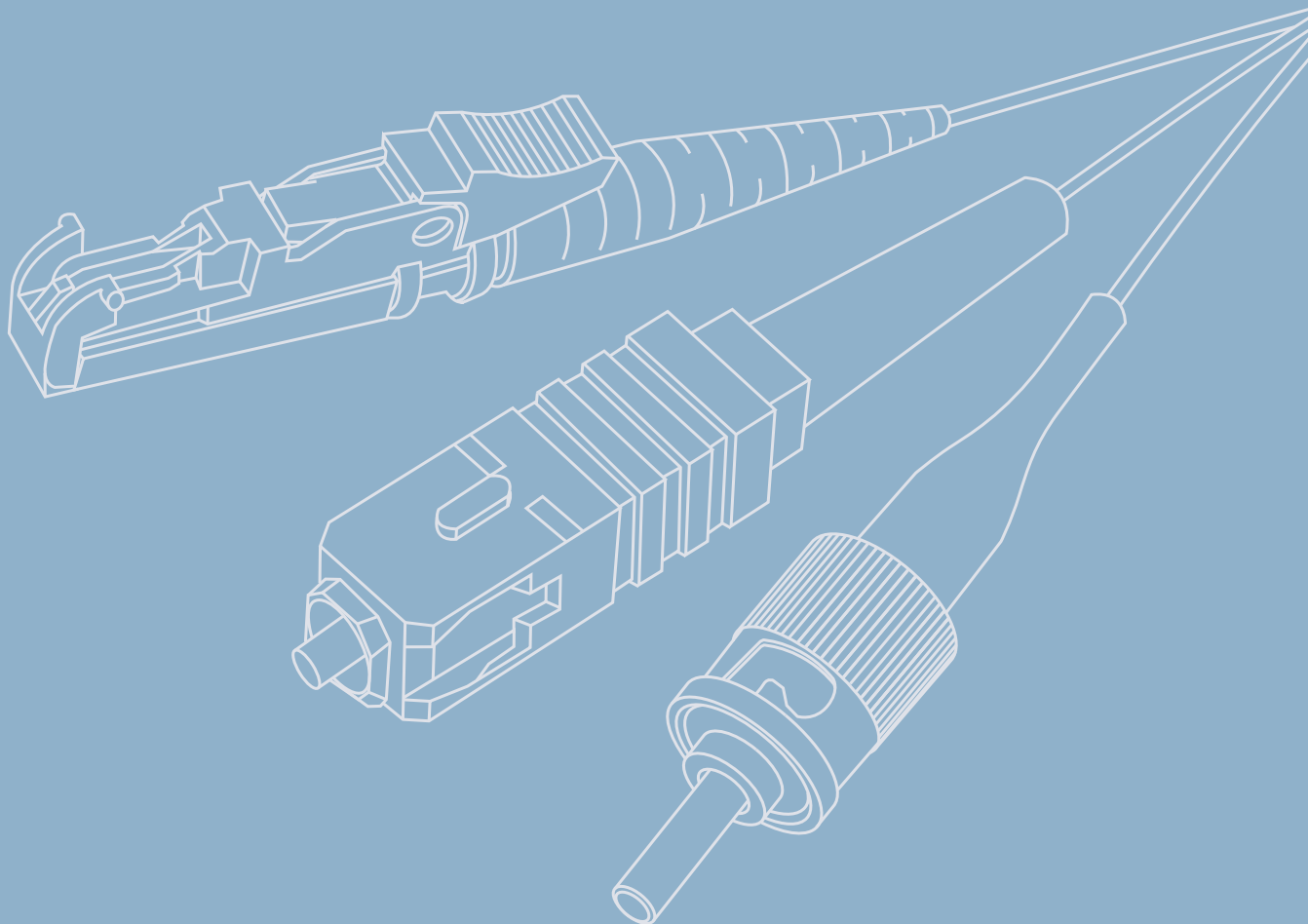
Order no.	Description	Insertion loss
J08093A5205	Attenuator LC, E9/125, 1310/1550 nm	5 dB
J08093A5210	Attenuator LC, E9/125, 1310/1550 nm	10 dB
J08093A6205	Attenuator LC/APC, E9/125, 1310/1550 nm	5 dB
J08093A6210	Attenuator LC/APC, E9/125, 1310/1550 nm	10 dB

Minimum order quantity 10 pcs. (different types possible)





## FO Fiber Pigtails





# 16

## FO Fiber Pigtails

16.1	Connector Type: ST.....	233
16.2	Connector Type: SC.....	234
16.3	Connector Type: LC.....	234
16.4	Connector Type: E2000.....	234
16.5	Pigtail-Sets .....	235

Telegärtner's FO pigtaills are field-proven. Their gel-free, easy-strip buffering allows removing of up to one meter of coating

at a time for very quick installation. Available individually and as a complete set.

### Performance Characteristics

- Available with Singlemode and Multimode fiber
- Singlemode versions available with PC and APC polishing
- Multimode 50 µm OM2/OM3/OM4 and 62.5 µm
- Singlemode 9 µm

	FO Fibers OS2 G.657.A1	FO Fibers OM2	FO Fibers OM3	FO Fibers OM4	FO Fibers OM1
<b>Mechanical Characteristics</b>					
Fiber structure acc. to DIN/VDE 0888	I-K...	I-K...	I-K...	I-K...	I-K...
Dimensions Ø in mm, primary/secondary coating	0.25/0.9	0.25/0.9	0.25/0.9	0.25/0.9	0.25/0.9
Max. pulling tension short-term/long-term in N	3	3	3	3	3
Max. Crush resistance long-term in N/m	1000	1000	1000	1000	1000
Min. bending radius in mm	15	25	25	25	25
Fiber colour	yellow	green	aqua	violet	blue
Weight in kg/km	0.67	0.67	0.67	0.67	0.67
<b>Climatic Characteristics</b>					
Operating temperature in °C	-5 / +55	-5 / +55	-5 / +55	-5 / +55	-5 / +55
Storage temperature in °C	-30 / +70	-30 / +70	-30 / +70	-30 / +70	-30 / +70
Installation temperature in °C	-5 / +50	-5 / +50	-5 / +50	-5 / +50	-5 / +50
Halogen-free acc. to	IEC 60754-2	IEC 60754-2	IEC 60754-2	IEC 60754-2	IEC 60754-2
<b>Technical Characteristics</b>					
Application	Pigtail	Pigtail	Pigtail	Pigtail	Pigtail
<b>Optical Characteristics</b>					
Insertion loss	Singlemode: max. 0.4 dB <sup>1</sup> ; Multimode: max. 0.3 dB <sup>1</sup>				
Return loss	Singlemode: min. 40 dB <sup>2</sup> (APC: min. 60 dB); Multimode: min. 30 dB <sup>2</sup>				
Life	≥ 1000				

1) Measurement procedure acc. to IEC 61300-3-4

2) Measurement procedure acc. to IEC 61300-3-6

### Connector Type: ST

16.1



Order no.	Fiber type	Connector type	Fiber colour	Length
L00819A0007	E9/125 OS2	ST	yellow	2,0 m
L00819A0013	G50/125 OM2	ST	green	2,0 m
L00819A0045	G50/125 OM3	ST	aqua	2,0 m
L00819A0068	G50/125 OM4	ST	violet	2,0 m
L00819A0019	G62,5/125 OM1	ST	blue	2,0 m

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

## 16.2 Connector Type: SC



Order no.	Fiber type	Connector type	Length	Fiber colour	Housing Colour
L00889W0007	E9/125 OS2	SC	2,0 m	yellow	blue
L00889W0039	E9/125 OS2	SC/APC	2,0 m	yellow	green
L00889W0016	G50/125 OM2	SC	2,0 m	green	beige
L00889W0051	G50/125 OM3	SC	2,0 m	aqua	aqua
L00889A0028	G50/125 OM4	SC	2,0 m	violet	black
L00889W0071	G50/125 OM4	SC	2,0 m	violet	violet
L00889W0017	G62,5/125 OM1	SC	2,0 m	blue	beige

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

## 16.3 Connector Type: LC



Order no.	Fiber type	Connector type	Length	Fiber colour	Housing Colour
L00879A0000	E9/125 OS2	LC	2,0 m	yellow	blue
L00879A0013	E9/125 OS2	LC/APC	2,0 m	yellow	green
L00879A0001	G50/125 OM2	LC	2,0 m	green	beige
L00879A0004	G50/125 OM3	LC	2,0 m	aqua	aqua
L00879A0018	G50/125 OM4	LC	2,0 m	violet	black
L00879A0025	G50/125 OM4	LC	2,0 m	violet	violet
L00879A0002	G62,5/125 OM1	LC	2,0 m	blue	beige

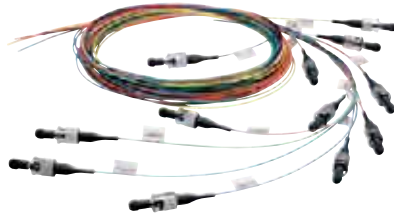
Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

## 16.4 Connector Type: E2000



Order no.	Fiber type	Connector type	Length	Housing Colour	Fiber colour
L00859A0003	E9/125 OS2	E2000/APC	2,0 m	green	yellow

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)



Order no.	Description	Pigtails	Remarks	Housing Colour
L00819A0064	Pigtail-Set	12 x 9/125, OS2, 2m, ST	coloured acc. to VDE 0888	metal
L00889W0056	Pigtail-Set	12 x 9/125, OS2, 2m, SC	coloured acc. to VDE 0888	blue
L00889W0029	Pigtail-Set	12 x 9/125, OS2, 2m, SC/APC	coloured acc. to VDE 0888	green
L00879A0009	Pigtail-Set	12 x 9/125, OS2, 2m, LC	coloured acc. to VDE 0888	blue
L00879A0017	Pigtail-Set	12 x 9/125, OS2, 2m, LC/APC	coloured acc. to VDE 0888	green
L00859A0013	Pigtail-Set	12 x 9/125, OS2, 2m, E2000/APC	coloured acc. to VDE 0888	green
L00819A0060	Pigtail-Set	12 x 50/125, OM2, 2m, ST	coloured acc. to VDE 0888	metal
L00889W0033	Pigtail-Set	12 x 50/125, OM2, 2m, SC	coloured acc. to VDE 0888	beige
L00879A0008	Pigtail-Set	12 x 50/125, OM2, 2m, LC	coloured acc. to VDE 0888	beige
L00819A0071	Pigtail-Set	12 x 50/125, OM3, 2m, ST	coloured acc. to VDE 0888	metal
L00889W0027	Pigtail-Set	12 x 50/125, OM3, 2m, SC	coloured acc. to VDE 0888	aqua
L00879A0010	Pigtail-Set	12 x 50/125, OM3, 2m, LC	coloured acc. to VDE 0888	aqua
L00819A0073	Pigtail-Set	12 x 50/125, OM4, 2m, ST	coloured acc. to VDE 0888	metal
L00889A0065	Pigtail-Set	12 x 50/125, OM4, 2m, SC	coloured acc. to VDE 0888	black
L00879A0023	Pigtail-Set	12 x 50/125, OM4, 2m, LC	coloured acc. to VDE 0888	black
L00889W0079	Pigtail-Set	12 x 50/125, OM4, 2m, SC	coloured acc. to VDE 0888	violet
L00879A0026	Pigtail-Set	12 x 50/125, OM4, 2m, LC	coloured acc. to VDE 0888	violet

## FO Fiber Pigtails



## TICNET Configurator

Ideal for planners and installers: simply assemble cables and fiber pigtails online: do you want to assemble cables and connectors online or a fiber optic patch panel to meet your specific needs and then send an order inquiry to your local specialist retailer straight away? Then the TICNET Configurator developed by Telegärtner is just what you need!



## Define product:

1. define fiber type and length
2. choose connector type and marking



## Show final product:

All the information relating to the product you require is listed in a clear breakdown including the gross list prices classified by price bracket. Your data is available in PDF format for download after configuration. you can view the products you have configured at any time by entering your TICNET configuration number and security code on the TICNET homepage. The number and security code are sent to you in an email.



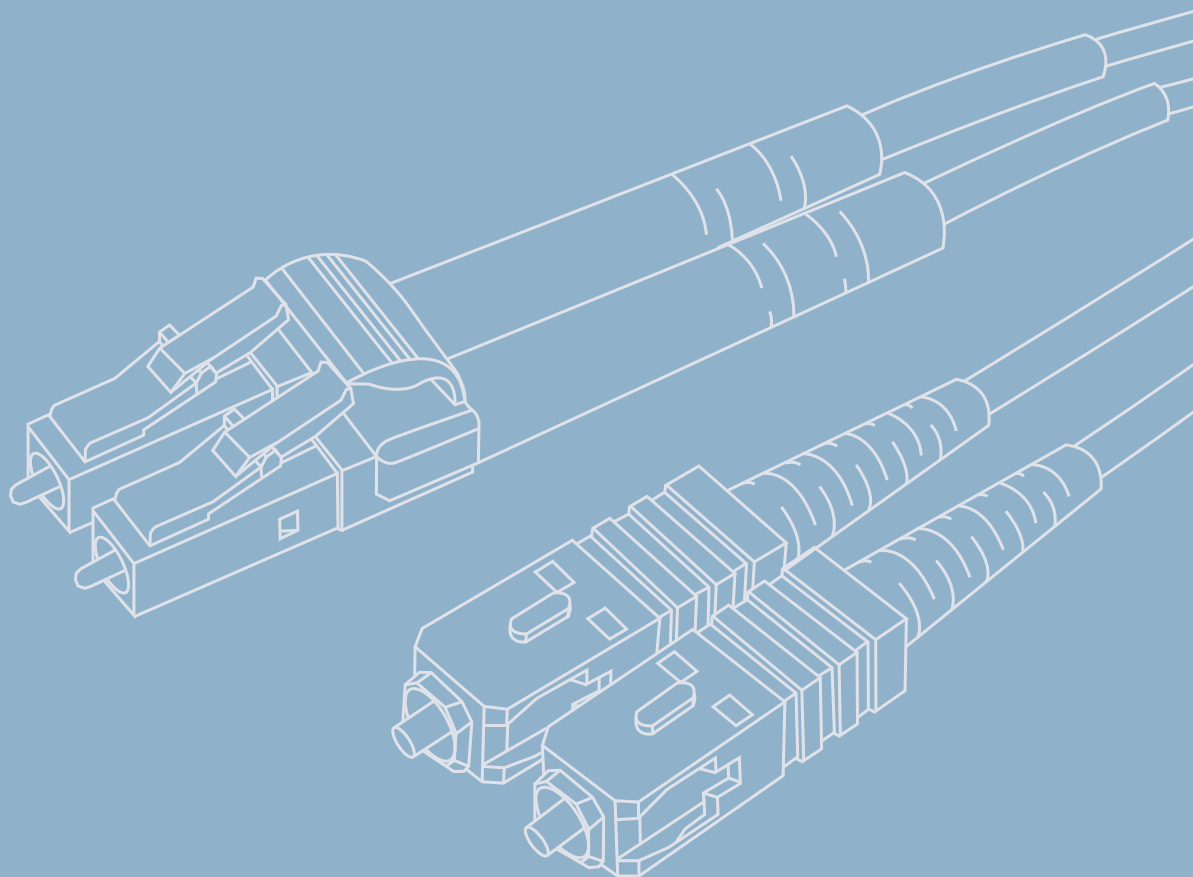
## Add configuration to shopping basket:

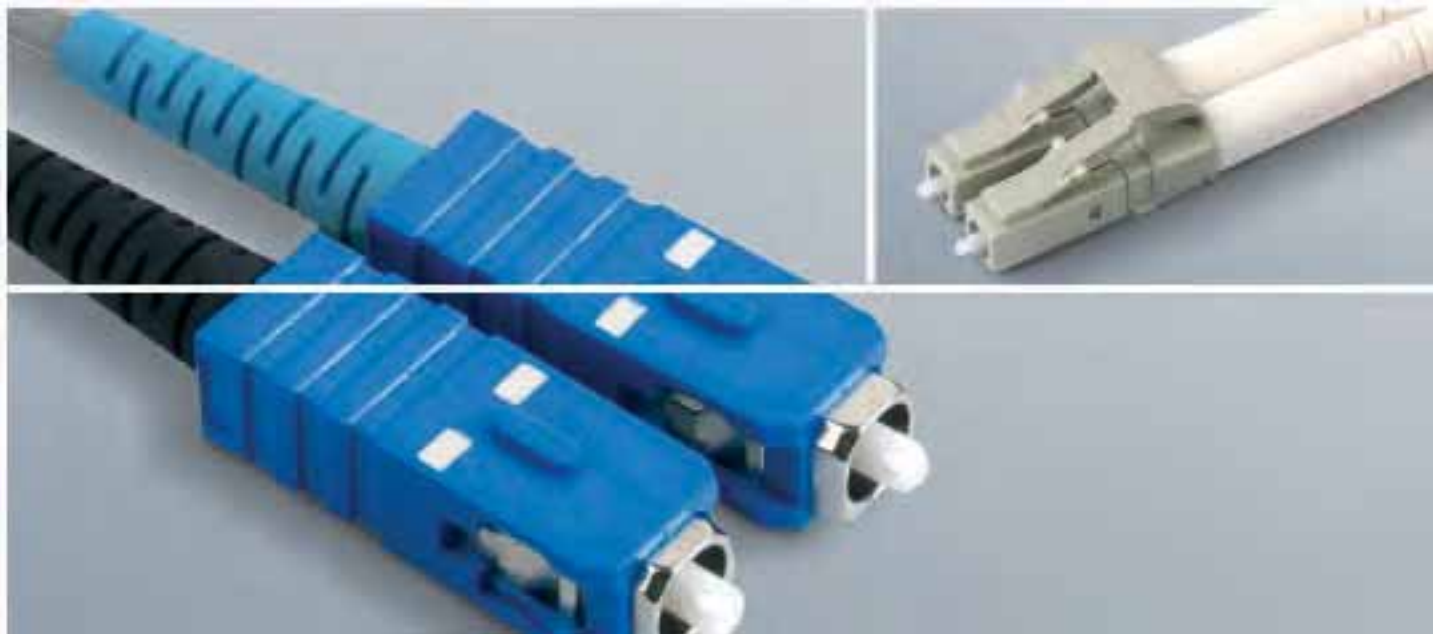
It is possible to change quantity, copy with different cable length and show parts list of your configuration. Also you can send an order inquiry to Telegärtner.



[www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

## FO Patch Cords





# 17

## FO Patch Cords

<b>17.1</b>	<b>FO Duplex Patch Cords</b> .....	<b>239</b>
17.1.1	Connector Type: LC Duplex .....	240
17.1.2	Connector Type: SC Duplex .....	241
17.1.3	Connector Type: SC .....	242
17.1.4	Connector Type: ST .....	243
17.1.5	Connector Type: E2000 .....	244
<b>17.2</b>	<b>FO Duplex Adaptor Cords</b> .....	<b>244</b>
17.2.1	Connector Types: 1st end SC Duplex, 2nd end LC Duplex .....	244
17.2.2	Connector Types: 1st end 2x ST, 2nd end SC Duplex .....	245
17.2.3	Connector Types: 1st end 2x ST, 2nd end LC Duplex .....	246
17.2.4	Connector Types: 1st end SC Duplex (with clamp for flexible AVB setting), 2nd end MT-RJ female .....	247
14.2.5	Connector Types: 1st end 2x ST, 2nd end MT-RJ female .....	248
<b>17.3</b>	<b>Accessories</b> .....	<b>248</b>



Of all components in a channel, patch cords have to endure highest stress and wear. This is why many users rely on patch cords made by Telegärtner: Perfectly matched components,

highest quality standards and completely tracked manufacturing processes make sure the data network works safely and reliably.

### Performance Characteristics

- Available with Singlemode and Multimode fiber
- Standard lengths of 1 m, 2 m, 3 m, 5 m and 10 m
- Customer specific lengths available using the TICNET configurator at [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

### FO Duplex Patch Cords

17.1

Acc. to ISO/IEC 11801 the fiber channels of duplex connectors are connected, i.e. channel termination A on the 1st side is connected to channel termination B on 2nd side. The channels

A/B are marked by differently coloured cable boots (A=red, B=black).



acc. to ISO/IEC 11801

	Duplex cable Zipcord OS2 G.657.A1	Duplex cable Zipcord OM2	Duplex cable Zipcord OM3	Duplex cable Zipcord OM4	Duplex cable Zipcord OM1
<b>Mechanical Characteristics</b>					
Calbe structure acc. DIN/VDE 0888	I-K(ZN)H 2x1 ...	I-K(ZN)H 2x1 ...	I-K(ZN)H 2x1 ...	I-K(ZN)H 2x1 ...	I-K(ZN)H 2x1 ...
Cable dimensions in mm: Zipcord	2.8 x 5.7	2.8 x 5.7	2.8 x 5.7	2.8 x 5.7	2.8 x 5.7
Cable dimensions in mm: Minizip	1.8 x 3.7	1.8 x 3.7	1.8 x 3.7	1.8 x 3.7	1.8 x 3.7
Max. pulling tension short-term/long-term in N: Zipcord	400 / 200	400 / 200	400 / 200	400 / 200	400 / 200
Max. pulling tension short-term/long-term in N: Minizip	240 / 140	240 / 140	240 / 140	240 / 140	240 / 140
Max. crush resistance long-term in N/m: Zipcord	5000	5000	5000	5000	5000
Max. crush resistance long-term in N/m: Minizip	2000	2000	2000	2000	2000
Min. bending radius in mm	15	25	25	25	25
Colour of outer jacket	yellow	orange	aqua	violet	orange
Weight in kg/km: Zipcord	14.5	14.5	14.5	14.5	14.5
Weight in kg/km: Minizip	7.4	7.4	7.4	7.4	7.4
<b>Climatic Characteristics</b>					
Operating temperature in °C	-5 / +55	-5 / +55	-5 / +55	-5 / +55	-5 / +55
Storage temperature in °C	-30 / +70	-30 / +70	-30 / +70	-30 / +70	-30 / +70
Installation temperature in °C	-5 / +50	-5 / +50	-5 / +50	-5 / +50	-5 / +50
Flame retardancy	IEC 60332-1	IEC 60332-1	IEC 60332-1	IEC 60332-1	IEC 60332-1
Halogen-free acc. to	IEC 60754-2	IEC 60754-2	IEC 60754-2	IEC 60754-2	IEC 60754-2
<b>Technical Characteristics</b>					
Application	Patch cords	Patch cords	Patch cords	Patch cords	Patch cords
<b>Optical Characteristics</b>					
Insertion loss	Singlemode: max. 0.4 dB <sup>1</sup> ; Multimode: max. 0.3 dB <sup>1</sup>				
Return loss	Singlemode: min. 40 dB <sup>2</sup> (APC: min. 60 dB <sup>2</sup> ); Multimode: min. 30 dB <sup>2</sup>				
Life	≥ 1000				

1) Measurement procedure acc. to IEC 61300-3-4

2) Measurement procedure acc. to IEC 61300-3-6

17.1

## 17.1

## FO Duplex Patch Cords

## 17.1.1

## Connector Type: LC Duplex



Order no.	Fiber type	Connector type	Length	Housing Colour	Cable Colour
L00870A0002	E9/125 OS2	LC Duplex	1.0 m	blue	yellow
L00871A0003	E9/125 OS2	LC Duplex	2.0 m	blue	yellow
L00872A0002	E9/125 OS2	LC Duplex	3.0 m	blue	yellow
L00873A0002	E9/125 OS2	LC Duplex	5.0 m	blue	yellow
L00875A0002	E9/125 OS2	LC Duplex	10.0 m	blue	yellow

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Housing Colour	Cable Colour
L00870A0024	E9/125 OS2	LC/APC Duplex	1.0 m	green	yellow
L00871A0026	E9/125 OS2	LC/APC Duplex	2.0 m	green	yellow
L00872A0024	E9/125 OS2	LC/APC Duplex	3.0 m	green	yellow
L00873A0031	E9/125 OS2	LC/APC Duplex	5.0 m	green	yellow
L00875A0034	E9/125 OS2	LC/APC Duplex	10.0 m	green	yellow

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Housing Colour	Cable Colour
L00870A0000	G50/125 OM2	LC Duplex	1.0 m	beige	orange
L00871A0004	G50/125 OM2	LC Duplex	2.0 m	beige	orange
L00872A0000	G50/125 OM2	LC Duplex	3.0 m	beige	orange
L00873A0000	G50/125 OM2	LC Duplex	5.0 m	beige	orange
L00875A0000	G50/125 OM2	LC Duplex	10.0 m	beige	orange

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Housing Colour	Cable Colour
L00870A0003	G50/125 OM3	LC Duplex	1.0 m	aqua	aqua
L00871A0006	G50/125 OM3	LC Duplex	2.0 m	aqua	aqua
L00872A0003	G50/125 OM3	LC Duplex	3.0 m	aqua	aqua
L00873A0003	G50/125 OM3	LC Duplex	5.0 m	aqua	aqua
L00875A0003	G50/125 OM3	LC Duplex	10.0 m	aqua	aqua

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Housing Colour	Cable Colour
L00870A0005	G50/125 OM4	LC Duplex	1.0 m	black	violet
L00871A0008	G50/125 OM4	LC Duplex	2.0 m	black	violet
L00872A0006	G50/125 OM4	LC Duplex	3.0 m	black	violet
L00873A0009	G50/125 OM4	LC Duplex	5.0 m	black	violet
L00875A0007	G50/125 OM4	LC Duplex	10.0 m	black	violet

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Housing Colour	Cable Colour
L00870A0001	G62,5/125 OM1	LC Duplex	1.0 m	beige	orange
L00871A0005	G62,5/125 OM1	LC Duplex	2.0 m	beige	orange
L00872A0001	G62,5/125 OM1	LC Duplex	3.0 m	beige	orange
L00873A0001	G62,5/125 OM1	LC Duplex	5.0 m	beige	orange
L00875A0001	G62,5/125 OM1	LC Duplex	10.0 m	beige	orange

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

## Connector Type: SC Duplex

17.1.2



Order no.	Fiber type	Connector type	Length	Housing Colour	Cable Colour
L00880A0006	E9/125 OS2	SC Duplex	1.0 m	blue	yellow
L00881A0006	E9/125 OS2	SC Duplex	2.0 m	blue	yellow
L00882A0002	E9/125 OS2	SC Duplex	3.0 m	blue	yellow
L00883A0002	E9/125 OS2	SC Duplex	5.0 m	blue	yellow
L00885A0002	E9/125 OS2	SC Duplex	10.0 m	blue	yellow

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Housing Colour	Cable Colour
L00880C0007	G50/125 OM2	SC Duplex	1.0 m	beige	orange
L00881C0007	G50/125 OM2	SC Duplex	2.0 m	beige	orange
L00882C0003	G50/125 OM2	SC Duplex	3.0 m	beige	orange
L00883C0003	G50/125 OM2	SC Duplex	5.0 m	beige	orange
L00885C0003	G50/125 OM2	SC Duplex	10.0 m	beige	orange

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Housing Colour	Cable Colour
L00880C0010	G50/125 OM3	SC Duplex	1.0 m	aqua	aqua
L00881C0023	G50/125 OM3	SC Duplex	2.0 m	aqua	aqua
L00882C0015	G50/125 OM3	SC Duplex	3.0 m	aqua	aqua
L00883C0017	G50/125 OM3	SC Duplex	5.0 m	aqua	aqua
L00885C0000	G50/125 OM3	SC Duplex	10.0 m	aqua	aqua

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Housing Colour	Cable Colour
L00880A0018	G50/125 OM4	SC Duplex	1.0 m	black	violet
L00881A0028	G50/125 OM4	SC Duplex	2.0 m	black	violet
L00882A0020	G50/125 OM4	SC Duplex	3.0 m	black	violet
L00883A0029	G50/125 OM4	SC Duplex	5.0 m	black	violet
L00885A0026	G50/125 OM4	SC Duplex	10.0 m	black	violet

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Housing Colour	Cable Colour
L00880C0008	G62,5/125 OM1	SC Duplex	1.0 m	beige	orange
L00881C0008	G62,5/125 OM1	SC Duplex	2.0 m	beige	orange
L00882C0004	G62,5/125 OM1	SC Duplex	3.0 m	beige	orange
L00883C0004	G62,5/125 OM1	SC Duplex	5.0 m	beige	orange
L00885C0004	G62,5/125 OM1	SC Duplex	10.0 m	beige	orange

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

17.1

## 17.1

## FO Duplex Patch Cords

## 17.1.3

## Connector Type: SC



Order no.	Fiber type	Connector type	Length	Housing Colour	Cable Colour
L00880A0003	E9/125 OS2	SC	1.0 m	blue	yellow
L00881A0003	E9/125 OS2	SC	2.0 m	blue	yellow
L00882A0005	E9/125 OS2	SC	3.0 m	blue	yellow
L00883A0005	E9/125 OS2	SC	5.0 m	blue	yellow
L00885A0005	E9/125 OS2	SC	10.0 m	blue	yellow
L00881A0021	E9/125 OS2	SC/APC	1.0 m	green	yellow
L00881A0020	E9/125 OS2	SC/APC	2.0 m	green	yellow
L00882A0011	E9/125 OS2	SC/APC	3.0 m	green	yellow
L00883A0012	E9/125 OS2	SC/APC	5.0 m	green	yellow
L00885A0012	E9/125 OS2	SC/APC	10.0 m	green	yellow

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Housing Colour	Cable Colour
L00880C0004	G50/125 OM2	SC	1.0 m	beige	orange
L00881C0004	G50/125 OM2	SC	2.0 m	beige	orange
L00882C0006	G50/125 OM2	SC	3.0 m	beige	orange
L00883C0006	G50/125 OM2	SC	5.0 m	beige	orange
L00885C0006	G50/125 OM2	SC	10.0 m	beige	orange

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Housing Colour	Cable Colour
L00880C0015	G50/125 OM3	SC	1.0 m	aqua	aqua
L00881C0024	G50/125 OM3	SC	2.0 m	aqua	aqua
L00882C0000	G50/125 OM3	SC	3.0 m	aqua	aqua
L00883C0025	G50/125 OM3	SC	5.0 m	aqua	aqua
L00885C0020	G50/125 OM3	SC	10.0 m	aqua	aqua

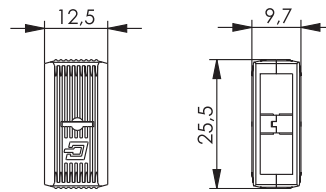
Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Housing Colour	Cable Colour
L00880A0017	G50/125 OM4	SC	1.0 m	black	violet
L00881A0027	G50/125 OM4	SC	2.0 m	black	violet
L00882A0019	G50/125 OM4	SC	3.0 m	black	violet
L00883A0028	G50/125 OM4	SC	5.0 m	black	violet
L00885A0025	G50/125 OM4	SC	10.0 m	black	violet

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Housing Colour	Cable Colour
L00880C0005	G62,5/125 OM1	SC	1.0 m	beige	orange
L00881C0005	G62,5/125 OM1	SC	2.0 m	beige	orange
L00882C0007	G62,5/125 OM1	SC	3.0 m	beige	orange
L00883C0007	G62,5/125 OM1	SC	5.0 m	beige	orange
L00885C0007	G62,5/125 OM1	SC	10.0 m	beige	orange

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)



Order no.	Description	Remarks	Colour
B00042A0103	Clamp for SC connector (spacing acc. to SC Duplex)	packaging unit 10 pcs.	blue
B00042A0102	Clamp for SC connector (spacing acc. to SC Duplex)	packaging unit 10 pcs.	green
B00042A0101	Clamp for SC connector (spacing acc. to SC Duplex)	packaging unit 10 pcs.	beige
B00042A0159	Clamp for SC connector (spacing acc. to SC Duplex)	packaging unit 10 pcs.	aqua
B00042A0105	Clamp for SC connector (spacing acc. to SC Duplex)	packaging unit 10 pcs.	yellow
B00042A0107	Clamp for SC connector (spacing acc. to SC Duplex)	packaging unit 10 pcs.	red
B00042A0104	Clamp for SC connector (spacing acc. to SC Duplex)	packaging unit 10 pcs.	black

## Connector Type: ST

17.1.4



Order no.	Fiber type	Connector type	Length	Cable Colour
L00810A0005	E9/125 OS2	ST	1.0 m	yellow
L00811A0012	E9/125 OS2	ST	2.0 m	yellow
L00812A0011	E9/125 OS2	ST	3.0 m	yellow
L00813A0005	E9/125 OS2	ST	5.0 m	yellow
L00816A0005	E9/125 OS2	ST	10.0 m	yellow

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Cable Colour
L00810A0003	G50/125 OM2	ST	1.0 m	orange
L00811A0007	G50/125 OM2	ST	2.0 m	orange
L00812A0007	G50/125 OM2	ST	3.0 m	orange
L00813A0003	G50/125 OM2	ST	5.0 m	orange
L00816A0003	G50/125 OM2	ST	10.0 m	orange

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Cable Colour
L00810A0010	G50/125 OM3	ST	1.0 m	aqua
L00811A0028	G50/125 OM3	ST	2.0 m	aqua
L00812A0018	G50/125 OM3	ST	3.0 m	aqua
L00813A0008	G50/125 OM3	ST	5.0 m	aqua
L00815A0006	G50/125 OM3	ST	10.0 m	aqua

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Cable Colour
L00810A0014	G50/125 OM4	ST	1.0 m	violet
L00811A0034	G50/125 OM4	ST	2.0 m	violet
L00812A0021	G50/125 OM4	ST	3.0 m	violet
L00813A0014	G50/125 OM4	ST	5.0 m	violet
L00815A0008	G50/125 OM4	ST	10.0 m	violet

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

17.1

## 17.1 FO Duplex Patch Cords

## 17.1.4 Connector Type: ST

Order no.	Fiber type	Connector type	Length	Cable Colour
L00810A0004	G62,5/125 OM1	ST	1.0 m	orange
L00811A0009	G62,5/125 OM1	ST	2.0 m	orange
L00812A0009	G62,5/125 OM1	ST	3.0 m	orange
L00813A0004	G62,5/125 OM1	ST	5.0 m	orange
L00816A0004	G62,5/125 OM1	ST	10.0 m	orange

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

## 17.1.5 Connector Type: E2000

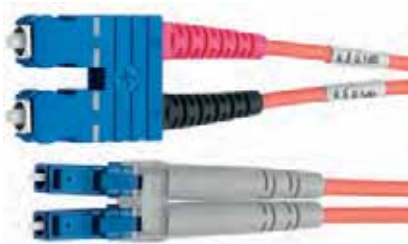


Order no.	Fiber type	Connector type	Length	Housing Colour	Cable Colour
L00850A0001	E9/125 OS2	E2000/APC	1.0 m	green	yellow
L00851A0008	E9/125 OS2	E2000/APC	2.0 m	green	yellow
L00852A0000	E9/125 OS2	E2000/APC	3.0 m	green	yellow
L00853A0001	E9/125 OS2	E2000/APC	5.0 m	green	yellow
L00855A0001	E9/125 OS2	E2000/APC	10.0 m	green	yellow

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

## 17.2 FO Duplex Adaptor Cords

## 17.2.1 Connector Types: 1st end SC Duplex, 2nd end LC Duplex



Order no.	Fiber type	Connector type	Length	Housing Colour	Cable Colour
L00890A0041	E9/125 OS2	1st end SC Duplex, 2nd end LC Duplex	1.0 m	blue	yellow
L00891A0017	E9/125 OS2	1st end SC Duplex, 2nd end LC Duplex	2.0 m	blue	yellow
L00892A0040	E9/125 OS2	1st end SC Duplex, 2nd end LC Duplex	3.0 m	blue	yellow
L00893A0043	E9/125 OS2	1st end SC Duplex, 2nd end LC Duplex	5.0 m	blue	yellow
L00895A0040	E9/125 OS2	1st end SC Duplex, 2nd end LC Duplex	10.0 m	blue	yellow

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Housing Colour	Cable Colour
L00890C0038	G50/125 OM2	1st end SC Duplex, 2nd end LC Duplex	1.0 m	beige	orange
L00891C0018	G50/125 OM2	1st end SC Duplex, 2nd end LC Duplex	2.0 m	beige	orange
L00892C0037	G50/125 OM2	1st end SC Duplex, 2nd end LC Duplex	3.0 m	beige	orange
L00893C0040	G50/125 OM2	1st end SC Duplex, 2nd end LC Duplex	5.0 m	beige	orange
L00895C0037	G50/125 OM2	1st end SC Duplex, 2nd end LC Duplex	10.0 m	beige	orange

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Housing Colour	Cable Colour
L00890C0055	G50/125 OM3	1st end SC Duplex, 2nd end LC Duplex	1.0 m	aqua	aqua
L00891C0042	G50/125 OM3	1st end SC Duplex, 2nd end LC Duplex	2.0 m	aqua	aqua
L00892C0024	G50/125 OM3	1st end SC Duplex, 2nd end LC Duplex	3.0 m	aqua	aqua
L00893C0022	G50/125 OM3	1st end SC Duplex, 2nd end LC Duplex	5.0 m	aqua	aqua
L00895C0021	G50/125 OM3	1st end SC Duplex, 2nd end LC Duplex	10.0 m	aqua	aqua

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Housing Colour	Cable Colour
L00890A0080	G50/125 OM4	1st end SC Duplex, 2nd end LC Duplex	1.0 m	black	violet
L00891A0082	G50/125 OM4	1st end SC Duplex, 2nd end LC Duplex	2.0 m	black	violet
L00892A0075	G50/125 OM4	1st end SC Duplex, 2nd end LC Duplex	3.0 m	black	violet
L00893A0079	G50/125 OM4	1st end SC Duplex, 2nd end LC Duplex	5.0 m	black	violet
L00895A0073	G50/125 OM4	1st end SC Duplex, 2nd end LC Duplex	10.0 m	black	violet

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Housing Colour	Cable Colour
L00890C0039	G62,5/125 OM1	1st end SC Duplex, 2nd end LC Duplex	1.0 m	beige	orange
L00891C0019	G62,5/125 OM1	1st end SC Duplex, 2nd end LC Duplex	2.0 m	beige	orange
L00892C0038	G62,5/125 OM1	1st end SC Duplex, 2nd end LC Duplex	3.0 m	beige	orange
L00893C0041	G62,5/125 OM1	1st end SC Duplex, 2nd end LC Duplex	5.0 m	beige	orange
L00895C0038	G62,5/125 OM1	1st end SC Duplex, 2nd end LC Duplex	10.0 m	beige	orange

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

### Connector Types: 1st end 2xST, 2nd end SC Duplex

17.2.2



Order no.	Fiber type	Connector type	Length	Housing Colour SC	Cable Colour
L00890A0018	E9/125 OS2	1st end 2xST, 2nd end SC Duplex	1.0 m	blue	yellow
L00811A0022	E9/125 OS2	1st end 2xST, 2nd end SC Duplex	2.0 m	blue	yellow
L00892A0005	E9/125 OS2	1st end 2xST, 2nd end SC Duplex	3.0 m	blue	yellow
L00893A0005	E9/125 OS2	1st end 2xST, 2nd end SC Duplex	5.0 m	blue	yellow
L00895A0004	E9/125 OS2	1st end 2xST, 2nd end SC Duplex	10.0 m	blue	yellow

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

17.2

## 17.2

## FO Duplex Adaptor Cords

## 17.2.2 Connector Types: 1st end 2xST, 2nd end SC Duplex

Order no.	Fiber type	Connector type	Length	Housing Colour SC	Cable Colour
L00890C0019	G50/125 OM2	1st end 2xST, 2nd end SC Duplex	1.0 m	beige	orange
L00891C0071	G50/125 OM2	1st end 2xST, 2nd end SC Duplex	2.0 m	beige	orange
L00892C0001	G50/125 OM2	1st end 2xST, 2nd end SC Duplex	3.0 m	beige	orange
L00893C0003	G50/125 OM2	1st end 2xST, 2nd end SC Duplex	5.0 m	beige	orange
L00895C0003	G50/125 OM2	1st end 2xST, 2nd end SC Duplex	10.0 m	beige	orange

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Housing Colour SC	Cable Colour
L00890C0059	G50/125 OM3	1st end 2xST, 2nd end SC Duplex	1.0 m	aqua	aqua
L00891C0026	G50/125 OM3	1st end 2xST, 2nd end SC Duplex	2.0 m	aqua	aqua
L00892C0048	G50/125 OM3	1st end 2xST, 2nd end SC Duplex	3.0 m	aqua	aqua
L00893C0028	G50/125 OM3	1st end 2xST, 2nd end SC Duplex	5.0 m	aqua	aqua
L00895C0025	G50/125 OM3	1st end 2xST, 2nd end SC Duplex	10.0 m	aqua	aqua

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Housing Colour SC	Cable Colour
L00890A0077	G50/125 OM4	1st end 2xST, 2nd end SC Duplex	1.0 m	black	violet
L00891A0079	G50/125 OM4	1st end 2xST, 2nd end SC Duplex	2.0 m	black	violet
L00892A0072	G50/125 OM4	1st end 2xST, 2nd end SC Duplex	3.0 m	black	violet
L00893A0076	G50/125 OM4	1st end 2xST, 2nd end SC Duplex	5.0 m	black	violet
L00895A0070	G50/125 OM4	1st end 2xST, 2nd end SC Duplex	10.0 m	black	violet

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Housing Colour SC	Cable Colour
L00890C0021	G62,5/125 OM1	1st end 2xST, 2nd end SC Duplex	1.0 m	beige	orange
L00891C0072	G62,5/125 OM1	1st end 2xST, 2nd end SC Duplex	2.0 m	beige	orange
L00892C0009	G62,5/125 OM1	1st end 2xST, 2nd end SC Duplex	3.0 m	beige	orange
L00893C0001	G62,5/125 OM1	1st end 2xST, 2nd end SC Duplex	5.0 m	beige	orange
L00895C0001	G62,5/125 OM1	1st end 2xST, 2nd end SC Duplex	10.0 m	beige	orange

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

## 17.2.3

## Connector Types: 1st end 2xST, 2nd end LC Duplex



Order no.	Fiber type	Connector type	Length	Housing Colour LC	Cable Colour
L00890A0040	E9/125 OS2	1st end 2xST, 2nd end LC Duplex	1.0 m	blue	yellow
L00891A0014	E9/125 OS2	1st end 2xST, 2nd end LC Duplex	2.0 m	blue	yellow
L00892A0039	E9/125 OS2	1st end 2xST, 2nd end LC Duplex	3.0 m	blue	yellow
L00893A0042	E9/125 OS2	1st end 2xST, 2nd end LC Duplex	5.0 m	blue	yellow
L00895A0039	E9/125 OS2	1st end 2xST, 2nd end LC Duplex	10.0 m	blue	yellow

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Housing Colour LC	Cable Colour
L00890A0036	G50/125 OM2	1st end 2xST, 2nd end LC Duplex	1.0 m	beige	orange
L00891A0015	G50/125 OM2	1st end 2xST, 2nd end LC Duplex	2.0 m	beige	orange
L00892A0035	G50/125 OM2	1st end 2xST, 2nd end LC Duplex	3.0 m	beige	orange
L00893A0038	G50/125 OM2	1st end 2xST, 2nd end LC Duplex	5.0 m	beige	orange
L00895A0035	G50/125 OM2	1st end 2xST, 2nd end LC Duplex	10.0 m	beige	orange

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)



Order no.	Fiber type	Connector type	Length	Housing Colour LC	Cable Colour
L00890A0058	G50/125 OM3	1st end 2xST, 2nd end LC Duplex	1.0 m	aqua	aqua
L00891A0029	G50/125 OM3	1st end 2xST, 2nd end LC Duplex	2.0 m	aqua	aqua
L00892A0029	G50/125 OM3	1st end 2xST, 2nd end LC Duplex	3.0 m	aqua	aqua
L00893A0027	G50/125 OM3	1st end 2xST, 2nd end LC Duplex	5.0 m	aqua	aqua
L00895A0024	G50/125 OM3	1st end 2xST, 2nd end LC Duplex	10.0 m	aqua	aqua

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Housing Colour LC	Cable Colour
L00890A0078	G50/125 OM4	1st end 2xST, 2nd end LC Duplex	1.0 m	black	violet
L00891A0080	G50/125 OM4	1st end 2xST, 2nd end LC Duplex	2.0 m	black	violet
L00892A0073	G50/125 OM4	1st end 2xST, 2nd end LC Duplex	3.0 m	black	violet
L00893A0077	G50/125 OM4	1st end 2xST, 2nd end LC Duplex	5.0 m	black	violet
L00895A0071	G50/125 OM4	1st end 2xST, 2nd end LC Duplex	10.0 m	black	violet

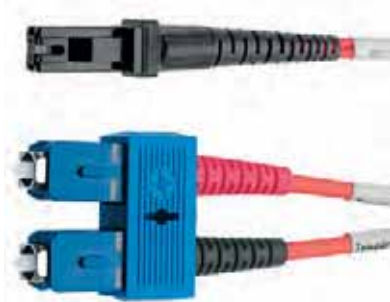
Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Housing Colour LC	Cable Colour
L00890A0037	G62,5/125 OM1	1st end 2xST, 2nd end LC Duplex	1.0 m	beige	orange
L00891A0016	G62,5/125 OM1	1st end 2xST, 2nd end LC Duplex	2.0 m	beige	orange
L00892A0036	G62,5/125 OM1	1st end 2xST, 2nd end LC Duplex	3.0 m	beige	orange
L00893A0039	G62,5/125 OM1	1st end 2xST, 2nd end LC Duplex	5.0 m	beige	orange
L00895A0036	G62,5/125 OM1	1st end 2xST, 2nd end LC Duplex	10.0 m	beige	orange

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

#### Connector Types: 1st end SC Duplex (with clamp for flexible A/B setting), 2nd end MT-RJ female

17.2.4



Order no.	Fiber type	Connector type	Length	Housing Colour SC	Cable Colour
L00890C0024	G50/125 OM2	1st end T-SC Duplex (with clamp), 2nd end MT-RJ	1.0 m	beige	orange
L00891C0036	G50/125 OM2	1st end T-SC Duplex (with clamp), 2nd end MT-RJ	2.0 m	beige	orange
L00892C0016	G50/125 OM2	1st end T-SC Duplex (with clamp), 2nd end MT-RJ	3.0 m	beige	orange
L00893C0013	G50/125 OM2	1st end T-SC Duplex (with clamp), 2nd end MT-RJ	5.0 m	beige	orange
L00895C0013	G50/125 OM2	1st end T-SC Duplex (with clamp), 2nd end MT-RJ	10.0 m	beige	orange

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

Order no.	Fiber type	Connector type	Length	Housing Colour SC	Cable Colour
L00891C0048	G50/125 OM3	1st end T-SC Duplex (with clamp), 2nd end MT-RJ	2.0 m	aqua	aqua

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

17.2

## 17.2

## FO Duplex Adaptor Cords

## 17.2.5

## Connector Types: 1st end 2xST, 2nd end MT-RJ female



Order no.	Fiber type	Connector type	Length	Cable Colour
L00890A0032	G50/125 OM2	1st end 2xST, 2nd end MT-RJ	1.0 m	orange
L00891A0032	G50/125 OM2	1st end 2xST, 2nd end MT-RJ	2.0 m	orange
L00892A0032	G50/125 OM2	1st end 2xST, 2nd end MT-RJ	3.0 m	orange
L00893A0032	G50/125 OM2	1st end 2xST, 2nd end MT-RJ	5.0 m	orange
L00895A0032	G50/125 OM2	1st end 2xST, 2nd end MT-RJ	10.0 m	orange

Other lengths and types : [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

## 17.3

## Accessories



Order no.	Description	Remarks
B00010A0033	captive protection cap	diameter 1.25 mm; PU: 1.000 pcs.
B00010A0034	captive protection cap	diameter 2.5 mm; PU: 1.000 pcs.



## TICNET Configurator

Ideal for planners and installers: simply assemble cables and fiber pigtails online: do you want to assemble cables and connectors online or a fiber optic patch panel to meet your specific needs and then send an order inquiry to your local specialist retailer straight away? Then the TICNET Configurator developed by Telegärtner is just what you need!



### Define product:

1. define fiber type and length
2. choose connector type and marking



### Show final product:

All the information relating to the product you require is listed in a clear breakdown including the gross list prices classified by price bracket. Your data is available in PDF format for download after configuration. you can view the products you have configured at any time by entering your TICNET configuration number and security code on the TICNET homepage. The number and security code are sent to you in an email.



### Add configuration to shopping basket:

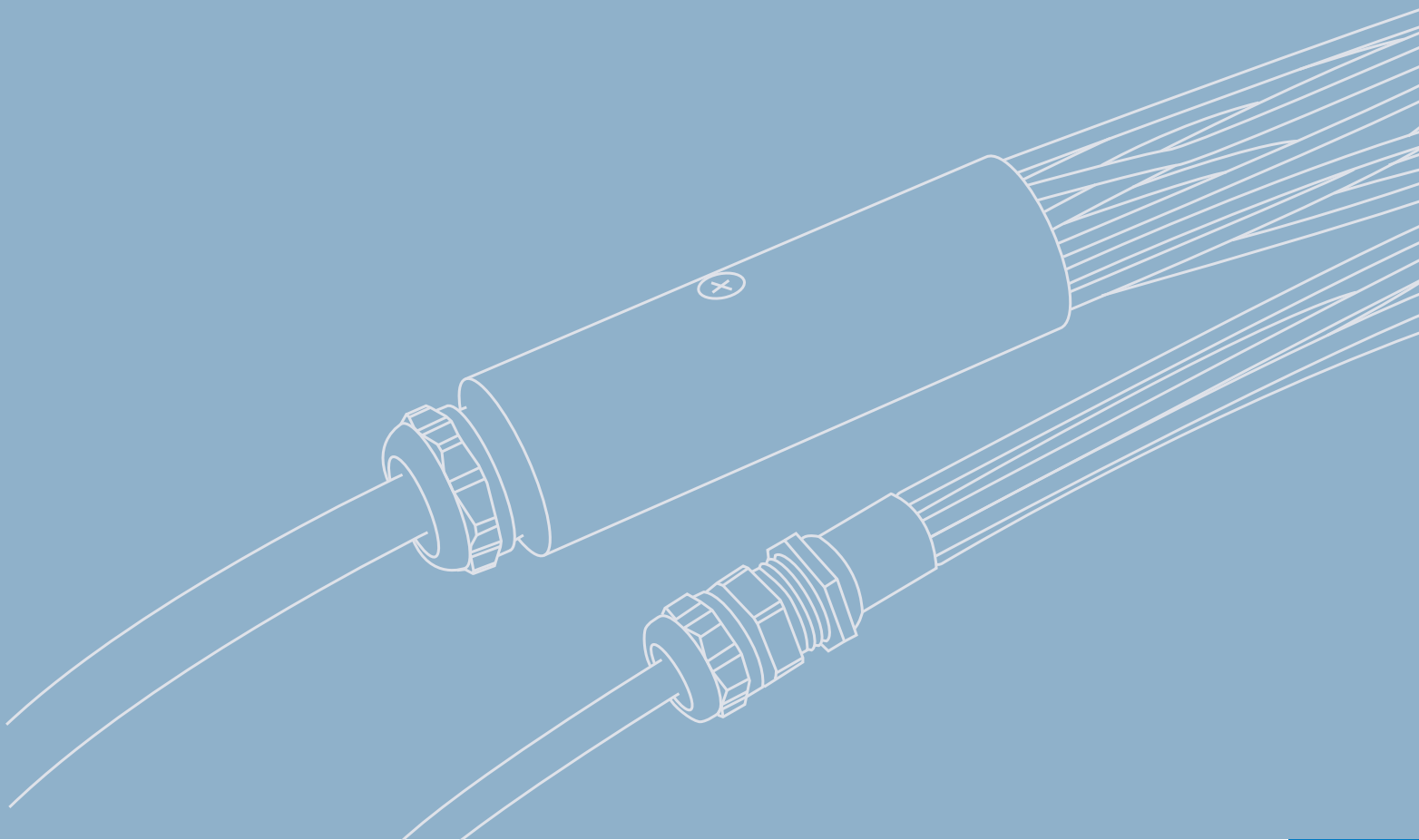
It is possible to change quantity, copy with different cable length and show parts list of your configuration. Also you can send an order inquiry to Telegärtner.



[www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)



## FO Ready-to-install Fiber Optic Links





# 18

## FO Ready-to-install Fiber Optic Links

18.1	FO Universal Cables .....	253
18.2	FO Mini Breakout Cables .....	255
18.3	FO Breakout Cables .....	255
18.4	FO Simplex Cables .....	256
18.5	FO Duplex Cables .....	257
18.6	FO Fibers .....	258
18.7	Assembly .....	258

# FO Ready-to-install Fiber Optic Links

18

Unpack, clean, connect – and you're done. Pre-terminated, ready-to-install fiber optic cables save time and make installing much easier. No stripping, no splicing, no connectors to be installed on the fibers – just plug and play. Proven quality by

Telegärtner for easy, ready-to-use fiber optic links. Available with all relevant types of fibers, cables and connectors according to national and international standards.

## Performance Characteristics

- Ready-to-install optical-fiber cable runs with cables acc. to IEC 60794-1 and design acc. to DIN/VDE 0888; with halogen-free, flame retardant jacket
- with between 2 and 48 fibers E9/125, G50/125 and G62,5/125 acc. to IEC 60793 in different link classes
- test certification showing insertion loss

	Fiber Specification OS2	Fiber Specification OM2	Fiber Specification OM3	Fiber Specification OM4	Fiber Specification OM1
<b>Standards</b>					
Standard	ITU G.652 D	IEC60793-2-10	IEC60793-2-10	IEC60793-2-10	IEC60793-2-10
<b>Optical Characteristics</b>					
Fiber Class acc. to ISO/IEC 11801	OS2	OM2	OM3	OM4	OM1
Max. attenuation in dB/km at 850/1300 nm	-	2.8 / 0.90	3.0 / 1.0	3.0 / 1.0	3.2 / 1.1
Max. attenuation in dB/km at 1310/1550 nm	0.40 / 0.30	-	-	-	-
Bandwidth in MHz x km at 850/1300 nm	-	600 / 1200	1500 / 500	3500 / 500	200 / 600
Dispersion in ps/nm x km	≤ 3.5 / ≤ 18	-	-	-	-
Link Class OF in m at 1310/1550 nm: 1 Gbit/10 Gbit	10000 / 10000	-	-	-	-
Link Class OF in m at 850 nm: 1 Gbit/10 Gbit	-	600 / 82	900 / 300	900 / 550	275 / 33
Link Class OF in m at 1300 nm: 1 Gbit/10 Gbit	-	600 / n.a.	550 / n.a.	550 / n.a.	550 / n.a.

## FO Universal Cables

18.1

	Central Loose Tupe OS2	Central Loose Tupe OM2	Central Loose Tupe OM3	Central Loose Tupe OM4	Central Loose Tupe OM1
<b>Mechanical Characteristics</b>					
Cable structure acc. to DIN/VDE 0888	A/I-DQ(ZN) BH ...	A/I-DQ(ZN) BH ...	A/I-DQ(ZN) BH ...	A/I-DQ(ZN) BH ...	A/I-DQ(ZN) BH ...
Cable diameter in mm	≤ 6.1	≤ 6.1	≤ 6.1	≤ 6.1	≤ 6.1
Max. pulling tension short-term/long-term in N	1500 / 700	1500 / 700	1500 / 700	1500 / 700	1500 / 700
Max. Crush resistance long-term in N/m	15000	15000	15000	15000	15000
Min. bending radius in mm	15 x Ø / 10 x Ø	15 x Ø / 10 x Ø	15 x Ø / 10 x Ø	15 x Ø / 10 x Ø	15 x Ø / 10 x Ø
Colour of outer jacket	orange	orange	orange	orange	orange
Weight in kg/km	37	37	37	37	37
<b>Climatic Characteristics</b>					
Operating temperature / Storage temperature in °C	-30 / +70	-30 / +70	-30 / +70	-30 / +70	-30 / +70
Installation temperature in °C	-5 / +50	-5 / +50	-5 / +50	-5 / +50	-5 / +50
Flame retardancy	IEC 60332-1	IEC 60332-1	IEC 60332-1	IEC 60332-1	IEC 60332-1
Halogen-free acc. to	IEC 60754-2	IEC 60754-2	IEC 60754-2	IEC 60754-2	IEC 60754-2
Watertightness	IEC 60794-1-2-F5	IEC 60794-1-2-F5	IEC 60794-1-2-F5	IEC 60794-1-2-F5	IEC 60794-1-2-F5
UV resistance	ISO 4892-2	ISO 4892-2	ISO 4892-2	ISO 4892-2	ISO 4892-2
<b>Technical Characteristics</b>					
Application	outdoor, for direct burial/indoor				

18.1

## 18.1

## FO Universal Cables

	Stranded Loose Tube OS2	Stranded Loose Tube OM3	Stranded Loose Tube OM4
<b>Mechanical Characteristics</b>			
Cable structure acc. to DIN/VDE 0888	A/I-DQ(ZN)BH 4x12	A/I-DQ(ZN)BH 4x12	A/I-DQ(ZN)BH 4x12
Cable diameter in mm	≤ 12.5	≤ 12.5	≤ 12.5
Max. pulling tension short-term/long-term in N	4000	4000	4000
Max. Crush resistance long-term in N/m	30000	30000	30000
Min. bending radius (operation/installation) in mm	15x Ø / 20x Ø	15x Ø / 20x Ø	15x Ø / 20x Ø
Colour of outer jacket	yellow	orange	orange
Weight in kg/km	185	185	185
<b>Climatic Characteristics</b>			
Operating temperature in °C	-25 / +60	-25 / +60	-25 / +60
Storage temperature in °C	-25 / +70	-25 / +70	-25 / +70
Installation temperature in °C	-5 / +50	-5 / +50	-5 / +50
Flame retardancy	IEC 60332-1-2	IEC 60332-1-2	IEC 60332-1-2
Halogen-free acc. to	IEC 60754-2	IEC 60754-2	IEC 60754-2
Watertightness	IEC 60794-1-2-F5B	IEC 60794-1-2-F5B	IEC 60794-1-2-F5B
<b>Technical Characteristics</b>			
Application	outdoor, not for direct burial/indoor		



Order no.	Fiber type	Number of Fibers	Cable diameter	Cable Colour	Weight
L08020A0112	E9/125 OS2	12	≤ 6.1 mm	orange	37
L08020A0124	E9/125 OS2	24	≤ 6.1 mm	orange	37
L08020B9001	E9/125 OS2	48	≤ 12.5 mm	yellow	185

Order no.	Fiber type	Number of Fibers	Cable diameter	Cable Colour	Weight
L08021A0104	G50/125 OM2	4	≤ 6.1 mm	orange	37
L08021A0106	G50/125 OM2	6	≤ 6.1 mm	orange	37
L08021A0108	G50/125 OM2	8	≤ 6.1 mm	orange	37
L08021A0112	G50/125 OM2	12	≤ 6.1 mm	orange	37
L08021A0324	G50/125 OM2	24	≤ 6.1 mm	orange	37

Order no.	Fiber type	Number of Fibers	Cable diameter	Cable Colour	Weight
L08021B0304	G50/125 OM3	4	≤ 6.1 mm	orange	37
L08021B0308	G50/125 OM3	8	≤ 6.1 mm	orange	37
L08021B0312	G50/125 OM3	12	≤ 6.1 mm	orange	37
L08021B0324	G50/125 OM3	24	≤ 6.1 mm	orange	37
L08021B9001	G50/125 OM3	48	≤ 12.5 mm	orange	185

Order no.	Fiber type	Number of Fibers	Cable diameter	Cable Colour	Weight
L08021C0304	G50/125 OM4	4	≤ 6.1 mm	orange	37
L08021C0308	G50/125 OM4	8	≤ 6.1 mm	orange	37
L08021C0312	G50/125 OM4	12	≤ 6.1 mm	orange	37
L08021C0324	G50/125 OM4	24	≤ 6.1 mm	orange	37
L08021C9001	G50/125 OM4	48	≤ 12.5 mm	orange	37

Order no.	Fiber type	Number of Fibers	Cable diameter	Cable Colour	Weight
L08022A0104	G62,5/125 OM1	4	≤ 6.1 mm	orange	37
L08022A0106	G62,5/125 OM1	6	≤ 6.1 mm	orange	37
L08022A0108	G62,5/125 OM1	8	≤ 6.1 mm	orange	37
L08022A0112	G62,5/125 OM1	12	≤ 6.1 mm	orange	37



## FO Ready-to-install Fiber Optic Links

18

## FO Mini Breakout Cable

18.2

	Mini Breakout Cable OM2	Mini Breakout Cable OM3	Mini Breakout Cable OM4
<b>Mechanical Characteristics</b>			
Cable structure acc. to DIN/VDE 0888	I-K(ZN)H n...	I-K(ZN)H n...	I-K(ZN)H n...
Cable dia. in mm (4/8 fibers)	4,8 / 5,3	4,8 / 5,3	4,8 / 5,3
Max. pulling tension short-term/long-term in N with 4 fibers	800 / 400	800 / 400	800 / 400
Max. pulling tension short-term/long-term in N with 8 fibers	900 / 450	900 / 450	900 / 450
Max. Crush resistance long-term in N/m	4000	4000	4000
Min. bending radius in mm	10x Ø	10x Ø	10x Ø
Colour of outer jacket	orange	orange	orange
Weight in kg/km with 4 fibers	19	19	19
Weight in kg/km with 8 fibers	25	25	25
<b>Climatic Characteristics</b>			
Operating temperature in °C	-5 / +55	-5 / +55	-5 / +55
Storage temperature in °C	-30 / +70	-30 / +70	-30 / +70
Installation temperature in °C	-5 / +50	-5 / +50	-5 / +50
Flame retardancy	IEC 60332-2	IEC 60332-2	IEC 60332-2
Halogen-free acc. to	IEC 60754-2	IEC 60754-2	IEC 60754-2
<b>Technical Characteristics</b>			
Application	inhouse cabling		



Order no.	Fiber type	Number of Fibers	Cable diameter	Cable Colour	Weight
L08021K1104	G50/125 OM2	4	≤ 5.5 mm	orange	19
L08021K1108	G50/125 OM2	8	≤ 5.5 mm	orange	25

Order no.	Fiber type	Number of Fibers	Cable diameter	Cable Colour	Weight
L08021B1204	G50/125 OM3	4	≤ 5.5 mm	orange	19
L08021B1208	G50/125 OM3	8	≤ 5.5 mm	orange	25

Order no.	Fiber type	Number of Fibers	Cable diameter	Cable Colour	Weight
L08021C1204	G50/125 OM4	4	≤ 5.5 mm	orange	19
L08021C1208	G50/125 OM4	8	≤ 5.5 mm	orange	25

## FO Breakout Cables

18.3

	Breakout OS2	Breakout OM2	Breakout OM3	Breakout OM4	Breakout OM1
<b>Mechanical Characteristics</b>					
Cable structure acc. to DIN/VDE 0888	I-K(ZN)HH n.../I-V...	I-K(ZN)HH n.../I-V...	I-K(ZN)HH n.../I-V...	I-K(ZN)HH n.../I-V...	I-K(ZN)HH n.../I-V...
Max. Crush resistance long-term in N/m	7500	7500	7500	7500	7500
Min. bending radius in mm	8x Ø	10x Ø	10x Ø	10x Ø	10x Ø
<b>Climatic Characteristics</b>					
Operating temperature in °C	-5 / +55	-5 / +55	-5 / +55	-5 / +55	-5 / +55
Storage temperature in °C	-30 / +70	-30 / +70	-30 / +70	-30 / +70	-30 / +70
Installation temperature in °C	-5 / +50	-5 / +50	-5 / +50	-5 / +50	-5 / +50
Flame retardancy	IEC 60332-1	IEC 60332-1	IEC 60332-1	IEC 60332-1	IEC 60332-1
Halogen-free acc. to	IEC 60754-2	IEC 60754-2	IEC 60754-2	IEC 60754-2	IEC 60754-2
<b>Technical Characteristics</b>					
Application	inhouse cabling				

18.3

## 18.3

## FO Breakout Cables



Order no.	Fiber type	Number of Fibers	Secondary coating	cable diameter mm	Cable Colour
L08020K1202	E9/125 OS2	2	Semi-tight buffer	3.8 x 6.7 (flat, 2xØ 2.8)	yellow
L08010A0006	E9/125 OS2	2	Tight buffer	3.1 x 5.2 (flat, 2xØ 2.1)	yellow
L08020K1212	E9/125 OS2	12	Semi-tight buffer	Ø 10.5 (12x Ø2.1)	yellow

Order no.	Fiber type	Number of Fibers	Secondary coating	cable diameter mm	Cable Colour
L08021K1202	G50/125 OM2	2	Semi-tight buffer	3.8 x 6.7 (flat, 2xØ 2.8)	orange
L08021K1204	G50/125 OM2	4	Semi-tight buffer	Ø 6.2 (4xØ 2.1)	orange
L08021K1208	G50/125 OM2	8	Semi-tight buffer	Ø 9.4 (8xØ 2.1)	orange
L08021K1212	G50/125 OM2	12	Semi-tight buffer	Ø 10.5 (12xØ 2.1)	orange

Order no.	Fiber type	Number of Fibers	Secondary coating	cable diameter mm	Cable Colour
L08011A0029	G50/125 OM3	2	Semi-tight buffer	3.1 x 5.2 (flat, 2xØ 2.1)	aqua
L08011A0027	G50/125 OM3	2	Tight buffer	2.9 x 4.7 (flat, 2xØ 1.8)	aqua
L08021B1404	G50/125 OM3	4	Semi-tight buffer	Ø 6.2 (4xØ 2.1)	orange
L08021B1406	G50/125 OM3	6	Semi-tight buffer	Ø 8.0 (6xØ 2.1)	orange

Order no.	Fiber type	Number of Fibers	Secondary coating	cable diameter mm	Cable Colour
L08011A0035	G50/125 OM4	2	Semi-tight buffer	3.1 x 5.2 (flat, 2xØ 2.1)	violet
L08021C1404	G50/125 OM4	4	Semi-tight buffer	Ø 6.2 (4xØ 2.1)	orange
L08021C1406	G50/125 OM4	6	Semi-tight buffer	Ø 8.0 (6xØ 2.1)	orange

Order no.	Fiber type	Number of Fibers	Secondary coating	cable diameter mm	Cable Colour
L08022K1202	G62,5/125 OM1	2	Semi-tight buffer	3.8 x 6.7 (flat, 2xØ 2.8)	orange
L08022K1204	G62,5/125 OM1	4	Semi-tight buffer	Ø 6.2 (4xØ 2.1)	orange
L08022K1212	G62,5/125 OM1	12	Semi-tight buffer	Ø 10.5 (12x Ø2.1)	orange

## 18.4

## FO Simplex Cable

	Simplex cable OS2 G.657.A1	Simplex cable OM2	Simplex cable OM3	Simplex cable OM4
<b>Mechanical Characteristics</b>				
Cable structure acc. to DIN/VDE 0888	I-K(ZN)H ...	I-K(ZN)H ...	I-K(ZN)H ...	I-K(ZN)H ...
Cable diameter in mm	2.8	2.8	2.8	2.8
Max. pulling tension short-term/long-term in N: Ø 2.8 mm	200 / 100	200 / 100	200 / 100	200 / 100
Max. pulling tension short-term/long-term in N: Ø 1.8 mm	140 / 70	140 / 70	140 / 70	140 / 70
Max. Crush resistance long-term in N/m	5000	5000	5000	5000
Min. bending radius in mm	15	30	30	30
Colour of outer jacket	yellow	orange	aqua	orange
Weight in kg/km: Ø 2.8	7.2	7.2	7.2	7.2
Weight in kg/km: Ø 1.8	3.2	3.2	3.2	3.2
<b>Climatic Characteristics</b>				
Operating temperature in °C	-5 / +55	-5 / +55	-5 / +55	-5 / +55
Storage temperature in °C	-30 / +70	-30 / +70	-30 / +70	-30 / +70
Installation temperature in °C	-5 / +50	-5 / +50	-5 / +50	-5 / +50
Flame retardancy	IEC 60332-1	IEC 60332-1	IEC 60332-1	IEC 60332-1
Halogen-free acc. to	IEC 60754-2	IEC 60754-2	IEC 60754-2	IEC 60754-2
<b>Technical Characteristics</b>				
Application	Patch cords	Patch cords	Patch cords	Patch cords

## FO Ready-to-install Fiber Optic Links

18



Order no.	Fiber type	Number of Fibers	Cable diameter	Cable Colour	Weight
L08000A0005	E9/125 OS2	1	Ø 2.8 mm	yellow	7.2
L08001A0002	G50/125 OM2	1	Ø 2.8 mm	orange	7.2
L08001A0035	G50/125 OM3	1	Ø 2.8 mm	aqua	7.2
L08002A0002	G62,5/125 OM1	1	Ø 2.8 mm	orange	7.2

## FO Duplex Cable

18.5

	OS2 G657.A1	OM2	OM3	OM4	OM1
<b>Mechanical Characteristics</b>					
Cable structure acc. to DIN/VDE 0888	I-K(ZN)H 2x1 ...	I-K(ZN)H 2x1 ...	I-K(ZN)H 2x1 ...	I-K(ZN)H 2x1 ...	I-K(ZN)H 2x1 ...
Cable dimensions in mm: Zipcord	2.8 x 5.7	2.8 x 5.7	2.8 x 5.7	2.8 x 5.7	2.8 x 5.7
Cable dimensions in mm: Minizip	1.8 x 3.7	1.8 x 3.7	1.8 x 3.7	1.8 x 3.7	1.8 x 3.7
Max. pulling tension short-term/long-term in N: Zipcord	400 / 200	400 / 200	400 / 200	400 / 200	400 / 200
Max. pulling tension short-term/long-term in N: Minizip	240 / 140	240 / 140	240 / 140	240 / 140	240 / 140
Max. crush resistance long-term in N/m: Zipcord	5000	5000	5000	5000	5000
Max. crush resistance long-term in N/m: Minizip	2000	2000	2000	2000	2000
Min. bending radius in mm	15	25	25	25	25
Colour of outer jacket	yellow	orange	aqua	violet	orange
Weight in kg/km: Zipcord	14.5	14.5	14.5	14.5	14.5
Weight in kg/km: Minizip	7.4	7.4	7.4	7.4	7.4
<b>Climatic Characteristics</b>					
Operating temperature in °C	-5 / +55	-5 / +55	-5 / +55	-5 / +55	-5 / +55
Storage temperature in °C	-30 / +70	-30 / +70	-30 / +70	-30 / +70	-30 / +70
Installation temperature in °C	-5 / +50	-5 / +50	-5 / +50	-5 / +50	-5 / +50
Flame retardancy	IEC 60332-1	IEC 60332-1	IEC 60332-1	IEC 60332-1	IEC 60332-1
Halogen-free acc. to	IEC 60754-2	IEC 60754-2	IEC 60754-2	IEC 60754-2	IEC 60754-2
<b>Technical Characteristics</b>					
Application	Patch cords	Patch cords	Patch cords	Patch cords	Patch cords



Order no.	Fiber type	Number of Fibers	Secondary coating	Cable Colour	Weight
L08010A0002	E9/125 OS2	2	Semi-tight buffer	yellow	14.5
L08010A0004	E9/125 OS2	2	Tight buffer	yellow	7.4
L08011A0001	G50/125 OM2	2	Semi-tight buffer	orange	14.5
L08011A0004	G50/125 OM2	2	Tight buffer	orange	7.4

18.5

## 18.5 FO Duplex Cable

Order no.	Fiber type	Number of Fibers	Secondary coating	Cable Colour	Weight
L08011A0024	G50/125 OM3	2	Semi-tight buffer	aqua	14.5
L08011A0028	G50/125 OM3	2	Tight buffer	aqua	7.4

Order no.	Fiber type	Number of Fibers	Secondary coating	Cable Colour	Weight
L08011A0033	G50/125 OM4	2	Semi-tight buffer	violet	14.5
L08011A0041	G50/125 OM4	2	Tight buffer	violet	7.4

Order no.	Fiber type	Number of Fibers	Secondary coating	Cable Colour	Weight
L08012A0001	G62,5/125 OM1	2	Semi-tight buffer	orange	14.5

Order no.	Fiber type	Number of Fibers	Secondary coating	Cable Colour	Weight
L08110A0000	S980/1000 POF	2	Semi-tight buffer	black	7.6

## 18.6 FO Fibers

	OS2 G.657.A1	OM2	OM3	OM4	OM1
<b>Mechanical Characteristics</b>					
Fiber structure acc. to DIN/VDE 0888	I-K...	I-K...	I-K...	I-K...	I-K...
Dimensions Ø in mm, primary/secondary coating	0.25/0.9	0.25/0.9	0.25/0.9	0.25/0.9	0.25/0.9
Max. pulling tension short-term/long-term in N	3	3	3	3	3
Max. Crush resistance long-term in N/m	1000	1000	1000	1000	1000
Min. bending radius in mm	15	25	25	25	25
Fiber colour	yellow	green	aqua	violet	blue
Weight in kg/km	0.67	0.67	0.67	0.67	0.67
<b>Climatic Characteristics</b>					
Operating temperature in °C	-5 / +55	-5 / +55	-5 / +55	-5 / +55	-5 / +55
Storage temperature in °C	-30 / +70	-30 / +70	-30 / +70	-30 / +70	-30 / +70
Installation temperature in °C	-5 / +50	-5 / +50	-5 / +50	-5 / +50	-5 / +50
Halogen-free acc. to	IEC 60754-2	IEC 60754-2	IEC 60754-2	IEC 60754-2	IEC 60754-2
<b>Technical Characteristics</b>					
Application	Pigtail	Pigtail	Pigtail	Pigtail	Pigtail

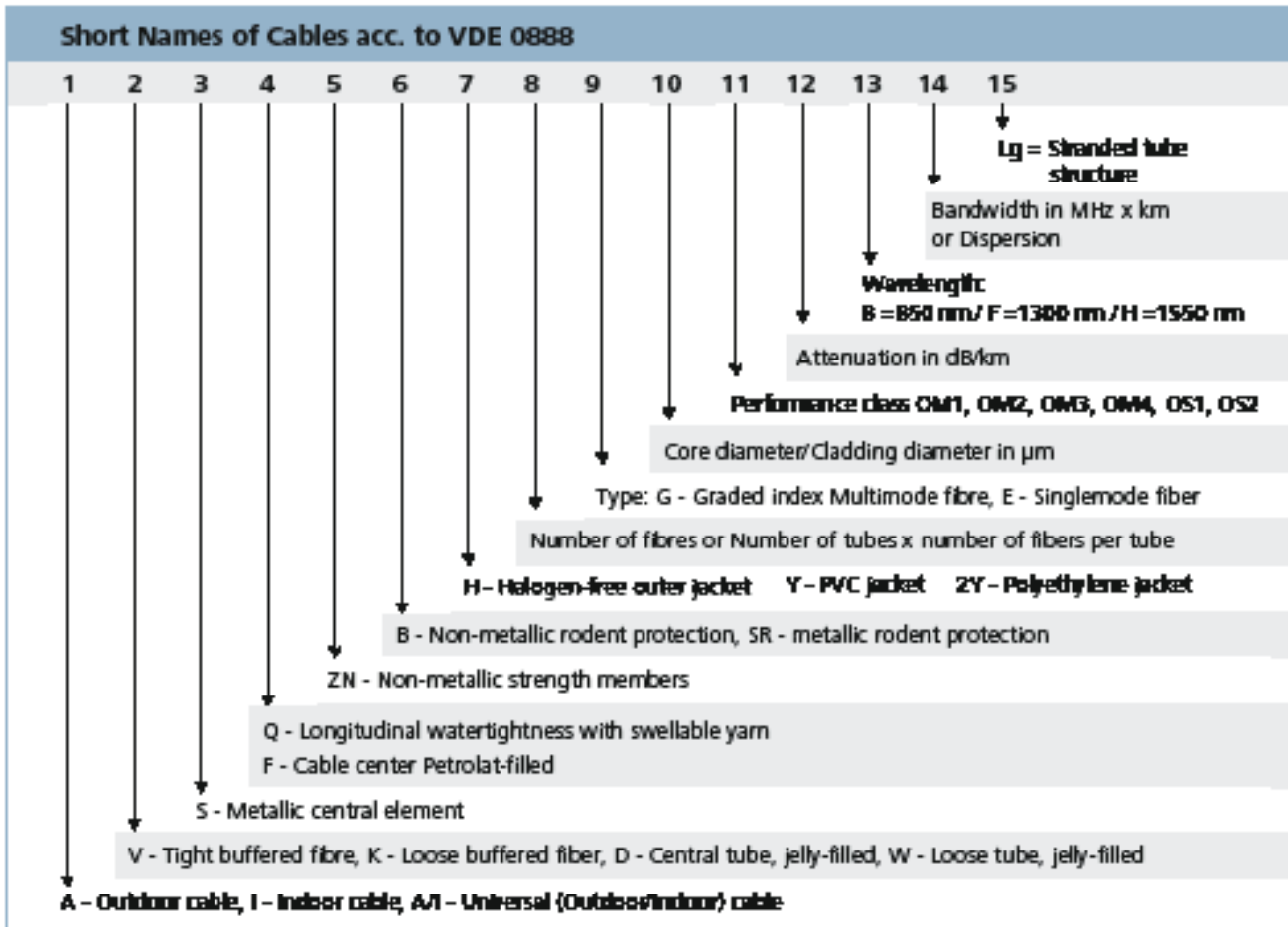


Order no.	Fiber type	Diameter	Colour	Weight kg/km
L08000A0001	E9/125 OS2	0.9 mm	yellow	0.67
L08001A0001	G50/125 OM2	0.9 mm	green	0.67
L08001A0028	G50/125 OM3	0.9 mm	aqua	0.67
L08001A0033	G50/125 OM4	0.9 mm	violet	0.67
L08002A0001	G62,5/125 OM1	0.9 mm	blue	0.67

## 18.7 Assembly

Order no.	Description	Remarks
U01100A0129	Cable handling for FO cable up to 30 m	wrapped to a ring
U01100A0130	Cable handling for FO cable 31 to 75 m	on coil D=400 mm, W=200 mm
U01100A0131	Cable handling for FO cable 76 to 150 m	on coil D=580 mm, W=200 mm
U01100A0132	Cable handling for FO cable more than 151 m	on coil D=580 mm, W=430mm

# FO Ready-to-install Fiber Optic Links



**Short Names of Cables acc. to VDE 0888 (example)**

<u>AI</u> -	<u>D</u>	<u>Q</u>	<u>ZN</u>	<u>B</u>	<u>H</u>	<u>12</u>	<u>G</u>	<u>50/125</u>	<u>OM2</u>	<u>2,7</u>	<u>B</u>	<u>0,8</u>	<u>F</u>	<u>600</u>
↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
1	2	4	5	6	7	8	9	10	11	12	13	12	13	14

**Colour code for multi-fiber loose tube cables (Standard code acc. to IEC 60304)**

Fiber no.	Fiber colour code	Fiber no.	Fiber colour code with ring marking
1	red	13	red
2	green	14	green
3	blue	15	blue
4	yellow	16	yellow
5	white	17	white
6	grey	18	grey
7	brown	19	brown
8	violet	20	violet
9	aqua	21	aqua
10	black	22	transparent (no ring marking)
11	orange	23	orange
12	pink	24	pink

**Standards**  
 Optical cables from Telegärtner fulfil the following standards:  
 • DIN VDE 0888  
 • DIN VDE 0889  
 • DIN VDE 0472  
 • DIN VDE 0473  
 • EN 50173  
 • EN 187 000 bis 187 105  
 • EN 188 000  
 • IUT Rec G.651 bis G.657  
 • IEC 60793  
 • IEC 60794

# FO Ready-to-install Fiber Optic Links

## TICNET Configurator



Ideal for planners and installers: simply assemble cables and fiber pigtails online: do you want to assemble cables and connectors online or a fiber optic patch panel to meet your specific needs and then send an order inquiry to your local specialist retailer straight away? Then the TICNET Configurator developed by Telegärtner is just what you need!



### Define product:

1. define fiber type and length
2. choose connector type and marking



### Show final product:

All the information relating to the product you require is listed in a clear breakdown including the gross list prices classified by price bracket. Your data is available in PDF format for download after configuration. you can view the products you have configured at any time by entering your TICNET configuration number and security code on the TICNET homepage. The number and security code are sent to you in an email.



### Add configuration to shopping basket:

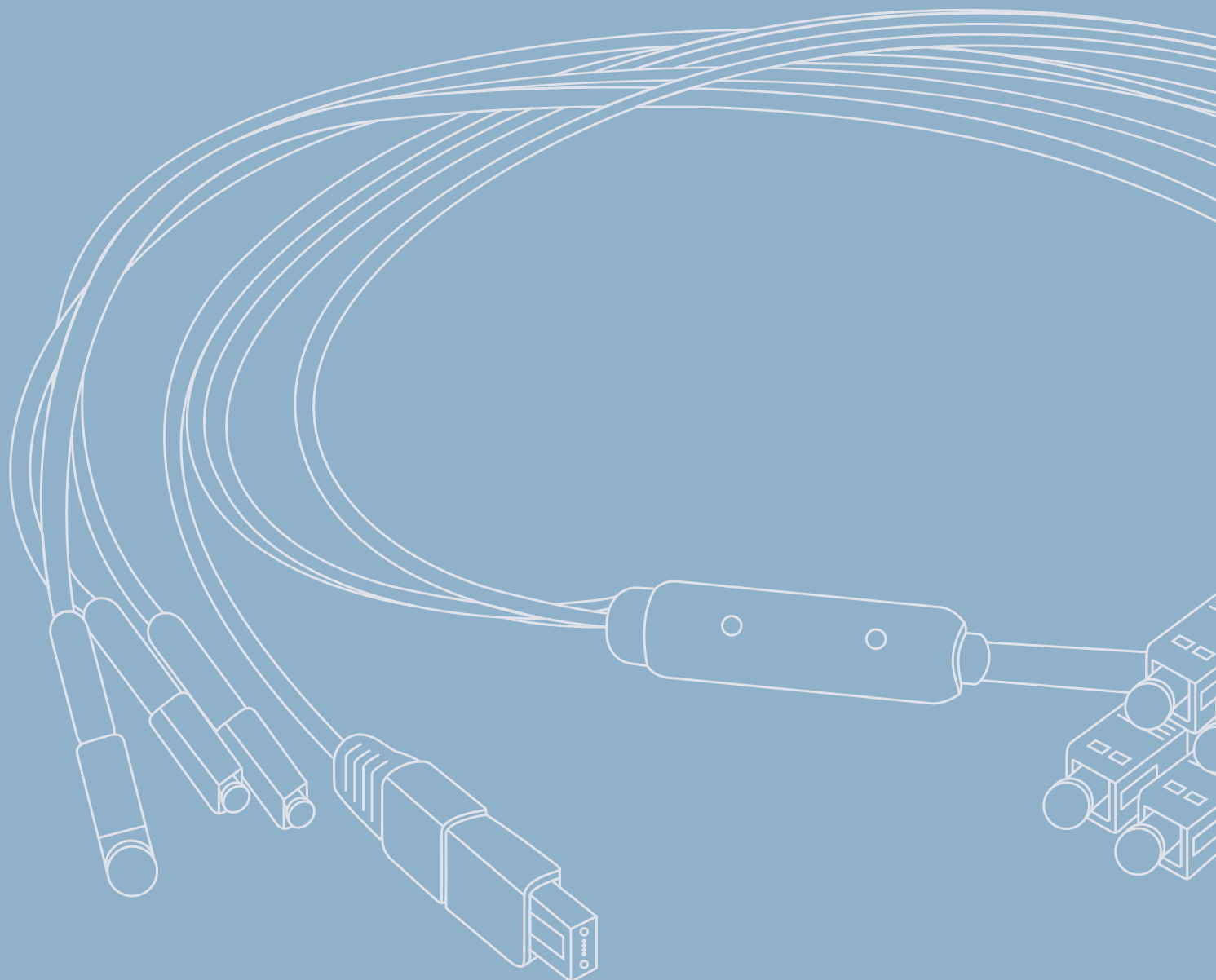
It is possible to change quantity, copy with different cable length and show parts list of your configuration. Also you can send an order inquiry to Telegärtner.



[www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)



## FO MPO/MTP® Cabling System





# 19

## FO MPO/MTP® Cabling System

<b>19.1</b>	<b>MPO/MTP® Patch Cords.....</b>	<b>263</b>
19.1.1	MPO Patch Cords OS2 .....	264
19.1.2	MPO Patch Cords OM3.....	264
19.1.3	MPO Patch Cords OM4.....	265
<b>19.2</b>	<b>MPO/MTP® Harness .....</b>	<b>265</b>
19.2.1	MPO Harness OS2 .....	266
19.2.2	MPO Harness OM3.....	267
19.2.3	MPO Harness OM4.....	267
<b>19.3</b>	<b>MPO/MTP® Harness 0.9 mm .....</b>	<b>268</b>
<b>19.4</b>	<b>MPO/MTP® FanOut Modules.....</b>	<b>269</b>
19.4.1	FanOut Modules including FanOut Kit.....	269
19.4.2	FanOut Modules with assembled MPO/MTP® Adaptors.....	270
<b>19.5</b>	<b>MPO/MTP® Module Carrier .....</b>	<b>271</b>
<b>19.6</b>	<b>19" FO Patch Panel BASIS V with MPO/MTP® Adaptors.....</b>	<b>271</b>
<b>19.7</b>	<b>FO Ready-to-install Fiber Optic Links MPO/MTP® .....</b>	<b>272</b>



# FO MPO/MTP® Cabling System

19

The pre-term MPO/MTP® cabling system is the future-proof and economical solution for fiber optic networks from 10 Mbps to 100 Gbps according to EN 50173, EN50174, ISO/IEC 24764:2010 and ANSI/TIA-568-C.0. Telegärtner offers

components according to connectivity method A as a standard, with identical MPO modules on either side of a link and 1:1 trunk cables. Components for connectivity methods B and C are also available.

## Performance Characteristics

- Connectivity method A; type B and C also available
- Low insertion loss components on request
- Customer specific lengths available using the TICNET configurator at [www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)

## MPO/MTP® Patch Cords

19.1

In order to offer users the migration path from 10 Gbit/s to 40 Gbit/s the Telegärtner MPO/MTP® product family refers to polarity A. The channel termination A/B is done by fiber

optic duplex patch cords on one side of the link at the FanOut modules.

	Fiber Specification OS2	Fiber Specification OM3	Fiber Specification OM4
<b>Standards</b>			
Standard	ITU G.652 D	IEC60793-2-10	IEC60793-2-10
<b>Optical Characteristics</b>			
Fiber Class acc. to ISO/IEC 11801	OS2	OM3	OM4
Max. attenuation in dB/km at 850/1300 nm	-	3.0 / 1.0	3.0 / 1.0
Max. attenuation in dB/km at 1310/1550 nm	0.40 / 0.30	-	-
Bandwidth in MHz x km at 850/1300 nm	-	1500 / 500	3500 / 500
Dispersion in ps/nm x km	≤ 3.5 / ≤ 18	-	-
Link Class OF in m at 1310/1550 nm: 1 Gbit/10 Gbit	10000 / 10000	-	-
Link Class OF in m at 850 nm: 1 Gbit/10 Gbit	-	900 / 300	900 / 550
Link Class OF in m at 1300 nm: 1 Gbit/10 Gbit	-	550 / n.a.	550 / n.a.
<b>Mechanical Characteristics</b>			
Fiber structure: Primary coating	Acrylate, Ø 250 ±15 µm		
Cable structure: Cable jacket	Polymer, yellow (9/125), aqua (50/125 OM3), violet (50/125 OM4)		
Cable structure: Dimensions	3.0 mm		
Cable structure: Strength members	Aramid (Kevlar)		
Bending radius	OS2: 15 mm; OM3/OM4: 25 mm		
Mating Face	female (male on request)		
<b>Climatic Characteristics</b>			
Operating temperature in °C	-5° to 55° C		
<b>Optical Characteristics</b>			
Polarity	Type A (Type B, C on request)		
Life	≥500		
Insertion loss with fiber 9/125	<0.7 (typ. 0.25) dB <sup>1</sup>		
Insertion loss with fiber 50/125	<0.5 (typ. 0.2) dB <sup>1</sup>		
Return loss: Singlemode APC	>60 dB <sup>2</sup>		
Return Loss: Multimode PC	>30 dB <sup>2</sup>		

19.1

1) Measurement procedure acc. to IEC 61300-3-4

2) Measurement procedure acc. to IEC 61300-3-6

## FO MPO/MTP® Cabling System

## 19.1

## MPO/MTP® Patch Cords

## 19.1.1

## MPO Patch Cord OS2



Order no.	Fiber type	Connector type	Cable Colour	Housing Colour	Length
L00830A0007	E9/125 OS2	MPO APC female	yellow	green	1.0 m
L00831A0007	E9/125 OS2	MPO APC female	yellow	green	2.0 m
L00832A0007	E9/125 OS2	MPO APC female	yellow	green	3.0 m
L00833A0007	E9/125 OS2	MPO APC female	yellow	green	5.0 m
L00835A0007	E9/125 OS2	MPO APC female	yellow	green	10.0 m
L00836A0013	E9/125 OS2	MPO APC female	yellow	green	15.0 m
L00836A0017	E9/125 OS2	MPO APC female	yellow	green	20.0 m
L00836A0021	E9/125 OS2	MPO APC female	yellow	green	25.0 m
L00836A0025	E9/125 OS2	MPO APC female	yellow	green	30.0 m
L00836A0029	E9/125 OS2	MPO APC female	yellow	green	35.0 m
L00836A0033	E9/125 OS2	MPO APC female	yellow	green	40.0 m
L00836A0037	E9/125 OS2	MPO APC female	yellow	green	50.0 m
L00836A0041	E9/125 OS2	MPO APC female	yellow	green	60.0 m
L00836A0045	E9/125 OS2	MPO APC female	yellow	green	70.0 m
L00836A0049	E9/125 OS2	MPO APC female	yellow	green	80.0 m
L00836A0053	E9/125 OS2	MPO APC female	yellow	green	90.0 m
L00836A0057	E9/125 OS2	MPO APC female	yellow	green	100.0 m

Other lengths on request

## 19.1.2

## MPO Patch Cord OM3



Order no.	Fiber type	Connector type	Cable Colour	Housing Colour	Length
L00830A0005	G50/125 OM3	MPO PC female	aqua	aqua	1.0 m
L00831A0005	G50/125 OM3	MPO PC female	aqua	aqua	2.0 m
L00832A0005	G50/125 OM3	MPO PC female	aqua	aqua	3.0 m
L00833A0005	G50/125 OM3	MPO PC female	aqua	aqua	5.0 m
L00835A0005	G50/125 OM3	MPO PC female	aqua	aqua	10.0 m
L00836A0011	G50/125 OM3	MPO PC female	aqua	aqua	15.0 m
L00836A0015	G50/125 OM3	MPO PC female	aqua	aqua	20.0 m
L00836A0019	G50/125 OM3	MPO PC female	aqua	aqua	25.0 m
L00836A0023	G50/125 OM3	MPO PC female	aqua	aqua	30.0 m
L00836A0027	G50/125 OM3	MPO PC female	aqua	aqua	35.0 m
L00836A0031	G50/125 OM3	MPO PC female	aqua	aqua	40.0 m
L00836A0035	G50/125 OM3	MPO PC female	aqua	aqua	50.0 m
L00836A0039	G50/125 OM3	MPO PC female	aqua	aqua	60.0 m
L00836A0043	G50/125 OM3	MPO PC female	aqua	aqua	70.0 m
L00836A0047	G50/125 OM3	MPO PC female	aqua	aqua	80.0 m
L00836A0051	G50/125 OM3	MPO PC female	aqua	aqua	90.0 m
L00836A0055	G50/125 OM3	MPO PC female	aqua	aqua	100.0 m

Other lengths on request

## FO MPO/MTP® Cabling System

## 19

## MPO Patch Cord OM4

## 19.1.3



Order no.	Fiber type	Connector type	Cable Colour	Housing Colour	Length
L00830A0006	G50/125 OM4	MPO PC female	violet	black	1.0 m
L00831A0006	G50/125 OM4	MPO PC female	violet	black	2.0 m
L00832A0006	G50/125 OM4	MPO PC female	violet	black	3.0 m
L00833A0006	G50/125 OM4	MPO PC female	violet	black	5.0 m
L00835A0006	G50/125 OM4	MPO PC female	violet	black	10.0 m
L00836A0012	G50/125 OM4	MPO PC female	violet	black	15.0 m
L00836A0016	G50/125 OM4	MPO PC female	violet	black	20.0 m
L00836A0020	G50/125 OM4	MPO PC female	violet	black	25.0 m
L00836A0024	G50/125 OM4	MPO PC female	violet	black	30.0 m
L00836A0028	G50/125 OM4	MPO PC female	violet	black	35.0 m
L00836A0032	G50/125 OM4	MPO PC female	violet	black	40.0 m
L00836A0036	G50/125 OM4	MPO PC female	violet	black	50.0 m
L00836A0040	G50/125 OM4	MPO PC female	violet	black	60.0 m
L00836A0044	G50/125 OM4	MPO PC female	violet	black	70.0 m
L00836A0048	G50/125 OM4	MPO PC female	violet	black	80.0 m
L00836A0052	G50/125 OM4	MPO PC female	violet	black	90.0 m
L00836A0056	G50/125 OM4	MPO PC female	violet	black	100.0 m

Other lengths on request

## MPO/MTP® Harness

## 19.2

The MPO/MTP® Harness is used to connect active equipment having LC or SC interfaces with a MPO/MTP® backbone. On one side they are terminated with MPO/MTP® male

connectors, on the other side with a splitter to LC or SC connectors and 2.1 mm simplex cables.

	Fiber Specification OS2	Fiber Specification OM3	Fiber Specification OM4
<b>Standards</b>			
Standard	ITU G.652 D	IEC60793-2-10	IEC60793-2-10
<b>Optical Characteristics</b>			
Fiber Class acc. to ISO/IEC 11801	OS2	OM3	OM4
Max. attenuation in dB/km at 850/1300 nm	-	3.0 / 1.0	3.0 / 1.0
Max. attenuation in dB/km at 1310/1550 nm	0.40 / 0.30	-	-
Bandwidth in MHz x km at 850/1300 nm	-	1500 / 500	3500 / 500
Dispersion in ps/nm x km	≤ 3.5 / ≤ 18	-	-
Link Class OF in m at 1310/1550 nm: 1 Gbit/10 Gbit	10000 / 10000	-	-
Link Class OF in m at 850 nm: 1 Gbit/10 Gbit	-	900 / 300	900 / 550
Link Class OF in m at 1300 nm: 1 Gbit/10 Gbit	-	550 / n.a.	550 / n.a.
<b>Mechanical Characteristics</b>			
Fiber structure: Primary coating	Acrylate, Ø 250 ±15 µm		
Cable structure: Cable jacket	Polymer, yellow (9/125), aqua (50/125 OM3), violet (50/125 OM4)		
Cable structure: Dimensions	3.0 / 2.1 mm		
Cable structure: Strength members	Aramid (Kevlar)		
Splitter: Dimensions (diameter)	15 mm		
Splitter: Length	50 mm		
Bending radius	OS2: 15 mm; OM3/OM4: 25 mm		
Mating Face	male (female on request)		

## 19.2

## 19.2

## MPO/MTP® Harness

## Climatic Characteristics

Operating temperature in °C	-5° to 55° C
-----------------------------	--------------

## Optical Characteristics

Polarity	Type A (Type B, C on request)
Life	≥500 (MPO); ≥1000 (SC/LC)
Insertion loss with fiber 9/125	MPO APC: <0.7 (typ. 0.25) <sup>1</sup> dB; LC/SC: <0.4 dB <sup>1</sup>
Insertion loss with fiber 50/125	MPO PC: <0.5 (typ. 0.2) <sup>1</sup> dB; LC/SC: <0.3 dB <sup>1</sup>
Return loss: Singlemode APC	MPO: >60 dB <sup>2</sup> ; LC/SC: >60 dB <sup>2</sup>
Return loss: Singlemode PC	LC/SC: >40 dB <sup>2</sup>
Return Loss: Multimode PC	MPO: >30 dB <sup>2</sup> ; LC/SC: >30 dB <sup>2</sup>

1) Measurement procedure acc. to IEC 61300-3-4

2) Measurement procedure acc. to IEC 61300-3-6

## 19.2.1

## MPO Harness OS2



Order no.	Fiber type	Connector type	Length	Cable Colour	Housing Colour
L00830A0030	E9/125 OS2	1st end MPO APC; 2nd end LC APC	1.0 m	yellow	MPO APC: green; LC APC: green
L00831A0030	E9/125 OS2	1st end MPO APC; 2nd end LC APC	2.0 m	yellow	MPO APC: green; LC APC: green
L00832A0030	E9/125 OS2	1st end MPO APC; 2nd end LC APC	3.0 m	yellow	MPO APC: green; LC APC: green
L00833A0030	E9/125 OS2	1st end MPO APC; 2nd end LC APC	5.0 m	yellow	MPO APC: green; LC APC: green
L00835A0030	E9/125 OS2	1st end MPO APC; 2nd end LC APC	10.0 m	yellow	MPO APC: green; LC APC: green

Other lengths on request

Order no.	Fiber type	Connector type	Length	Cable Colour	Housing Colour
L00830A0031	E9/125 OS2	1st end MPO APC; 2nd end SC APC	1.0 m	yellow	MPO APC: green; SC APC: green
L00831A0031	E9/125 OS2	1st end MPO APC; 2nd end SC APC	2.0 m	yellow	MPO APC: green; SC APC: green
L00832A0031	E9/125 OS2	1st end MPO APC; 2nd end SC APC	3.0 m	yellow	MPO APC: green; SC APC: green
L00833A0031	E9/125 OS2	1st end MPO APC; 2nd end SC APC	5.0 m	yellow	MPO APC: green; SC APC: green
L00835A0031	E9/125 OS2	1st end MPO APC; 2nd end SC APC	10.0 m	yellow	MPO APC: green; SC APC: green

Other lengths on request



Order no.	Fiber type	Connector type	Length	Cable Colour	Housing Colour
L00830A0032	E9/125 OS2	1st end MPO APC; 2nd end LC PC	1.0 m	yellow	MPO APC: green; LC PC: blue
L00831A0032	E9/125 OS2	1st end MPO APC; 2nd end LC PC	2.0 m	yellow	MPO APC: green; LC PC: blue
L00832A0032	E9/125 OS2	1st end MPO APC; 2nd end LC PC	3.0 m	yellow	MPO APC: green; LC PC: blue
L00833A0032	E9/125 OS2	1st end MPO APC; 2nd end LC PC	5.0 m	yellow	MPO APC: green; LC PC: blue
L00835A0032	E9/125 OS2	1st end MPO APC; 2nd end LC PC	10.0 m	yellow	MPO APC: green; LC PC: blue

Other lengths on request

## FO MPO/MTP® Cabling System

## 19

Order no.	Fiber type	Connector type	Length	Cable Colour	Housing Colour
L00830A0033	E9/125 OS2	1st end MPO APC; 2nd end SC PC	1.0 m	yellow	MPO APC: green; SC PC: blue
L00831A0033	E9/125 OS2	1st end MPO APC; 2nd end SC PC	2.0 m	yellow	MPO APC: green; SC PC: blue
L00832A0033	E9/125 OS2	1st end MPO APC; 2nd end SC PC	3.0 m	yellow	MPO APC: green; SC PC: blue
L00833A0033	E9/125 OS2	1st end MPO APC; 2nd end SC PC	5.0 m	yellow	MPO APC: green; SC PC: blue
L00835A0033	E9/125 OS2	1st end MPO APC; 2nd end SC PC	10.0 m	yellow	MPO APC: green; SC PC: blue

Other lengths on request

## MPO Harness OM3

## 19.2.2



Order no.	Fiber type	Connector type	Length	Cable Colour	Housing Colour
L00830A0026	G50/125 OM3	1st end MPO PC; 2nd end LC PC	1.0 m	aqua	MPO PC: aqua; LC PC: aqua
L00831A0026	G50/125 OM3	1st end MPO PC; 2nd end LC PC	2.0 m	aqua	MPO PC: aqua; LC PC: aqua
L00832A0026	G50/125 OM3	1st end MPO PC; 2nd end LC PC	3.0 m	aqua	MPO PC: aqua; LC PC: aqua
L00833A0026	G50/125 OM3	1st end MPO PC; 2nd end LC PC	5.0 m	aqua	MPO PC: aqua; LC PC: aqua
L00835A0026	G50/125 OM3	1st end MPO PC; 2nd end LC PC	10.0 m	aqua	MPO PC: aqua; LC PC: aqua

Other lengths on request

Order no.	Fiber type	Connector type	Length	Cable Colour	Housing Colour
L00830A0027	G50/125 OM3	1st end MPO PC; 2nd end SC PC	1.0 m	aqua	MPO PC: aqua; SC PC: aqua
L00831A0027	G50/125 OM3	1st end MPO PC; 2nd end SC PC	2.0 m	aqua	MPO PC: aqua; SC PC: aqua
L00832A0027	G50/125 OM3	1st end MPO PC; 2nd end SC PC	3.0 m	aqua	MPO PC: aqua; SC PC: aqua
L00833A0027	G50/125 OM3	1st end MPO PC; 2nd end SC PC	5.0 m	aqua	MPO PC: aqua; SC PC: aqua
L00835A0027	G50/125 OM3	1st end MPO PC; 2nd end SC PC	10.0 m	aqua	MPO PC: aqua; SC PC: aqua

Other lengths on request

## MPO Harness OM4

## 19.2.3



Order no.	Fiber type	Connector type	Length	Cable Colour	Housing Colour
L00830A0028	G50/125 OM4	1st end MPO PC; 2nd end LC PC	1.0 m	violet	MPO PC: black; LC PC: black
L00831A0028	G50/125 OM4	1st end MPO PC; 2nd end LC PC	2.0 m	violet	MPO PC: black; LC PC: black
L00832A0028	G50/125 OM4	1st end MPO PC; 2nd end LC PC	3.0 m	violet	MPO PC: black; LC PC: black
L00833A0028	G50/125 OM4	1st end MPO PC; 2nd end LC PC	5.0 m	violet	MPO PC: black; LC PC: black
L00835A0028	G50/125 OM4	1st end MPO PC; 2nd end LC PC	10.0 m	violet	MPO PC: black; LC PC: black

Other lengths on request

Order no.	Fiber type	Connector type	Length	Cable Colour	Housing Colour
L00830A0029	G50/125 OM4	1st end MPO PC; 2nd end SC PC	1.0 m	violet	MPO PC: black; SC PC: black
L00831A0029	G50/125 OM4	1st end MPO PC; 2nd end SC PC	2.0 m	violet	MPO PC: black; SC PC: black
L00832A0029	G50/125 OM4	1st end MPO PC; 2nd end SC PC	3.0 m	violet	MPO PC: black; SC PC: black
L00833A0029	G50/125 OM4	1st end MPO PC; 2nd end SC PC	5.0 m	violet	MPO PC: black; SC PC: black
L00835A0029	G50/125 OM4	1st end MPO PC; 2nd end SC PC	10.0 m	violet	MPO PC: black; SC PC: black

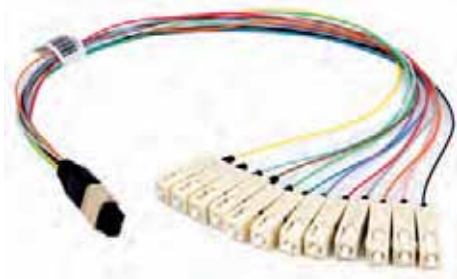
Other lengths on request

## 19.3 MPO/MTP® Harness 0.9 mm

	Fiber Specification OS2	Fiber Specification OM3	Fiber Specification OM4
<b>Standards</b>			
Standard	ITU G.652 D	IEC60793-2-10	IEC60793-2-10
<b>Optical Characteristics</b>			
Fiber Class acc. to ISO/IEC 11801	OS2	OM3	OM4
Max. attenuation in dB/km at 850/1300 nm	-	3.0 / 1.0	3.0 / 1.0
Max. attenuation in dB/km at 1310/1550 nm	0.40 / 0.30	-	-
Bandwidth in MHz x km at 850/1300 nm	-	1500 / 500	3500 / 500
Dispersion in ps/nm x km	≤ 3.5 / ≤ 18	-	-
Link Class OF in m at 1310/1550 nm: 1 Gbit/10 Gbit	10000 / 10000	-	-
Link Class OF in m at 850 nm: 1 Gbit/10 Gbit	-	900 / 300	900 / 550
Link Class OF in m at 1300 nm: 1 Gbit/10 Gbit	-	550 / n.a.	550 / n.a.
<b>Mechanical Characteristics</b>			
Fiber structure: Primary coating	Acrylate, Ø 250 ±15 µm		
Cable structure: Cable jacket	12 colours acc. to IEC 60304 (DIN VDE 0888)		
Mating Face	male (female on request)		
<b>Climatic Characteristics</b>			
Operating temperature in °C	-5° to 55° C		
<b>Optical Characteristics</b>			
Polarity	Type A (Type B, C on request)		
Life	≥500 (MPO); ≥1000 (SC/LC)		
Insertion loss with fiber 9/125	MPO APC: <0.7 (typ. 0.25) dB <sup>1</sup> ; LC/SC: <0.4 dB <sup>1</sup>		
Insertion loss with fiber 50/125	MPO PC: <0.5 (typ. 0.2) dB <sup>1</sup> ; LC/SC: <0.3 dB <sup>1</sup>		
Return loss: Singlemode APC	MPO: >60 dB <sup>2</sup> ; LC/SC: >60 dB <sup>2</sup>		
Return loss: Singlemode PC	LC/SC: >40 dB <sup>2</sup>		
Return Loss: Multimode PC	MPO: >30 dB <sup>2</sup> ; LC/SC: >30 dB <sup>2</sup>		

1) Measurement procedure acc. to IEC 61300-3-4

2) Measurement procedure acc. to IEC 61300-3-6



Order no.	Fiber type	Connector type	Length	Housing Colour
L00839A0016	E9/125 OS2	1st end MPO APC; 2nd end LC PC	0.4 m	MPO APC: green; LC PC: blue
L00839A0017	E9/125 OS2	1st end MPO APC; 2nd end LC APC	0.4 m	MPO APC: green; LC APC: green
L00839A0015	G50/125 OM3	1st end MPO PC; 2nd end LC PC	0.4 m	MPO PC: aqua; LC PC: aqua
L00839A0024	G50/125 OM4	1st end MPO PC; 2nd end LC PC	0.4 m	MPO PC: black; LC PC: black

## FO MPO/MTP® Cabling System

19

## MPO/MTP® FanOut Modules

19.4

The MPO/MTP® FanOut Modules are used to connect active equipment having LC or SC interfaces with a MPO/MTP® backbone. On one side they are terminated with MPO/MTP® male connectors, on the other side with LC or SC connectors

and 0.9 mm simplex cables. This unit is protected by metal 3 HU slots which can be slid into the 19" module carriers on site.

	Fiber Specification OS2	Fiber Specification OM3	Fiber Specification OM4
<b>Standards</b>			
Standard	ITU G.652 D	IEC60793-2-10	IEC60793-2-10
<b>Optical Characteristics</b>			
Fiber Class acc. to ISO/IEC 11801	OS2	OM3	OM4
Max. attenuation in dB/km at 850/1300 nm	-	3.0 / 1.0	3.0 / 1.0
Max. attenuation in dB/km at 1310/1550 nm	0.40 / 0.30	-	-
Bandwidth in MHz x km at 850/1300 nm	-	1500 / 500	3500 / 500
Dispersion in ps/nm x km	≤ 3.5 / ≤ 18	-	-
Link Class OF in m at 1310/1550 nm: 1 Gbit/10 Gbit	10000 / 10000	-	-
Link Class OF in m at 850 nm: 1 Gbit/10 Gbit	-	900 / 300	900 / 550
Link Class OF in m at 1300 nm: 1 Gbit/10 Gbit	-	550 / n.a.	550 / n.a.
<b>Mechanical Characteristics</b>			
Fiber structure: Primary coating	Acrylate, Ø 250 ±15 µm		
Cable structure: Dimensions	Single fiber: 0.9 mm		
Bending radius	Single fiber: min. 30 mm		
Mating Face	male (female on request)		
<b>Climatic Characteristics</b>			
Operating temperature in °C	-5° to 55° C		
<b>Optical Characteristics</b>			
Polarity	Type A (Type B, C on request)		
Life	≥500 (MPO); ≥1000 (SC/LC)		
Insertion loss with fiber 9/125	MPO APC: <0.7 (typ. 0.25) dB <sup>1</sup> ; LC/SC: <0.4 dB <sup>1</sup>		
Insertion loss with fiber 50/125	MPO PC: <0.5 (typ. 0.2) dB <sup>1</sup> ; LC/SC: <0.3 dB <sup>1</sup>		
Return loss: Singlemode APC	MPO: >60 dB <sup>2</sup> ; LC/SC: >60 dB <sup>2</sup>		
Return loss: Singlemode PC	LC/SC: >40 dB <sup>2</sup>		
Return Loss: Multimode PC	MPO: >30 dB <sup>2</sup> ; LC/SC: >30 dB <sup>2</sup>		

1) Measurement procedure acc. to IEC 61300-3-4

2) Measurement procedure acc. to IEC 61300-3-6

## FanOut Modules including FanOut Kit

19.4.1



Order no.	Fiber type	Adaptor Type	Number of Adaptors	Connector type	Housing Colour
H02050F4231	E9/125 OS2	LC Quad	6	1st end 2xMPO APC; 2nd end 24xLC PC	MPO APC: green; LC PC: blue
H02050F4241	E9/125 OS2	LC Quad	6	1st end 2xMPO APC; 2nd end 24xLC APC	MPO APC: green; LC APC: green
H02050F4221	G50/125 OM3	LC Quad	6	1st end 2xMPO PC; 2nd end 24xLC PC	MPO PC: aqua; LC PC: aqua
H02050F4251	G50/125 OM4	LC Quad	6	1st end 2xMPO PC; 2nd end 24xLC PC	MPO PC: black; LC PC: black

19.4

## 19.4 MPO/MTP® FanOut Modules

## 19.4.1 FanOut Modules including FanOut Kit



Order no.	Fiber type	Adaptor Type	Number of Adaptors	Connector type	Housing Colour
H02050F4131	E9/125 OS2	LC Duplex	6	1st end 1xMPO APC; 2nd end 12xLC PC	MPO APC: green; LC PC: blue
H02050F4141	E9/125 OS2	LC Duplex	6	1st end 1xMPO APC; 2nd end 12xLC APC	MPO APC: green; LC APC: green
H02050F4121	G50/125 OM3	LC Duplex	6	1st end 1xMPO PC; 2nd end 12xLC PC	MPO PC: aqua; LC PC: aqua
H02050F4151	G50/125 OM4	LC Duplex	6	1st end 1xMPO PC; 2nd end 12xLC PC	MPO PC: black; LC PC: black



Order no.	Fiber type	Adaptor Type	Number of Adaptors	Connector type	Housing Colour
H02050F4031	E9/125 OS2	SC Duplex	6	1st end 1xMPO APC; 2nd end 12xSC PC	MPO APC: green; SC PC: blue
H02050F4041	E9/125 OS2	SC Duplex	6	1st end 1xMPO APC; 2nd end 12xSC APC	MPO APC: green; SC APC: green
H02050F4021	G50/125 OM3	SC Duplex	6	1st end 1xMPO PC; 2nd end 12xSC PC	MPO PC: aqua; SC PC: aqua
H02050F4051	G50/125 OM4	SC Duplex	6	1st end 1xMPO PC; 2nd end 12xSC PC	MPO PC: black; SC PC: black

## 19.4.2 FanOut Modules with assembled MPO/MTP® adaptors



Order no.	Description	Remarks	Colour
H02050F4252	3 HU / 7 PU FanOut Module	assembled with 4 MPO/MTP® adaptors	black



## FO MPO/MTP® Cabling System

19

## MPO/MTP® Module Carrier

19.5



Order no.	Description	Colour	Remarks
H02032A0030	19" FO module carrier 3 HU / 84 PU	aluminium sheet anodized	for max. 12 FO Modules 3 HU / 7 PU



Order no.	Short name	Type
H02032A0021	19" module carrier with flange 3 HU / 84 PU	anodized aluminum, completely pre-assembled for 19" rack



Order no.	Description	Remarks	Colour
H02030A4625	19" FO module carrier 1 HU for FanOut Modules	for maximal 3 FanOut modules 3HU / 7PU	black RAL 9005

## 19" FO Patch Panel BASIS V with MPO/MTP® Adaptors

19.6



Order no.	Description	Remarks	Colour
H02030A0661	19" FO patch panel Basis V 1 HU	assembled with 24 MPO/MTP® adaptors	grey RAL 7035

## 19.7 FO Ready-to-install Fiber Optic Links MPO/MTP®

The Telegärtner MPO/MTP® Cabling System is completed with the Mini-ODS cable splitters. The Mini-ODS splitters form the perfect adoption for loose-tube cables with 12-

48 fiber to be supplied factory-assembled with the MPO/MTP® connectors attached to round single-cables containing 12 fibers.

	Fiber Specifications OS2	Fiber Specifications OM3	Fiber Specifications OM4
<b>Standards</b>			
Standard	ITU G.652 D	IEC60793-2-10	IEC60793-2-10
<b>Optical Characteristics</b>			
Fiber Class acc. to ISO/IEC 11801	OS2	OM3	OM4
Max. attenuation in dB/km at 850/1300 nm	-	3.0 / 1.0	3.0 / 1.0
Max. attenuation in dB/km at 1310/1550 nm	0.40 / 0.30	-	-
Bandwidth in MHz x km at 850/1300 nm	-	1500 / 500	3500 / 500
Dispersion in ps/nm x km	≤ 3.5 / ≤ 18	-	-
Link Class OF in m at 1310/1550 nm: 1 Gbit/10 Gbit	10000 / 10000	-	-
Link Class OF in m at 850 nm: 1 Gbit/10 Gbit	-	900 / 300	900 / 550
Link Class OF in m at 1300 nm: 1 Gbit/10 Gbit	-	550 / n.a.	550 / n.a.
<b>Mechanical Characteristics</b>			
Type	Connector type MPO acc. to IEC 61754-7		
Fiber structure: Primary coating	Acrylate, Ø 250 ±15 µm		
Cable structure: Dimensions	Single fiber: 3.0 mm		
Cable structure: Strength members	Aramid (Kevlar)		
Splitter: Dimensions (diameter)	25		
Splitter: Length	55 mm		
Bending radius	Single fiber: min. 30 mm		
Mating Face	female (male on request)		
<b>Climatic Characteristics</b>			
Operating temperature in °C	-40° to 75° C		
<b>Optical Characteristics</b>			
Polarity	Type A (Type B, C on request)		
Life	≥500		
Insertion loss with fiber 9/125	MPO APC: <0.7 (typ. 0.25) dB <sup>1</sup>		
Insertion loss with fiber 50/125	MPO PC: <0.5 (typ. 0.2) dB <sup>1</sup>		
Return loss: Singlemode APC	MPO: >60 dB <sup>2</sup>		
Return Loss: Multimode PC	MPO: >30 dB <sup>2</sup>		

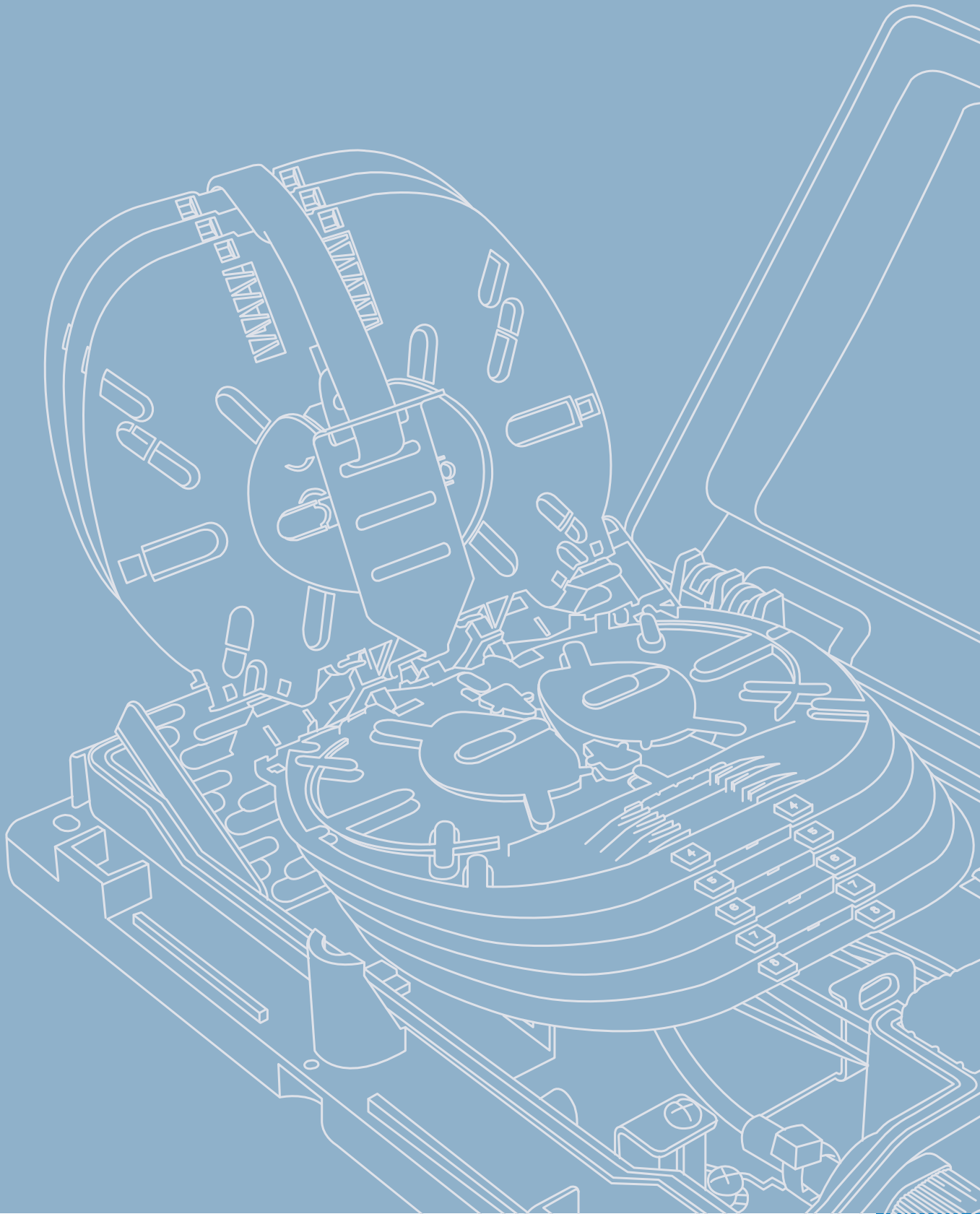
1) Measurement procedure acc. to IEC 61300-3-4

2) Measurement procedure acc. to IEC 61300-3-6

## FO Ready-to-install Fiber Optic Links MPO/MTP® for 12 / 24 / 48 fibers



## FO Splice Cassette System SAM





# 20

## FO Splice Cassette System SAM

<b>20.1</b>	<b>SAM - Splice Arranged Management.....</b>	<b>275</b>
20.1.1	SAM Single Circuit Cassette Modules.....	275
20.1.2	SAM Single Element Cassette Modules.....	275
20.1.3	SAM Fiber Management.....	275
<b>20.2</b>	<b>SAM - Splice Arranged Management Accessoires.....</b>	<b>276</b>
<b>20.3</b>	<b>SAM - Splice Arranged Management ODB 54.....</b>	<b>276</b>
<b>20.4</b>	<b>SAM - Splice Arranged Management Modular Wall Distributor.....</b>	<b>277</b>

# FO Splice Cassette System SAM

20

SAM – Splice Arranged Management System by Telegärtner offers optimum splice and fiber management using minimum space. Splice cassette can be flipped without any distortion of

data signal transmission. They accept crimp and heat-shrink fusion splice protectors and can hold 1.5 m of fiber slack. Also suitable for blown fiber solutions.

## Performance Characteristics

- optionally suitable for both crimp and shrink splice protection
- can accommodate fiber diameters up to 600  $\mu\text{m}$
- bending radius of 30 mm

## SAM - Splice Arranged Management

20.1

### SAM Single Circuit Cassette Module

20.1.1



Order no.	Description	Remarks
H02050A0272	SC - Single Circuit Cassette module	8 cassettes for max. 4 fibers each cassette, incl. carrier plate; for crimp/shrink splice protection; dimensions: 128x144x61 mm

### SAM Single Element Cassette Module

20.1.2



Order no.	Description	Remarks
H02050A0173	SE - Single Element Cassette module	4 cassettes for max. 12 fibers each cassette, incl. carrier plate; for crimp/shrink splice protection; dimensions 136x144x61 mm

### SAM Fiber Management

20.1.3



Order no.	Description	Remarks
B00045A0150	SAM Fiber Management	170x120x23 mm

## 20.2 SAM - Splice Arranged Management Accessories



Order no.	Description	Remarks
B00015A0012	cover for SC/SE cassette, transparent	140x97x0.5 mm



Order no.	Description	Colour
B00115A0005	numbering clips 1-10 for SC/SE cassette	blue
B00115A0006	numbering clips 11-20 for SC/SE cassette	blue



Order no.	Description
B06014A0057	assembly retainer for SC/SE cassette

## 20.3 SAM - Splice Arranged Management ODB 54



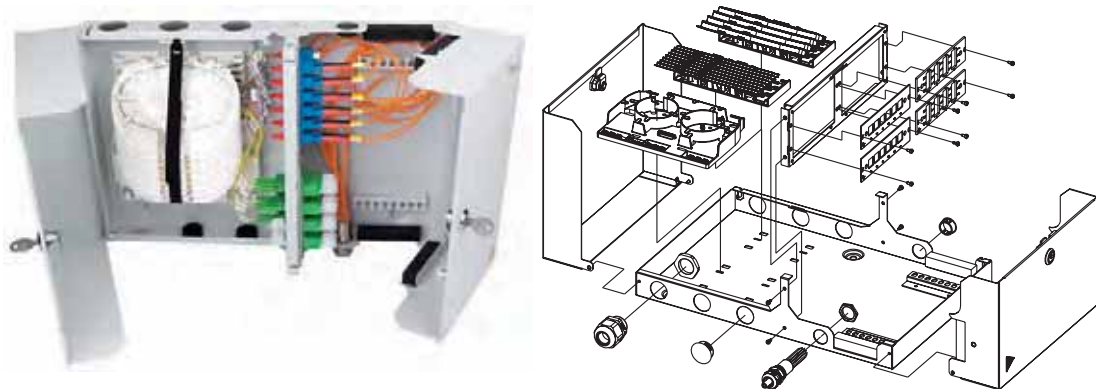
Order no.	Description	Remarks
H02050A0282	ODB 54 equipped with 8 SC cassette	for max. 4 fibers for crimp/shrink splice protection each cassette
H02050A0283	ODB 54 equipped with 4 SE cassette	for max. 12 fibers for crimp/shrink splice protection each cassette

# FO Splice Cassette System SAM

20

## SAM - Splice Arranged Management Modular Wall Distributor

20.4



Order no.	Description	Remarks	Colour
H02050A0302	Modular Wall Distributor SAM-SC	Housing with 2 swivel doors, separately lockable, each three cable entries on top/bottom for M25; with 8 SC cassettes	RAL 7035
H02050A0303	Modular Wall Distributor SAM-SE	Housing with 2 swivel doors, separately lockable, each three cable entries on top/bottom for M25; with 4 SE cassettes	RAL 7035

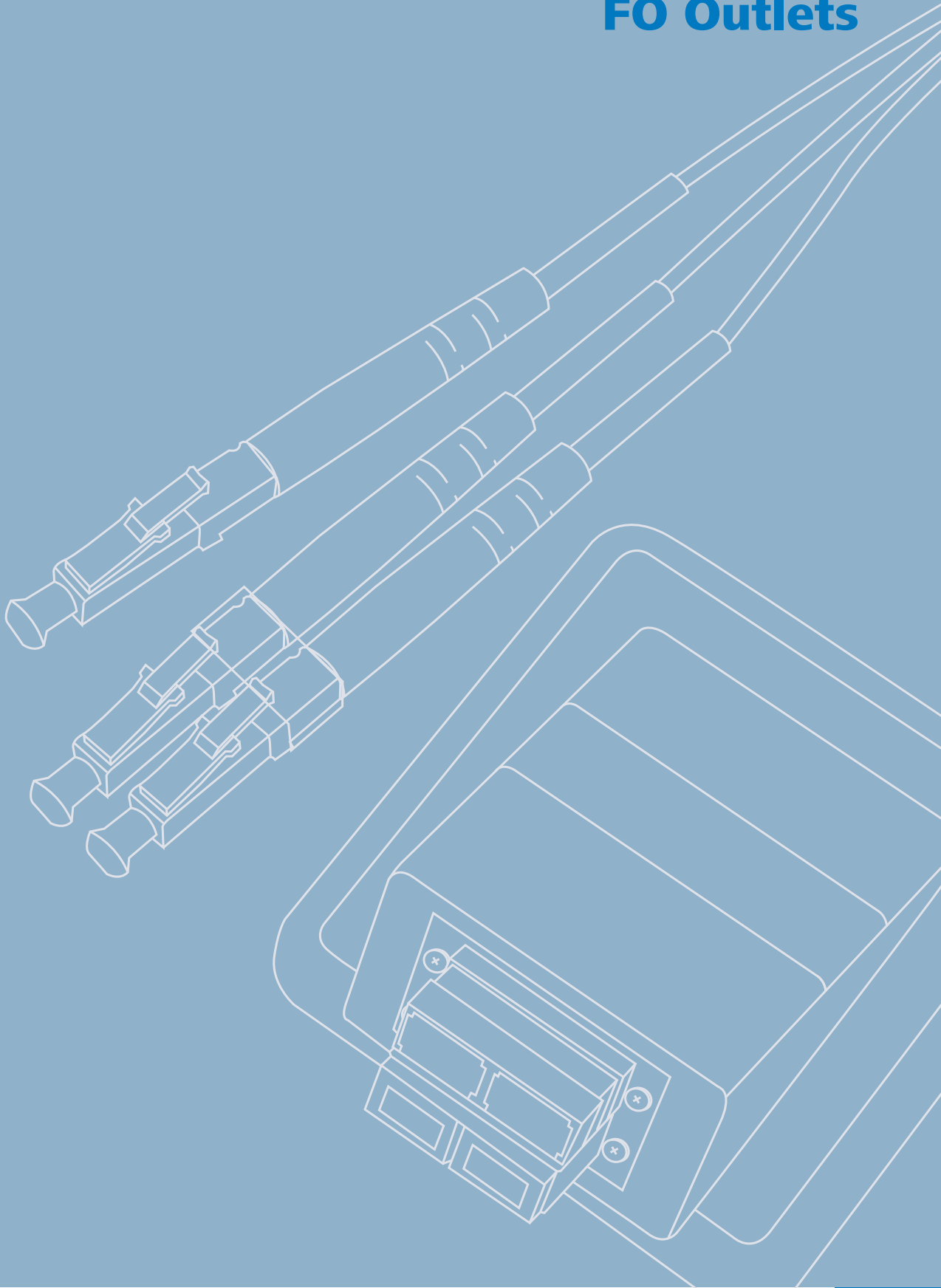


Order no.	for Housing type	HU	PU	Number of panel piercings and connector type	Panel piercing	Colour
H02024A8101	FO Module	3	7	6x SC Duplex, ST/SC Duplex	Z93	aluminium sheet anodised
H02024A8111	FO Module	3	7	12x ST	Z64	aluminium sheet anodised
H02024A8334	FO Module	3	7	12x E2000	Z66	aluminium sheet anodised
H02024A8105	FO Module	3	7	6x LC Duplex	Z99	aluminium sheet anodised
H02024A8125	FO Module	3	7	12x LC Duplex	Z99	aluminium sheet anodised





## FO Outlets





# 21

## FO Outlets

<b>21.1</b>	<b>FO Outlets OAD/K.....</b>	<b>281</b>
21.1.1	Outlet parts OAD/K for individual ordering.....	281
<b>21.2</b>	<b>FO Outlets OAD/S .....</b>	<b>282</b>
21.2.1	Complete outlets OAD/S with assembled adaptors .....	282
21.2.2	Outlet parts OAD/S for individual ordering .....	283
21.2.3	Accessories for OAD/S .....	284
<b>21.3</b>	<b>Pre-assembled FITH OAD/S Outlets.....</b>	<b>285</b>
<b>21.4</b>	<b>FO Outlets OAD with Splice Holder .....</b>	<b>285</b>
21.4.1	Complete outlets OAD with assembled adaptors .....	286
21.4.2	Outlet parts OAD for individual ordering.....	287
21.4.3	Accessories for OAD .....	288

Fiber optic outlets near the end-users have to be protected from dust and shock. On the other hand, patch cords have to be connected easily and reliably. With decades of experience,

Telegärtner offers compact, precise and reliable fiber optic outlets for best connections in fiber optic networks.

## FO Outlets OAD/K

21.1

## Performance Characteristics

- The extra flat outlet for cabling duct system
- can be installed also into the cabling duct system BR netway from Hager Tehalit (BRN Ecoline und Inline)
- horizontal and vertical mounting possible
- winding drum for fiber or cable reserve with ensured radius of 25 mm
- covering cab dimensions 97 x 80 mm with integrated dust cover

## Outlet parts OAD/K for individual ordering

21.1.1



Order no.	Description	Type	Fixing
H02051A0251	Outlet kit for 2xSC Duplex / 2xLC Quad	Outlet kit for 2xSC Duplex or ST/SC Duplex or ST Duplex or 2xLC Quad (cable termination with mini breakout recommended)	for snap-in mounting or tapping screws
H02051A0253	Outlet kit for 4xSC/E2000	Outlet kit for 4xSC or ST/SC or E2000	for snap-in mounting
H02051A0254	Outlet kit for 2xLC Duplex	Outlet kit for 2xLC Duplex	for snap-in mounting



Order no.	Description	Type	Colour
H02051A0240	Covering cap for OAD/K	with marking label and transparent plastic cover	alpine white

## 21.2 FO Outlets OAD/S

## Performance Characteristics

- The universal outlet for nearly any application
- suitable for switching programs of several manufacturers
- winding drum for fiber or cable reserve loops with ensured radius of 25 mm minimum
- 5 mm automatic height adjustment for cover frames acc. to DIN 49075 or 50 x 50 mm
- horizontal and vertical installation in cable ducts as well as in flush or surface mounting boxes
- output direction 20° to vertical direction

## OAD/S is compatible with the following switching programmes\*

Busch-Jäger	PEHA	Jung	GIRA	Kopp	ELSO	Merten	Berker
Alpha nea	Standard	ST550	Standard	Color	Novia	Octo-Color	Arsys
Reflex SI	Dialog	CD500	System 55	Denver	Fashion	Atelier	Cliptec
Reflex SI	Tangent	LS990	S-Color	Vision	Scala	Standard	Modul 2
Linear							
Impuls		CD plus	Basic	Noblesse	Classic		
SF solo		A500					
		A plus					

\*This table display is only a selection and does not claim to be complete. When in doubt please contact your supplier.

Remark: Adaptor frame for 50x50 mm required.

## 21.2.1 Complete outlets OAD/S with assembled adaptors



Order no.	Description	Type	Colour
H02051C0514	OAD/S with 2xSC Duplex, assembled	OAD/S Outlet for cable duct, with 2 SC Duplex adaptors, ceramic/metal	alpine white
H02051C0515	OAD/S with 2xST/SC Duplex, assembled	OAD/S Outlet for cable duct, with 2 ST/SC Duplex adaptors, ceramic/metal	alpine white



Order no.	Description	Type	Colour
H02051C0510	OAD/S with 2xST Duplex, assembled	OAD/S Outlet for cable duct, with 2 ST Duplex adaptors, ceramic/metal	alpine white



Order no.	Description	Type	Colour
H02051C0534	OAD/S with 2xLC Duplex, assembled	OAD/S Outlet for cable duct, with 2 LC Duplex adaptors, ceramic	alpine white

Outlet parts OAD/S for individual ordering

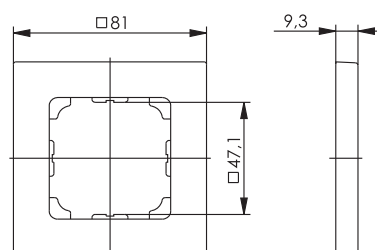
21.2.2



Order no.	Description	Type
H02051A0500	OAD/S 2xSC Duplex	Outlet kit for 2xSC Duplex or 2xST/SC Duplex or 2xST Duplex adaptor or 2xLC Quad
H02051A0503	OAD/S 2xLC Duplex	Outlet kit for 2xLC Duplex



Order no.	Description	Type	Colour
B00043A0045	Covering cap for OAD/S	with marking label and transparent plastic cover	alpine white



Order no.	Short name	Type	Colour
B00004A0024	Cover frame	single, 81x81	alpine white

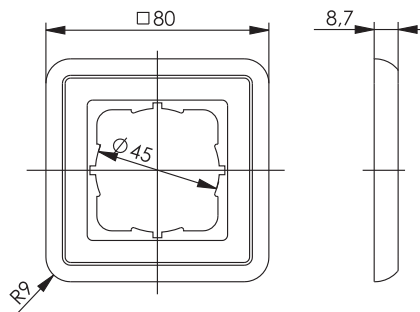
21.2

## 21.2

## FO Outlets OAD/S

## 21.2.2

## Outlet parts OAD/S for individual ordering



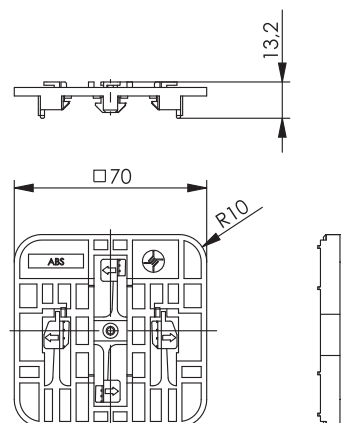
Order no.	Short name	Type	Colour
B00004A0021	Cover frame	single, 80x80	alpine white

## 21.2.3

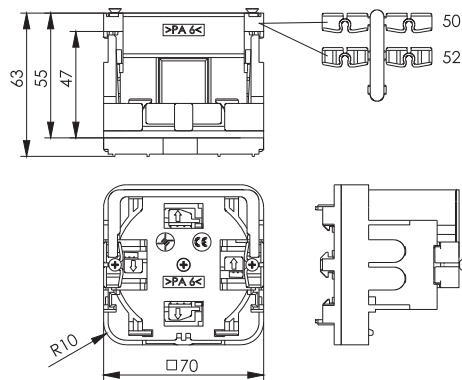
## Accessories for OAD/S



Order no.	Description	Type	Colour
H02000C0060	Surface Mount Set for OAD/S	Surface Mount Set for OAD/S data channel outlet, carrier with cover, 80x80x49 mm	alpine white



Order no.	Short name	Type
H02000A0054	Top hat rail adaptor for surface mounting set	for top hat rails DIN 60715



Order no.	Short name	Type
H02010B0014	Universal Equipment Mounting Set for installation of outlets in cable ducts for heights 47, 50, 52 and 55 mm and for top hat rails, C-rails, Combi-rails	without half shell

### Pre-assembled FITH OAD/S outlet

21.3

#### Performance Characteristics

- FITH (Fiber-in-the-Home) fiber optic outlet with cable reel for pre-terminated fiber optical cable
- ready-to-install - no need for measuring cable length or splicing optical fibers
- Adaptors with dust cover and laser protection installed
- Fiber G657.A2



Order no.	Short name	Type	Length	Remarks
H02082A0001	FITH OAD/S outlet, pre-assembled with 2 pcs. LC/APC Duplex adaptors and 4 LC/APC plugs	cable 4 fibers Singlemode	25 m	ready-to-install
H02082A0002	FITH OAD/S outlet, pre-assembled with 2 pcs. LC/APC Duplex adaptors and 4 LC/APC plugs	cable 4 fibers Singlemode	50 m	ready-to-install
H02082A0003	FITH OAD/S outlet, pre-assembled with 2 pcs. LC/APC Duplex adaptors and 4 LC/APC plugs	cable 4 fibers Singlemode	75 m	ready-to-install
H02082A0004	FITH OAD/S outlet, pre-assembled with 2 pcs. LC/APC Duplex adaptors and 4 LC/APC plugs	cable 4 fibers Singlemode	100 m	ready-to-install

### FO Outlet OAD with Splice Holder

21.4

#### Performance Characteristics

- the fiber optic outlet with integrated splice protection
- suitable for standard double mounting boxes and DIN mounting plates (Ø 45 mm) or 50x50 mm cutout
- suitable for switching programs of several manufacturer
- horizontal and vertical installation, cable exit can be rotated in 90° steps
- space for fiber loops
- integrated splice holder for 8 crimp splices systems

21.4

## 21.4

## FO Outlet OAD with Splice Holder

## OAD is compatible with the following switching programs\*

Busch-Jäger	PEHA	Jung	GIRA	Kopp	ELSO	Merten	Berker
Alpha nea	Standard	ST550	Standard	Color	Novia	Octo-Color	Arsys
Reflex SI	Dialog	CD500	System 55	Denver	Fashion	Atelier	Cliptec
Reflex SI	Tangenta	LS990	S-Color	Vision	Scala	Standard	Modul 2
Linear							
Impuls		CD plus	Basic	Noblesse	Classic		
SF solo		A500					
		A plus					

\*This table display is only a selection and does not claim to be complete. When in doubt please contact your supplier.

Remark: Adaptor frame for 50x50 mm required.

## 21.4.1

## Complete outlets OAD with assembled adaptors



Order no.	Description	Type	Colour
H02051C0050	OAD Single Outlet with 4xST, assembled	OAD Outlet with 4 ST Adaptors, ceramic/metal	alpine white



Order no.	Description	Type	Colour
H02051C0058	OAD Single Outlet with 2xSC Duplex, assembled	OAD Outlet with 2 SC Duplex-Adaptors, ceramic sleeve/plastic housing	alpine white
H02051C0066	OAD Single Outlet with 2xST/SC Duplex, assembled	OAD Outlet with 2 T-ST/SC Duplex-Adaptors, ceramic sleeve/ plastic housing	alpine white



Order no.	Description	Type	Colour
H02051C0072	OAD single outlet with 2xLC Quad, assembled	OAD outlet, with 2xLC Quad adaptors, ceramic	alpine white





Order no.	Description	Type	Colour
H02051C0060	OAD Double Outlet with 4xSC Duplex, assembled	OAD Outlet, with 4 SC Duplex Adaptors, ceramic sleeve, plastic housing	alpine white
H02051C0068	OAD Double Outlet with 4xST/SC Duplex, assembled	OAD Outlet, with 4 ST/SC Duplex, ceramic sleeve/plastic housing	alpine white

## Outlet parts OAD for individual ordering

21.4.2



Order no.	Description	Type
H02051A0000	Outlet part OAD for 4x ST	Housing with 1 adaptor plate for 4 ST adaptors
H02051A0001	Outlet part OAD for 8x ST	Housing with 2 adaptor plates for 8 ST adaptors
H02051A0002	Outlet part OAD for 2x SC Duplex / 2 x LC Quad	Housing with 1 adaptor plate for 2 SC Duplex adaptors or 2 LC Quad adaptors
H02051A0003	Outlet part OAD for 4x SC Duplex, 4 x LC Quad	Housing with 2 adaptor plates for 4 SC Duplex adaptors or 4 LC Quad adaptors

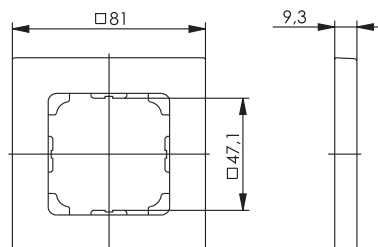


Order no.	Description	Type	Colour
B00044A0079	Covering cap	with marking label	alpine white

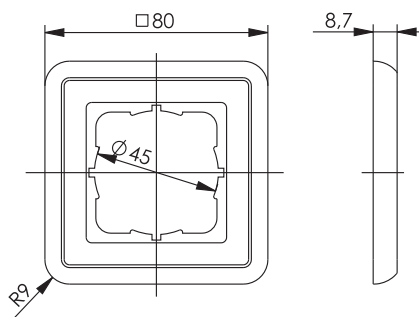
21.4

## 21.4 FO Outlet OAD with Splice Holder

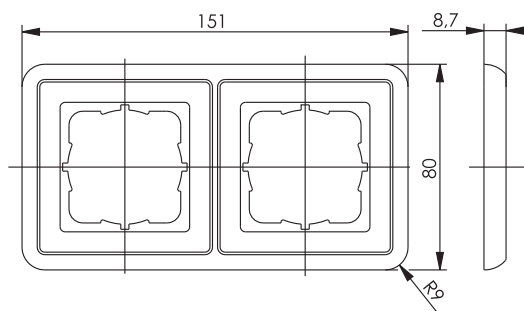
## 21.4.2 Outlet parts OAD for individual ordering



Order no.	Short name	Type	Colour
B00004A0024	Cover frame	single, 81x81	alpine white



Order no.	Short name	Type	Colour
B00004A0021	Cover frame	single, 80x80	alpine white



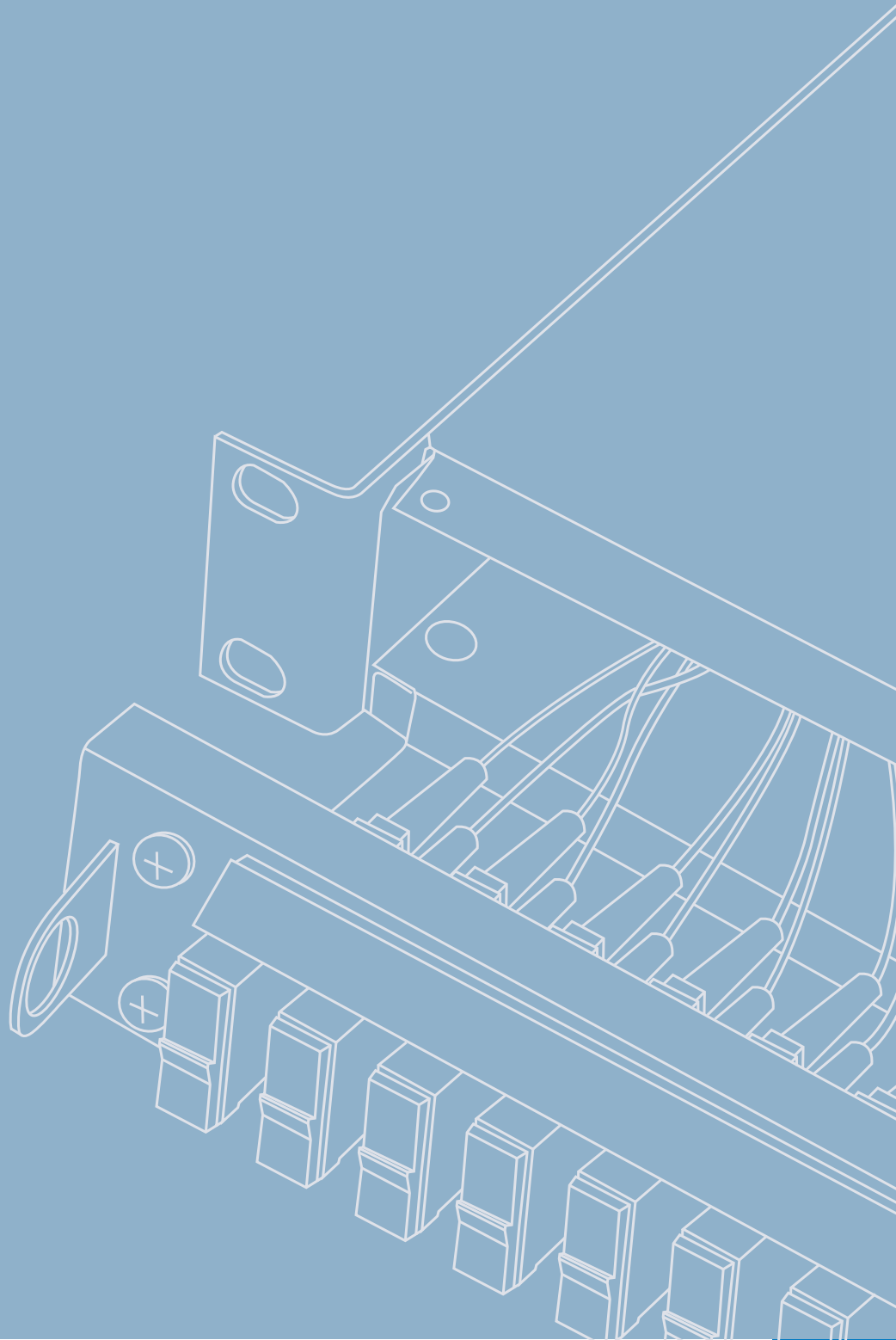
Order no.	Short name	Type	Colour
B00005A0009	Cover frame	double, 80x151	alpine white

## 21.4.3 Accessories for OAD



Order no.	Description	Type	Colour
H02000A0085	surface mount box for OAD	inclusive blind cover	alpine white

## FO Patch Panels





# 22

## FO Patch Panels

<b>22.1</b>	<b>19" FO Patch Panels assembled.....</b>	<b>291</b>
22.1.1	ECONOMY V assembled .....	291
22.1.2	BASIS V assembled .....	292
22.1.3	BASIS eco assembled.....	295
22.1.4	PROFI V assembled.....	298
<b>22.2</b>	<b>19" FO Patch Panels for Individual Ordering .....</b>	<b>301</b>
22.2.1	ECONOMY V for individual ordering .....	301
22.2.2	BASIS V for individual ordering .....	301
22.2.3	PROFI V for individual ordering .....	302
22.2.4	PROFI Plus for individual ordering .....	302
22.2.5	PROFI T for individual ordering .....	303
<b>22.3</b>	<b>Accessories - Front Plates for Individual Ordering .....</b>	<b>303</b>
22.3.1	Front plates for Housing Types ECONOMY V / BASIS V / PROFI V / PROFI Plus / PROFI T.....	303
<b>22.4</b>	<b>Modular Fiber Optic Distribution System.....</b>	<b>304</b>
22.4.1	19" FO Module Carrier 3 HU / 84 PU .....	304
22.4.2	Cable Fixing Set for 19" FO Module Carrier 3 HU .....	305
22.4.3	19" FO Module Carrier 1 HU.....	305
22.4.4	Fiber Optic Modules 3 HU/7 PU - assembled.....	305
22.4.5	Fiber Optic Modules 3 HU/7 PU - Housings for individual ordering.....	306
22.4.6	Fiber Optic Modules 3 HU/7 PU - front plates for individual ordering .....	306
22.4.7	19" FO Distribution panel 1 HU .....	307
22.4.8	19" FO loop storage box 1 HU.....	307
22.4.9	Cable Entries for Distribution Panel and Loop Storage Box .....	308
<b>22.5</b>	<b>Accessories for 19" FO Patch Panels.....</b>	<b>308</b>
22.5.1	Cable glands and fiber protection tube .....	308
22.5.2	Splice cassettes, splice holders, splice protectors and cable tube .....	308
22.5.3	Covers for unused panel piercings .....	310
22.5.4	Additional Accessories .....	310

Telegärtner offers a comprehensive range of fiber optic patch panels for nearly any application. Shelves can be ordered

preloaded or individually configured with fixed and sliding options, pre-assembled or modular.

	ECONOMY V		BASIS V		BASIS eco	PROFI V		PROFI Plus		PROFI T		
<b>Mechanical Characteristics</b>												
Housing	sheet steel 1 mm, powder-laminated, light grey RAL 7035, black RAL 9005 (BASIS V/PROFI V)											
Protection acc. to IEC 60529	IP20		IP20		IP20	IP20		IP20		IP20		
Front plates	sheet aluminium 1.5 mm, powder-laminated, light grey RAL 7035 / black RAL 9005, port no. imprinted, marking strip with plastic cover optional											
Cable entries	strain relief bar for cable ties		2x M20; 2x M25		2x M20; 2x M25		2x M25		6x M25		2x M25	
Panel piercings	for ST, SC, SC Duplex, E2000, LC Duplex, FC				for ST, SC, SC Duplex, E2000, LC Duplex		for ST, SC, SC Duplex, E2000, LC Duplex, FC					
<b>Dimensions in mm</b>	<b>1 HU</b>	<b>2 HU</b>	<b>1 HU</b>	<b>2 HU</b>	<b>1 HU</b>	<b>2 HU</b>	<b>1 HU</b>	<b>2 HU</b>	<b>1 HU</b>	<b>2 HU</b>	<b>1 HU</b>	<b>2 HU</b>
Width	482	482	482	482	482	-	482	482	482	482	482	-
Height	44	88	44	88	44	-	44	88	44	88	44	-
Depth	175	175	265	265	265	-	300	300	230	230	265	-

## 19" FO Patch Panels assembled

22.1

### ECONOMY V assembled

22.1.1

### Performance Characteristics

- For installation of Breakout cables, Mini Breakout cables and TICNET pre-terminated cables
- Fixed housing
- 2 fixing brackets included, 50 mm recessed mounting possible

### Scope of delivery:

- Housing
- Front plate
- Adaptors
- Cable ties



Order no.	Housing type	Number of Adaptors	Adaptor Type	Adaptor: Colour	Remarks
H02030A0018	ECONOMY V 1 HU	12	ST, ceramic sleeve, metal housing	metal	for singlemode and multimode
H02030A0021	ECONOMY V 1 HU	24	ST, ceramic sleeve, metal housing	metal	for singlemode and multimode

22.1

## 22.1 19" FO Patch Panels assembled

## 22.1.1 ECONOMY V assembled

Order no.	Housing type	Number of Adaptors	Adaptor Type	Adaptor: Colour	Remarks
H02030A0016	ECONOMY V 1 HU	6	SC Duplex, ceramic sleeve, plastic housing	blue	for singlemode and multimode
H02030M0016	ECONOMY V 1 HU	6	SC Duplex, ceramic sleeve, plastic housing	beige	for multimode
H02030T0016	ECONOMY V 1 HU	6	SC Duplex, ceramic sleeve, plastic housing	aqua	for multimode OM3
H02030V0016	ECONOMY V 1 HU	6	SC Duplex, ceramic sleeve, plastic housing	black	for multimode OM4
H02030A0019	ECONOMY V 1 HU	12	SC Duplex, ceramic sleeve, plastic housing	blue	for singlemode and multimode
H02030M0019	ECONOMY V 1 HU	12	SC Duplex, ceramic sleeve, plastic housing	beige	for multimode
H02030T0019	ECONOMY V 1 HU	12	SC Duplex, ceramic sleeve, plastic housing	aqua	for multimode OM3
H02030V0019	ECONOMY V 1 HU	12	SC Duplex, ceramic sleeve, plastic housing	black	for multimode OM4
H02030A0022	ECONOMY V 1 HU	24	SC Duplex, ceramic sleeve, plastic housing	blue	for singlemode and multimode
H02030M0022	ECONOMY V 1 HU	24	SC Duplex, ceramic sleeve, plastic housing	beige	for multimode
H02030T0022	ECONOMY V 1 HU	24	SC Duplex, ceramic sleeve, plastic housing	aqua	for multimode OM3
H02030V0022	ECONOMY V 1 HU	24	SC Duplex, ceramic sleeve, plastic housing	black	for multimode OM4

Order no.	Housing type	Number of Adaptors	Adaptor Type	Adaptor: Colour	Remarks
H02030A0608	ECONOMY V 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	blue	for singlemode and multimode
H02030M0608	ECONOMY V 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	beige	for multimode
H02030T0608	ECONOMY V 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	aqua	for multimode OM3
H02030V0608	ECONOMY V 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	black	for multimode OM4
H02030A0609	ECONOMY V 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	blue	for singlemode and multimode
H02030M0609	ECONOMY V 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	beige	for multimode
H02030T0609	ECONOMY V 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	aqua	for multimode OM3
H02030V0609	ECONOMY V 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	black	for multimode OM4
H02030A0610	ECONOMY V 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	blue	for singlemode and multimode
H02030M0610	ECONOMY V 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	beige	for multimode
H02030T0610	ECONOMY V 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	aqua	for multimode OM3
H02030V0610	ECONOMY V 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	black	for multimode OM4

## 22.1.2 BASIS V assembled

## Performance Characteristics

- For installation of multifiber cables and TICNET pre-terminated cables
- Fixed housing
- 2 fixing brackets included, 50 mm recessed mounting possible

## Scope of delivery:

- Housing with each 2 cable entries for M20 and M25 cable glands
- 1 cable gland M20 for 5-9 mm
- 1 cable gland M25 for 9-16 mm
- 2 covers for M20 and M25
- Splice cassette with integrated crimp splice holders for max. 24 fibers and cover
- Front plate
- Adaptors and Pigtails see tables

Panels with pigtails include crimp splice protectors type Telekom and marking strip.



Order no.	Housing type	Number of Adaptors	Adaptor Type	Adaptor: Colour	Number of Splice Cassettes	Remarks
H02030A0000	BASIS V 1 HU	12	ST, ceramic sleeve, metal housing	metal	1	for singlemode and multimode
H02030A0001	BASIS V 1 HU	24	ST, ceramic sleeve, metal housing	metal	2	for singlemode and multimode

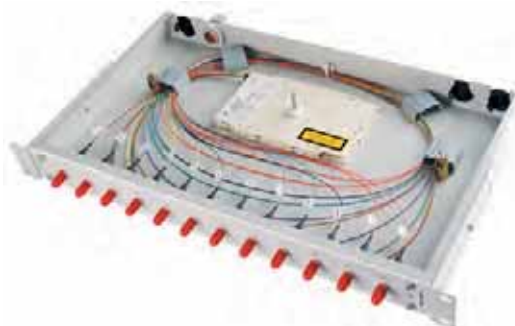
## FO Patch Panels

## 22

Order no.	Housing type	Number of Adaptors	Adaptor Type	Adaptor: Colour	No. of Splice Cassettes	Remarks
H02030A0008	BASIS V 1 HU	6	SC Duplex, ceramic sleeve, plastic housing	blue	1	for singlemode and multimode
H02030M0008	BASIS V 1 HU	6	SC Duplex, ceramic sleeve, plastic housing	beige	1	for multimode
H02030T0008	BASIS V 1 HU	6	SC Duplex, ceramic sleeve, plastic housing	aqua	1	for multimode OM3
H02030V0008	BASIS V 1 HU	6	SC Duplex, ceramic sleeve, plastic housing	black	1	for multimode OM4
H02030A0009	BASIS V 1 HU	12	SC Duplex, ceramic sleeve, plastic housing	blue	2	for singlemode and multimode
H02030M0009	BASIS V 1 HU	12	SC Duplex, ceramic sleeve, plastic housing	beige	2	for multimode
H02030T0009	BASIS V 1 HU	12	SC Duplex, ceramic sleeve, plastic housing	aqua	2	for multimode OM3
H02030V0009	BASIS V 1 HU	12	SC Duplex, ceramic sleeve, plastic housing	black	2	for multimode OM4
H02030A0034	BASIS V 1 HU	24	SC Duplex, ceramic sleeve, plastic housing	blue	2	for singlemode and multimode
H02030M0034	BASIS V 1 HU	24	SC Duplex, ceramic sleeve, plastic housing	beige	2	for multimode
H02030T0034	BASIS V 1 HU	24	SC Duplex, ceramic sleeve, plastic housing	aqua	2	for multimode OM3
H02030V0034	BASIS V 1 HU	24	SC Duplex, ceramic sleeve, plastic housing	black	2	for multimode OM4

Order no.	Housing type	Number of Adaptors	Adaptor Type	Adaptor: Colour	No. of Splice Cassettes	Remarks
H02030A0590	BASIS V 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	blue	1	for singlemode and multimode
H02030M0590	BASIS V 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	beige	1	for multimode
H02030T0590	BASIS V 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	aqua	1	for multimode OM3
H02030V0590	BASIS V 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	black	1	for multimode OM4
H02030A0491	BASIS V 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	blue	2	for singlemode and multimode
H02030M0491	BASIS V 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	beige	2	for multimode
H02030T0491	BASIS V 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	aqua	2	for multimode OM3
H02030V0491	BASIS V 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	black	2	for multimode OM4
H02030A0492	BASIS V 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	blue	2	for singlemode and multimode
H02030M0492	BASIS V 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	beige	2	for multimode
H02030T0492	BASIS V 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	aqua	2	for multimode OM3
H02030V0492	BASIS V 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	black	2	for multimode OM4

Order no.	Housing type	Number of Adaptors	Adaptor Type	Adaptor: Colour	No. of Splice Cassettes	Remarks
H02030A0554	BASIS V 1 HU	12	E2000/APC, ceramic sleeve, plastic housing	green	1	for singlemode
H02030A0594	BASIS V 1 HU	24	E2000/APC, ceramic sleeve, plastic housing	green	2	for singlemode



Order no.	Housing type	Number of Adaptors	Adaptor Type	Fiber Pigtaills	Colour	Remarks
H02030E0000	BASIS V 1 HU	12	ST, ceramic sleeve, metal housing	12x 9/125, OS2, 2 m, ST	metal	coloured, stripped for splicing
H02030F0000	BASIS V 1 HU	12	ST, ceramic sleeve, metal housing	12x 50/125, OM2, 2 m, ST	metal	coloured, stripped for splicing
H02030K0000	BASIS V 1 HU	12	ST, ceramic sleeve, metal housing	12x 50/125, OM3, 2 m, ST	metal	coloured, stripped for splicing
H02030E0001	BASIS V 1 HU	24	ST, ceramic sleeve, metal housing	24x 9/125, OS2, 2 m, ST	metal	coloured, stripped for splicing
H02030F0001	BASIS V 1 HU	24	ST, ceramic sleeve, metal housing	24x 50/125, OM2, 2 m, ST	metal	coloured, stripped for splicing
H02030K0001	BASIS V 1 HU	24	ST, ceramic sleeve, metal housing	24x 50/125, OM3, 2 m, ST	metal	coloured, stripped for splicing

## 22.1

## 19" FO Patch Panels assembled

## 22.1.2

## BASIS V assembled

Order no.	Housing type	Number of Adaptors	Adaptor Type	Fiber Pigtailes	Colour	Remarks
H02030E0008	BASIS V 1 HU	6	SC Duplex, ceramic sleeve, plastic housing	12x 9/125 OS2, 2 m, SC	blue	coloured, stripped for splicing
H02030F0008	BASIS V 1 HU	6	SC Duplex, ceramic sleeve, plastic housing	12x 50/125 OM2, 2 m, SC	beige	coloured, stripped for splicing
H02030K0008	BASIS V 1 HU	6	SC Duplex, ceramic sleeve, plastic housing	12x 50/125 OM3, 2 m, SC	aqua	coloured, stripped for splicing
H02030G0008	BASIS V 1 HU	6	SC Duplex, ceramic sleeve, plastic housing	12x 50/125 OM4, 2 m, SC	black	coloured, stripped for splicing
H02030E0009	BASIS V 1 HU	12	SC Duplex, ceramic sleeve, plastic housing	24x 9/125 OS2, 2 m, SC	blue	coloured, stripped for splicing
H02030F0009	BASIS V 1 HU	12	SC Duplex, ceramic sleeve, plastic housing	24x 50/125 OM2, 2 m, SC	beige	coloured, stripped for splicing
H02030K0009	BASIS V 1 HU	12	SC Duplex, ceramic sleeve, plastic housing	24x 50/125 OM3, 2 m, SC	aqua	coloured, stripped for splicing
H02030G0009	BASIS V 1 HU	12	SC Duplex, ceramic sleeve, plastic housing	24x 50/125 OM4, 2 m, SC	black	coloured, stripped for splicing
H02030E0034	BASIS V 1 HU	24	SC Duplex, ceramic sleeve, plastic housing	48x 9/125 OS2, 2 m, SC	blue	coloured, stripped for splicing
H02030F0034	BASIS V 1 HU	24	SC Duplex, ceramic sleeve, plastic housing	48x 50/125 OM2, 2 m, SC	beige	coloured, stripped for splicing
H02030K0034	BASIS V 1 HU	24	SC Duplex, ceramic sleeve, plastic housing	48x 50/125 OM3, 2 m, SC	aqua	coloured, stripped for splicing
H02030G0034	BASIS V 1 HU	24	SC Duplex, ceramic sleeve, plastic housing	48x 50/125 OM4, 2 m, SC	black	coloured, stripped for splicing

Order no.	Housing type	Number of Adaptors	Adaptor Type	Fiber Pigtailes	Colour	Remarks
H02030E0590	BASIS V 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	12x 9/125 OS2, 2 m, LC	blue	coloured, stripped for splicing
H02030F0590	BASIS V 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	12x 50/125 OM2, 2 m, LC	beige	coloured, stripped for splicing
H02030K0590	BASIS V 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	12x 50/125 OM3, 2 m, LC	aqua	coloured, stripped for splicing
H02030G0590	BASIS V 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	12x 50/125 OM4, 2 m, LC	black	coloured, stripped for splicing
H02030E0491	BASIS V 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	24x 9/125 OS2, 2 m, LC	blue	coloured, stripped for splicing
H02030F0491	BASIS V 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	24x 50/125 OM2, 2 m, LC	beige	coloured, stripped for splicing
H02030K0491	BASIS V 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	24x 50/125 OM3, 2 m, LC	aqua	coloured, stripped for splicing
H02030G0491	BASIS V 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	24x 50/125 OM4, 2 m, LC	black	coloured, stripped for splicing
H02030E0492	BASIS V 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	48x 9/125 OS2, 2 m, LC	blue	coloured, stripped for splicing
H02030F0492	BASIS V 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	48x 50/125 OM2, 2 m, LC	beige	coloured, stripped for splicing
H02030K0492	BASIS V 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	48x 50/125 OM3, 2 m, LC	aqua	coloured, stripped for splicing
H02030G0492	BASIS V 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	48x 50/125 OM4, 2 m, LC	black	coloured, stripped for splicing

Order no.	Housing type	Number of Adaptors	Adaptor Type	Fiber Pigtailes	Colour	Remarks
H02030E0554	BASIS V 1 HU	12	E2000/APC, ceramic sleeve, plastic housing	12x 9/125, OS2, 2 m, E2000/APC	green	coloured, stripped for splicing
H02030E0594	BASIS V 1 HU	24	E2000/APC, ceramic sleeve, plastic housing	24x 9/125, OS2, 2 m, E2000/APC	green	coloured, stripped for splicing



### Performance Characteristics

- For installation of multifiber cables and TICNET pre-terminated cables
- Can accommodate up to 12 splice cassette
- Fixed housing

### Scope of delivery:

- Housing with each 2 cable entries for M20 and M25 glands
- 1 cable gland M20 for 5-9 mm
- 1 cable gland M25 for 9-16 mm
- 2 covers für M20 und M25
- Splice cassette with integrated crimp splice holders for max. 24 fibers and covers
- front plates
- Adaptors and pigtails see tables



Order no.	Housing type	Number of Adaptors	Adaptor Type	Adaptor: Colour	Number of Splice Cassettes	Remarks
H02030S9000	BASIS eco 1 HU	12	ST, ceramic sleeve, metal housing	metal	1	for singlemode and multimode
H02030A9000	BASIS eco 1 HU	12	ST, phosphor bronze sleeve, metal housing	metal	1	for multimode
H02030S9001	BASIS eco 1 HU	24	ST, ceramic sleeve, metal housing	metal	2	for singlemode and multimode
H02030A9001	BASIS eco 1 HU	24	ST, phosphor bronze sleeve, metal housing	metal	2	for multimode

Order no.	Housing type	Number of Adaptors	Adaptor Type	Adaptor: Colour	Number of Splice Cassettes	Remarks
H02030S9008	BASIS eco 1 HU	6	SC Duplex, ceramic sleeve, plastic housing	blue	1	for singlemode and multimode
H02030A9008	BASIS eco 1 HU	6	SC Duplex, phosphor bronze sleeve, plastic housing	beige	1	for multimode
H02030T9008	BASIS eco 1 HU	6	SC Duplex, phosphor bronze sleeve, plastic housing	aqua	1	for multimode OM3
H02030V9008	BASIS eco 1 HU	6	SC Duplex, phosphor bronze sleeve, plastic housing	black	1	for multimode OM4
H02030S9009	BASIS eco 1 HU	12	SC Duplex, ceramic sleeve, plastic housing	blue	2	for singlemode and multimode
H02030A9009	BASIS eco 1 HU	12	SC Duplex, phosphor bronze sleeve, plastic housing	beige	2	for multimode
H02030T9009	BASIS eco 1 HU	12	SC Duplex, phosphor bronze sleeve, plastic housing	aqua	2	for multimode OM3
H02030V9009	BASIS eco 1 HU	12	SC Duplex, phosphor bronze sleeve, plastic housing	black	2	for multimode OM4
H02030S9034	BASIS eco 1 HU	24	SC Duplex, ceramic sleeve, plastic housing	blue	2	for singlemode and multimode
H02030A9034	BASIS eco 1 HU	24	SC Duplex, phosphor bronze sleeve, plastic housing	beige	2	for multimode
H02030T9034	BASIS eco 1 HU	24	SC Duplex, phosphor bronze sleeve, plastic housing	aqua	2	for multimode OM3
H02030V9034	BASIS eco 1 HU	24	SC Duplex, phosphor bronze sleeve, plastic housing	black	2	for multimode OM4

## 22.1

## 19" FO Patch Panels assembled

## 22.1.3

## BASIS eco assembled

Order no.	Housing type	Number of Adaptors	Adaptor Type	Adaptor: Colour	Number of Splice Cassettes	Remarks
H02030S9590	BASIS eco 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	blue	1	for singlemode and multimode
H02030A9590	BASIS eco 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	beige	1	for multimode
H02030T9590	BASIS eco 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	aqua	1	for multimode OM3
H02030V9590	BASIS eco 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	black	1	for multimode OM4
H02030S9451	BASIS eco 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	blue	2	for singlemode and multimode
H02030A9451	BASIS eco 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	beige	2	for multimode
H02030T9451	BASIS eco 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	aqua	2	for multimode OM3
H02030V9451	BASIS eco 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	black	2	for multimode OM4
H02030S9452	BASIS eco 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	blue	2	for singlemode and multimode
H02030A9452	BASIS eco 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	beige	2	for multimode
H02030T9452	BASIS eco 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	aqua	2	for multimode OM3
H02030V9452	BASIS eco 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	black	2	for multimode OM4



Order no.	Housing type	Number of Adaptors	Adaptor Type	Colour	Fiber Pigtails	Remarks
H02030D9000	BASIS eco 1 HU	12	ST, ceramic sleeve, metal housing	metal	12x 9/125, OS2, 2 m, ST	coloured, stripped for splicing
H02030B9000	BASIS eco 1 HU	12	ST, phosphor bronze sleeve, metal housing	metal	12x 50/125, OM2, 2 m, ST	coloured, stripped for splicing
H02030K9000	BASIS eco 1 HU	12	ST, phosphor bronze sleeve, metal housing	metal	12x 50/125, OM3, 2 m, ST	coloured, stripped for splicing
H02030G9000	BASIS eco 1 HU	12	ST, phosphor bronze sleeve, metal housing	metal	12x 50/125, OM4, 2 m, ST	coloured, stripped for splicing
H02030D9001	BASIS eco 1 HU	24	ST, ceramic sleeve, metal housing	metal	24x 9/125, OS2, 2 m, ST	coloured, stripped for splicing
H02030B9001	BASIS eco 1 HU	24	ST, phosphor bronze sleeve, metal housing	metal	24x 50/125, OM2, 2 m, ST	coloured, stripped for splicing
H02030K9001	BASIS eco 1 HU	24	ST, phosphor bronze sleeve, metal housing	metal	24x 50/125, OM3, 2 m, ST	coloured, stripped for splicing
H02030G9001	BASIS eco 1 HU	24	ST, phosphor bronze sleeve, metal housing	metal	24x50/125, OM4, 2m, ST	coloured, stripped for splicing

## FO Patch Panels

## 22

Order no.	Housing type	Number of Adaptors	Adaptor Type	Colour	Fiber Pigtailes	Remarks
H02030D9008	BASIS eco 1 HU	6	SC Duplex, ceramic sleeve, plastic housing	blue	12x 9/125, OS2, 2 m, SC	coloured, stripped for splicing
H02030B9008	BASIS eco 1 HU	6	SC Duplex, phosphor bronze sleeve, plastic housing	beige	12x 50/125, OM2, 2 m, SC	coloured, stripped for splicing
H02030K9008	BASIS eco 1 HU	6	SC Duplex, phosphor bronze sleeve, plastic housing	aqua	12x 50/125, OM3, 2 m, SC	coloured, stripped for splicing
H02030G9008	BASIS eco 1 HU	6	SC Duplex, phosphor bronze sleeve, plastic housing	black	12x 50/125, OM4, 2 m, SC	coloured, stripped for splicing
H02030D9009	BASIS eco 1 HU	12	SC Duplex, ceramic sleeve, plastic housing	blue	24x 9/125, OS2, 2 m, SC	coloured, stripped for splicing
H02030B9009	BASIS eco 1 HU	12	SC Duplex, phosphor bronze sleeve, plastic housing	beige	24x 50/125, OM2, 2 m, SC	coloured, stripped for splicing
H02030K9009	BASIS eco 1 HU	12	SC Duplex, phosphor bronze sleeve, plastic housing	aqua	24x 50/125, OM3, 2 m, SC	coloured, stripped for splicing
H02030G9009	BASIS eco 1 HU	12	SC Duplex, phosphor bronze sleeve, plastic housing	black	24x 50/125, OM4, 2 m, SC	coloured, stripped for splicing
H02030D9034	BASIS eco 1 HU	24	SC Duplex, ceramic sleeve, plastic housing	blue	48x 9/125, OS2, 2 m, SC	coloured, stripped for splicing
H02030B9034	BASIS eco 1 HU	24	SC Duplex, phosphor bronze sleeve, plastic housing	beige	48x 50/125, OM2, 2 m, SC	coloured, stripped for splicing
H02030K9034	BASIS eco 1 HU	24	SC Duplex, phosphor bronze sleeve, plastic housing	aqua	48x 50/125, OM3, 2 m, SC	coloured, stripped for splicing
H02030G9034	BASIS eco 1 HU	24	SC Duplex, phosphor bronze sleeve, plastic housing	black	48x 50/125, OM4, 2 m, SC	coloured, stripped for splicing

Order no.	Housing type	Number of Adaptors	Adaptor Type	Colour	Fiber Pigtailes	Remarks
H02030D9590	BASIS eco 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	blue	12x 9/125, OS2, 2 m, LC	coloured, stripped for splicing
H02030B9590	BASIS eco 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	beige	12x 50/125, OM2, 2 m, LC	coloured, stripped for splicing
H02030K9590	BASIS eco 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	aqua	12x 50/125, OM3, 2 m, LC	coloured, stripped for splicing
H02030G9590	BASIS eco 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	black	12x 50/125, OM4, 2 m, LC	coloured, stripped for splicing
H02030D9451	BASIS eco 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	blue	24x 9/125, OS2, 2 m, LC	coloured, stripped for splicing
H02030B9451	BASIS eco 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	beige	24x 50/125, OM2, 2 m, LC	coloured, stripped for splicing
H02030K9451	BASIS eco 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	aqua	24x 50/125, OM3, 2 m, LC	coloured, stripped for splicing
H02030G9451	BASIS eco 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	black	24x 50/125, OM4, 2 m, LC	coloured, stripped for splicing
H02030D9452	BASIS eco 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	blue	48x 9/125, OS2, 2 m, LC	coloured, stripped for splicing
H02030B9452	BASIS eco 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	beige	48x 50/125, OM2, 2 m, LC	coloured, stripped for splicing
H02030K9452	BASIS eco 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	aqua	48x 50/125, OM3, 2 m, LC	coloured, stripped for splicing
H02030G9452	BASIS eco 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	black	48x 50/125, OM4, 2 m, LC	coloured, stripped for splicing

22.1

## 22.1

## 19" FO Patch Panels assembled

## 22.1.4

## PROFI V assembled

## Performance Characteristics

- For installation of loose tube cables
- With pull-out drawer
- Fixed rear panel for secure cable attachment

## Scope of delivery:

- Housing with 2 cable entries for M25
- 1 cable gland M25 for 9-16 mm
- 1 cover for M25
- 1 fiber protection tube with 12 mm inner diameter
- Front plate
- Splice cassette with integrated splice holders for max. 24 fibers und cover
- Adaptors and pigtails see table

Panels with pigtails include crimp splice protectors type Telekom and marking strip.



Order no.	Housing type	No. of Adaptors	Adaptor Type	Adaptor: Colour	No. of Splice Cassettes	Remarks
H02030A0002	PROFI V 1 HU	12	ST, ceramic sleeve, metal housing	metal	1	for singlemode and multimode
H02030A0003	PROFI V 1 HU	24	ST, ceramic sleeve, metal housing	metal	2	for singlemode and multimode

Order no.	Housing type	No. of Adaptors	Adaptor Type	Adaptor: Colour	No. of Splice Cassettes	Remarks
H02030A0010	PROFI V 1 HU	6	SC Duplex, ceramic sleeve, plastic housing	blue	1	for singlemode and multimode
H02030M0010	PROFI V 1 HU	6	SC Duplex, ceramic sleeve, plastic housing	beige	1	for multimode
H02030T0010	PROFI V 1 HU	6	SC Duplex, ceramic sleeve, plastic housing	aqua	1	for multimode OM3
H02030V0010	PROFI V 1 HU	6	SC Duplex, ceramic sleeve, plastic housing	black	1	for multimode OM4
H02030A0011	PROFI V 1 HU	12	SC Duplex, ceramic sleeve, plastic housing	blue	2	for singlemode and multimode
H02030M0011	PROFI V 1 HU	12	SC Duplex, ceramic sleeve, plastic housing	beige	2	for multimode
H02030T0011	PROFI V 1 HU	12	SC Duplex, ceramic sleeve, plastic housing	aqua	2	for multimode OM3
H02030V0011	PROFI V 1 HU	12	SC Duplex, ceramic sleeve, plastic housing	black	2	for multimode OM4
H02030A0036	PROFI V 1 HU	24	SC Duplex, ceramic sleeve, plastic housing	blue	2	for singlemode and multimode
H02030M0036	PROFI V 1 HU	24	SC Duplex, ceramic sleeve, plastic housing	beige	2	for multimode
H02030T0036	PROFI V 1 HU	24	SC Duplex, ceramic sleeve, plastic housing	aqua	2	for multimode OM3
H02030V0036	PROFI V 1 HU	24	SC Duplex, ceramic sleeve, plastic housing	black	2	for multimode OM4

## FO Patch Panels

## 22

► Order no.	Housing type	Number of Adaptors	Adaptor Type	Adaptor: Colour	Number of Splice Cassettes	Remarks
H02030A0591	PROFI V 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	blue	1	for singlemode and multimode
H02030M0591	PROFI V 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	beige	1	for multimode
H02030T0591	PROFI V 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	aqua	1	for multimode OM3
H02030V0591	PROFI V 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	black	1	for multimode OM4
H02030A0506	PROFI V 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	blue	2	for singlemode and multimode
H02030M0506	PROFI V 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	beige	2	for multimode
H02030T0506	PROFI V 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	aqua	2	for multimode OM3
H02030V0506	PROFI V 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	black	2	for multimode OM4
H02030A0507	PROFI V 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	blue	2	for singlemode and multimode
H02030M0507	PROFI V 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	beige	2	for multimode
H02030T0507	PROFI V 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	aqua	2	for multimode OM3
H02030V0507	PROFI V 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	black	2	for multimode OM4

► Order no.	Housing type	Number of Adaptors	Adaptor Type	Adaptor: Colour	Number of Splice Cassettes	Remarks
H02030A0555	PROFI V 1 HU	12	E2000/APC, ceramic sleeve, plastic housing	green	1	for singlemode
H02030A0595	PROFI V 1 HU	24	E2000/APC, ceramic sleeve, plastic housing	green	2	for singlemode



► Order no.	Housing type	Number of Adaptors	Adaptor Type	Colour	Fiber Pigtaills	Remarks
H02030E0002	PROFI V 1 HU	12	ST, ceramic sleeve, metal housing	metal	12x 9/125, OS2, 2 m, ST	coloured, stripped for splicing
H02030F0002	PROFI V 1 HU	12	ST, ceramic sleeve, metal housing	metal	12x 50/125, OM2, 2 m, ST	coloured, stripped for splicing
H02030K0002	PROFI V 1 HU	12	ST, ceramic sleeve, metal housing	metal	12x 50/125, OM3, 2 m, ST	coloured, stripped for splicing
H02030E0003	PROFI V 1 HU	24	ST, ceramic sleeve, metal housing	metal	24x 9/125, OS2, 2 m, ST	coloured, stripped for splicing
H02030F0003	PROFI V 1 HU	24	ST, ceramic sleeve, metal housing	metal	24x 50/125, OM2, 2 m, ST	coloured, stripped for splicing
H02030K0003	PROFI V 1 HU	24	ST, ceramic sleeve, metal housing	metal	24x 50/125, OM3, 2 m, ST	coloured, stripped for splicing

22.1

## 22.1

## 19" FO Patch Panels assembled

## 22.1.4

## PROFI V assembled

Order no.	Housing type	Number of Adaptors	Adaptor Type	Colour	Fiber Pigtails	Remarks
H02030E0010	PROFI V 1 HU	6	SC Duplex, ceramic sleeve, plastic housing	blue	12x 9/125, OS2, 2 m, SC	coloured, stripped for splicing
H02030F0010	PROFI V 1 HU	6	SC Duplex, ceramic sleeve, plastic housing	beige	12x 50/125, OM2, 2 m, SC	coloured, stripped for splicing
H02030K0010	PROFI V 1 HU	6	SC Duplex, ceramic sleeve, plastic housing	aqua	12x 50/125, OM3, 2 m, SC	coloured, stripped for splicing
H02030G0010	PROFI V 1 HU	6	SC Duplex, ceramic sleeve, plastic housing	black	12x 50/125, OM4, 2 m, SC	coloured, stripped for splicing
H02030E0011	PROFI V 1 HU	12	SC Duplex, ceramic sleeve, plastic housing	blue	24x 9/125, OS2, 2 m, SC	coloured, stripped for splicing
H02030F0011	PROFI V 1 HU	12	SC Duplex, ceramic sleeve, plastic housing	beige	24x 50/125, OM2, 2 m, SC	coloured, stripped for splicing
H02030K0011	PROFI V 1 HU	12	SC Duplex, ceramic sleeve, plastic housing	aqua	24x 50/125, OM3, 2 m, SC	coloured, stripped for splicing
H02030G0011	PROFI V 1 HU	12	SC Duplex, ceramic sleeve, plastic housing	black	24x 50/125, OM4, 2 m, SC	coloured, stripped for splicing
H02030E0036	PROFI V 1 HU	24	SC Duplex, ceramic sleeve, plastic housing	blue	48x 9/125, OS2, 2 m, SC	coloured, stripped for splicing
H02030F0036	PROFI V 1 HU	24	SC Duplex, ceramic sleeve, plastic housing	beige	48x 50/125, OM2, 2 m, SC	coloured, stripped for splicing
H02030K0036	PROFI V 1 HU	24	SC Duplex, ceramic sleeve, plastic housing	aqua	48x 50/125, OM3, 2 m, SC	coloured, stripped for splicing
H02030G0036	PROFI V 1 HU	24	SC Duplex, ceramic sleeve, plastic housing	black	48x 50/125, OM4, 2 m, SC	coloured, stripped for splicing

Order no.	Housing type	Number of Adaptors	Adaptor Type	Colour	Fiber Pigtails	Remarks
H02030E0591	PROFI V 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	blue	12x 9/125, OS2, 2 m, LC	coloured, stripped for splicing
H02030F0591	PROFI V 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	beige	12x 50/125, OM2, 2 m, LC	coloured, stripped for splicing
H02030K0591	PROFI V 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	aqua	12x 50/125, OM3, 2 m, LC	coloured, stripped for splicing
H02030G0591	PROFI V 1 HU	6	LC Duplex, ceramic sleeve, plastic housing	black	12x 50/125, OM4, 2 m, LC	coloured, stripped for splicing
H02030E0506	PROFI V 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	blue	24x 9/125, OS2, 2 m, LC	coloured, stripped for splicing
H02030F0506	PROFI V 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	beige	24x 50/125, OM2, 2 m, LC	coloured, stripped for splicing
H02030K0506	PROFI V 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	aqua	24x 50/125, OM3, 2 m, LC	coloured, stripped for splicing
H02030G0506	PROFI V 1 HU	12	LC Duplex, ceramic sleeve, plastic housing	black	24x 50/125, OM4, 2 m, LC	coloured, stripped for splicing
H02030E0507	PROFI V 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	blue	48x 9/125, OS2, 2 m, LC	coloured, stripped for splicing
H02030F0507	PROFI V 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	beige	48x 50/125, OM2, 2 m, LC	coloured, stripped for splicing
H02030K0507	PROFI V 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	aqua	48x 50/125, OM3, 2 m, LC	coloured, stripped for splicing
H02030G0507	PROFI V 1 HU	24	LC Duplex, ceramic sleeve, plastic housing	black	48x 50/125, OM4, 2 m, LC	coloured, stripped for splicing

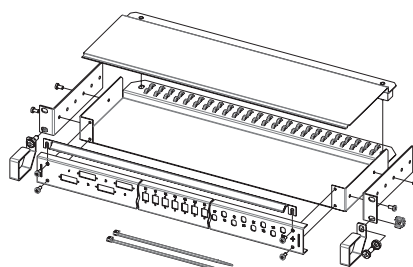
Order no.	Housing type	Number of Adaptors	Adaptor Type	Colour	Fiber Pigtails	Remarks
H02030E0555	PROFI V 1 HU	12	E2000/APC, ceramic sleeve, plastic housing	green	12x 9/125, OS2, 2 m, E2000/APC	coloured, stripped for splicing
H02030E0595	PROFI V 1 HU	24	E2000/APC, ceramic sleeve, plastic housing	green	24x 9/125, OS2, 2 m, E2000/APC	coloured, stripped for splicing

## 19" FO Patch Panels for Individual Ordering

22.2

### ECONOMY V for individual ordering

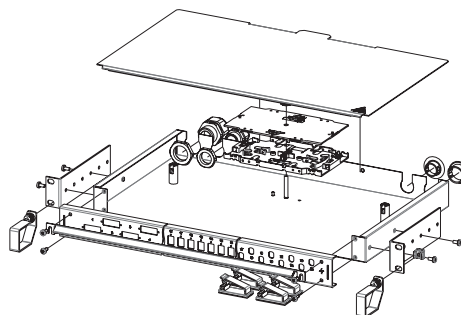
22.2.1



Order no.	Description	Type
H02030A0048	Housing ECONOMY V 1 HU	19" patch panel with fixing bar for cables
H02030A0435	Cover for ECONOMY 1HU	incl. sealing foam strap at cable entry
H02031A0027	Housing ECONOMY V 2 HU	19" patch panel with fixing bar for cables
H02030A0436	Cover for ECONOMY 2HU	incl. sealing foam strap at cable entry

### BASIS V for individual ordering

22.2.2



Order no.	Description	Remarks	Colour
H02030A0293	Housing BASIS V 1 HU	Closed 19" housing for storage of maximum 4 Splice or Combi cassettes, with integrated cable entry holes, one for M20 and one for M25 gland on the left and on the right, with additional strain relief clamps and guiding clips for fibers and cables, protection class IP 20	grey RAL 7035
H02030A4390	Housing BASIS V 1 HU	Closed 19" housing for storage of maximum 4 Splice or Combi cassettes, with integrated cable entry holes, one for M20 and one for M25 gland on the left and on the right, with additional strain relief clamps and guiding clips for fibers and cables, protection class IP 20	black RAL 9005
H02031A0023	Housing BASIS V 2 HU	Closed 19" housing for storage of maximum 8 Splice or Combi cassettes, with integrated cable entry holes, one M20 and one M25 gland on the left and on the right, with additional strain relief clamps and guiding clips for fibers and cables, protection class IP 20	grey RAL 7035

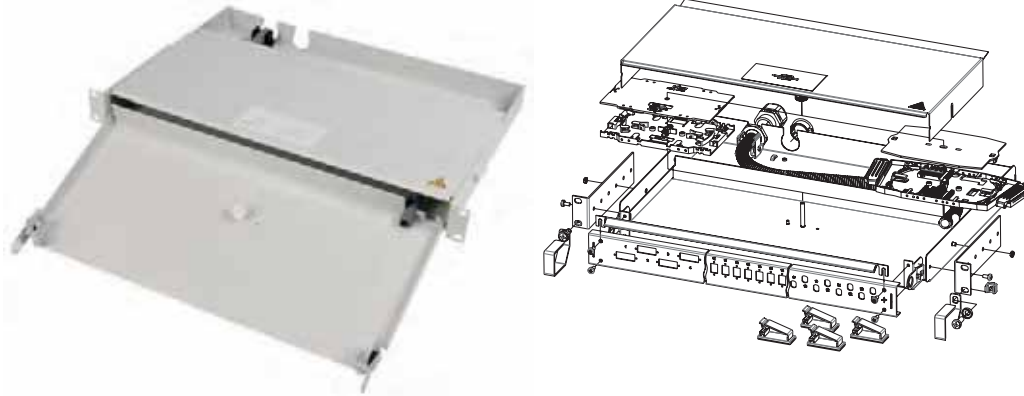
22.2

## 22.2

## 19" FO Patch Panels for Individual Ordering

## 22.2.3

## PROFI V for individual ordering



Order no.	Description	Remarks	Colour
H02030A0400	Housing PROFI V 1 HU	19" housing with closed slide-in unit, for storage of maximum 3 splice cassette or combi cassette, with integrated cable entry holes for 2 M25 glands at the left-hand-side of housing, with guiding for fibres and cables, protection class IP 20	grey RAL 7035
H02030A4400	Housing PROFI V 1 HU	19" housing with closed slide-in unit, for storage of maximum 3 splice cassette or combi cassette, with integrated cable entry holes for 2 M25 glands at the left-hand-side of housing, with guiding for fibres and cables, protection class IP 20	black RAL 9005
H02031A0010	Housing PROFI V 2 HU	19" housing with closed slide-in unit, for storage of maximum 8 splice cassette or combi cassette, with integrated cable entry holes for 2 M25 glands at the left-hand-side of housing, with guiding for fibres and cables, protection class IP 20	grey RAL 7035

## 22.2.4

## PROFI Plus for individual ordering

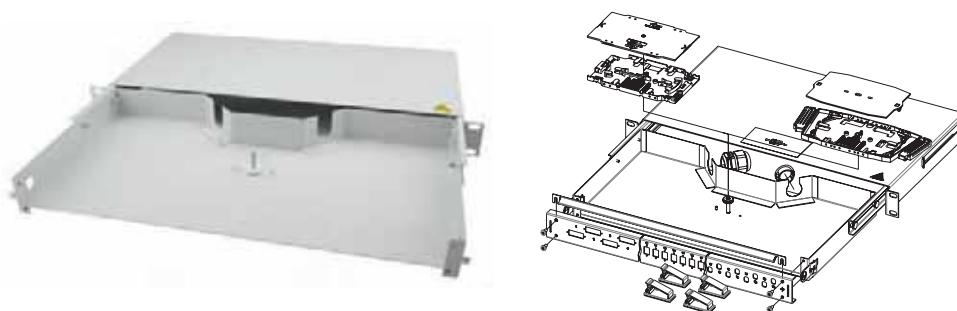


Order no.	Description	Remarks
H02030A0425	Housing PROFI Plus 1 HU	19" housing with closed slide-in unit, with fiber and cable storage in two separate levels within the slide-in, for max. 2 splice cassettes, with cable entry from the rear or from the side (M25 or cable tie), protection class IP 20
H02031A0037	Housing PROFI Plus 2 HU	19" housing with closed slide-in unit, with fiber and cable storage in two separate levels within the slide-in, for max. 5 splice cassettes, with cable entry from the rear or from the side (M25 or cable tie), protection class IP 20



## PROFI T for individual ordering

22.2.5



Order no.	Description	Remarks
H02030A0662	Housing PROFIT T 1 HU	19" housing with closed slide-in unit, for storage of maximum 4 splice cassettes, with 2 integrated central cable entry holes for M25 glands, with guiding for fibres and cables, protection class IP 20

## Accessories - Front plates for individual ordering

22.3

## Front plates for Housing Types ECONOMY V / BASIS V / PROFIT V / PROFIT Plus / PROFIT T

22.3.1



Order no.	HU	Number of panel piercings and connector type	Panel piercing	Number of rows x panel piercings	Marking stripes	Colour
H02025A0400	1	12 ST	Z64	1x12	*)	grey RAL 7035
H02025A0401	1	24 ST	Z64	2x12	*)	grey RAL 7035
H02025A0402	1	12 SC	Z77	1x12	*)	grey RAL 7035
H02025A0403	1	24 SC	Z77	1x24	*)	grey RAL 7035
H02025A0404	1	6 SC Duplex, LC Quad	Z93	1x6 horizontal	*)	grey RAL 7035
H02025A0405	1	12 SC Duplex, LC Quad	Z93	2x6 horizontal	*)	grey RAL 7035
H02025A0477	1	12 SC Duplex, LC Quad	Z93	1x12 vertical	*)	grey RAL 7035
H02025A0406	1	24 SC Duplex, LC Quad	Z93	1x24 vertical	-	grey RAL 7035
H02025A0474	1	12 E2000	Z66	1x12	*)	grey RAL 7035
H02025A0475	1	24 E2000	Z66	1x24	*)	grey RAL 7035
H02025A0543	1	6 LC Duplex	Z99	1x6	*)	grey RAL 7035
H02025A0493	1	12 LC Duplex	Z99	1x12	*)	grey RAL 7035
H02025A0486	1	24 LC Duplex	Z99	1x24	*)	grey RAL 7035
H02025A0467	1	24 FC	Z73	1x24	*)	grey RAL 7035
H02025A0443	1	Dummy plate	-	-	*)	grey RAL 7035



Order no.	HU	Remarks	Colour
H02025A0610	1	for max. 3x 3HU/7PU front plates	grey RAL 7035



Order no.	HU	Number of panel piercings and connector type	Panel piercing	Number of rows x panel piercings	Marking stripes	Colour
H02025A4493	1	12 LC Duplex	Z99	1x12	*)	black RAL 9005
H02025A4486	1	24 LC Duplex	Z99	1x24	*)	black RAL 9005

22.3

\*) see chapter „Additional Accessories“

## 22.3 Accessories - Front plates for individual ordering

## 22.3.1 Front plates for Housing Types ECONOMY V / BASIS V / PROFI V / PROFI Plus / PROFI T



Order no.	HU	Number of panel piercings and connector type	Panel piercing	Number of rows x panel piercings	Marking stripes	Colour
H02025A0416	2	48 ST	Z64	3x16	*)	grey RAL 7035
H02025A0452	2	48 SC Duplex, LC Quad	Z93	2x24 vertical	*)	grey RAL 7035
H02025A0482	2	48 E2000	Z66	2x24	*)	grey RAL 7035
H02025A0567	2	48 LC Duplex	Z99	2x24	*)	grey RAL 7035
H02025A0444	2	Dummy plate	-	-	*)	grey RAL 7035

\*) see chapter „Additional Accessories“

## 22.4 Modular Fiber Optic Distribution System

## Performance Characteristics

- For installation of multifiber loose-tube cables, Breakout, Mini Breakout and TICNET pre-terminated cables
- Modular design
- Individual and customer-specific configuration
- When ordered with pigtails, System Telekom crimp splice protectors and labeling strips are included

## Mechanical Characteristics

Module rack	anodized aluminum 2 mm / 1 mm
Front plates, housings	anodized aluminum 1.5 mm, port no. imprinted
Cable fixing set for Module Carrier	anodized aluminum 2 mm
Distribution panel	steel 1.25 mm / 1 mm, powder-laminated, light grey 7035
Loop storage box	sheet steel 1 mm, powder-laminated, light grey RAL 7035
Cable entries	M25 for 6-20 mm cable diameter in 4 steps; M20 for 6-12 mm cable diameter in 2 steps
Panel piercings	for ST, SC, SC Duplex, E2000, LC Duplex
Dimensions (W x H x D) Module carrier	482 x 132 x 345
Dimensions (W x H x D) Distribution panel	482 x 44 x 168
Dimensions (W x H x D) Loop storage box	482 x 44 x 300

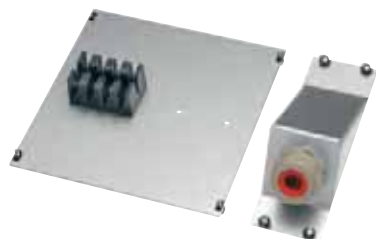
## 22.4.1 19" FO Module Carrier 3 HU / 84 PU



Order no.	Description	Colour	Remarks
H02032A0030	19" FO Module Carrier 3 HU / 84 PU	aluminium sheet anodised	for max. 12 FO Modules 3 HU/ 7 PU

## Cable Fixing Set for 19" FO Module Carrier 3 HU

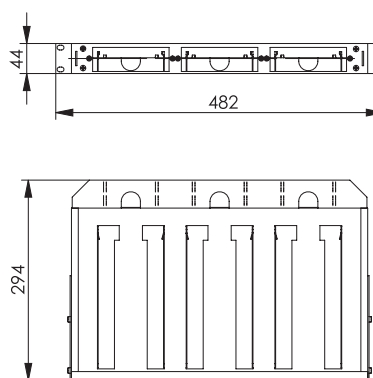
22.4.2



Order no.	Description	HU	PU	PG/Cable diameter
H02032A0031	Cable Fixing Set for Module Carrier	3	8 + 26	16 / 9-13 mm

## 19" FO Module Carrier 1 HU

22.4.3



Order no.	Description	HU	Remarks
H02030A0581	19" FO Module Carrier 1 HU	1	for max. 3 FO modules 3 HU/7 PU

## Fiber Optic Modules 3 HU/7 PU assembled

22.4.4



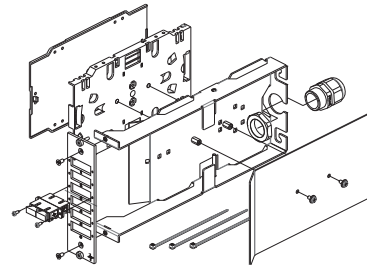
Order no.	Description	HU	PU	Number of Adaptors	Adaptor Type	Colour	Fiber Pigtails	Remarks
H02053D0165	Housing incl. adaptors, splice cassette type Telekom, pigtails	3	7	6	SC Duplex, ceramic sleeve, plastic housing	blue	12 x 9/125, OS2, 2 m, SC	coloured*
H02053B0165	Housing incl. adaptors, splice cassette type Telekom, pigtails	3	7	6	SC Duplex, ceramic sleeve, plastic housing	beige	12 x 50/125, OM2, 2 m, SC	coloured*
H02053K0165	Housing incl. adaptors, splice cassette type Telekom, pigtails	3	7	6	SC Duplex, ceramic sleeve, plastic housing	aqua	12 x 50/125, OM3, 2 m, SC	coloured*
H02053G0165	Housing incl. adaptors, splice cassette type Telekom, pigtails	3	7	6	SC Duplex, ceramic sleeve, plastic housing	black	12 x 50/125, OM4, 2 m, SC	coloured*
H02053D0166	Housing incl. adaptors, splice cassette type Telekom, pigtails	3	7	6	LC Duplex, ceramic sleeve, plastic housing	blue	12 x 9/125, OS2, 2 m, LC	coloured*
H02053B0166	Housing incl. adaptors, splice cassette type Telekom, pigtails	3	7	6	LC Duplex, ceramic sleeve, plastic housing	beige	12 x 50/125, OM2, 2 m, LC	coloured*
H02053K0166	Housing incl. adaptors, splice cassette type Telekom, pigtails	3	7	6	LC Duplex, ceramic sleeve, plastic housing	aqua	12 x 50/125, OM3, 2 m, LC	coloured*
H02053G0166	Housing incl. adaptors, splice cassette type Telekom, pigtails	3	7	6	LC Duplex, ceramic sleeve, plastic housing	black	12 x 50/125, OM4, 2 m, LC	coloured*

\* and stripped for splicing

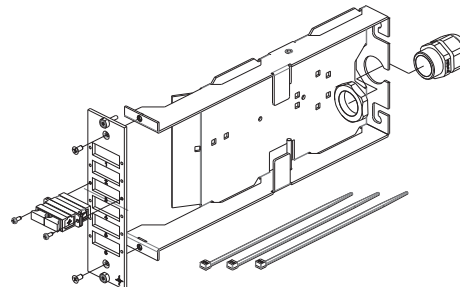
22.4

## 22.4 Modular Fiber Optic Distribution System

## 22.4.5 Fiber Optic Modules 3 HU/7 PU - Housings for individual ordering

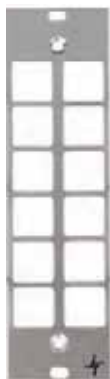


Order no.	Description	HU	PU	Splice cassettes
H02053A0164	Housing incl. 1x Splice cassette and cover without splice holder	3	7	1



Order no.	Description	HU	PU	Splice cassettes
H02053A0160	Housing for TICNET, ODS-Mini or breakout cable	3	7	-

## 22.4.6 Fiber Optic Modules 3 HU/7 PU - Front plates for individual ordering



Order no.	for Housing type	HU	PU	Number of panel piercings and connector type	Panel piercing	Colour
H02024A8101	FO Module	3	7	6 SC Duplex, ST/SC Duplex	Z93	aluminium sheet anodised
H02024A8111	FO Module	3	7	12 ST	Z64	aluminium sheet anodised
H02024A8334	FO Module	3	7	12 E2000	Z66	aluminium sheet anodised
H02024A8105	FO Module	3	7	6 LC Duplex	Z99	aluminium sheet anodised
H02024A8125	FO Module	3	7	12 LC Duplex	Z99	aluminium sheet anodised
H02023A8002	FO Module	3	7	Dummy plate for Module	-	aluminium sheet anodised
H02023A8003	FO Module	3	7	Dummy plate for Module carrier	-	aluminium sheet anodised



► Order no.	for Housing type	HU	PU	Number of panel piercings and connector type	Panel piercing	Colour
H02024A4101	FO Module	3	7	6 SC Duplex, LC Quad	Z93	black RAL 9005
H02024A4100	FO Module	3	7	6 LC Duplex	Z77	black RAL 9005

## 19" FO Distribution panel 1 HU

22.4.7



► Order no.	Description	Mounting in rack	Colour
H02030A0429	19" FO Distribution panel 1 HU	vertical	light grey RAL 7035
H02030A0428	19" FO Distribution panel 1 HU	horizontal	light grey RAL 7035
H02025A0316	Dummy plate for distribution panel		light grey RAL 7035
F05001A0008	Fiber protection tube, both ends with M25 gland, l = 2.5 m		

## 19" FO loop storage box 1 HU

22.4.8



► Order no.	Description	Mounting in rack	Colour
H02030A0427	19" FO loop storage box 1 HU	horizontal	light grey RAL 7035

22.4

## 22.4 Modular Fiber Optic Distribution System

## 22.4.9 Cable Entries for Distribution Panel and Loop Storage Box



Order no.	Description	HU	for M25	Cable entry
H02025A0312	Cable entry	1	2xM25	straight
H02025A0313	Cable entry	1	1xM25	angular 30
H02025A0310	Cable entry	1	-	closed
H02025A0315	Cable entry	1	for cable ties	straight

## 22.5 Accessories for 19" FO Patch Panels

## 22.5.1 Cable Glands and Fiber Protection Tube



Order no.	Description	Remarks
H01012A0034	cable gland M25 for cable dia. 7-10 mm	Polyamide PA6, grey
H01012A0052	cable gland M25 for cable dia. 9-16 mm	Polyamide PA6, grey
H01012A0048	Cable gland M25 for cable dia. 16-20 mm	Polyamide PA6, grey
H01011A0037	Cable gland M20 for cable dia. 5 - 9 mm	Polyamide PA6, grey
H01012A0044	Cable gland M20 for cable dia. 9 - 13 mm	Polyamide PA6, grey

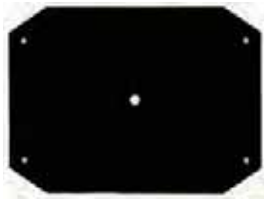


Order no.	Description	Remarks
F05001A0009	Fiber protection tube for PROFI V	for fiber protection between housing rear wall and slide-in unit, 12 mm inside dia., with adaptor for M20/M25 gland

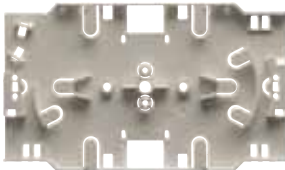
## 22.5.2 Splice Cassettes, Splice Holders, Splice Protectors and Cable Tube



Order no.	Description	Remarks
H02050A0000	Splice cassette including splice holders	162x120x8.5 mm for max. 24 crimp splices



Order no.	Description	Remarks
B06015A0016	Cover for Splice cassette with integrated splice holders	162x120x1 mm



Order no.	Description	Remarks
H02050A0061	Splice cassette Telekom	155 x 92 x 8 mm, for max. 2 splice holders



Order no.	Description	Remarks
B06015A0086	Cover for splice cassette Telekom	155x92x2 mm



Order no.	Description	Remarks
F08001A0002	Wire strain relief for splice cassette Telekom	for 12 fibers with secondary coating 0.9 mm



Order no.	Description	Remarks
F08000A0002	Splice holder for 12 crimp splice protectors	System Telekom



Order no.	Description	Remarks
F08000A0003	Crimp splice protector	System Telekom
F08000A0014	Crimp splice protector	System Telekom, PU = 150 pcs.
F08000A0017	Micro splice protector for shrink splices	Ø 1.3 mm, L=30 mm

## 22.5 Accessories for 19" FO Patch Panels

## 22.5.2 Splice Cassettes, Splice Holders, Splice Protectors and Cable Tube



Order no.	Description	Remarks
F08000A0008	Splice holder for 6 shrink splices	for shrink splice protector Ø 3 mm



Order no.	Description	Remarks
F08000A0010	Splice protector for shrink splices	Ø 3 mm, L=45 mm
F08000A0011	Splice protector for shrink splices	Ø 3 mm, L=60 mm
F08000A0017	Micro splice protector for shrink splices	Ø 1.3 mm, L=30 mm



Order no.	Description	Remarks
L08100A0002	Cable tube L=0.6 m	prepared for direct connector termination with Combi cassette



Order no.	Description	Remarks	Dimensions
H02050A0166	Mini splice cassette with cover for splice	for fibers with bending radius 15 mm min., storage for 2 shrink splice protector	100 x 40 x 8 mm

## 22.5.3 Covers for unused Panel Piercings



Order no.	Description	Remarks
B00012A0019	Cover for M25 hole	Plastic, black
B00012A0046	Cover for M20 hole	Plastic, black



Order no.	Description	Remarks	Mount. dim.
B00010A0004	Cover for ST or FC adaptor cutout	Plastic, black	Z64
B00011A0027	Cover for SC or E2000 adaptor cutout	Plastic, black	Z77
B00012A0011	Cover for SC Duplex, LC Quad adaptor cutout	Plastic, black	Z93
B00011A0043	Cover for LC Duplex cutout	Plastic, black	Z99



## Additional Accessories

22.5.4



Order no.	Short name
H10000A0000	Carrier with marking strip for 19" front plates, screw mounting

Order no.	Description
B05002A0002	Marking strip 380 x 12 mm, self-adhesive, for BASIS V / ECONOMY V / PROFI V / PROFI Plus / PROFI T
B05002A0008	Marking strip 35 x 12 mm, self-adhesive, for 7 PU front plates



Order no.	Short name
H02025A0084	19" Dummy plate 1 HE



Order no.	Short name
H02025A0343	19" Patch Panel with 5 cable guide bars (plastic)



Order no.	Description
H02025A0317	Cable Management for 19" FO Patch Panel 1 HU
H02025A0314	Cable Management for 19" FO Patch Panel 2 HU
R00040A0023	Velcro fastener set (4 pcs.) for cable management

22.5

## 22.5 Accessories for 19" FO Patch Panels

## 22.5.4 Additional Accessories



Order no.	Short name
H02025A0116	Cable management plate for 19" patch panels 1 HU



Order no.	Short name
B06013A0010	Cable management bar for 19" patch panels



Order no.	Short name
H06000A0001	Fixing set for patch panels (4 screws M6x16 with nuts)



Order no.	Description
H06000A0003	Screws for adaptors SC, SC Duplex, ST Duplex, ST/SC Duplex

## TICNET Configurator

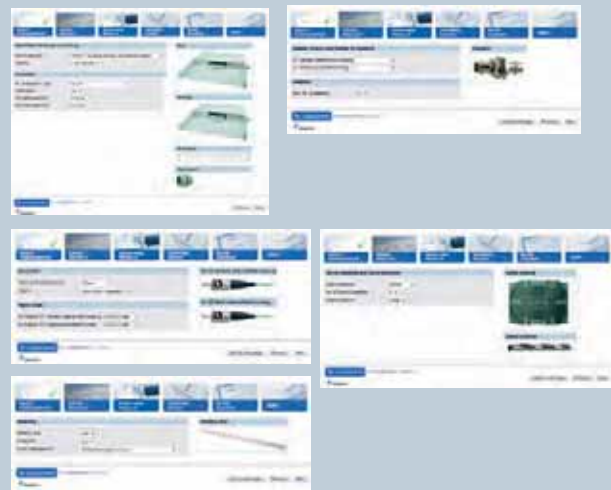


Ideal for planners and installers: simply assemble cables and fiber pigtails online: do you want to assemble cables and connectors online or a fiber optic patch panel to meet your specific needs and then send an order inquiry to your local specialist retailer straight away? Then the TICNET Configurator developed by Telegärtner is just what you need!



### Define product:

1. select patch panel type, housing and front plate
2. choose adaptor version and number of adaptors
3. select equipment and pigtail types
4. choose splice cassettes and splice protector
5. define assembly



### Show final product:

All the information relating to the product you require is listed in a clear breakdown including the gross list prices classified by price bracket. Your data is available in PDF format for download after configuration. you can view the products you have configured at any time by entering your TICNET configuration number and security code on the TICNET homepage. The number and security code are sent to you in an email.



### Add configuration to shopping basket:

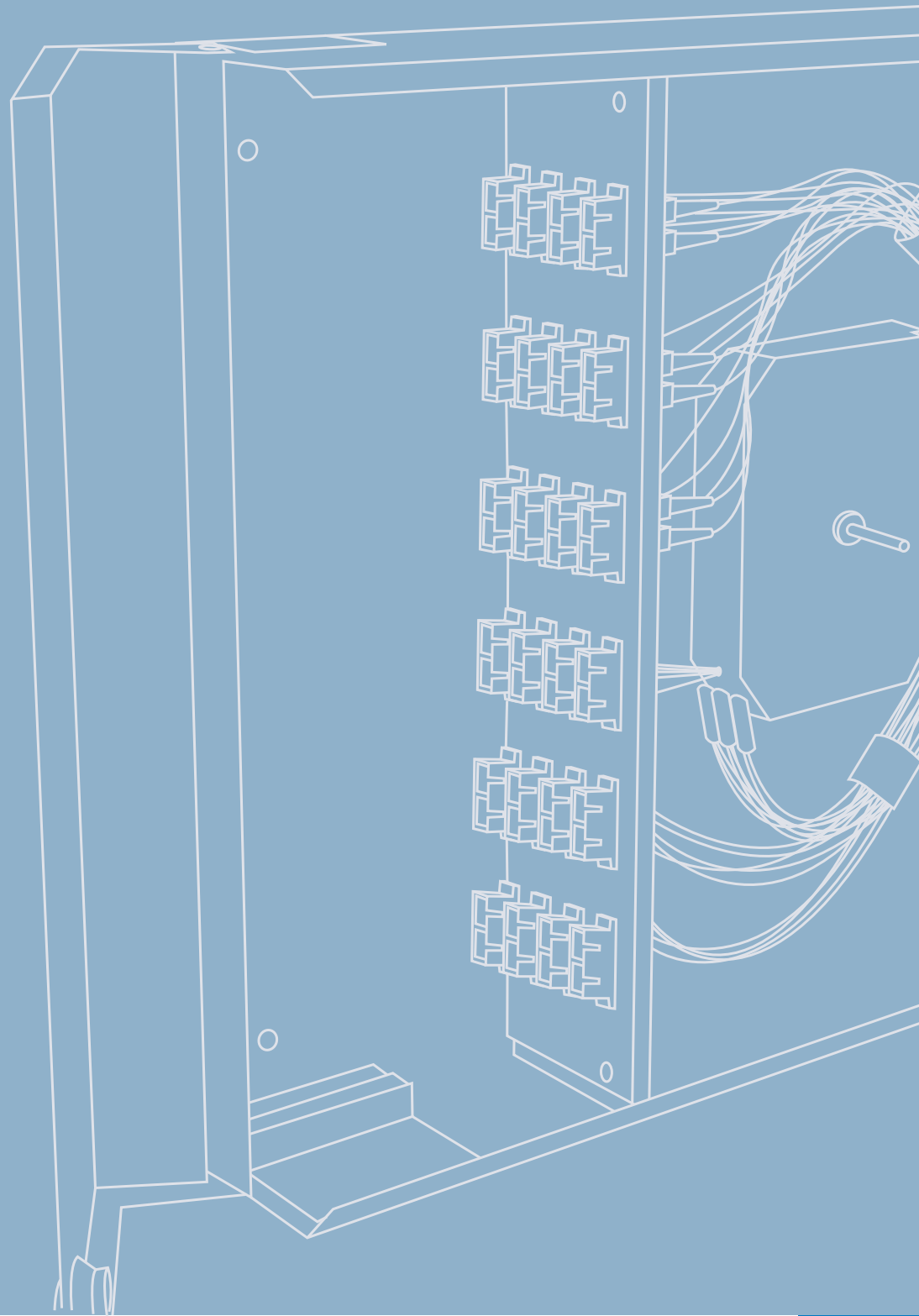
It is possible to change quantity, copy with different cable length and show parts list of your configuration. Also you can send an order inquiry to Telegärtner.



[www.telegaertner.com/ticnet](http://www.telegaertner.com/ticnet)



## FO Wall Boxes and Splice Boxes





# 23

## FO Wall Boxes and Splice Boxes

<b>23.1</b>	<b>Housing</b> .....	<b>318</b>
23.1.1	FO Wall Distributor .....	318
23.1.2	FO Wall Splice Box .....	318
23.1.3	FO Combi Wall Box .....	319
23.1.4	FO Modular Wall Distributor .....	319
23.1.5	FO Mini Wall Distributor .....	320
23.1.6	FO Compact Splice Box .....	320
23.1.7	Distributor MPD24 FO .....	321
23.1.8	ODB 54 for splicing .....	321
23.1.9	ODB 54 - TICNET .....	322
23.1.10	Accessories for ODB 54 .....	323
23.1.11	FO Splice Box IP66 .....	324
23.1.12	Accessories for FO Splice Box IP66 .....	324
<b>23.2</b>	<b>Distribution Plates for FO Wall Distributors and FO Splice Boxes</b> .....	<b>325</b>
<b>23.3</b>	<b>FO MICRO Splice Box</b> .....	<b>326</b>
23.3.1	FO MICRO Splice Box, complete .....	326
23.3.2	Accessories FO MICRO Splice Box .....	327
<b>23.4</b>	<b>FO Connection Splice Box</b> .....	<b>327</b>
<b>23.5</b>	<b>Compact Wall Box for 19" Patch Panels</b> .....	<b>328</b>
<b>23.6</b>	<b>STX Mounting Rail Distributor</b> .....	<b>328</b>
23.6.1	STX Mounting Rail Distributor assembled with adaptors .....	329
23.6.2	STX Mounting Rail Distributor assembled with adaptors and pigtails .....	330

# FO Wall Boxes and Splice Boxes

Fiber optic wall boxes and splice boxes by Telegärtner offer a maximum amount of ports using a minimum of space. Based

on Telegärtner's decades of experience, they offer easy and reliable patching even in high density applications.

	FO Wall Distributor	FO Wall Splice Box	FO Combi Wall Box	FO Modular Wall Distributor
<b>Mechanical Characteristics</b>				
Housing	sheet steel 1 mm powder-laminated, light grey RAL 7035			
Distribution plates	aluminium sheet 1.5 mm powder-laminated, light grey RAL 7035		aluminium anodized	
Cable entries / strain relief	M25 / strain relief bar for cable ties			
Protection class acc. to IEC 60529	IP30	IP20	IP20	IP30
Panel piercings	ST, SC, SC Duplex, LC Duplex, E2000			
Dimension: width	440 mm	440 mm	440 mm	390 mm
Dimension: height	440 mm	440 mm	440 mm	260 mm
Dimension: depth	95 mm	95 mm	85 mm	100 mm

	FO Splice Box IP66 S / S-V	FO Splice Box IP66 M / M-V	Wall Distributor ODB 54	FO MICRO Splice Box
<b>Mechanical Characteristics</b>				
Housing	thermoplastic, non halogen, flame retardant, light grey RAL 7035			thermoplastic, non halogen, flame retardant, pure white RAL 9010
Distribution plates	aluminium sheet 1.5 mm			-
Cable entries / strain relief	M20 / M25			sealing grommets Ø max. 7.5 mm
Protection class acc. to IEC 60529	IP66	IP66	IP54	IP30
Panel piercings	ST, SC, LC Duplex, SC Duplex, E2000			SC, E2000
Dimension: width	254 mm	360 mm	250 mm	160 mm
Dimension: height	180 mm	254 mm	200 mm	110 mm
Dimension: depth	90 mm	111 mm	64 mm	30 mm

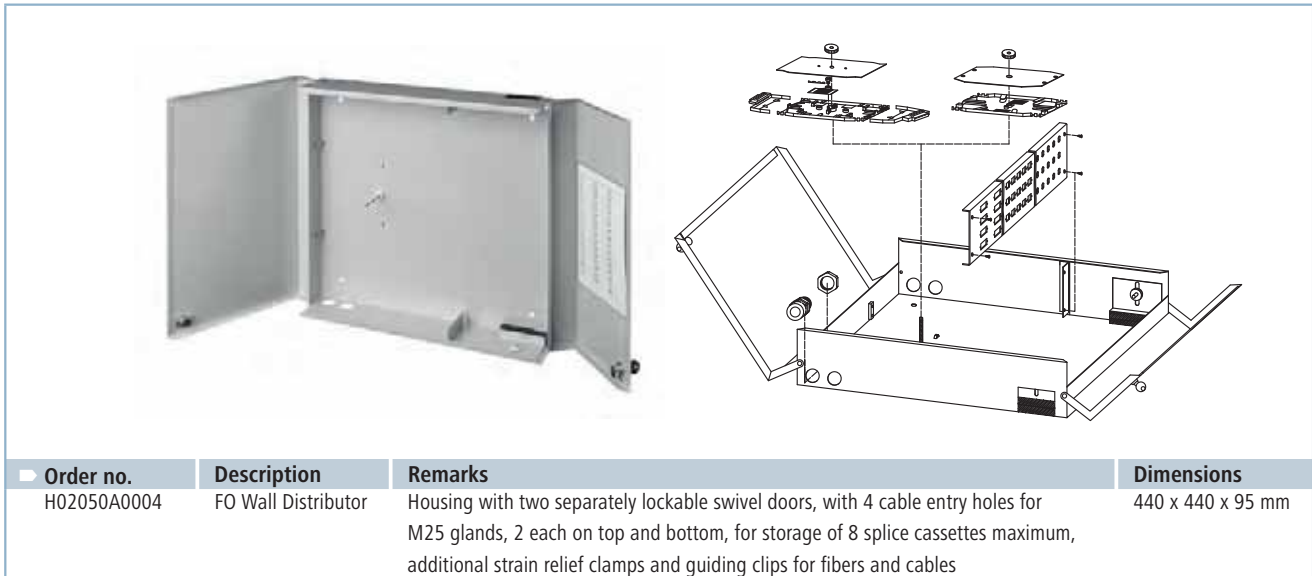
	FO Mini Wall Distributor	FO Compact Splice Box	FO Distributor MPD24
<b>Mechanical Characteristics</b>			
Housing	sheet steel 1 mm powder-laminated, light grey RAL 7035		sheet steel 1 mm varnished, pure white RAL 9010
Distribution plates	aluminium sheet 1.5 mm powder-laminated, light grey RAL 7035		sheet steel 1 mm
Cable entries / strain relief	strain relief bar for cable ties		
Protection class acc. to IEC 60529	IP30	IP30	IP20
Panel piercings	ST, SC, LC Duplex, SC Duplex, E2000		
Dimension: width	320 mm	265 mm	446 mm
Dimension: height	280 mm	150 mm	190 mm
Dimension: depth	50 mm	55 mm	51 mm

## 23.1 Housing

## 23.1.1 FO Wall Distributor

## Performance Characteristics

- Up to 4 incoming fiber optic cables
- Up to 8 splice cassettes
- Separately lockable doors
- Distribution plates for different types of FO adaptors

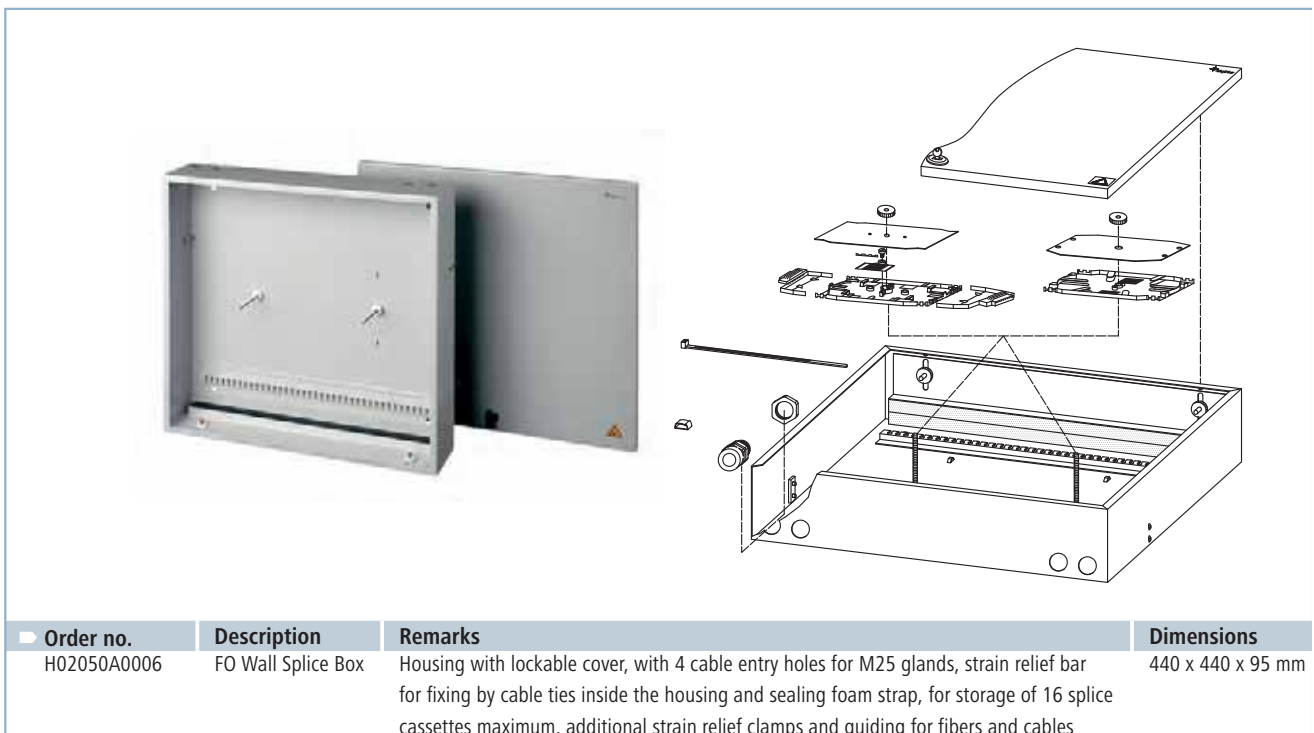


Distribution plates and accessories see chapter "Distribution Plates for Wall Distributors and FO Splice Boxes"

## 23.1.2 FO Wall Splice Box

## Performance Characteristics

- Up to 4 incoming fiber optic cables
- Up to 16 splice cassettes
- Distribution plates for different types of FO adaptors
- Strain relief bar for outgoing fiber optic cables



Distribution plates and accessories see chapter "Distribution Plates for Wall Distributors and FO Splice Boxes"

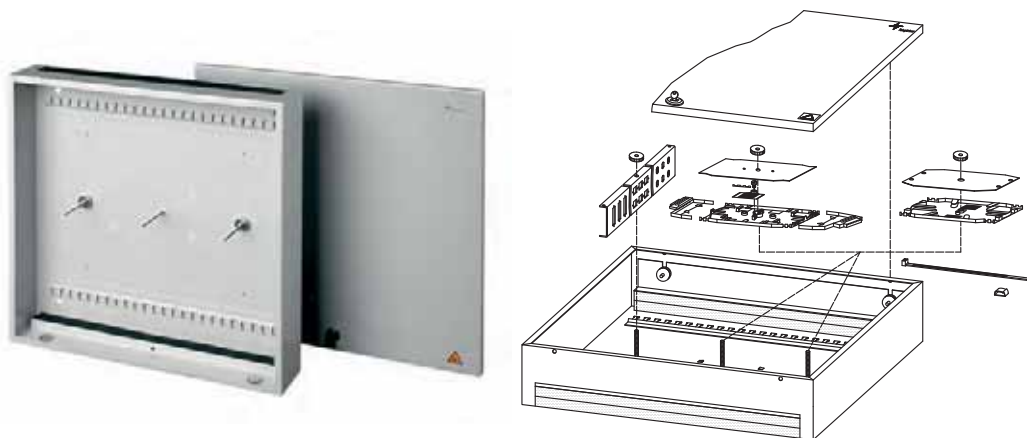


## FO Combi Wall Box

23.1.3

## Performance Characteristics

- Cable entry sealed by foam strips
- Strain relief bar with cable ties
- Up to 24 splice cassettes
- Distribution plates for different types of FO adaptors



Order no.	Description	Remarks	Dimensions
H02050A0010	FO Combi Wall Box	Housing with swivel lid, lockable, with strain relief bars inside the housing and sealing foam straps for incoming and outgoing cables, or storage of 24 splice cassettes maximum, or 4 cassettes and 2 distribution plates	440 x 440 x 85 mm

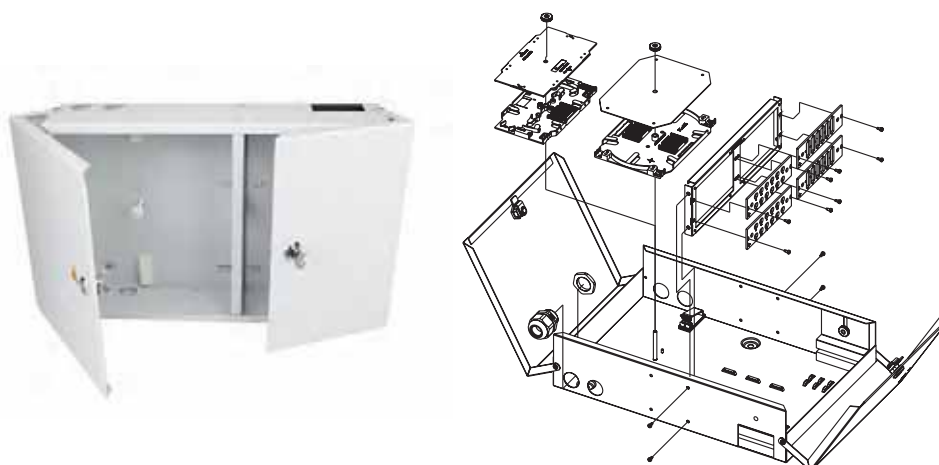
Distribution plates and accessories see chapter "Distribution Plates for Wall Distributors and FO Splice Boxes"

## FO Modular Wall Distributor

23.1.4

## Performance Characteristics

- Using for 3 pcs. 3 HU / 7 PU frontplates
- Mixed assembly of different adaptor types and fibres possible
- allows splicing of up to 120 fibers



Order no.	Description	Remarks	Dimensions
H02050A0295	FO Modular Wall Distributor	Housing with 2 swivel doors, separately lockable, each two cable entries on top/bottom for M25; max. 5 splice cassettes, for 4x 3HU/7PU front plates	390 x 260 x 100 mm

Distribution plates and accessories see chapter "Distribution Plates for Wall Distributors and FO Splice Boxes"

23.1

## 23.1

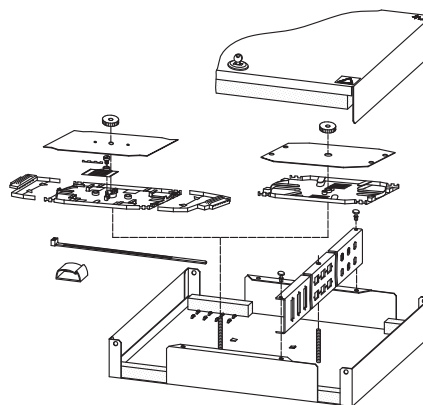
## Housing

## 23.1.5

## FO Mini Wall Distributor

## Performance Characteristics

- Distribution plates for different types of FO adaptors
- Up to 4 splice cassettes and distribution plates
- alternatively 8 splice cassettes without distribution plates



Order no.	Description	Remarks	Dimensions
H02050A0008	FO Mini Wall Distributor	Housing with lockable cover, with each 2 cable entry openings for incoming and outgoing cables to be fixed by cable ties, with sealing straps, for storage of 8 splice cassettes maximum, or 4 cassettes and 1 distribution plate	320 x 280 x 50 mm

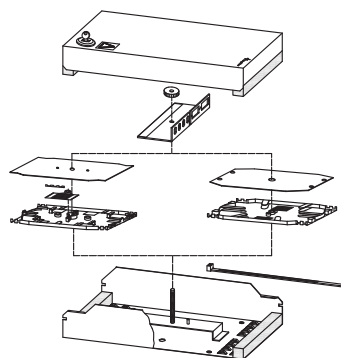
Distribution plates and accessories see chapter "Distribution Plates for Wall Distributors and FO Splice Boxes"

## 23.1.6

## FO Compact Splice Box

## Performance Characteristics

- One splice cassette and distribution plate
- alternatively 4 splice cassettes without distribution plates
- with lockable cover

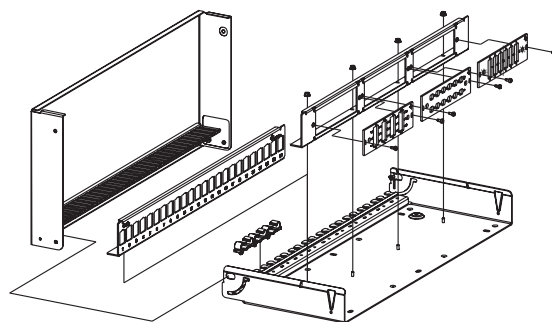


Order no.	Description	Remarks	Dimensions
H02050A0013	FO Compact Splice Box	Housing with lockable cover, with 2 cable entry openings for incoming and outgoing cables to be fixed by cable ties, with sealing straps, for storage of 4 splice cassettes maximum or 1 cassette and 1 distribution plate	265 x 150 x 55 mm

Distribution plates and accessories see chapter Distribution Plates for Wall Distributors and FO Splice Boxes"

### Performance Characteristics

- Using for 3 pcs. 3 HU / 7 PU frontplates
- wall/surface mounting; housing base with plaster compensation
- for the installation cover can be locked or removed (tool-less)



Order no.	Description	Type	Dimensions	Colour
H02025A0243	MPD24 FO	for 3x3 HU / 7 PU front plates	446x190x51 mm	pure white RAL 9010

### Performance Characteristics

- Protection class IP54
- material: PC, IK 04
- locking with 2 snap-fits and optional lead seal
- loop storage
- mounting of gas- or waterblocker for blow fiber system (optional)



IP54

Order no.	Dimensions	Description	Remarks
H02050A0190	250 x 200 x 64 mm	housing ODB 54	for splicing of max. 24 fibers

Customized versions on request.

## 23.1

## Housing

## 23.1.8

## ODB 54 with assembled adaptors and pigtails



IP54

Order no.	Dimensions	Number of Adaptors	Adaptor Type	Colour	Fiber Pigtails
H02050A0193	250 x 200 x 64 mm	6	SC duplex adaptor, singlemode	blue	12x 9/125 OS2
H02050A0194	250 x 200 x 64 mm	6	SC /APC duplex adaptor, singlemode	green	12x 9/125 OS2
H02050A0191	250 x 200 x 64 mm	6	SC duplex adaptor, multimode	beige	12x 50/125 OM2
H02050A0192	250 x 200 x 64 mm	6	SC duplex adaptor, multimode	aqua	12x 50/125 OM3
H02050A0246	250 x 200 x 64 mm	6	SC duplex adaptor, multimode	black	12x 50/125 OM4

Order no.	Dimensions	Number of Adaptors	Adaptor Type	Colour	Fiber Pigtails
H02050A0201	250 x 200 x 64 mm	6	ST duplex adaptor, singlemode	metal	12x 9/125 OS2
H02050A0199	250 x 200 x 64 mm	6	ST duplex adaptor, multimode	metal	12x 50/125 OM2
H02050A0200	250 x 200 x 64 mm	6	ST duplex adaptor, multimode	metal	12x 50/125 OM3
H02050A0248	250 x 200 x 64 mm	6	ST duplex adaptor, multimode	metal	12x 50/125 OM4

Order no.	Dimensions	Number of Adaptors	Adaptor Type	Colour	Fiber Pigtails
H02050A0197	250 x 200 x 64 mm	6	LC duplex adaptor, singlemode	blue	12x 9/125 OS2
H02050A0198	250 x 200 x 64 mm	6	LC/APC duplex adaptor, singlemode	green	12x 9/125 OS2
H02050A0195	250 x 200 x 64 mm	6	LC duplex adaptor, multimode	beige	12x 50/125 OM2
H02050A0196	250 x 200 x 64 mm	6	LC duplex adaptor, multimode	aqua	12x 50/125 OM3
H02050A0247	250 x 200 x 64 mm	6	LC duplex adaptor, multimode	black	12x 50/125 OM4

Order no.	Dimensions	Number of Adaptors	Adaptor Type	Colour	Fiber Pigtails
H02050A0205	250 x 200 x 64 mm	12	E2000 APC adaptor, singlemode	green	12x 9/125 OS2

## 23.1.9

## ODB 54 - TICNET

## Performance Characteristics

- Protection class IP54
- material: PC, IK 04
- locking with 2 snap-fits and optional lead seal
- mounting for TICNET cable splitter ODS-Mini 4-24 fibers



IP54

Order no.	Description	Remarks
H02050A0279	Housing ODB54 - TICNET	for max. 6 SC Duplex / LC Quad / ST Duplex adaptors
H02050A0280	Housing ODB54 - TICNET	for max. 6 LC Duplex adaptors
H02050A0281	Housing ODB54 - TICNET	for max. 12 E2000 adaptors

## FO Wall Boxes and Splice Boxes

Accessories for ODB 54

23.1.10



Order no.	Description	Remarks
F08000A0002	Splice holder for 12 crimp splice protectors	System Telekom



Order no.	Description	Remarks
F08000A0008	Splice holder for 6 shrink splices	for shrink splice protector Ø 3 mm



Order no.	Description	Remarks
H01011A0037	Cable gland M20 for cable dia. 5 - 9 mm	Polyamide PA6, grey
H01012A0050	cable gland M20 for cable dia. 7 - 13.5 mm	Polyamide PA6, grey



Order no.	Description
H01000A0288	ODB 54 add-on-kit cellular rubber patch cable entry



Order no.	Description
R00040A0047	ODB 54 add-on-kit cable tie for gas/water blocker

23.1

## 23.1

## Housing

## 23.1.11

## FO Splice Box IP66

## Performance Characteristics

- Water- and dust-proof housing
- Protection class IP66
- Available in 2 different sizes



Order no.	Description	Remarks	Dimensions
H02050A0087	FO Splice Box IP66 S	Housing for storage of up to 5 splice cassettes Telekom or 2 splice cassettes Telekom and 1 distribution plate	254 x 180 x 90 mm; wall mounting: 239 x 165 mm, 4x Ø4,5
H02050A0075	FO Splice Box IP66 M	Housing for storage of up to 8 splice cassettes Telekom or 3 splice cassettes Telekom and 1 distribution plate	360 x 254 x 111 mm; wall mounting: 346 x 239 mm, 4x Ø4,5



Order no.	Description	Remarks	Dimensions
H02050A0229	FO splice box IP66 S-V	housing with embossed holes M20/M25, for storage of up to 5 splice cassettes Telekom or 3 splice cassettes Telekom and 1 distribution plate	254 x 180 x 90 mm; wall mounting: 239 x 165 mm; 4xØ4.5
H02050A0231	FO splice box IP66 M-V	housing with embossed holes M20/M25, for storage of up to 8 splice cassettes Telekom or 3 splice cassettes Telekom and 1 distribution plate	360 x 254 x 111 mm; wall mounting: 346 x 239 mm; 4xØ4.5

## 23.1.12

## Accessories for FO Splice Box IP66



Order no.	Description	Remarks
H01011A0037	Cable gland M20 for cable dia. 5 - 9 mm	Polyamide PA6, grey
H01012A0044	Cable gland M20 for cable dia. 9 - 13 mm	Polyamide PA6, grey
H01012A0048	Cable gland M25 for cable dia. 16-20 mm	Polyamide PA6, grey

## FO Wall Boxes and Splice Boxes

Order no.	Description	Remarks
H01011A0043	split cable gland, M25x1.5, with split nut hex 32	Polyamide PA6, grey

Order no.	Description	Remarks
B01012A0033	cable insert for split cable gland M25, 2x Ø 2 mm	polymere
B01012A0034	cable insert for split cable gland M25, 2x Ø 3 mm	polymere
B01012A0035	cable insert for split cable gland M25, 4x Ø 2 mm	polymere
B01012A0036	cable insert for split cable gland M25, 4x Ø 3 mm	polymere
B01012A0037	cable insert for split cable gland M25, Ø 5-6 mm	polymere
B01012A0038	cable insert for split cable gland M25, Ø 6-7 mm	polymere
B01012A0039	cable insert for split cable gland M25, Ø 7-8 mm	polymere
B01012A0040	cable insert for split cable gland M25, Ø 8-9 mm	polymere
B01012A0041	cable insert for split cable gland M25, Ø 9-10 mm	polymere
B01012A0042	cable insert for split cable gland M25, Ø 10-11 mm	polymere

Order no.	Short name
U01010A0004	Drilling hole and fixing cable gland M20x1.5 (without products)

## Distribution Plates for FO Wall Distributors and FO Splice Boxes

23.2



Order no.	for Housing type	Number of panel piercings and connector type	Panel piercing	Number of rows x panel piercings	Port marking
H02025A0069	Wall Distributor	48 ST	Z64	3x16	x
H02025A0070	Wall Distributor	48 SC	Z77	3x16	x
H02025A0097	Wall Distributor	24 SC Duplex, LC Quad	Z93	4x6	x
H02025A0533	Wall Distributor	48 SC Duplex, LC Quad	Z93	2x24S	x
H02025A0278	Wall Distributor	48 E2000	Z66	3x16	x
H02025A0155	Wall Distributor	72 LC Duplex	Z99	3x24	x



Order no.	for Housing type	Number of panel piercings and connector type	Panel piercing	Number of rows x panel piercings	Port marking
H02025A0112	Combi Wall Box / Mini Wall Distributor	24 ST	Z64	2x12	x
H02025A0113	Combi Wall Box / Mini Wall Distributor	24 SC	Z77	2x12	x
H02025A0114	Combi Wall Box / Mini Wall Distributor	12 SC Duplex, LC Quad	Z93	1x12	x
H02025A0366	Combi Wall Box / Mini Wall Distributor	24 SC Duplex, LC Quad	Z93	4x6	x
H02025A0281	Combi Wall Box / Mini Wall Distributor	24 E2000	Z66	2x12	x
H02025A0349	Combi Wall Box / Mini Wall Distributor	24 LC Duplex	Z99	2x12	x



Order no.	for Housing type	Number of panel piercings and connector type	Panel piercing	Number of rows x panel piercings
H02025A0293	Compact Splice Box	12 ST	Z64	2x6
H02025A0286	Compact Splice Box	6 SC	Z77	1x6
H02025A0137	Compact Splice Box	4 SC Duplex, LC Quad	Z93	1x4
H02025A0350	Compact Splice Box	6 E2000	Z66	1x6
H02025A0115	Compact Splice Box	6 LC Duplex	Z99	1x6
H02025A0363	Compact Splice Box	8 SC Duplex	Z93	1x8

23.2

## 23.2 Distribution Plates for FO Wall Distributors and FO Splice Boxes



Order no.	for Housing type	Number of panel piercings and connector type	Panel piercing	Number of rows x panel piercings
H02025A0331	Splice Box IP66 S-V	12 ST	Z64	2x6
H02025A0329	Splice Box IP66 S-V	12 SC adaptor	Z77	2x6
H02025A0328	Splice Box IP66 S-V	12 SC Duplex, 12 LC Quad	Z93	1x12
H02025A0330	Splice Box IP66 S-V	12 LC Duplex	Z99	2x6
H02025A0368	Splice Box IP66 S-V	12 E2000	Z66	2x6



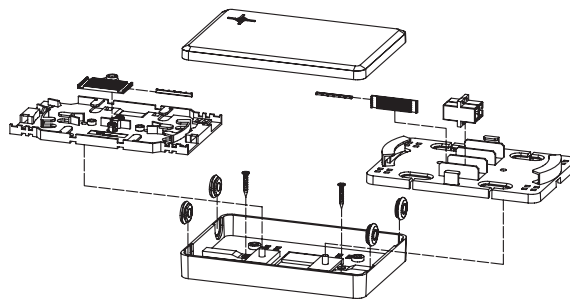
Order no.	for Housing type	Number of panel piercings and connector type	Panel piercing	Number of rows x panel piercings
H02025A0322	Splice box IP66 M-V	24 ST	Z64	2x12
H02025A0332	Splice box IP66 M-V	24 SC	Z77	2x12
H02025A0336	Splice box IP66 M-V	18 SC Duplex, LC Quad	Z93	3x6
H02025A0333	Splice box IP66 M-V	24 E2000	Z66	2x12
H02025A0334	Splice box IP66 M-V	24 LC Duplex	Z99	2x12

## 23.3 FO MICRO Splice Box

## Performance Characteristics

- For high density applications
- For quick snap-on mounting on top hat rails
- For horizontal and vertical mounting on the wall, subfloor or in distribution compartments

## 23.3.1 FO MICRO Splice Box, complete

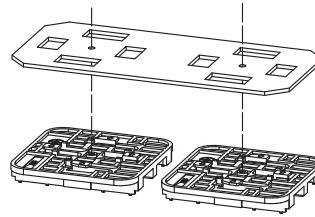


Order no.	Description	Adaptors	Pigtails	Dimensions
H02050A0109	MICRO splice box incl. 4xSC adaptor, accessories	4xSC, ceramic		160 x 110 x 30 mm
H02050A0112	MICRO splice box incl. splice holder, 4xSC adaptor, pigtails, accessories	4xSC, ceramic	4x9/125, 2 m, SC	160 x 110 x 30 mm
H02050A0251	MICRO splice box incl. splice holder, 4xSC/APC adaptor, pigtails, accessories	4xSC/APC, ceramic	4x9/125, 2 m, SC/APC	160 x 110 x 30 mm
H02050A0111	MICRO splice box incl. splice holder, 4xSC adaptor, pigtails, accessories	4xSC, ceramic	4x50/125, 2 m, SC	160 x 110 x 30 mm
H02050A0105	MICRO splice box incl. Telekom splice cassette, 1x splice holder, accessories			160 x 110 x 30 mm
H02050A0104	MICRO splice box incl. adaptor plate, splice holder, accessories			160 x 110 x 30 mm



## Accessories FO MICRO Splice Box

23.3.2



Order no.	Description
H02050A0106	Fixing set for cable duct installation of MICRO Splice Box



Order no.	Description
F08000A0012	Splice holder for 5 crimp splices for MICRO Splice Box



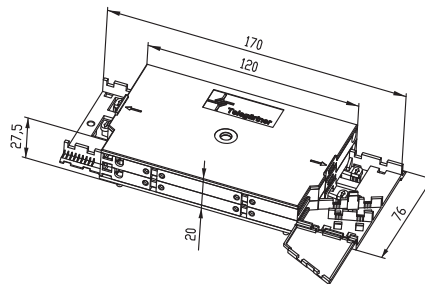
Order no.	Description
B07003A0012	Grommet for 7.5 mm max. cable diameter

## FO Connection Splice Box

23.4

## Performance Characteristics

- Installation in cable ducts or top hat rails
- Storage cassette for storage of fiber loops
- Compact splice cassette with integrated splice holder for 12 crimp splices



Order no.	Description	Remarks
H02050A0107	FO Connection Splice Box	incl. base plate for top hat rail fixing
H02050A0076	Compact storage cassette	for storage of fiber loops (retrofitting)
H02050A0077	Compact splice cassette	with integrated splice holder for 12 crimp splices (retrofitting)
B00045A0078	Splice cassette cover for FO Compact splice- / storage cassette	

## 23.5 Compact Wall Box for 19" Patch Panels



Order no.	Product package
H02072A0001	Compact LAN wall distributor 3 HU (B 450 mm x H 505 mm x T 175 mm), without components
H02072A0002	Compact LAN wall distributor 4 HU (W 600 mm x H 600 mm x D 220 mm) without components; two separated simultaneous locking doors

## 23.6 STX Mounting Rail Distributor

## Performance Characteristics

- For up to 24 fibers
- 3 individual cable entries (top/bottom/rear)
- top hat rail mounting, 3 mounting options

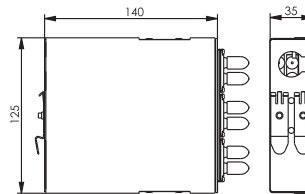
Mechanical Characteristics	
Material: housing	sheet steel zinc plated, powder coated, light grey RAL 7035
Material: front plate	sheet steel zinc plated, powder coated, light grey RAL 7035
Material: top hat rail adaptor	sheet steel nickel plated
Cable entry	cable gland M20 for 5-9 mm
Panel piercings	ST Duplex, SC Duplex, LC Duplex, E2000 Compact
Dimensions in mm: Width	35 / 70
Dimensions in mm: Height	125
Dimensions in mm: Depth	140
Environmental Requirements	
Shock	250 ms <sup>2</sup>
Vibration sinusoidal (9 Hz - 500 Hz)	50 ms <sup>2</sup>
Protection against particulate ingress	IP2X
Protection against water / immersion	IPX0
Ambient temperature	-40° C to + 70° C
Rapid change of temperature	-40° C to + 70° C / 25 cycles t=30 min.
Climatic damp heat	+25° C / +65° C / 93% RH // -10° C / 21 cycles
Flowing mixed gas	+25° C / 73% RH / 4 days, H <sub>2</sub> S / SO <sub>2</sub>

## FO Wall Boxes and Splice Boxes

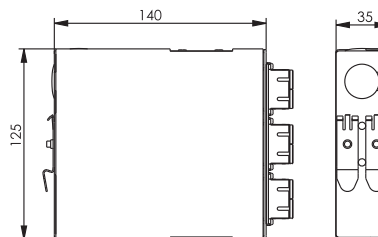
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## STX Mounting Rail Distributor assembled with adaptors

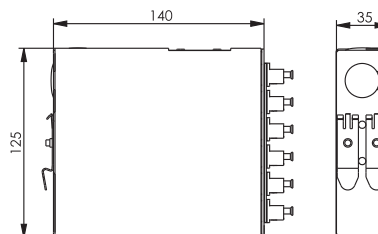
23.6.1



Order no.	Housing type	Adaptors	Type
H82050A0001	STX mounting rail distributor	6xST Duplex, phosphor bronze sleeve/metal housing	Multimode
H82050S0001	STX mounting rail distributor	6xST Duplex, ceramic sleeve/metal housing	Singlemode/Multimode



Order no.	Housing type	Adaptors	Colour	Type
H82050A0002	STX mounting rail distributor	6xSC Duplex, phosphor bronze sleeve/plastic housing	beige	Multimode
H82050S0002	STX mounting rail distributor	6xSC Duplex, ceramic sleeve, plastic housing	blue	Singlemode/Multimode
H82050S0003	STX mounting rail distributor	6xSC Duplex, ceramic sleeve/metal housing	silver	Singlemode/Multimode



Order no.	Housing type	Adaptors	Colour	Type
H82050A0005	STX mounting rail distributor	6xLC Duplex, ceramic sleeve/plastic housing	beige	Multimode
H82050S0005	STX mounting rail distributor	6xLC Duplex, ceramic sleeve/plastic housing	blue	Singlemode/Multimode



Order no.	Type
H06000A0055	Cable strain relief (bar, clamp, screw), only for loose-tube cables and mini-breakout cables



Order no.	Description	Remarks
F08000A0003	Crimp splice protector	System Telekom
F08000A0014	Crimp splice protector	System Telekom, PU = 150 pcs.
F08000A0017	Micro splice protector for shrink splice	Ø 1.3 mm, L=30 mm

23.6

## 23.6

## STX Mounting Rail Distributor

## 23.6.2

## STX Mounting Rail Distributor assembled with adaptors and pigtails



Order no.	Description	Fiber Pigtails	Remarks
H82050E0001	STX mounting rail distributor with 6x ST Duplex, splice cassette, pigtails	12x E9/125, ST	coloured*
H82050F0001	STX mounting rail distributor with 6x ST Duplex, splice cassette, pigtails	12x G50/125 OM2, ST	coloured*
H82050K0001	STX mounting rail distributor with 6x ST Duplex, splice cassette, pigtails	12x G50/125 OM3, ST	coloured*
H82050G0001	STX mounting rail distributor with 6x ST Duplex, splice cassette, pigtails	12x G50/125 OM4, ST	coloured*
H82050E0002	STX mounting rail distributor with 6x SC Duplex, splice cassette, pigtails	12x E9/125, SC	coloured*
H82050E0003	STX mounting rail distributor with 6x SC Duplex, splice cassette, pigtails	12x E9/125, SC	metal housing, coloured*
H82050F0002	STX mounting rail distributor with 6x SC Duplex, splice cassette, pigtails	12x G50/125 OM2, SC	coloured*
H82050K0002	STX mounting rail distributor with 6x SC Duplex, splice cassette, pigtails	12x G50/125 OM3, SC	coloured*
H82050G0002	STX mounting rail distributor with 6x SC Duplex, splice cassette, pigtails	12x G50/125 OM4, SC	coloured*
H82050E0005	STX mounting rail distributor with 6x LC Duplex, splice cassette, pigtails	12x E9/125, LC	coloured*
H82050F0005	STX mounting rail distributor with 6x LC Duplex, splice cassette, pigtails	12x G50/125 OM2, LC	coloured*
H82050K0005	STX mounting rail distributor with 6x LC Duplex, splice cassette, pigtails	12x G50/125 OM3, LC	coloured*
H82050G0005	STX mounting rail distributor with 6x LC Duplex, splice cassette, pigtails	12x G50/125 OM4, LC	coloured*
H82050E0007	STX mounting rail distributor with 6x E2000 Compact, splice cassette, pigtails	12x E9/125, E2000	coloured*
H82050F0007	STX mounting rail distributor with 6x E2000 Compact, splice cassette, pigtails	12x G50/125 OM2, E2000	coloured*
H82050K0007	STX mounting rail distributor with 6x E2000 Compact, splice cassette, pigtails	12x G50/125 OM3, E2000	coloured*
H82050G0007	STX mounting rail distributor with 6x E2000 Compact, splice cassette, pigtails	12x G50/125 OM4, E2000	coloured*

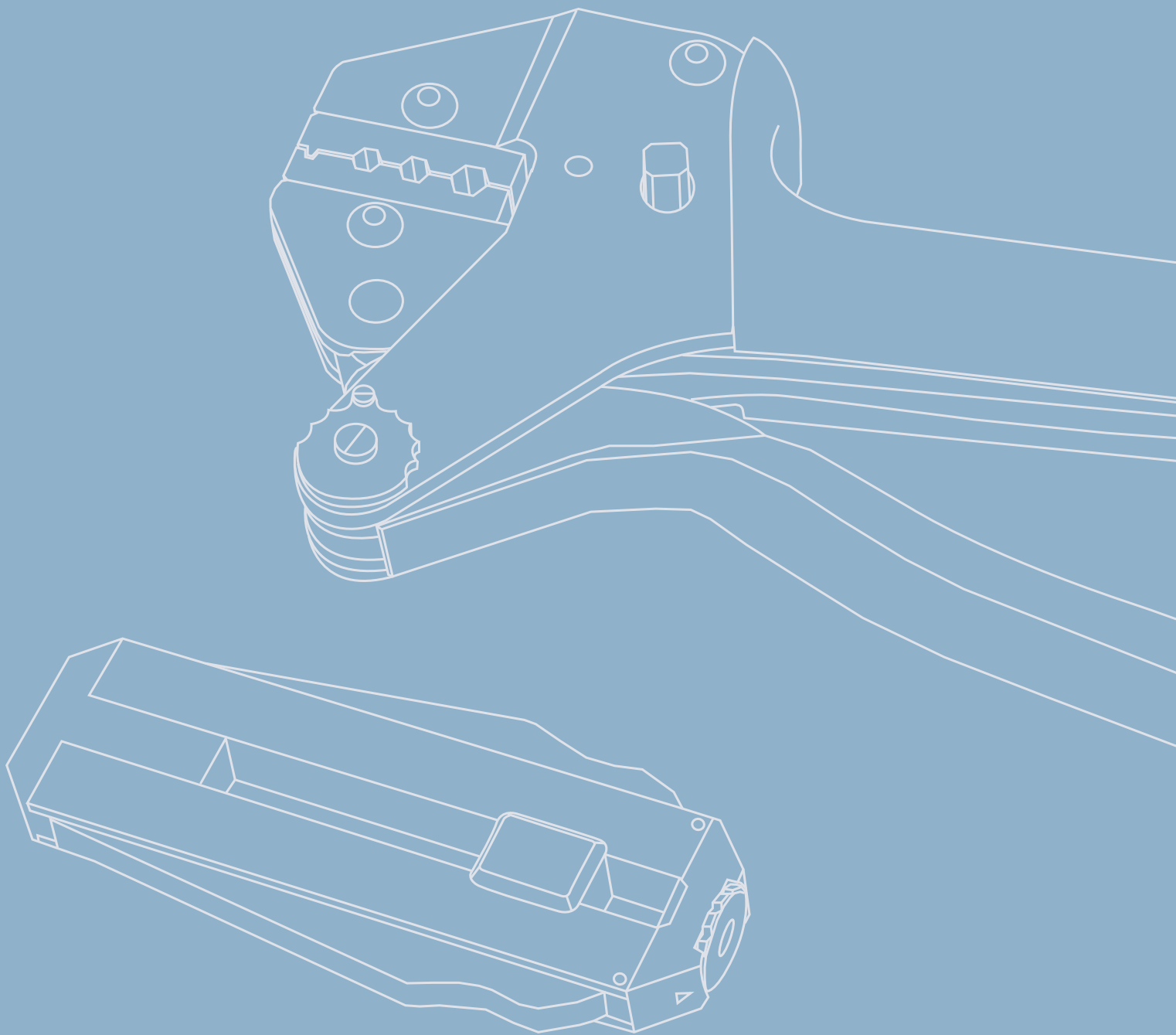
\* with cable strain relief; stripped for splicing



Order no.	Description	Fiber Pigtails	Remarks
H82050E0101	STX mounting rail distributor with 12x ST Duplex, splice cassette, pigtails	24x E9/125, ST	coloured*
H82050F0101	STX mounting rail distributor with 12x ST Duplex, splice cassette, pigtails	24x G50/125 OM2, ST	coloured*
H82050K0101	STX mounting rail distributor with 12x ST Duplex, splice cassette, pigtails	24x G50/125 OM3, ST	coloured*
H82050G0101	STX mounting rail distributor with 12x ST Duplex, splice cassette, pigtails	24x G50/125 OM4, ST	coloured*
H82050E0102	STX mounting rail distributor with 12x SC Duplex, splice cassette, pigtails	24x E9/125, SC	coloured*
H82050F0102	STX mounting rail distributor with 12x SC Duplex, splice cassette, pigtails	24x G50/125 OM2, SC	coloured*
H82050K0102	STX mounting rail distributor with 12x SC Duplex, splice cassette, pigtails	24x G50/125 OM3, SC	coloured*
H82050G0102	STX mounting rail distributor with 12x SC Duplex, splice cassette, pigtails	24x G50/125 OM4, SC	coloured*
H82050E0105	STX mounting rail distributor with 12x LC Duplex, splice cassette, pigtails	24x E9/125, LC	coloured*
H82050F0105	STX mounting rail distributor with 12x LC Duplex, splice cassette, pigtails	24x G50/125 OM2, LC	coloured*
H82050K0105	STX mounting rail distributor with 12x LC Duplex, splice cassette, pigtails	24x G50/125 OM3, LC	coloured*
H82050G0105	STX mounting rail distributor with 12x LC Duplex, splice cassette, pigtails	24x G50/125 OM4, LC	coloured*

\* with cable strain relief; stripped for splicing

## FO Termination Tools and Accessories





# 24

## FO Termination Tools and Accessories

24.1	FO Tool Set.....	333
24.2	Accessories for FO Tool Set .....	334

# FO Termination Tools and Accessories

# 24

For secure and steady termination on-site, Telegärtner offers a wide assortment of auxiliary means and tools. For terminating a FO connector it is necessary to have tools for preparing the

fibers, a crimp tool, polishing materials and a microscope for checking the connector end face. Supplementary sets are available for the termination of POF and LC connectors.

## FO Tool Set

## 24.1



Order no.	Description	Remarks
N84000A0000	Tool Set Fast Cure for FO Connectors, Basic Equipment	Content: <ul style="list-style-type: none"> <li>• crimp tool for ST and SC connectors</li> <li>• kevlar cutter</li> <li>• stripping tool for jacket, primary- and secondary coating</li> <li>• knife</li> <li>• light rod with adaptor for connector 2.5 mm ferrules</li> <li>• cleaning tissues</li> <li>• polishing pads</li> <li>• polishing foils</li> <li>• sapphire scribe</li> <li>• microscope 100x and 200x Conversion Eyepiece</li> <li>• polishing discs for connector 2.5 mm ferrules</li> <li>• polishing and cleaning fluid</li> <li>• Fast Cure Adhesive Set</li> </ul>
N84001A0002	Termination Tool Set POF	
N00100A0016	Polishing foil set for POF	10 pcs. P1500 and 1µ each
N04001A0067	Polishing disc for POF connectors 2.5 dia.	plastic

## 24.2 Accessories for FO Tool Set

Order no.	Description	Remarks
▶ N84001A0000	Supplementary Set LC (for GOF and PCF)	crimp insert, polishing disc, microscope conversion eyepiece, light rod
▶ N84001A0001	Supplementary Set SC (for POF)	crimp insert, stripping tool knife, abrasive paper, polishing foil, polishing pad
▶ N80000A0001	Crimp tool with insert for ST, SC and IP67 plugs	included in Tool Case Fast Cure
▶ N81001A0000	Crimp insert for ST/SC and IP67 plugs	wrench size: 3.4/4.52, 3.65/4.52 and 8.23
N81001A0001	Crimp insert for ST/SC POF and IP67 plugs	wrench size: 3.23, 4.52 and 8.23
N01001A0061	Crimp insert for LC and IP67 plugs	wrench size: 3.05/3.24 and 8.23
▶ N04001A0032	Kevlar scissors	included in Tool Case Fast Cure
▶ N04001A0033	Cutter	included in Tool Case Fast Cure
▶ N04001A0063	Cable Stripping Tool	included in Tool Case Fast Cure
▶ N04001A0031	Stripping tool for jacket and primary coating	included in Tool Case Fast Cure
▶ N04001A0062	Stripping tool 0.25 - 0.8 mm for secondary coating	included in Tool Case Fast Cure
▶ Q00051A0006	Fast Cure Adhesive Set	for approx. 250 connectors ST, SC, LC; included in Tool Case Fast Cure
▶ N04001A0018	Light rod for connectors 2.5 mm dia.	incl. batteries; included in Tool Case Fast Cure
▶ N04001A0024	Cleaning tissues	alcohol-soaked, set with 20 pcs.; included in Tool Case Fast Cure
N04001A0064	Cleaning tissues	dry, set with 100 pcs.; included in Tool Case Fast Cure
▶ N04001A0048	Polishing disc for ST and SC plugs	stainless steel, included in Tool Case Fast Cure
▶ N04001A0059	Polishing pad Ø 127 mm for prior- and final polishing steps	included in Tool Case Fast Cure
▶ N00100A0010	Polishing foils 30 µm, Ø 127 mm	50 pcs.; included in Tool Case Fast Cure
N00100A0009	Polishing foils 2 µm, Ø 127 mm	50 pcs.
N00100A0017	Polishing foils 3 µm, Ø 127 mm, Diamond	5 pcs.; included in Tool Case Fast Cure
N00100A0011	Fine polishing foils for Singlemode	5 pcs.; included in Tool Case Fast Cure
N00100A0018	polishing foils 0,5 µm, Ø 127 mm, diamond	5 pcs.

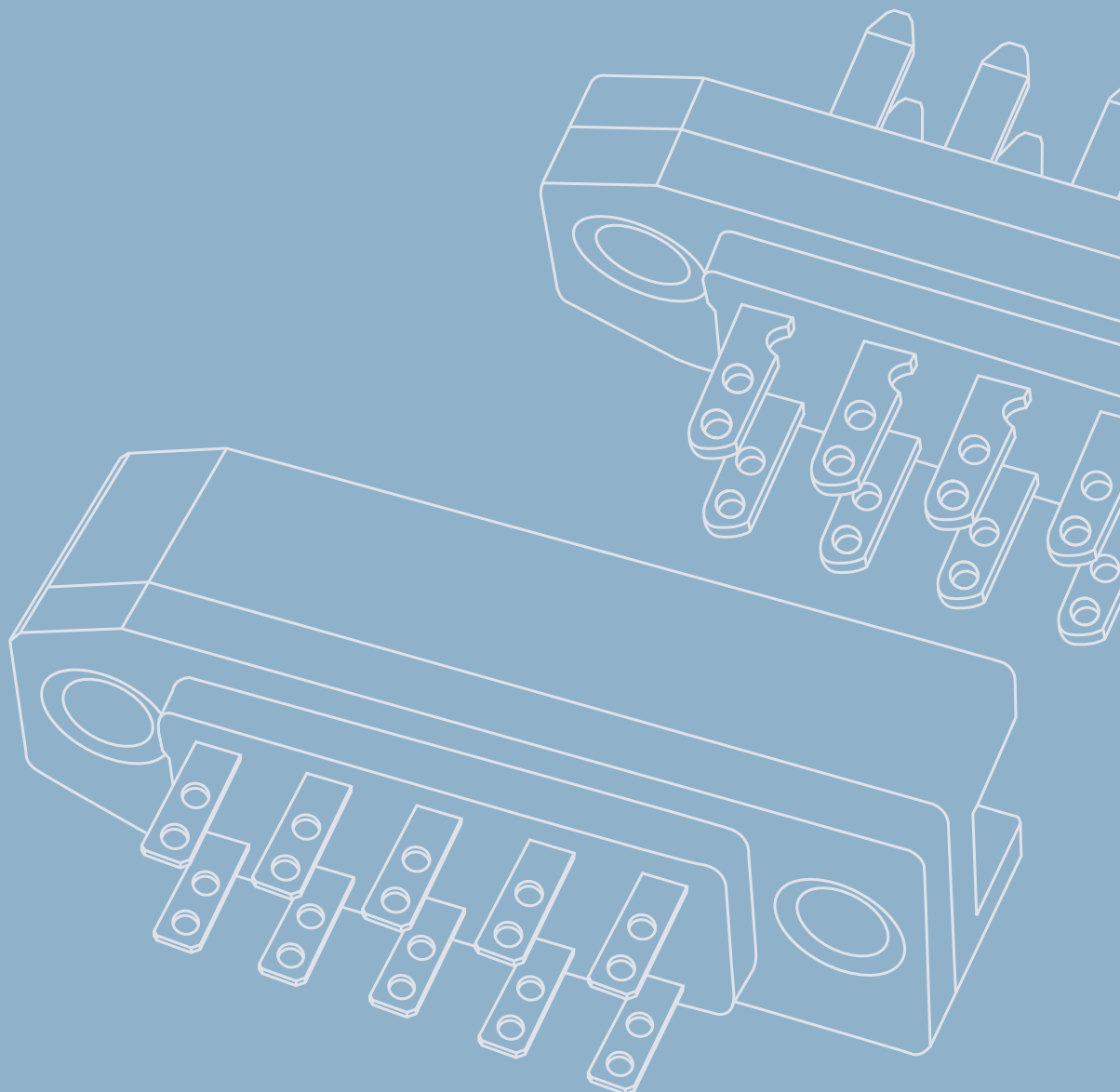


# FO Termination Tools and Accessories

▶ Order no.	Description	Remarks
N04001A0026	Polishing and cleaning liquid	included in Tool Case Fast Cure
▶ Order no.	Description	Remarks
N04001A0017	Cleaving tool	for fiber cutting; included in Tool Case Fast Cure
▶ Order no.	Description	Remarks
N04001A0039	Microscope, 100x	incl. batteries; included in Tool Case Fast Cure
▶ Order no.	Description	Remarks
N04001A0040	200x Microscope conversion eyepiece	included in Tool Case Fast Cure
▶ Order no.	Description	Remarks
N04001A0046	Stripping tool for jacket, secondary and primary coating	
▶ Order no.	Description	Remarks
N04001A0034	Split-tip cleaning swabs	with cleaning fluid, set with 20 pcs.
▶ Order no.	Description	Remarks
N04001A0074	Cleaner for LC connectors	
N04001A0073	Cleaner for ST, SC, FC connector	
N04001A0082	Cleaner for MPO/MTP® connectors	
▶ Order no.	Description	Remarks
N04001A0081	Fiber tester with adaptors for ferrules ST, SC, FC, LC for visual fault locating in FO links	



## Connectors according to DIN 41 618 and DIN 41 622





## Connectors according to DIN 41 618 and DIN 41 622

25.1	Connection according to DIN 41 618, Symmetrical Contact Configuration .....	339
25.2	Connection according to DIN 41 622, Asymmetrical Contact Configuration .....	340
25.3	Housing for Connectors according to DIN 41 618 and DIN 41 622.....	340
25.4	Locking Through for Housing .....	341
25.5	Cable Reliefs for Housings .....	341
25.6	Coding Parts for Connectors according to DIN 41 618 and DIN 41 622 .....	342

## Connectors according to DIN 41 618 and DIN 41 622

25

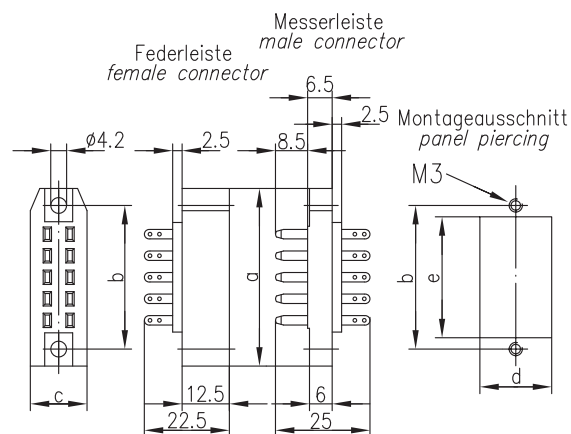
Connectors according to DIN 41 618 and DIN 41 622 are knife-/spring contact types. Its rugged design causes a reliable electrical connection. They are mainly used in plug in unit designs and as cable connectors, using metal-/plastic housings

with corresponding coding and locking parts. The termination is soldering. Male connectors with terminals for PCB mounting and with wire wrap posts are possible (on request).

	DIN 41 618	DIN 41 622
<b>Mechanical Characteristics</b>		
Withdrawal force of a single knife	≥ 0.8 N	≥ 0.8 N
Durability (mating cycles)	≥ 500	≥ 500
Material: contact (finish)	≥ 6 μm Ag	≥ 6 μm Ag
Material: insulators	PC gv black	PC gv black
Material: knife contacts	2.5 x 1 mm	3.0 x 1 mm
Material: terminators	solderable tinned	solderable tinned
<b>Climatic Characteristics</b>		
Tested / classified in accordance with DIN IEC 60068-1	40/085/21	40/085/21
<b>Electrical Characteristics</b>		
Insulation resistance	≥ 1000 MΩ	≥ 1000 MΩ
Voltage proof	1500 V <sub>eff</sub> /50 Hz	1500 V <sub>eff</sub> /50 Hz
Working voltage	250 AC / 200 DC	380 AC / 450 DC
Working current at environmental temperature 20° C	6 A	8 A
Working current at environmental temperature 40° C	5 A	6 A
Working current at environmental temperature at 60° C	3 A	4 A

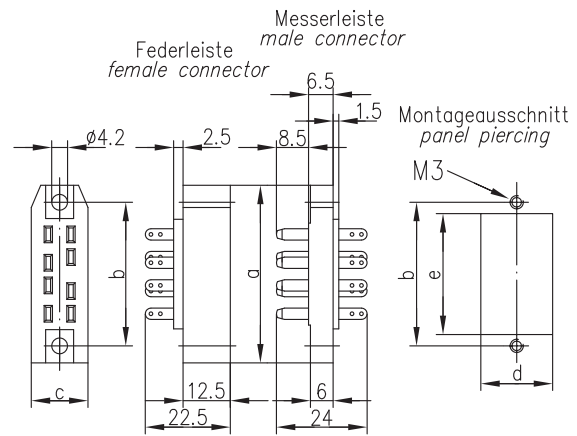
## Connection according to DIN 41 618, Symmetrical Contact Configuration

25.1



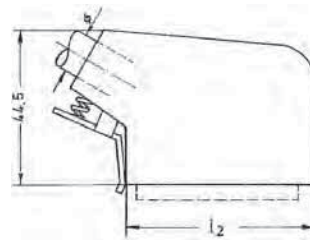
Order no.	Short name	Size in mm	Remarks
J00044A0900	male connector A 10	a=47; b=38; c=15; d=14; e=32	solder terminals, 10-way
J00040A0901	female connector B 10	a=47; b=38; c=15; d=14; e=32	solder terminals, 10-way
J00045A0902	male connector A 16	a=59; b=50; c=15; d=14; e=43	solder terminals, 16-way
J00041A0903	female connector B 16	a=59; b=50; c=15; d=14; e=43	solder terminals, 16-way
J00045A0904	male connector A 20	a=71; b=62; c=15; d=14; e=55	solder terminals, 20-way
J00041A0905	female connector B 20	a=71; b=62; c=15; d=14; e=55	solder terminals, 20-way
J00046A0906	male connector A 26	a=83; b=74; c=15; d=14; e=68	solder terminals, 26-way
J00042A0907	female connector B 26	a=83; b=74; c=15; d=14; e=68	solder terminals, 26-way
J00046A0908	male connector A 39	a=83; b=74; c=20; d=19; e=68	solder terminals, 39-way
J00042A0909	female connector B 39	a=83; b=74; c=20; d=19; e=68	solder terminals, 39-way

## 25.2 Connection according to DIN 41 622, Asymmetrical Contact Configuration



Order no.	Short name	Size in mm	Remarks
J00044A0910	male connector A 8	a=47; b=38; c=15; d=14; e=32	solder terminals, 8-way
J00040A0911	female connector B 8	a=47; b=38; c=15; d=14; e=32	solder terminals, 8-way
J00045A0912	male connector A 12	a=59; b=50; c=15; d=14; e=43	solder terminals, 12-way
J00041A0913	female connector B 12	a=59; b=50; c=15; d=14; e=43	solder terminals, 12-way
J00045A0914	male connector A 16	a=71; b=62; c=15; d=14; e=55	solder terminals, 16-way
J00041A0915	female connector B 16	a=71; b=62; c=15; d=14; e=55	solder terminals, 16-way
J00045A0916	male connector A 20	a=83; b=74; c=15; d=14; e=68	solder terminals, 20-way
J00041A0917	female connector B 20	a=83; b=74; c=15; d=14; e=68	solder terminals, 20-way
J00046A0918	male connector A 30	a=83; b=74; c=20; d=19; e=68	solder terminals, 30-way
J00042A0919	female connector B 30	a=83; b=74; c=20; d=19; e=68	solder terminals, 30-way

## 25.3 Housing for Connectors according to DIN 41 618 and DIN 41 622



Order no.	Short name	for connectors according to DIN 41 618	for connectors according to DIN 41 622	Remarks
H00030A0955	housing 8/10	10-way	8-way	metal, black
H00031A0957	housing 12/16	16-way	12-way	metal, black
H00031A0959	housing 16/20	20-way	16-way	metal, black
H00031A0965	housing 20/26	26-way	20-way	metal, black
H00032A0942	housing 30/39	39-way	30-way	metal, black

Can also be used as non locking. Remove locking parts, rip off lug by plastic housing.

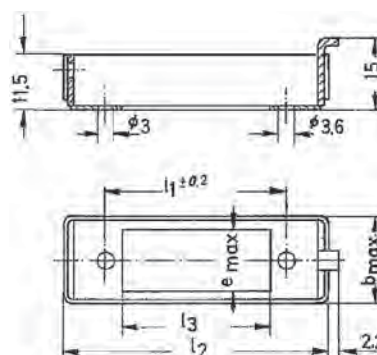
## Connectors according to DIN 41 618 and DIN 41 622

25

## Locking Through for Housing

25.4

for housings	sizes in mm					material
	l1	l2	l3	b	e	
8/10	38	55.4 55.4	31	18.1	13	metal
12/16	50	67.4 66.4	43	18.1	13	metal
16/20	62	79.4 78.4	55	18.1	13	metal
20/26	74	91.4 90.4	67	18.1	13	metal
30/39	74	91.4 90.4	67	23.1	18	metal

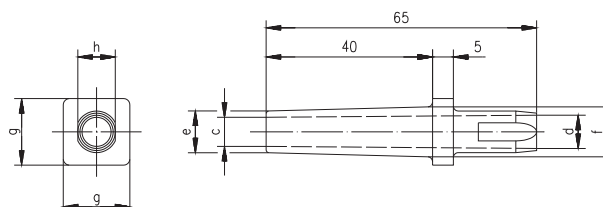


Order no.	Short name	Remarks
B03014A0936	locking through 8/10	metal, black
B03014A0937	locking through 12/16	metal, black
B03014A0938	locking through 16/20	metal, black
B03015A0939	locking through 20/26	metal, black
B03015A0940	locking through 30/39	metal, black

## Cable Reliefs for Housings

25.5

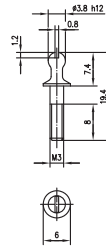
for housings	sizes in mm					
	c	d	e	f	g	h
8/10; 12/16M 16/20; 20/26	7	8	10	12	16	9
30/39	10.5	11.5	14	15.5	21	14



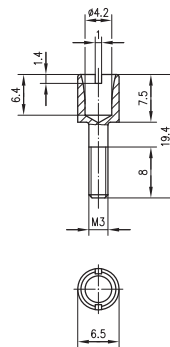
Order no.	Short name	Remarks
B00082A0943	cable relief 30/39	for housing 30/39, black

## 25.6

## Coding Parts for Connectors according to DIN 41 618 and 41 622



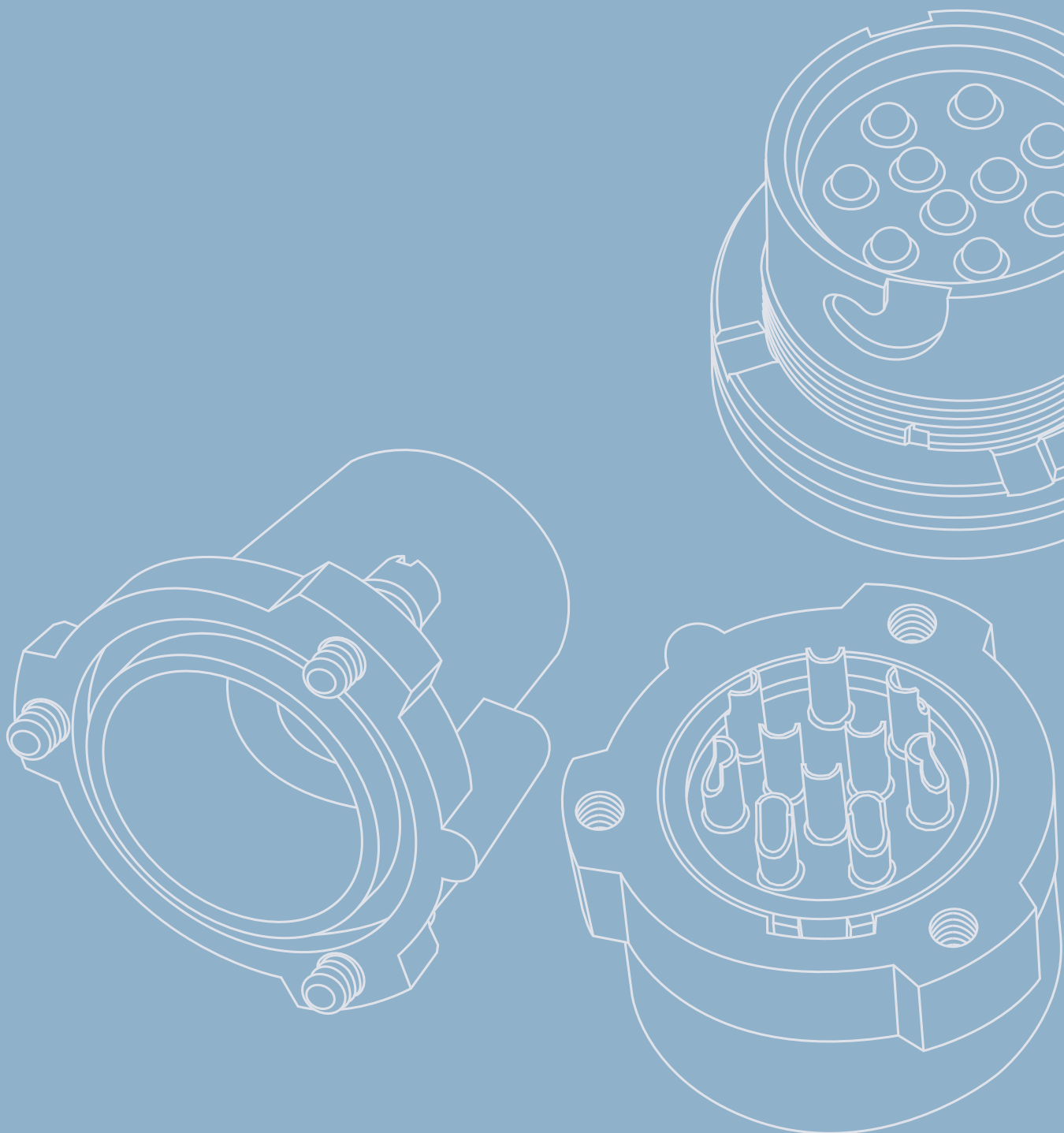
Order no.	Remarks
A16010A0923	pin



Order no.	Remarks
A16010A0924	jack



## **LF Connectors 10-way according to MIL-C-10544**





# 26

## LF Connectors for 10-way according to MIL-C-10544

26.1	Straight Plug .....	345
26.2	Angle Plug .....	345
26.3	Straight Jack.....	346
26.4	Jack Receptacle .....	346
26.5	Protective Cap .....	346

# LF Connectors for 10-way according to MIL-C-10544

26

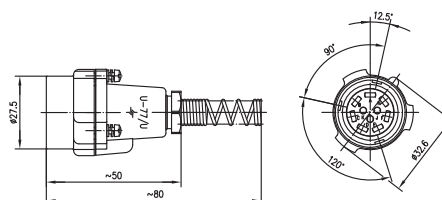
The 10-way LF connectors according to MIL-C-10544 are mainly used in communication equipments (e.g. for connecting handsets, headphones and microphones). It is a waterproof and bajonet locking system. The female connector is designed

with double spring loaded contacts and the male connector with rigid contacts, both with solder terminals. The male connector block is designed with a double fixing feature against rotation.

Mechanical Characteristics	
Locking force	max. 277 Ncm
Delocking force	min. 46 Ncm
Contact force (all contacts)	max. 113 N
Vibration (10 Hz to 2.000 Hz)	100 m/s <sup>2</sup>
Shock (11 ms duration)	500 m/s <sup>2</sup>
Waterproof (pressure)	0.2 bar
Durability (mating cycles)	≥ 1.500
Material: contacts	CuZn38Pb1
Material: contact spring	CuBe2
Material: contact finish	Ag over CuNi / Rh over CuNi
Material: insulators	Melamin 150
Material: armatures	rust-resistant or POM
Material: gaskets	rubber
Climatic Characteristics	
Tested / classified in acc. to DIN IEC 60068-1	55/085/10
Electrical Characteristics	
Insulation resistance	≥ 200 MΩ
Voltage proof	500 V <sub>eff</sub> /50 Hz
Working voltage a.c.	max. 50 V
Working current	max. 0.1 A

## Straight Plug

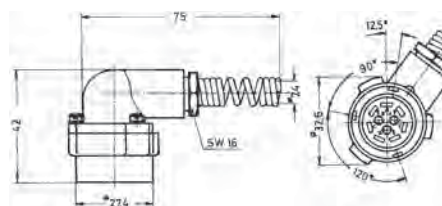
26.1



Order no.	Nato-No.	MIL-Std.	Remarks
J00014A0585	5935-283-2950	U-77/U	with stainless steel bayonetting and POM backpart, for cable ø 7.5 mm
J00014B0585		U-77/U-D	bayonetting and backpart in POM, for cable ø 7.5 mm
J00014A0000	5935-12-318-9422	U-77/U-M	with stainless steel bayonetting and metal backpart, for cable ø 5.5 mm

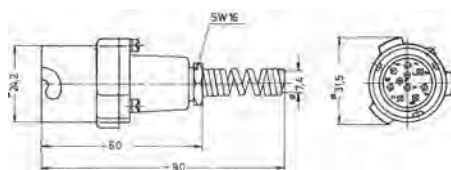
## Angle Plug

26.2



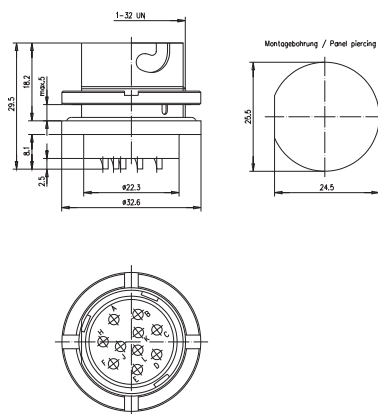
Order no.	Nato-No.	MIL-Std.	Remarks
J00014A0586	5935-00-577-034, 5935-12-149-7783	U-127/U	with stainless steel bayonetting and POM backpart, for cable ø 7.5
J00014B0586		U-127/U-D	with bayonetting and backpart in POM, for cable ø 7.5
J00014D0586		U-127/U-D	with bayonetting and backpart in POM, for cable ø 5.5
J00014A0002	5935-12-318-9424	U-127/U-M	with stainless steel bayonetting and metal backpart, for cable ø 5.5

## 26.3 Straight Jack



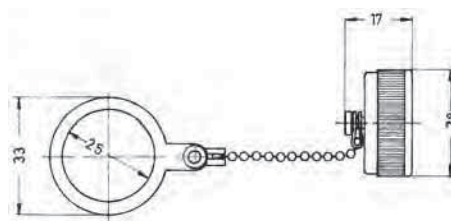
Order no.	MIL-Std.	Nato-No.	Remarks
J00010A0590	U-78/U	5935-283-2884	with stainless steel bayonetting and POM backpart, for cable $\varnothing$ 7.5
J00010A0000	U-78/U-M	5935-12-318-9423	with stainless steel bayonetting and metal backpart, for cable $\varnothing$ 5.5

## 26.4 Jack Receptacle



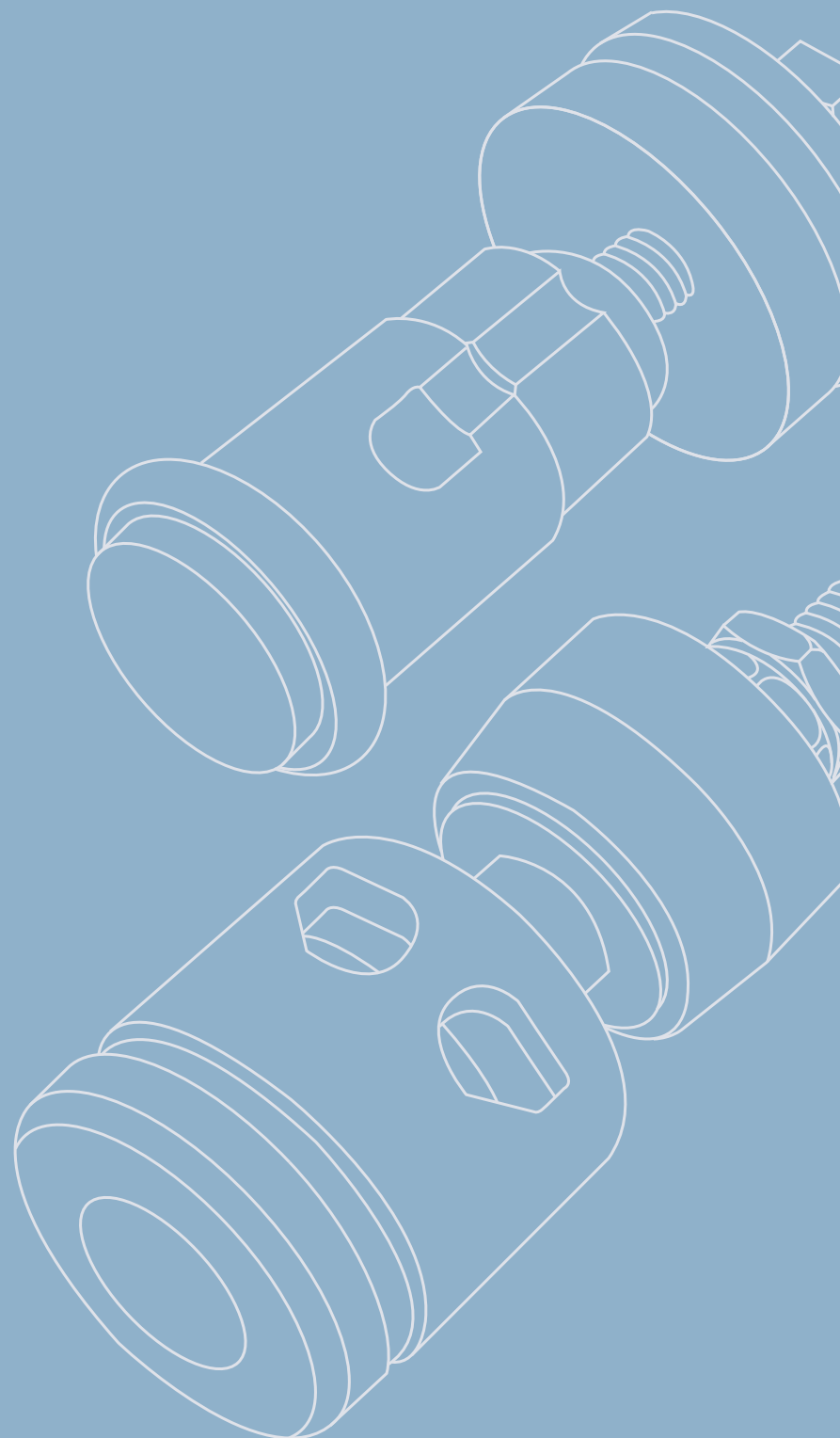
Order no.	MIL-Std.	Nato-No.
J00050A0587	U-79/U	5935-12-187-2716

## 26.5 Protective Cap



Order no.	MIL-Std.	Nato-No.	Remarks
H00030A0589	CW 339	5935-258-4449	Protective Cap applicable for J00050A0587

## Binding Posts KL 58, KL 65





# 27

## Binding Posts KL 58, KL 65

27.1	Binding Posts KL 58.....	349
27.2	Binding Posts KL 65.....	349

## Binding Posts KL 58, KL 65

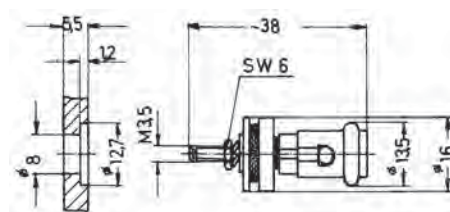
27

The binding posts KL 58 and KL 65 are quick connection clamping posts mainly used in radio equipments and their accessories.

Mechanical Characteristics	
Depress force KL 58	min. 15 N
Depress force KL 65	min. 15 N
Conductor to be clamped	Ø max. 2.5 mm
Material: contacts	CuZn38Pb1
Material: contact finish	Ni
Material: insulators KL 58	PA
Material: insulators KL 65	PA
Climatic Characteristics	
Tested / classified in accordance with DIN IEC 60068-1	55/070/04
Electrical Characteristics	
Insulation resistance	≥ 100 MΩ
Voltage proof	500 V <sub>eff</sub> / 50 Hz
Working current KL 58	max. 10 A
Working current KL 65	max. 10 A

## Binding Posts KL 58

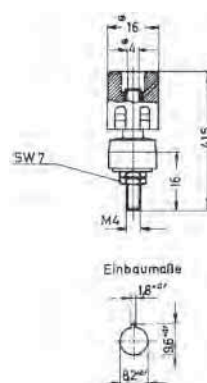
27.1



Order no.	Remarks	Nato-No.
J02010A0650	waterproof mounting	5940-00-194-7739; 5940-12-159-7114

## Binding Posts KL 65

27.2



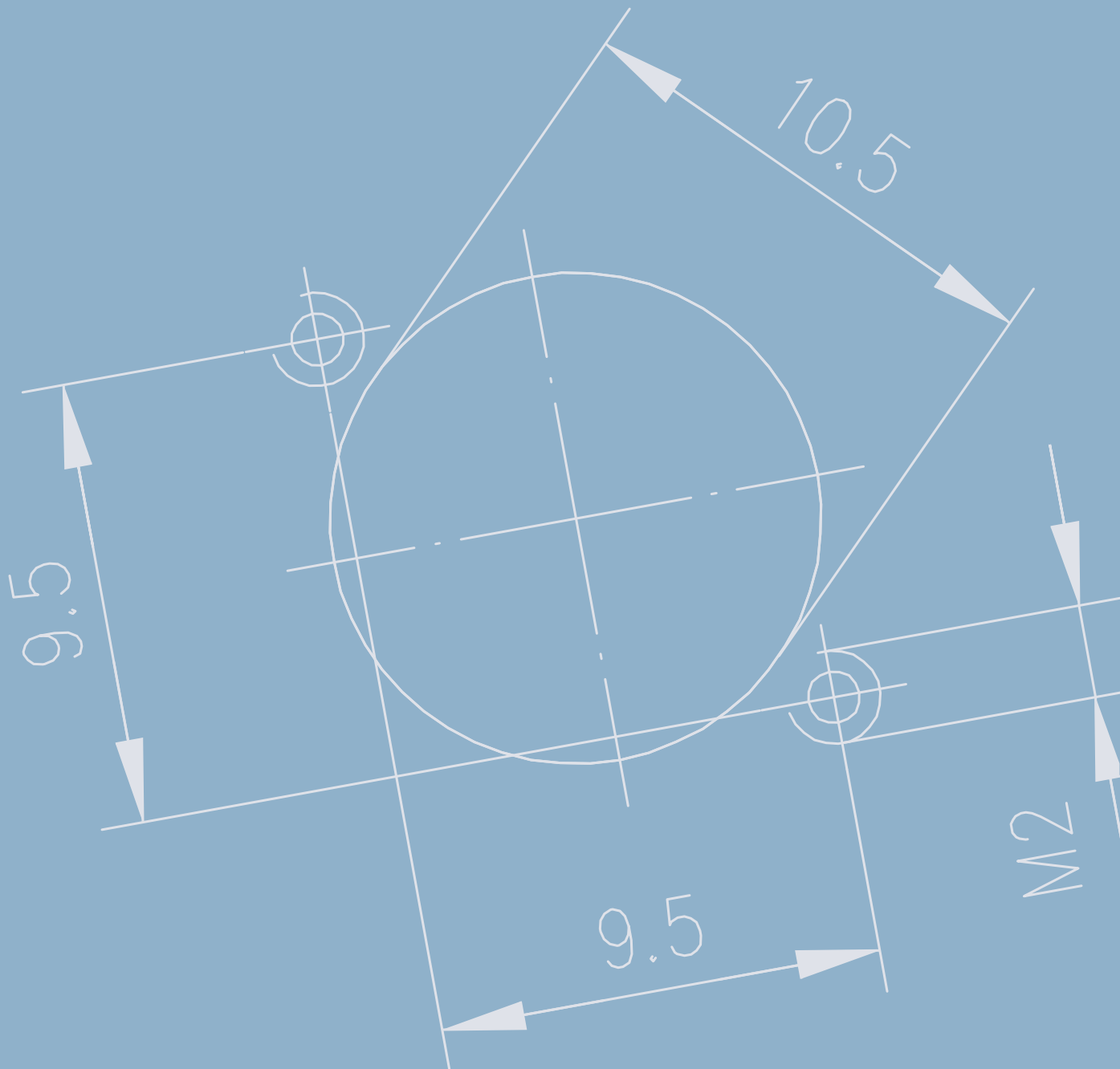
Order no.	Nato-No.	Remarks
J02010A0652	5940-12-160-0242	insulators red, insulated mounting
J02010B0652	5940-12-160-0241	insulators black, insulated mounting
J02010C0652	5940-12-345-4407	insulators blue, insulated mounting
J02010D0652	5940-12-345-4406	insulators green, insulated mounting





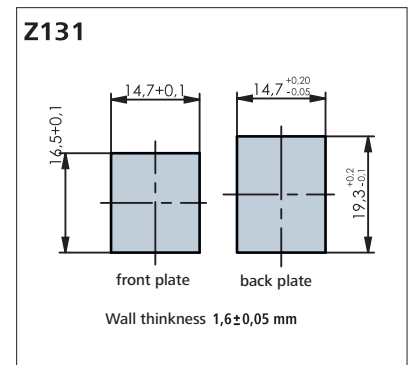
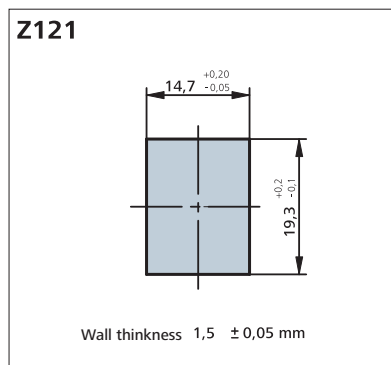
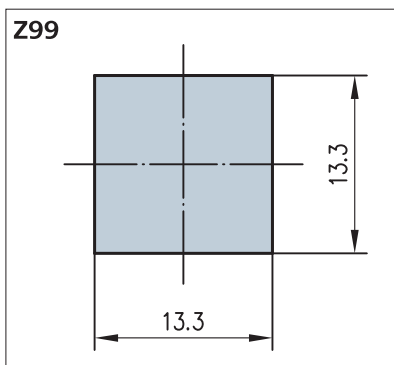
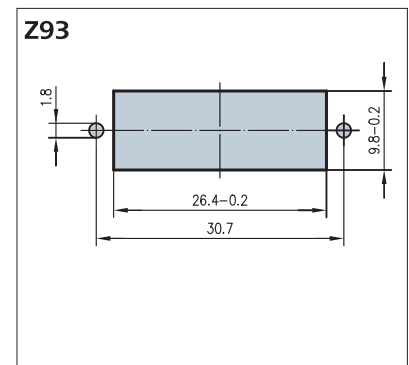
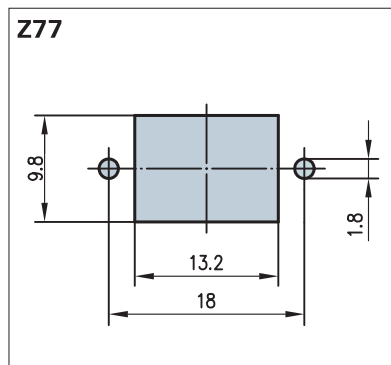
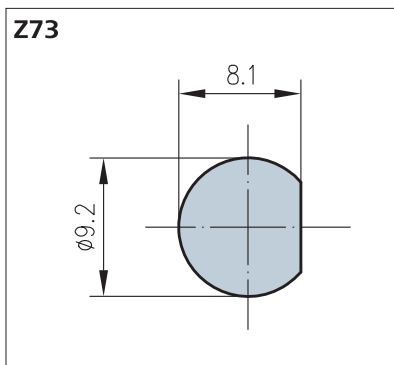
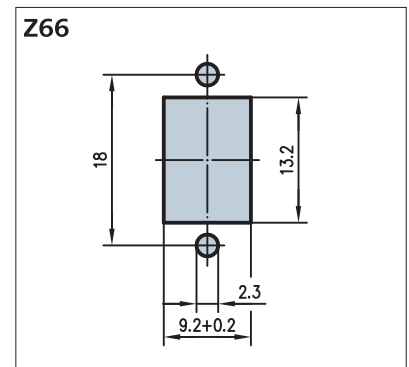
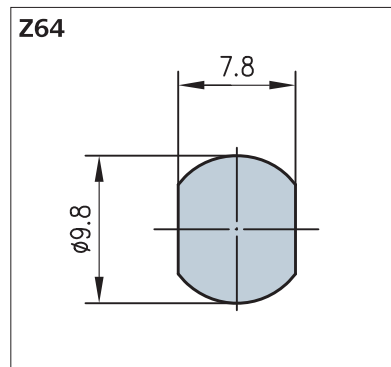
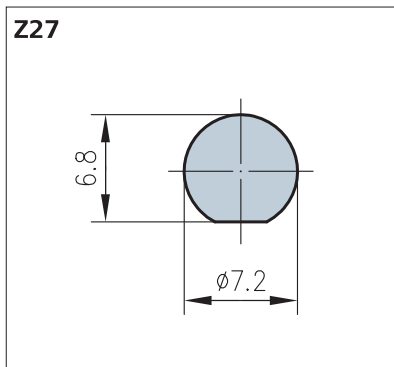
# 28

## Panel Piercings



Telegärtner is keen to facilitate your product selection, and to offer you practical support in your daily involvement with connectors. For this reason, on the following pages you will

find all the panel piercings shown at diverse connectors as a Panel Piercing Code (e.g. Z66), as a kind of „working tool“.



## **Index of Order Numbers**

Order no.	Page	Order no.	Page	Order no.	Page	Order no.	Page	Order no.	Page
<b>A</b>									
A16010A0923	342	B01012A0038	325	H02000A0081	97	H02025A0332	326	H02030A0662	303
A16010A0924	342	B01012A0039	325	H02000A0085	288	H02025A0333	326	H02030A4390	301
<b>B</b>									
B00001A0016	102	B01012A0040	325	H02000A0086	101	H02025A0334	326	H02030A4400	302
B00001B0016	102	B01012A0041	325	H02000A0090	92	H02025A0336	326	H02030A4625	271
B00001C0016	102	B01012A0042	325	H02000A0092	92	H02025A0343	104, 119	H02030A9000	295
B00001D0016	102	B03014A0936	341	H02000A0094	94		311	H02030A9001	295
B00001E0016	102	B03014A0937	341	H02000A0096	92	H02025A0349	325	H02030A9008	295
B00002A0014	72, 102	B03014A0938	341	H02000A0103	97	H02025A0350	325	H02030A9009	295
B00002B0014	72, 102	B03015A0939	341	H02000B0065	93	H02025A0363	325	H02030A9034	295
B00002C0014	72, 102	B03015A0940	341	H02000C0027	71	H02025A0366	325	H02030A9451	296
B00002D0014	72, 102	B05002A0002	311	H02000C0060	284	H02025A0368	326	H02030A9452	296
B00002E0014	72, 102	B05002A0008	311	H02010A0040	88	H02025A0400	303	H02030A9590	296
B00002F0014	72, 102	B05002A0012	103, 119	H02010A0053	87	H02025A0401	303	H02030B9000	296
B00002G0014	72, 102	B06013A0010	104, 119	H02010A0068	90	H02025A0402	303	H02030B9001	296
B00002H0014	72, 102		312	H02010A0069	91	H02025A0403	303	H02030B9008	297
B00004A0021	70, 91,	B06014A0057	276	H02010A0079	87	H02025A0404	303	H02030B9009	297
	284, 288	B06015A0016	309	H02010A0081	87	H02025A0405	303	H02030B9034	297
B00004A0024	69, 91	B06015A0086	309	H02010A0083	88	H02025A0406	303	H02030B9451	297
	283, 288	B07003A0012	327	H02010A0086	86	H02025A0416	304	H02030B9452	297
B00005A0009	70, 1, 288	<b>F</b>		H02010B0013	71, 102	H02025A0443	303	H02030B9590	297
B00005A0011	90	F00020A0113	70, 86	H02010B0014	71, 102	H02025A0444	304	H02030D9000	296
B00005A0012	90	F00020A0123	70, 86		285	H02025A0452	304	H02030D9001	296
B00010A0004	310	F00020A2130	132	H02010B0085	85	H02025A0467	303	H02030D9008	297
B00010A0033	248	F00020A2131	132	H02010C0063	88	H02025A0474	303	H02030D9009	297
B00010A0034	248	F00020A2132	132	H02010C0064	89	H02025A0475	303	H02030D9034	297
B00011A0027	310	F00020A2133	132	H02010C0065	89	H02025A0477	303	H02030D9451	297
B00011A0043	310	F00020A2134	132	H02023A8002	306	H02025A0482	304	H02030D9452	297
B00012A0011	310	F00020A3130	135	H02023A8003	306	H02025A0486	303	H02030D9590	297
B00012A0018	223	F00020A3131	135	H02024A4100	307	H02025A0493	303	H02030E0000	293
B00012A0019	310	F00020A3132	135	H02024A4101	307	H02025A0533	325	H02030E0001	293
B00012A0046	310	F00020A3133	135	H02024A8101	277, 306	H02025A0543	303	H02030E0002	299
B00015A0012	276	F05001A0008	307	H02024A8105	277, 306	H02025A0567	304	H02030E0003	299
B00042A0101	223, 243	F05001A0009	308	H02024A8111	277, 306	H02025A0610	303	H02030E0008	294
B00042A0102	223, 243	F08000A0002	309, 323	H02024A8125	277, 306	H02025A4486	303	H02030E0009	294
B00042A0103	223, 243	F08000A0003	309, 329	H02024A8334	277, 306	H02025A4493	303	H02030E0010	300
B00042A0104	223, 243	F08000A0008	310, 323	H02025A0069	325	H02030A0000	292	H02030E0011	300
B00042A0105	223, 243	F08000A0010	310	H02025A0070	325	H02030A0001	292	H02030E0034	294
B00042A0107	243	F08000A0011	310	H02025A0084	120, 311	H02030A0002	298	H02030E0036	300
B00042A0159	223, 243	F08000A0012	327	H02025A0097	325	H02030A0003	298	H02030E0491	294
B00043A0045	283	F08000A0014	309, 329	H02025A0112	325	H02030A0008	293	H02030E0492	294
B00044A0079	287	F08000A0017	310	H02025A0113	325	H02030A0009	293	H02030E0506	300
B00045A0078	327	F08000A0015	329	H02025A0114	325	H02030A0010	298	H02030E0507	300
B00045A0150	275	F08001A0002	309	H02025A0115	325	H02030A0011	298	H02030E0554	294
B00080A0089	136	<b>H</b>		H02025A0116	104, 119	H02030A0016	292	H02030E0555	300
B00080A0090	137	H00030A0008	104		312	H02030A0018	291	H02030E0590	294
B00080B0089	136	H00030A0014	72, 119	H02025A0137	325	H02030A0019	292	H02030E0591	300
B00080B0090	137	H00030A0589	346	H02025A0155	325	H02030A0021	291	H02030E0594	294
B00080C0089	136	H00030A0955	340	H02025A0167	95	H02030A0022	292	H02030E0595	300
B00080C0090	137	H00030C0014	72, 119	H02025A0171	95	H02030A0034	293	H02030F0000	293
B00080D0089	136	H00030D0014	72, 119	H02025A0197	96	H02030A0036	298	H02030F0001	293
B00080D0090	137	H00030E0014	72, 119	H02025A0199	96	H02030A0048	301	H02030F0002	299
B00080E0089	136	H00030F0014	72, 119	H02025A0220	95	H02030A0293	301	H02030F0003	299
B00080E0090	137	H00031A0957	340	H02025A0221	96	H02030A0400	302	H02030F0008	294
B00080F0089	136	H00031A0959	340	H02025A0234	96	H02030A0425	302	H02030F0009	294
B00080F0090	137	H00031A0965	340	H02025A0236	95	H02030A0427	307	H02030F0010	300
B00081A0031	137	H00032A0942	340	H02025A0241	95	H02030A0428	307	H02030F0011	300
B00081A0036	138	H01000A0288	323	H02025A0243	321	H02030A0429	307	H02030F0034	294
B00081B0031	137	H01011A0037	308, 323	H02025A0260	98	H02030A0435	301	H02030F0036	300
B00081B0036	138		324	H02025A0278	325	H02030A0436	301	H02030F0491	294
B00081C0031	137	H01011A0043	325	H02025A0281	325	H02030A0491	293	H02030F0492	294
B00081C0036	138	H01011A0048	103	H02025A0286	325	H02030A0492	293	H02030F0506	300
B00081D0031	137	H01011A0051	94	H02025A0293	325	H02030A0506	299	H02030F0507	300
B00081D0036	138	H01012A0034	308	H02025A0310	308	H02030A0507	299	H02030F0590	294
B00081E0031	137	H01012A0044	308, 324	H02025A0312	308	H02030A0554	293	H02030F0591	300
B00081E0036	138	H01012A0048	308, 324	H02025A0313	308	H02030A0555	299	H02030G0008	294
B00081F0036	138	H01012A0050	323	H02025A0314	311	H02030A0581	305	H02030G0009	294
B00082A0943	341	H01012A0052	308	H02025A0315	308	H02030A0590	293	H02030G0010	300
B00115A0005	276	H02000A0054	72, 284	H02025A0316	307	H02030A0591	299	H02030G0011	300
B00115A0006	276	H02000A0064	93	H02025A0317	311	H02030A0594	293	H02030G0034	294
B01012A0033	325	H02000A0069	94	H02025A0322	326	H02030A0595	299	H02030G0036	300
B01012A0034	325	H02000A0070	94	H02025A0328	326	H02030A0608	292	H02030G0491	294
B01012A0035	325	H02000A0071	93	H02025A0329	326	H02030A0609	292	H02030G0492	294
B01012A0036	325	H02000A0072	93	H02025A0330	326	H02030A0610	292	H02030G0506	300
B01012A0037	325	H02000A0080	97	H02025A0331	326	H02030A0661	271	H02030G0507	300

Order no.	Page	Order no.	Page	Order no.	Page	Order no.	Page	Order no.	Page
H02030G0590	294	H02030T0608	292	H02050A0246	322	H82050A0002	329	J00026A0142	139
H02030G0591	300	H02030T0609	292	H02050A0247	322	H82050A0005	329	J00026A0165	135
H02030G9000	296	H02030T0610	292	H02050A0248	322	H82050E0001	330	J00026A0182	135
H02030G9001	296	H02030T9008	295	H02050A0251	326	H82050E0002	330	J00026A0183	136
H02030G9008	297	H02030T9009	295	H02050A0272	275	H82050E0003	330	J00026A2000	131
H02030G9009	297	H02030T9034	295	H02050A0273	275	H82050E0005	330	J00026A2001	131
H02030G9034	297	H02030T9451	296	H02050A0279	322	H82050E0007	330	J00026A2002	131
H02030G9451	297	H02030T9452	296	H02050A0280	322	H82050E0101	330	J00026A2003	131
H02030G9452	297	H02030T9590	296	H02050A0281	322	H82050E0102	330	J00026A2004	131
H02030G9590	297	H02030V0008	293	H02050A0282	276	H82050E0105	330	J00026A2110	132
H02030K0000	293	H02030V0009	293	H02050A0283	276	H82050F0001	330	J00026A2111	132
H02030K0001	293	H02030V0010	298	H02050A0295	319	H82050F0002	330	J00026A2112	132
H02030K0002	299	H02030V0011	298	H02050A0302	277	H82050F0005	330	J00026A2113	132
H02030K0003	299	H02030V0016	292	H02050A0303	277	H82050F0007	330	J00026A2114	132
H02030K0008	294	H02030V0019	292	H02050F4021	270	H82050F0101	330	J00026A3000	134
H02030K0009	294	H02030V0022	292	H02050F4031	270	H82050F0102	330	J00026A3001	134
H02030K0010	300	H02030V0034	293	H02050F4041	270	H82050F0105	330	J00026A3002	134
H02030K0011	300	H02030V0036	298	H02050F4051	270	H82050G0001	330	J00026A3003	134
H02030K0034	294	H02030V0491	293	H02050F4121	270	H82050G0002	330	J00026A3110	135
H02030K0036	300	H02030V0492	293	H02050F4131	270	H82050G0005	330	J00026A3111	135
H02030K0491	294	H02030V0506	299	H02050F4141	270	H82050G0007	330	J00026A3112	135
H02030K0492	294	H02030V0507	299	H02050F4151	270	H82050G0101	330	J00026A3113	135
H02030K0506	300	H02030V0590	293	H02050F4221	269	H82050G0102	330	J00026A4000	133
H02030K0507	300	H02030V0591	299	H02050F4231	269	H82050G0105	330	J00026A4001	133
H02030K0590	294	H02030V0608	292	H02050F4241	269	H82050K0001	330	J00026A4002	133
H02030K0591	300	H02030V0609	292	H02050F4251	269	H82050K0002	330	J00026A4003	133
H02030K9000	296	H02030V0610	292	H02050F4252	270	H82050K0005	330	J00026A4004	133
H02030K9001	296	H02030V9008	295	H02051A0000	287	H82050K0007	330	J00026A4110	134
H02030K9008	297	H02030V9009	295	H02051A0001	287	H82050K0101	330	J00026A4111	134
H02030K9009	297	H02030V9034	295	H02051A0002	287	H82050K0102	330	J00026A4112	134
H02030K9034	297	H02030V9451	296	H02051A0003	287	H82050K0105	330	J00026A4113	134
H02030K9451	297	H02030V9452	296	H02051A0020	281	H82050S0001	329	J00026A4114	134
H02030K9452	297	H02030V9590	296	H02051A0251	281	H82050S0002	329	J00026A5000	132
H02030K9590	297	H02031A0010	302	H02051A0253	281	H82050S0003	329	J00026A5001	132
H02030M0008	293	H02031A0023	301	H02051A0254	281	H82050S0005	329	J00026A5002	132
H02030M0009	293	H02031A0027	301	H02051A0500	283	H86011A0000	137	J00026A5003	132
H02030M0010	298	H02031A0037	302	H02051A0503	283	H86011A0001	137	J00026A5004	132
H02030M0011	298	H02032A0021	116, 271	H02051C0050	286	H86011A0002	137	J00026A5110	133
H02030M0016	292	H02032A0030	271, 304	H02051C0058	286	H86011A0003	137	J00026A5111	133
H02030M0019	292	H02032A0031	305	H02051C0060	287	H86011A0004	137	J00026A5112	133
H02030M0022	292	H02050A0000	308	H02051C0066	286	H86011A0005	137	J00026A5113	133
H02030M0034	293	H02050A0004	318	H02051C0068	287	H86011A0006	137	J00026A5114	133
H02030M0036	298	H02050A0006	318	H02051C0072	286			J00029A0003	118
H02030M0491	293	H02050A0008	320	H02051C0510	282	J00010A0000	346	J00029A0004	118
H02030M0492	293	H02050A0010	319	H02051C0514	282	J00010A0590	346	J00029A0006	118
H02030M0506	299	H02050A0013	320	H02051C0515	282	J00014A0000	345	J00029A0007	118
H02030M0507	299	H02050A0061	309	H02051C0534	283	J00014A0002	345	J00029A0008	118
H02030M0590	293	H02050A0075	324	H02053A0160	306	J00014A0585	345	J00029A0009	117
H02030M0591	299	H02050A0076	327	H02053A0164	306	J00014A0586	345	J00029A0010	117
H02030M0608	292	H02050A0077	327	H02053B0165	305	J00014B0585	345	J00029A0011	117
H02030M0609	292	H02050A0087	324	H02053B0166	305	J00014B0586	345	J00029A0013	117
H02030M0610	292	H02050A0104	326	H02053D0165	305	J00014D0586	345	J00029A0061	80
H02030S9000	295	H02050A0105	326	H02053D0166	305	J00020A0388	68	J00029A0062	81, 168
H02030S9001	295	H02050A0106	327	H02053G0165	305	J00020A0389	68	J00029A0064	82, 168
H02030S9008	295	H02050A0107	327	H02053G0166	305	J00020A0393	67	J00029A0077	79
H02030S9009	295	H02050A0109	326	H02053K0165	305	J00020A0395	67	J00029A0088	82
H02030S9034	295	H02050A0111	326	H02053K0166	305	J00020A0419	68	J00029A0108	83
H02030S9451	296	H02050A0112	326	H02072A0001	328	J00020A0420	69	J00029A0116	179
H02030S9452	296	H02050A0166	310	H02072A0002	328	J00020A0500	64	J00029A2000	79
H02030T0008	293	H02050A0190	321	H02082A0001	285	J00020A0502	64	J00029A2001	79
H02030T0009	293	H02050A0191	322	H02082A0002	285	J00020A0503	65	J00029A2110	79
H02030T0010	298	H02050A0192	322	H02082A0003	285	J00020A0505	65	J00029A2111	79
H02030T0011	298	H02050A0193	322	H02082A0004	285	J00020A0506	65	J00029A3000	78
H02030T0016	292	H02050A0194	322	H06000A0001	104, 119	J00020A0507	66	J00029A3001	78
H02030T0019	292	H02050A0195	322			J00020A0510	84	J00029A3110	78
H02030T0022	292	H02050A0196	322	H06000A0003	312	J00020A0511	84	J00029A3111	78
H02030T0034	293	H02050A0197	322	H06000A0055	329	J00020A0512	85	J00029B0061	81
H02030T0036	298	H02050A0198	322	H06000A0056	101	J00020A0513	85	J00029B0064	83
H02030T0491	293	H02050A0199	322	H06000A0074	190	J00020A0514	84	J00029B0077	80
H02030T0492	293	H02050A0200	322	H06000B0045	101	J00020A0515	84	J00029K0036	79
H02030T0506	299	H02050A0201	322	H10000A0000	120, 311	J00023A0056	69	J00029K0050	81
H02030T0507	299	H02050A0205	322	H60030A0000	195	J00023A0204	66	J00029K0051	80
H02030T0590	293	H02050A0229	324	H60030A0001	195	J00023A0205	101	J00029K0052	81, 168
H02030T0591	299	H02050A0231	324	H82050A0001	329	J00023A0206	101	J00029K0054	82, 168

Order no.	Page	Order no.	Page	Order no.	Page	Order no.	Page	Order no.	Page
J00029K0078	81	J02024C0007	100, 109	J08081A0017	224	L00000A0200	153	L00001A0088	150
J00029L0036	80	J02024L0002	112	J08081A0032	224	L00000A0201	154	L00001A0089	150
J00029L0050	82	J08001A0002	228	J08081A0034	224	L00000A0202	154	L00001A0090	148
J00029L0051	81	J08010A0005	221	J08081A0035	224	L00000A0203	154	L00001A0099	156
J00029L0054	83	J08010A0007	221	J08081A0036	224	L00000A0204	154	L00001A0117	156
J00029L0078	82	J08010A0008	221	J08081A0037	224	L00000A0226	151	L00001A0123	151
J00040A0901	339	J08010A0016	221	J08081A0038	224	L00000A0230	148	L00001A0154	152
J00040A0911	340	J08010A0035	221	J08081A0040	224	L00000A0231	148	L00001A0155	152
J00041A0903	339	J08010A0036	221	J08081A0041	224	L00000A0232	149	L00001A0156	152
J00041A0905	339	J08010A0056	221	J08082A0002	228	L00000A0233	149	L00001A0157	153
J00041A0913	340	J08011A0002	222	J08082A0007	228	L00000A0234	150	L00001A0159	153
J00041A0915	340	J08011A0003	222	J08082A0010	228	L00000A0235	150	L00001A0162	153
J00041A0917	340	J08011A0014	222	J08082A0012	228	L00000A0236	151	L00001A0163	154
J00042A0907	339	J08011A0017	222	J08093A0205	229	L00000A0237	151	L00001A0164	154
J00042A0909	339	J08021A0002	228	J08093A0210	229	L00000A0238	151	L00001A0194	151
J00042A0919	340	J08051A0012	227	J08093A1205	229	L00000A0253	155	L00001A0199	155
J00044A0900	339	J08070A0000	225	J08093A1210	229	L00000A0254	155	L00001A0228	161
J00044A0910	340	J08070A0002	225	J08093A5205	229	L00000A0273	161	L00001A0230	162
J00045A0902	339	J08070A0005	225	J08093A5210	229	L00000A0274	143	L00001A0232	162
J00045A0904	339	J08070A0007	225	J08093A6205	229	L00000A0287	161	L00001A0234	163
J00045A0912	340	J08070A0009	225	J08093A6210	229	L00000A0288	162	L00001A0236	163
J00045A0914	340	J08070A0010	225	J60020A0000	189	L00000A0289	162	L00001A0238	164
J00045A0916	340	J08070A0033	225	J60020A0002	189	L00000A0290	162	L00001A0243	164
J00046A0906	339	J08070A0034	225	J60020A0004	189	L00000A0291	162	L00001A0244	160
J00046A0908	339	J08070A0035	225	J60023A0000	190	L00000A0292	163	L00001A0245	160
J00046A0918	340	J08070A0043	225	J60026A0000	188	L00000A0293	163	L00001A0264	161
J00050A0587	346	J08070A0044	225	J60029A0000	190	L00000A0294	163	L00001A0288	155
J00060A0069	125	J08070A0047	225	J68070A0000	192	L00000A0295	163	L00001A0289	155
J00060A0071	124	J08070A0055	226	J68070A0001	192	L00000A0296	164	L00001D0003	159
J00060A0072	124	J08070A0056	226	J68070A0004	194	L00000A0297	164	L00001D0032	158
J00060B0069	125	J08070A0057	226	J68070A0005	194	L00000A0303	164	L00001D0033	158
J02010A0650	349	J08070A0058	226	J68070A0006	194	L00000A0304	164	L00001D0034	159
J02010A0652	349	J08070A0059	226	J68070A0007	194	L00000A0307	160	L00001D0035	157
J02010B0652	349	J08071A0000	226	J68070A0008	192	L00000A0308	160	L00001D0036	157
J02010C0652	349	J08071A0002	226	J68071A0000	192	L00000A0309	160	L00001D0095	159
J02010D0652	349	J08071A0004	226	J68071A0001	192	L00000A0310	160	L00001E0000	167
J02021A0030	115	J08071A0005	226	J68071A0004	193	L00000A0311	160	L00001E0005	165
J02021A0037	100	J08071A0010	226	J68071A0006	194	L00000A0312	160	L00001E0007	165
J02021A0050	113	J08071A0017	226	J68071A0007	195	L00000A0340	161	L00001E0067	166
J02021A0051	113	J08071A0018	227	J80026A0003	133	L00000A0341	161	L00001E0068	165
J02021A0053	113	J08071A0019	227	J80026A0045	133	L00000A0376	155	L00001E0069	166
J02021A0054	114	J08071A0020	227	J80026A0046	133	L00000A0377	155	L00001E0070	167
J02021A0055	114	J08071A0021	226	J80026A0047	133	L00000D0004	159	L00002A0112	148
J02022A0050	108	J08071A0028	226	J80060A0000	126	L00000D0005	159	L00002A0113	148
J02022A0052	115	J08071A0029	227	J88080A0000	223	L00000D0017	157	L00002A0114	149
J02022A0053	115	J08071A0030	226	J88080A0008	223	L00000D0022	158	L00002A0115	149
J02022A0054	115	J08071A0031	227	<b>L</b>		L00000D0023	158	L00002A0116	150
J02022A0055	115	J08071A0034	226	L00000A0072	148	L00000D0024	159	L00002A0117	150
J02022A0056	1145	J08071A0042	227	L00000A0073	148	L00000D0025	157	L00002A0120	156
J02022A0057	111	J08071A0044	227	L00000A0074	149	L00000D0026	157	L00002A0139	156
J02022A0059	110	J08071A0048	226	L00000A0075	149	L00000D0031	158	L00002A0141	151
J02023A0026	99	J08071A0052	226	L00000A0076	150	L00000D0032	158	L00002A0173	152
J02023A0030	100	J08080A0001	223	L00000A0077	150	L00000D0033	159	L00002A0174	152
J02023A0033	99	J08080A0002	223	L00000A0081	148	L00000D0034	157	L00002A0175	154
J02023A0034	99	J08080A0005	223	L00000A0082	148	L00000D0035	157	L00002A0176	153
J02023A0035	99	J08080A0006	223	L00000A0083	149	L00000D0089	159	L00002A0177	153
J02023A0039	98	J08080A0016	223	L00000A0084	149	L00000D0090	159	L00002A0179	153
J02023A0040	98	J08080A0018	223	L00000A0085	150	L00000E0000	167	L00002A0180	154
J02023A0050	108	J08080A0036	223	L00000A0086	150	L00000E0001	167	L00002A0194	80
J02023A0051	108	J08080A0037	223	L00000A0102	156	L00000E0003	165	L00002A0195	151
J02023A0052	109	J08080A0043	223	L00000A0103	156	L00000E0010	165	L00002A0203	155
J02023A0053	116	J08080A0046	223	L00000A0118	156	L00000E0011	165	L00002A0219	161
J02023B0017	110	J08080A0047	223	L00000A0120	156	L00000E0063	166	L00002A0231	162
J02023B0018	110	J08080A0048	223	L00000A0130	151	L00000E0064	165	L00002A0233	162
J02023C0014	111	J08080A0051	223	L00000A0131	151	L00000E0065	166	L00002A0235	163
J02023K0025	99	J08080A0052	223	L00000A0189	152	L00000E0066	167	L00002A0237	163
J02023K0027	99	J08080A0053	223	L00000A0192	152	L00000E0068	166	L00002A0239	164
J02023K0029	100	J08081A0000	224	L00000A0193	152	L00000E0069	165	L00002A0243	164
J02023L0014	111	J08081A0002	224	L00000A0194	152	L00000E0070	166	L00002A0244	160
J02023S0018	110	J08081A0006	224	L00000A0195	153	L00000E0071	167	L00002A0245	160
J02023S0050	108	J08081A0010	224	L00000A0196	153	L00001A0084	148	L00002A0259	161
J02023S0051	108	J08081A0011	224	L00000A0197	153	L00001A0085	148	L00002A0282	155
J02024A0007	100, 109	J08081A0014	224	L00000A0198	153	L00001A0086	149	L00002A0283	155
J02024C0002	112	J08081A0016	224	L00000A0199	153	L00001A0087	149	L00002D0002	159

Order no.	Page	Order no.	Page	Order no.	Page	Order no.	Page	Order no.	Page
L00002D0076	158	L00004A0178	161	L00006A0040	148	L00810A0010	243	L00833A0032	266
L00002D0077	158	L00004A0179	162	L00006A0041	149	L00810A0014	243	L00833A0033	267
L00002D0078	159	L00004A0181	162	L00006A0042	149	L00811A0007	243	L00835A0005	264
L00002D0079	157	L00004A0182	163	L00006A0043	149	L00811A0009	244	L00835A0006	265
L00002D0080	157	L00004A0183	163	L00006A0044	149	L00811A0012	243	L00835A0007	264
L00002D0123	159	L00004A0185	164	L00006A0045	149	L00811A0022	245	L00835A0026	267
L00002E0000	167	L00004A0186	164	L00006A0046	149	L00811A0028	243	L00835A0027	267
L00002E0004	165	L00004A0189	160	L00006A0047	149	L00811A0034	243	L00835A0028	267
L00002E0101	166	L00004A0191	160	L00006A0048	149	L00812A0007	243	L00835A0029	267
L00002E0102	165	L00004A0206	161	L00006A0049	150	L00812A0009	244	L00835A0030	266
L00002E0103	166	L00004A0225	155	L00006A0050	150	L00812A0011	243	L00835A0031	266
L00002E0104	167	L00004D0004	159	L00006A0051	150	L00812A0018	243	L00835A0032	266
L00003A0049	156	L00004D0037	158	L00006A0052	150	L00812A0021	243	L00835A0033	267
L00003A0055	148	L00004D0038	158	L00006A0053	150	L00813A0003	243	L00836A0011	264
L00003A0056	148	L00004D0039	159	L00006A0054	150	L00813A0004	244	L00836A0012	265
L00003A0057	149	L00004D0040	157	L00006A0055	150	L00813A0005	243	L00836A0013	264
L00003A0058	149	L00004D0041	157	L00006A0056	150	L00813A0008	243	L00836A0015	264
L00003A0059	150	L00004D0062	159	L00006A0185	80	L00813A0014	243	L00836A0016	265
L00003A0060	150	L00004E0000	167	L00006A0321	161	L00815A0006	243	L00836A0017	264
L00003A0067	156	L00004E0003	165	L00006A0322	161	L00815A0008	243	L00836A0019	264
L00003A0078	156	L00004E0051	166	L00006A0323	161	L00816A0003	243	L00836A0020	265
L00003A0085	151	L00004E0052	165	L00006A0324	162	L00816A0004	244	L00836A0021	264
L00003A0119	152	L00004E0053	166	L00006A0325	162	L00816A0005	243	L00836A0023	264
L00003A0121	152	L00004E0054	167	L00006A0326	162	L00819A0007	233	L00836A0024	265
L00003A0123	153	L00005A0027	148	L00006A0327	162	L00819A0013	233	L00836A0025	264
L00003A0124	153	L00005A0028	148	L00006A0328	162	L00819A0019	233	L00836A0027	264
L00003A0125	153	L00005A0029	149	L00006A0329	162	L00819A0045	233	L00836A0028	265
L00003A0126	154	L00005A0030	149	L00006A0330	163	L00819A0060	235	L00836A0029	264
L00003A0127	154	L00005A0031	150	L00006A0331	163	L00819A0064	235	L00836A0031	264
L00003A0145	80	L00005A0032	150	L00006A0332	163	L00819A0068	233	L00836A0032	265
L00003A0147	151	L00005A0035	156	L00006A0333	163	L00819A0071	235	L00836A0033	264
L00003A0157	155	L00005A0051	151	L00006A0334	163	L00819A0073	235	L00836A0035	264
L00003A0204	161	L00005A0080	152	L00006A0335	163	L00830A0005	264	L00836A0036	265
L00003A0205	162	L00005A0081	152	L00006A0336	164	L00830A0006	265	L00836A0037	264
L00003A0206	162	L00005A0082	153	L00006A0337	164	L00830A0007	264	L00836A0039	264
L00003A0207	163	L00005A0083	153	L00006A0338	164	L00830A0026	267	L00836A0040	265
L00003A0208	163	L00005A0084	153	L00006A0341	164	L00830A0027	267	L00836A0041	264
L00003A0209	164	L00005A0085	154	L00006A0342	164	L00830A0028	267	L00836A0043	264
L00003A0216	164	L00005A0086	154	L00006A0343	164	L00830A0029	267	L00836A0044	265
L00003A0217	160	L00005A0102	80	L00006A0358	161	L00830A0030	266	L00836A0045	264
L00003A0218	160	L00005A0103	151	L00006A0359	161	L00830A0031	266	L00836A0047	264
L00003A0230	161	L00005A0104	156	L00006A0360	161	L00830A0032	266	L00836A0048	265
L00003A0250	155	L00005A0113	155	L00006D0078	157	L00830A0033	267	L00836A0049	264
L00003D0004	159	L00005A0129	161	L00006D0079	157	L00831A0005	264	L00836A0051	264
L00003D0026	158	L00005A0130	162	L00006D0080	157	L00831A0006	265	L00836A0052	265
L00003D0027	158	L00005A0131	162	L00006D0081	157	L00831A0007	264	L00836A0053	264
L00003D0028	159	L00005A0132	163	L00006D0082	157	L00831A0026	267	L00836A0055	264
L00003D0029	157	L00005A0133	163	L00006D0083	157	L00831A0027	267	L00836A0056	265
L00003D0030	157	L00005A0134	164	L00006D0084	157	L00831A0028	267	L00836A0057	264
L00003D0062	159	L00005A0137	164	L00006D0085	157	L00831A0029	267	L00839A0015	268
L00003E0000	167	L00005A0138	160	L00006D0086	158	L00831A0030	266	L00839A0016	268
L00003E0003	165	L00005A0139	160	L00006D0087	158	L00831A0031	266	L00839A0017	268
L00003E0048	166	L00005A0153	161	L00006D0088	158	L00831A0032	266	L00839A0024	268
L00003E0049	165	L00005A0176	155	L00006D0089	158	L00831A0033	267	L00850A0001	244
L00003E0050	166	L00005D0004	159	L00006D0090	158	L00832A0005	264	L00851A0008	244
L00003E0051	167	L00005D0035	157	L00006D0091	158	L00832A0006	265	L00852A0000	244
L00004A0054	148	L00005D0036	157	L00006D0092	158	L00832A0007	264	L00853A0001	244
L00004A0055	148	L00005D0037	158	L00006D0093	158	L00832A0026	267	L00855A0001	244
L00004A0056	149	L00005D0038	158	L00006D0094	159	L00832A0027	267	L00859A0003	234
L00004A0057	149	L00005D0039	159	L00006D0095	159	L00832A0028	267	L00859A0013	235
L00004A0058	150	L00005D0040	159	L00006D0096	159	L00832A0029	267	L00870A0000	240
L00004A0060	150	L00005E0000	167	L00006D0097	159	L00832A0030	266	L00870A0001	240
L00004A0064	156	L00005E0003	165	L00006D0098	159	L00832A0031	266	L00870A0002	240
L00004A0071	151	L00005E0025	166	L00006D0099	159	L00832A0032	266	L00870A0003	240
L00004A0109	152	L00005E0026	165	L00006D0100	159	L00832A0033	267	L00870A0005	240
L00004A0111	152	L00005E0027	166	L00006D0101	159	L00833A0005	264	L00870A0007	240
L00004A0112	153	L00005E0028	167	L00006E0015	165	L00833A0006	265	L00871A0003	240
L00004A0113	153	L00006A0033	148	L00006E0019	165	L00833A0007	264	L00871A0004	240
L00004A0114	153	L00006A0034	148	L00006E0020	165	L00833A0026	267	L00871A0005	240
L00004A0115	154	L00006A0035	148	L00040A0009	103	L00833A0027	267	L00871A0006	240
L00004A0116	154	L00006A0036	148	L00040A0009	116	L00833A0028	267	L00871A0008	240
L00004A0128	80	L00006A0037	148	L00810A0003	243	L00833A0029	267	L00871A0026	240
L00004A0134	151	L00006A0038	148	L00810A0004	244	L00833A0030	266	L00872A0000	240
L00004A0145	155	L00006A0039	148	L00810A0005	243	L00833A0031	266	L00872A0001	240

Order no.	Page	Order no.	Page	Order no.	Page	Order no.	Page	Order no.	Page
L00872A0002.....	240	L00885A0005.....	242	L00893A0005.....	245	L02002C0074.....	171	<b>N</b>	
L00872A0003.....	240	L00885A0012.....	242	L00893A0027.....	247	L02002D0061.....	172	N00000A0013.....	103
L00872A0006.....	240	L00885A0025.....	242	L00893A0032.....	248	L02002E0061.....	172	N00000B0020.....	103, 139
L00872A0024.....	240	L00885A0026.....	241	L00893A0038.....	246	L02002F0061.....	172	N00001A0002.....	138
L00873A0000.....	240	L00885C0000.....	241	L00893A0039.....	247	L08000A0001.....	258	N00001A0006.....	138
L00873A0001.....	240	L00885C0003.....	241	L00893A0042.....	246	L08000A0005.....	257	N00001A0011.....	138
L00873A0002.....	240	L00885C0004.....	241	L00893A0043.....	244	L08001A0001.....	258	N00100A0009.....	334
L00873A0003.....	240	L00885C0006.....	242	L00893A0076.....	246	L08001A0002.....	257	N00100A0010.....	334
L00873A0009.....	240	L00885C0007.....	242	L00893A0077.....	247	L08001A0028.....	258	N00100A0011.....	334
L00873A0031.....	240	L00885C0020.....	242	L00893A0079.....	245	L08001A0033.....	258	N00100A0016.....	333
L00875A0000.....	240	L00889A0028.....	234	L00893C0001.....	246	L08001A0035.....	257	N00100A0017.....	334
L00875A0001.....	240	L00889A0065.....	235	L00893C0003.....	246	L08002A0001.....	258	N00100A0018.....	334
L00875A0002.....	240	L00889W0007.....	234	L00893C0013.....	247	L08002A0002.....	257	N01001A0061.....	334
L00875A0003.....	240	L00889W0016.....	234	L00893C0022.....	245	L08010A0002.....	257	N01002A0000.....	73, 120
L00875A0007.....	240	L00889W0017.....	234	L00893C0028.....	246	L08010A0004.....	257	N01002A0001.....	73, 120
L00875A0034.....	240	L00889W0027.....	235	L00893C0040.....	245	L08010A0006.....	256	N04001A0017.....	335
L00879A0000.....	234	L00889W0029.....	235	L00893C0041.....	245	L08011A0001.....	257	N04001A0018.....	334
L00879A0001.....	234	L00889W0033.....	235	L00893C0044.....	245	L08011A0004.....	257	N04001A0024.....	334
L00879A0002.....	234	L00889W0039.....	234	L00895A0024.....	247	L08011A0024.....	258	N04001A0026.....	335
L00879A0004.....	234	L00889W0051.....	234	L00895A0032.....	248	L08011A0027.....	256	N04001A0031.....	334
L00879A0008.....	235	L00889W0056.....	235	L00895A0035.....	246	L08011A0028.....	258	N04001A0032.....	334
L00879A0009.....	235	L00889W0071.....	234	L00895A0036.....	247	L08011A0029.....	256	N04001A0033.....	334
L00879A0010.....	235	L00889W0079.....	235	L00895A0039.....	246	L08011A0033.....	258	N04001A0034.....	335
L00879A0013.....	234	L00890A0018.....	245	L00895A0040.....	244	L08011A0035.....	256	N04001A0039.....	335
L00879A0017.....	235	L00890A0032.....	248	L00895A0070.....	246	L08011A0041.....	258	N04001A0040.....	335
L00879A0018.....	234	L00890A0036.....	246	L00895A0071.....	247	L08012A0001.....	258	N04001A0046.....	335
L00879A0023.....	235	L00890A0037.....	247	L00895A0073.....	245	L08020A0112.....	254	N04001A0048.....	334
L00879A0025.....	234	L00890A0040.....	246	L00895C0001.....	246	L08020A0124.....	254	N04001A0059.....	334
L00879A0026.....	235	L00890A0041.....	244	L00895C0003.....	246	L08020B9001.....	254	N04001A0062.....	334
L00880A0003.....	242	L00890A0058.....	247	L00895C0013.....	247	L08020K1202.....	256	N04001A0063.....	334
L00880A0006.....	241	L00890A0077.....	246	L00895C0021.....	245	L08020K1212.....	256	N04001A0064.....	334
L00880A0017.....	242	L00890A0078.....	247	L00895C0025.....	246	L08021A0104.....	254	N04001A0067.....	333
L00880A0018.....	241	L00890A0080.....	245	L00895C0037.....	245	L08021A0106.....	254	N04001A0073.....	335
L00880C0004.....	242	L00890C0019.....	246	L00895C0038.....	245	L08021A0108.....	254	N04001A0074.....	335
L00880C0005.....	242	L00890C0021.....	246	L02002A0036.....	175	L08021A0112.....	254	N04001A0081.....	335
L00880C0007.....	241	L00890C0024.....	247	L02002A0040.....	175	L08021A0324.....	254	N04001A0082.....	335
L00880C0008.....	241	L00890C0038.....	245	L02002A0041.....	175	L08021B0304.....	254	N80000A0001.....	334
L00880C0010.....	241	L00890C0039.....	245	L02002A0042.....	173	L08021B0308.....	254	N81001A0000.....	334
L00880C0015.....	242	L00890C0055.....	245	L02002A0043.....	173	L08021B0312.....	254	N81001A0001.....	334
L00881A0003.....	242	L00890C0059.....	246	L02002A0051.....	175	L08021B0324.....	254	N84000A0000.....	333
L00881A0006.....	241	L00891A0014.....	246	L02002A0053.....	175	L08021B1204.....	255	N84001A0000.....	334
L00881A0020.....	242	L00891A0015.....	246	L02002A0054.....	175	L08021B1208.....	255	N84001A0001.....	334
L00881A0021.....	242	L00891A0016.....	247	L02002A0055.....	175	L08021B1404.....	256	N84001A0002.....	333
L00881A0027.....	242	L00891A0017.....	244	L02002A0056.....	175	L08021B1406.....	256	<b>Q</b>	
L00881A0028.....	241	L00891A0029.....	247	L02002A0057.....	174	L08021B9001.....	254	Q00051A0006.....	334
L00881C0004.....	242	L00891A0032.....	248	L02002A0061.....	172	L08021C0304.....	254	<b>R</b>	
L00881C0005.....	242	L00891A0079.....	246	L02002A0062.....	175	L08021C0308.....	254	R00040A0023.....	311
L00881C0007.....	241	L00891A0080.....	247	L02002A0094.....	174	L08021C0312.....	254	R00040A0047.....	323
L00881C0008.....	241	L00891A0082.....	245	L02002A0095.....	174	L08021C0324.....	254	<b>U</b>	
L00881C0023.....	241	L00891C0018.....	245	L02002A0143.....	171	L08021C1204.....	255	U01010A0004.....	325
L00881C0024.....	242	L00891C0019.....	245	L02002A0146.....	171	L08021C1208.....	255	U01100A0129.....	258
L00882A0002.....	241	L00891C0026.....	246	L02002A0150.....	174	L08021C1404.....	256	U01100A0130.....	258
L00882A0005.....	242	L00891C0036.....	247	L02002A0156.....	172	L08021C1406.....	256	U01100A0131.....	258
L00882A0011.....	242	L00891C0042.....	245	L02002A0175.....	171	L08021C9001.....	254	U01100A0132.....	258
L00882A0019.....	242	L00891C0048.....	247	L02002A0176.....	174	L08021K1104.....	255		
L00882A0020.....	241	L00891C0071.....	246	L02002A0180.....	171	L08021K1108.....	255		
L00882C0000.....	242	L00891C0072.....	246	L02002A0181.....	171	L08021K1202.....	256		
L00882C0003.....	241	L00892A0005.....	245	L02002A0182.....	171	L08021K1204.....	256		
L00882C0004.....	241	L00892A0029.....	247	L02002A0183.....	171	L08021K1208.....	256		
L00882C0006.....	242	L00892A0032.....	248	L02002A0184.....	171	L08021K1212.....	256		
L00882C0007.....	242	L00892A0035.....	246	L02002A0185.....	171	L08022A0104.....	254		
L00882C0015.....	241	L00892A0036.....	247	L02002A0198.....	173	L08022A0106.....	254		
L00883A0002.....	241	L00892A0039.....	246	L02002A0199.....	173	L08022A0108.....	254		
L00883A0005.....	242	L00892A0040.....	244	L02002A0200.....	173	L08022A0112.....	254		
L00883A0012.....	242	L00892A0072.....	246	L02002B0036.....	175	L08022K1202.....	256		
L00883A0028.....	242	L00892A0073.....	247	L02002B0057.....	174	L08022K1204.....	256		
L00883A0029.....	241	L00892A0075.....	245	L02002B0061.....	172	L08022K1212.....	256		
L00883C0003.....	241	L00892C0001.....	246	L02002B0086.....	173	L08100A0002.....	310		
L00883C0004.....	241	L00892C0009.....	246	L02002C0036.....	175	L08110A0000.....	258		
L00883C0006.....	242	L00892C0016.....	247	L02002C0057.....	174	<b>M</b>			
L00883C0007.....	242	L00892C0024.....	245	L02002C0061.....	172	M06000A0067.....	136		
L00883C0017.....	241	L00892C0037.....	245	L02002C0071.....	172	M06000A0068.....	136		
L00883C0025.....	242	L00892C0038.....	245	L02002C0072.....	172	M06010A0017.....	183		
L00885A0002.....	241	L00892C0048.....	246	L02002C0073.....	171				



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## at a glance



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For the optimum online planning of individual fiber optic patch panels and wall distributors, ready-to-install fiber optic links, fiber optic patch cords and pigtails, RJ45 patch cords in protection class IP20 and IP67.

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- Detailed product information with images and technical data
- Clear breakdown of all relevant information incl. gross list prices
- Saving of your configurations for quick subsequent orders
- View your saved configurations at any time by entering security code

[www.telegaertner.com/go/ticnet](http://www.telegaertner.com/go/ticnet)



### Network-Configurator

For fast and easy online planning of a structured network incl. modules/keystones, outlets, patch panels, mini distributors, patch cords and installation cable.

#### Advantages at a glance:

- Two different view options (floor viewing for planning across several floors as well as room view for a simple planning of your individual network) for a easy and fast configuration
- Detailed parts lists with technical data and gross list prices in Excel or PDF format for downloading
- View saved configurations and edit at any time by entering security code

[www.telegaertner.com/go/network-config](http://www.telegaertner.com/go/network-config)



### COAX-Configurator

For the optimum online planning of individually assembled RF cables incl. coaxial connectors, cable cover, labelling and cable length.

#### Advantages at a glance:

- Detailed display of all products which you need for your personal configuration – with PDF data sheets for downloading
- Illustration on the connectors by photo and technical drawings
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- Your individual configuration as a clear specification in PDF format: for downloading and printing

[www.telegaertner.com/go/coaxconfig](http://www.telegaertner.com/go/coaxconfig)

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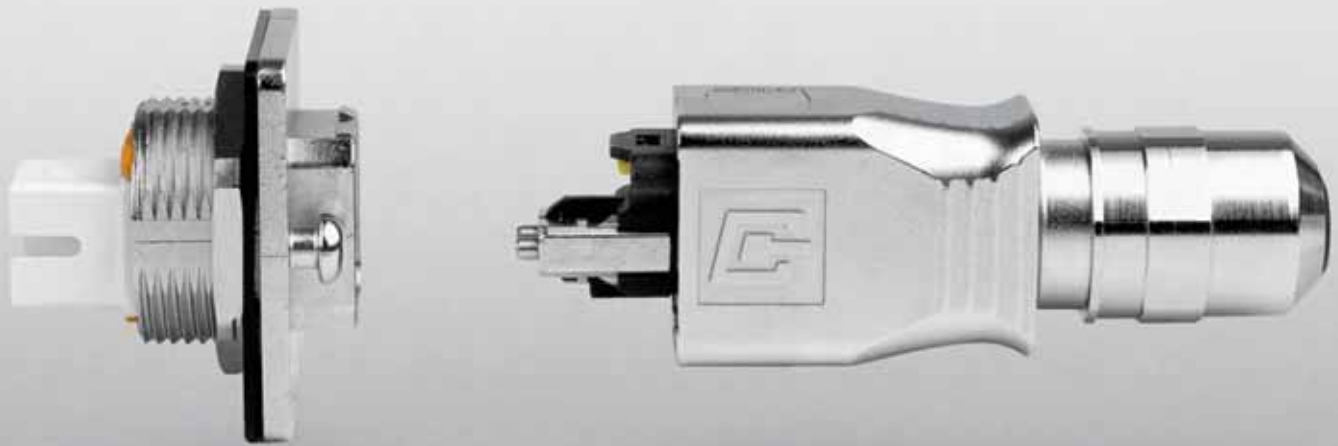
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