

BEST CONTACTS FOR YOUR SUCCESS



NETWORKING COMPONENTS

COAXIAL CONNECTORS

CABLE ASSEMBLIES

PRECISION TURNED PARTS

PLASTIC INJECTION MOULD PARTS

INDUSTRIAL ELECTRONICS



DataVoice **Office**

Product Catalogue Data and Telecommunications



All products are shown in our
online catalogue
www.telegaertner.com

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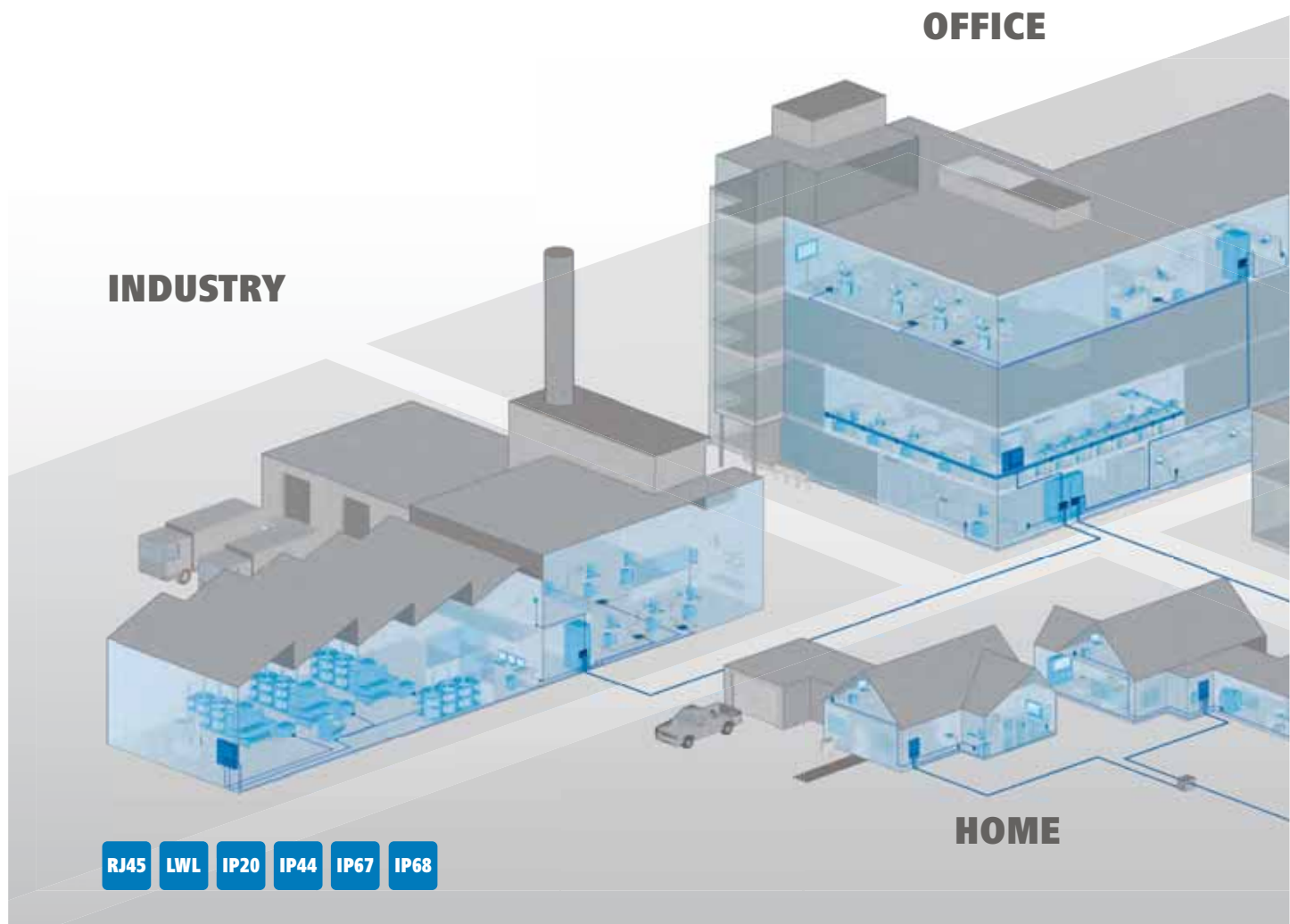
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Data Voice – The Cabling System with PLUS POINTS

Professional Package System for Generic Building Cabling

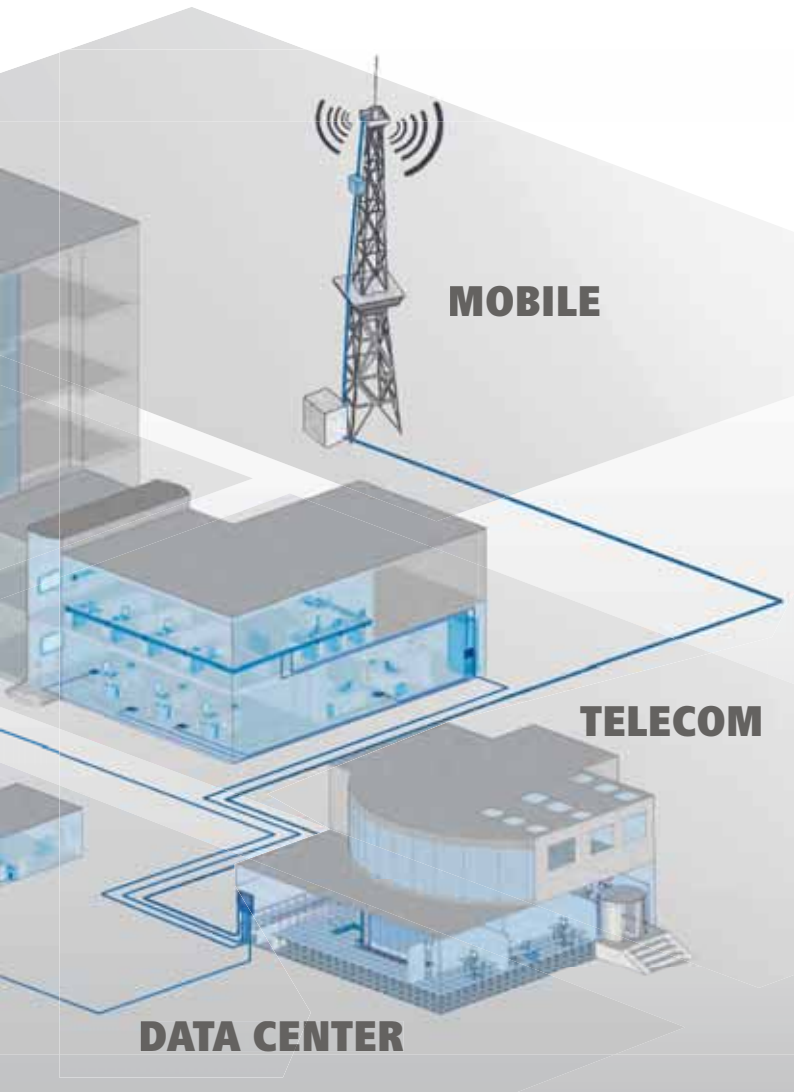
DataVoice is a reliable professional package for designers, fitters and users developed by Telegärtner to meet all generic cabling requirements in office buildings, production halls and machines. The DataVoice range includes components for copper and fiber optic cable networks and connectors

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.

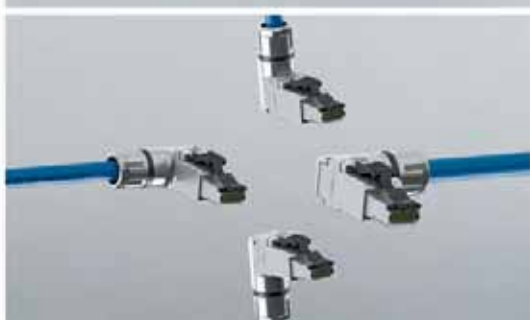
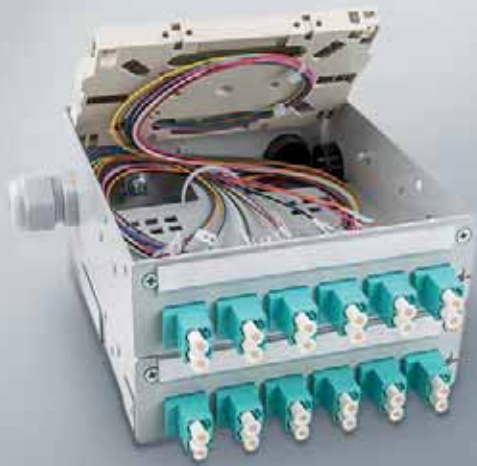
Telegärtner offers you a comprehensive program of high quality connection components for the data and telecommunications throughout the building. This kicks off with a complete FO program which can be delivered pre-assembled, continues in the office environment with extensive network solutions does not 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_A 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

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- Color Configurator
- InfoScreen
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- Online Catalogue DataVoice **NEW**
- DataVoice Connector Finder

DataVoice Office Online catalogue

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Shopping basket
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- Outlets
- Modular System MIO/SIMULUM
- Patch Panels and Distribution
- Connection Modules Cat. 5
- Modular Plugs
- 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 Plugs
- 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, 36



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



Telegärtner | Telegärtner worldwide | Company

TC, Movement or Order No.

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

Downloads & Tools
Configurators and Tools

- TCNET Configurator
- COAX Configurator
- Cable Connector Finder
- Cable Group Finder
- Calculator: Millimeter - Inch
- Calculator: Reflection Behavior

TCNET Configurator
Four efficient configurators for customer product combinations.

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 cable dimensions.

Cable Group Finder
For simple classification of unlisted cable series.

Calculator: Millimeter - Inch
Unit Conversion: mm to inch

Calculator: Reflection Behavior
For the rapid calculation of reflection in passive connectors.

Telegärtner Group
Head Office:
Telegärtner AG, Germany

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Information
Updates

Contact and Support
Telegärtner Call Center
Leinfelden, 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



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



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

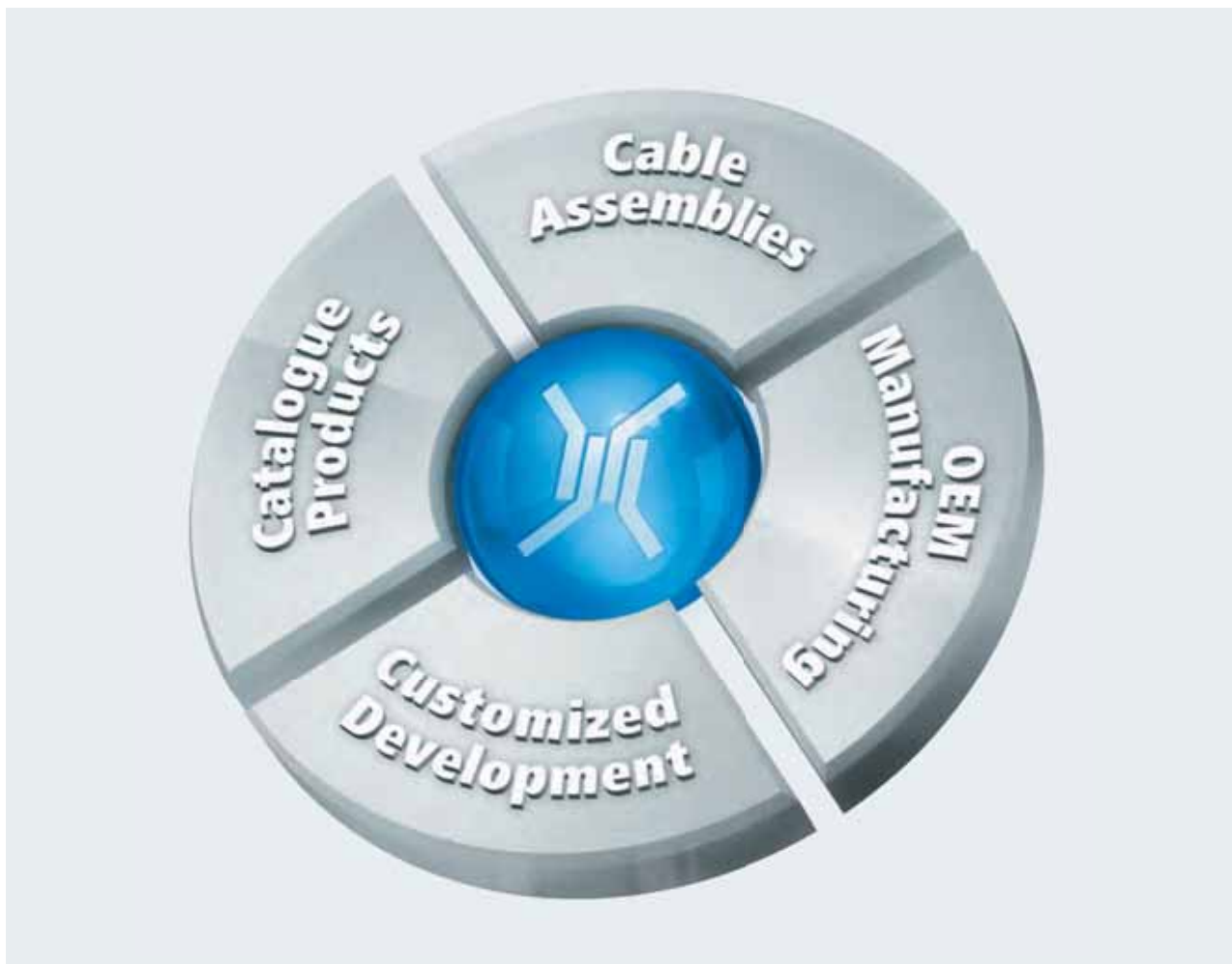
www.telegaertner.com/go/coaxconfig

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.

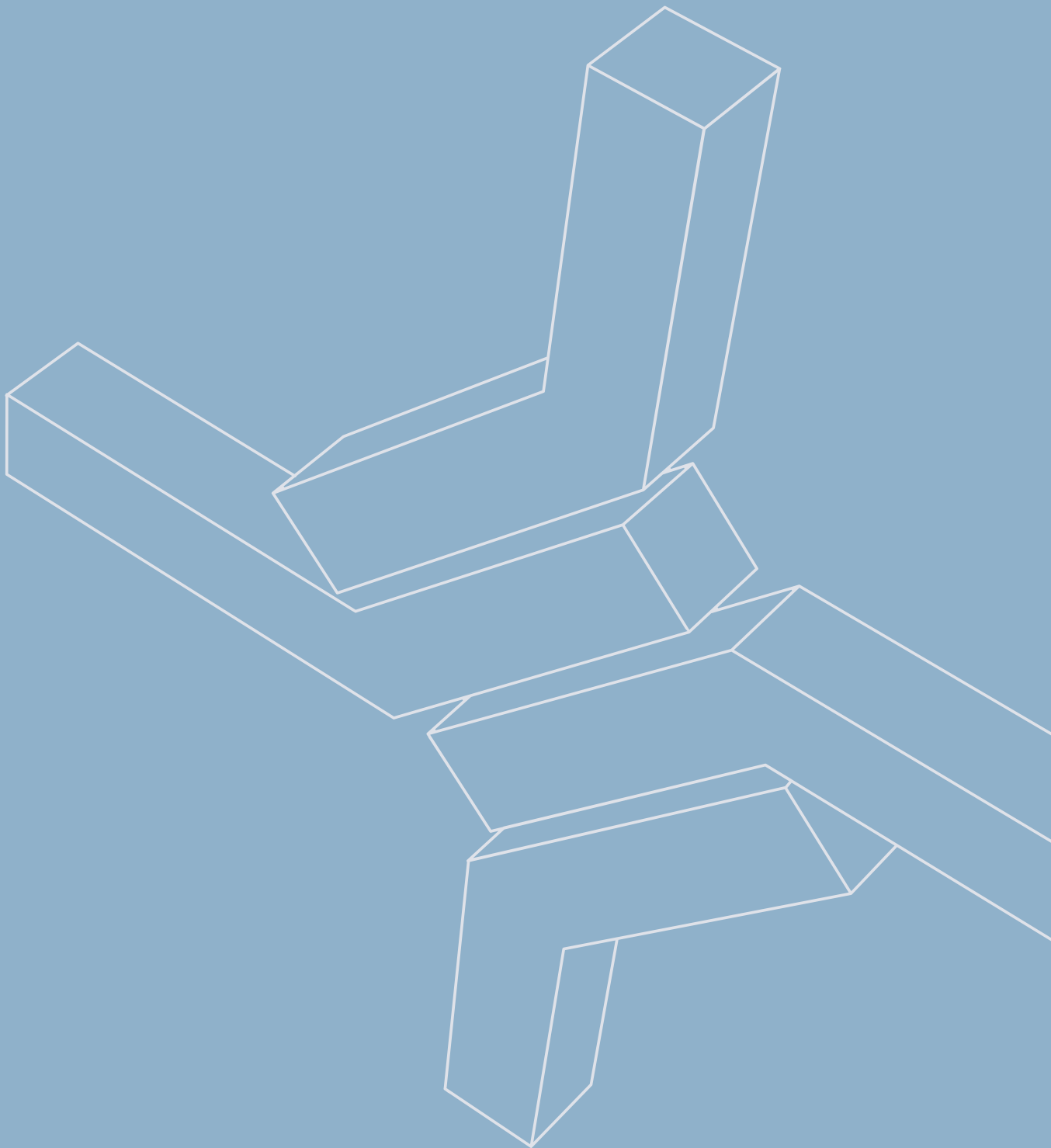


Cable Assemblies

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



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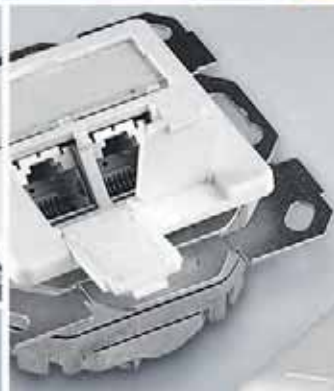
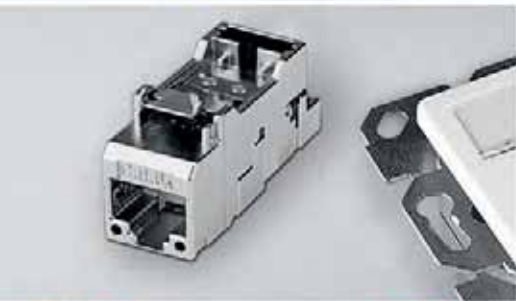
Best Contacts for your Success

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



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 CO₂ 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



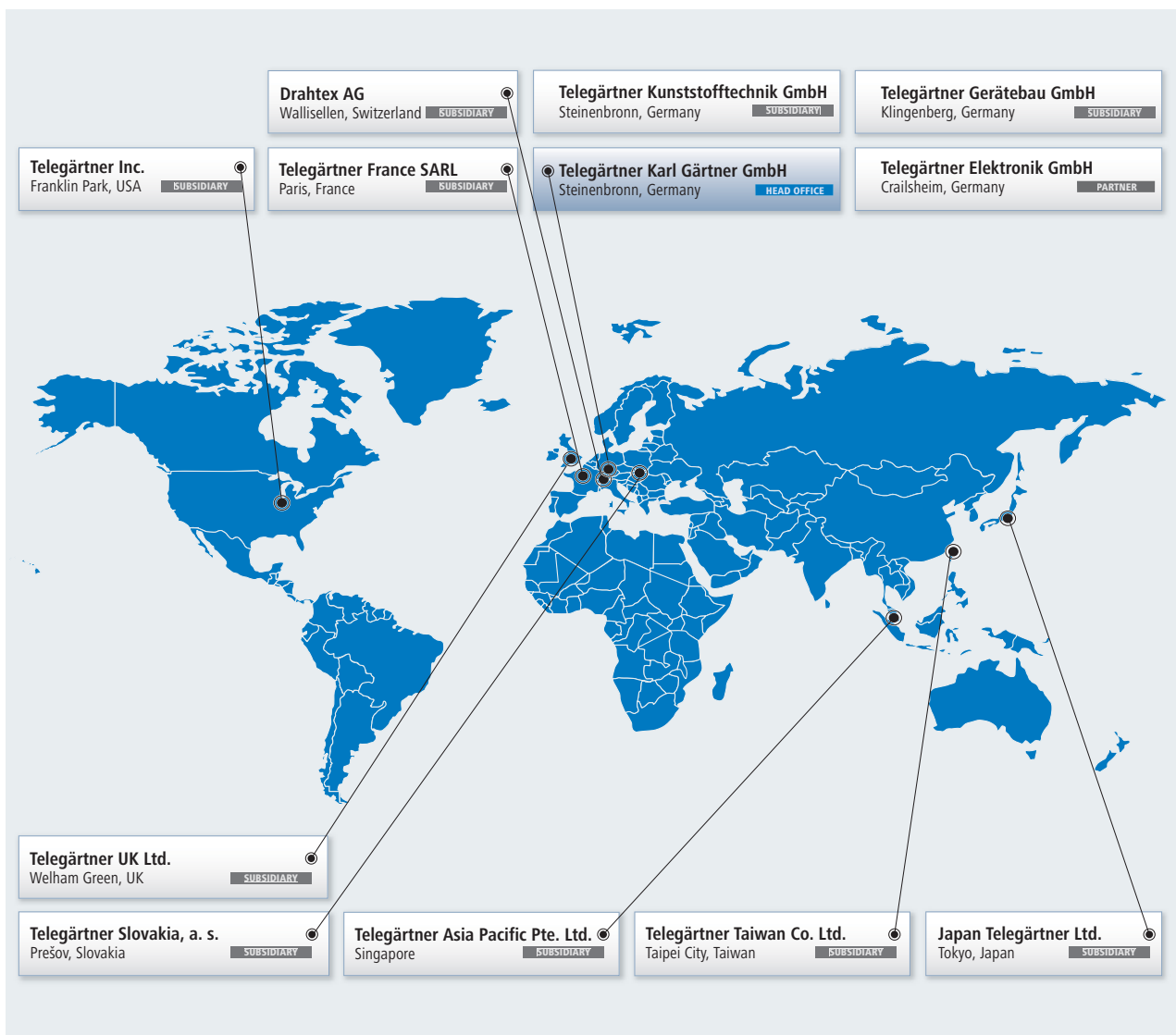
The Telegärtner Group

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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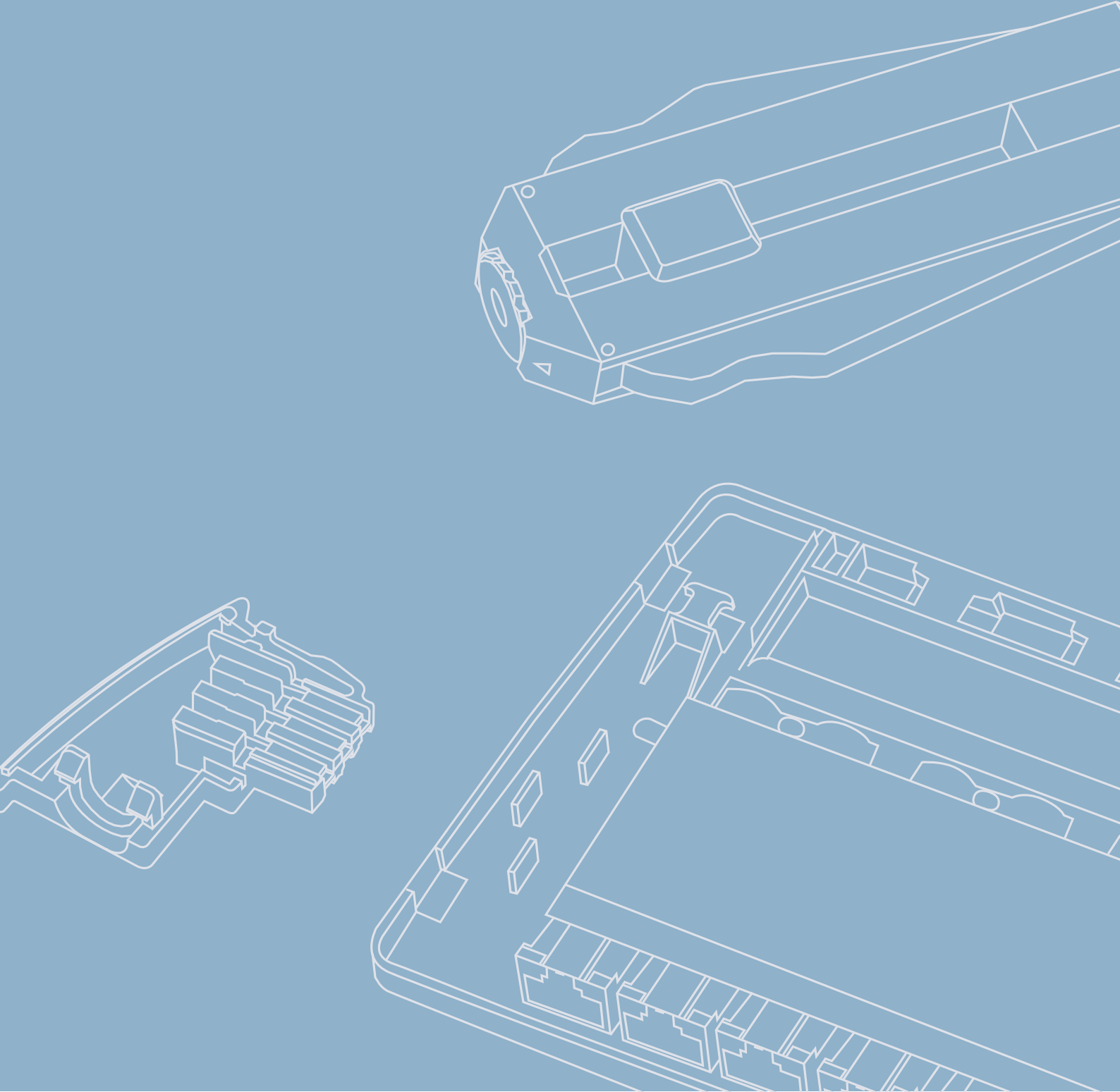
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Technical Information



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



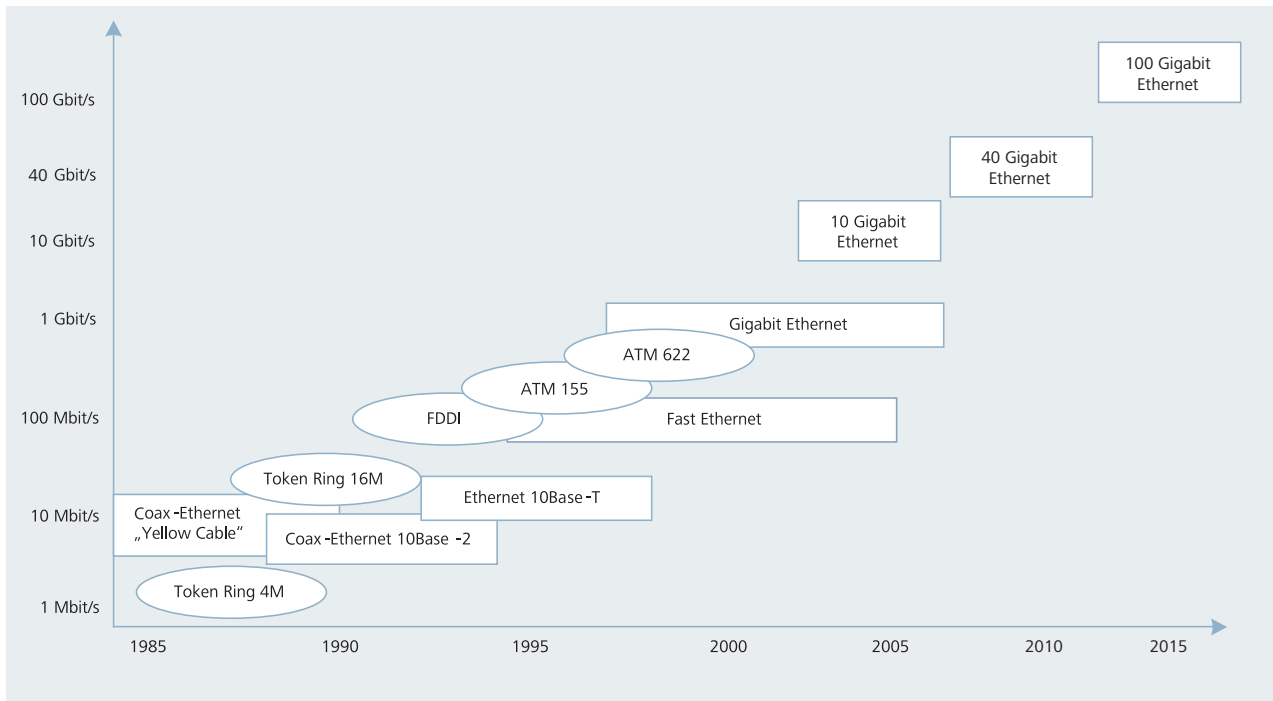
TAE Outlet



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.

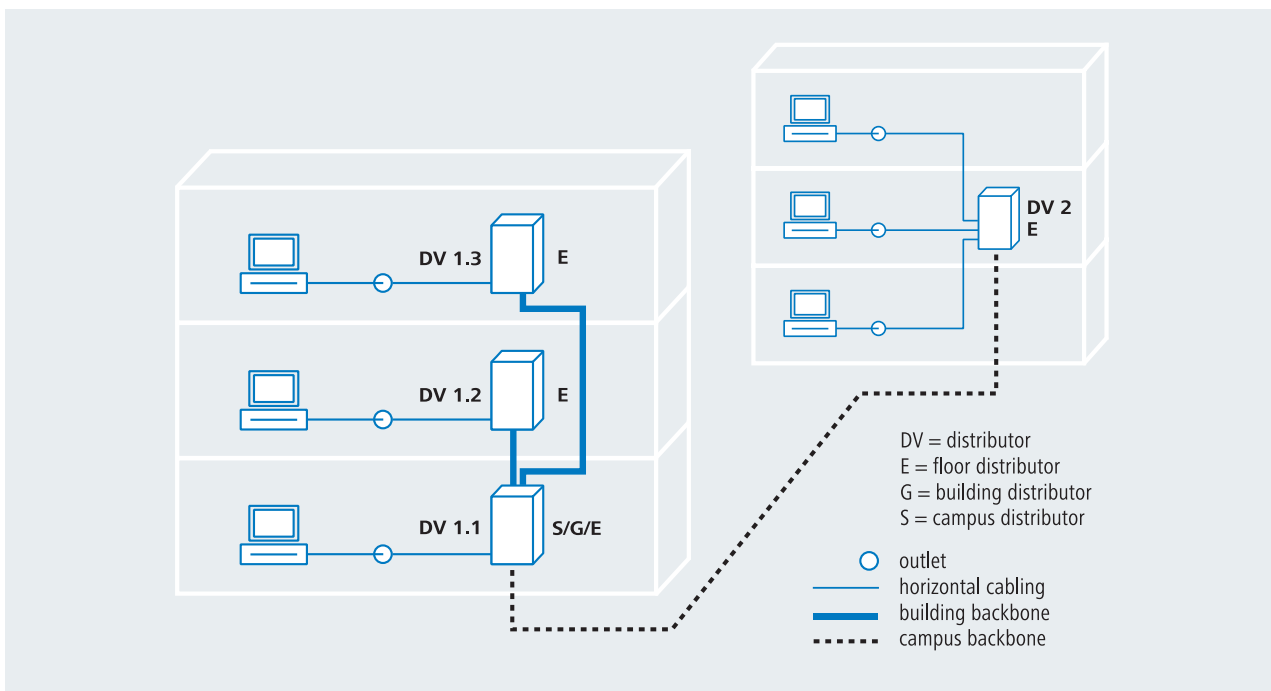
The cabling to connect the floor disributors to the building distributor following a star topology is called building backbone. According to the standards, each floor should have at least one floor distributor. However, it is also possible to use one floor distributor for several floors should they be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

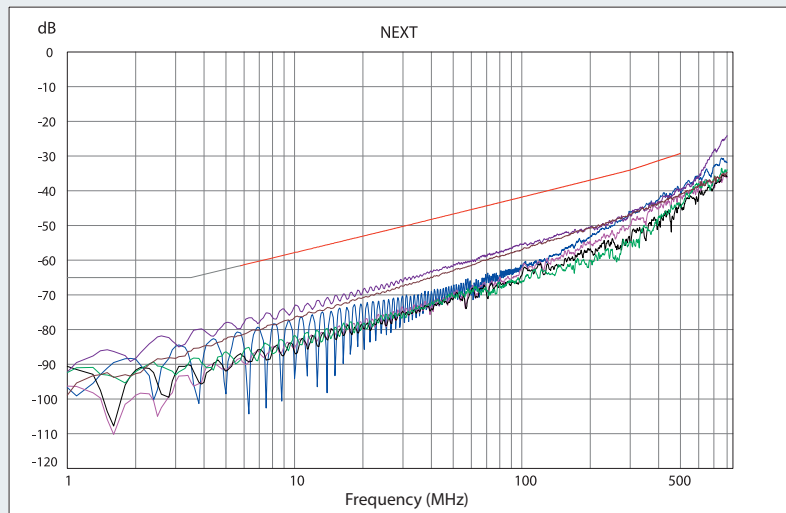
The first editions of ISO/IEC 11801 and EN 50173 were published in 1995. In 2000, addenda were published with the requirements for Gigabit Ethernet over copper cable.

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_A / Category 6_A) 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_A connection components measured in 90 m Class E_A 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

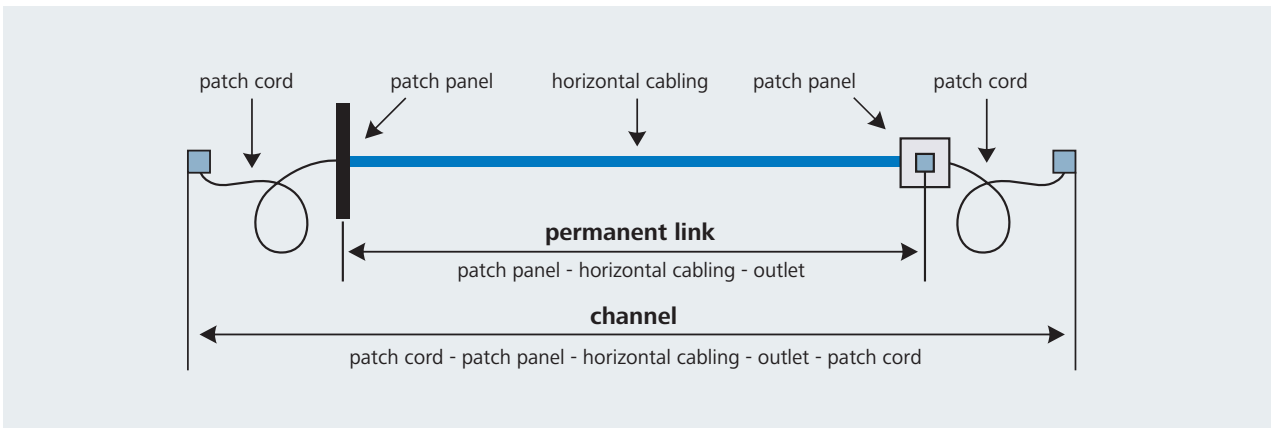
Permanent Link and Channel

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.



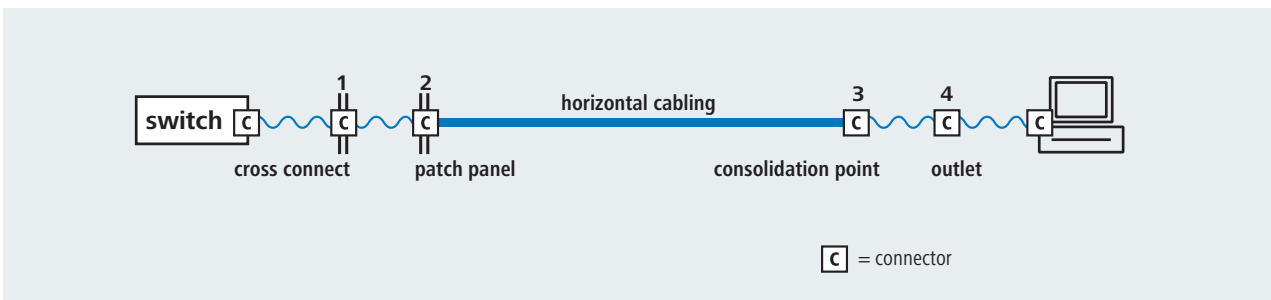
Permanent link and channel

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.

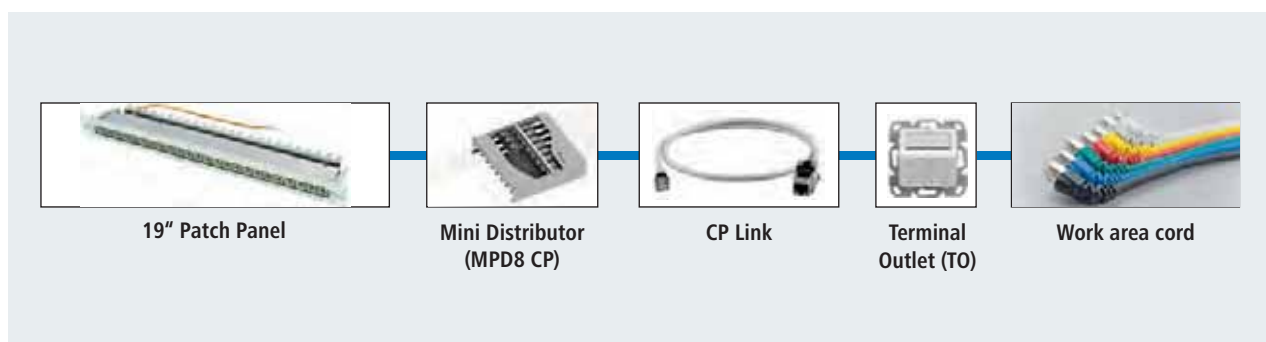


4 connector model

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_A: 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_A: 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_A, will use the RJ45 connector and will be backwards compatible with categories 5/5e, 6 and 6_A. Category 8.2 will be based on category 7_A. It

will be backwards compatible to all categories including cat. 7 and 7_A 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_A: 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_A: 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_A 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_A for 10GBASE-T at 100 m channel length

The correct spelling of Class E_A and Category 6_A: 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“:

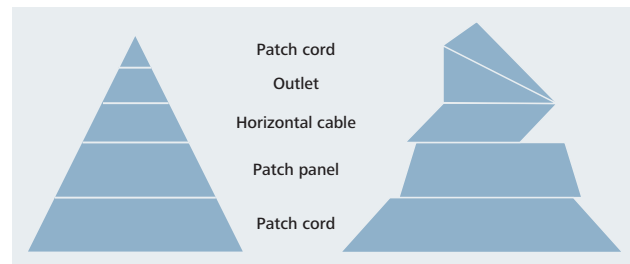
Link and Channel according to ISO: Class E_A
 Link and Channel according to TIA: Category 6A link
 Components according to ISO: Category 6_A
 Components according to TIA: Category 6A

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

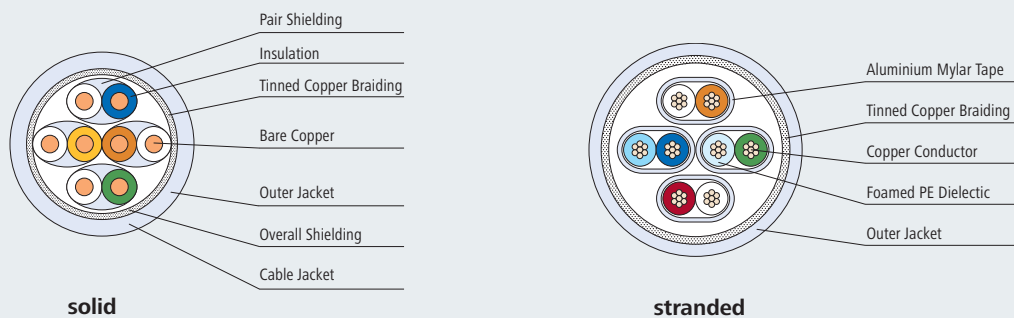
S/FTP: overall braid screen (S), elements foil screened (FTP)

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.

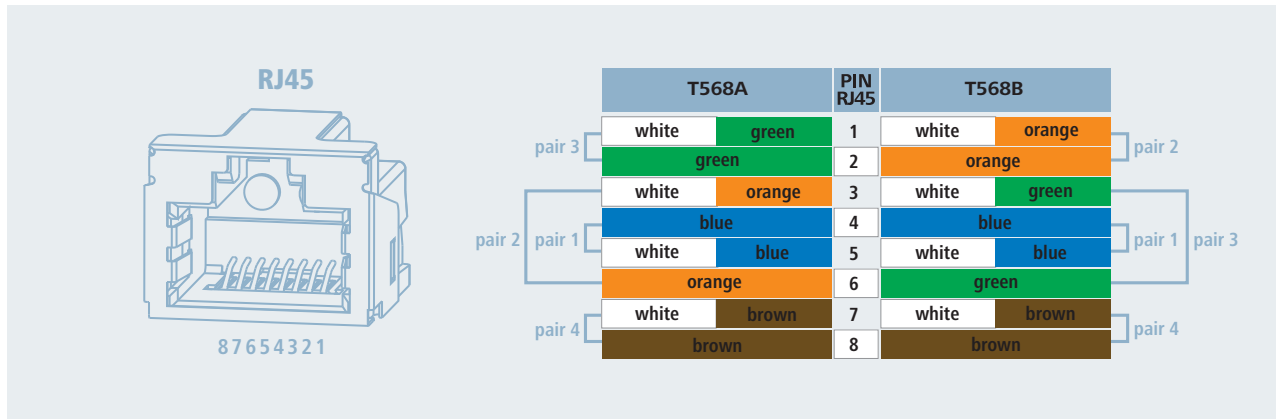


Connecting hardware

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.

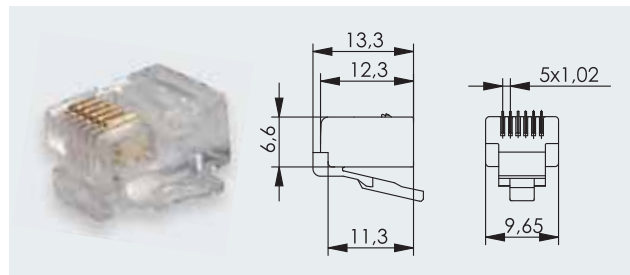
The American standard EIA/TIA 568 defines two different colour codings for RJ45 plugs and jacks. The colour coding T568A was originally developed for the military. T568B, which was developed for civil use, has become common for most installations by now.

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.

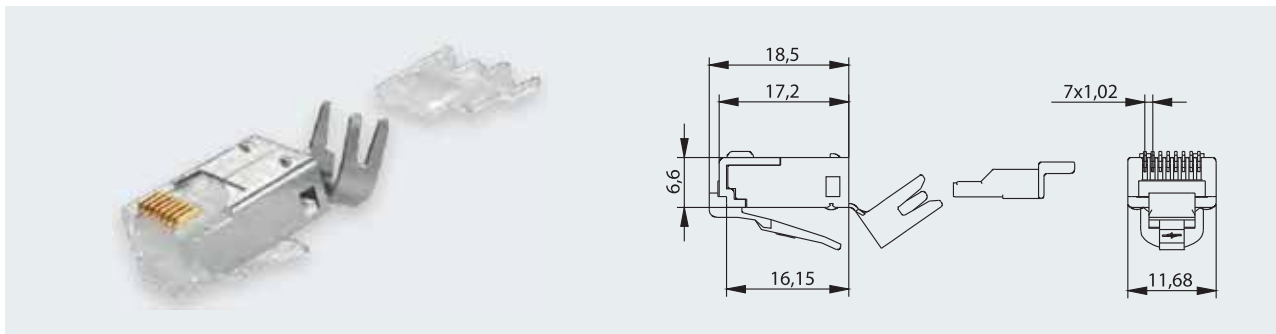


RJ45 pin assignment and colour coding

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_A was the first board based outlet with LSA+ contacts and Cat.6_A performance verified by the independent test lab GHMT worldwide.



RJ45 outlets with board and individual modules, both Cat.6_A 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_A 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_A 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_A

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_A 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_A 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_A 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.



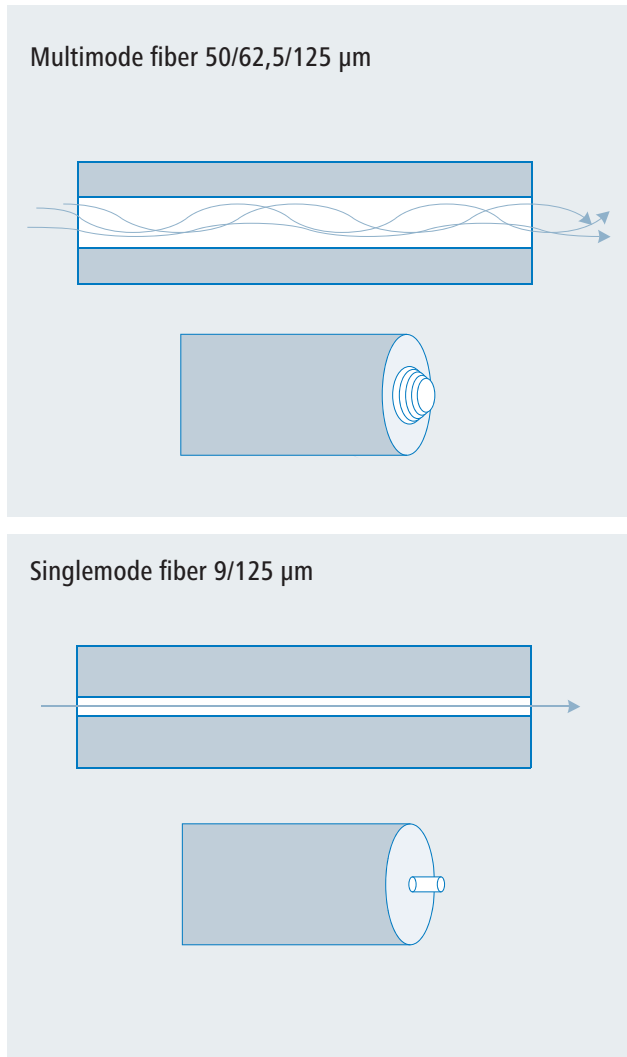
Fiber Optic Networks

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 | | |
| Wavelength | 850 nm | 1300 nm | 850 nm | 1300 nm | 1310 nm | 1383 nm | 1550 nm |
| Attenuation | 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.

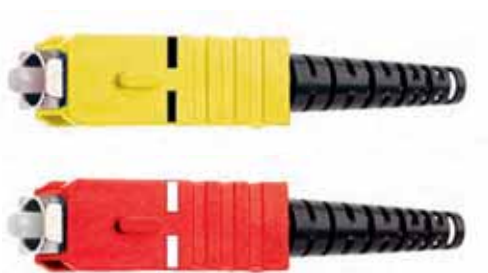
Plastic optical fibers

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

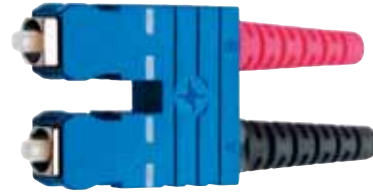
Singlemode PC, rectangular connector tip
(PC = physical contact): blue

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.

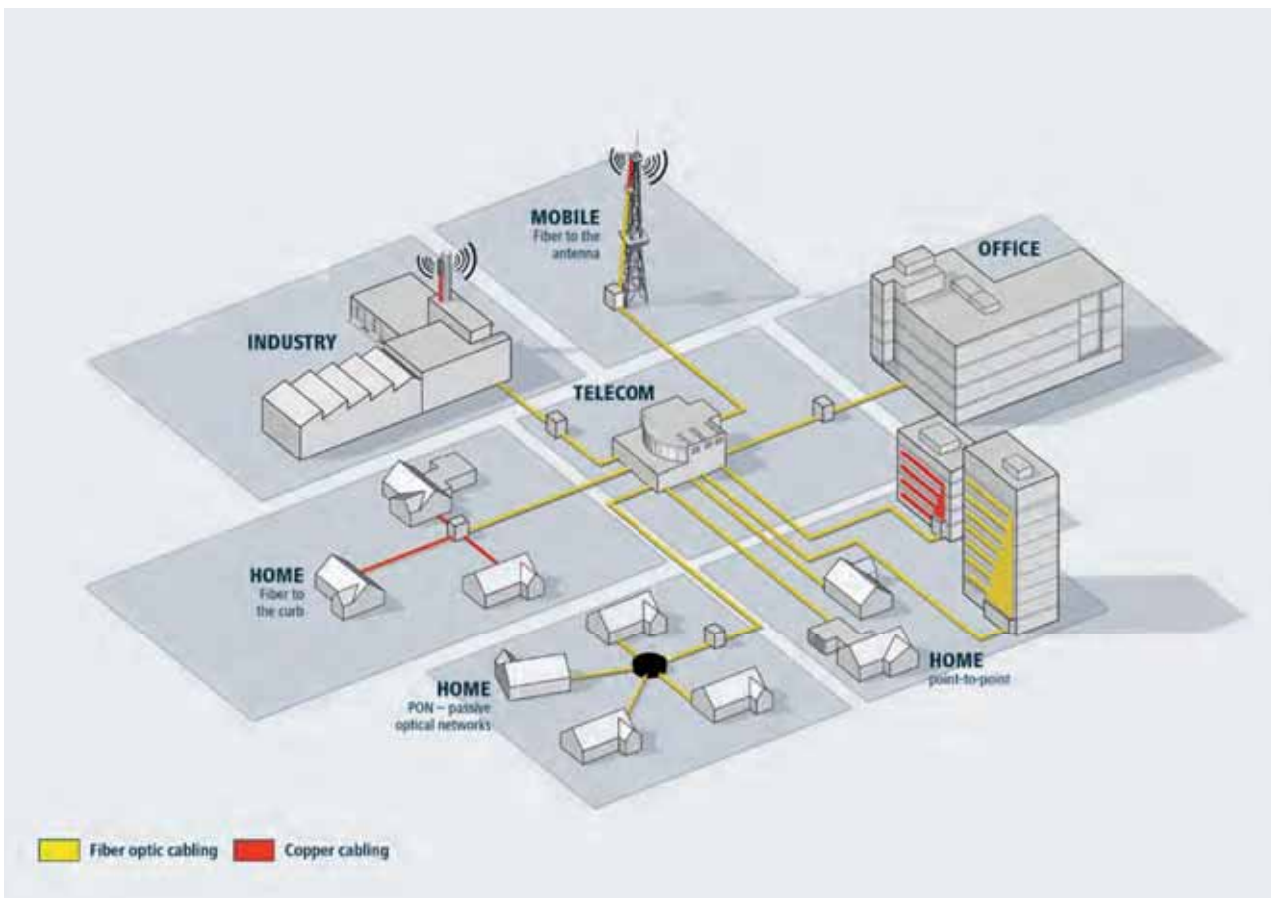


Optical coupler

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



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)

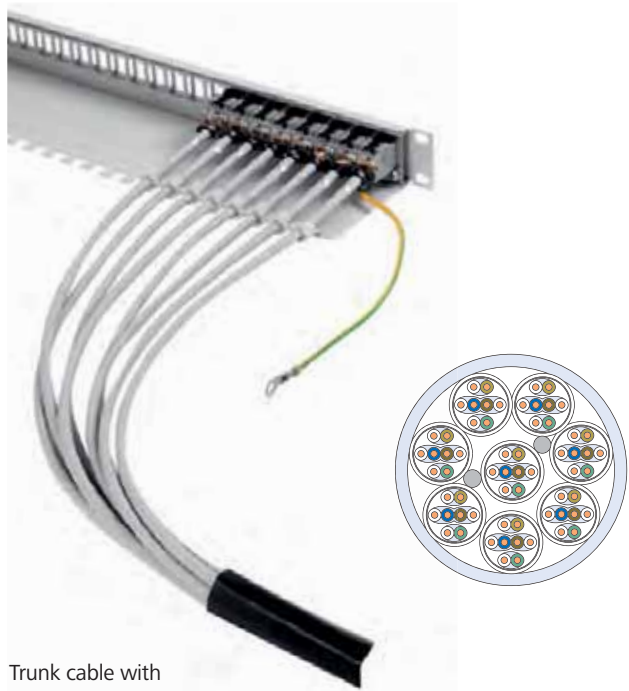
Parallel Optics and 40/100 Gigabit Ethernet

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

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

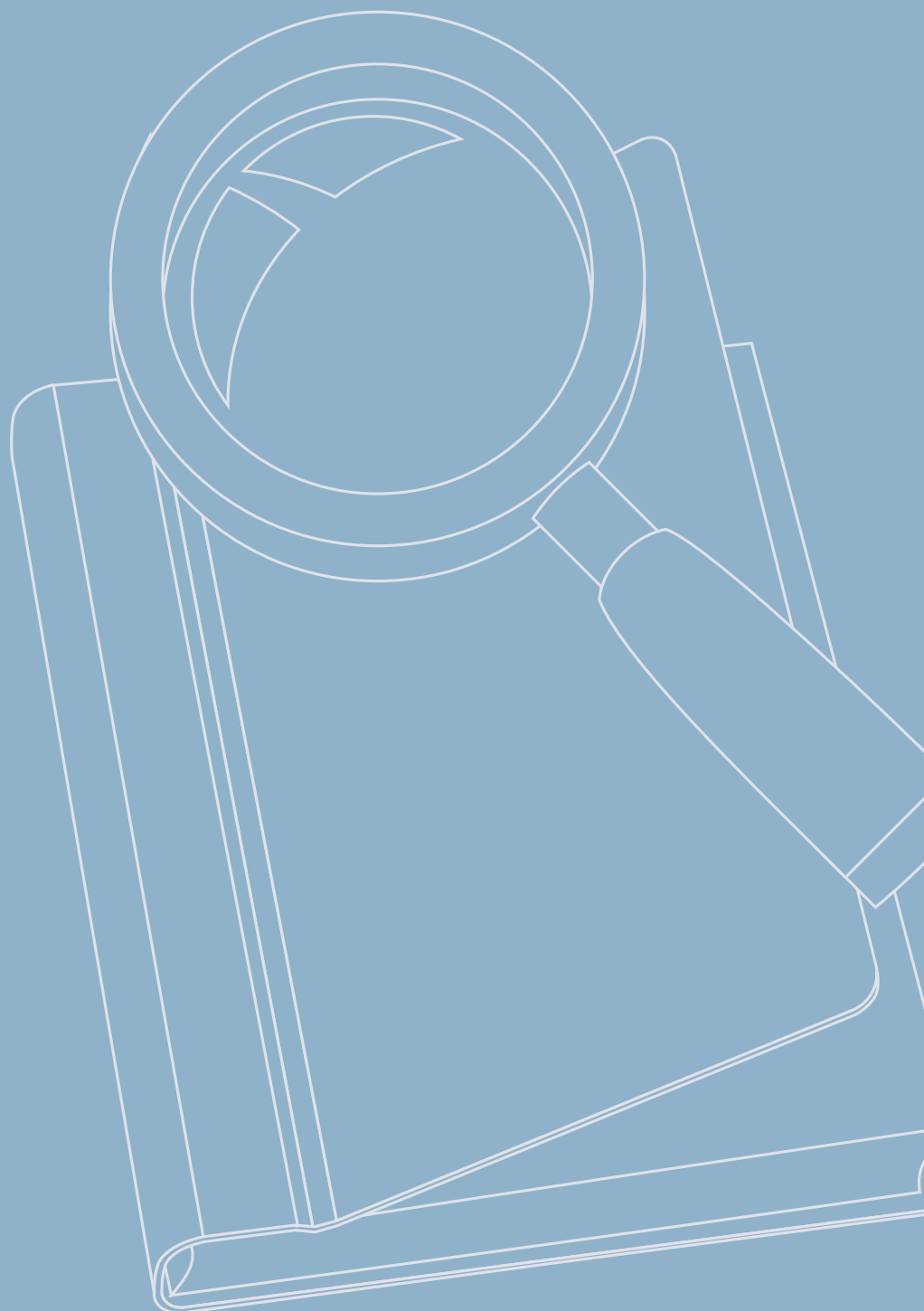


Protection against foreign bodies Protection against water

| 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:

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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.

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.

Full-duplex connection

Connection with transmitting and receiving simultaneously.

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.

Half-duplex connection

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

High return loss

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

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”

HRL

→ See *high return loss*

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.

ITU

International Telecommunication Union.

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*

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.

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.

**Link**

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

Local area network

→ See *LAN*

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.

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.

LSF/OH

Acronym for low smoke and fume / zero halogen.

→ See *LSZH*

LSH connector

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

LSOH

Acronym for low smoke zero halogen.

→ See *LSZH*

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.

MAN

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

Mbit/s

→ See *Mbps*

Mbps

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

= 1 million bits per second.

Metropolitan area network

→ See MAN

MHz

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

MIC connector

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

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.

MP connector

Old term for MPO connector, see there.

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.

**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.

**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.

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.

NT – network termination

Termination of the cables that run into a building.

OAN – optical access network

Fiber optic network that connects buildings to street cabinets.

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.

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.

ONU – optical network unit

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

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

Permanent link

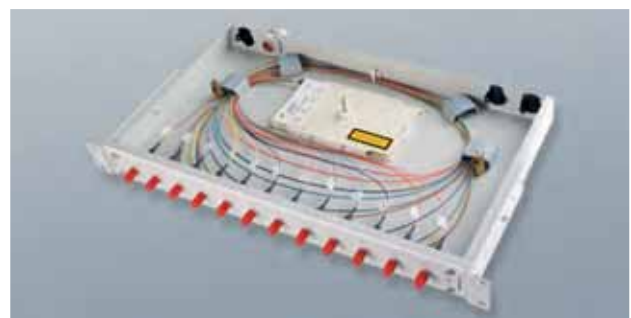
End-to-end part of the cabling from patch panel to outlet, including the cable but not the patch cords.

Patch cord

Flexible cord with connectors on both ends.

Patch panel

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



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 µm, with primary coating it is 250 µm.

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.



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.

Storage area network

→ *See SAN*

TIA

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

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.

Two way concept

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

VF-45 connector

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

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.

WAN

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

Wavelength multiplexing

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

Wide area network

→ *See WAN*

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 ² : | 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_A / Cat. 6A

→ See *Category 6_A*

Cat. 7

→ See *Category 7*

Cat. 7_A

→ See *Category 7_A*

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_A (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_A

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_A (Cat. 6_A), 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_A
ISO/IEC: category 6_A
TIA: category 6A

Permanent link (cabling between patch panel and outlet):

EN: class E_A permanent link
ISO/IEC: class E_A permanent link
TIA: category 6A permanent link

Channel (entire cabling including patch cords):

EN: class E_A channel
ISO/IEC: class E_A 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_A

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_A (Cat. 7_A), in Europe the standard series EN 50173 is used. The American ANSI EIA/TIA 568C specifies no requirements for a Category 7_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 7_A
ISO/IEC: category 7_A
TIA: not specified

Permanent link (cabling between patch panel and outlet):

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

Channel (entire cabling including patch cords):

EN: class F_A channel
ISO/IEC: class F_A 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_A

→ See Category 6_A

Class F

→ See Category 7

Class F_A

→ See Category 7_A

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*

Link

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

local area network

→ *See LAN*

LSF/OH

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

LSOH

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

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.

Mbit/s

→ *See Mbps*

Mbps

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

MHz

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

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.

Near end crosstalk attenuation

→ *See NEXT – near end crosstalk attenuation*

Network termination

→ *See NT – network termination*

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.

NT – network termination

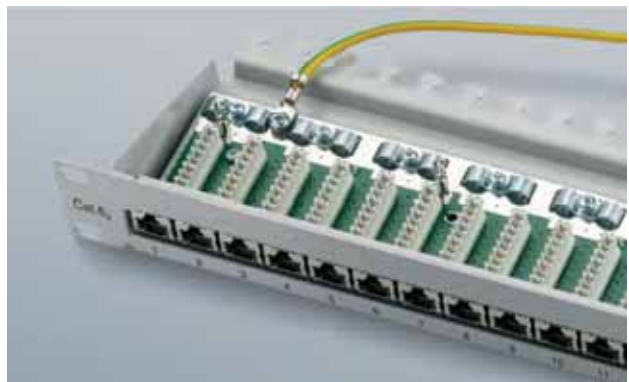
Termination of an outside plant cable entering a building.

Patch cord

Flexible cord with connectors on both ends.

**Patch panel**

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

**Permanent link**

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

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.

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*.

PowerSum ACR

→ *See PSCAR – PowerSum ACR*

PowerSum ELFEXT

→ *See PSELFEXT – PowerSum ELFEXT*

PowerSum NEXT

→ *See PSNEXT – PowerSum NEXT*

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_A, unshielded

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

IEC 60603-7-51: Connectors up to 500 MHz / Cat. 6_A, 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_A, 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.

SAN

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

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*.

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.

Storage area network

→ See *SAN*

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.

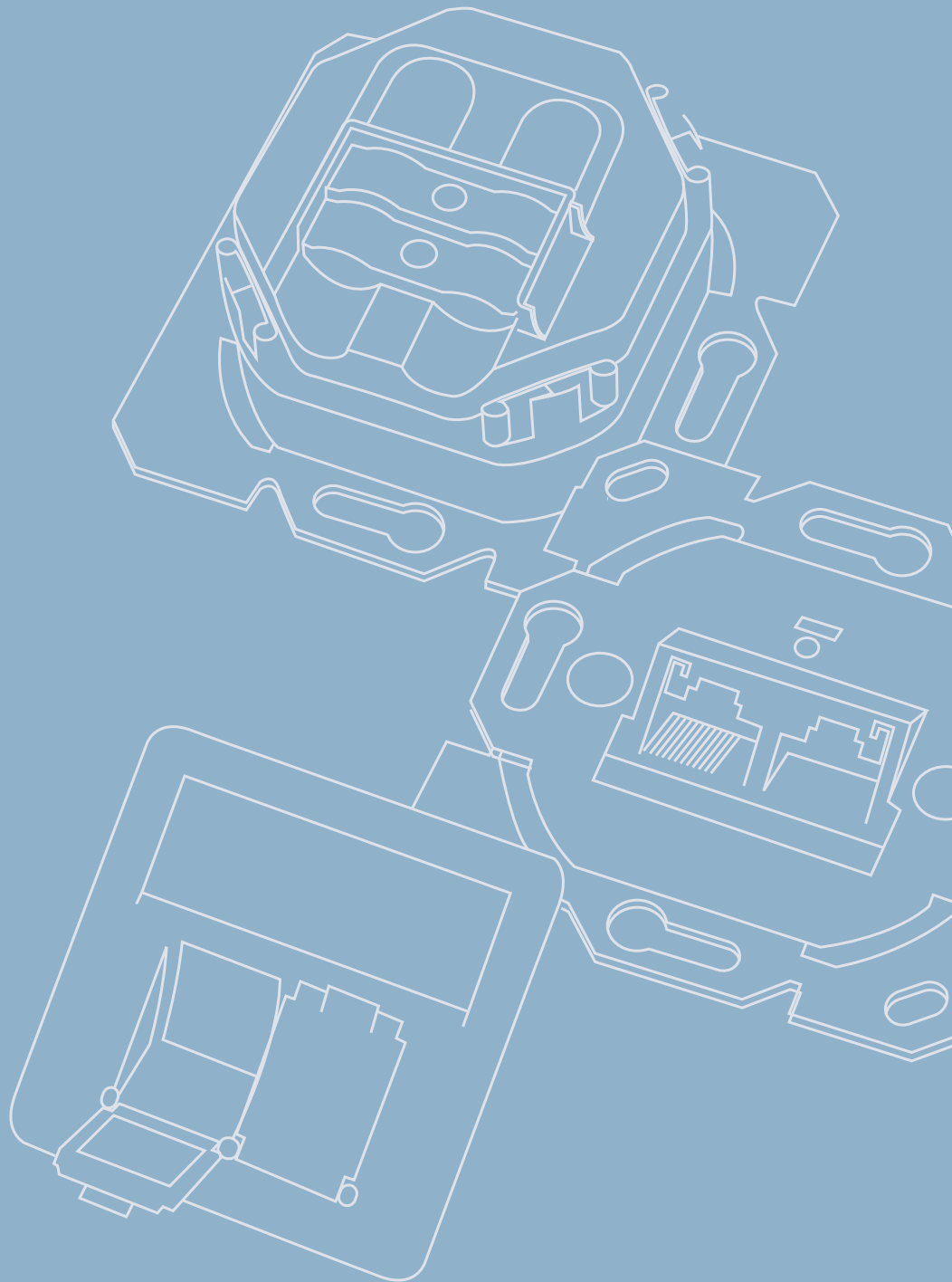
Yellow Cable

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

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

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| | AMJ45 | VAD AP Compact |
|--|---|--|
| Standards | | |
| Connectors | IEC 60603-7-51 / -7-3 | IEC 60603-7-51 |
| Mechanical Characteristics | | |
| 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 |
| Environmental Requirements | | |
| Ambient temperature | -40° C to + 70° C | -40° C to + 70° C |
| Electrical Characteristics | | |
| 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 _A 500 | Class E _A 500 |
| PoE according to IEEE802.3af | Cat.5e | - |
| Transmission Characteristics | | |
| Category 6 _A (Component) for products Cat.6 _A | ISO/IEC 11801, DIN EN 50173-1 | - |
| Class E _A (Permanent Link) for products Cat.6 _A , Class E _A 500 | ISO/IEC 11801, DIN EN 50173-1 | ISO/IEC 11801, DIN EN 50173-1 |
| Class E _A (Channel) for products Cat.6 _A , Class E _A 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 _A , Class E _A 500 | for Class E _A 500 |

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



1.1

Series AMJ45 K Cat.6_A, Class E_A 500, Cat.5e - shielded


Performance Characteristics

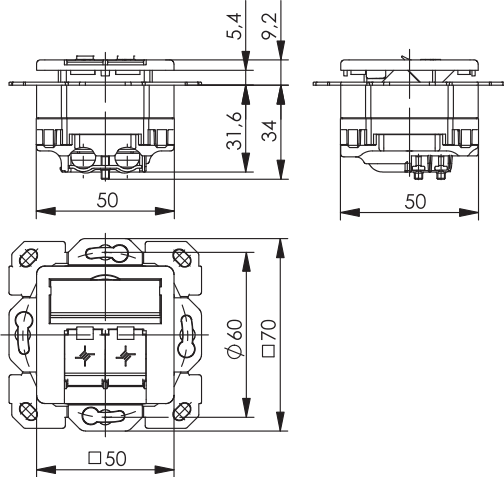
- transmission performance: Cat.6_A acc. to ISO/IEC 11801; EN 50173-1
- fully shielded
- 360° shielding contact and strain relief by means of two (one in the case of Cat.5e) separate, captive screw clamps for the exterior cable jacket and shielding
- can be wired up from all directions, in 8x45° steps
- 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 - „Downloads“.

1.1.1


AMJ45 K Cat.6_A shielded for cable duct mounting

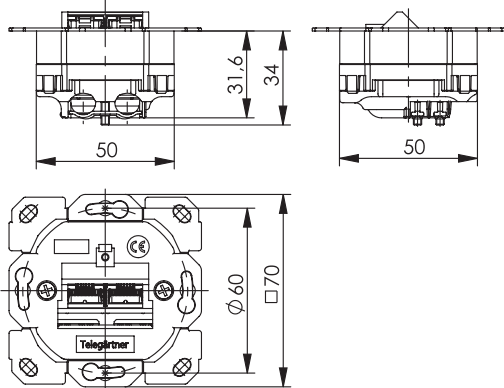







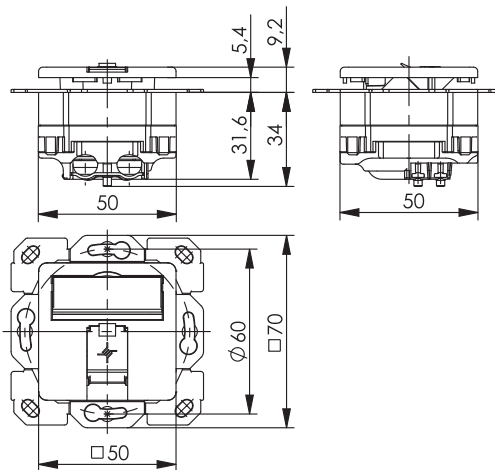
| Order no. | Short name | Type | Colour |
|-------------|--------------------------------------|-----------------------------|--------------|
| J00020A0500 | AMJ45 8/8 K Up/50 Cat.6 _A | cable duct mounting, 2xRJ45 | alpine white |



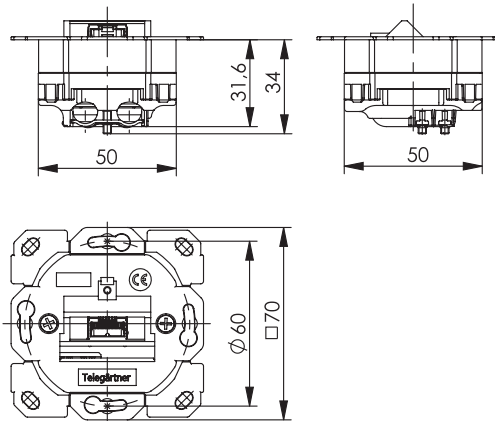


| Order no. | Short name | Type | |
|-------------|---|-----------------------------|--|
| J00020A0502 | AMJ45 8/8 K Up/0 Cat.6 _A without faceplate | cable duct mounting, 2xRJ45 | |

Cat.6_AREAL-TIME
RE-EMBEDDED

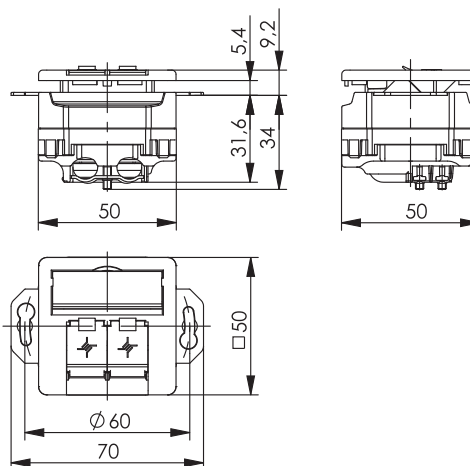
| Order no. | Short name | Type | Colour |
|-------------|------------------------------------|-----------------------------|--------------|
| J00020A0505 | AMJ45 8 K Up/50 Cat.6 _A | cable duct mounting, 1xRJ45 | alpine white |

Cat.6_AREAL-TIME
RE-EMBEDDED

| Order no. | Short name | Type |
|-------------|---|-----------------------------|
| J00020A0506 | AMJ45 8 K Up/0 Cat.6 _A without faceplate | cable duct mounting, 1xRJ45 |

AMJ45/B K Cat.6_A shielded for subfloor mounting

1.1.2

Cat.6_AREAL-TIME
RE-EMBEDDED

| Order no. | Short name | Type | Colour |
|-------------|--|---------------------------|--------------|
| J00020A0503 | AMJ45/B 8/8 K Up/50 Cat.6 _A | subfloor mounting, 2xRJ45 | alpine white |

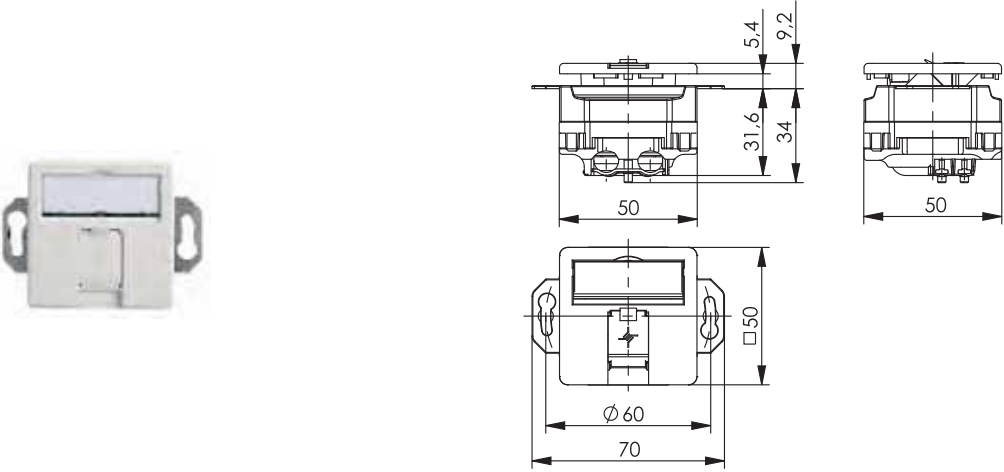
1.1

Outlets

1.1

Series AMJ45 K Cat.6_A, Class E_A 500, Cat.5e - shielded

1.1.2

AMJ45/B K Cat.6_A shielded for subfloor mounting


Cat.6_A

REAL-TIME RE-EMBEDDED

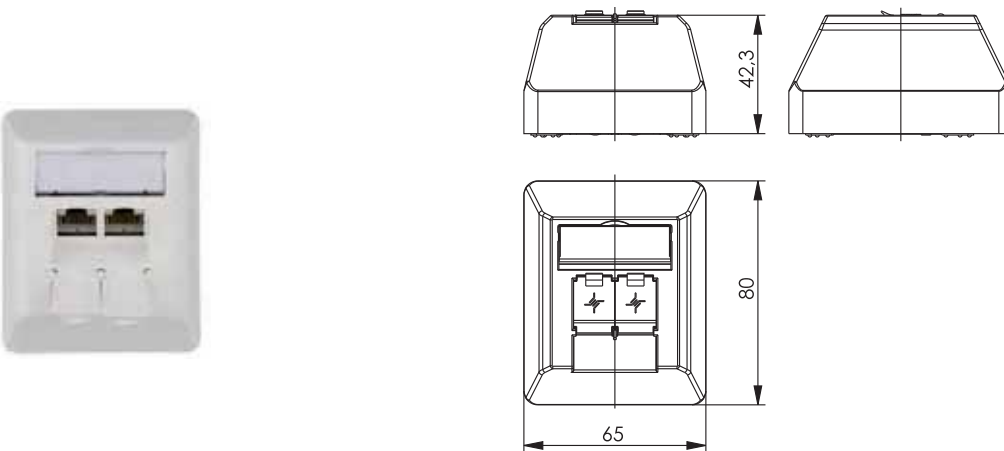
| Order no. | Short name | Type | Colour |
|-------------|--------------------------------------|---------------------------|--------------|
| J00020A0507 | AMJ45/B 8 K Up/50 Cat.6 _A | subfloor mounting, 1xRJ45 | alpine white |

1.1.3

AMJ45 K Cat.6_A AP shielded for surface mounting

Performance Characteristics

- transmission performance: Cat.6_A 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_A

REAL-TIME RE-EMBEDDED

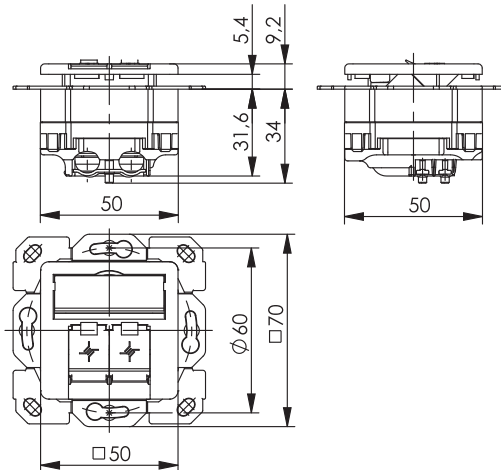
| Order no. | Short name | Type | Colour |
|-------------|-----------------------------------|--------------------------|--------------|
| J00023A0204 | AMJ45 8/8 K AP Cat.6 _A | surface mounting, 2xRJ45 | alpine white |

AMJ45 K Class EA 500 shielded for cable duct mounting

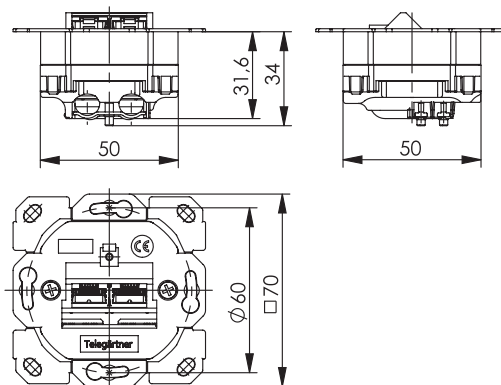
1.1.4

Performance Characteristics

- transmission performance: PL Class E_A 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 _A 500 | cable duct mounting, 2xRJ45 | alpine white |



| Order no. | Short name | Type |
|-------------|---|-----------------------------|
| J00020A0395 | AMJ45 K 8/8 Up/0 Class E _A 500 without faceplate | cable duct mounting, 2xRJ45 |

1.1

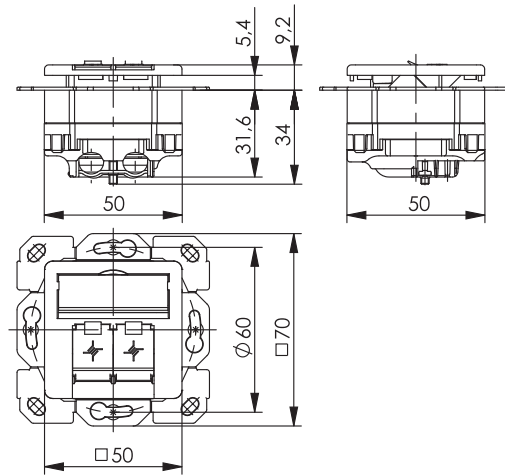
Outlets

1.1

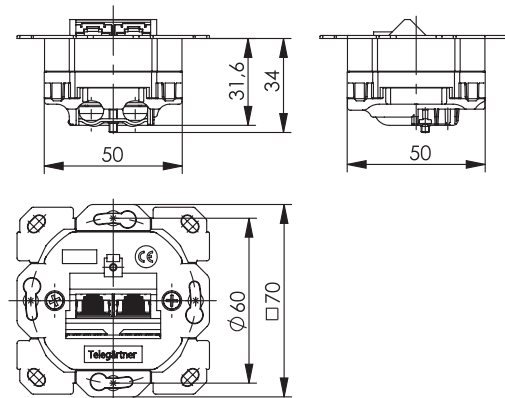
Series AMJ45 K Cat.6_A, Class E_A 500, Cat.5e - shielded

1.1.5

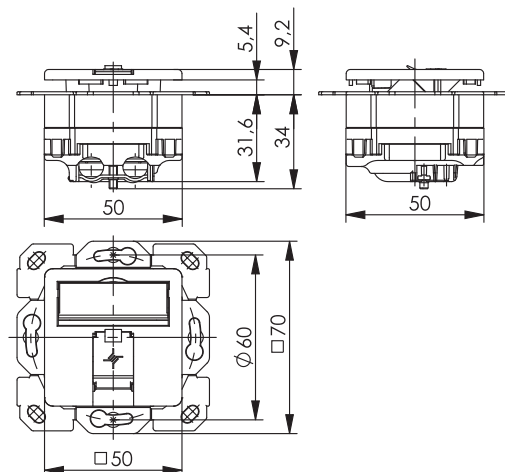
AMJ45 Cat.5e shielded for cable duct mounting



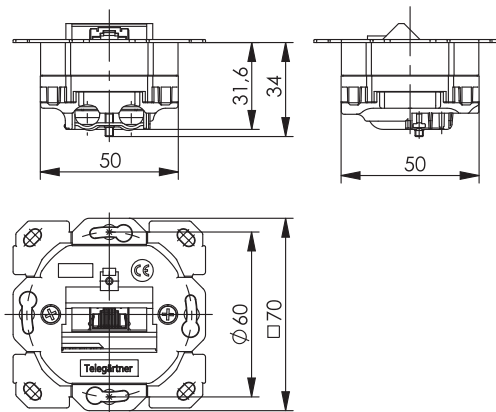
| Order no. | Short name | Type | Colour |
|-------------|------------------------|-----------------------------|--------------|
| J00020A0389 | AMJ45 8/8 Up/50 Cat.5e | cable duct mounting, 2xRJ45 | alpine white |



| 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 |



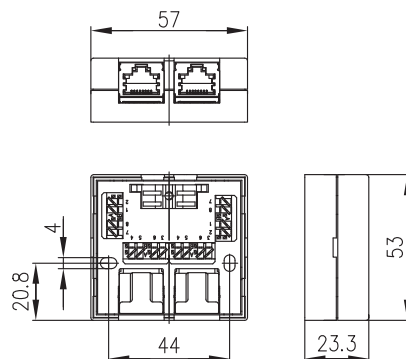
| Order no. | Short name | Type |
|-------------|---------------------------------------|-----------------------------|
| J00020A0420 | AMJ45 8 Up/0 Cat.5e without faceplate | cable duct mounting, 1xRJ45 |

Series VAD® Class E_A 500 - shielded

1.2

Performance Characteristics

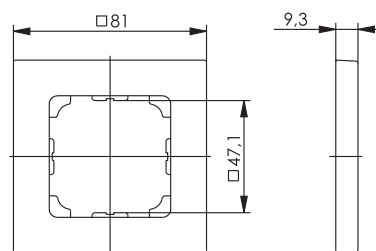
- suitable for 10 Gigabit Ethernet acc. to IEEE 802.3an
- Transmission performance: PL Class E_A 500 acc. to ISO/IEC 11801; EN 50173-1
- surface housing can be retrofitted with a flip-up loss-proof, transparent label field
- the cables are terminated via IDC (LSA Plus) terminals with colour coding acc. 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 _A 500 | shielded; surface mounting | pure white RAL 9010 |

Cover Frames for Outlets

1.3



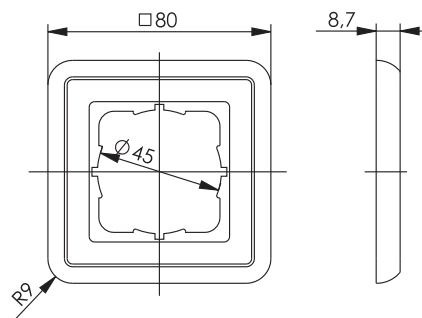
| Order no. | Short name | Type | Series | Colour |
|-------------|-------------|---------------|--|--------------|
| B00004A0024 | Cover frame | single, 81x81 | AMJ45, UMJ45, Module System AMJ/UMJ, OAD/S | alpine white |

1.3

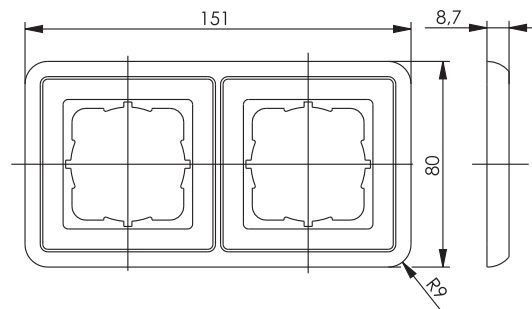
Outlets

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

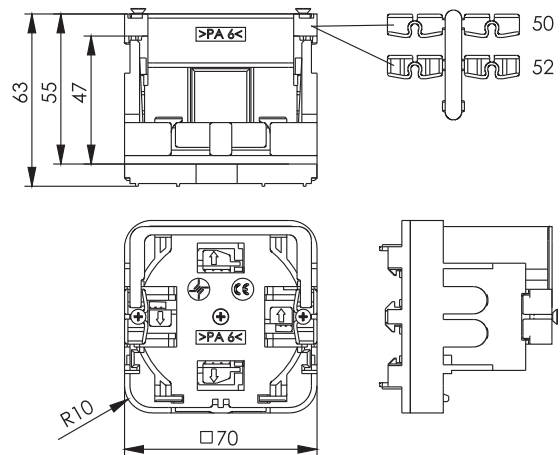
| Order no. | Short name | Series | Colour |
|-------------|---|--------------|--------------|
| F00020A0123 | Faceplate 50 x 50 mm for AMJ45 8 UP/0 and design capable module carrier AMJ-S; with screw, transparent label field, cover and 1 protection flap | AMJ45; AMJ-S | alpine white |

Universal Equipment Mounting Set for Outlets in Cable Ducts

1.5

Performance Characteristics

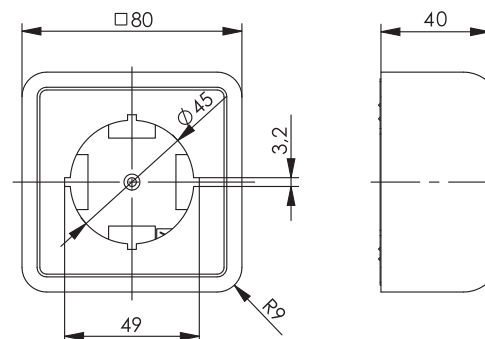
- suitable for cable duct systems with C-rails, top-hat rails, and Combi-rails with 35 mm fixings
- variable height compensation for cable ducts with internal heights of 47 mm, 50 mm, 52 mm, and 55 mm
- cable strain relief
- can be string-mounted, and therefore suitable for double, triple and multiple 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



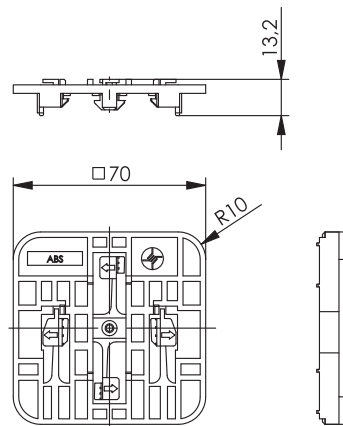
| Order no. | Short name | Type | Colour |
|-------------|----------------------|-------------|--------------|
| H02000C0027 | Surface mounting set | 80x80x40 mm | alpine white |

1.6

Outlets

1.6

Surface Mounting Set for Outlets



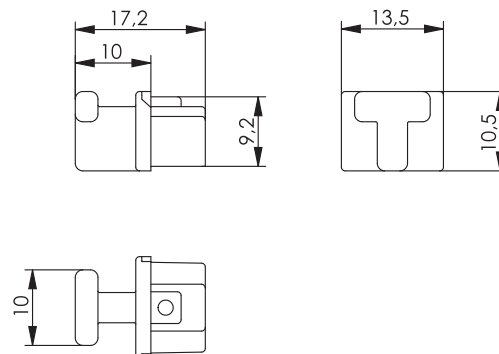
| Order no. | Short name | Type |
|-------------|---|-----------------------------|
| H02000A0054 | Top hat rail adaptor for surface mounting set | for top hat rails DIN 60715 |

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 |

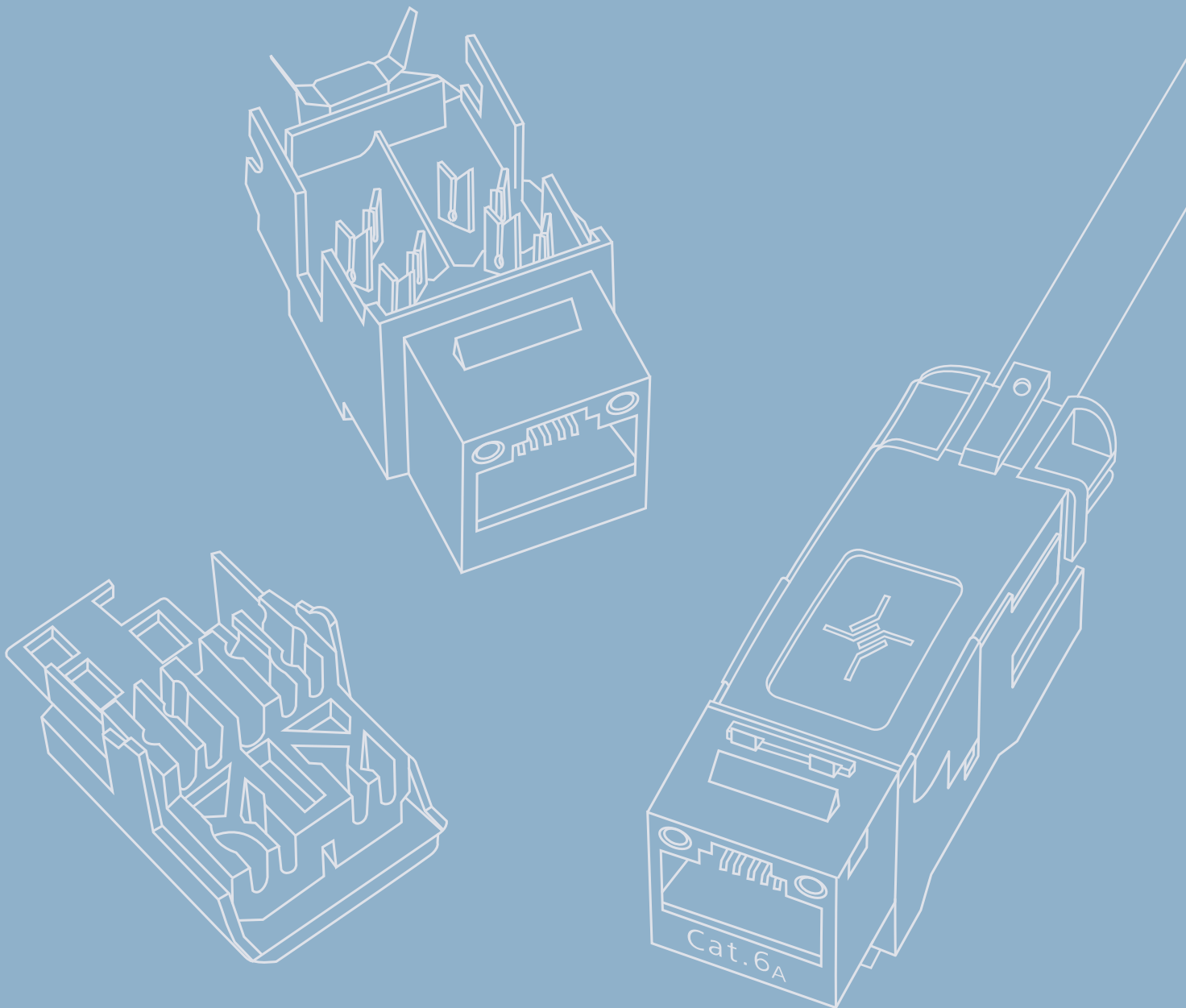


| Order no. | Short name |
|-------------|---|
| N01002A0000 | Tool for IDC termination (LSA Plus) without wire cutter |



| 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

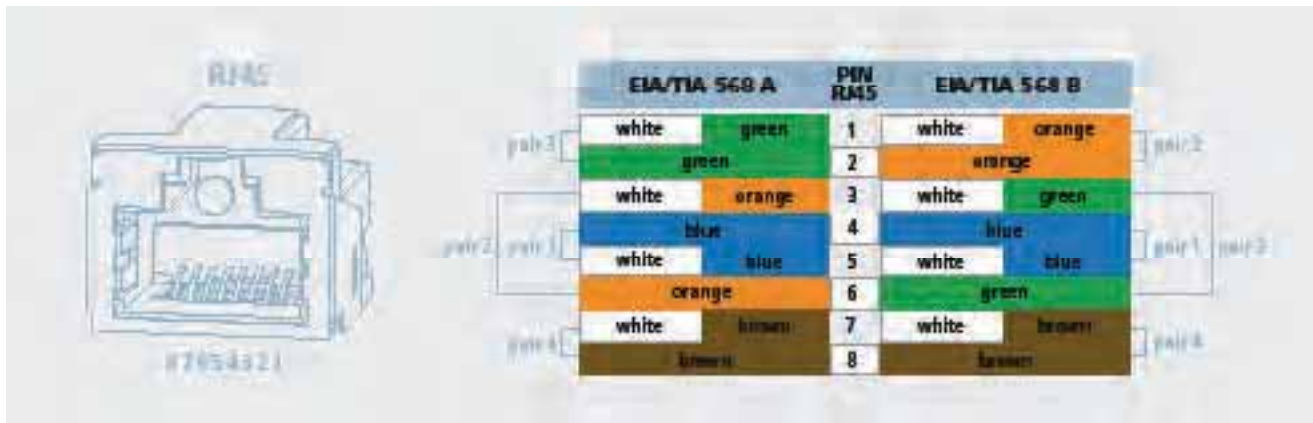
| | | |
|------------|--|-----------|
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Modular System AMJ-S/AMJ/UMJ

| | 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 | | | | |
| Standards | | | | | | |
| 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 |
| Mechanical Characteristics | | | | | | |
| 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 | |
| Environmental Requirements | | | | | | |
| 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 |
| Electrical Characteristics | | | | | | |
| 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+ | | | | | |
| Transmission Characteristics | | | | | | |
| 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_A acc. to IEC 60603-7-51
- Cat.6_A re-embedded tested acc. to IEC 60512-27-100
- link certificate: Class E_A 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_A

AMJ-S

REAL-TIME RE-EMBEDDED

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

Cat.6_A

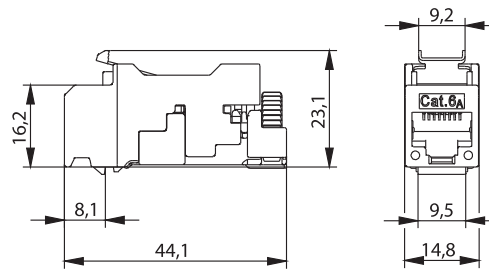
AMJ-S

REAL-TIME RE-EMBEDDED

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

Modular System AMJ-S/AMJ/UMJ

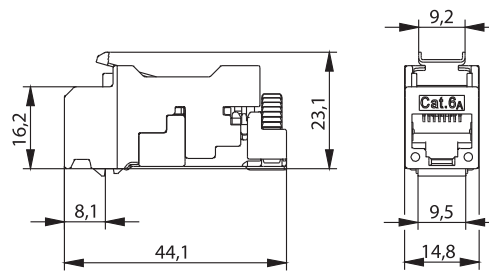
2

Cat.6_A

AMJ-S

REAL-TIME
RE-EMBEDDED

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

Cat.6_A

AMJ-S

REAL-TIME
RE-EMBEDDED

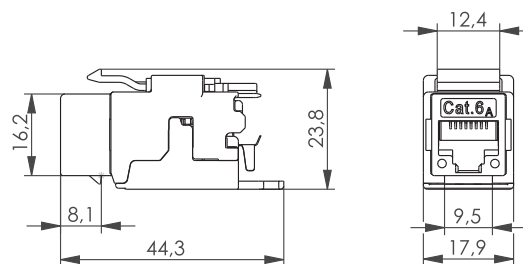
| Order no. | Short name | Type | Remarks | Mount. dim. |
|-------------|---------------------------------------|---------------------------|---|-------------|
| J00029A2110 | AMJ-S Module Cat.6 _A T568A | blister package (24 pcs.) | tool-free connectivity, suitable for RJ45/11/12 plugs | Z121 |
| J00029A2111 | AMJ-S Module Cat.6 _A 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_A acc. to IEC 60603-7-51
- link certificate: Class E_A acc. to ISO/IEC 11801
- 10 Gigabit-Ethernet compliant (IEEE 802.3an)
- fully-automated production of Cat.6_A RJ45 core to guarantee a uniformly high quality standard
- overbending protection: ≥ 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_A

AMJ

REAL-TIME
RE-EMBEDDED

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

2.1

Modular System AMJ-S/AMJ/UMJ

2.1

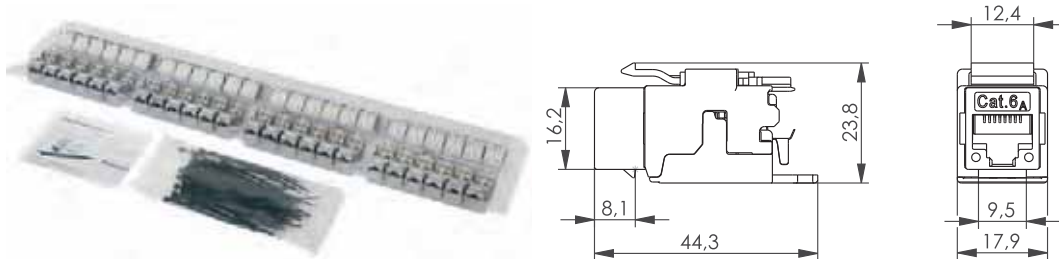
AMJ-S Modules and AMJ Modules/Coupler - shielded

2.1.2

AMJ Module K

Cat.6_A

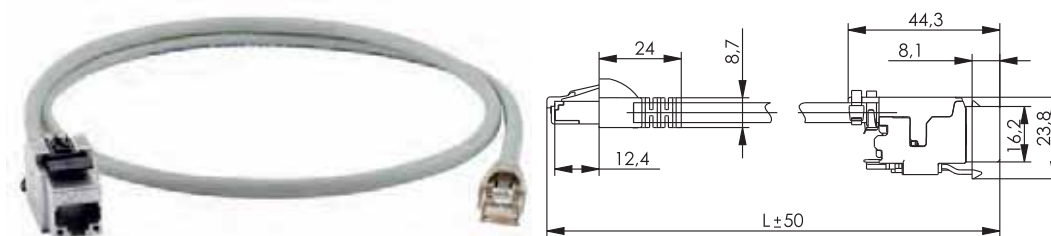
AMJ-S

REAL-TIME
RE-EMBEDDED

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

Cat.6_A

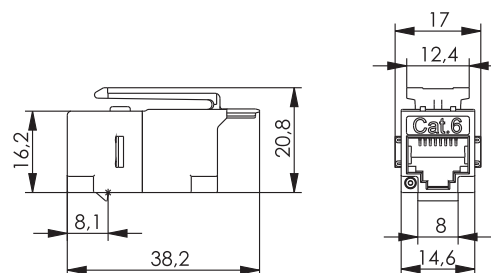
AMJ-S

REAL-TIME
RE-EMBEDDED

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

2.1.3

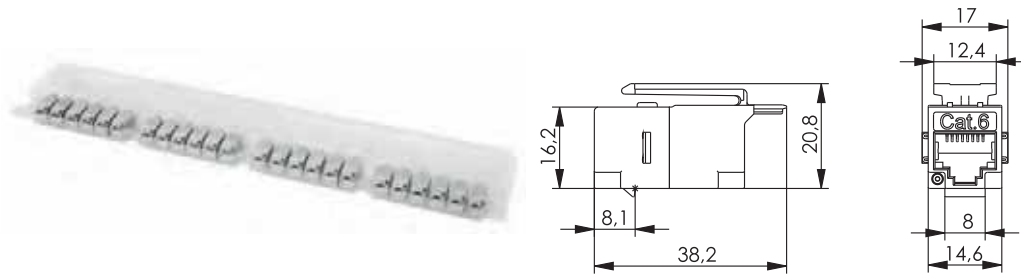
AMJ Coupler K



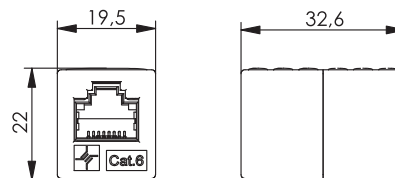
| Order no. | Short name | Description | Remarks | Mount. dim. |
|-------------|---------------------------|--|-------------------------------|-------------|
| J00029A0061 | AMJ Coupler K Cat.6, f-f | suitable for Class E _A Channel, 10 Gigabit Ethernet | suitable for RJ45/11/12 plugs | Z121 |
| J00029K0051 | 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 _A 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 _A 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

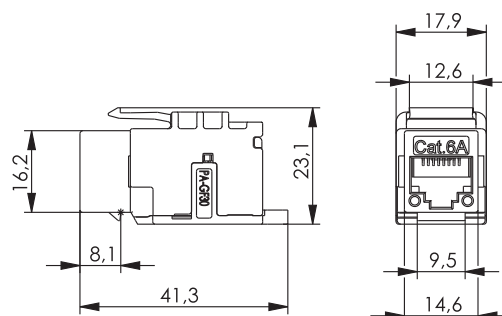
2.2

Performance Characteristics

- Class E_A 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_A 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 _A 500 T568A | tool-free connectivity, suitable for RJ45/11/12 plugs | Z121 |
| J00029K0078 | UMJ Module K Class E _A 500 T568B | tool-free connectivity, suitable for RJ45/11/12 plugs | Z121 |

2.2

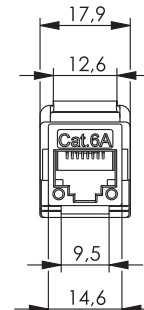
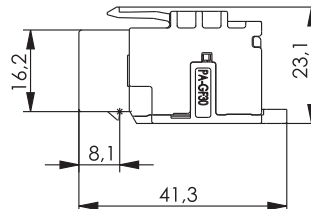
Modular System AMJ-S/AMJ/UMJ

2.2

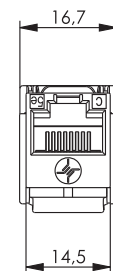
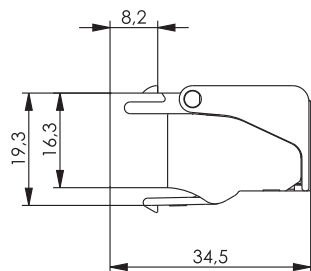
UMJ Modules/Coupler - unshielded

2.2.1

UMJ Module K



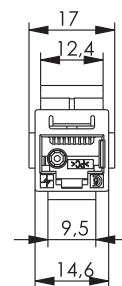
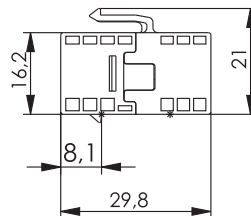
| Order no. | Short name | Type | Remarks | Mount. dim. |
|-------------|---|---------------------------|---|-------------|
| J00029L0050 | UMJ Module K Class E _A 500 T568A | blister package (24 pcs.) | tool-free connectivity, suitable for RJ45/11/12 plugs | Z121 |
| J00029L0078 | UMJ Module K Class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

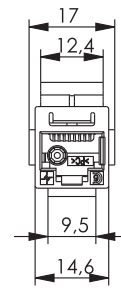
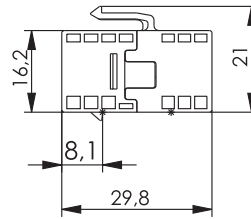
2.2.2

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



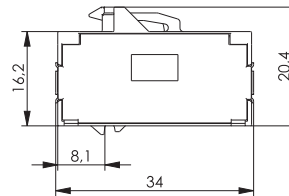
| Order no. | Short name | Type | Remarks | Mount. dim. |
|-------------|---------------------------|---------------------------|-------------------------------|-------------|
| J00029B0064 | UMJ Coupler K Cat.6, f-f | blister package (24 pcs.) | suitable for RJ45/11/12 plugs | Z121 |
| J00029L0054 |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

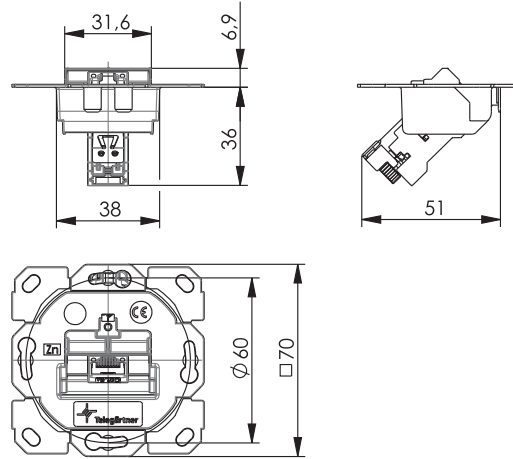
2.4

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

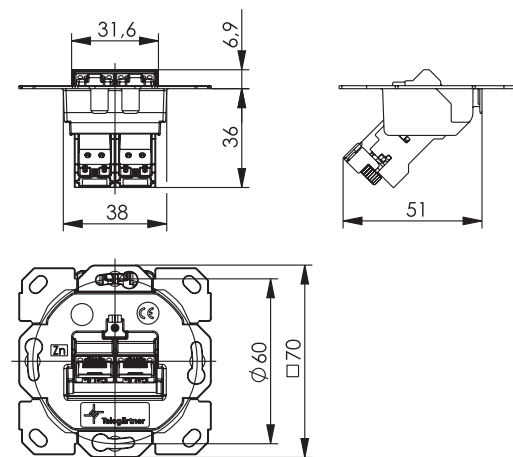
Cat.6_A

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 _A 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 _A 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 / Downloads

Cat.6_A

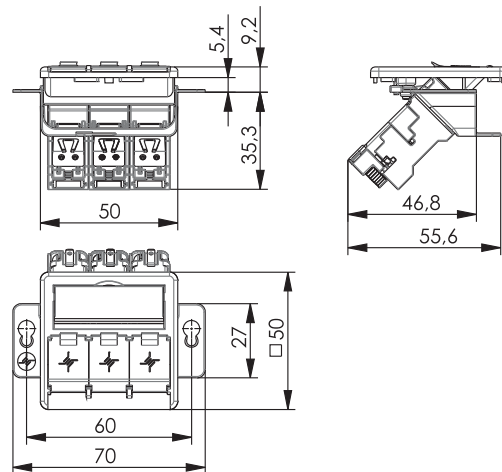
AMJ-S

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 _A 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 _A 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 / Downloads

Modular System AMJ-S/AMJ/UMJ

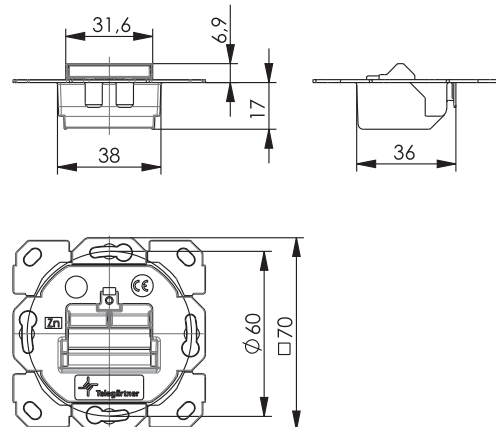


Cat.6A

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 _A 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 _A 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 / Downloads

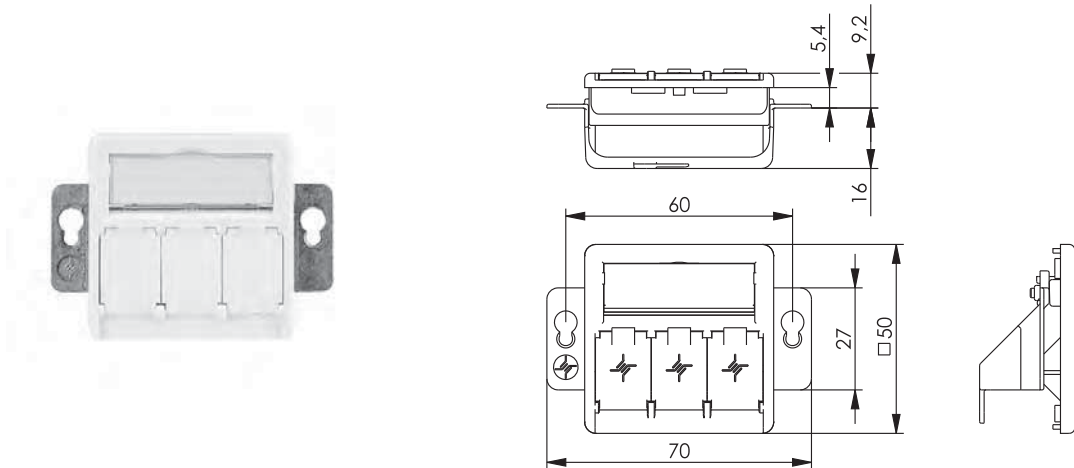
Modular System AMJ-S/AMJ/UMJ

2.4

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

2.4.1

Cable Duct Mounting - suitable for switching programs



| 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 |



| 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 |

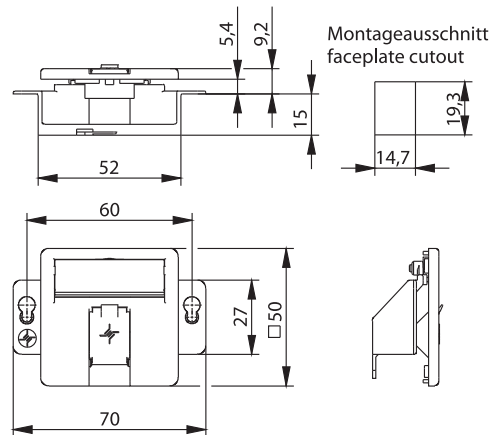


| Order no. | Short name | Series | Colour |
|-------------|--|--------------|--------------|
| F00020A0113 | Faceplate 50 x 50 mm for AMJ45 8/8 UP/0 and design capable module carrier AMJ-S; with screw, transparent label field, cover and 2 protection flaps | AMJ45; AMJ-S | alpine white |

Modular System AMJ-S/AMJ/UMJ

Cable Duct Mounting

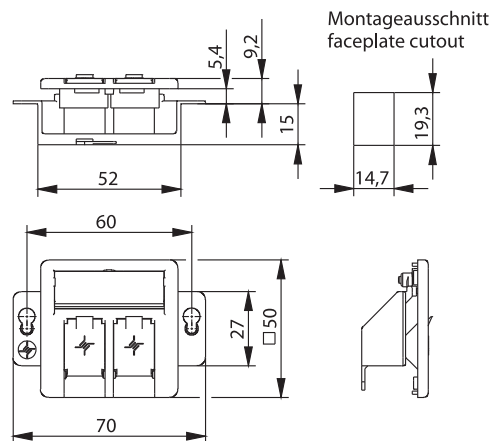
2.4.2



AMJ-S

AMJ

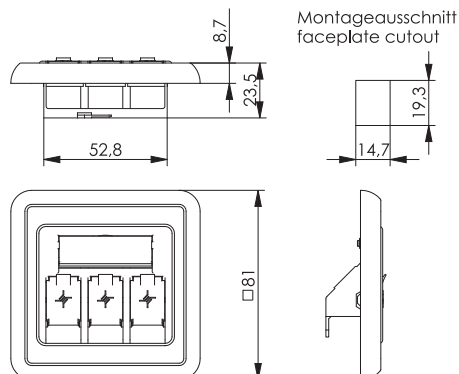
| Order no. | Short name | Type | Remarks | Series | Colour |
|-------------|--------------------|---|---|---|-----------------|
| H02010A0079 | Faceplate 50x50 | Single gang UP/50 incl. module carrier, label field and shutter, without Module/Coupler | for cable duct and underfloor, for flush-mounting 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

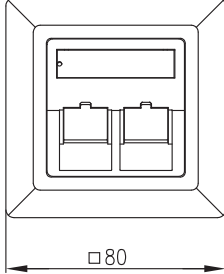
2.4

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


2.4.2

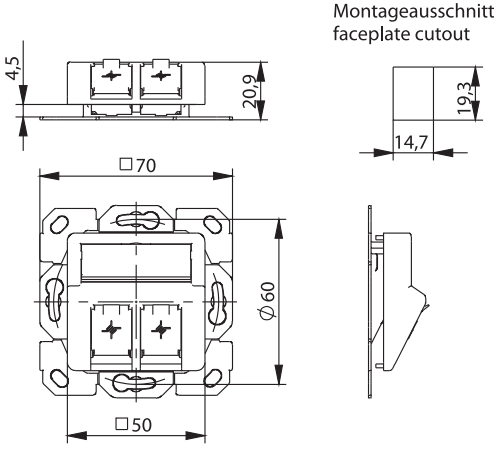
Cable Duct Mounting






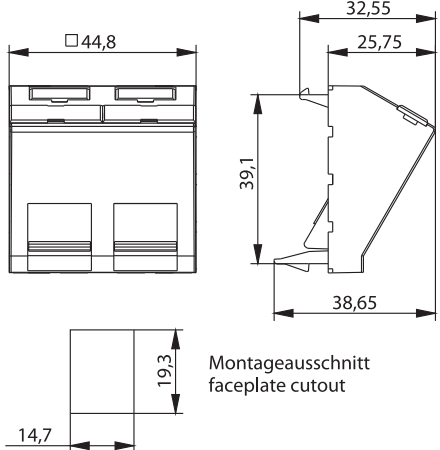
| Order no. | Short name | Type | Remarks | Series | Colour |
|-------------|--------------------|--|---|--|-----------------|
| H02010A0040 | Faceplate 80x80 | Double gang UP, without Module/ Coupler, mating direction 45° | without frame also suitable for UP/50 cable duct | AMJ-S; AMJ Module K; AMJ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





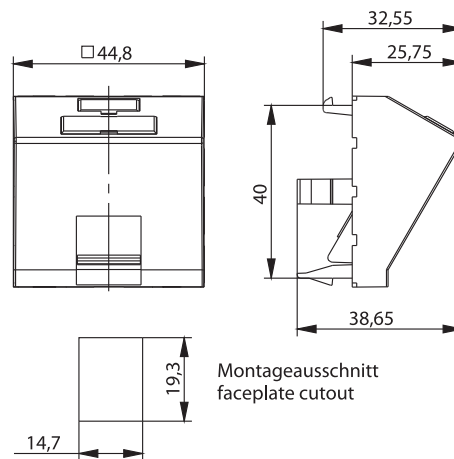
| Order no. | Short name | Type | Remarks | Series | Colour |
|-------------|--------------------------------|---|--|---|-----------------|
| H02010A0083 | Faceplate 50x50, projecting | Double gang UP/50 incl. Module Carrier, label field and shutter, without Module/Coupler | for flush mounting and cavity 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 |





| 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 |

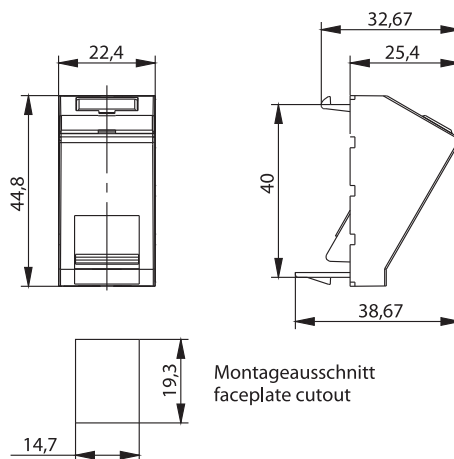
Modular System AMJ-S/AMJ/UMJ



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 |

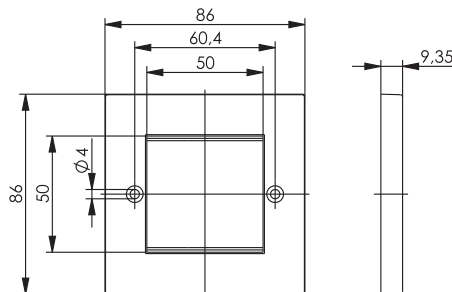
Modular System AMJ-S/AMJ/UMJ

2.4

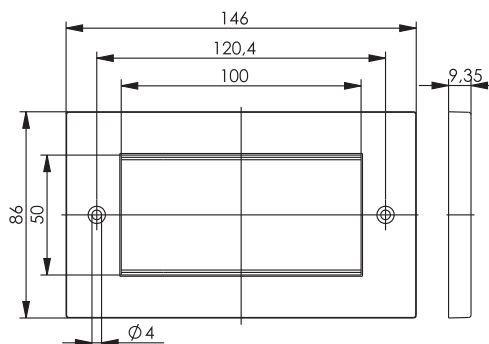
Applications for AMJ-S Modules and AMJ/UMJ Modules/Coupler

2.4.2

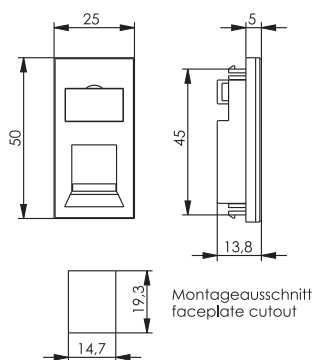
Cable Duct Mounting



| 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 |



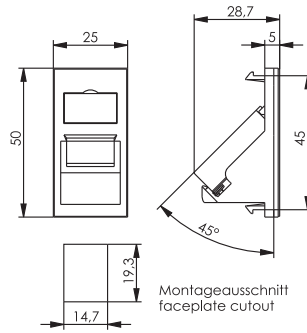
AMJ-S

AMJ

Montageausschnitt
faceplate cutout

| 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 |

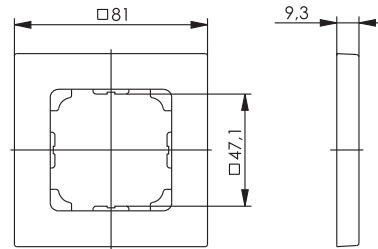
Modular System AMJ-S/AMJ/UMJ



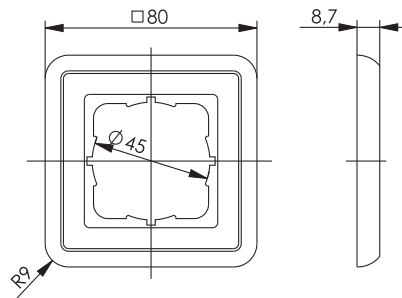
AMJ-S

AMJ

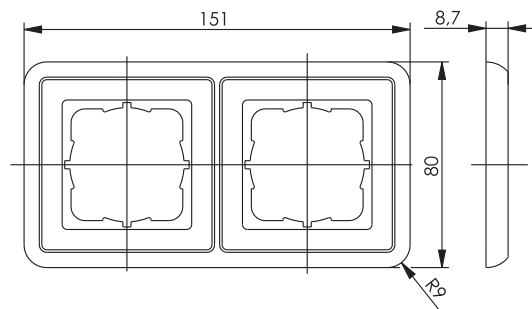
| Order no. | Short name | Type | Remarks | Series | Colour |
|-------------|-----------------------------|---|----------------------|--|--------|
| H02010A0069 | Faceplate 25x50 UK-Style | Single gang incl. label field and Shutter, w/o Modules | mating direction 45° | AMJ-S; AMJ Module K; AMJ Coupler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

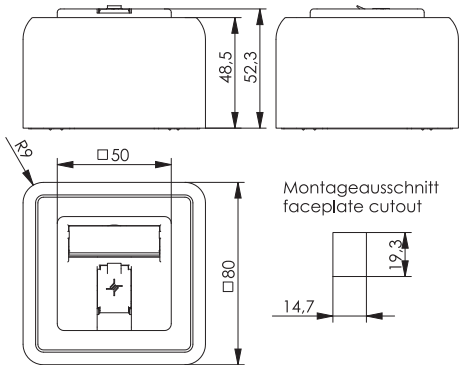
2.4.3

Surface Mounting




AMJ-S

AMJ

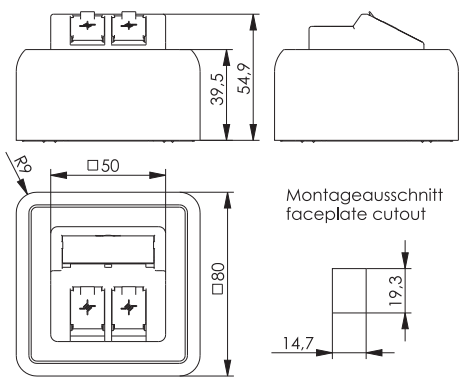


| Order no. | Short name | Type | Remarks | Series | Colour |
|-------------|-----------------|--|----------------------|---|--------------|
| H02000A0090 | Faceplate 80x80 | Single gang AP incl. module carrier, label field and shutter, without Module/Coupler | mating direction 45° | AMJ-S; AMJ Module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




AMJ-S

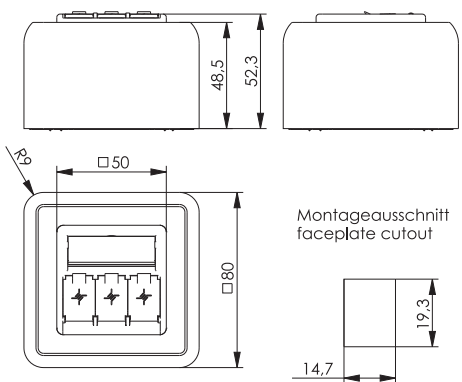
AMJ



| 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 |

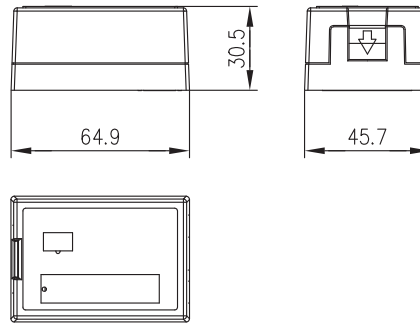


AMJ-S



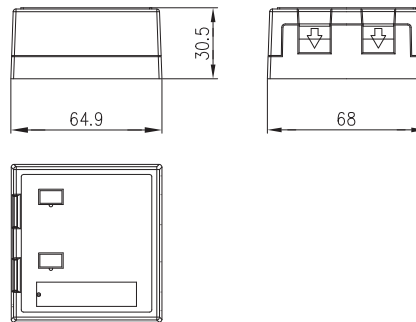
| Order no. | Short name | Type | Remarks | Series | Colour |
|-------------|-----------------|--|----------------------|--------|--------------|
| H02000A0096 | Faceplate 80x80 | Triple gang AP incl. Module Carrier, label field and shutter, without Module/Coupler | mating direction 45° | AMJ-S | alpine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

Modular System AMJ-S/AMJ/UMJ



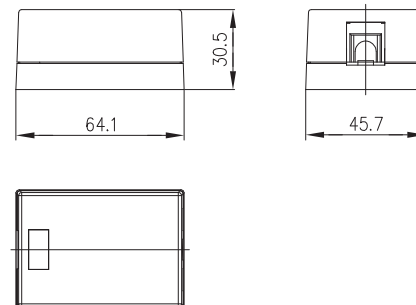
AMJ

| 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 |



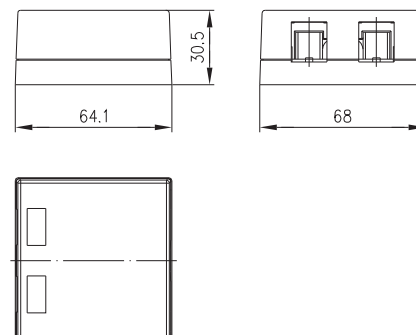
AMJ

| 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

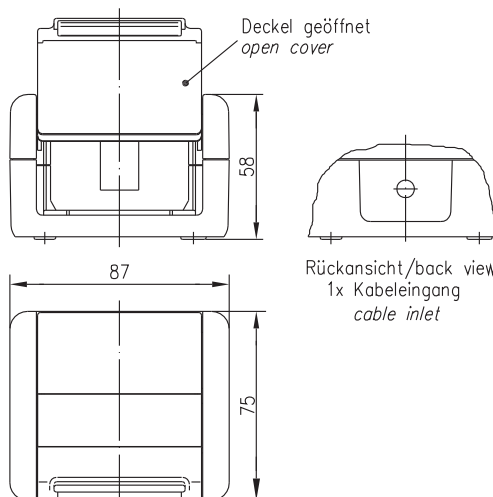
2.4.3

Surface Mounting



AMJ-S

AMJ

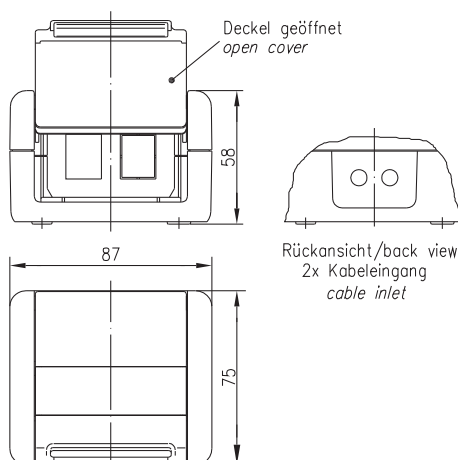


| Order no. | Short name | Type | Remarks | Series | Colour |
|-------------|----------------|--|-------------------------------|---|--------|
| H02000A0069 | Outlet IP44 AP | Single gang surface mounting box, without Module/Coupler | for AMJ/ UMJ Modules /Coupler | AMJ-S; AMJ Module K; AMJ Coupler K;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



AMJ-S

AMJ

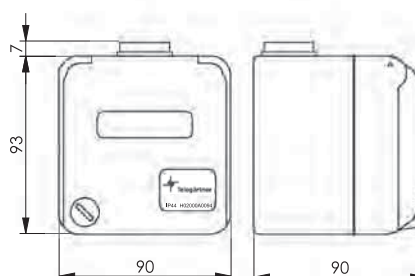


| Order no. | Short name | Type | Remarks | Series | Colour |
|-------------|----------------|--|-------------------------------|---|--------|
| H02000A0070 | Outlet IP44 AP | Double gang surface mounting box, without Module/Coupler | for AMJ/ UMJ Modules/ Coupler | AMJ-S; AMJ Module K; AMJ Coupler K;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



AMJ-S

AMJ

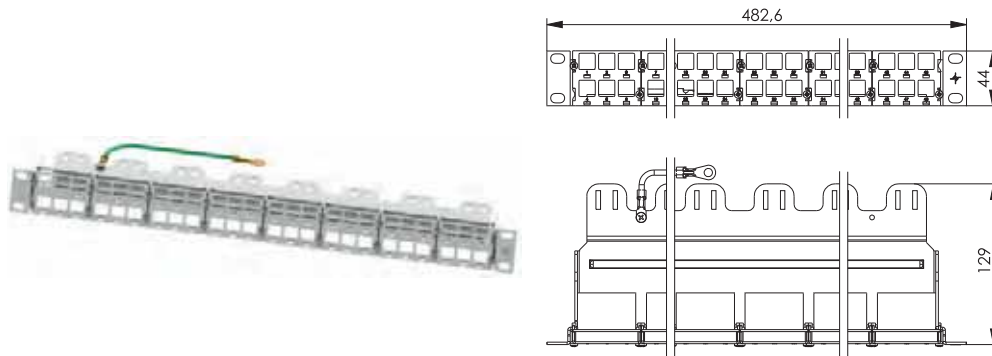


| Bestell-Nr. | Short name | Type | Remarks |
|-------------|--------------------------|--|---------------------------|
| H02000A0094 | Outlet IP44 AP with lock | Double gang surface mounting box, without Module/Coupler | lockable |
| H01011A0051 | Cable gland M25x1,5; 2x8 | | for 2 cables 3-8 mm, grey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

Modular System AMJ-S/AMJ/UMJ

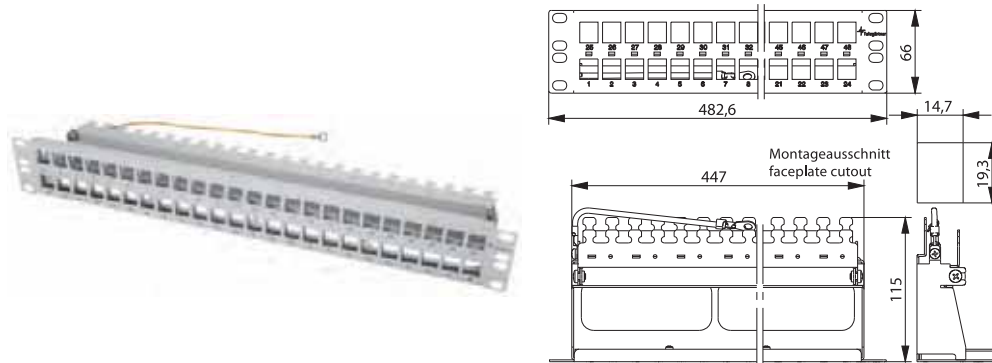
19" Module Carrier without Modules/Couplers

2.4.4



AMJ-S

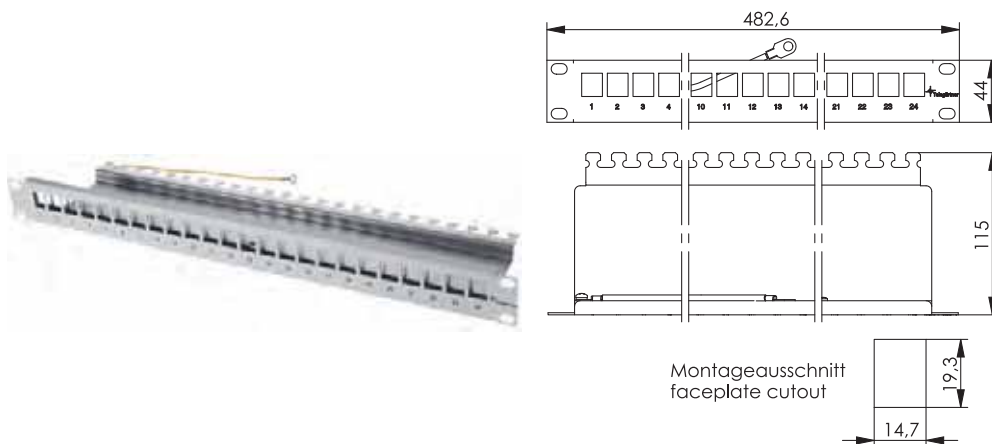
| Order no. | Short name | Type | Remarks | Series | Colour |
|-------------|---|--|----------|--------|-------------------------|
| H02025A0236 | 19" Frontplate 1 HU for 48 AMJ-S Modules | incl. cable strain relief and bonding kit, without Module/Coupler | 48 Ports | AMJ-S | sheet steel zinc-plated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



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

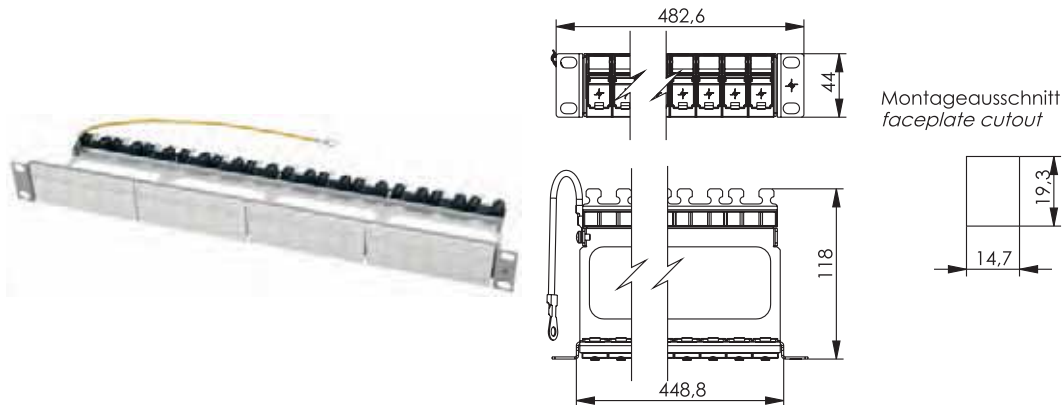
Modular System AMJ-S/AMJ/UMJ

2.4

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

2.4.4

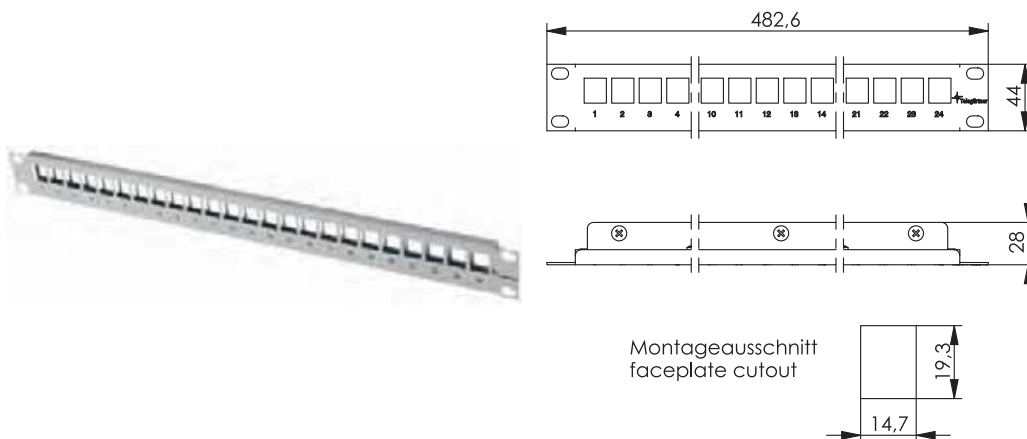
19" Module Carrier without Modules/Couplers



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

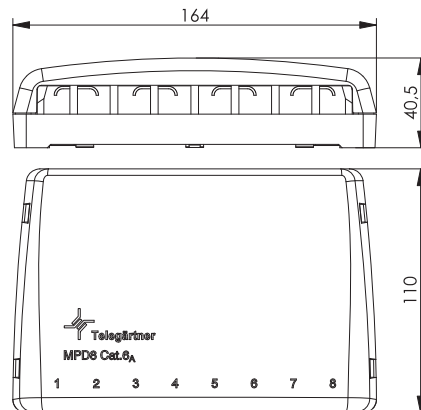
AMJ

| 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

Mini Distributor

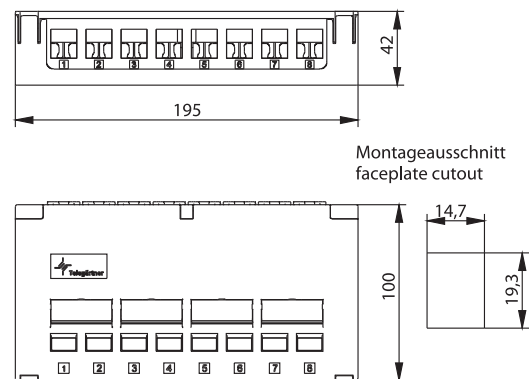
2.4.5



AMJ-S

AMJ

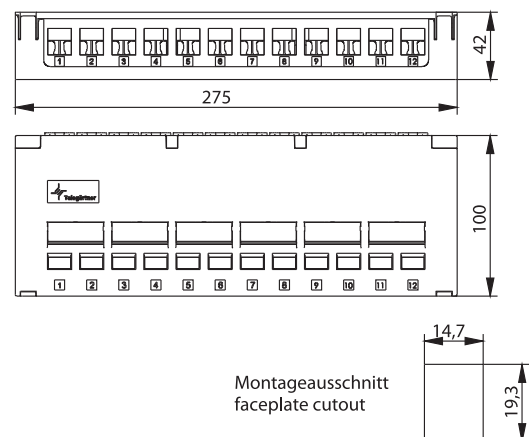
| Order no. | Short name | Type | Remarks | Series | Colour |
|-------------|-------------------------|--|---|--|-----------------|
| H02000A0103 | MPD8 AMJ/UMJ TH35/AP | Mini Distributor without module/coupler | 8 Ports, mounting onto DIN Rail TH35 without adapter | AMJ-S; AMJ Module K; AMJ Coupler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


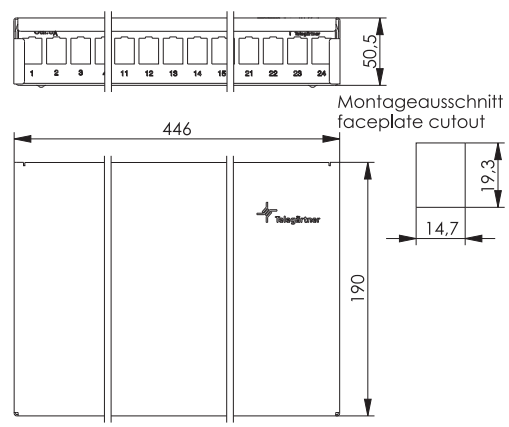
Modular System AMJ-S/AMJ/UMJ

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


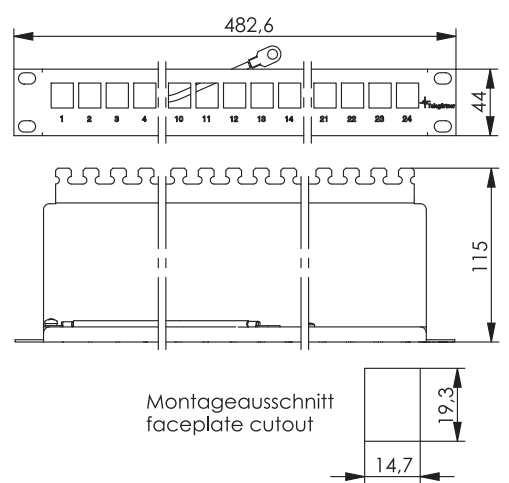
AMJ

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

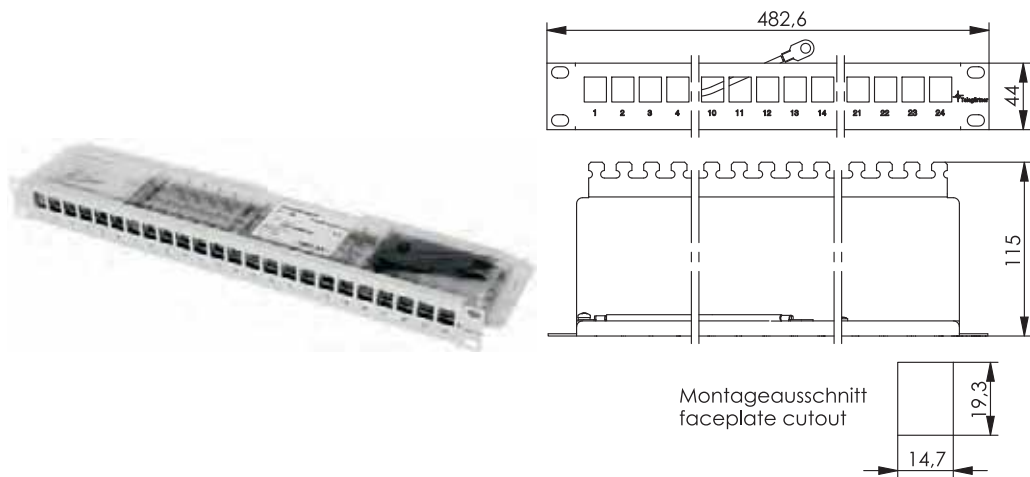
Cat.6A

AMJ-S

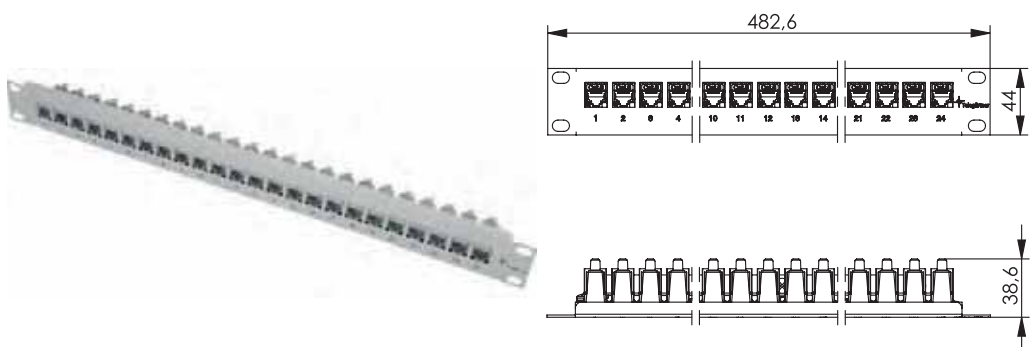
REAL-TIME RE-EMBEDDED

| Order no. | Short name | Type | Remarks | Colour |
|-------------|------------------------|--|---|---------------------|
| J02023A0039 | 19" Frontplate 1 HU | incl. 24 AMJ-S Modules Cat.6 _A 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 _A 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 _A 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 _A 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 _A 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 _A 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 _A 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 |

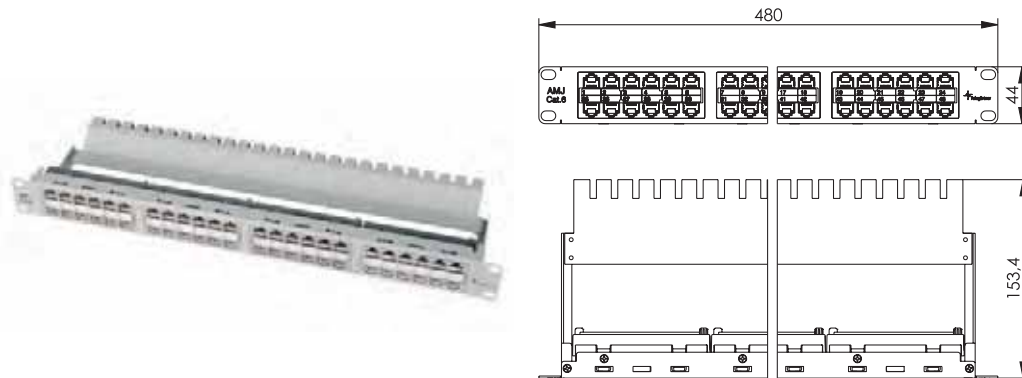
Modular System AMJ-S/AMJ/UMJ

2.4

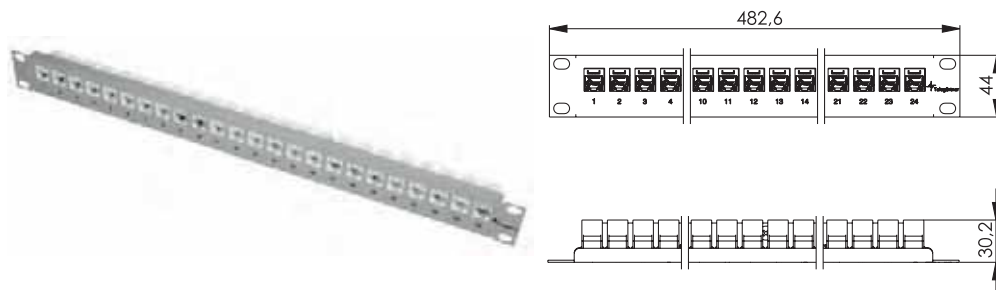
Applications for AMJ-S Modules and AMJ/UMJ Modules/Coupler

2.4.6

19" Module Carrier with Modules/Couplers



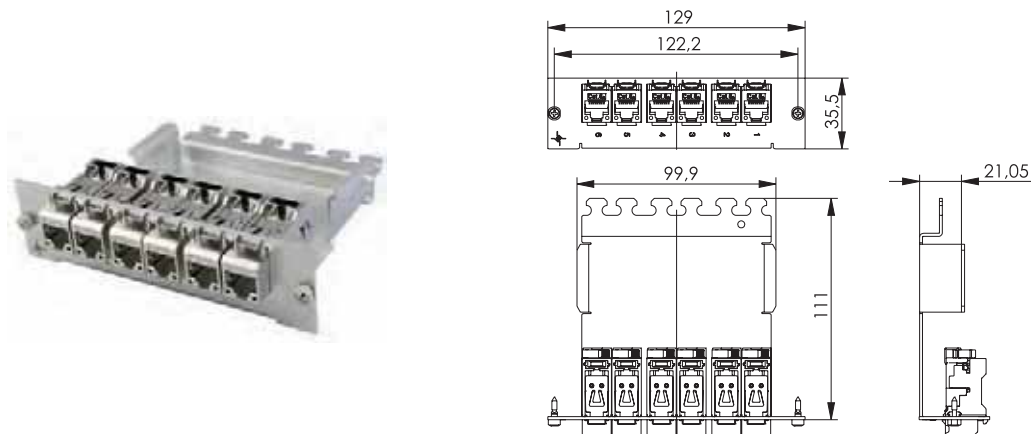
| Order no. | Short name | Type | Remarks | Colour |
|-------------|--------------------------------|---|-------------------------------|---------------------|
| J02024A0007 | 19" Feedthrough panel, 1 HU | incl. 48 AMJ Coupler K Cat.6 (4x12), cable strain relief and bonding kit | suitable for RJ45/11/12 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 _A T568A | suitable for RJ45/11/12 plugs | aluminium |

Cat.6_A

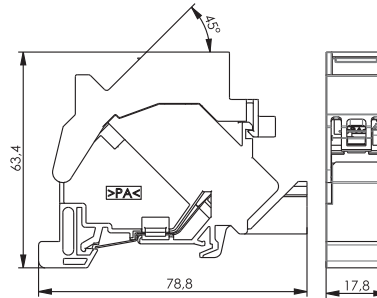
AMJ-S

REAL-TIME
RE-EMBEDDED

Modular System AMJ-S/AMJ/UMJ

Components for Mounting Rails

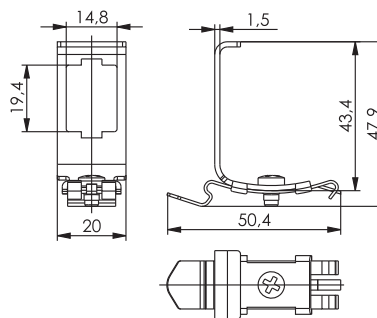
2.4.8

Cat.6_A

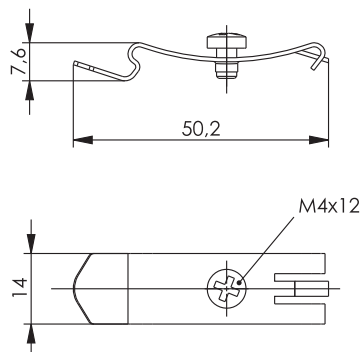
AMJ-S

REAL-TIME
RE-EMBEDDED

| Order no. | Short name | Type | Remarks | Colour |
|-------------|---------------------------------|---|------------------------|---------------------|
| J00023A0205 | Mounting rail outlet TS45 AMJ-S | incl. AMJ-S Module Cat.6 _A T568A | for mounting rail TH35 | light grey RAL 7035 |
| J00023A0206 | Mounting rail outlet TS45 AMJ-S | incl. AMJ-S Module Cat.6 _A 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

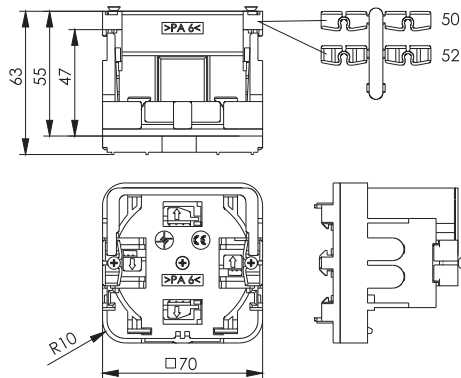
Modular System AMJ-S/AMJ/UMJ

2.4

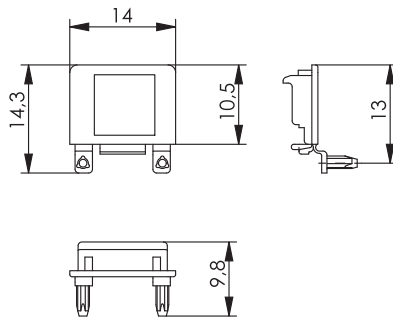
Applications for AMJ-S Modules and AMJ/UMJ Modules/Coupler

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. |

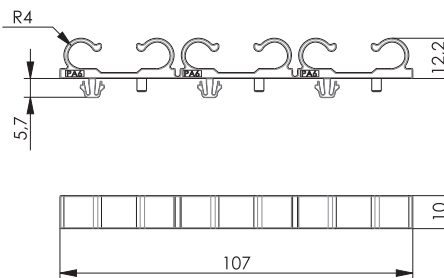


| Order no. | Short name | Colour |
|-------------|--|-----------------|
| B00002A0014 | protection flap for faceplate; for AMJ-S, AMJ, AMJ45 | alpine white |
| B00002B0014 | protection flap for faceplate; for AMJ-S, AMJ, AMJ45 | red RAL 3020 |
| B00002C0014 | protection flap for faceplate; for AMJ-S, 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



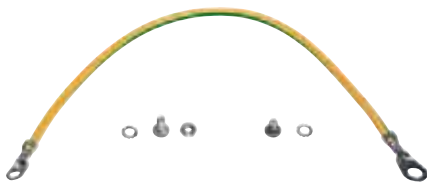
| Order no. | Short name | Type |
|-------------|-------------------------|---|
| N00000A0013 | Plier wrench 1 3/8 inch | auxiliary tool for AMJ, STX and UMJ Module; MFP8/UF8 assembly, 2 in 1 tool: gripper and spanner |



| 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) |



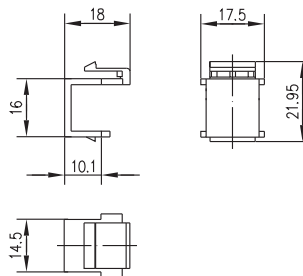
| Order no. | Short name |
|-------------|---|
| B06013A0010 | Cable management bar for 19" patch panels |



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

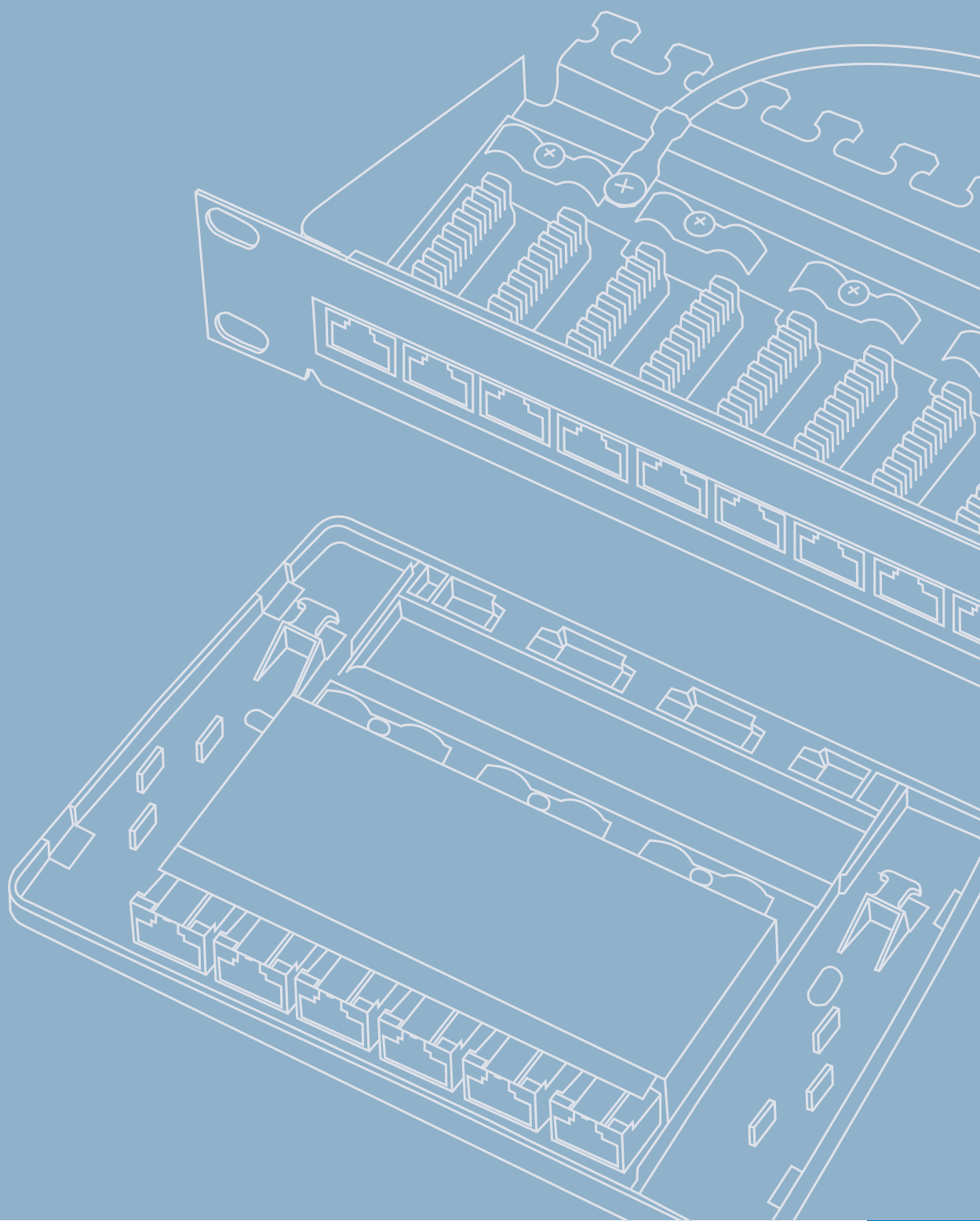


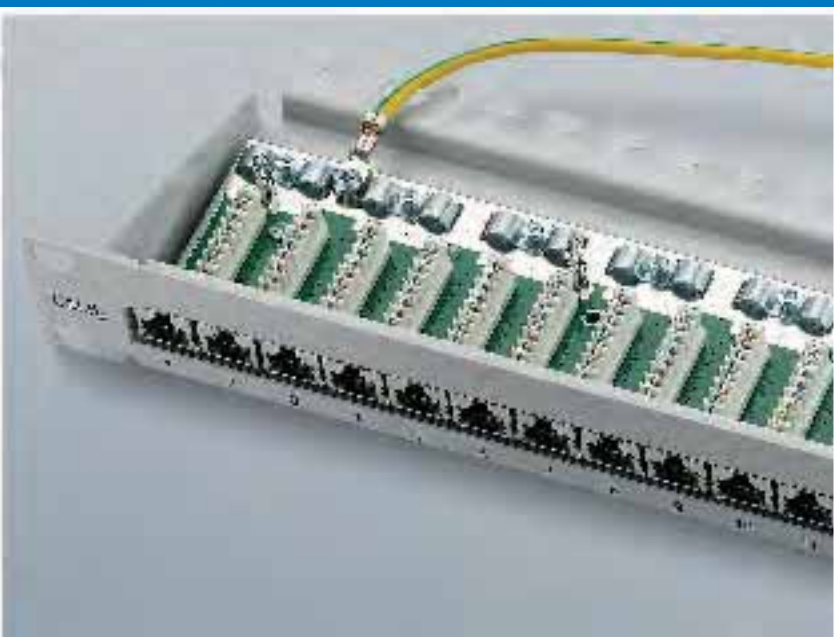
| Order no. | Short name |
|-------------|--|
| H02025A0116 | Cable management plate for 19" patch panels 1 HU |



| 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

| | | |
|------------|---|------------|
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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 |
| Standards | | | |
| Connectors | IEC 60603-7-51 / -7-5 / -7-3 / -7-41 | IEC 60603-7 | IEC 60603-7-51 / -7-41 |
| Mechanical Characteristics | | | |
| 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 |
| Environmental Requirements | | | |
| Ambient temperature | -40° C to + 70° C | -40° C to + 70° C | -40° C to + 70° C |
| Electrical Characteristics | | | |
| 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+ |
| Transmission Characteristics | | | |
| 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


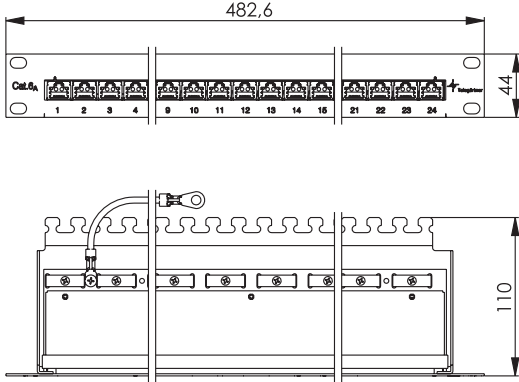


Patch Panels and Distributors

3.1 19" Patch Panels K Cat.6_A, Cat.6A & Cat.63.1.1 MPP24 K Cat.6_A & Cat.6A

Performance Characteristics


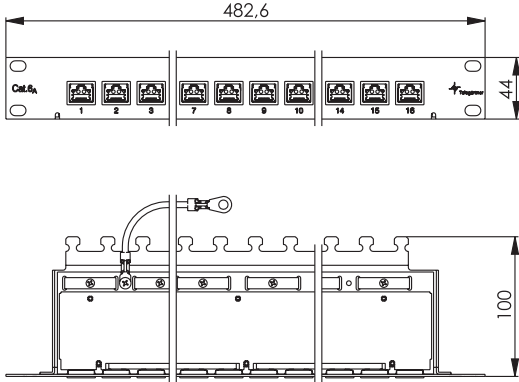
- 19"/10" rack mount unit 1 HU with 12, 16 or 24 RJ45 jacks assembled on one common PCB
- no special tooling required for mounting of cover (shielded type)
- printed circuit board is mounted horizontally
- bonding with the enclosed bonding kit (shielded types)
- cables are terminated via IDC (LSA Plus) 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_A, Class E_A 500 & Cat.6A types with overbending protection: >750 mating cycles with RJ45/RJ11/RJ12 plugs

Cat.6_A

REAL-TIME RE-EMBEDDED

| Order no. | Short name | Type | Colour |
|-------------|-------------------------------|-------------------------------------|---------------------|
| J02023A0050 | MPP24-HS K Cat.6 _A | 24 x RJ45 shielded | light grey RAL 7035 |
| J02023S0050 | MPP24-HS K Cat.6 _A | 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_A



Cat.6_A

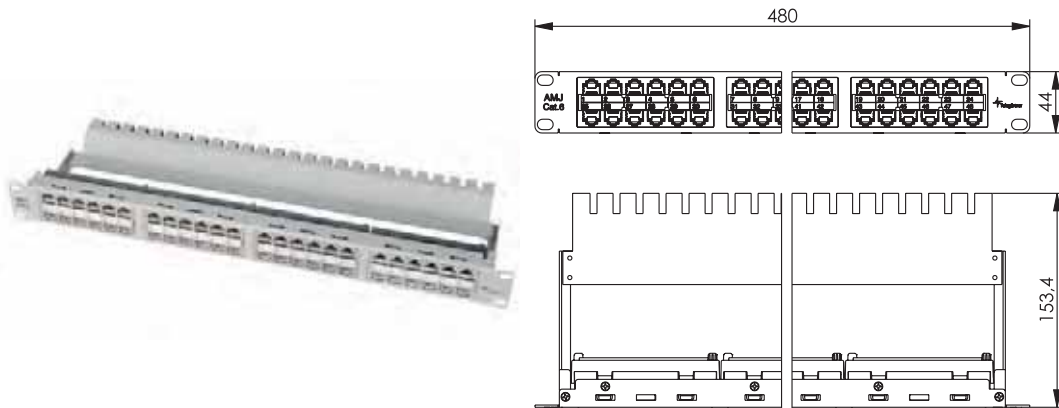
REAL-TIME RE-EMBEDDED

| Order no. | Short name | Type | Colour |
|-------------|--------------------------------|------------------|---------------------|
| J02022A0050 | MPP16-HS K Cat. 6 _A | 16xRJ45 shielded | light grey RAL 7035 |

Patch Panels and Distributors

19" Feedthrough Panel Cat.6

3.1.3



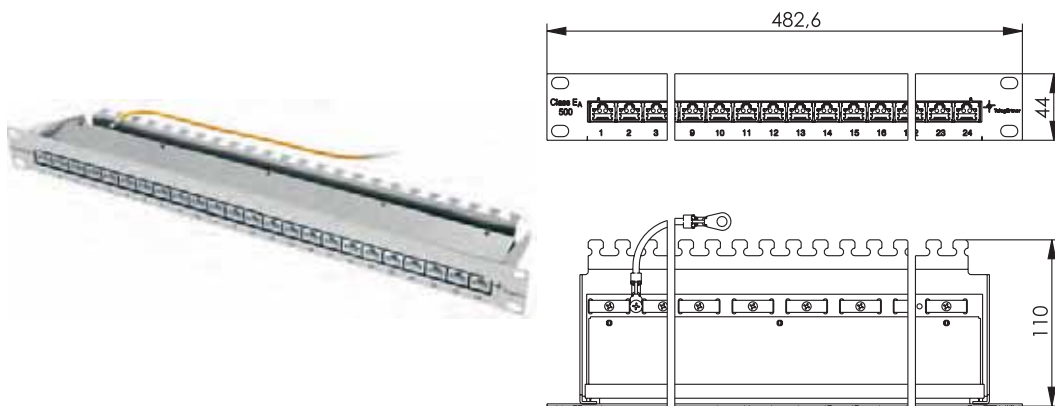
| Order no. | Short name | Type | Remarks | Colour |
|-------------|-----------------------------|--|-------------------------------|---------------------|
| J02024A0007 | 19" Feedthrough panel, 1 HU | incl. 48 AMJ Coupler K Cat.6 (4x12), cable strain relief and bonding kit | suitable for RJ45/11/12 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_A 500

3.2

MPP24 K Class E_A 500

3.2.1



| Order no. | Short name | Type | Colour |
|-------------|-------------------------------------|--------------------|---------------------|
| J02023A0052 | MPP24-HS K Class E _A 500 | 24 x RJ45 shielded | light grey RAL 7035 |

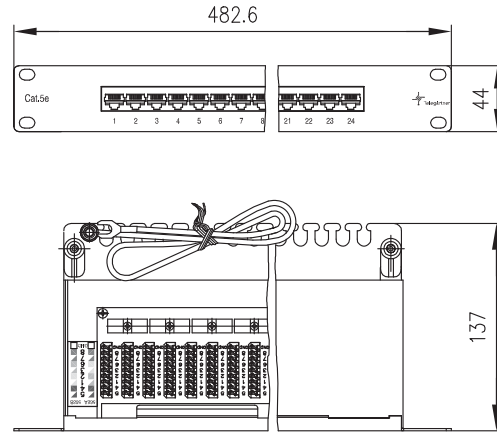
Patch Panels and Distributors

3.3

19" Patch Panels Cat.5e

3.3.1

MPP24 Cat.5e



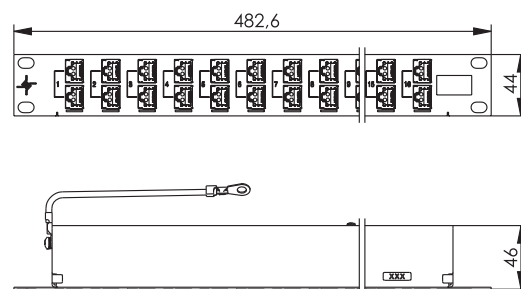
| Order no. | Short name | Type | Colour |
|-------------|-----------------|-------------------------------------|---------------------|
| J02023B0017 | MPP24-HS Cat.5e | 24 x RJ45 shielded | light grey RAL 7035 |
| J02023B0018 | MPP24-H Cat.5e | 24 x RJ45 unshielded, without cover | light grey RAL 7035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

3.4

19" Cross Connect Panel

Performance Characteristics

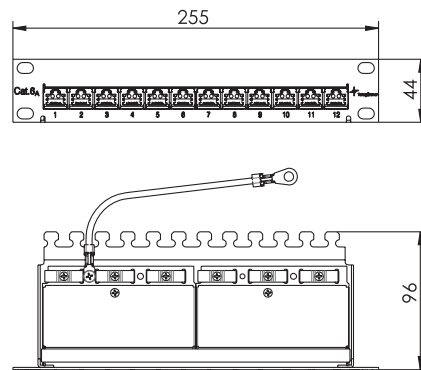
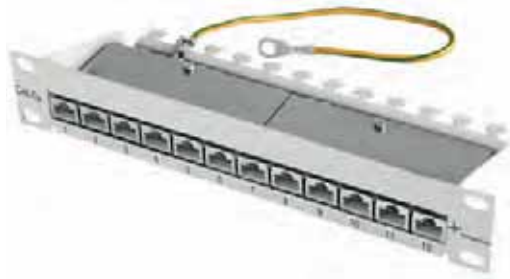
- 19" Cross Connect Panel – CCP32 with 16 plated-through RJ45 ports
- transmission performance acc. to Class E_A ISO/IEC 11801
- transmission performance acc. to Cat.6A ANSI/TIA/EIA-568-C.2
- suitable for PoE+ acc. to IEEE 802.3at
- 32 RJ45 jacks suitable for RJ45/11/12/45 plugs
- mating cycles \geq 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

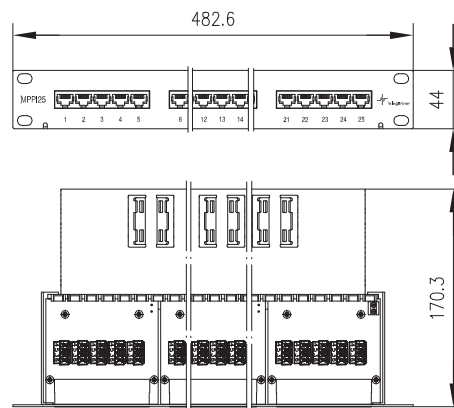
3.6

Performance Characteristics

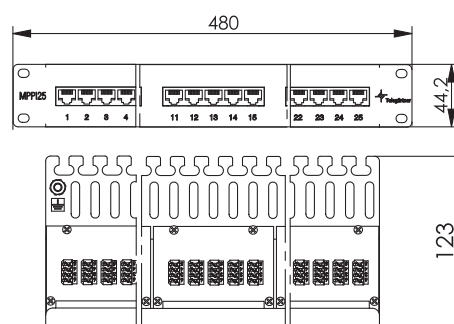
- 19" rack mount unit 1 HU with 25, 30 or 50 RJ45 jacks assembled on one common PCB
- wire termination via IDC (LSA-Plus) terminals
- modular jacks are numbered on the front panel
- strain relief by common cable ties (not included) without need of screws and special tools
- housing made of steel, light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

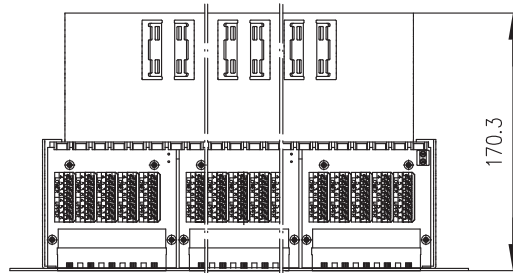
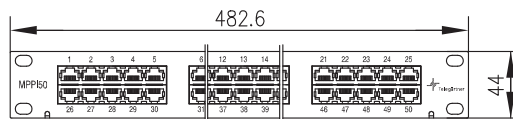
3.6

3.6

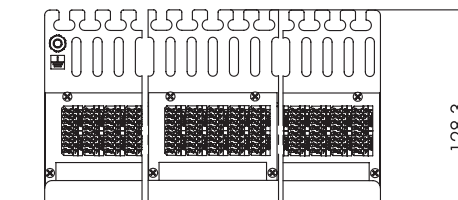
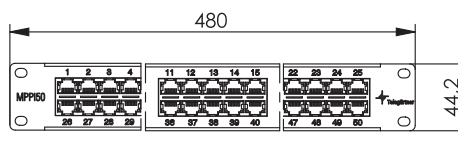
19" ISDN/Telephone Patch Panels Cat.3

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.

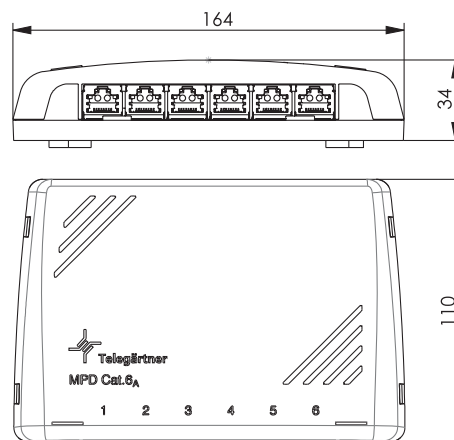
Up to 12 subscribers can be connected using shielded or unshielded installation cabling. The cables can be led into the housing from behind or from below. The distributor can be affixed to the wall, in a cable duct or simply placed on to the desk. A 19" rack mount version (with 3 HU) is also available.

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 & Cat.6A

3.7.1



Cat.6A



REAL-TIME RE-EMBEDDED


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

3.7

3.7

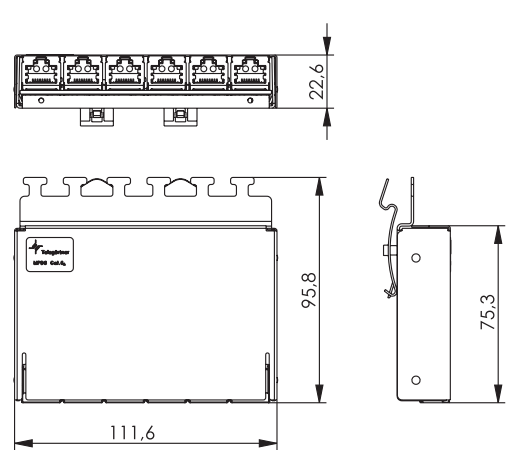
Mini Distributor

3.7.1


Mini Distributor MPD6 K Cat.6_A & Cat.6A


Cat.6_A

REAL-TIME RE-EMBEDDED

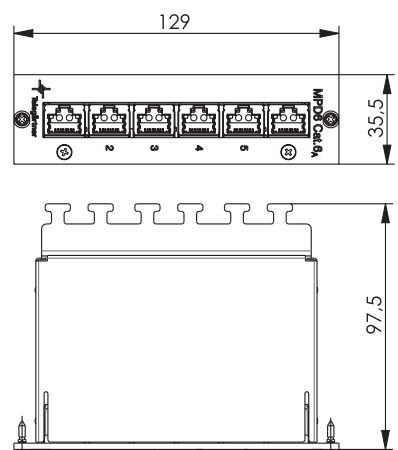


| Order no. | Short name | Type | Remarks |
|-------------|------------------------------|---|---|
| J02021A0055 | MPD6-HS K Cat.6 _A | 6-port mini distributor metal incl. 2 mounting rail adaptor | suitable for RJ45/11/12 plugs, mounting rail TH35 |



Cat.6_A

REAL-TIME RE-EMBEDDED

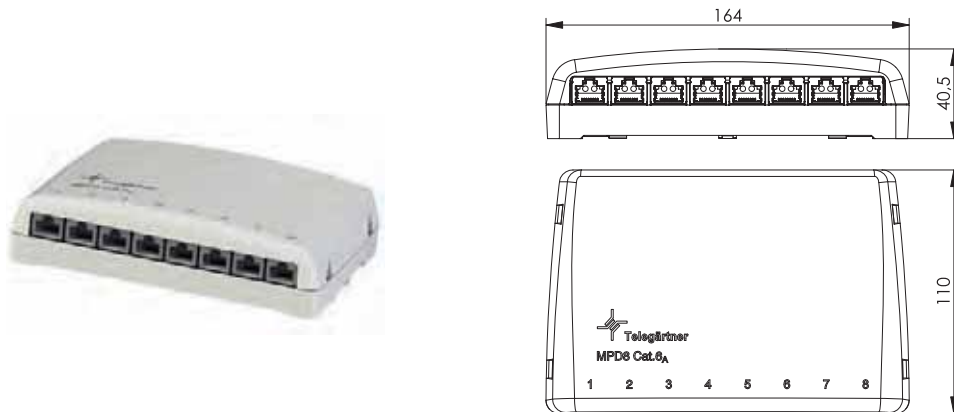


| Order no. | Short name | Type | Colour |
|-------------|--|--------------------------------|--------------------------------|
| J02021A0054 | MPD6-HS K Cat.6 _A 3 HU / 7 PU | shielded, 6x RJ45, 3 HU / 7 PU | front panel anodized aluminium |

Patch Panels and Distributors

Mini Distributor MPD8 K Cat.6_A

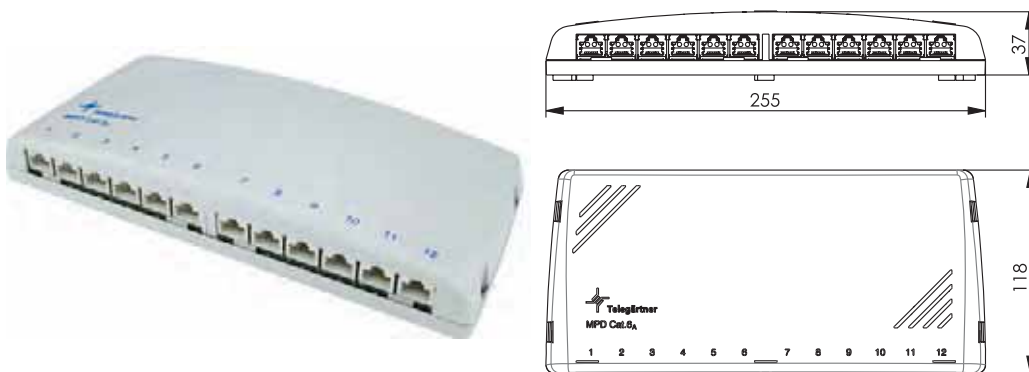
3.7.2

Cat.6_AREAL-TIME
RE-EMBEDDED

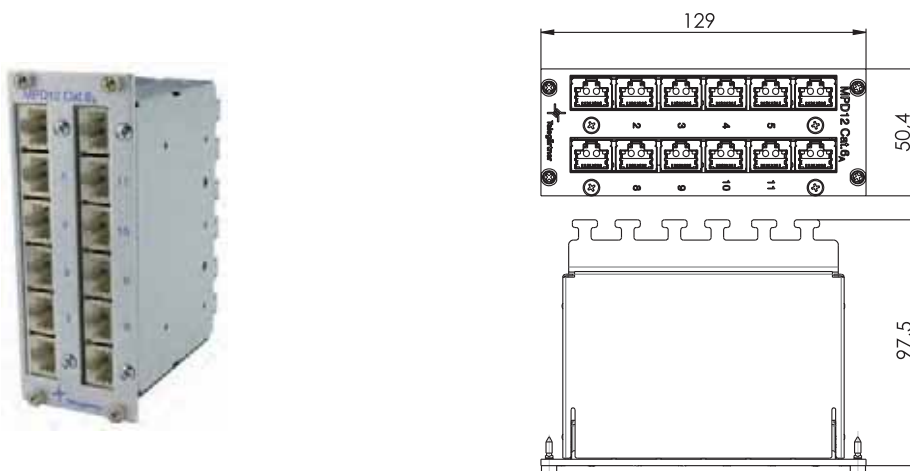
| Order no. | Short name | Type | Colour |
|-------------|------------------------------|--|--------------|
| J02021A0030 | MPD8-HS K Cat.6 _A | shielded, mounting onto mounting rail TH35 without adaptor | alpine white |

Mini Distributor MPD12 K Cat.6_A, Cat.6A

3.7.3

Cat.6_AREAL-TIME
RE-EMBEDDED

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

Cat.6_AREAL-TIME
RE-EMBEDDED

| Order no. | Short name | Type | Colour |
|-------------|--|---|--------------------------------|
| J02022A0055 | MPD12-HS K Cat.6 _A 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

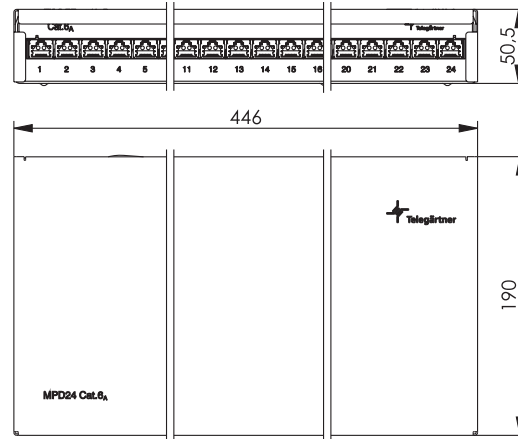
Patch Panels and Distributors

3.7

Mini Distributor

3.7.4

Mini Distributor MPD24-HS K Cat.6A



Cat.6A

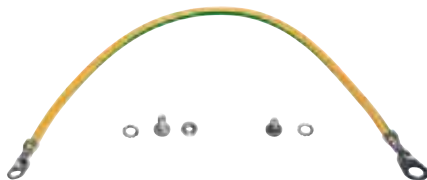
| Order no. | Short name | Type | Colour |
|-------------|------------------------------------|--------------------------------------|---------------------|
| J02023A0053 | Mini distributor MPD24-HS K Cat.6A | shielded, including cable management | pure white RAL 9010 |

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 |

Patch Panels and Distributors

3

Adaptor

3.8

T-Adaptors

3.8.1

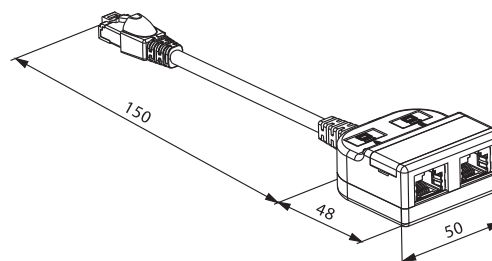
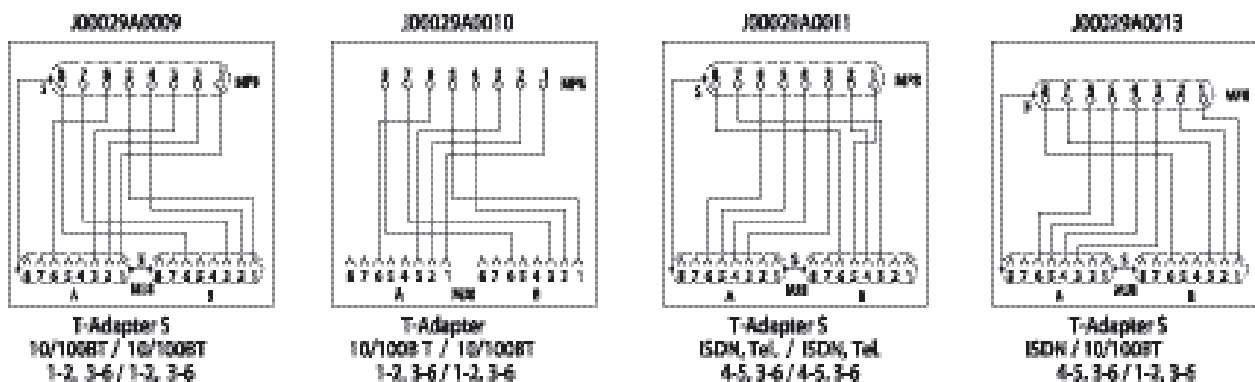
When all of the available connections in a data network are occupied problems arise to be sure, as soon as new subscribers are added. One solution would be to lay additional cables as well as to install further distribution panels and boxes. But this sometimes proves to be very difficult and costly because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

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.

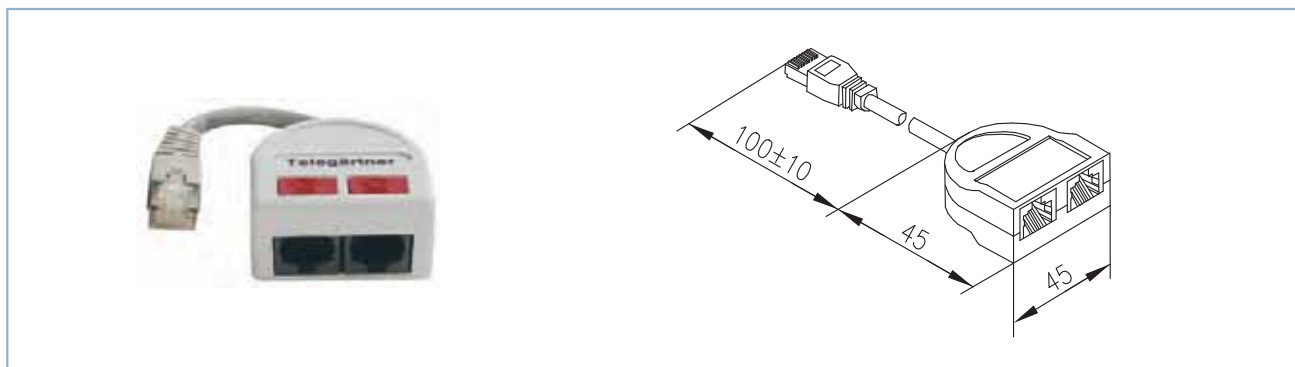
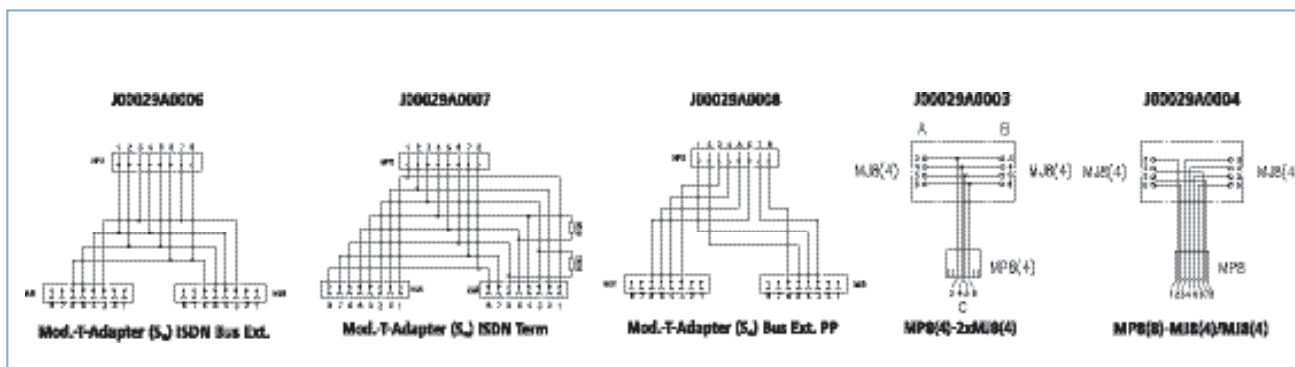
The T-Adaptor is available in three different versions for connection to the 19" Patch Panel and the wall outlets: the T-Bus-Ext. PP for the Patch Panel side, the T-Bus-Ext. Outlet

for the socket side and the T-Bus Term with an integrated 100 Ω 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.

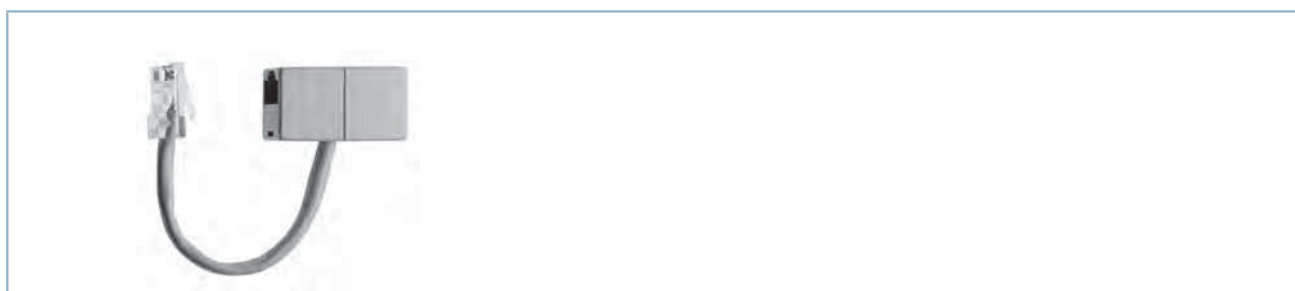
The ISDN Basic Access (NT) is connected to the first adaptor on the patch panel. If T-Adaptors are also put into the outlets, the number of connection possibilities even doubles.

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



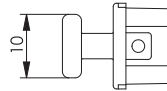
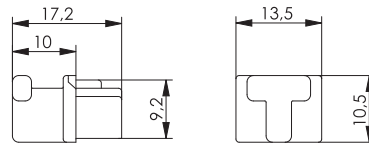
| Order no. | Short name | Remarks |
|-------------|-------------------------------------|--|
| J00029A0008 | Adaptor ISDN /Tel. T-Bus-Ext. PP | patch panel side |
| J00029A0006 | Adaptor ISDN/Tel. T-Bus-Ext. Outlet | outlet side |
| J00029A0007 | Adaptor ISDN/Tel. T-Bus.-Term | with integrated 100 Ω terminators |



| Order no. | Short name | Remarks |
|-------------|--------------------------------------|--|
| J00029A0003 | Adaptor ISDN/Tel. MP8(4)-2xMJ8(4) | for ISDN S_0 distribution |
| J00029A0004 | Adaptor ISDN/Tel. MP8(8)-MJ8(4)/8(4) | for Cable Sharing ISDN/Telephone Cat.3 |

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 |

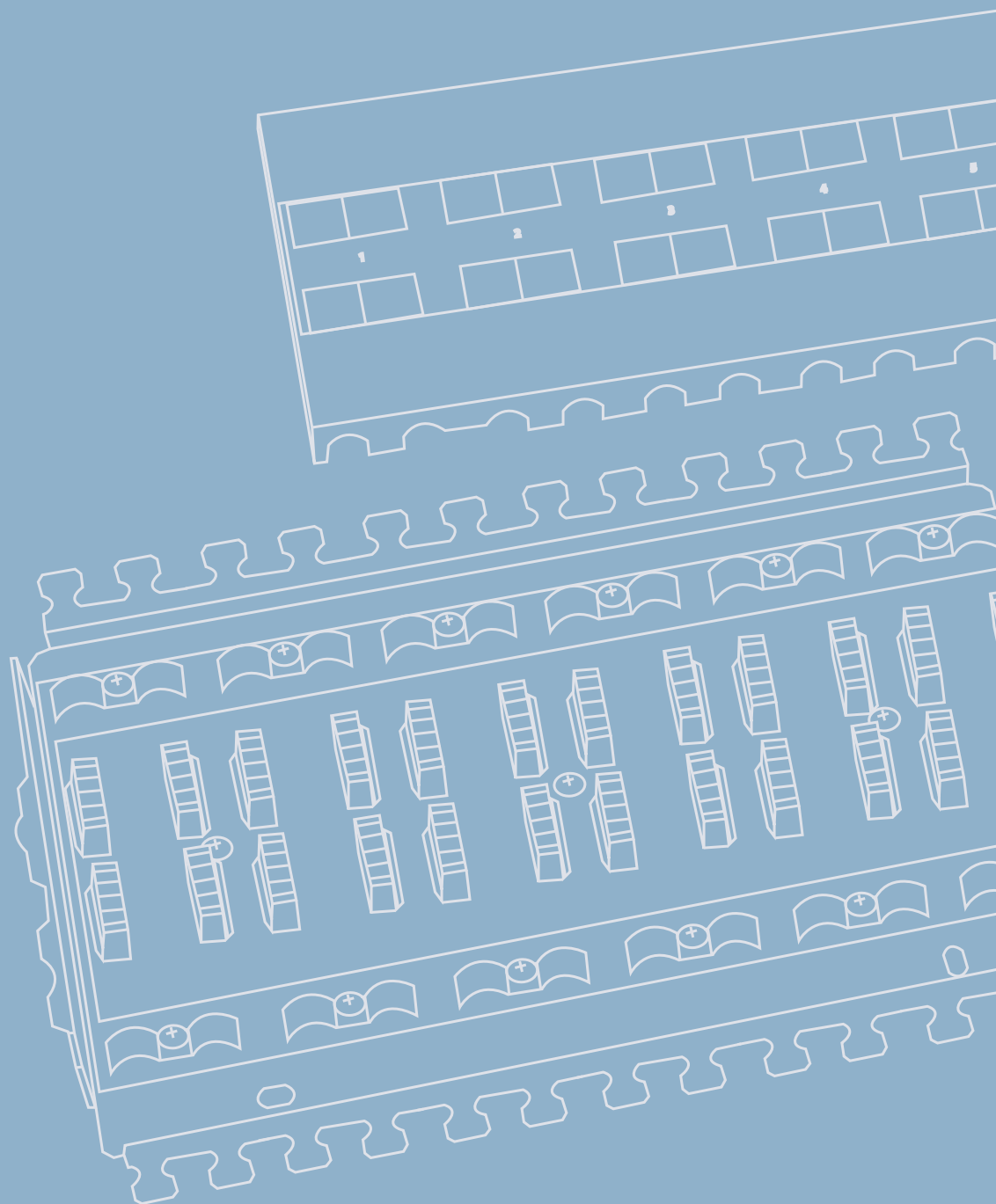


| Order no. | Short name |
|-------------|--|
| N01002A0001 | Insertion tool for IDC termination (LSA Plus) with wire cutter |



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

Connection Modules Cat.7A





4

Connection Modules Cat.7_A

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

Connection Modules Cat.7_A

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_A/Cat.7/ Cat.7_A) 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_A)
- 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 _A | 6x VM 8-8 Cat.7 _A | 12x VM 8-8 Cat.7 _A | VM-Pro 8-8 Class F _A IP67 |
|-------------------------------------|---|--|----------------------------------|---|
| Mechanical Characteristics | | | | |
| 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 |
| Climatic Characteristics | | | | |
| Temperature range [°C] | -40 °C to +70 °C | -40 °C to +70 °C | -40 °C to +70 °C | -40 °C to +85 °C |
| Electrical Characteristics | | | | |
| 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 |
| Transmission Characteristics | | | | |
| Cat.7 _A | Category 7 _A acc. to ISO/IEC 11801; EN 50173-1 | | | - |
| Klasse F _A | ISO/IEC 11801; DIN EN 50173-1 | | | |
| Cat.6 _A | 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 | | | |

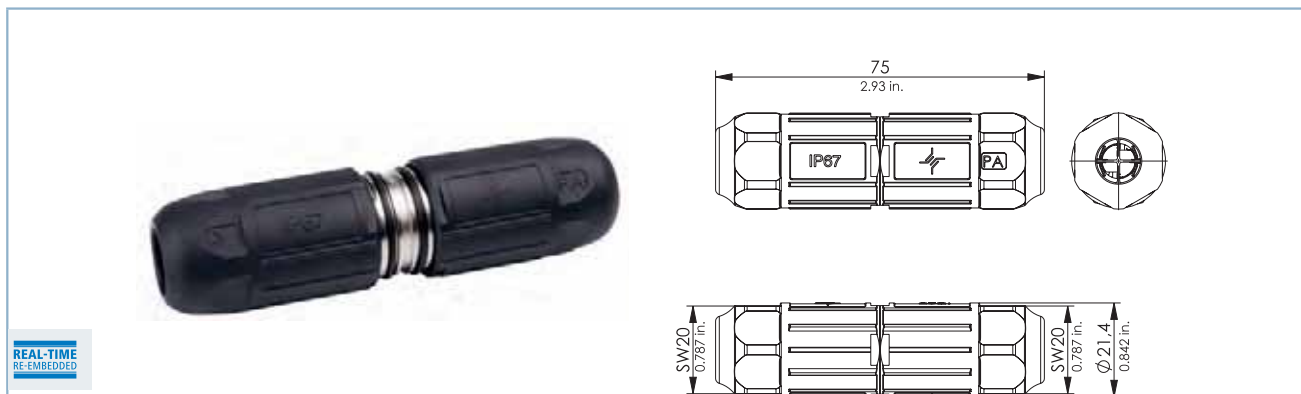
Connection Modules Cat.7_A

4.1

VM-Pro 8-8 Class F_A IP67

Performance Characteristics

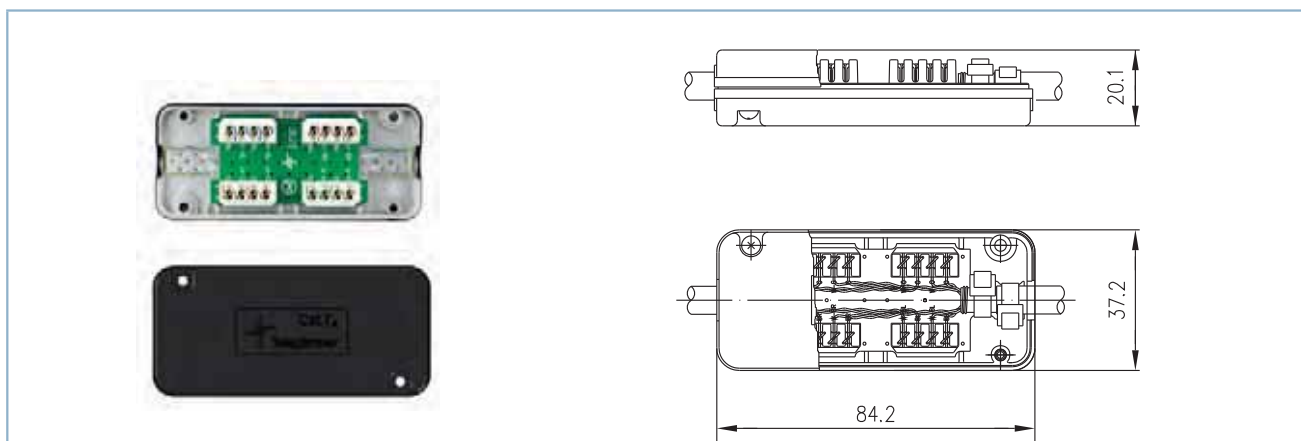
- Class F_A (1000 MHz)
- real-time re-embedded
- suitable for 100 / 250 / 500 / 1000 MHz installation and patch cords
- connection via IDC termination
- isolated construction
- Cable diameter: 5.5 - 9.0 mm
- connection of 4-pair shielded/unshielded installation and patch cords from AWG 27-22
- pairs 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



| Order no. | Description | Remarks | Colour |
|-------------|--------------------------------------|----------|--------|
| J80060A0000 | VM-Pro 8-8 Class F _A IP67 | AWG27-22 | black |

4.2

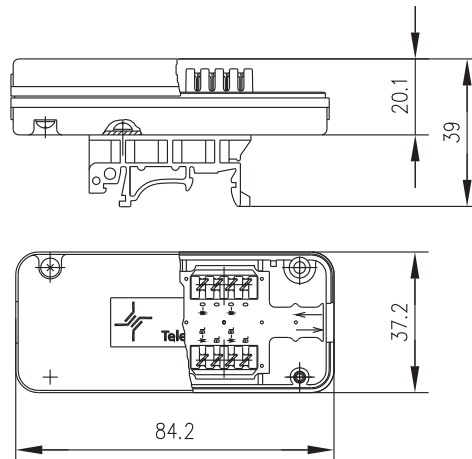
Connection Module Cat.7_A



| Order no. | Short name | Remarks | Colour |
|-------------|---------------------------|--|--------|
| J00060A0069 | VM 8-8 Cat.7 _A | module for shielded and unshielded installation cables | black |

Connection Modules Cat.7_A

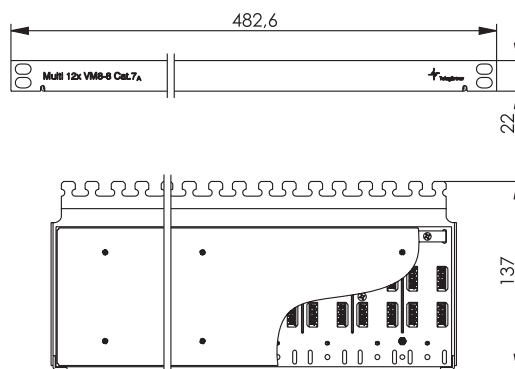
4



| Order no. | Short name | Remarks | Colour |
|-------------|--|--|--------|
| J00060B0069 | VM 8-8 Cat.7 _A 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_A

4.3

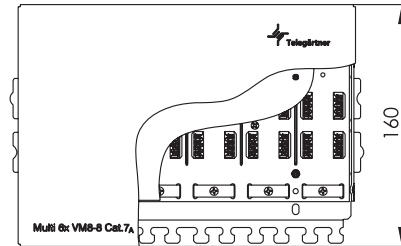
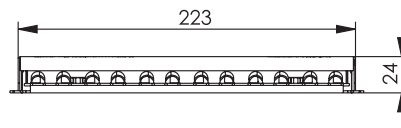


| Order no. | Short name | Remarks | Colour |
|-------------|-------------------------------------|---|---------------------|
| J00060A0072 | Multi 12x VM 8-8 Cat.7 _A | 19" 1/2 HE multi connection module for 12 shielded and unshielded installation cables | light grey RAL 7035 |

Connection Modules Cat.7_A

4.4

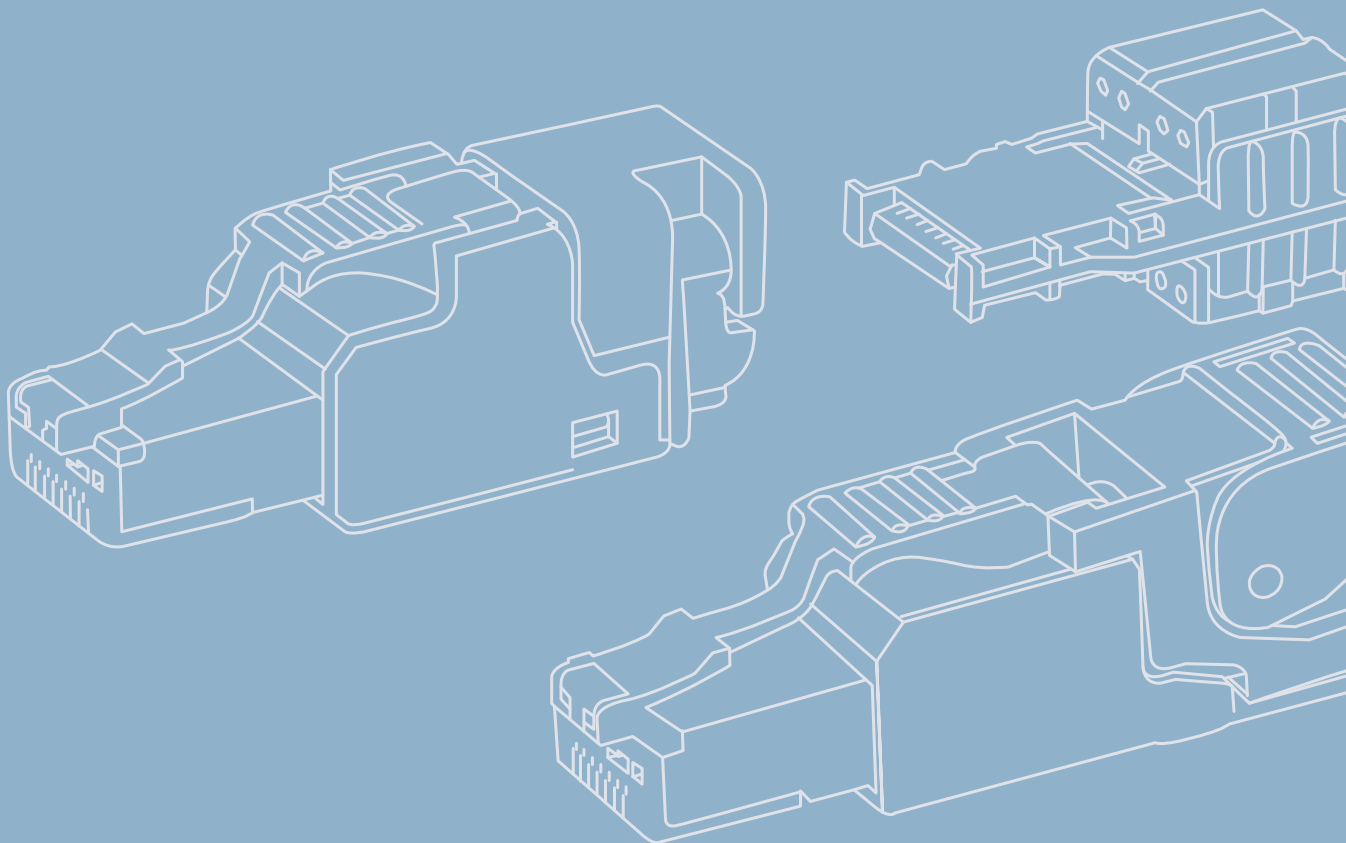
Multi Connection Module Cat.7_A for Wall Mounting



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

5

Modular Plugs





5

Modular Plugs

| | |
|---|------------|
| 5.1 RJ45 plugs (shielded and unshielded) | 129 |
| 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 |
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| 5.3 Crimp Tools and Crimp Dies for Modular Plugs | 138 |
| 5.4 RJ45 Terminator 100 Ω for ISDN Applications | 139 |

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_A 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_A 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_A 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 _A AWG27-22 | Plug MFP8 Cat.6 _A AWG27-24 |
|--|---------------------------------------|---------------------------------------|
| Standards | | |
| Connectors | IEC 60603-7-51 | IEC 60603-7-51 |
| Mechanical Characteristics | | |
| 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 |
| Climatic Characteristics | | |
| Temperature range [°C] | -40°C to +85°C | -40°C to +85°C |
| UL | E244889 | E244889 |
| Electrical Characteristics | | |
| 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+ |
| Transmission Characteristics | | |
| 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 |
|--|-----------------------------------|-----------------------------------|
| Standards | | |
| Connectors | IEC 60603-7-51 | IEC 60603-7-51 |
| Mechanical Characteristics | | |
| 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 |
| Climatic Characteristics | | |
| Temperature range [°C] | -40°C to +85°C | -40°C to +85°C |
| UL | E244889 | E244889 |
| Electrical Characteristics | | |
| 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+ |
| Transmission Characteristics | | |
| 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 |
|--|-----------------------------------|-----------------------------------|
| Standards | | |
| Connectors | IEC 60603-7-41 | IEC 60603-7-41 |
| Mechanical Characteristics | | |
| 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 |
| Climatic Characteristics | | |
| Temperature range [°C] | -40°C to +70°C | -40°C to +70°C |
| Electrical Characteristics | | |
| 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+ |
| Transmission Characteristics | | |
| 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

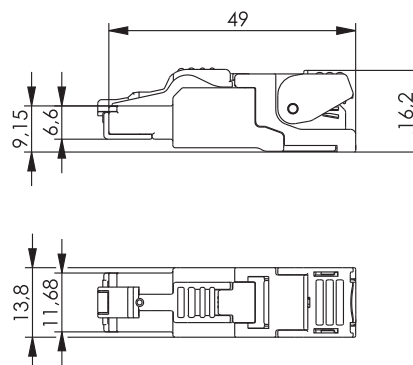
| | Plugs MP8(8)FS Cat.6A | Plugs MP8(8) Cat.6 | Plugs MP6(6) |
|---|---|------------------------------------|------------------------------------|
| Standards | | | |
| Connectors | IEC 60603-7-51 | IEC 60603-7-2 | IEC 60603-7 |
| Mechanical Characteristics | | | |
| Insertion force | ≤ 30 N | ≤ 20 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 |
| Climatic Characteristics | | | |
| Temperature range [°C] | -40°C to 70°C | -40°C to 70°C | -40°C to 70°C |
| UL | E244889 | - | - |
| Electrical Characteristics | | | |
| Current carrying capacity at 50°C | 1 A | 1 A | 1 A |
| PoE+ acc to IEEE 802.3at | Adequate for Power over Ethernet+ | | - |
| Transmission Characteristics | | | |
| 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 |

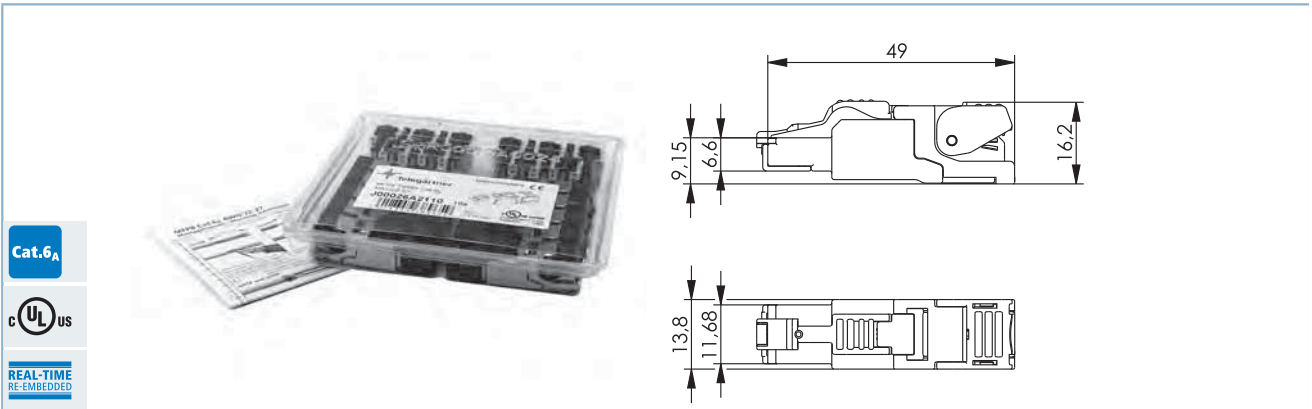
5.1

Modular Plugs

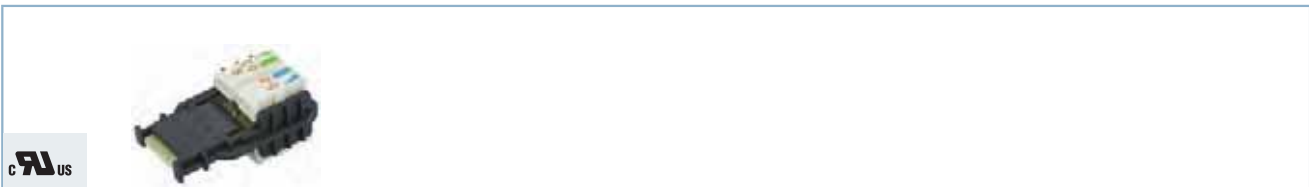
5.1

RJ45 Plugs (shielded and unshielded)

5.1.1

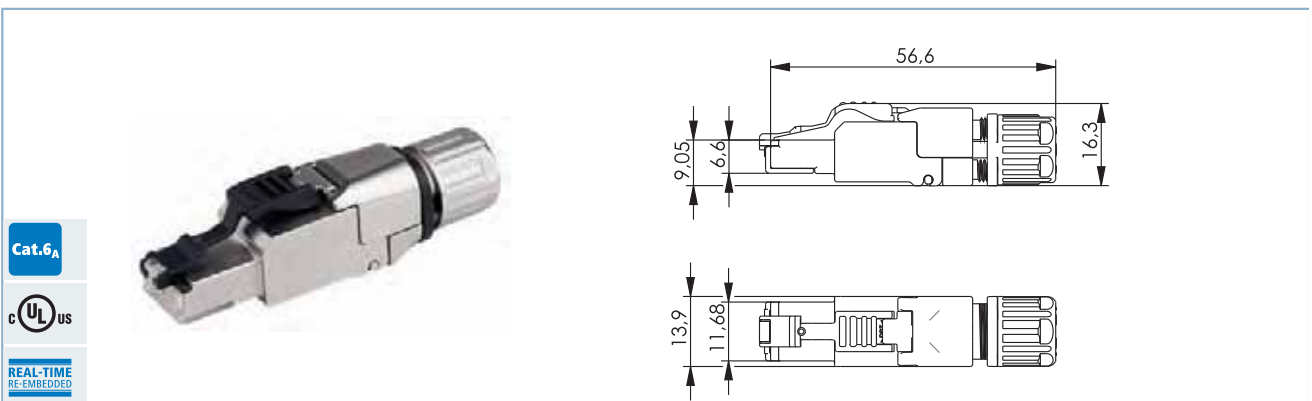
MFP8 Cat.6_A, shieldedCat.6_AREAL-TIME
RE-EMBEDDED

| Order no. | Short name | Remarks | Type |
|-------------|--------------------------------|--|---------------------------|
| J00026A2110 | MFP8 T568 A Cat.6 _A | 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 _A | 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 _A | 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 _A | AWG 26/1-24/1, AWG 27/7-24/7, incl. pre-assembled protection cap | blister package (10 pcs.) |



UL US

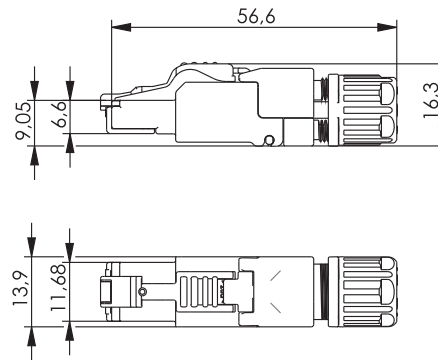
| Order no. | Short name | Remarks | Type |
|-------------|-------------------------|----------------------------------|---------------------------|
| F00020A2130 | MFP8 wire manager T568A | AWG24/1-AWG22/1, AWG27/7-AWG22/7 | blister package (30 pcs.) |
| F00020A2131 | MFP8 wire manager T568B | AWG24/1-AWG22/1, 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_AREAL-TIME
RE-EMBEDDED

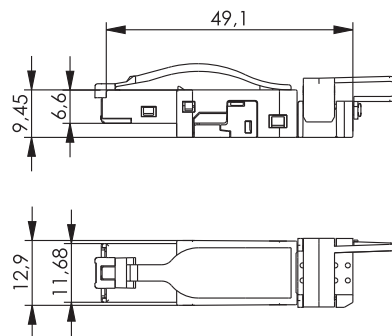
| Order no. | Short name | Remarks |
|-------------|-----------------------------------|--|
| J00026A5000 | MFP8 IE T568 A Cat.6 _A | AWG 24/1-22/1, AWG 27/7-22/7, incl. pre-assembled protection cap |
| J00026A5001 | MFP8 IE T568 B Cat.6 _A | AWG 24/1-22/1, AWG 27/7-22/7, incl. pre-assembled protection 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 _A | AWG 26/1-24/1, AWG 27/7-24/7, incl. pre-assembled protection cap |
| J00026A5003 | MFP8 IE T568 B Cat.6 _A | AWG 26/1-24/1, AWG 27/7-24/7, incl. pre-assembled protection cap |

Modular Plugs

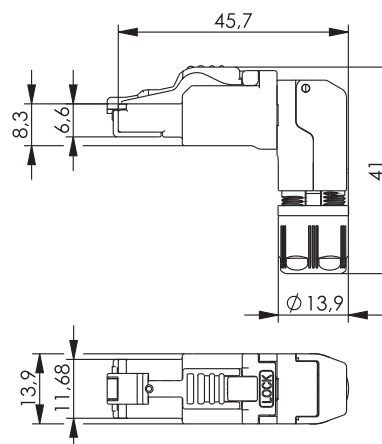
5

Cat.6_AcUL_{US}REAL-TIME
RE-EMBEDDED

| Order no. | Short name | Remarks | Type |
|-------------|-----------------------------------|--|---------------------------|
| J00026A5110 | MFP8 IE T568 A Cat.6 _A | 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 _A | 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 _A | 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 _A | AWG 26/1-24/1, AWG 27/7-24/7, incl. pre-assembled protection cap | blister package (10 pcs.) |

cUL_{US}G
STEADYREAL-TIME
RE-EMBEDDED

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

Cat.6_AcUL_{US}REAL-TIME
RE-EMBEDDED

| Order no. | Short name | Remarks |
|-------------|------------------------------------|--|
| J00026A4000 | MFP8-4x90 T568A Cat.6 _A | AWG 24/1-22/1, AWG 27/7-22/7, incl. pre-assembled protection cap |
| J00026A4001 | MFP8-4x90 T568B Cat.6 _A | 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 _A | AWG 26/1-24/1, AWG 27/7-24/7, incl. pre-assembled protection cap |
| J00026A4003 | MFP8-4x90 T568A Cat.6 _A | AWG 26/1-24/1, AWG 27/7-24/7, incl. pre-assembled protection cap |

Modular Plugs

5.1

RJ45 Plugs (shielded and unshielded)

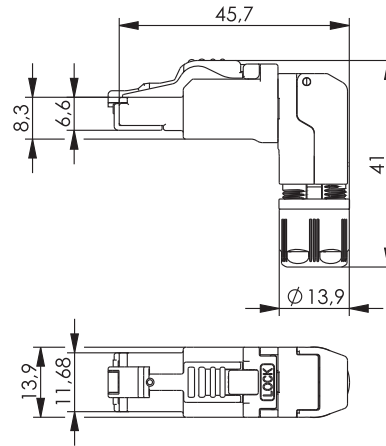
5.1.1

MFP8 Cat.6_A, shielded



REAL-TIME
RE-EMBEDDED

Cat.6_A



| Order no. | Short name | Remarks | Type |
|-------------|------------------------------------|--|---------------------------|
| J00026A4110 | MFP8-4x90 T568A Cat.6 _A | 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 _A | 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 _A | 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 _A | 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_A, unshielded

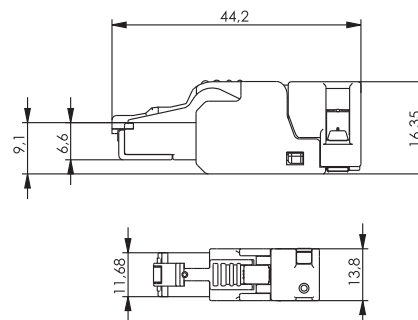
Performance Characteristics

- 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

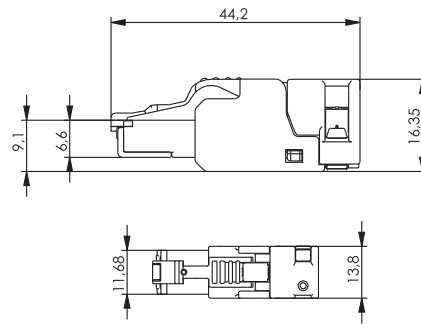
Cat.6_A



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

Modular Plugs

5

Cat.6_AREAL-TIME
RE-EMBEDDED

c UL US

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

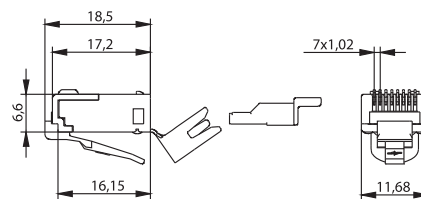


c UL US

| 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.) |

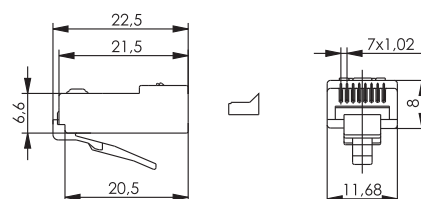
MP8, shielded and unshielded

5.1.3

Cat.6_AREAL-TIME
RE-EMBEDDED

c UL US

| Order no. | Short name | Remarks |
|-------------|--|---|
| J00026A0165 | RJ45 plug MP8(8) FS Cat.6 _A | 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

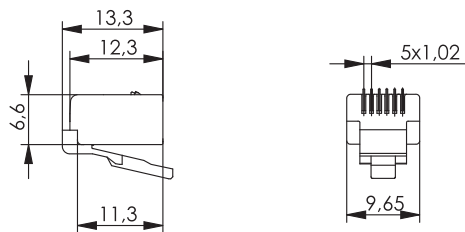
5.1 RJ45 Plugs (shielded and unshielded)

5.1.3 MP8, shielded and unshielded



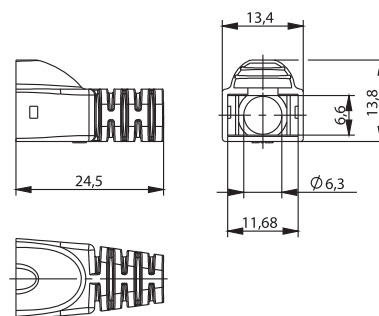
| Order no. | Short name | Type |
|-------------|-------------------------------------|----------------------------------|
| M06000A0067 | Check gauge for RJ45 MP8(8) FS plug | contact height minimum dimension |
| M06000A0068 | Check gauge for RJ45 MP8(8) FS plug | contact height maximum dimension |

5.1.4 MP6, unshielded



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

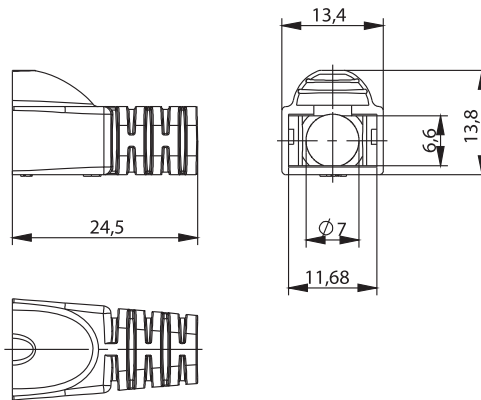
5.2 Cable Boots



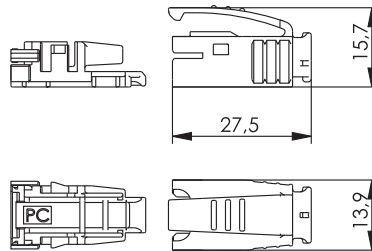
| Order no. | Short name | Remarks |
|-------------|-------------------------------------|--|
| B00080A0089 | Cable boot for MP8 FS (J00026A0165) | grey RAL 7035, Ø 6,3 mm, with latch protection |
| B00080B0089 | Cable boot for MP8 FS (J00026A0165) | red RAL 3017, Ø 6,3 mm, with latch protection |
| 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

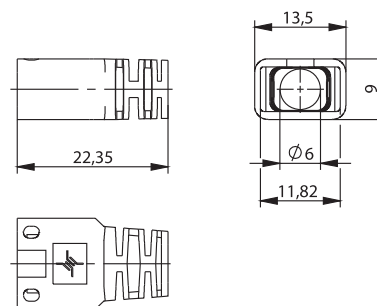
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| Order no. | Short name | Remarks |
|-------------|-------------------------------------|--|
| B00080A0090 | Cable boot for MP8 FS (J00026A0165) | grey RAL 7035, Ø 7,0 mm, with latch protection |
| B00080B0090 | Cable boot for MP8 FS (J00026A0165) | 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 |

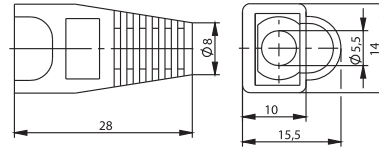


| Order no. | Short name | Remarks |
|-------------|-------------------------------------|---|
| B00081A0031 | Cable boot for MP8 FS (J00026A0165) | Cable boot, black RAL 9011, Ø 6.0 mm, without latch protection |
| B00081B0031 | Cable boot for MP8 FS (J00026A0165) | Cable boot, red RAL 3017, Ø 6.0 mm, 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) |



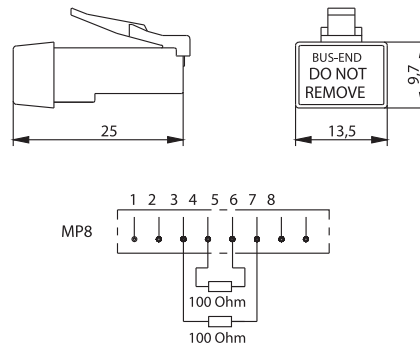
| Order no. | Description | Remarks |
|-------------|---|-------------------------------|
| N00001A0006 | Crimp tool with insert for unshielded MP6(6) plug; life ≥ 1.000 crimping operations | for MP6(6) plug (J00026A0183) |



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

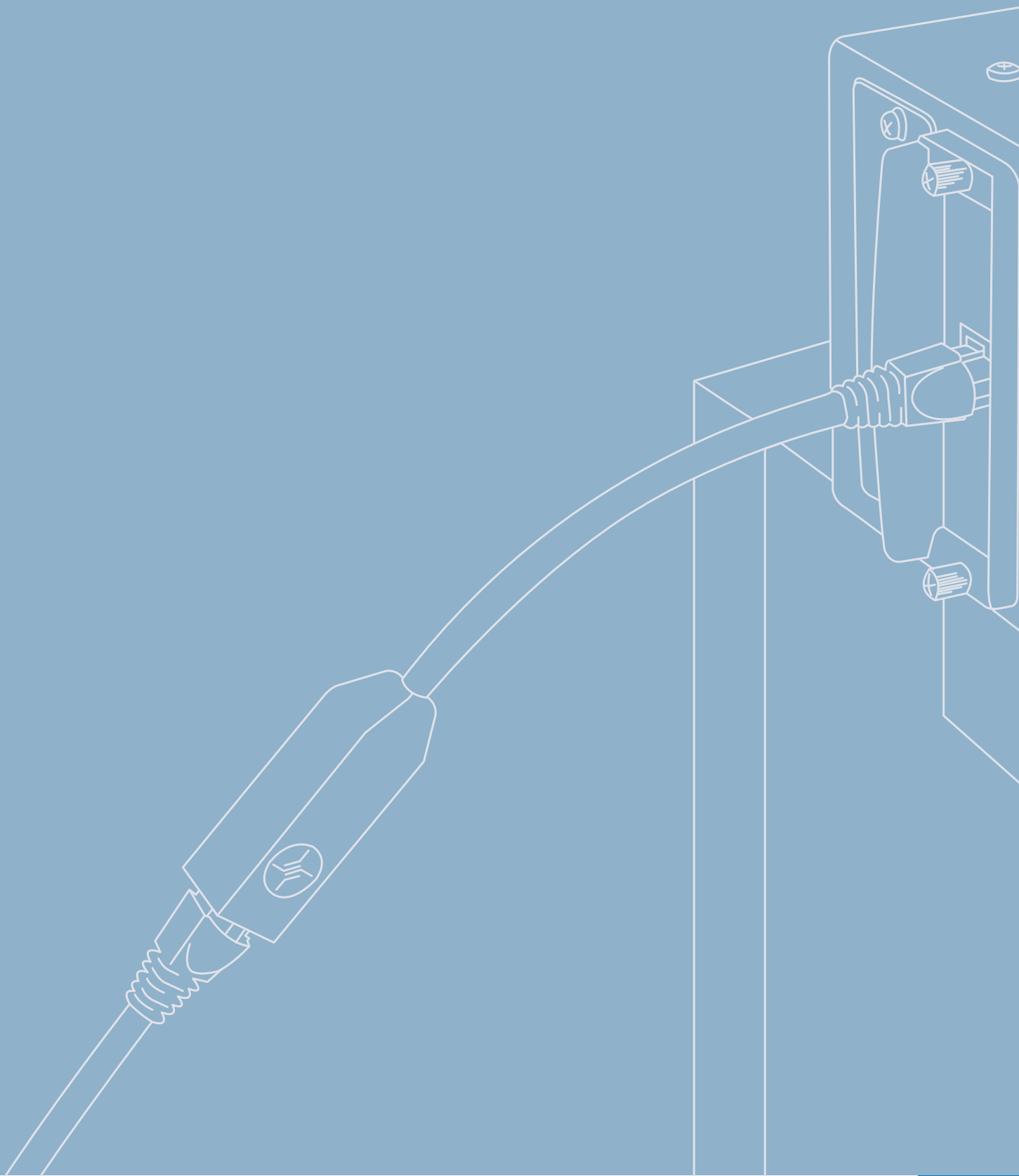
RJ45 Terminator 100 Ωs for ISDN applications

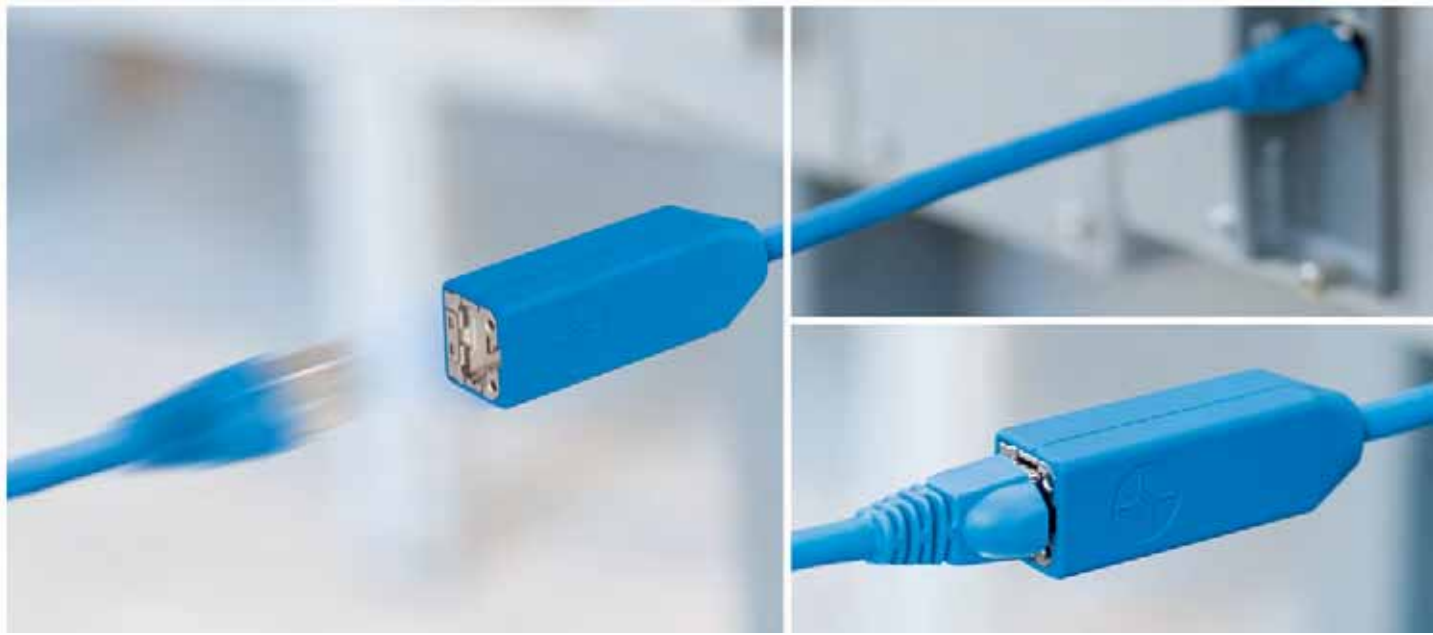
5.4



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

Defined Disconnect CP-Link





6

Defined Disconnect CP-Link

Defined Disconnect CP-Link

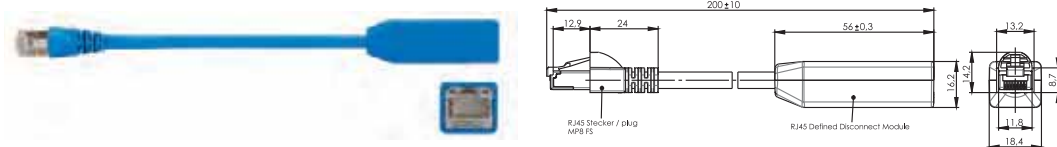
The DDCP-Link offers users and network administrators an easy way to protect expensive and mobile IT equipment with LAN access from damage. If the mobile IT equipment is moved in a bigger radius than the connected RJ45 cable allows, the DDCP-Link disconnects the connection when a certain pull-out force 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

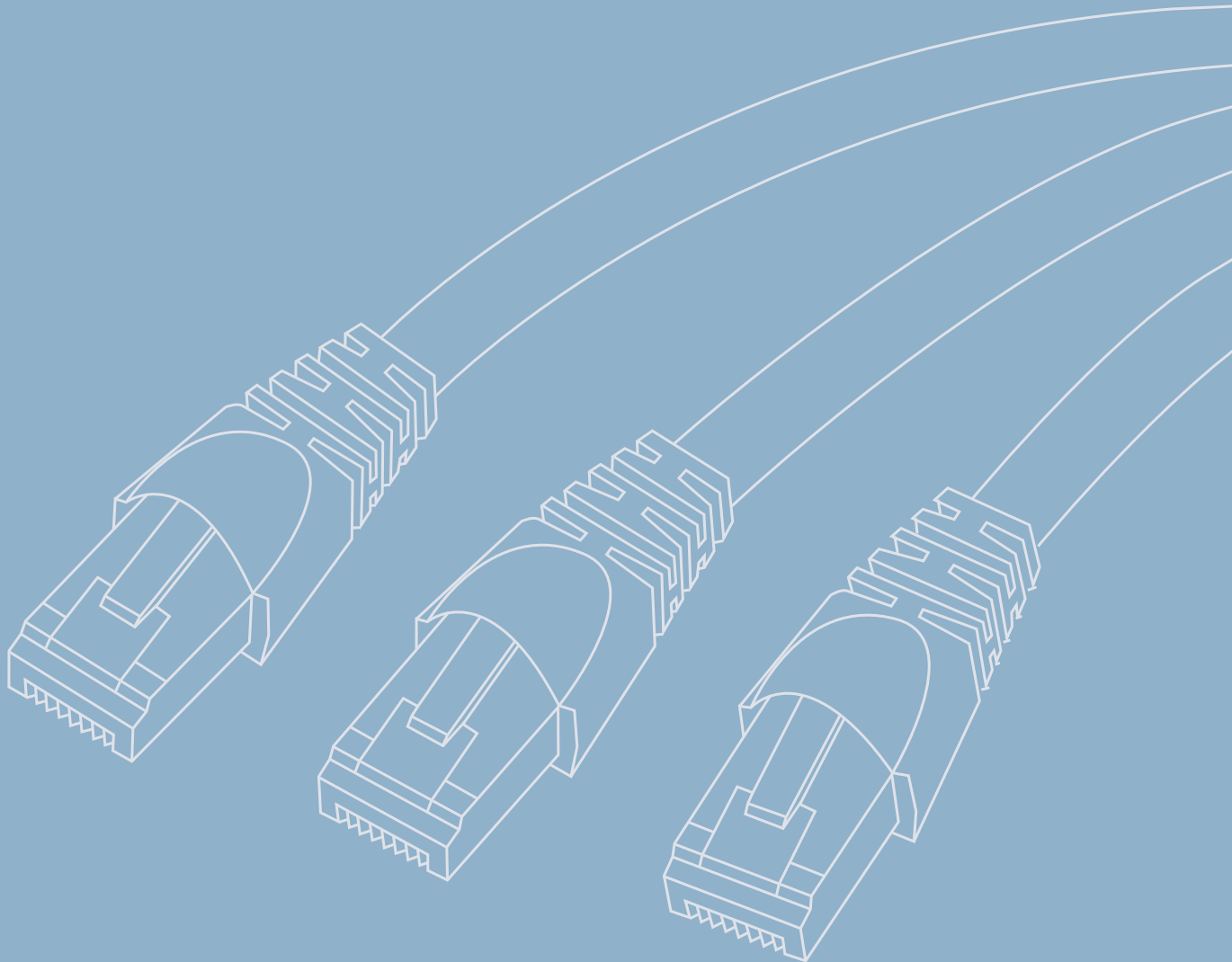
- Plug and Jack: IEC 60603-7-51 compliant
- Life: ≥ 750 mating cycles
- Connection diagram 1:1; pin assignment T568B
- Protected release latch
- Contact finish material: Ni1.2Au0.8
- Shielding housing material of jack: diecast nickel-plated zinc
- Outer diameter of cable: 5.8 mm (± 0.2 mm)
- Temperature range: -40° C to 70° 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

| | | |
|-------------|--|------------|
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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 _A S/FTP LSZH | Mini Patch Cords shielded 500 MHz/ Cat.6 _A S/FTP LSZH | Patch Cords shielded 100 MHz/Cat.5e F/UTP LSZH |
|--|--|--|--|
| Standards | | | |
| Connectors | IEC 60603-7-51 | IEC 60603-7-51 | IEC 60603-7-3 |
| Mechanical Characteristics | | | |
| 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) |
| Climatic Characteristics | | | |
| 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 |
| Electrical Characteristics | | | |
| Current carrying capacity at 50°C | 1 A | 1 A | 1 A |
| PoE+ acc to IEEE 802.3at | Adequate for Power over Ethernet+ | | |
| Transmission Characteristics | | | |
| 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 _A U/UTP LSZH | Patch Cords unshielded 250 MHz/Cat.6 U/UTP LSZH | Patch Cords unshielded 100 MHz/Cat.5e U/UTP PVC |
|--|--|---|---|
| Standards | | | |
| Connectors | IEC 60603-7-41 | IEC 60603-7-4 | IEC 60603-7-2 |
| Mechanical Characteristics | | | |
| 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) |
| Climatic Characteristics | | | |
| 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) |
| Electrical Characteristics | | | |
| Current carrying capacity at 50°C | 1 A | 1 A | 1 A |
| PoE+ acc to IEEE 802.3at | Adequate for Power over Ethernet+ | | |
| Transmission Characteristics | | | |
| 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

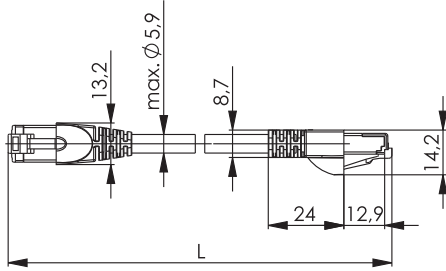
7.1

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

7.1.1

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






Cat.6A

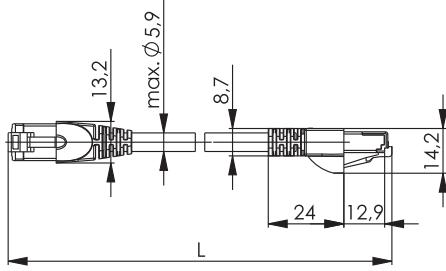
REAL-TIME RE-EMBEDDED

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

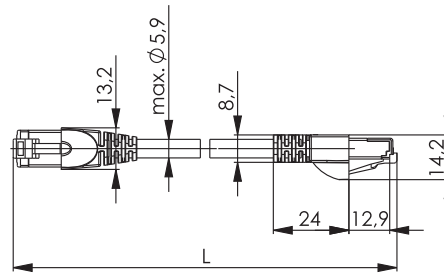
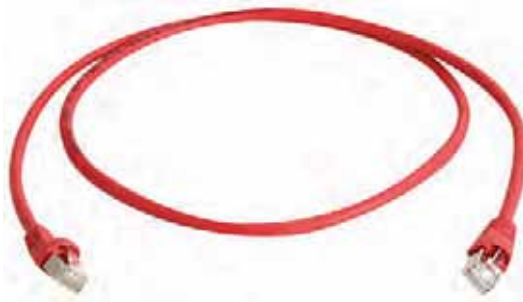
SHIELD

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

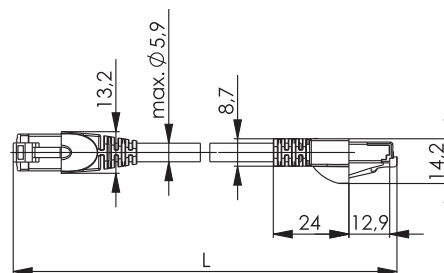
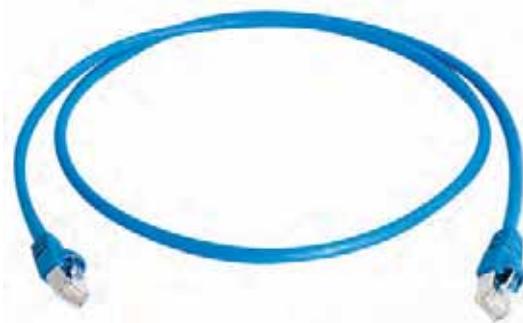
7



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

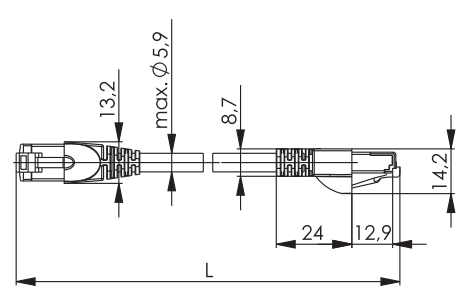
7.1





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

7.1.1


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

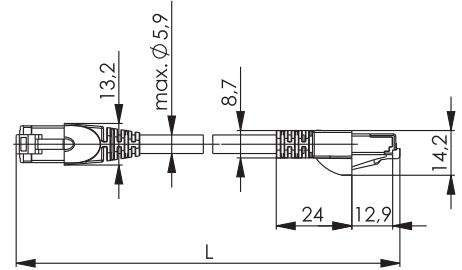








| Order no. | Short name | Length | Colour |
|-------------|----------------------|--------|--------|
| L00000A0234 | MP8 FS 500 LSZH-0,25 | 0,25 m | yellow |
| L00000A0076 | MP8 FS 500 LSZH-0,5 | 0,5 m | yellow |
| L00000A0085 | MP8 FS 500 LSZH-1,0 | 1,0 m | yellow |
| L00001A0088 | MP8 FS 500 LSZH-2,0 | 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 |



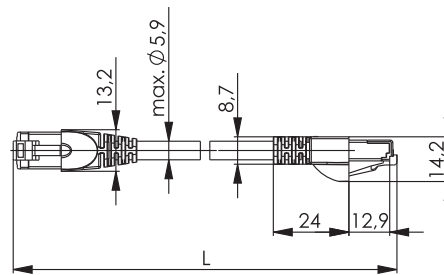


| Order no. | Short name | Length | Colour |
|-------------|----------------------|--------|--------|
| L00000A0235 | MP8 FS 500 LSZH-0,25 | 0,25 m | black |
| L00000A0077 | MP8 FS 500 LSZH-0,5 | 0,5 m | black |
| L00000A0086 | MP8 FS 500 LSZH-1,0 | 1,0 m | black |
| L00001A0089 | MP8 FS 500 LSZH-2,0 | 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

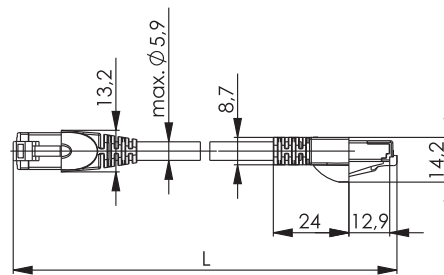
7



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

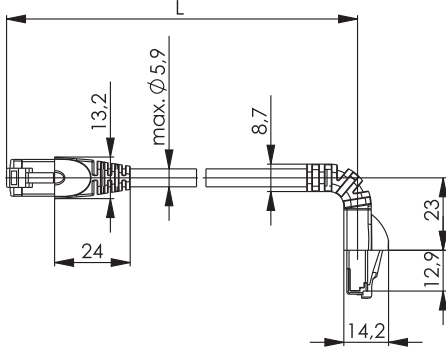
7.1





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

7.1.2


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

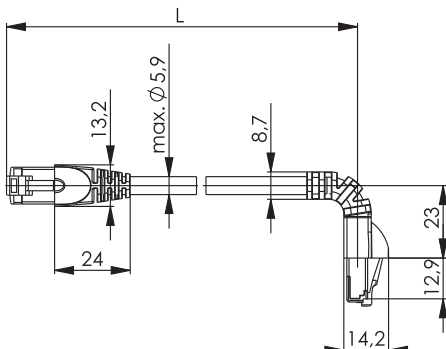








| Order no. | Short name | Length | Colour | Remarks |
|-------------|----------------------|--------|--------|---------------------------|
| L00000A0189 | MP8 FS 500 LSZH-0,5 | 0,5 m | grey | 1x90° - 1x180° cable boot |
| L00000A0192 | MP8 FS 500 LSZH-1,0 | 1,0 m | grey | 1x90° - 1x180° cable boot |
| 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 |



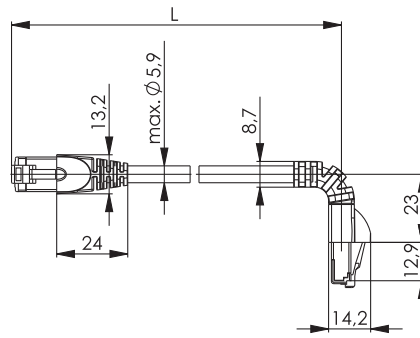


| Order no. | Short name | Length | Colour | Remarks |
|-------------|----------------------|--------|--------|---------------------------|
| L00000A0193 | MP8 FS 500 LSZH-0,5 | 0,5 m | green | 1x90° - 1x180° cable boot |
| L00000A0194 | MP8 FS 500 LSZH-1,0 | 1,0 m | green | 1x90° - 1x180° cable boot |
| 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

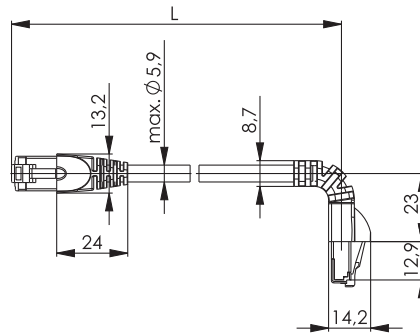
7



Cat.6A

REAL-TIME
RE-EMBEDDED

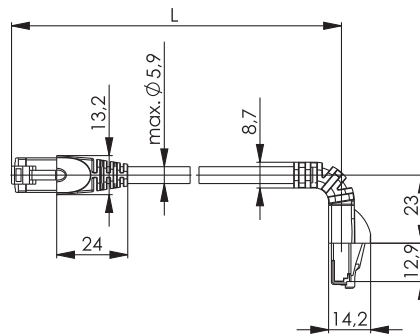
| Order no. | Short name | Length | Colour | Remarks |
|-------------|----------------------|--------|--------|---------------------------|
| L00000A0195 | MP8 FS 500 LSZH-0,5 | 0,5 m | red | 1x90° - 1x180° cable boot |
| L00000A0196 | MP8 FS 500 LSZH-1,0 | 1,0 m | red | 1x90° - 1x180° cable boot |
| 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

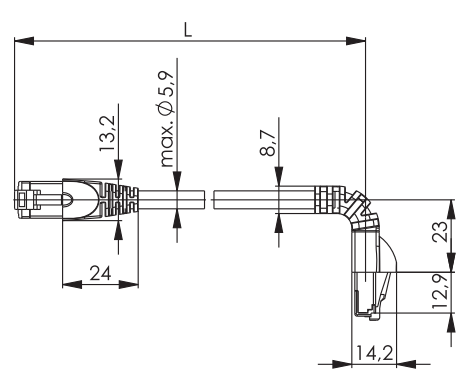
7.1





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

7.1.2


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

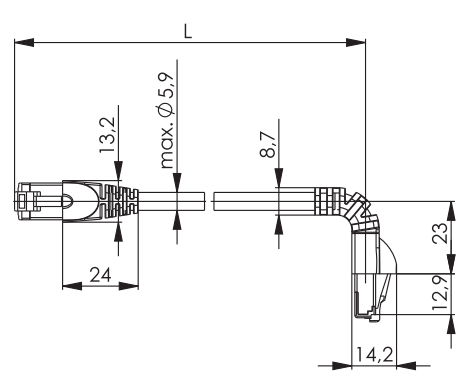








| Order no. | Short name | Length | Colour | Remarks |
|-------------|----------------------|--------|--------|---------------------------|
| L00000A0201 | MP8 FS 500 LSZH-0,5 | 0,5 m | black | 1x90° - 1x180° cable boot |
| L00000A0202 | MP8 FS 500 LSZH-1,0 | 1,0 m | black | 1x90° - 1x180° cable boot |
| 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 |





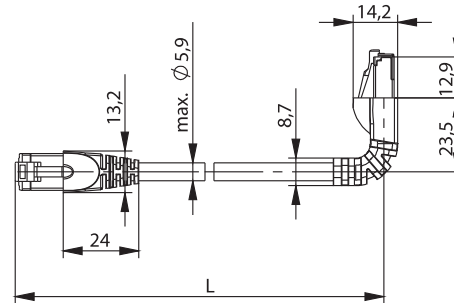
| Order no. | Short name | Length | Colour | Remarks |
|-------------|----------------------|--------|--------|---------------------------|
| L00000A0203 | MP8 FS 500 LSZH-0,5 | 0,5 m | white | 1x90° - 1x180° cable boot |
| L00000A0204 | MP8 FS 500 LSZH-1,0 | 1,0 m | white | 1x90° - 1x180° cable boot |
| 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



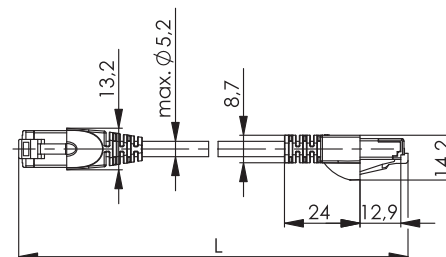
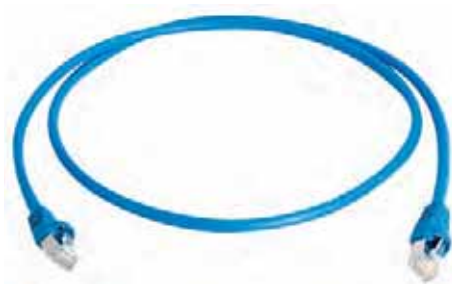
Cat.6A

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 |

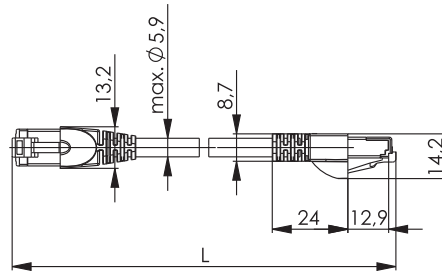
RJ45 Patch Cords

7.3

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



Cat.6A

REAL-TIME
RE-EMBEDDED

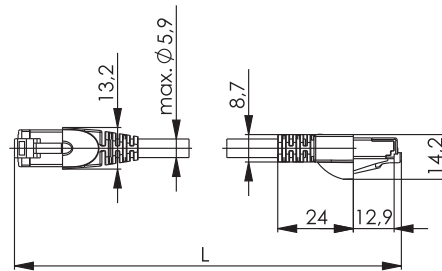
| Order no. | Short name | Remarks | Length | Colour |
|-------------|---------------------|---|--------|--------|
| L00003A0049 | MP8 FS 500 LSZH-5,0 | Telegärtner test cable for channel adapter Class E _A | 5,0 m | blue |

7.4

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



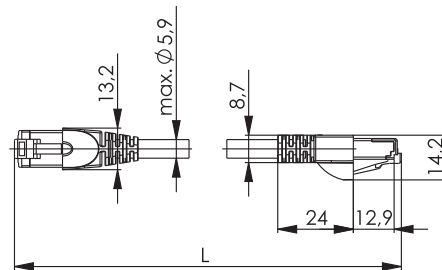
Cat.6A

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

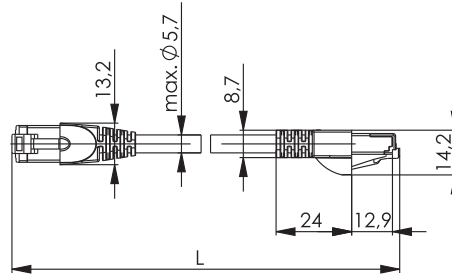
7

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

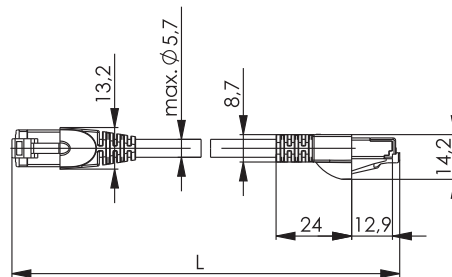
7.5

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

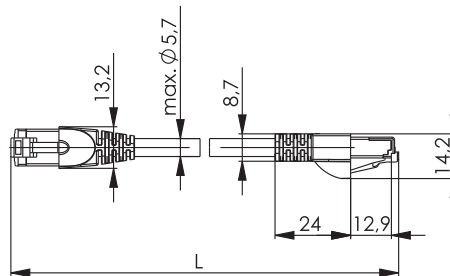
RJ45 Patch Cords

7.5

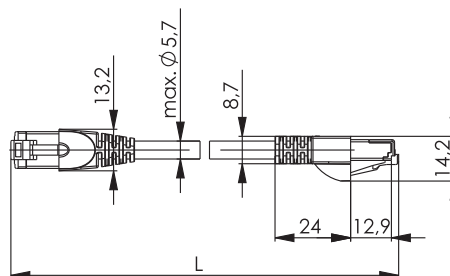
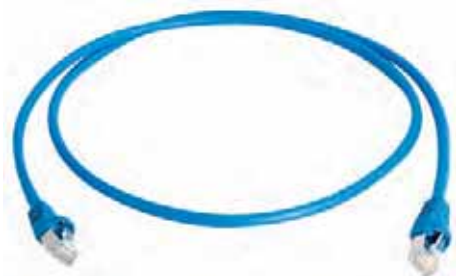
Cat.5e - Wiring 1:1 - F/UTP (LSZH) - shielded

7.5.1

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



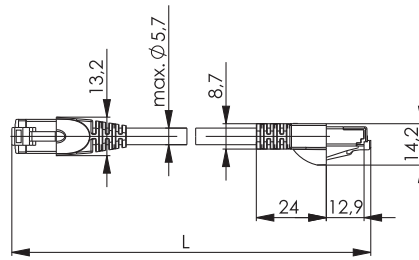
| Order no. | Short name | Length | Colour |
|-------------|----------------------|--------|--------|
| L00000D0031 | MP8 FS 100 LSZH-0,5 | 0,5 m | red |
| L00000D0022 | MP8 FS 100 LSZH-1,0 | 1,0 m | red |
| L00001D0032 | MP8 FS 100 LSZH-2,0 | 2,0 m | red |
| L00002D0076 | MP8 FS 100 LSZH-3,0 | 3,0 m | 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 |



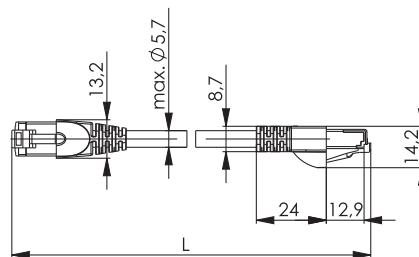
| Order no. | Short name | Length | Colour |
|-------------|----------------------|--------|--------|
| L00000D0032 | MP8 FS 100 LSZH-0,5 | 0,5 m | blue |
| L00000D0023 | MP8 FS 100 LSZH-1,0 | 1,0 m | blue |
| L00001D0033 | MP8 FS 100 LSZH-2,0 | 2,0 m | blue |
| L00002D0077 | MP8 FS 100 LSZH-3,0 | 3,0 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

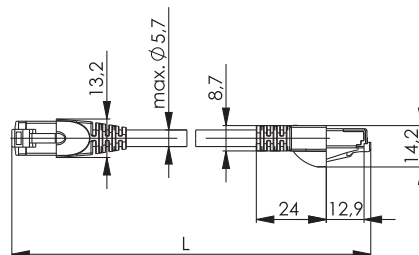
7



| 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 |

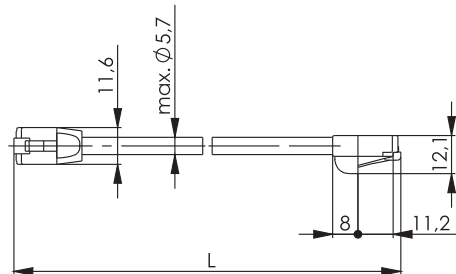
RJ45 Patch Cords

7.5

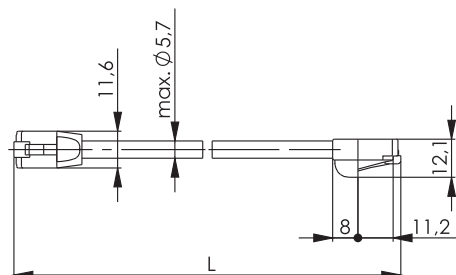
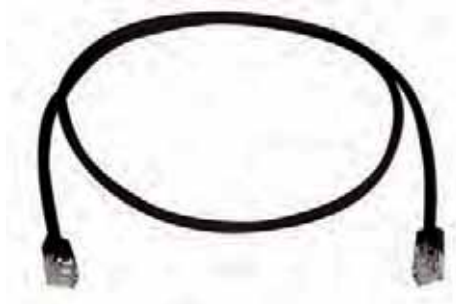
Cat.5e - Wiring 1:1 - F/UTP (LSZH) - shielded

7.5.2

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



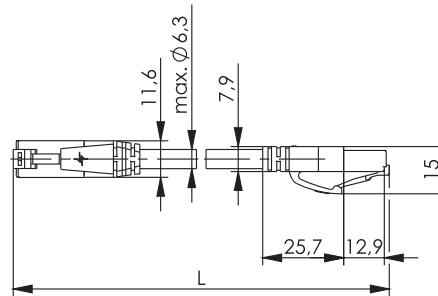
| Order no. | Short name | Length | Colour | Remarks |
|-------------|-----------------|--------|--------|------------|
| L00000A0307 | MP8 FS 100-0,25 | 0,25 m | grey | short boot |
| L00000A0308 | MP8 FS 100-0,5 | 0,5 m | grey | short boot |
| L00000A0309 | MP8 FS 100-1,0 | 1,0 m | grey | short boot |
| 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

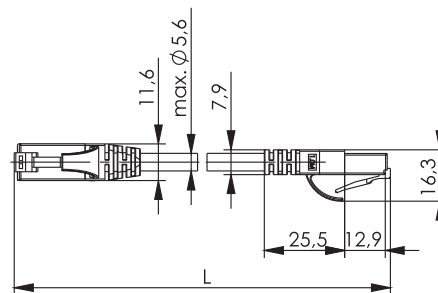
7.6



| 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



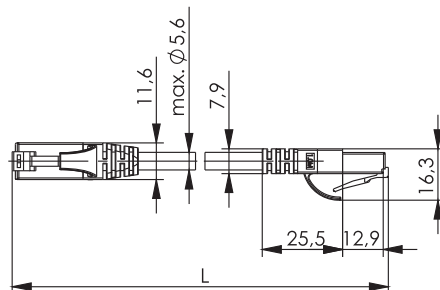
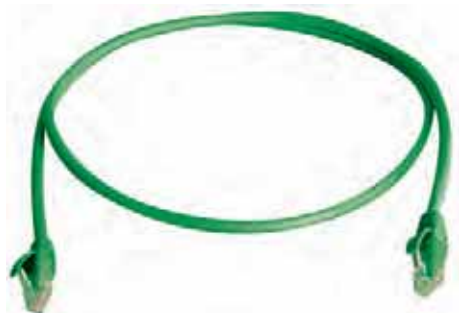
| Order no. | Short name | Length | Colour |
|-------------|--------------|--------|--------|
| L00000A0287 | MP8 250-0,5 | 0,5 m | grey |
| L00000A0273 | MP8 250-1,0 | 1,0 m | grey |
| L00001A0228 | MP8 250-2,0 | 2,0 m | grey |
| L00002A0219 | MP8 250-3,0 | 3,0 m | grey |
| L00003A0204 | MP8 250-5,0 | 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

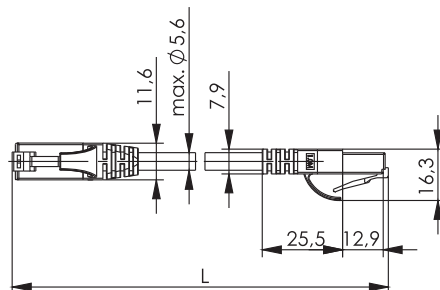
RJ45 Patch Cords

7.7

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



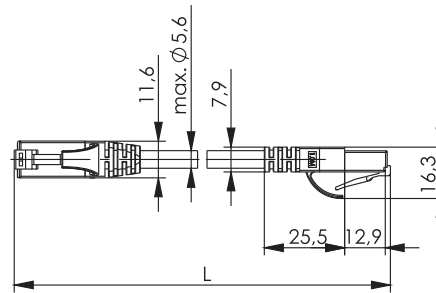
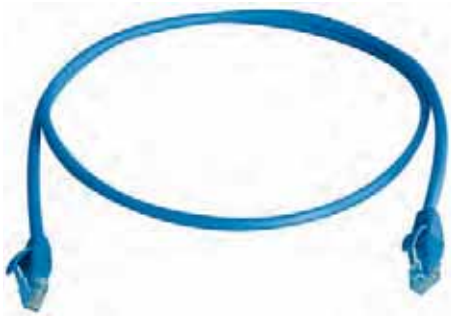
| Order no. | Short name | Length | Colour |
|-------------|--------------|--------|--------|
| L00000A0288 | MP8 250-0,5 | 0,5 m | green |
| L00000A0289 | MP8 250-1,0 | 1,0 m | green |
| L00001A0230 | MP8 250-2,0 | 2,0 m | green |
| L00002A0231 | MP8 250-3,0 | 3,0 m | green |
| L00003A0205 | MP8 250-5,0 | 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 |



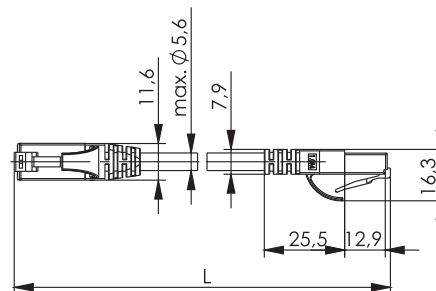
| Order no. | Short name | Length | Colour |
|-------------|--------------|--------|--------|
| L00000A0290 | MP8 250-0,5 | 0,5 m | red |
| L00000A0291 | MP8 250-1,0 | 1,0 m | red |
| L00001A0232 | MP8 250-2,0 | 2,0 m | red |
| L00002A0233 | MP8 250-3,0 | 3,0 m | red |
| L00003A0206 | MP8 250-5,0 | 5,0 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 |



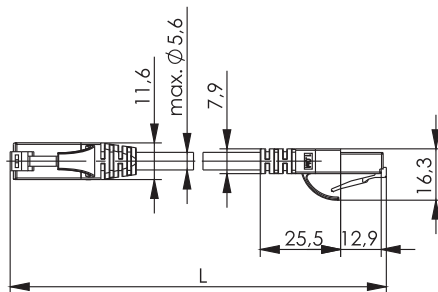
| Order no. | Short name | Length | Colour |
|-------------|--------------|--------|--------|
| L00000A0294 | MP8 250-0,5 | 0,5 m | yellow |
| L00000A0295 | MP8 250-1,0 | 1,0 m | yellow |
| L00001A0236 | MP8 250-2,0 | 2,0 m | yellow |
| L00002A0237 | MP8 250-3,0 | 3,0 m | yellow |
| L00003A0208 | MP8 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

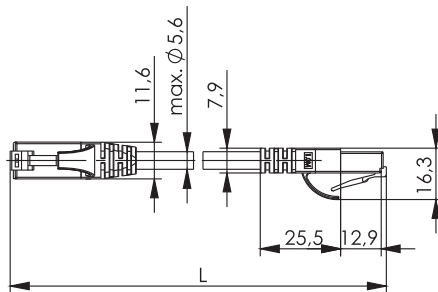
RJ45 Patch Cords

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 |



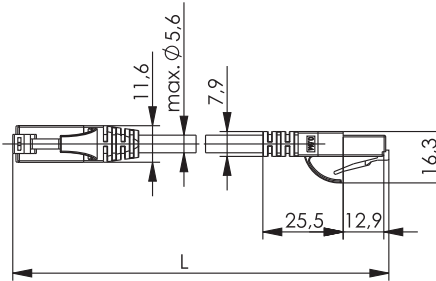
| Order no. | Short name | Length | Colour |
|-------------|--------------|--------|--------|
| L00000A0303 | MP8 250-0,5 | 0,5 m | white |
| L00000A0304 | MP8 250-1,0 | 1,0 m | white |
| L00001A0243 | MP8 250-2,0 | 2,0 m | white |
| L00002A0243 | MP8 250-3,0 | 3,0 m | white |
| L00003A0216 | MP8 250-5,0 | 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

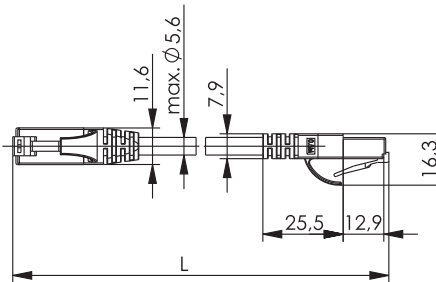
7

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 |



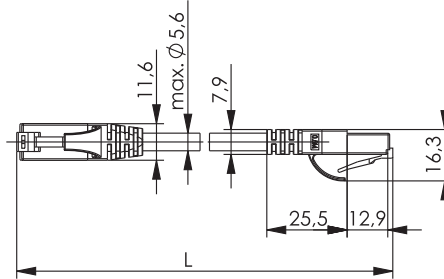
| Order no. | Short name | Length | Colour |
|-------------|--------------|--------|--------|
| L00000E0003 | MP8 100-0,25 | 0,25 m | green |
| L00000E0064 | MP8 100-0,5 | 0,5 m | green |
| L00000E0069 | MP8 100-1,0 | 1,0 m | green |
| L00001E0068 | MP8 100-2,0 | 2,0 m | green |
| L00002E0102 | MP8 100-3,0 | 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

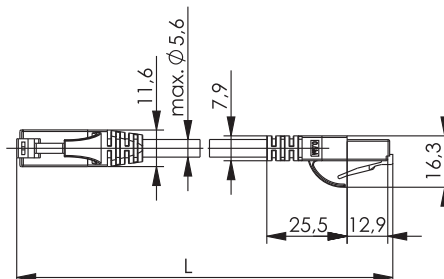
RJ45 Patch Cords

7.8

Cat.5e - Wiring 1:1 - U/UTP (PVC) - unshielded



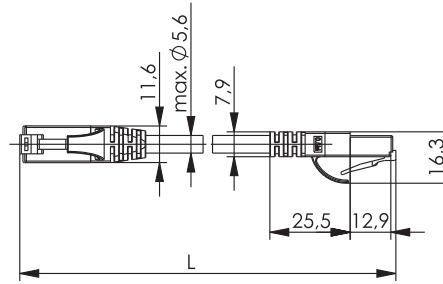
| Order no. | Short name | Length | Colour |
|-------------|--------------|--------|--------|
| L00000E0065 | MP8 100-0,5 | 0,5 m | red |
| L00000E0070 | MP8 100-1,0 | 1,0 m | red |
| L00001E0069 | MP8 100-2,0 | 2,0 m | red |
| L00002E0103 | MP8 100-3,0 | 3,0 m | red |
| L00003E0050 | MP8 100-5,0 | 5,0 m | red |
| L00004E0053 | MP8 100-7,5 | 7,5 m | red |
| L00005E0027 | MP8 100-10,0 | 10,0 m | red |



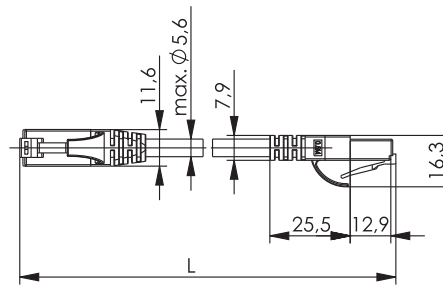
| Order no. | Short name | Length | Colour |
|-------------|--------------|--------|--------|
| L00000E0063 | MP8 100-0,5 | 0,5 m | blue |
| L00000E0068 | MP8 100-1,0 | 1,0 m | blue |
| L00001E0067 | MP8 100-2,0 | 2,0 m | blue |
| L00002E0101 | MP8 100-3,0 | 3,0 m | blue |
| L00003E0048 | MP8 100-5,0 | 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

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| 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 |

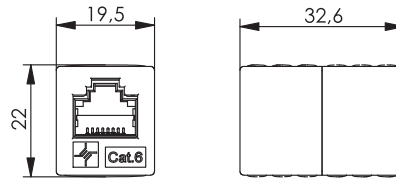


| Order no. | Short name | Length | Colour |
|-------------|--------------|--------|--------|
| L00000E0000 | MP8 100-0,5 | 0,5 m | black |
| L00000E0001 | MP8 100-1,0 | 1,0 m | black |
| L00001E0000 | MP8 100-2,0 | 2,0 m | black |
| L00002E0000 | MP8 100-3,0 | 3,0 m | black |
| L00003E0000 | MP8 100-5,0 | 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

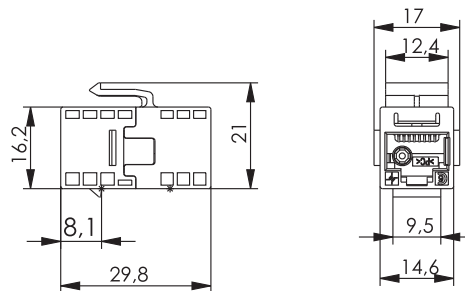


| Order no. | Short name | Description | Remarks | Colour |
|-------------|---------------------------------------|--|-------------------------------|--------------|
| J00029A0062 | AMJ Coupler K Cat.6, insulated, f-f* | suitable for Class E _A Channel, 10 Gigabit Ethernet | suitable for RJ45/11/12 plugs | 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

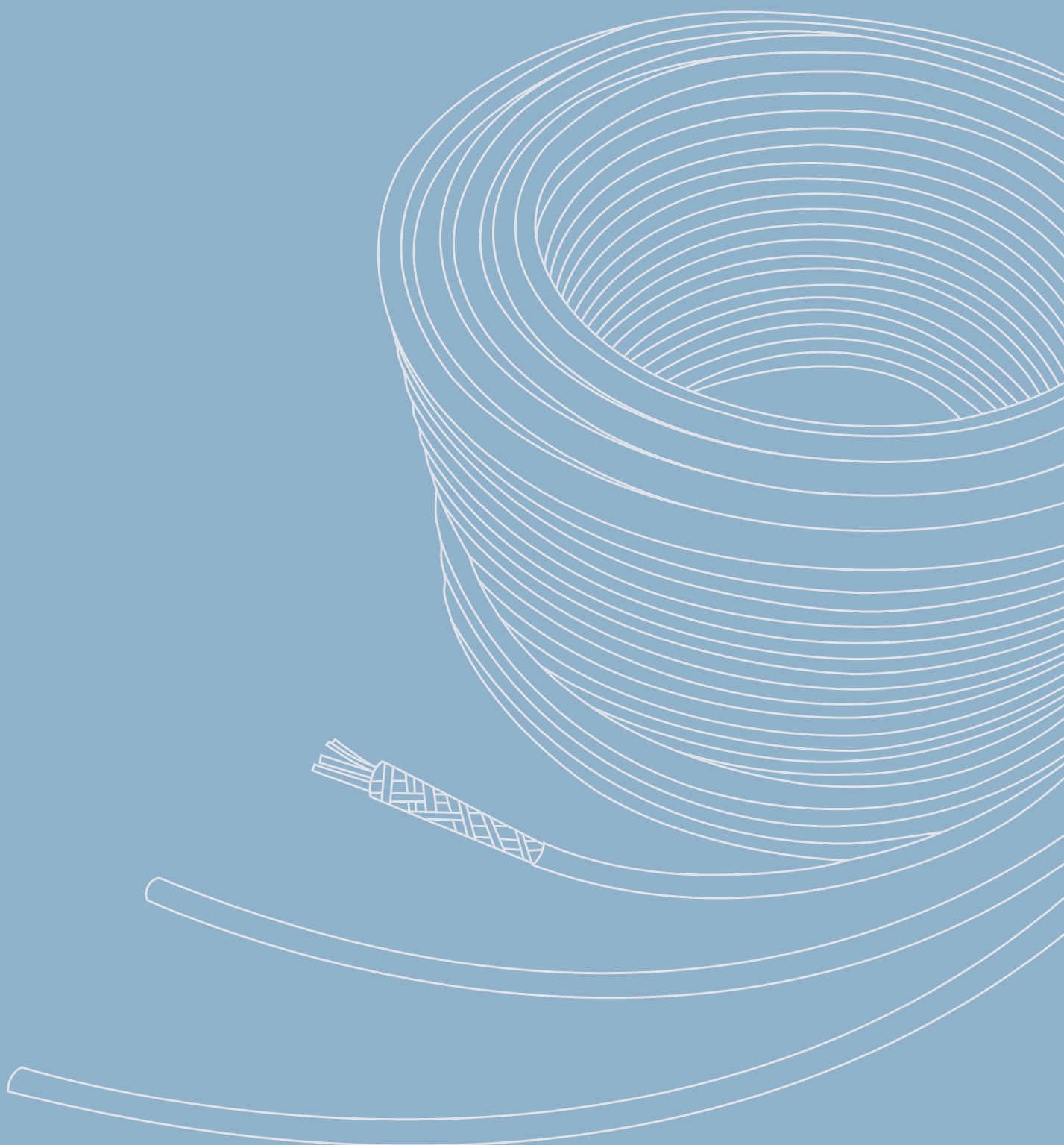
7.10

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

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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

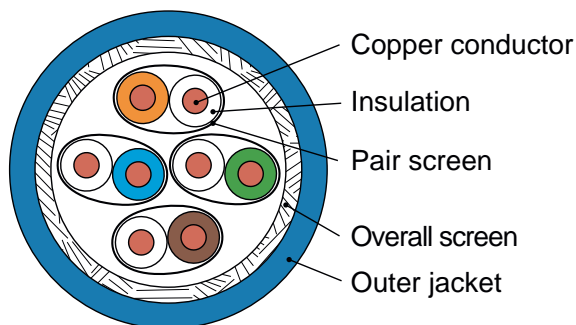
mechanical application conditions.

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

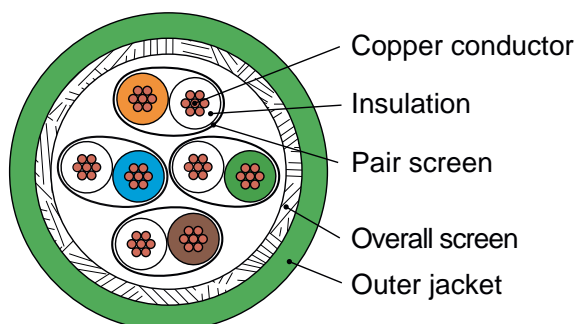
8.1.1



| Order no. | Description | Structure | Category | Colour | Length |
|-------------|-------------|-------------------------------|--------------------|--------|---------|
| L02002A0183 | AMJ 1300 | S/FTP 4x2xAWG23/1 LSZH | Cat.7 _A | blue | 1.000 m |
| L02002A0184 | AMJ 1300 | S/FTP 4x2xAWG23/1 LSZH | Cat.7 _A | blue | 500 m |
| L02002A0185 | AMJ 1300 | S/FTP 2X(4x2xAWG23/1) LSZH | Cat.7 _A | 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 | - |

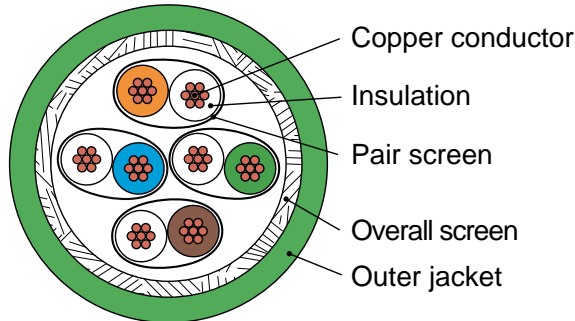
8.1

8.1

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

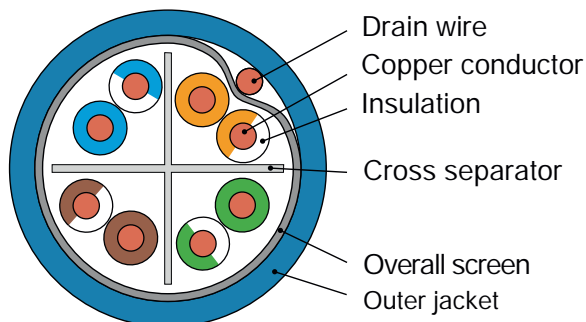
F/UTP cables carry 4 twisted wire pairs surrounded by aluminium foil as a total shield.

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



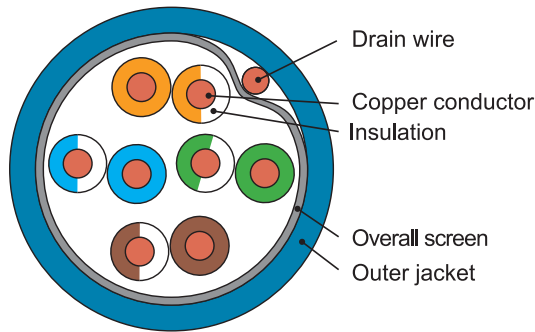
| Order no. | Description | Structure | Category | Colour | Length |
|-------------|-------------|------------------------|----------|--------|--------|
| L02002A0156 | AMJ 300 | F/UTP 4x2xAWG23/1 LSZH | Cat.6 | blue | 500 m |

Copper Installation and Flexible Cables

8

F/UTP AWG24

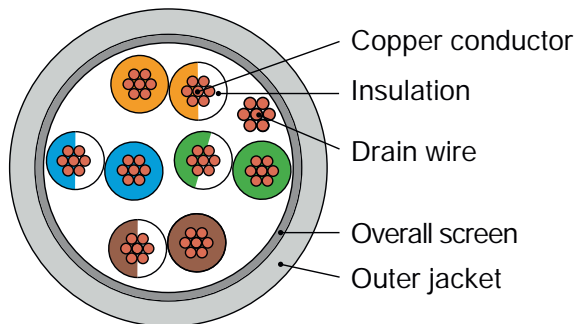
8.2.2



| 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

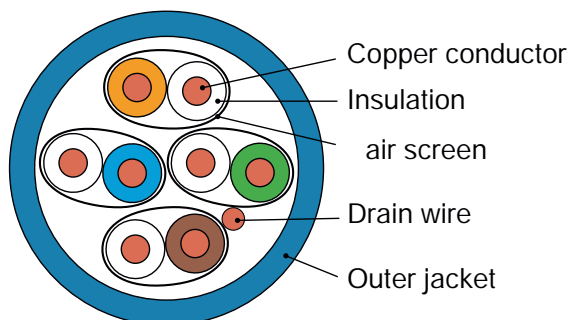
8.3

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

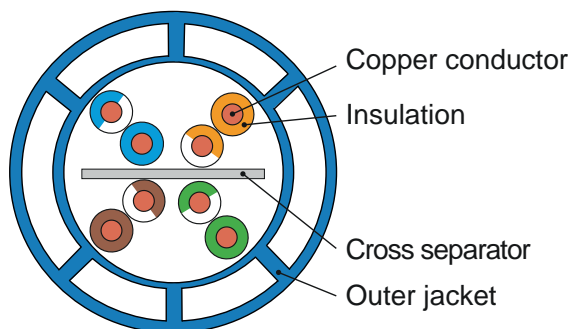
U/UTP Cable

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

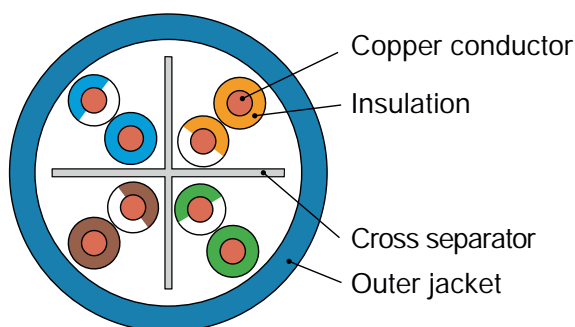
by other measures. U/UTP cables are especially thin in the outer dimensions and can therefore be accommodated in very narrow cable duct systems. The demand for low cable weights also make it advisable to use U/UTP cables.

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 |



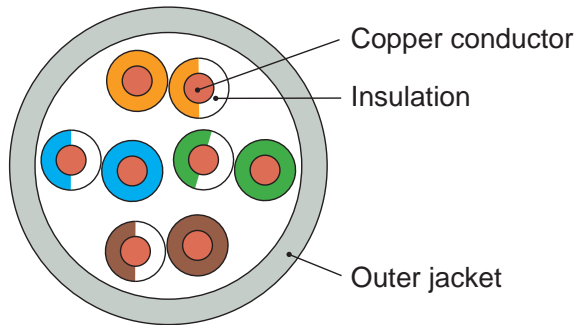
| Order no. | Description | Structure | Category | Colour | Length |
|-------------|-------------|------------------------|----------|--------|---------|
| L02002A0095 | UMJ 300 | U/UTP 4x2xAWG23/1 LSZH | Cat.6 | blue | 1.000 m |
| L02002A0094 | UMJ 300 | U/UTP 4x2xAWG23/1 LSZH | Cat.6 | blue | 500 m |
| 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

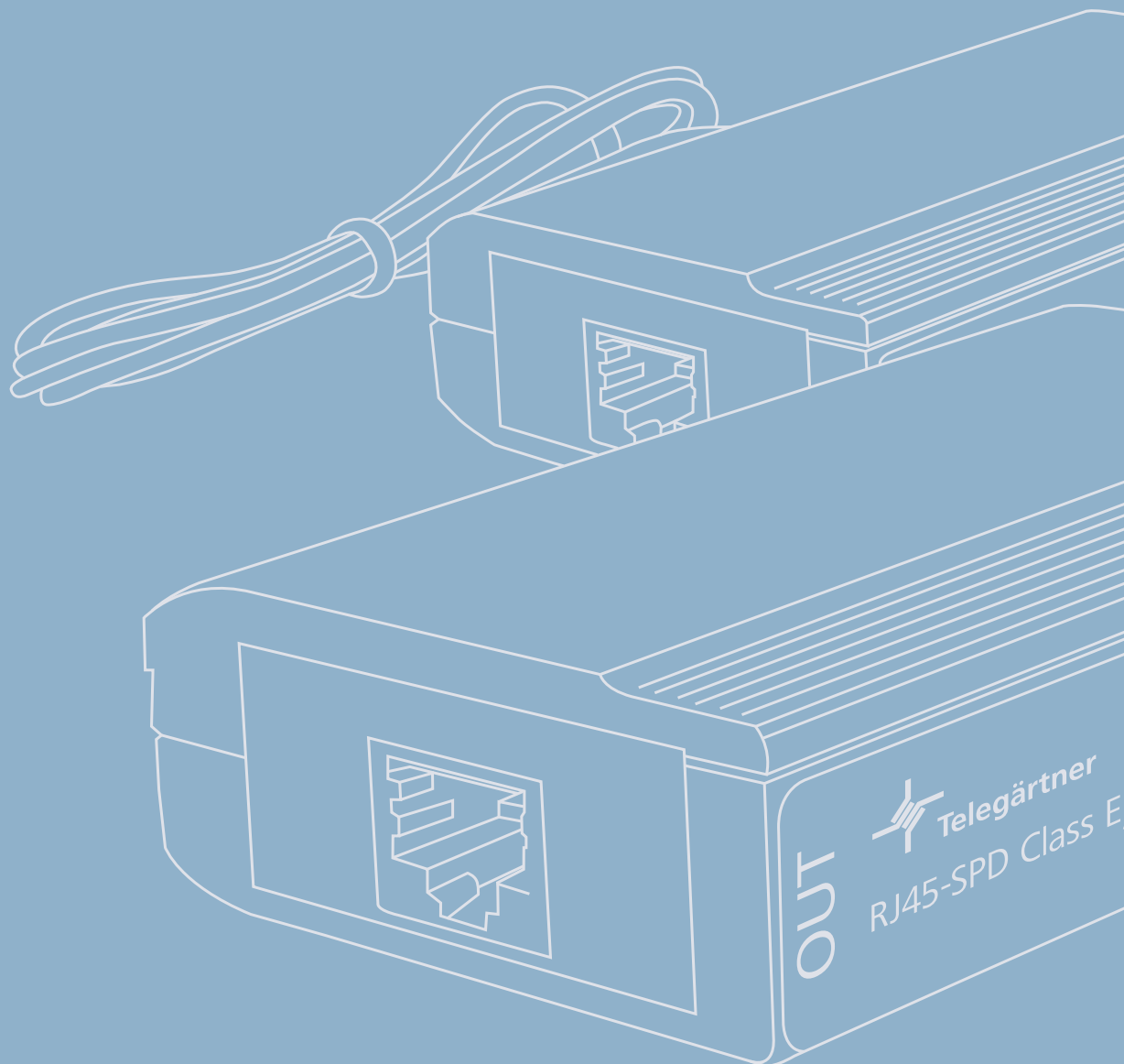
U/UTP AWG24

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 _A | 179 |
|---|-----|

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

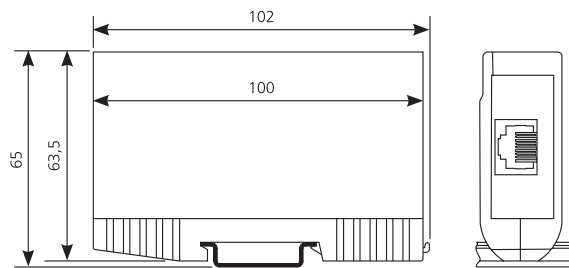
and hazards for any electronics connected to such a network. To protect the electronic equipment, an appropriate RJ45 surge protection with proper grounding has to be implemented in the cabling link.

RJ45-SPD Class E_A

9.1

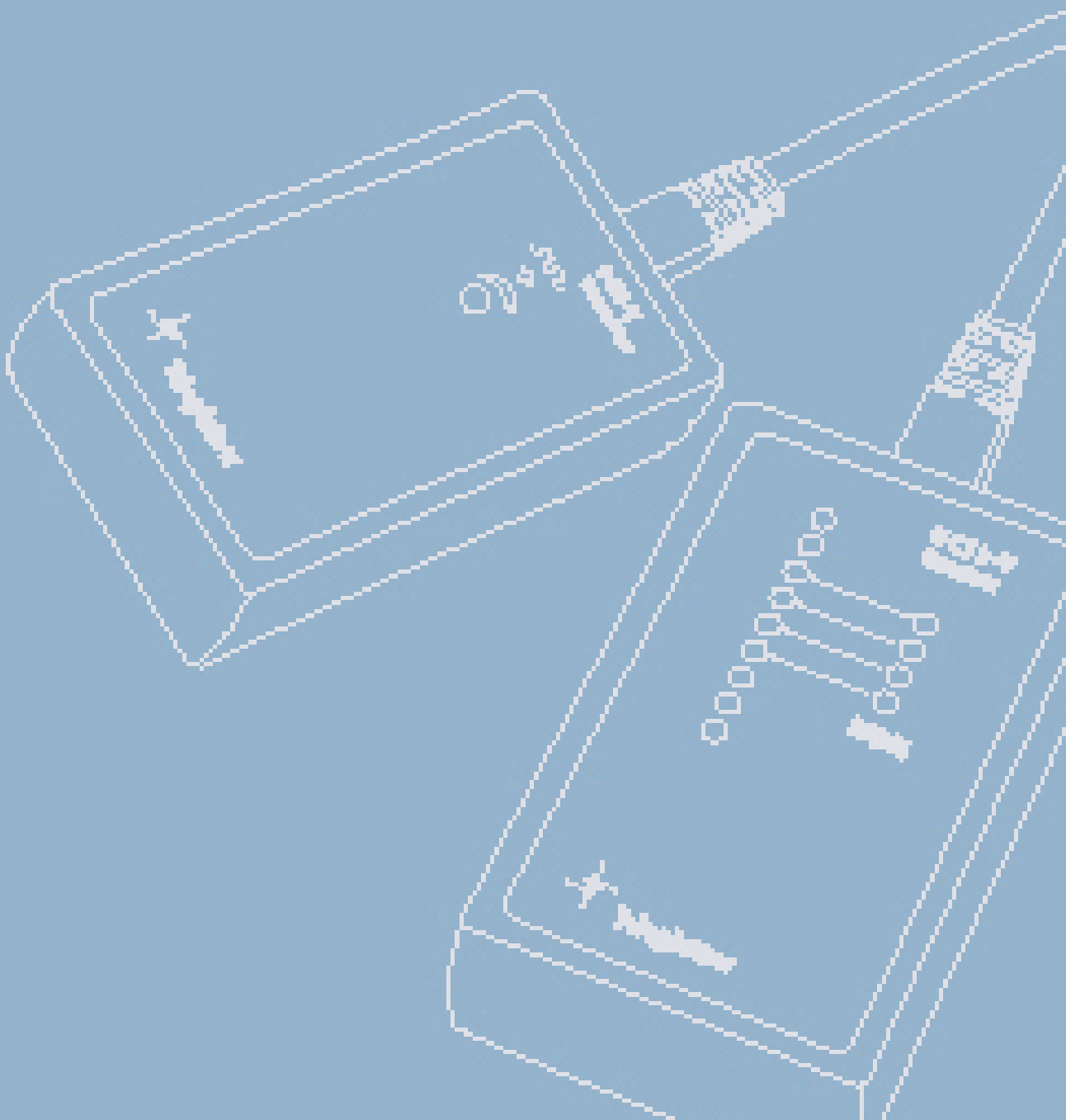
Performance Characteristics

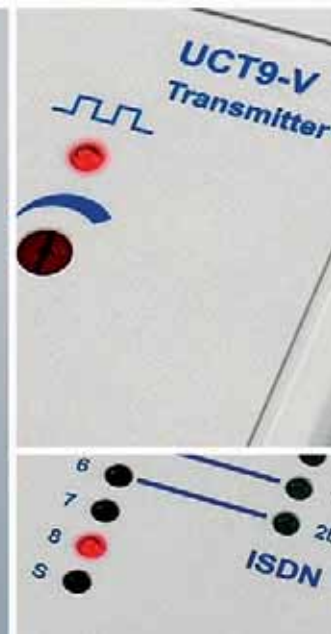
- Protection class: IP20
- Connection IN/OUT: RJ45/RJ11/RJ12
- mating cycles ≥ 750
- Dimension (H/W/D): 103/25/63 mm
- PoE acc. to IEEE 802.3at
- Class E_A (Permanent/Channel Link): ISO/IEC 11801, DIN EN 50173-1
- Surge protection acc. to DIN EN 61643-21
- operating temperature: -40° C to +70° C
- Mounting rail TH35



| Order no. | Description | Type |
|-------------|---|-------------------------------|
| J00029A0116 | Surge Protection Device RJ45-SPD Class E _A | 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-S₀-Bus via LAN, Telegärtner has integrated an S₀-Bus test facility in a single unit at an attractive price-performance ratio. ISDN-S₀-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

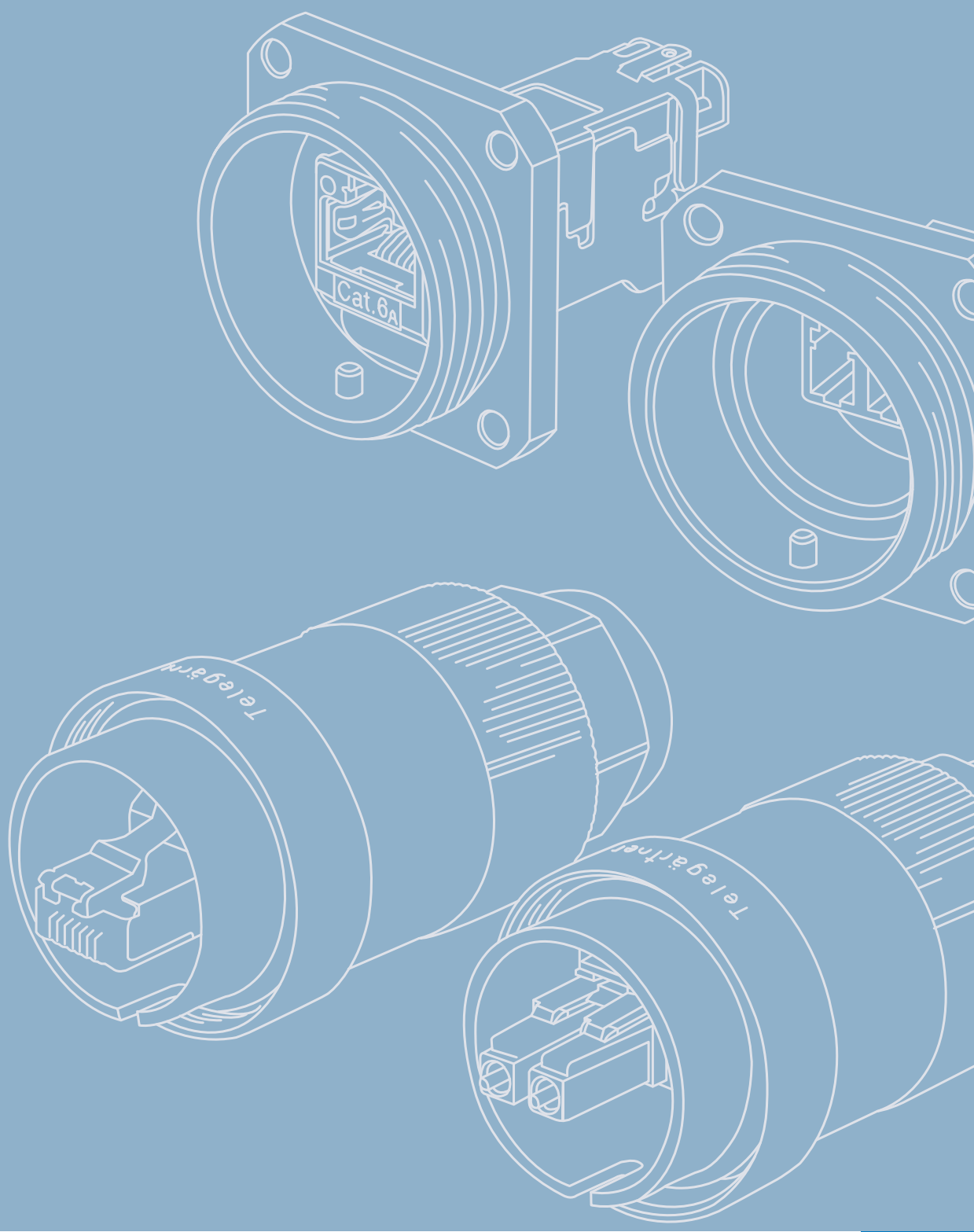
- transmitter with adjustable test speed
- receiver with error display (LED)
- 9 V battery
- instruction manual

Please find the instruction manual for UCT9 Type II on our homepage www.telegaertner.com



| Order no. | Description | Colour |
|-------------|----------------------------|--------|
| M06010A0017 | Wiring Tester UCT9 Type II | grey |

TOC – Outdoor Connectors





11

TOC – Outdoor Connectors

| | |
|--|------------|
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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_A, 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_A and RJ45 keystone AMJ-S Module Cat.6_A 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

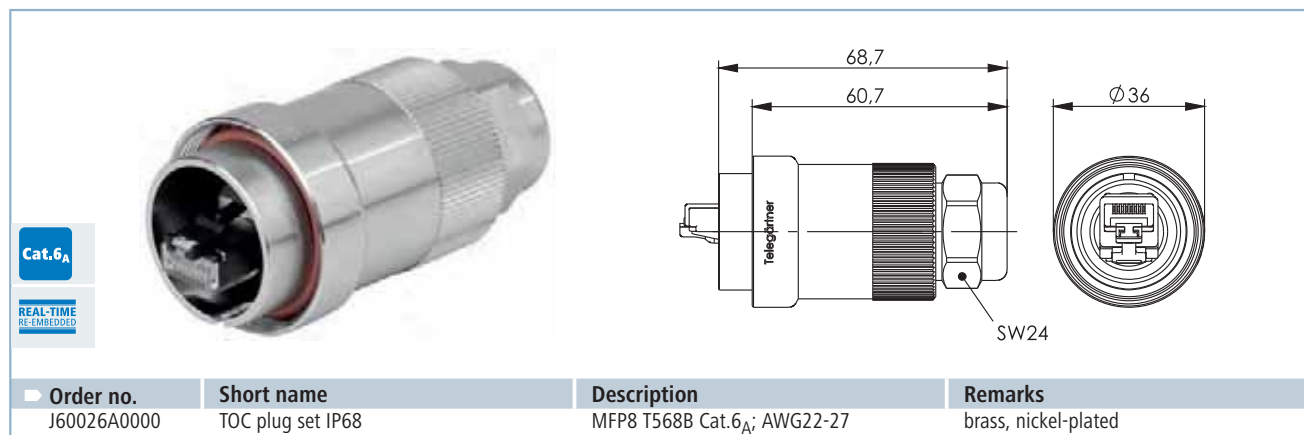
| | TOC plug set MFP8 | TOC bulkhead set AMJ-S Module | TOC bulkhead set AMJ Coupler | TOC Coupler AMJ Coupler |
|--|---|----------------------------------|---------------------------------|----------------------------|
| Standards | | | | |
| Connectors | IEC 60603-7-51 | IEC 60603-7-51 | IEC 60603-7-51 | 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 |
| Mechanical Characteristics | | | | |
| 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 |
|--|---------------------------------------|---------------------------------------|-------------------------------|-------------------------|
| Mechanical Characteristics | | | | |
| 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 | - | - |
| Environmental Requirements | | | | |
| Ambient temperature | -40°C to +85°C | -40°C to +85°C | -40°C to +85°C | -40°C to +85°C |
| Electrical Characteristics | | | | |
| 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+ | | | |
| Transmission Characteristics | | | | |
| Class E _A (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 _A | ISO/IEC 11801, DIN EN 50173-1 | | | |
| Class E _A | ISO/IEC 11801, DIN EN 50173-1 | | | |
| Category 6A | ANSI/TIA/EIA-568-C.2 | | | |

Performance Characteristics

- RJ45 plug MFP8 Cat.6_A acc. to IEC 60603-7-51 (500 MHz)
- RJ45 plug MFP8 Cat.6_A 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_A UL listed (E244889)



| Order no. | Short name | Description | Remarks |
|-------------|-------------------|--|----------------------|
| J60026A0000 | TOC plug set IP68 | MFP8 T568B Cat.6 _A ; AWG22-27 | brass, nickel-plated |

TOC – Outdoor Connectors

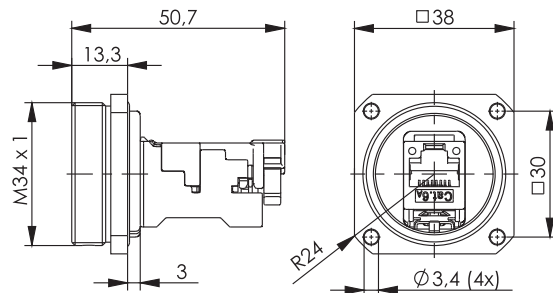
11

TOC Bulkhead Set IP68

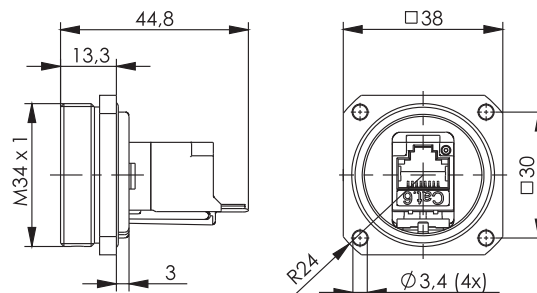
11.1.2

Performance Characteristics

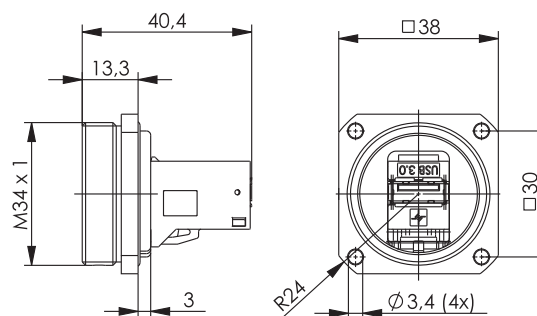
- RJ45 AMJ-S Module Cat.6_A or AMJ Coupler K Cat.6 Class E_A acc. to IEC 60603-7-51
- Cu-conductor:
solid 0.4 - 0.64 mm (AWG26/1 – AWG22/1);
stranded 0.46 - 0.76 mm (AWG27/7 – AWG22/7)
- USB-Keystone 3.0 (f-f) Type A
- insulation diameter: 0.9 - 1.6 mm
- 4-hole mounting, mounting cut out \varnothing 30.5 mm
- AMJ-S Module: UL listed (E244889)

Cat.6_AREAL-TIME
RE-EMBEDDED

| Order no. | Short name | Description | Remarks |
|-------------|-----------------------|---------------------------------------|----------------------|
| J60020A0000 | TOC Bulkhead Set IP68 | AMJ-S Module Cat.6 _A T568B | brass, nickel-plated |



| Order no. | Short name | Description | Remarks |
|-------------|-----------------------|--|----------------------|
| J60020A0002 | TOC Bulkhead Set IP68 | AMJ Coupler K Cat.6 Class E _A | 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

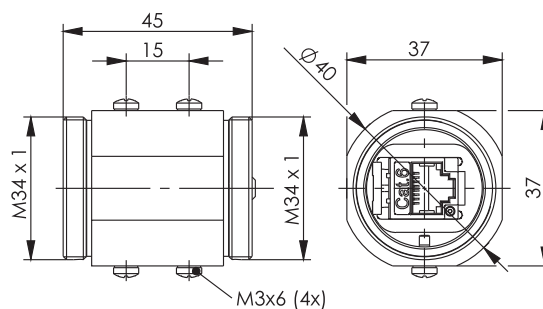
TOC-Serie RJ45

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)



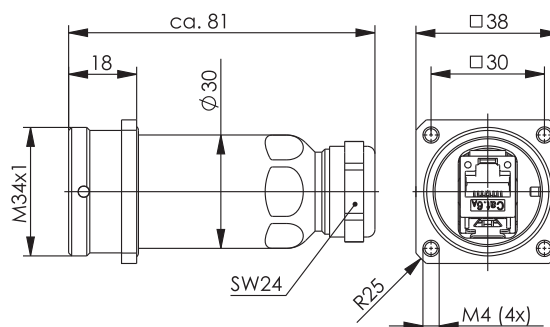
| Order no. | Short name | Description | Remarks |
|-------------|------------------|--|----------------------|
| J60029A0000 | TOC Coupler IP68 | AMJ Coupler K Cat.6 Class E _A | brass, nickel-plated |

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_A UL listed (E244889)



| Order no. | Short name | Description | Remarks |
|-------------|--------------------------|---------------------------------------|----------------------|
| J60023A0000 | TOC Bulkhead Outlet IP68 | AMJ-S Module Cat.6 _A 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 |
|---|--|----------------------------|-----------------------------|
| Standards | | | |
| 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 | |
| Mechanical Characteristics | | | |
| 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 | - | - |
| Environmental Requirements | | | |
| 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 |
| Optical Characteristics | | | |
| Reproducibility insertion loss | max. 0.1 dB | max. 0.1 dB | max. 0.1 dB |

11.2

11.2

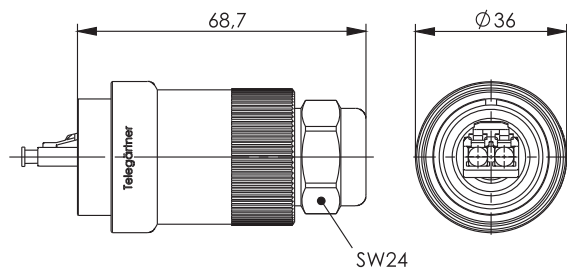
TOC Series LC Duplex

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



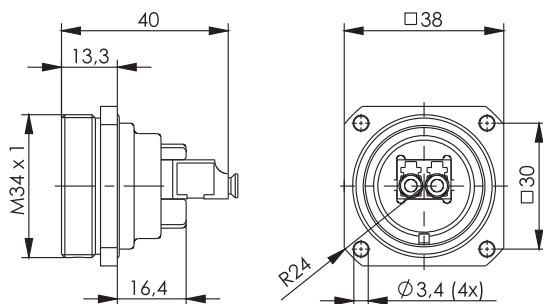
| Order no. | Short name | Description | Remarks |
|-------------|-------------------|--------------------------|----------------------|
| J68070A0000 | TOC plug set IP68 | LC Duplex Multimode | brass, nickel-plated |
| J68070A0001 | TOC plug set IP68 | LC/APC Duplex Singlemode | brass, nickel-plated |
| 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

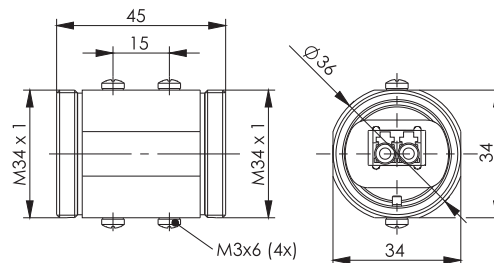
11

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 |
|---|-----------------------|----------------------------|-----------------------|
| Standards | | | |
| 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 | |
| Mechanical Characteristics | | | |
| 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

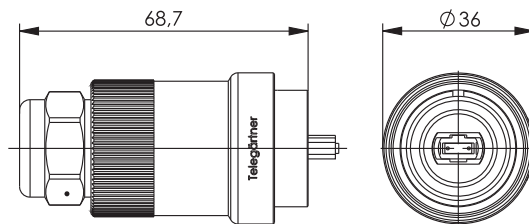
TOC Series MPO/MTP®

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



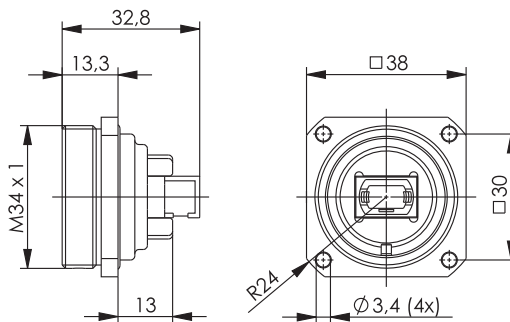
| Order no. | Short name | Description | Remarks |
|-------------|-------------------|---------------------------------|----------------------|
| J68070A0004 | TOC plug set IP68 | MPO/MTP® male, Multimode | brass, nickel-plated |
| J68070A0005 | TOC plug set IP68 | MPO/MTP® male, APC Singlemode | brass, 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

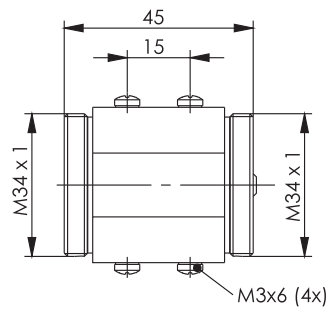
11

TOC Coupler IP68 MPO/MTP®

11.3.3

Performance Characteristics

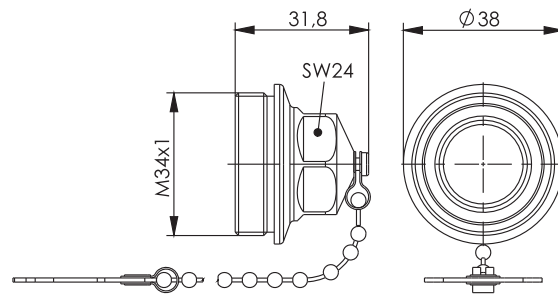
- suitable for TOC plug set IP68 MPO/MTP®
- mounting on DIN rail TH35 by means of adaptors (J06000A0056)



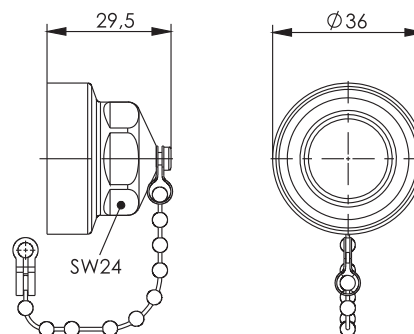
| Order no. | Short name | Description | Remarks |
|-------------|------------------|---------------------------------------|----------------------|
| J68071A0007 | TOC Coupler IP68 | MPO/MTP® adaptor Singlemode/Multimode | brass, nickel-plated |

Accessories for TOC Series

11.4

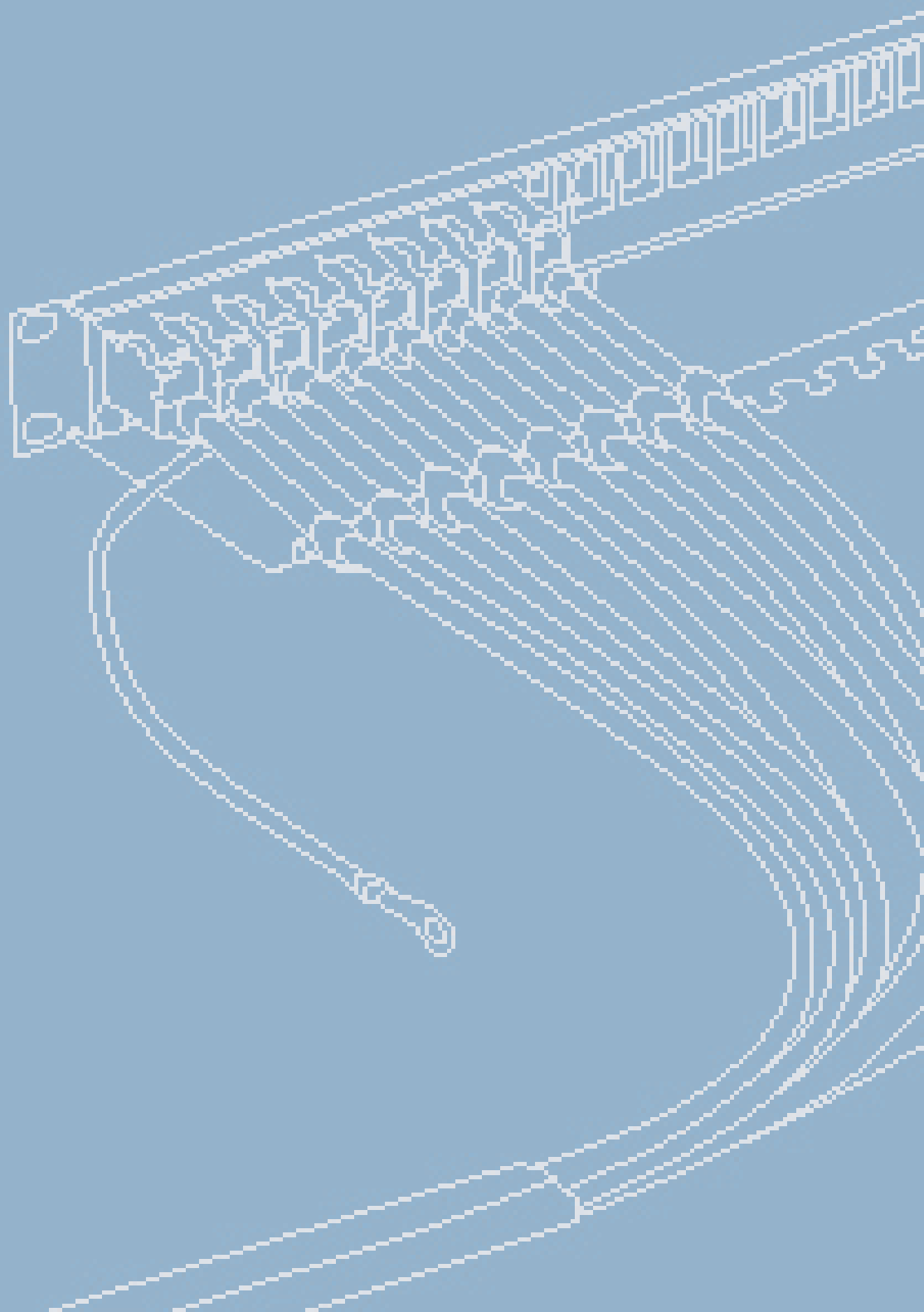


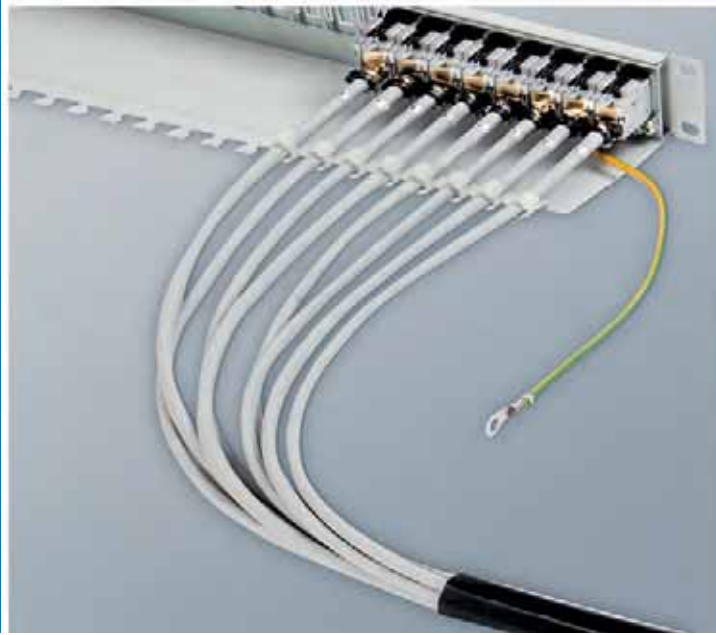
| Order no. | Short name | Remarks |
|-------------|------------------------------|---------------------------------|
| H60030A0001 | TOC plug protection cap IP68 | nickel-plated brass; with chain |



| 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_A up to 500 MHz
- 360° fully shielded
- High quality twisted pair cables
- High quality patch cords Cat.6_A 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

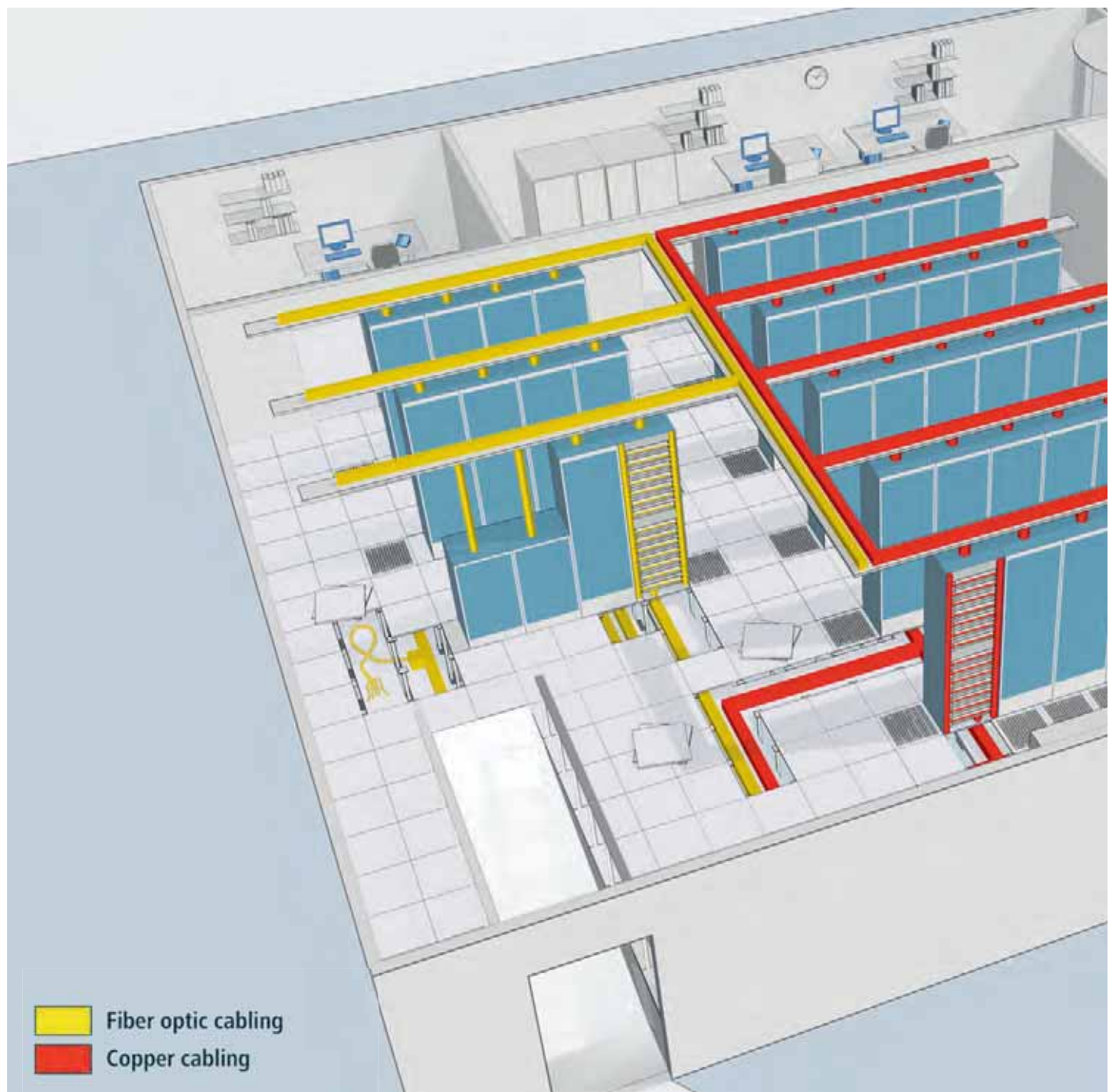
- Standard compliant components
- SFF – small form factor
- MPO/MTP® connector
- High density RJ45 modules, 48 ports using just 1 HU
- High density fiber optic modules, 48 ports/96 fibers using just 1 HU
- Hybrid solutions with copper and fiber optic modules

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.

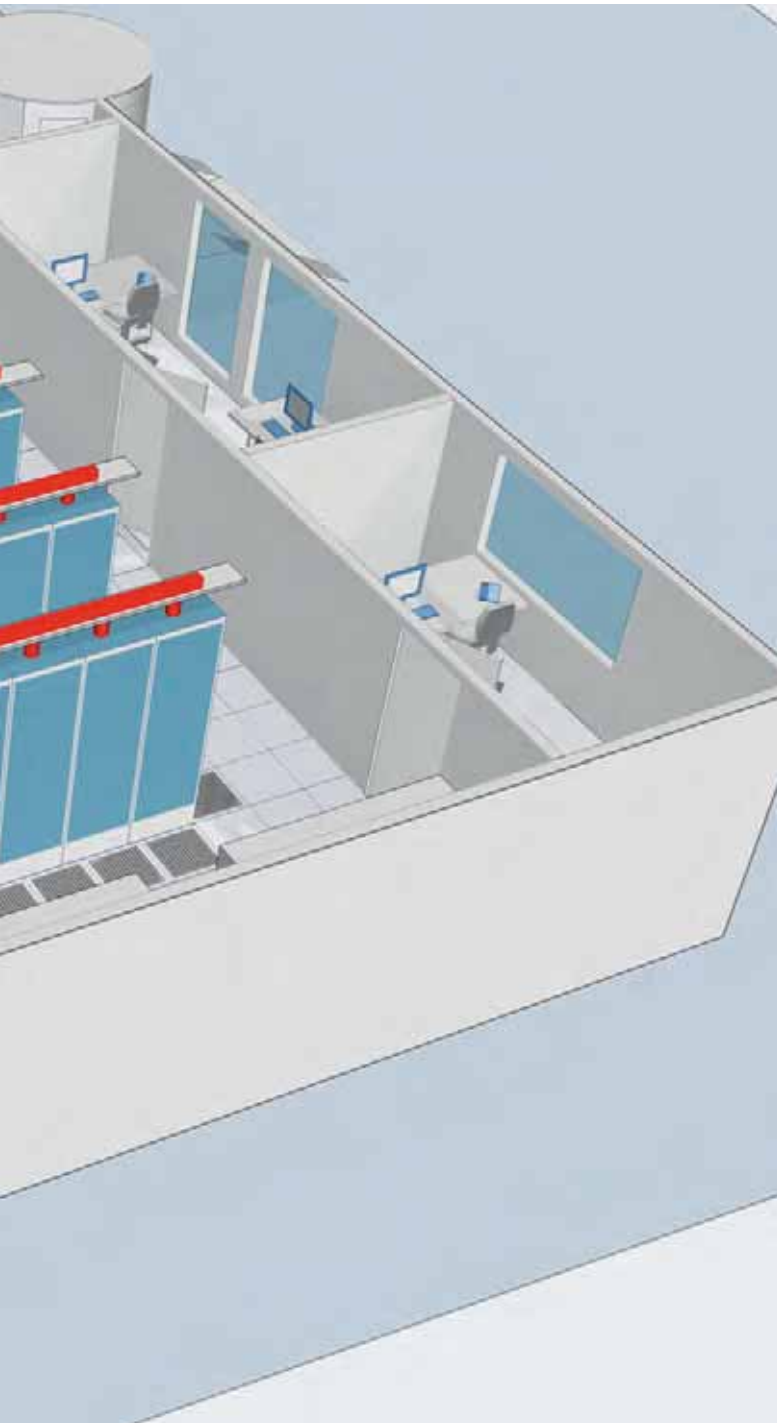
Time consuming cable cutting and stripping, terminating, curing, and polishing belong to the past. Pulling grips protect the connectors during cable installation and guarantee factory-proven quality even under rough installation conditions. Singlemode fiber and OM3/OM4 multimode fiber for data rates 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



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

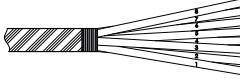


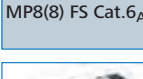
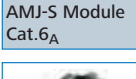
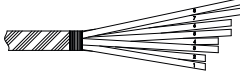




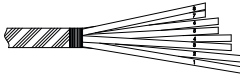
- Individually configurable both-end assembly
- Different cable types - shielded and unshielded; different copper wire diameters
- Selection of RJ45 plugs and modules for best possible cabling flexibility
- Coloured port numbering for clear identification
- Cables coiled with spun rayon fabric tape
- 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 _A 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 _A 4x2xAWG 23/1 LSZH blue | L02002A0200 | 7 | 20 | 23 | 25 |
| UMJ 500 U/UTP Cat.6 _A 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.

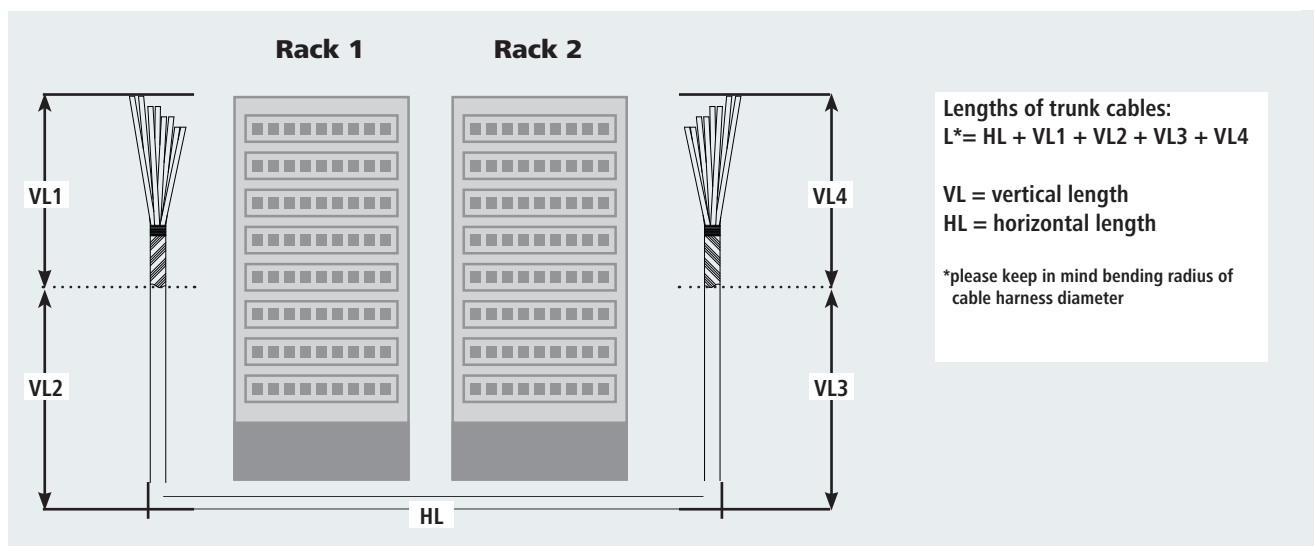
| Cable | No. Cable | Trunk | Plugs/Modules | |
|---|-----------|--|---|---|
| AMJ 1000 (1300) S/FTP Cat.7 (7 _A) 4x2xAWG 23/1 LSZH blue | 1-fold |  uniform trunks Length in cm: 30 / 50 / 70 | RJ45 plugs  | Module  |
| S/FTP Cat.7 4x2xAWG 27/7 LSZH grey | 4-fold | | MP8(8) FS Cat.6 _A  | AMJ-S Module Cat.6 _A  |
| AMJ 500 U/FTP Cat.6 _A 4x2xAWG 23/1 LSZH blue | 6-fold |  stepped trunks 1 - n | MFP8 Cat.6 _A  | AMJ Module K Cat.6 _A  |
| UMJ 500 U/UTP Cat.6 _A 4x2xAWG 23/1 LSZH blue | 8-fold | | UFP8 Cat.6 _A  | UMJ Module K Class E _A 500  |
| U/UTP Cat.6 4x2xAWG 24/1 LSZH blue | |  stepped trunks n - 1 | UFP8 Cat.6 _A | UMJ Module K Class E _A 500 |

Other cable types on request

Possible Combinations

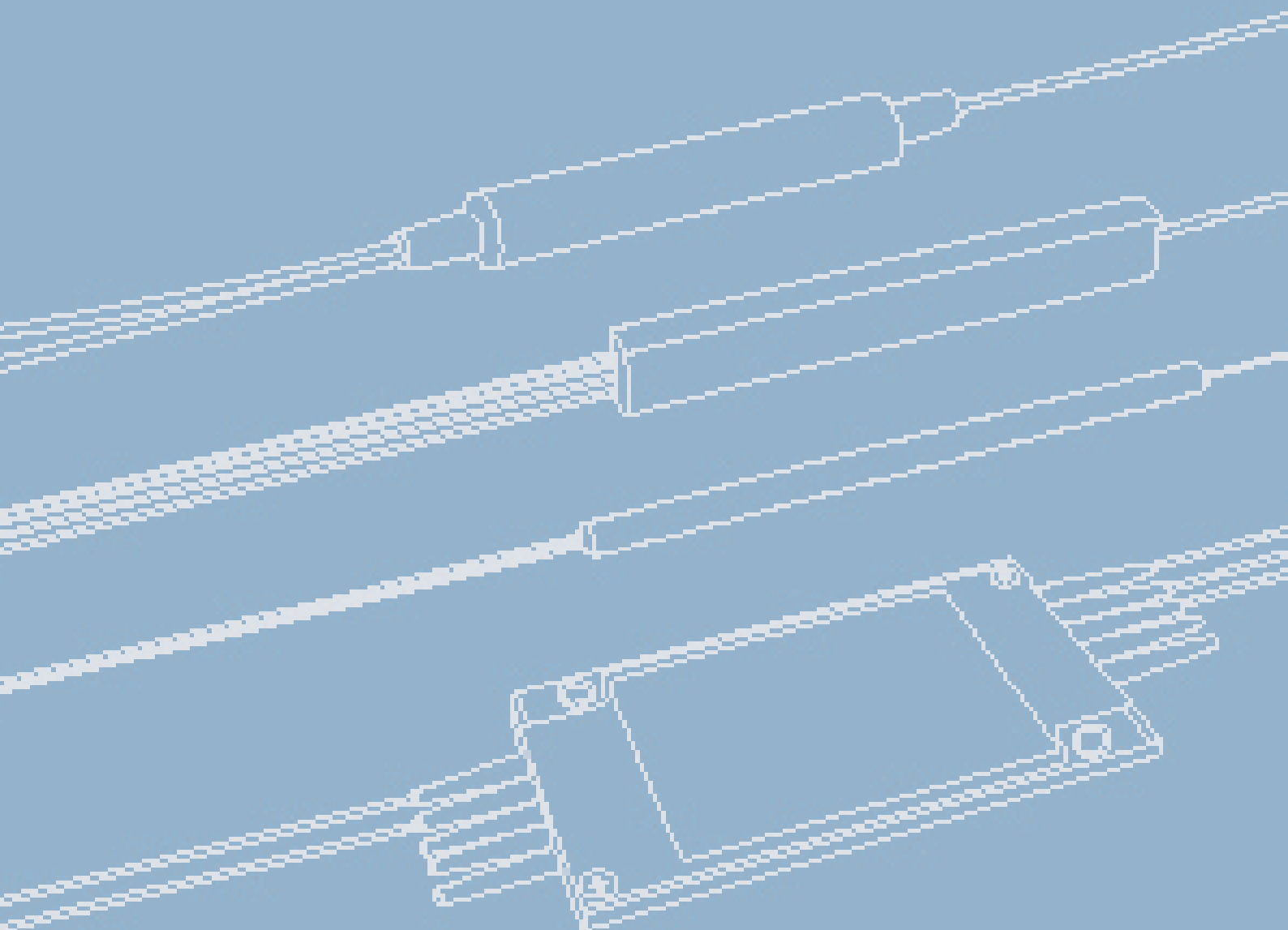
| | AMJ-S Module | AMJ Module K | MFP8 plug | MP8 FS plug | UFP8 plug | UMJ Module |
|--------------|--------------|--------------|-----------|-------------|-----------|------------|
| AMJ-S Module | X | | X | X | | |
| AMJ Module K | | X | X | X | | |
| MFP8 plug | X | X | X | X | | |
| MP8 FS plug | 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





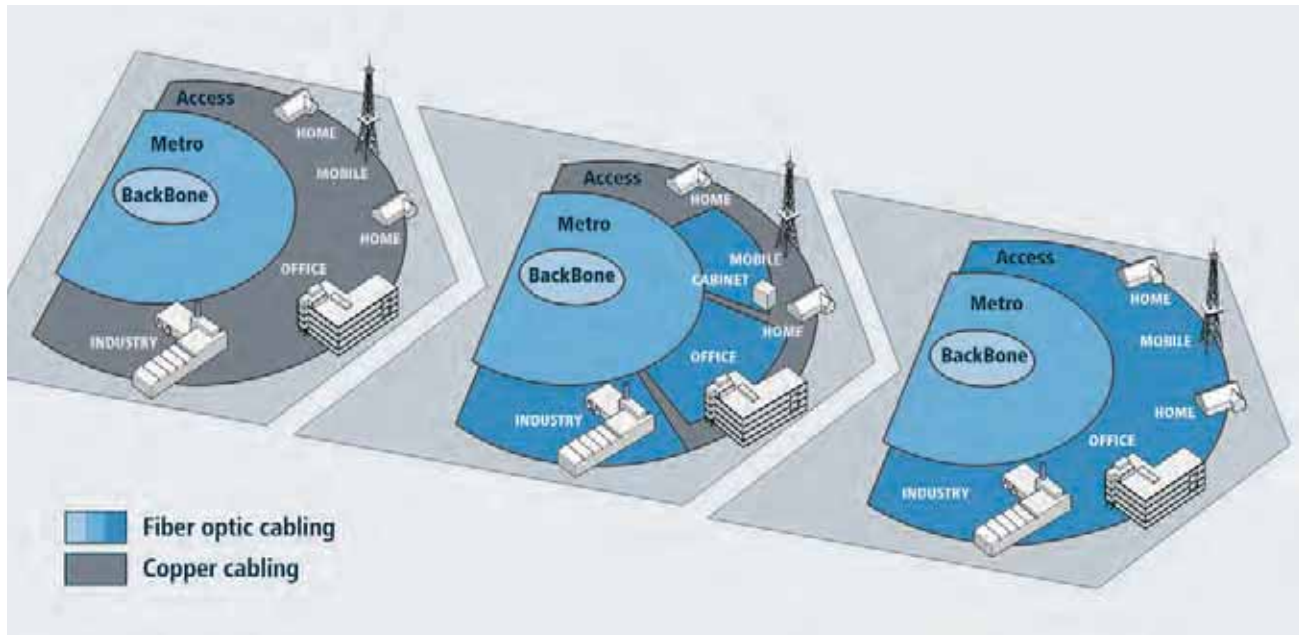
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Fiber-To-The-x Solutions

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 (≥ 15 mm)
- RJ45 and fiber optic connecting hardware for electrical fuse boxes

Performance

- Transmission performance

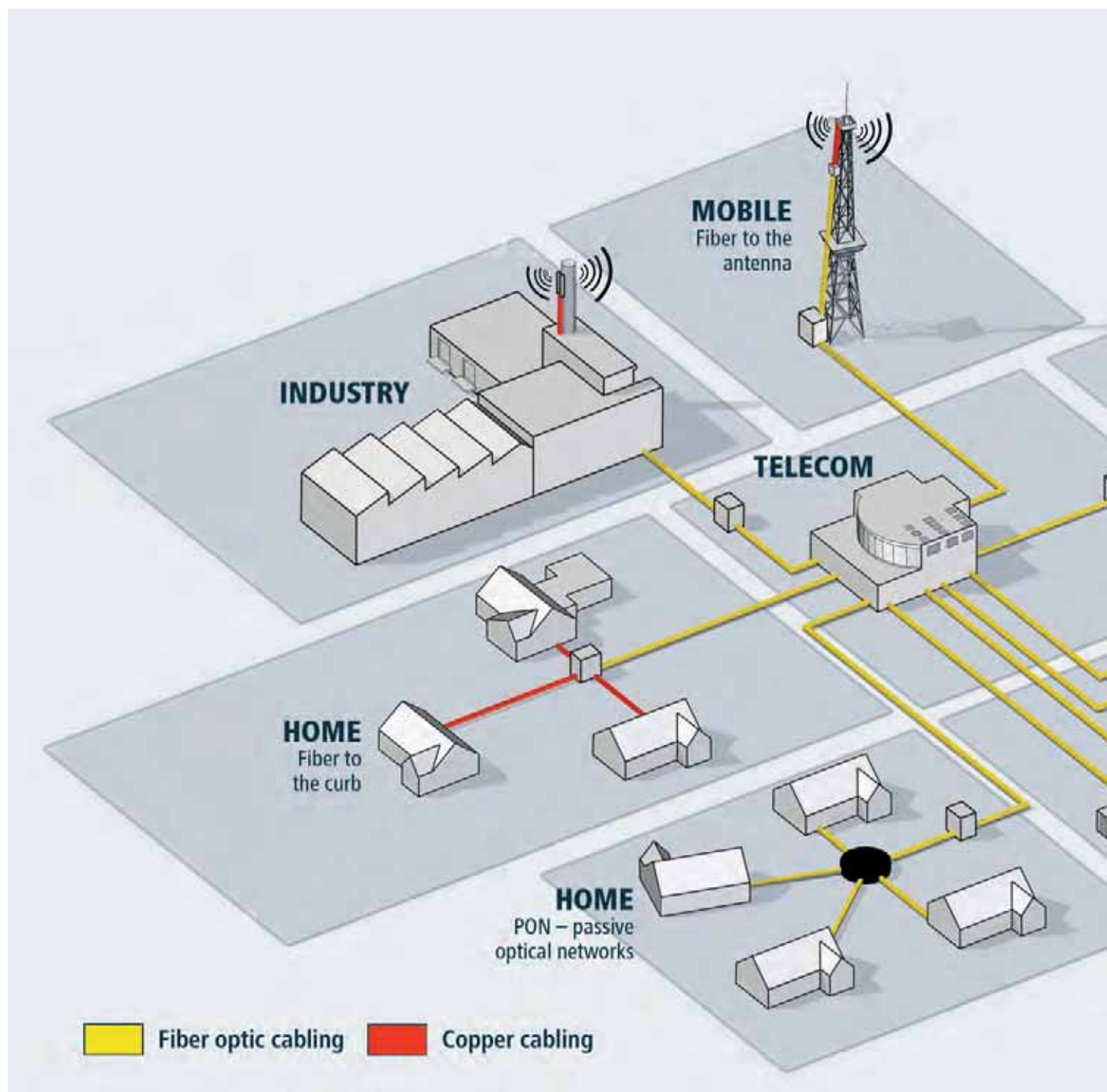
| | |
|-------------|------------------------|
| Coax | 900 / 1800 MHz (GSM) |
| | 2.3 / 4 GHz (UMTS) |
| | 2.7 GHz (LTE) |
| | 3.5 GHz (Wimax) |
| RJ45 | up to 500 MHz (Cat.6A) |
| Fiber optic | OS2, G.657Ax |
- Access net solutions for high bit rates with well-established coaxial, RJ45 and fiber optic 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

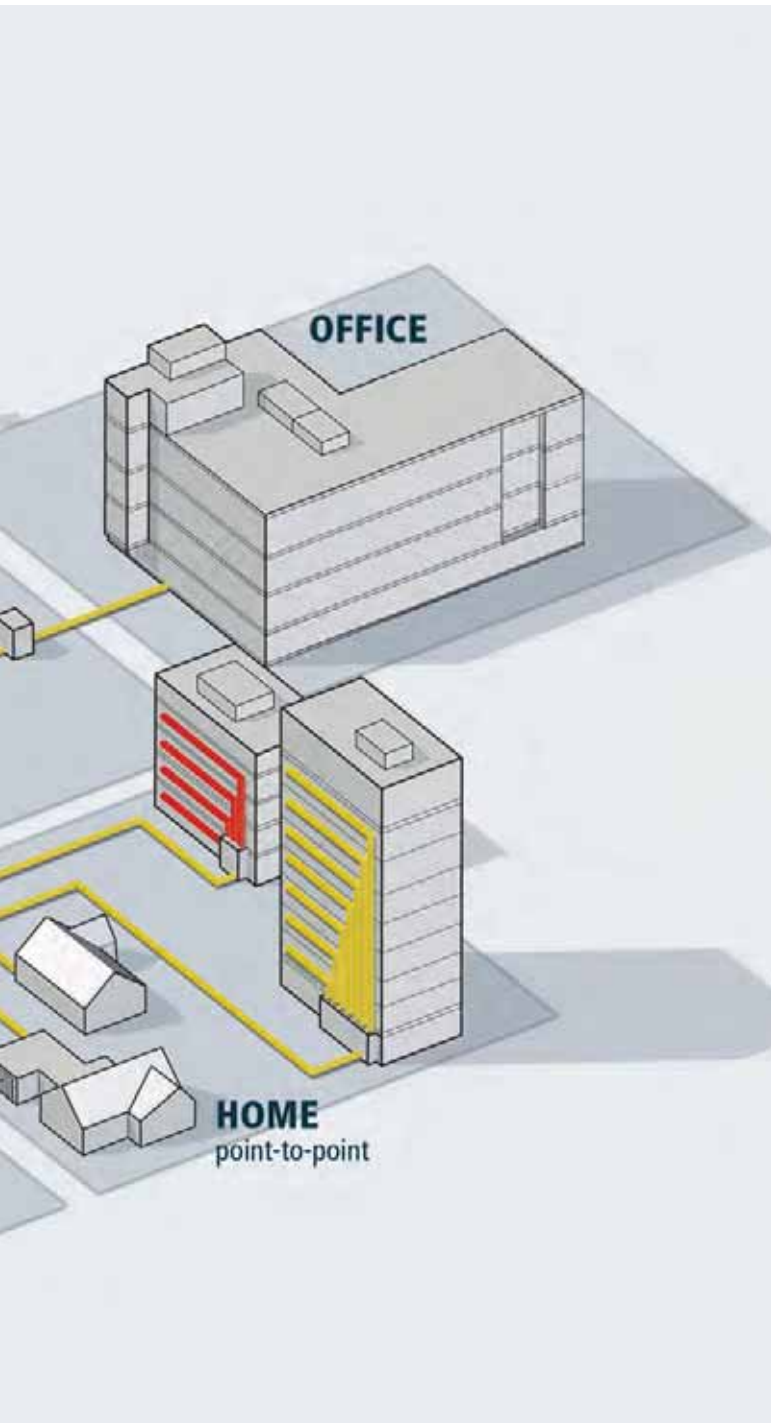
FTTx (Fiber-To-The-...) Cabling Solutions



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



Cabling solutions FTTA (Fiber-To-The-Antenna)

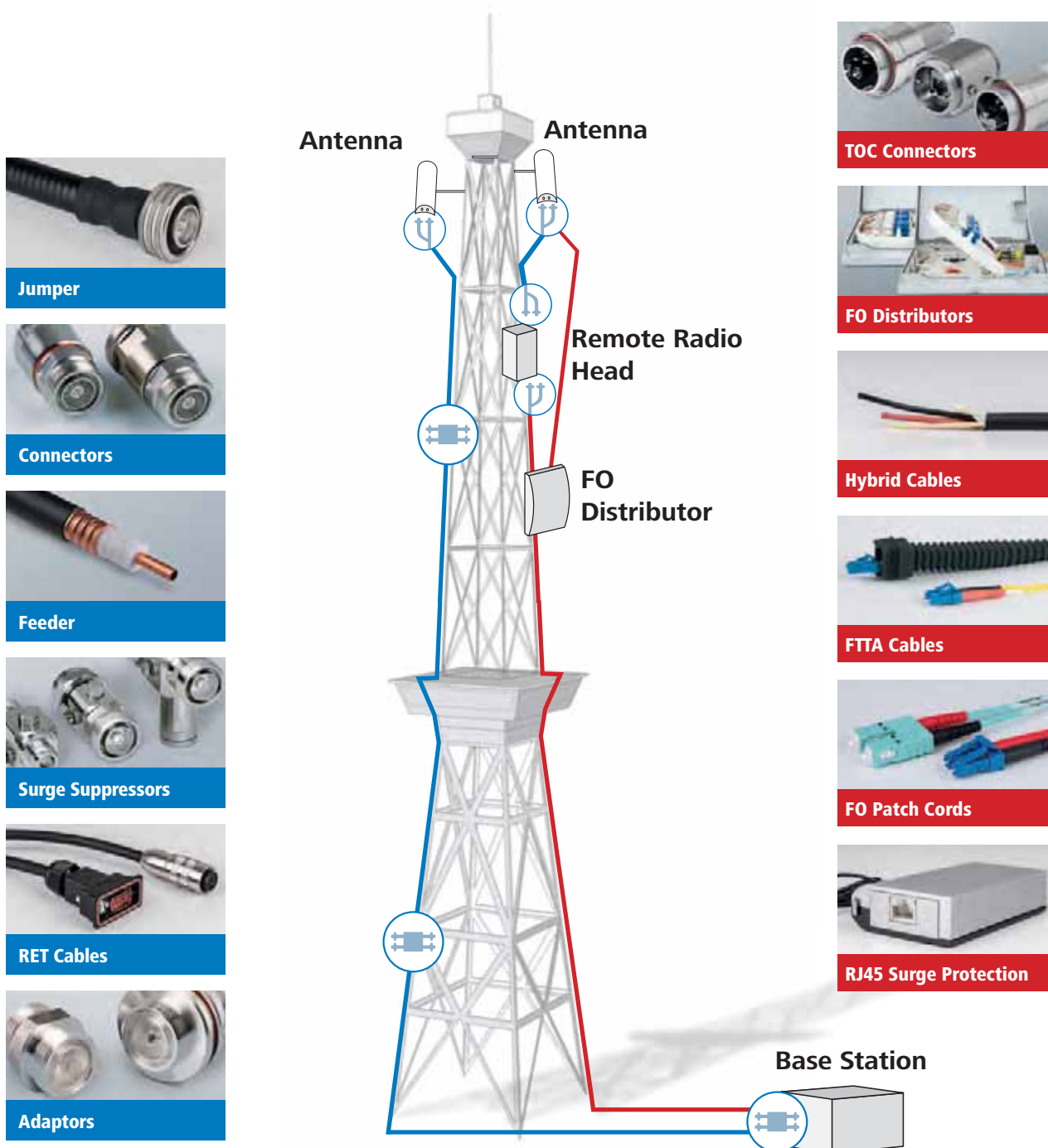
The need for increasingly large data volumes in mobile radio networks is increasing constantly and immensely. LTE will be receivable by smartphones, tablets and PCs in the future even in regions that were previously under-supplied in terms of broadband. Where just a few years ago a few Mbps were transferred 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.

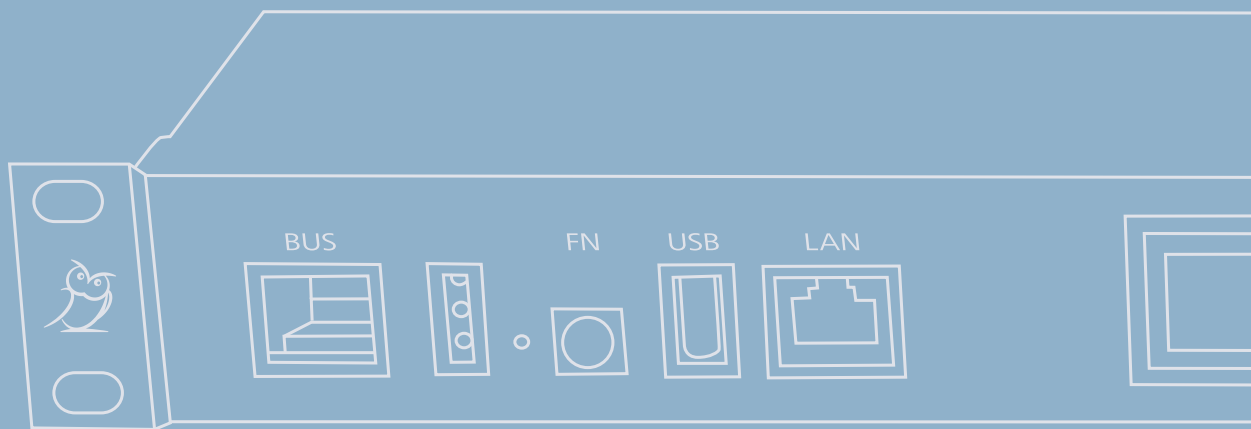
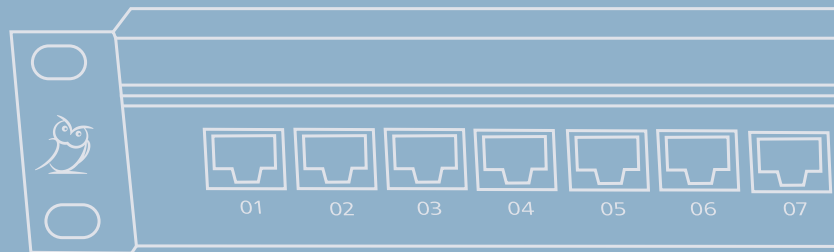
Performance Characteristics

- 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

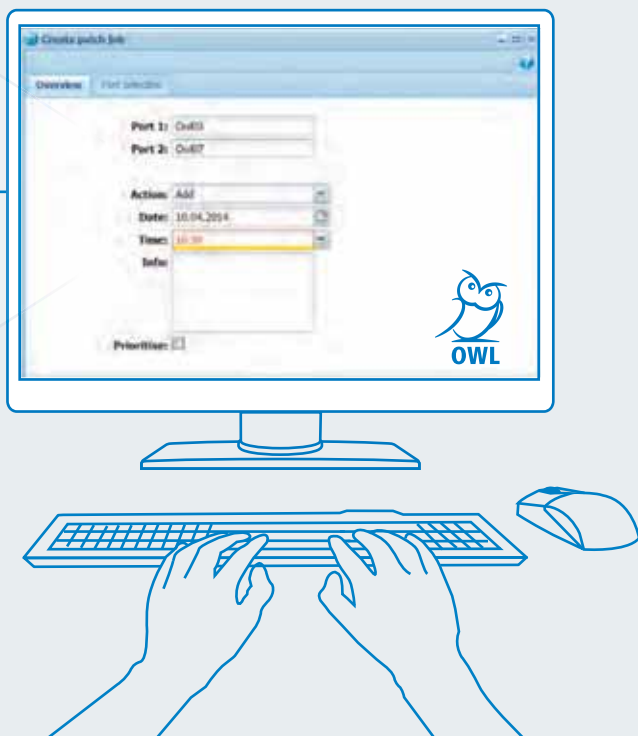
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IT network. The guideline of Owl is to provide an AIM with standard cabling components to the operator according to EN 50173-x.

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?

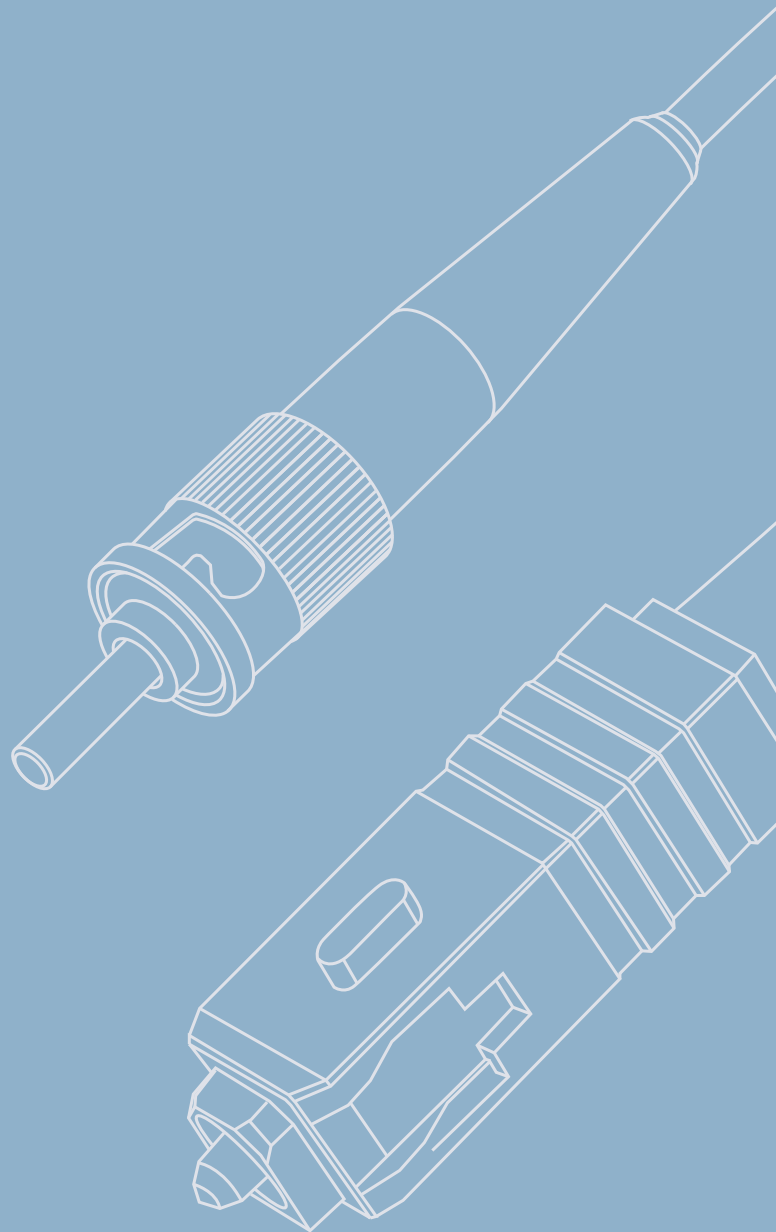
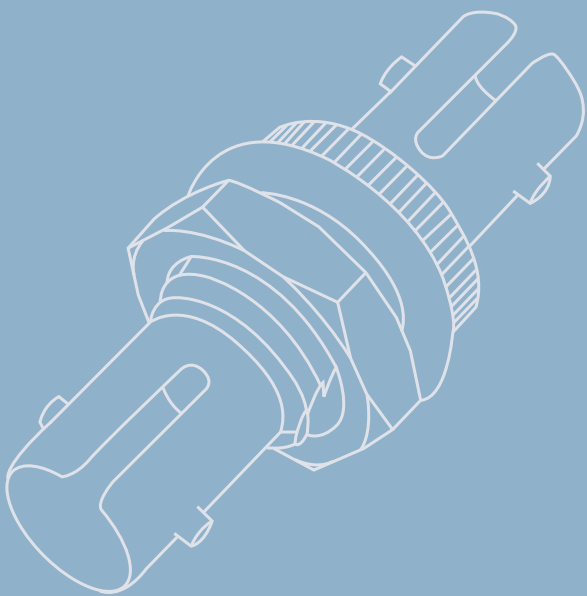
During the long lifetime of networks, further developments lead to different qualities of installation cables (FO and copper) being used. Only the combination of the ideal fiber and cable qualities of installation cables and patch cords guarantee optimum transmission properties.

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

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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 μ , 62,5 μ , 200 μ and 980 μ
- Singlemode 9 μ

ST Connectors

15.1

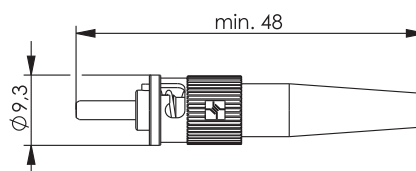
| | ST Connectors | ST Connectors for POF / PCF |
|---|--|---|
| Mechanical Characteristics | | |
| Type | BFOC/2,5 acc. to IEC 61754-2 | BFOC/2,5 similar IEC 61754-2 |
| Durability (mating cycles) | ≥ 1000 | ≥ 500 |
| Hex crimp size for strain relief | 3.4/4.52 x 10 mm; 3.65/4.52 mm | 3.4/4.52 x 10 mm (3.25 for cable \varnothing 2.2) |
| Strain relief | ≥ 100 N | ≥ 100 N (\varnothing 3.6); ≥ 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 |
| Climatic Characteristics | | |
| Operating temperature in °C | -20° to 80° C | -20° to 80° C |
| Storage temperature in °C | -40° to 90° C | -40° to 90° C |
| Optical Characteristics | | |
| Insertion loss: Plug (factory assembly) | Multimode: max. 0.4 dB ¹ ; Singlemode: max. 0.5 dB ¹ | POF: max. 1.5 dB; PCF: max. 1.0 dB |
| Insertion loss: Adaptor (ceramic) | Multimode/Singlemode: max. 0.2 dB ¹ | - |
| Insertion loss: Adaptor (phosphor bronze) | Multimode: max. 0.2 dB ¹ | - |
| Return loss | Multimode: min. 30 dB ² ; Singlemode: min. 40 dB ² | - |

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 |

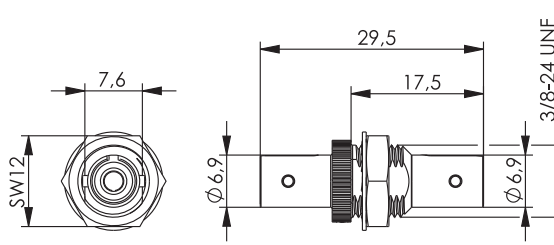
15.1

15.1

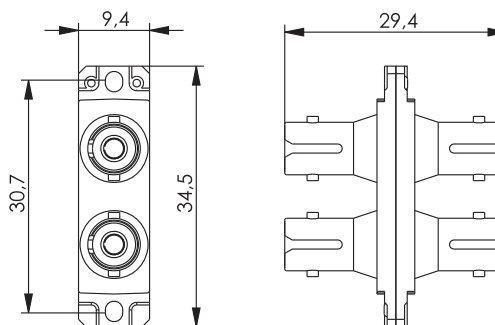
ST Connectors

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

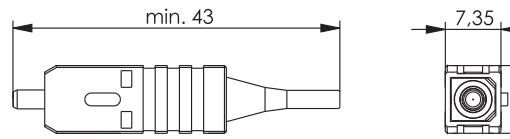
| | |
|---|--|
| Insertion loss: plug (factory assembly) | Multimode: max. 0.4 dB ¹ ; Singlemode/Singlemode APC: max. 0.5 dB ¹ ; POF: 1.5 dB; PCF: 1.0 dB |
| Insertion loss: adaptor | Multimode/Singlemode: max. 0.2 dB ¹ ; Singlemode APC: 0.2 dB ¹ |
| Return loss: plug (factory assembly) | Multimode: min. 30 dB ² ; Singlemode: min. 40 dB ² ; Singlemode APC: min. 60 dB ² |

1) Measurement procedure acc. to IEC 61300-3-4

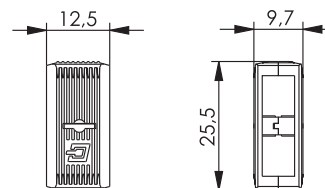
2) Measurement procedure acc. to IEC 61300-3-6

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 |

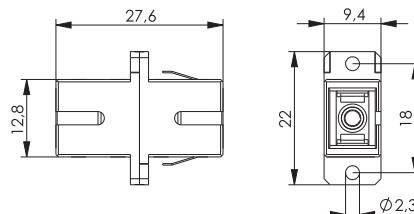
15.2

15.2

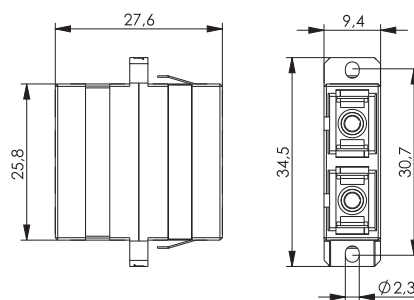
SC Connectors

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

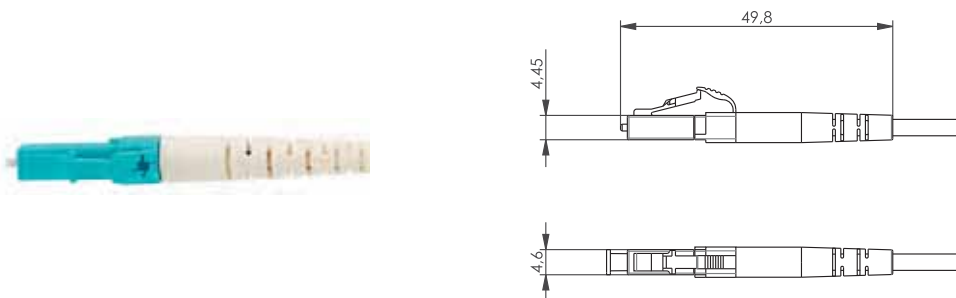
| Mechanical Characteristics | |
|---|--|
| Type | connector type LC acc. to IEC 61754-20 |
| Durability (mating cycles) | ≥ 1000 |
| Hex crimp size for strain relief | 3.24 x 10 mm |
| Strain relief | ≥ 100 N |
| Material: connector ferrule | Zirkonia ceramic |
| Material: adaptor split sleeve | Zirkonia 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 ¹ ; Singlemode/Singlemode APC: max. 0.5 dB ¹ |
| Insertion loss: Adaptor | Multimode/Singlemode: max. 0.2 dB ¹ ; Singlemode APC: 0.5 dB ¹ |
| Return loss: plug (factory assembly) | Multimode: min. 30 dB ² ; Singlemode: min. 40 dB ² ; Singlemode APC: min. 60 dB ² |

1) Measurement procedure acc. to IEC 61300-3-4

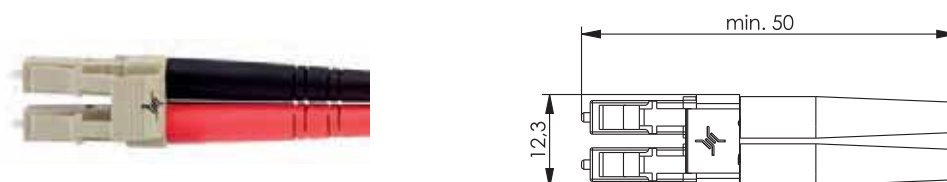
2) Measurement procedure acc. to IEC 61300-3-6

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 |

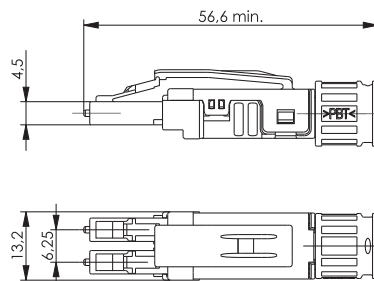
15.3

15.3

LC Connectors

15.3.2

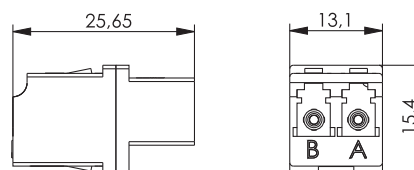
LC Plug EasyGrip



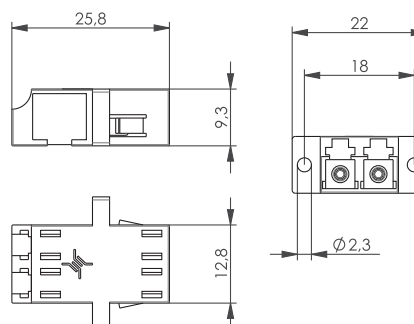
| Order no. | Description | Fiber type | Remarks | Housing Colour | Clamp colour |
|-------------|-----------------------------|--------------------|---|----------------|--------------|
| J08070A0055 | LC Duplex plug EasyGrip | E9/125 | for cable Ø 1.8 - 2.2 mm and 2.6 - 3.2 mm | blue | black |
| J08070A0056 | 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

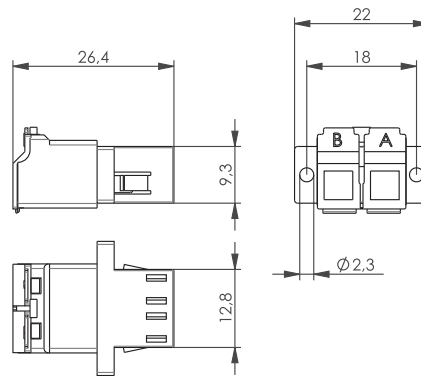
LC Adaptors



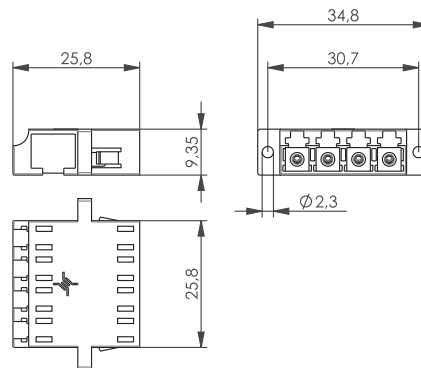
| Order no. | Description | Installation | Mount. dim. | Housing Colour |
|-------------|--|------------------|-------------|----------------|
| J08071A0000 | LC Duplex adaptor, Multimode and Singlemode, ceramic sleeve, plastic housing | Snap-in mounting | Z99 | blue |
| J08071A0004 | LC/APC Duplex adaptor, 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 |



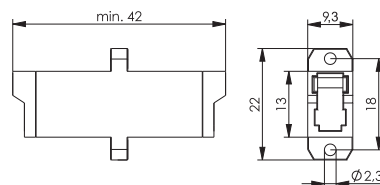
| Order no. | Description | Installation | Mount. dim. | Housing Colour |
|-------------|---|---------------------------|-------------|----------------|
| J08071A0042 | LC/APC Duplex adaptor, singlemode, ceramic sleeve, plastic housing with dust and laser protection cover | Snap-in or screw mounting | 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 |

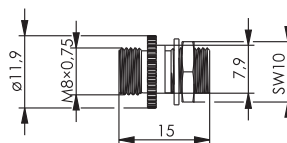
E 2000 Adaptors

15.4



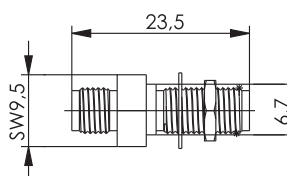
| Order no. | Description | Installation | Mount. dim. | Housing Colour |
|-------------|---|----------------|-------------|----------------|
| J08051A0012 | E2000/APC adaptor, Singlemode, ceramic sleeve, plastic housing, incl. screws M2 | screw mounting | Z66 | green |

15.5 FC Adaptors



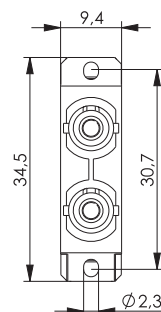
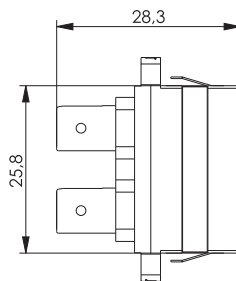
| Order no. | Description | Installation | Mount. dim. |
|-------------|--|----------------------|-------------|
| J08021A0002 | FC adaptor, Singlemode and Multimode, cermic sleeve, metal housing | single hole mounting | Z73 |

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 ¹ ; for 6-10: ±1 dB ¹ ; for 11-20 dB: ±1.5 dB ¹ ; for 21-30 dB: ±2 dB ¹ |
| Durability (mating cycles) | ≥ 500 |
| Return loss: Singlemode APC | ≥ 65 dB ² |
| Return loss: Singlemode PC | ≥ 43 dB ² |
| 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 |

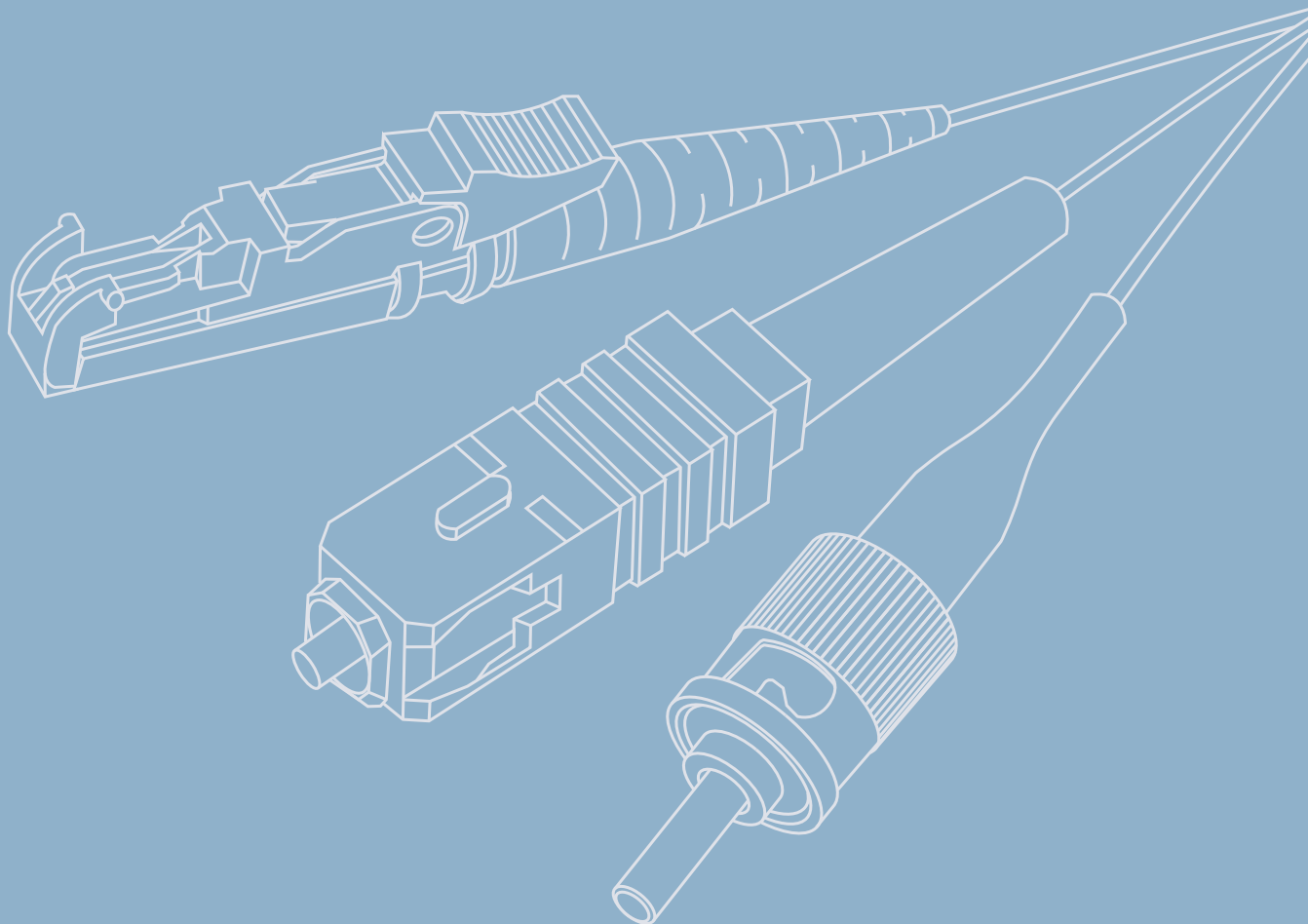
Minimum order quantity 10 pcs. (different types possible)



| 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

| | | |
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Telegärtner's FO pigtails 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 |
|--|---|------------------|------------------|------------------|------------------|
| Mechanical Characteristics | | | | | |
| 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 |
| Climatic Characteristics | | | | | |
| 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 |
| Technical Characteristics | | | | | |
| Application | Pigtail | Pigtail | Pigtail | Pigtail | Pigtail |
| Optical Characteristics | | | | | |
| Insertion loss | Singlemode: max. 0.4 dB ¹ ; Multimode: max. 0.3 dB ¹ | | | | |
| Return loss | Singlemode: min. 40 dB ² (APC: min. 60 dB); Multimode: min. 30 dB ² | | | | |
| 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

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

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 |

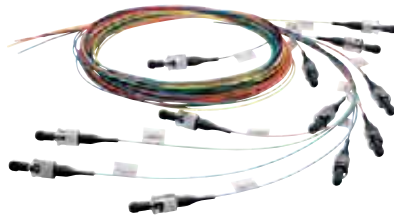
Other lengths and types : www.telegaertner.com/ticnet

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



| 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.



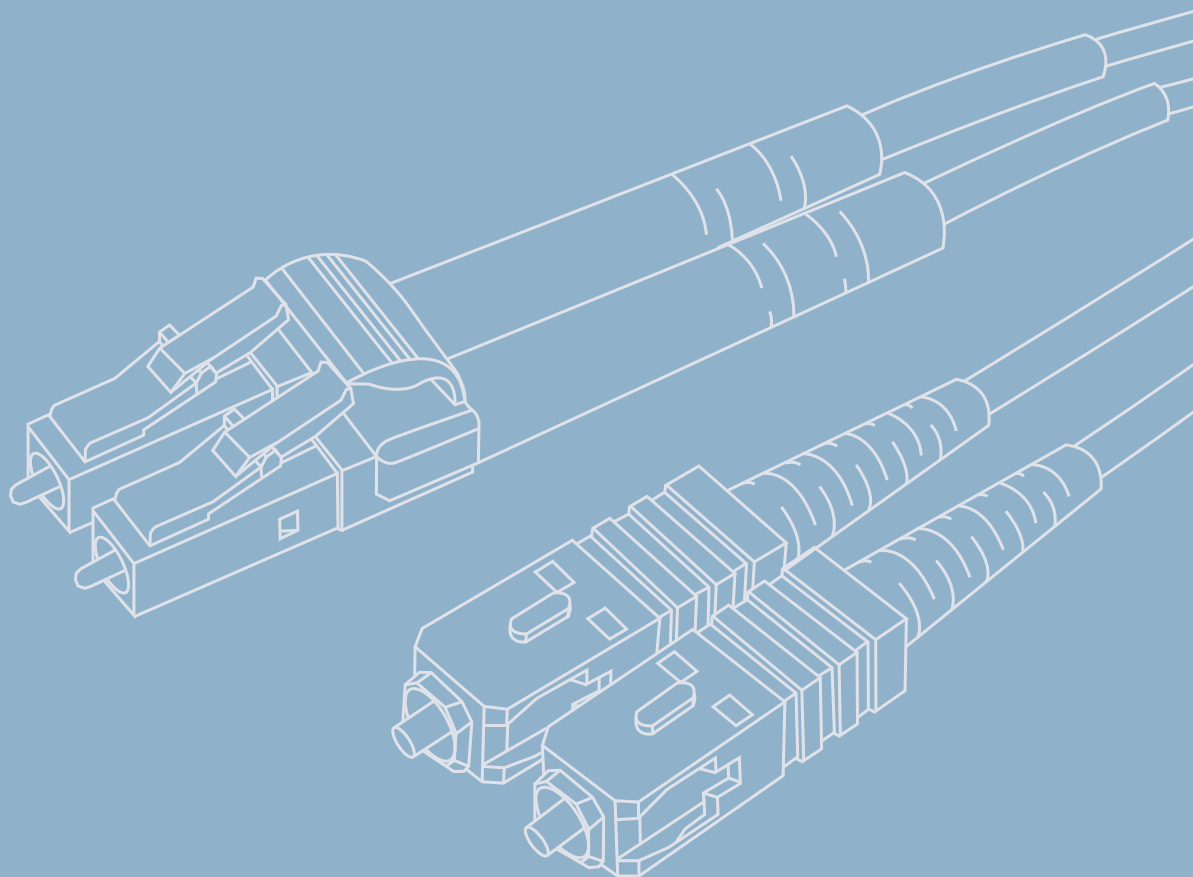
Add configuration to shopping basket:

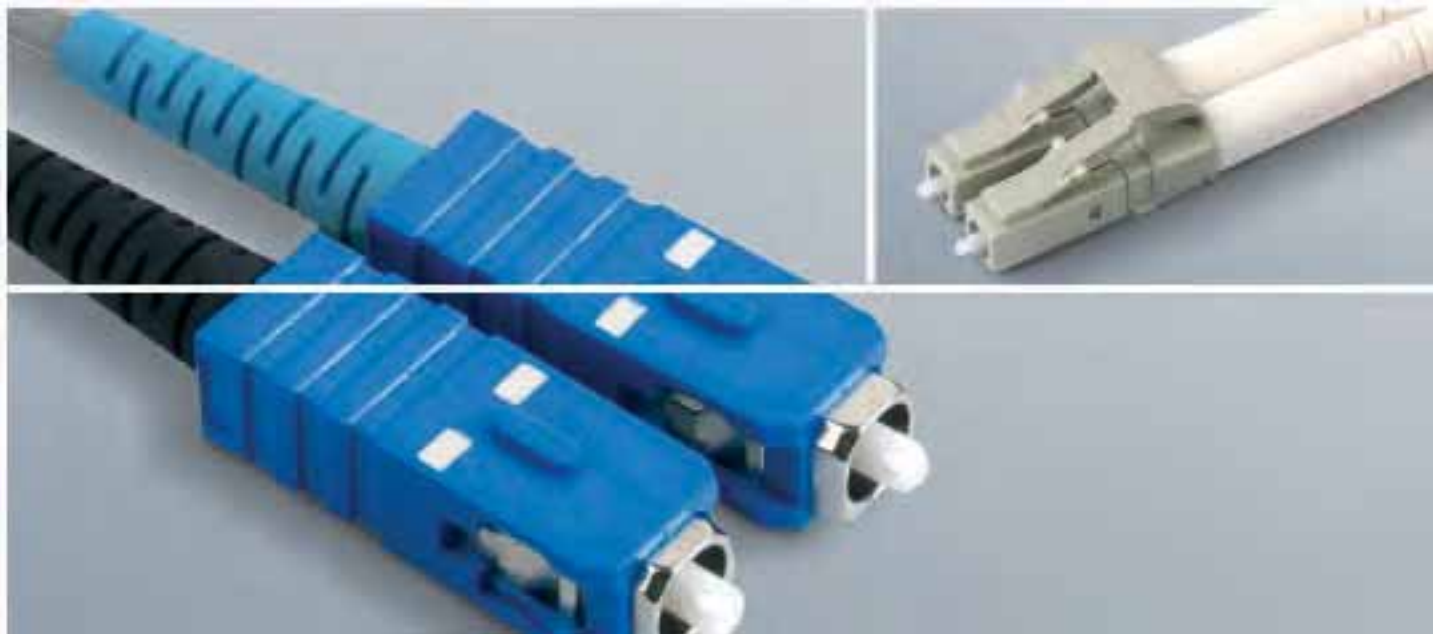
It is possible to change quantity, copy with different cable length and show parts list of your configuration. Also you can send an order inquiry to Telegärtner.



www.telegaertner.com/ticnet

FO Patch Cords





17

FO Patch Cords

| | | |
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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

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 |
|---|---|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Mechanical Characteristics | | | | | |
| 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 |
| Climatic Characteristics | | | | | |
| 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 |
| Technical Characteristics | | | | | |
| Application | Patch cords | Patch cords | Patch cords | Patch cords | Patch cords |
| Optical Characteristics | | | | | |
| Insertion loss | Singlemode: max. 0.4 dB ¹ ; Multimode: max. 0.3 dB ¹ | | | | |
| Return loss | Singlemode: min. 40 dB ² (APC: min. 60 dB ²); Multimode: min. 30 dB ² | | | | |
| 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

| 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

| 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

| 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

| 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

| 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

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

| 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

| 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

| 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

| 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

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

| 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

| 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 |

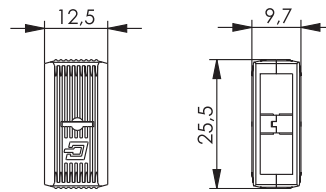
Other lengths and types : www.telegaertner.com/ticnet

| 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

| 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



| 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

| 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

| 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

| 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

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

17.1.5 Connector Type: E2000

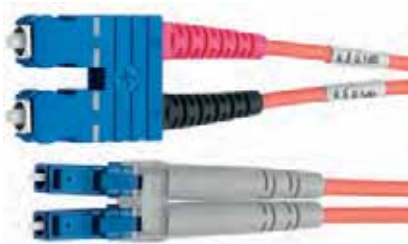


| Order no. | Fiber type | Connector type | Length | Housing Colour | Cable Colour |
|-------------|------------|----------------|--------|----------------|--------------|
| L00850A0001 | E9/125 OS2 | E2000/APC | 1.0 m | green | yellow |
| L00851A0008 | E9/125 OS2 | E2000/APC | 2.0 m | green | yellow |
| 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

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

| 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

| 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

| 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

| 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

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

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

| 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

| 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

| 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

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

| 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

| 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

| 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 |

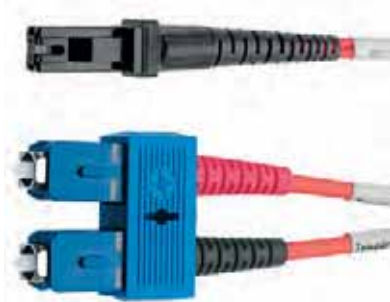
Other lengths and types : www.telegaertner.com/ticnet

| 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

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

| 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

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

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.



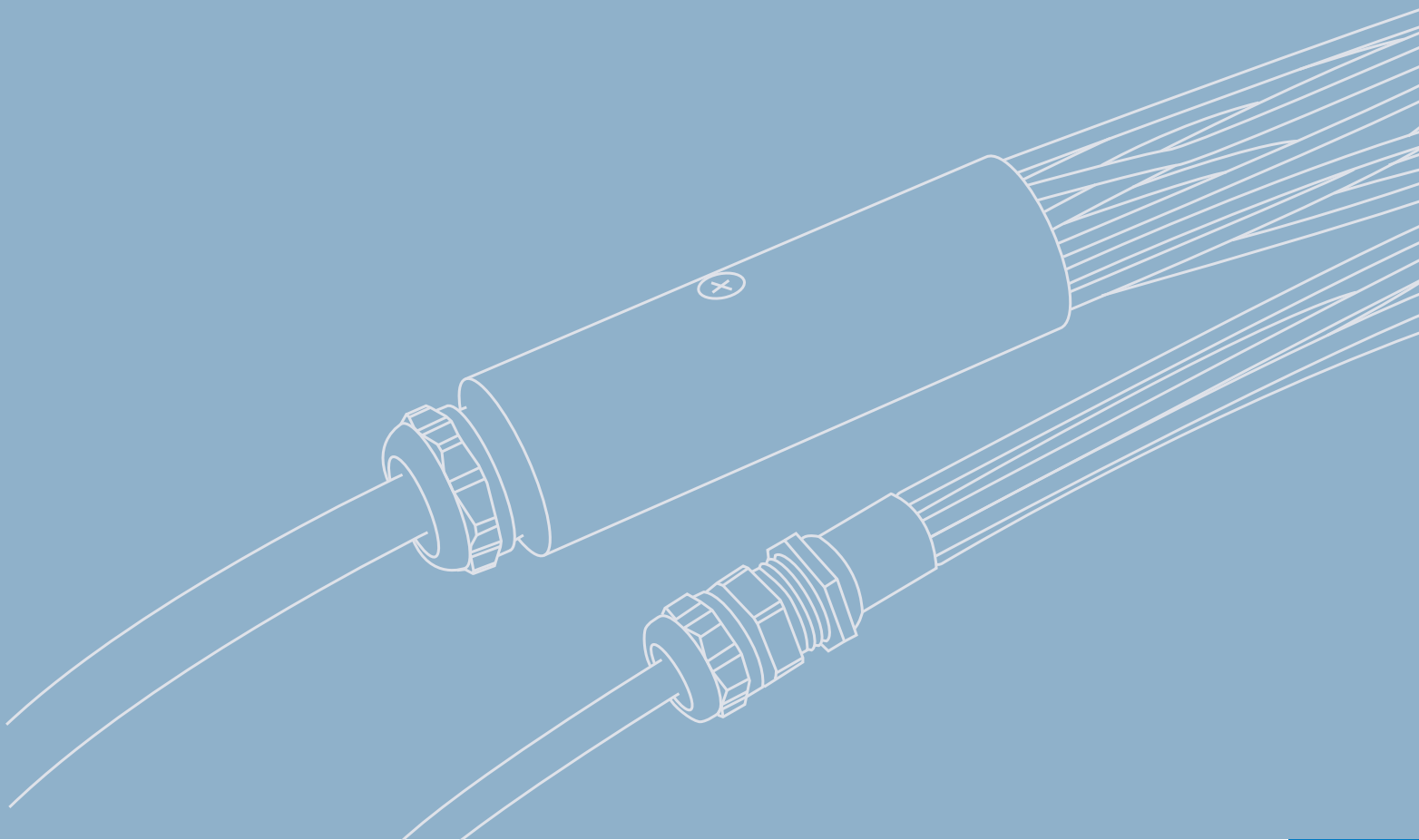
Add configuration to shopping basket:

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

FO Ready-to-install Fiber Optic Links





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FO Ready-to-install Fiber Optic Links

| | | |
|------|-------------------------------|-----|
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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 |
|--|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Standards | | | | | |
| Standard | ITU G.652 D | IEC60793-2-10 | IEC60793-2-10 | IEC60793-2-10 | IEC60793-2-10 |
| Optical Characteristics | | | | | |
| 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 |
|---|-----------------------------------|------------------------|------------------------|------------------------|------------------------|
| Mechanical Characteristics | | | | | |
| 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 |
| Climatic Characteristics | | | | | |
| 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 |
| Technical Characteristics | | | | | |
| 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 |
|--|---------------------------------------|-------------------------|-------------------------|
| Mechanical Characteristics | | | |
| 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 |
| Climatic Characteristics | | | |
| 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 |
| Technical Characteristics | | | |
| 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 |
|--|-------------------------|-------------------------|-------------------------|
| Mechanical Characteristics | | | |
| 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 |
| Climatic Characteristics | | | |
| 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 |
| Technical Characteristics | | | |
| 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 |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Mechanical Characteristics | | | | | |
| 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 |
| Climatic Characteristics | | | | | |
| 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 |
| Technical Characteristics | | | | | |
| 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 |
|--|----------------------------|-------------------|-------------------|-------------------|
| Mechanical Characteristics | | | | |
| 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 |
| Climatic Characteristics | | | | |
| 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 |
| Technical Characteristics | | | | |
| Application | Patch cords | Patch cords | Patch cords | Patch cords |

FO Ready-to-install Fiber Optic Links

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| Order no. | Fiber type | Number of Fibers | Cable diameter | Cable Colour | Weight |
|-------------|------------|------------------|----------------|--------------|--------|
| L08000A0005 | E9/125 OS2 | 1 | Ø 2.8 mm | yellow | 7.2 |

| Order no. | Fiber type | Number of Fibers | Cable diameter | Cable Colour | Weight |
|-------------|-------------|------------------|----------------|--------------|--------|
| L08001A0002 | G50/125 OM2 | 1 | Ø 2.8 mm | orange | 7.2 |

| Order no. | Fiber type | Number of Fibers | Cable diameter | Cable Colour | Weight |
|-------------|-------------|------------------|----------------|--------------|--------|
| L08001A0035 | G50/125 OM3 | 1 | Ø 2.8 mm | aqua | 7.2 |

| Order no. | Fiber type | Number of Fibers | Cable diameter | Cable Colour | Weight |
|-------------|---------------|------------------|----------------|--------------|--------|
| 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 |
|---|------------------|------------------|------------------|------------------|------------------|
| Mechanical Characteristics | | | | | |
| 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 |
| Climatic Characteristics | | | | | |
| 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 |
| Technical Characteristics | | | | | |
| 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 |

| Order no. | Fiber type | Number of Fibers | Secondary coating | Cable Colour | Weight |
|-------------|-------------|------------------|-------------------|--------------|--------|
| 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 |
|--|-----------------|-------------|-------------|-------------|-------------|
| Mechanical Characteristics | | | | | |
| 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 |
| Climatic Characteristics | | | | | |
| 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 |
| Technical Characteristics | | | | | |
| Application | Pigtail | Pigtail | Pigtail | Pigtail | Pigtail |

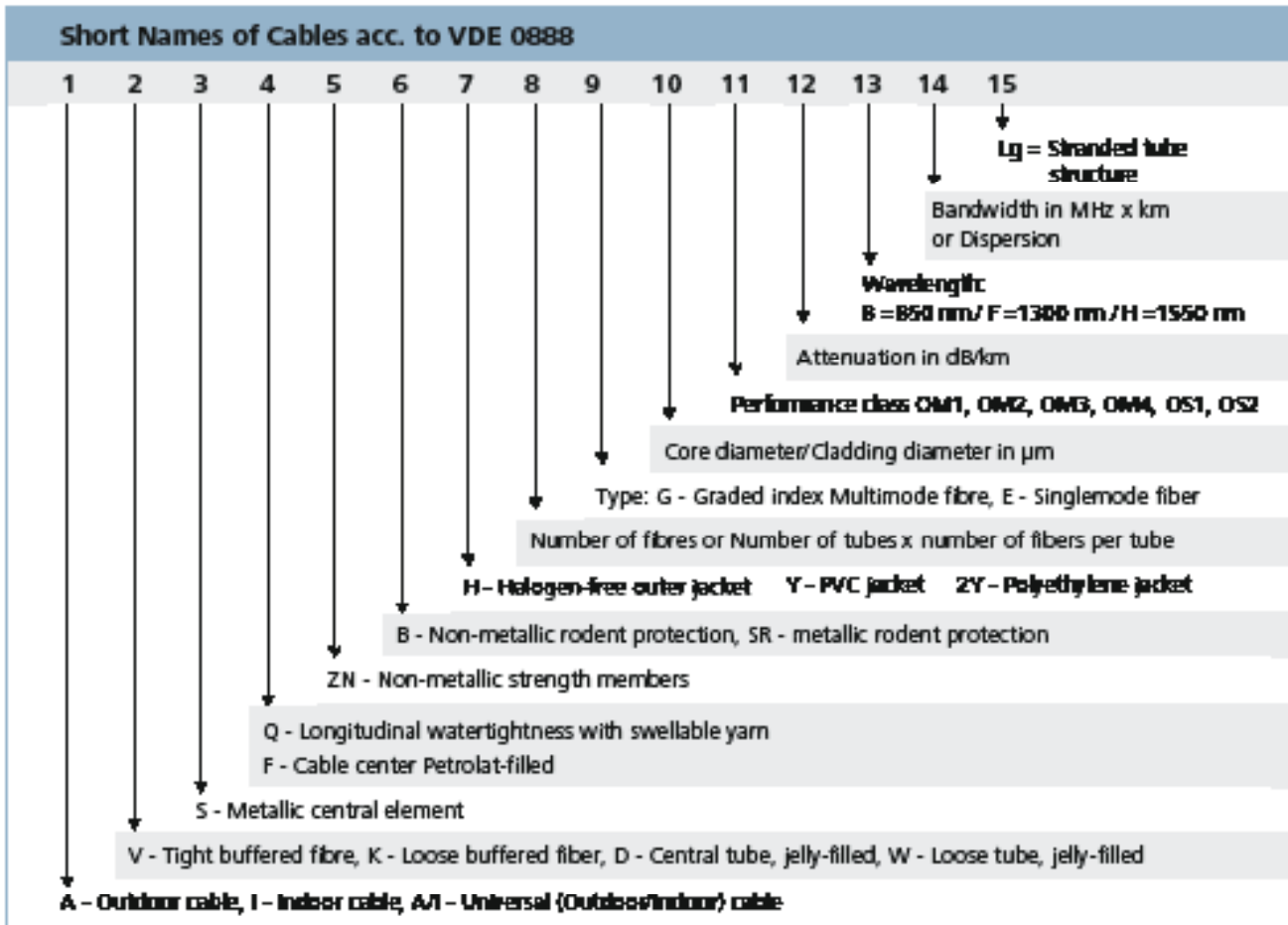


| Order no. | Fiber type | Diameter | Colour | Weight kg/km |
|-------------|---------------|----------|--------|--------------|
| L08000A0001 | E9/125 OS2 | 0.9 mm | yellow | 0.67 |
| L08001A0001 | G50/125 OM2 | 0.9 mm | green | 0.67 |
| L08001A0028 | G50/125 OM3 | 0.9 mm | aqua | 0.67 |
| L08001A0033 | 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)

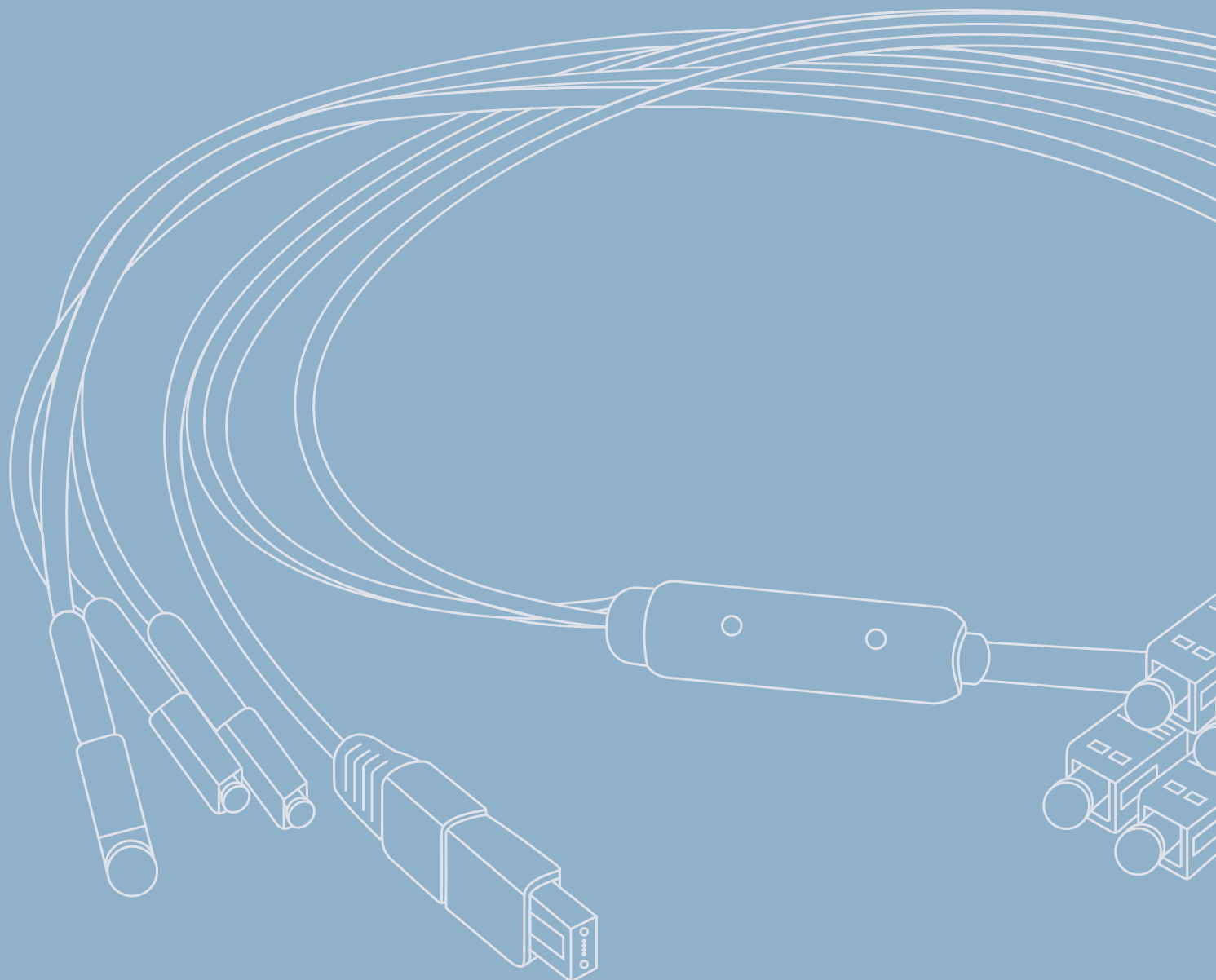
| | | | | | | | | | | | | | | |
|-------------|----------|----------|-----------|----------|----------|-----------|----------|---------------|------------|------------|----------|------------|----------|------------|
| <u>AI -</u> | <u>D</u> | <u>Q</u> | <u>ZN</u> | <u>B</u> | <u>H</u> | <u>12</u> | <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 MPO/MTP® Cabling System





19

FO MPO/MTP® Cabling System

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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

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 |
|--|---|-------------------------|-------------------------|
| Standards | | | |
| Standard | ITU G.652 D | IEC60793-2-10 | IEC60793-2-10 |
| Optical Characteristics | | | |
| 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. |
| Mechanical Characteristics | | | |
| 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) | | |
| Climatic Characteristics | | | |
| Operating temperature in °C | -5° to 55° C | | |
| Optical Characteristics | | | |
| Polarity | Type A (Type B, C on request) | | |
| Life | ≥500 | | |
| Insertion loss with fiber 9/125 | <0.7 (typ. 0.25) dB ¹ | | |
| Insertion loss with fiber 50/125 | <0.5 (typ. 0.2) dB ¹ | | |
| Return loss: Singlemode APC | >60 dB ² | | |
| Return Loss: Multimode PC | >30 dB ² | | |

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

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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 |
|--|---|-------------------------|-------------------------|
| Standards | | | |
| Standard | ITU G.652 D | IEC60793-2-10 | IEC60793-2-10 |
| Optical Characteristics | | | |
| 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. |
| Mechanical Characteristics | | | |
| 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) ¹ dB; LC/SC: <0.4 dB ¹ |
| Insertion loss with fiber 50/125 | MPO PC: <0.5 (typ. 0.2) ¹ dB; LC/SC: <0.3 dB ¹ |
| Return loss: Singlemode APC | MPO: >60 dB ² ; LC/SC: >60 dB ² |
| Return loss: Singlemode PC | LC/SC: >40 dB ² |
| Return Loss: Multimode PC | MPO: >30 dB ² ; LC/SC: >30 dB ² |

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

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| 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 |

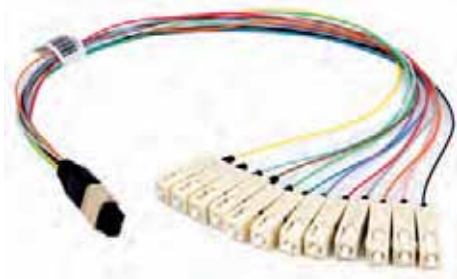
Other lengths on request

19.3 MPO/MTP® Harness 0.9 mm

| | Fiber Specification OS2 | Fiber Specification OM3 | Fiber Specification OM4 |
|--|---|-------------------------|-------------------------|
| Standards | | | |
| Standard | ITU G.652 D | IEC60793-2-10 | IEC60793-2-10 |
| Optical Characteristics | | | |
| 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. |
| Mechanical Characteristics | | | |
| 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) | | |
| 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) dB ¹ ; LC/SC: <0.4 dB ¹ | | |
| Insertion loss with fiber 50/125 | MPO PC: <0.5 (typ. 0.2) dB ¹ ; LC/SC: <0.3 dB ¹ | | |
| Return loss: Singlemode APC | MPO: >60 dB ² ; LC/SC: >60 dB ² | | |
| Return loss: Singlemode PC | LC/SC: >40 dB ² | | |
| Return Loss: Multimode PC | MPO: >30 dB ² ; LC/SC: >30 dB ² | | |

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

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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 |
|--|---|-------------------------|-------------------------|
| Standards | | | |
| Standard | ITU G.652 D | IEC60793-2-10 | IEC60793-2-10 |
| Optical Characteristics | | | |
| 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. |
| Mechanical Characteristics | | | |
| 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) | | |
| 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) dB ¹ ; LC/SC: <0.4 dB ¹ | | |
| Insertion loss with fiber 50/125 | MPO PC: <0.5 (typ. 0.2) dB ¹ ; LC/SC: <0.3 dB ¹ | | |
| Return loss: Singlemode APC | MPO: >60 dB ² ; LC/SC: >60 dB ² | | |
| Return loss: Singlemode PC | LC/SC: >40 dB ² | | |
| Return Loss: Multimode PC | MPO: >30 dB ² ; LC/SC: >30 dB ² | | |

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 |

FO MPO/MTP® Cabling System

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 |
|--|---|--------------------------|--------------------------|
| Standards | | | |
| Standard | ITU G.652 D | IEC60793-2-10 | IEC60793-2-10 |
| Optical Characteristics | | | |
| 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. |
| Mechanical Characteristics | | | |
| 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) | | |
| Climatic Characteristics | | | |
| Operating temperature in °C | -40° to 75° C | | |
| Optical Characteristics | | | |
| Polarity | Type A (Type B, C on request) | | |
| Life | ≥500 | | |
| Insertion loss with fiber 9/125 | MPO APC: <0.7 (typ. 0.25) dB ¹ | | |
| Insertion loss with fiber 50/125 | MPO PC: <0.5 (typ. 0.2) dB ¹ | | |
| Return loss: Singlemode APC | MPO: >60 dB ² | | |
| Return Loss: Multimode PC | MPO: >30 dB ² | | |

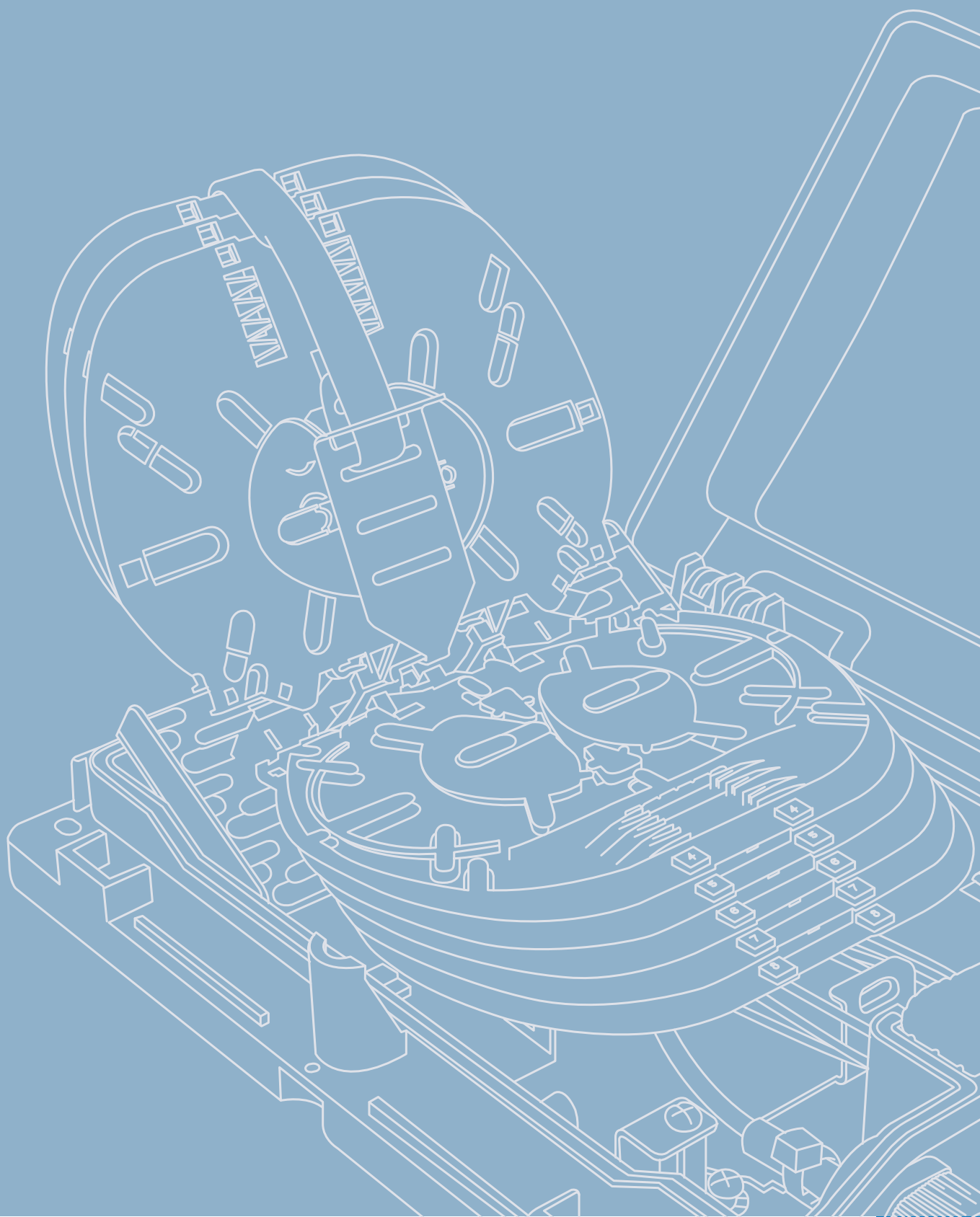
1) Measurement procedure acc. to IEC 61300-3-4

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

| | | |
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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 μm
- 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



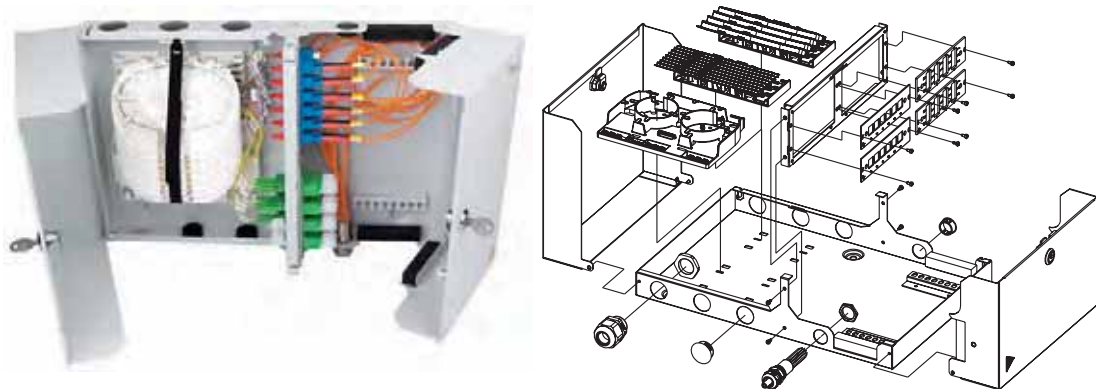
| Order no. | Description | Remarks |
|-------------|------------------------------------|---|
| H02050A0282 | ODB 54 equipped with 8 SC cassette | for max. 4 fibers for crimp/shrink splice protection each cassette |
| H02050A0283 | ODB 54 equipped with 4 SE cassette | for max. 12 fibers for crimp/shrink splice protection each cassette |

FO Splice Cassette System SAM

20

SAM - Splice Arranged Management Modular Wall Distributor

20.4

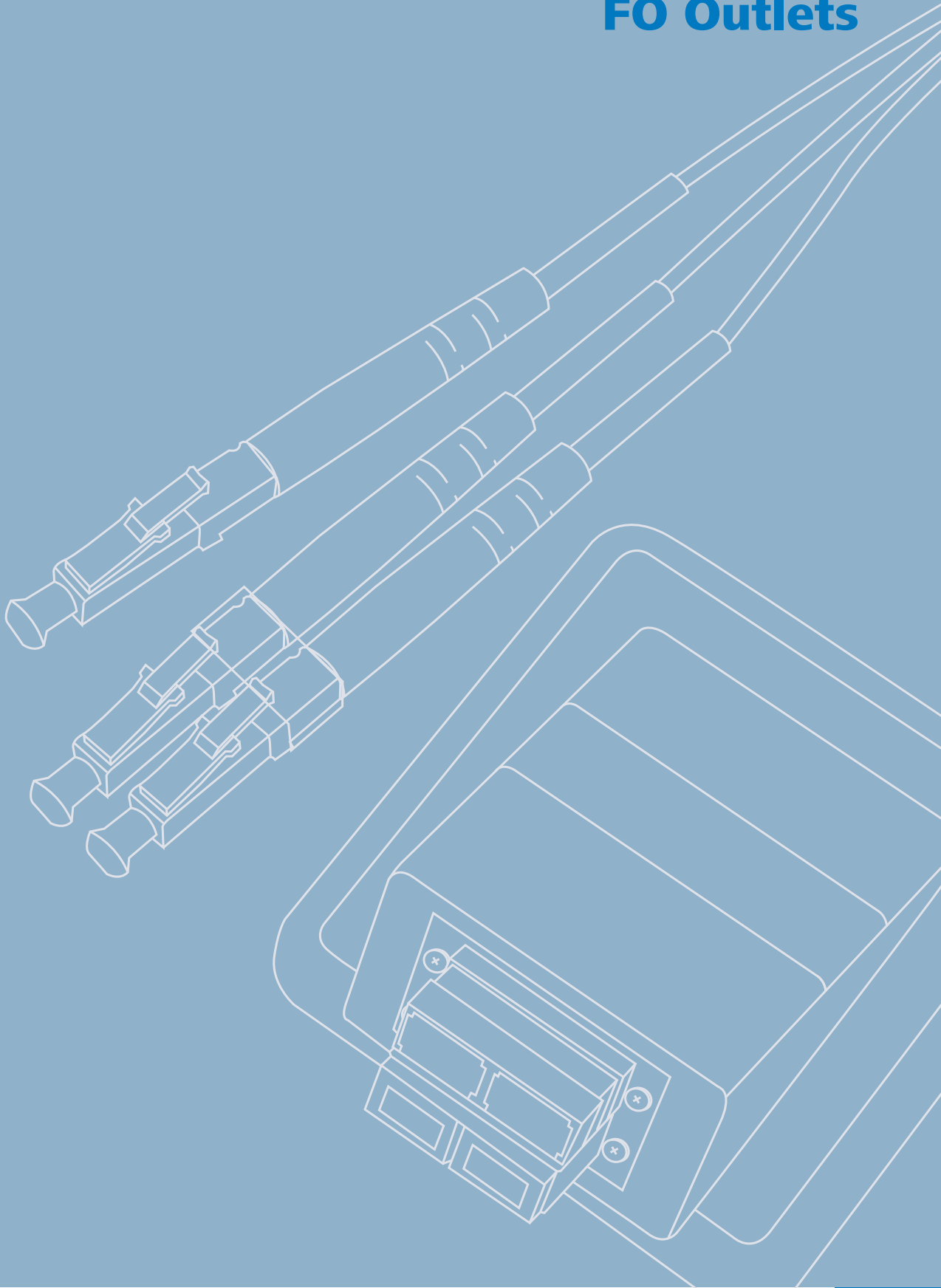


| Order no. | Description | Remarks | Colour |
|-------------|---------------------------------|---|----------|
| H02050A0302 | Modular Wall Distributor SAM-SC | Housing with 2 swivel doors, separately lockable, each three cable entries on top/bottom for M25; with 8 SC cassettes | RAL 7035 |
| H02050A0303 | 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

| | | |
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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 | 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.

21.2.1 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

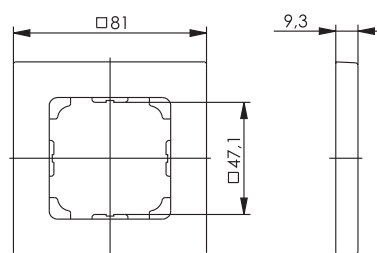
21.2.2



| 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 |

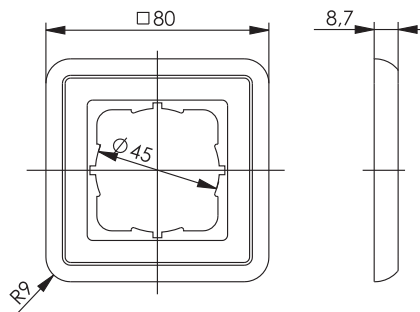
21.2

21.2

FO Outlets OAD/S

21.2.2

Outlet parts OAD/S for individual ordering



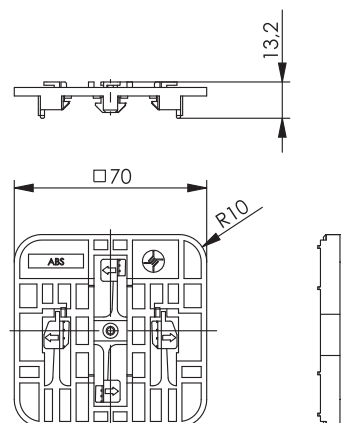
| Order no. | Short name | Type | Colour |
|-------------|-------------|---------------|--------------|
| B00004A0021 | Cover frame | single, 80x80 | alpine white |

21.2.3

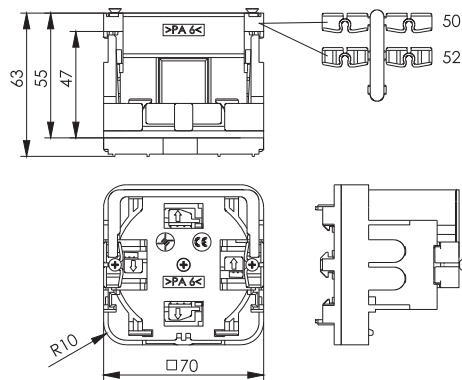
Accessories for OAD/S



| 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 | 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.

21.4.1

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 |

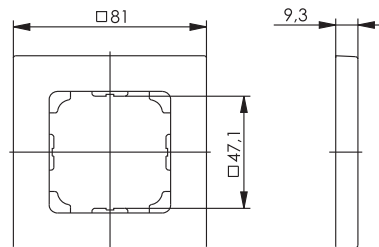


| Order no. | Description | Type | Colour |
|-------------|--------------|--------------------|--------------|
| B00044A0079 | Covering cap | with marking label | alpine white |

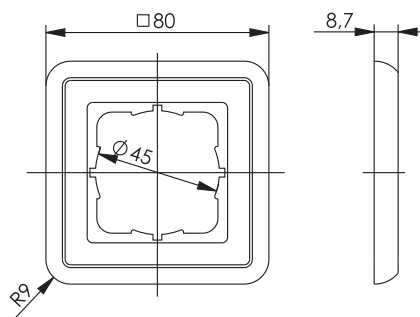
21.4

21.4 FO Outlet OAD with Splice Holder

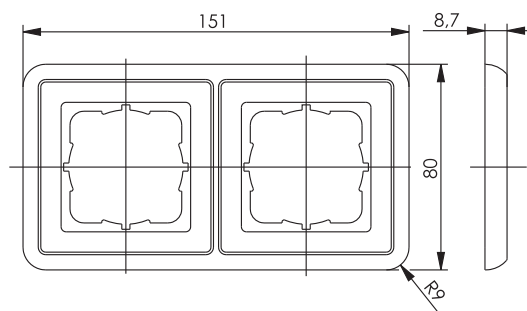
21.4.2 Outlet parts OAD for individual ordering



| 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 |



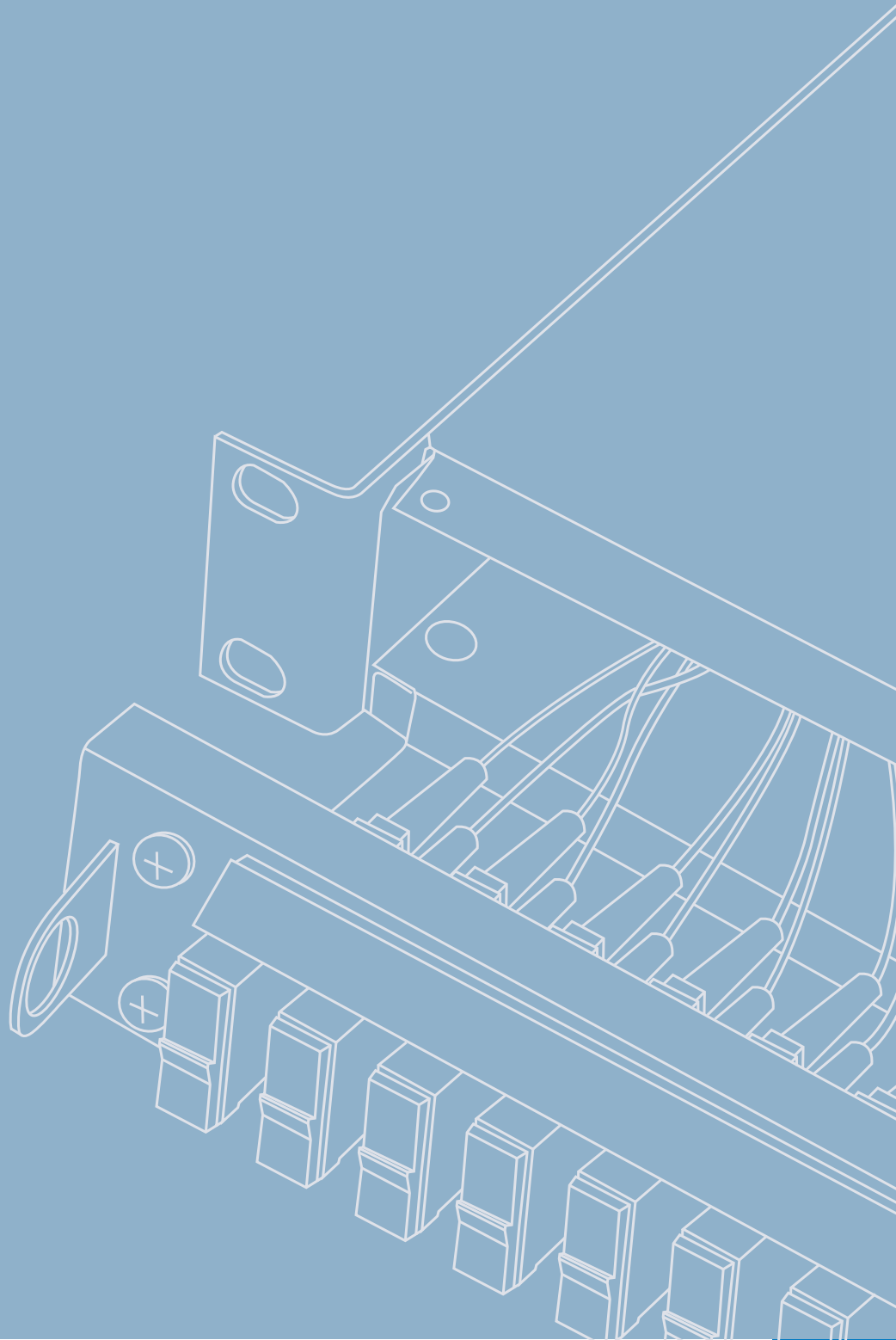
| Order no. | Short name | Type | Colour |
|-------------|-------------|----------------|--------------|
| B00005A0009 | Cover frame | double, 80x151 | alpine white |

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

| | | |
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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 | | |
|-----------------------------------|---|-------------|----------------|-------------|---|-------------|---|-------------|-------------|-------------|-------------|-------------|
| Mechanical Characteristics | | | | | | | | | | | | |
| 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 | | | | | |
| Dimensions in mm | 1 HU | 2 HU | 1 HU | 2 HU | 1 HU | 2 HU | 1 HU | 2 HU | 1 HU | 2 HU | 1 HU | 2 HU |
| 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 |

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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 |

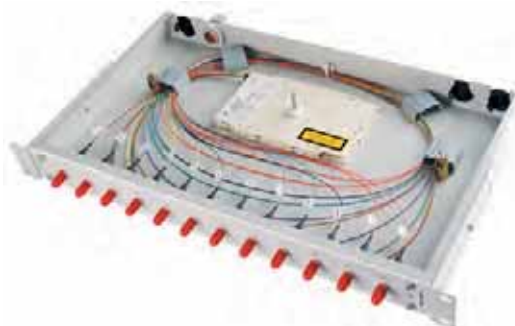
FO Patch Panels

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| 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 |

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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 |

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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 |

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| 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

19" FO Patch Panels assembled

22.1.4

PROFI V assembled

| Order no. | Housing type | Number of Adaptors | Adaptor Type | Colour | Fiber Pigtaills | 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 Pigtaills | 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 |

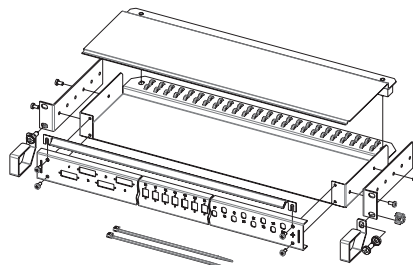
| Order no. | Housing type | Number of Adaptors | Adaptor Type | Colour | Fiber Pigtaills | Remarks |
|-------------|--------------|--------------------|--|--------|--------------------------------|---------------------------------|
| H02030E0555 | PROFI V 1 HU | 12 | E2000/APC, ceramic sleeve, plastic 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

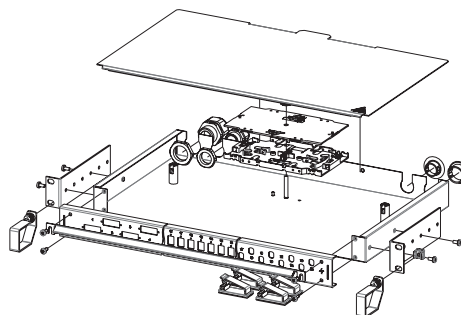
22.2.1



| 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 |

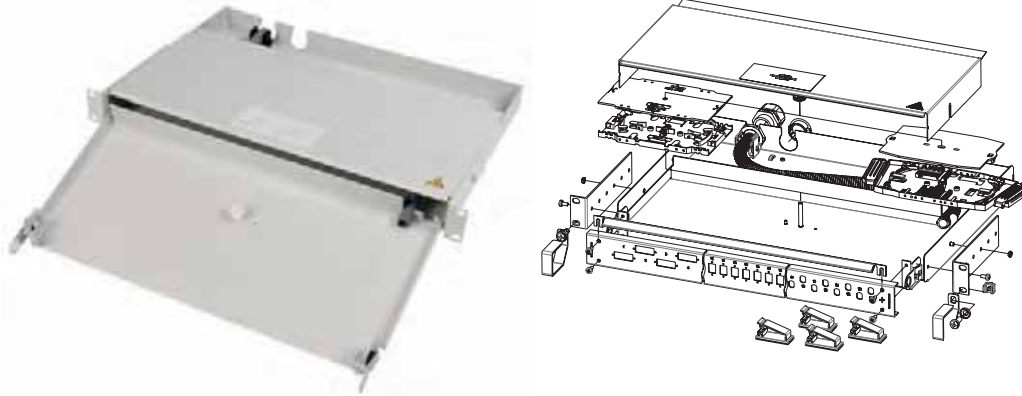
22.2

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

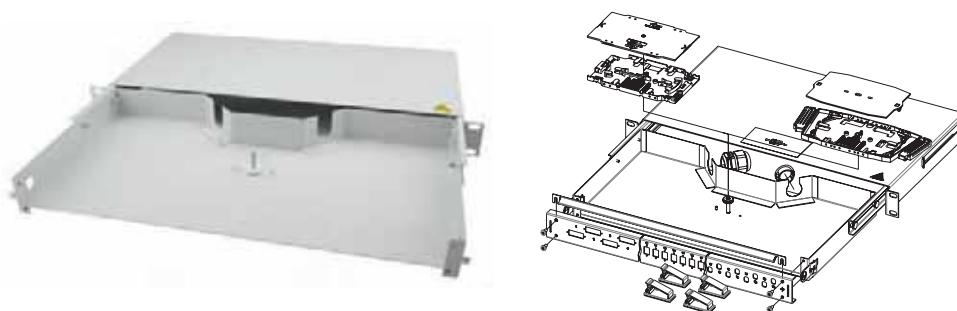
PROFI Plus for individual ordering



| 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 |

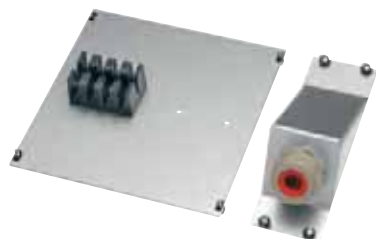
22.4.1 19" FO Module Carrier 3 HU / 84 PU



| 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

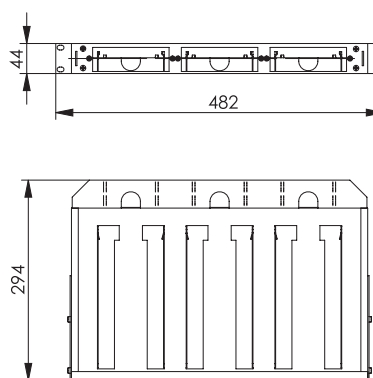
22.4.2



| 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



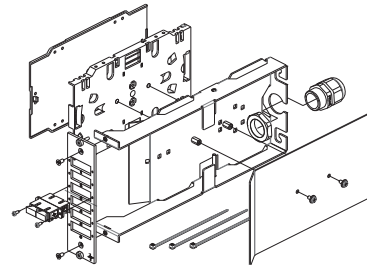
| Order no. | Description | HU | PU | Number of Adaptors | Adaptor Type | Colour | Fiber Pigtails | Remarks |
|-------------|--|----|----|--------------------|--|--------|---------------------------|-----------|
| H02053D0165 | Housing incl. adaptors, splice cassette type Telekom, pigtails | 3 | 7 | 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

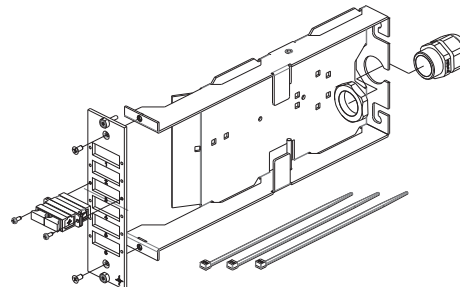
22.4

22.4 Modular Fiber Optic Distribution System

22.4.5 Fiber Optic Modules 3 HU/7 PU - Housings for individual ordering

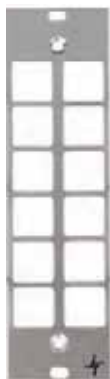


| Order no. | Description | HU | PU | Splice cassettes |
|-------------|--|----|----|------------------|
| H02053A0164 | Housing incl. 1x Splice cassette and cover without splice holder | 3 | 7 | 1 |



| 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 |

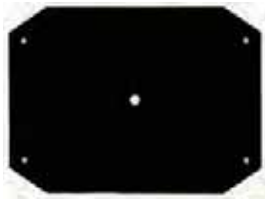


| Order no. | Description | Remarks |
|-------------|-----------------------------------|---|
| F05001A0009 | Fiber protection tube for PROFI V | for fiber protection between housing rear wall and slide-in unit, 12 mm inside dia., with adaptor for M20/M25 gland |

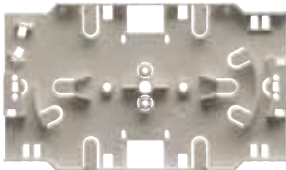
22.5.2 Splice Cassettes, Splice Holders, Splice Protectors and Cable Tube



| 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 |

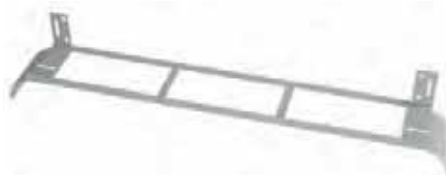
| Order no. | Description |
|-------------|--|
| B05002A0002 | Marking strip 380 x 12 mm, self-adhesive, for BASIS V / ECONOMY V / PROFI V / PROFI Plus / PROFI T |
| B05002A0008 | Marking strip 35 x 12 mm, self-adhesive, for 7 PU front plates |



| 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

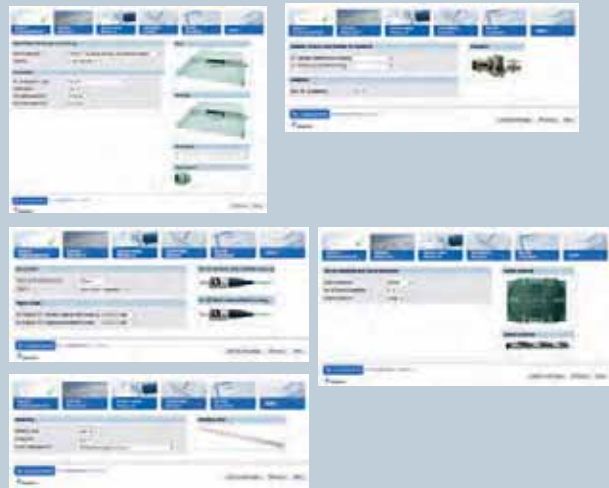


Ideal for planners and installers: simply assemble cables and fiber pigtails online: do you want to assemble cables and connectors online or a fiber optic patch panel to meet your specific needs and then send an order inquiry to your local specialist retailer straight away? Then the TICNET Configurator 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

FO Wall Boxes and Splice Boxes





23

FO Wall Boxes and Splice Boxes

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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 |
|------------------------------------|--|--------------------|--------------------|-----------------------------|
| Mechanical Characteristics | | | | |
| 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 |
|------------------------------------|--|----------------------------|-------------------------|--|
| Mechanical Characteristics | | | | |
| 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 |

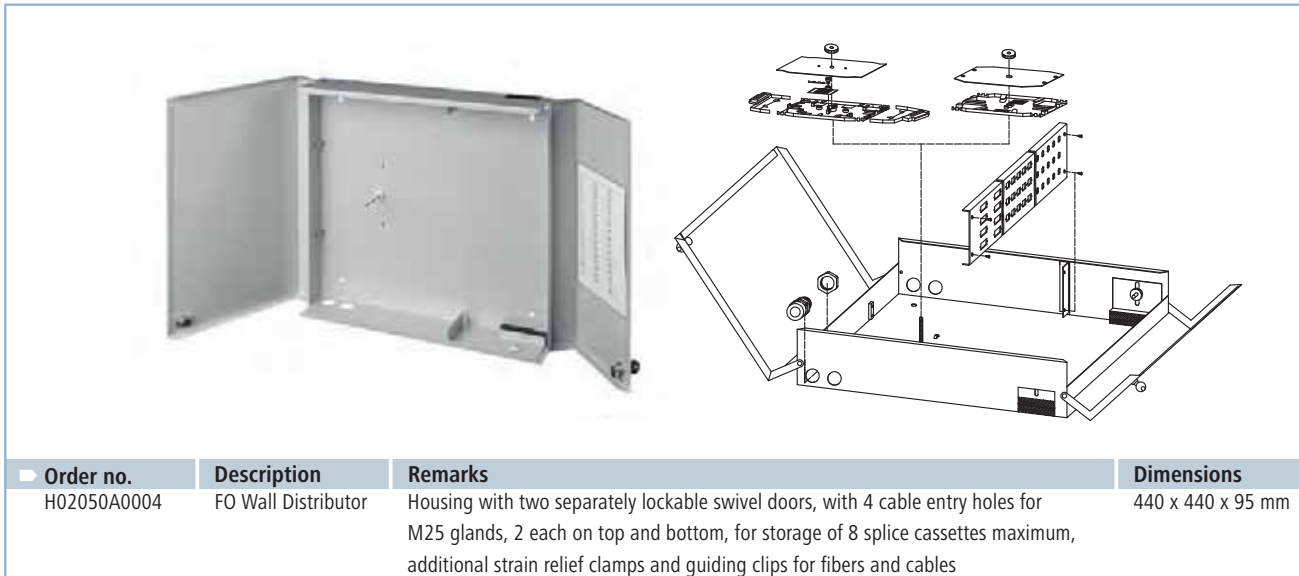
| | FO Mini Wall Distributor | FO Compact Splice Box | FO Distributor MPD24 |
|------------------------------------|--|-----------------------|---|
| Mechanical Characteristics | | | |
| Housing | sheet steel 1 mm powder-laminated, light grey RAL 7035 | | sheet steel 1 mm varnished, pure white RAL 9010 |
| 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

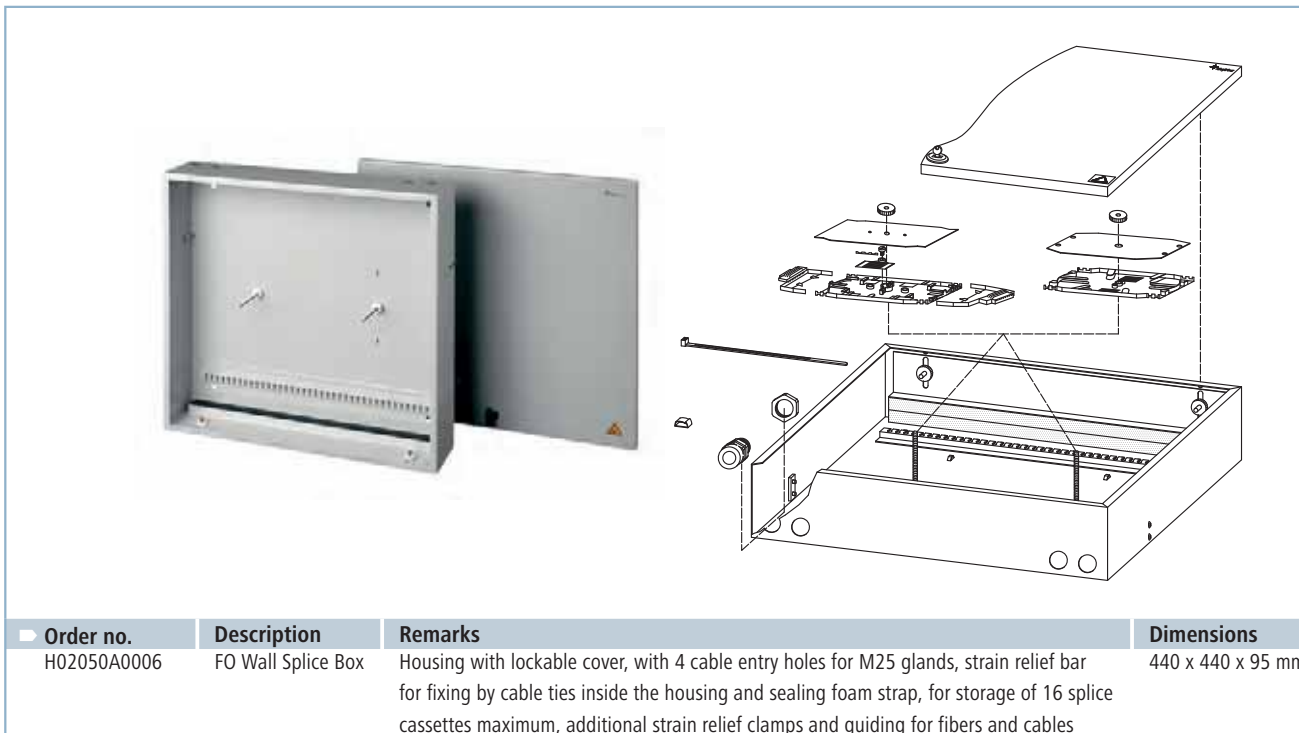


Distribution plates and accessories see chapter "Distribution Plates for Wall Distributors and FO Splice Boxes"

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 Wall Boxes and Splice Boxes

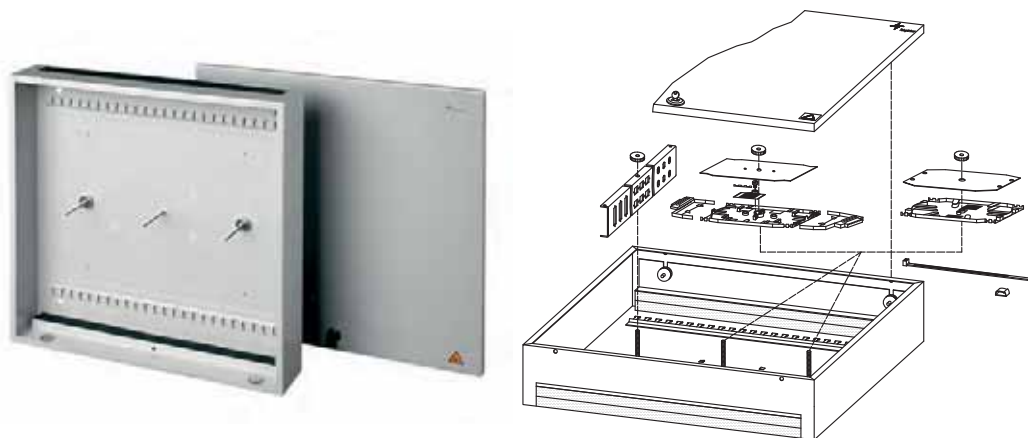
23

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 |

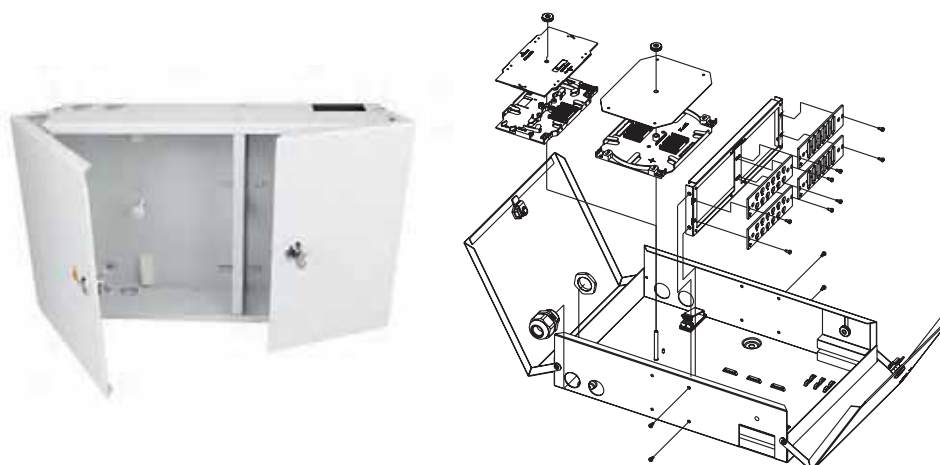
Distribution plates and accessories see chapter "Distribution Plates for Wall Distributors and FO Splice Boxes"

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

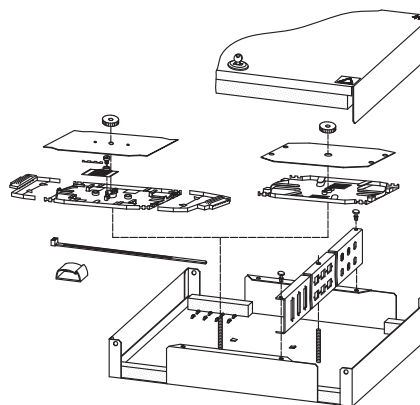
Housing

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 |

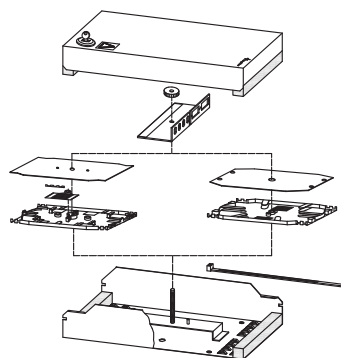
Distribution plates and accessories see chapter "Distribution Plates for Wall Distributors and FO Splice Boxes"

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"

FO Wall Boxes and Splice Boxes

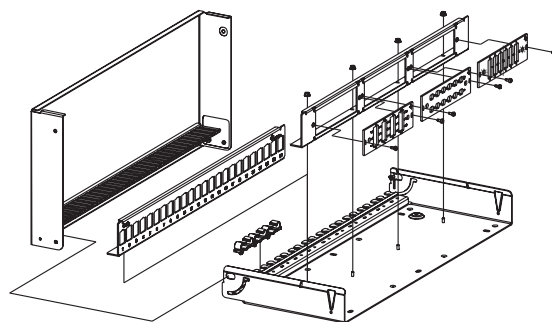
23

Distributor MPD24 FO

23.1.7

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 |

ODB 54 for splicing

23.1.8

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 |

23.1

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 |



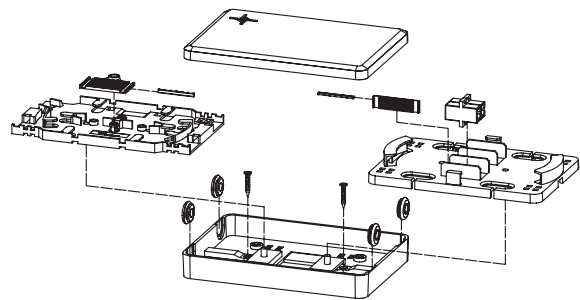
| Order no. | for Housing type | Number of panel piercings and connector type | Panel piercing | Number of rows x panel piercings |
|-------------|---------------------|--|----------------|----------------------------------|
| H02025A0322 | Splice box IP66 M-V | 24 ST | Z64 | 2x12 |
| H02025A0332 | Splice 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

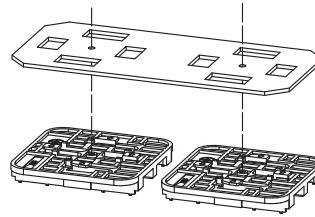
23.3.1 FO MICRO Splice Box, complete



| 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 |



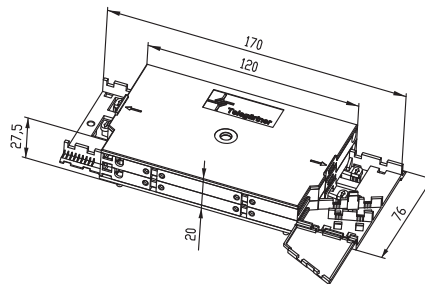
| Order no. | Description |
|-------------|--|
| B07003A0012 | Grommet for 7.5 mm max. cable diameter |

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

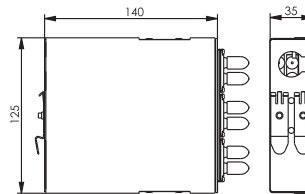
| Mechanical Characteristics | |
|--|--|
| Material: housing | sheet steel zinc plated, powder coated, light grey RAL 7035 |
| Material: front plate | sheet steel zinc plated, powder coated, light grey RAL 7035 |
| Material: top hat rail adaptor | sheet steel nickel plated |
| Cable entry | cable gland 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 ² |
| Vibration sinusoidal (9 Hz - 500 Hz) | 50 ms ² |
| 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 ₂ S / SO ₂ |

FO Wall Boxes and Splice Boxes

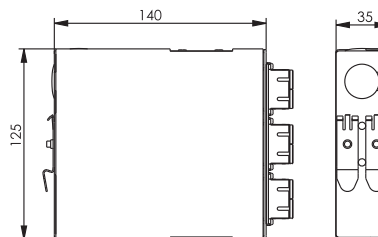
23

STX Mounting Rail Distributor assembled with adaptors

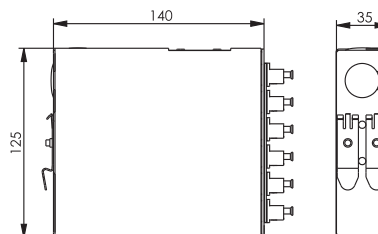
23.6.1



| 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* |

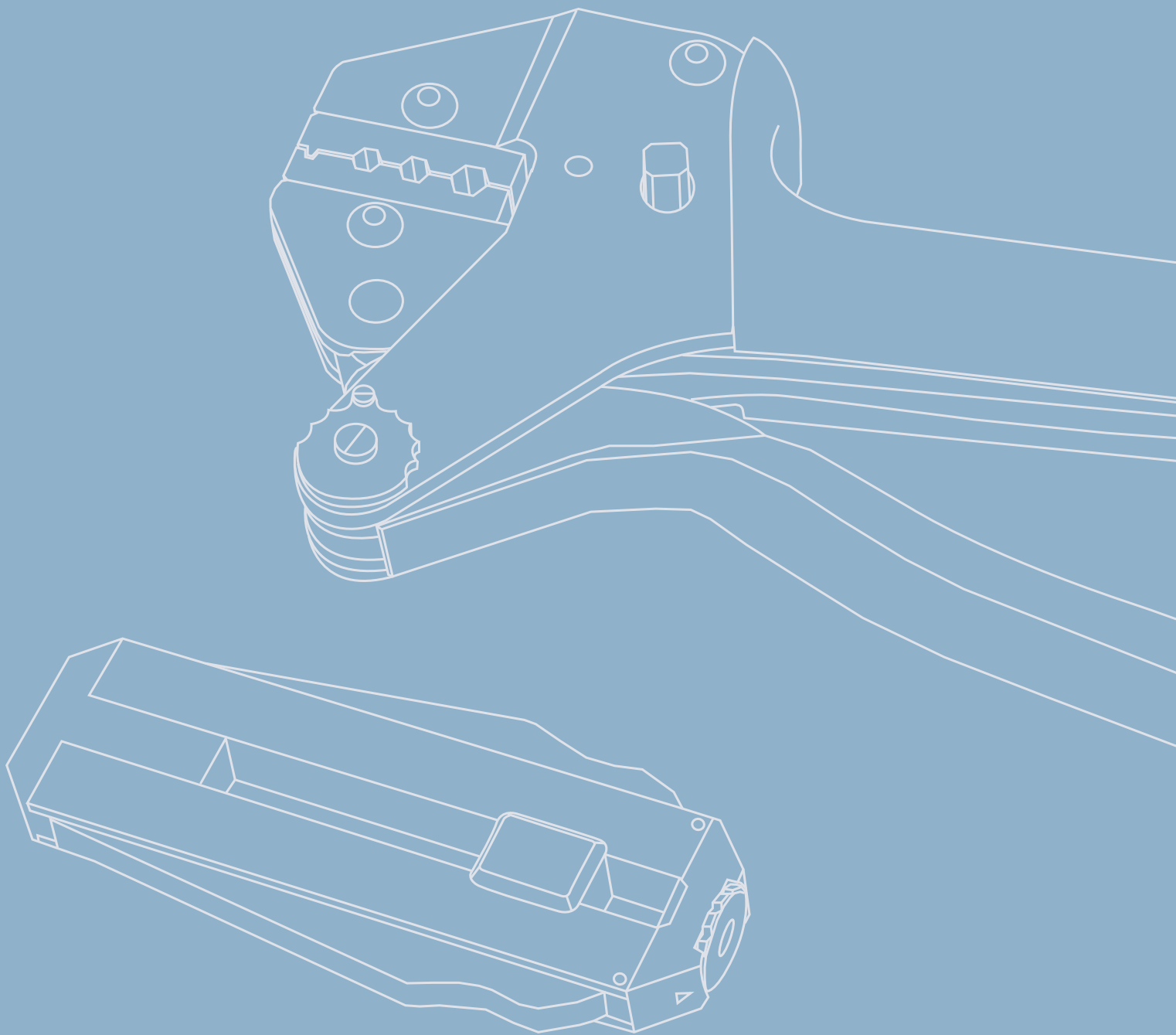
* with cable strain relief; stripped for splicing



| 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"> • crimp tool for ST and SC connectors • kevlar cutter • stripping tool for jacket, primary- and secondary coating • knife • light rod with adaptor for connector 2.5 mm ferrules • cleaning tissues • polishing pads • polishing foils • sapphire scribe • microscope 100x and 200x Conversion Eyepiece • polishing discs for connector 2.5 mm ferrules • polishing and cleaning fluid • Fast Cure Adhesive Set |
| 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 |

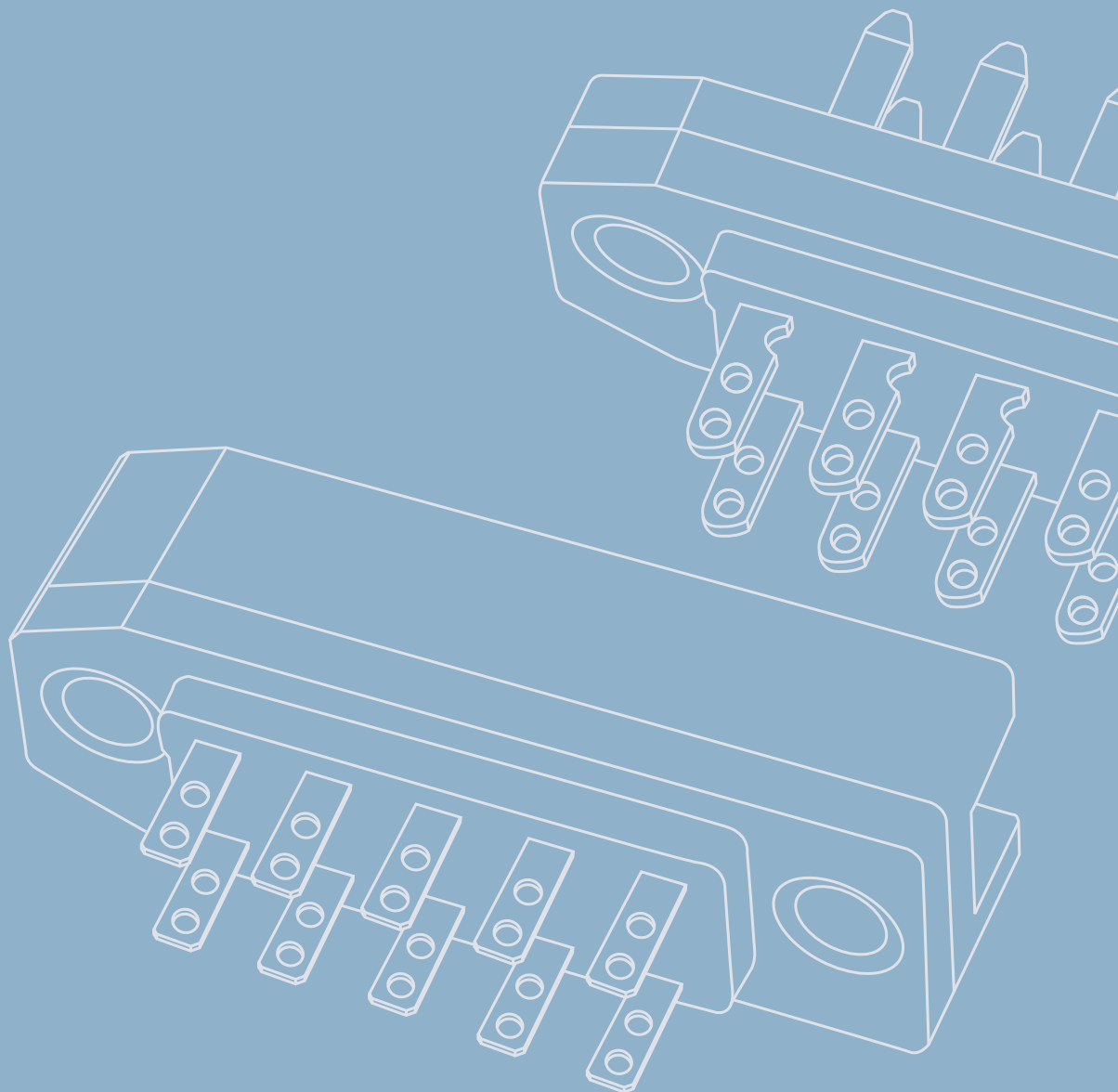
24.2 Accessories for FO Tool Set

| 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 |
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| 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

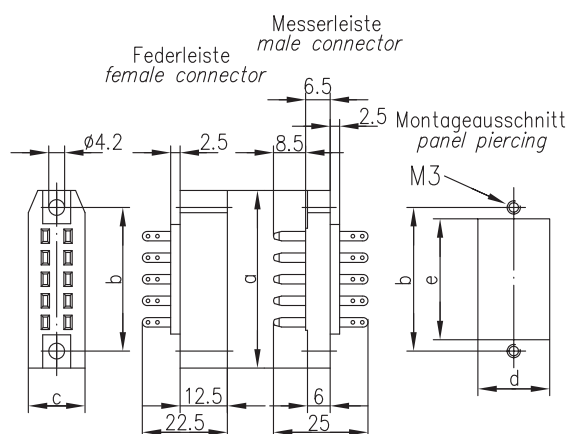
Connectors according to DIN 41 618 and DIN 41 622 are knife-/spring contact types. Its rugged design causes a reliable electrical connection. They are mainly used in plug in unit designs and as cable connectors, using metal-/plastic housings

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 |
|--|------------------------------|------------------------------|
| Mechanical Characteristics | | |
| 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 |
| Climatic Characteristics | | |
| Tested / classified in accordance with DIN IEC 60068-1 | 40/085/21 | 40/085/21 |
| Electrical Characteristics | | |
| Insulation resistance | ≥ 1000 MΩ | ≥ 1000 MΩ |
| Voltage proof | 1500 V _{eff} /50 Hz | 1500 V _{eff} /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 |

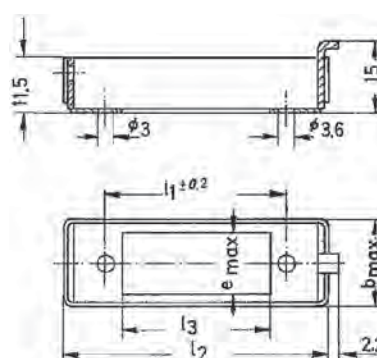
Connectors according to DIN 41 618 and DIN 41 622

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 |

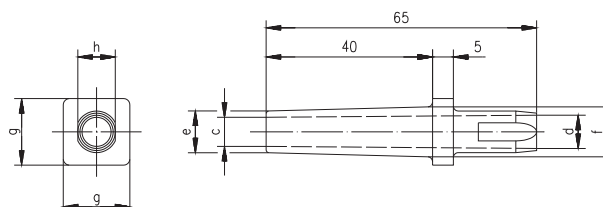


| Order no. | Short name | Remarks |
|-------------|-----------------------|--------------|
| B03014A0936 | locking through 8/10 | metal, black |
| B03014A0937 | locking through 12/16 | metal, black |
| B03014A0938 | locking through 16/20 | metal, black |
| B03015A0939 | locking through 20/26 | metal, black |
| B03015A0940 | locking through 30/39 | metal, black |

Cable Reliefs for Housings

25.5

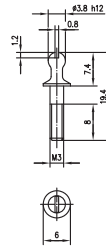
| for housings | sizes in mm | | | | | |
|---------------------------|-------------|------|----|------|----|----|
| | c | d | e | f | g | h |
| 8/10; 12/16M 16/20; 20/26 | 7 | 8 | 10 | 12 | 16 | 9 |
| 30/39 | 10.5 | 11.5 | 14 | 15.5 | 21 | 14 |



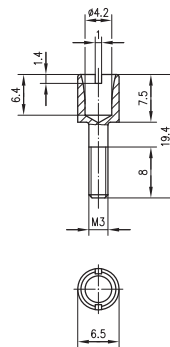
| Order no. | Short name | Remarks |
|-------------|--------------------|--------------------------|
| B00082A0943 | cable relief 30/39 | for housing 30/39, black |

25.6

Coding Parts for Connectors according to DIN 41 618 and 41 622

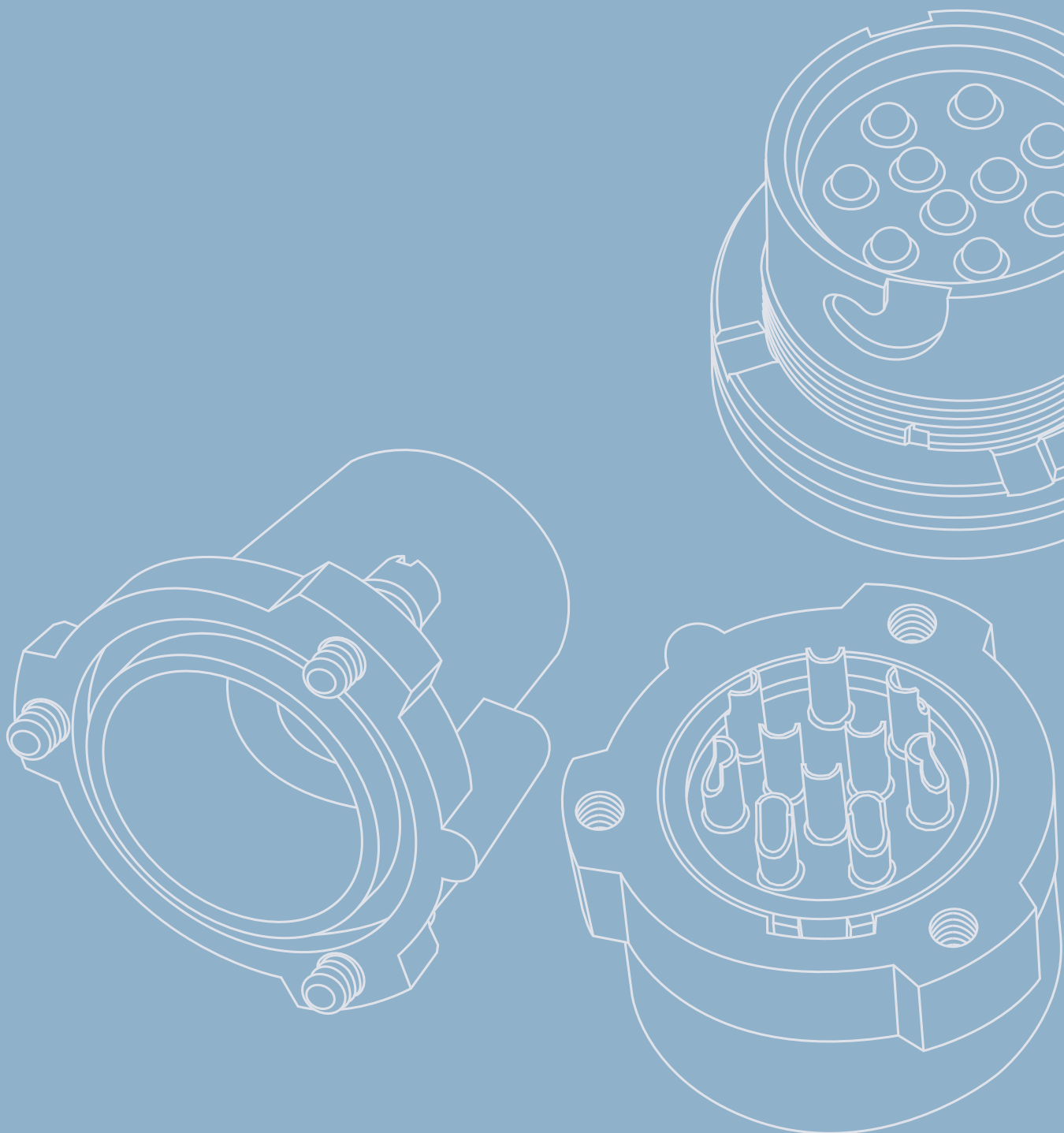


| Order no. | Remarks |
|-------------|---------|
| A16010A0923 | pin |



| 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

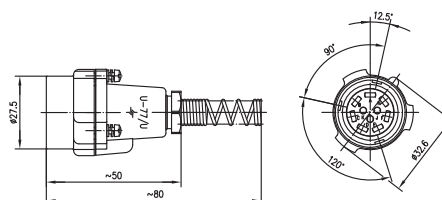
The 10-way LF connectors according to MIL-C-10544 are mainly used in communication equipments (e.g. for connecting handsets, headphones and microphones). It is a waterproof and bajonet locking system. The female connector is designed

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 ² |
| Shock (11 ms duration) | 500 m/s ² |
| 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 _{eff} /50 Hz |
| Working voltage a.c. | max. 50 V |
| Working current | max. 0.1 A |

Straight Plug

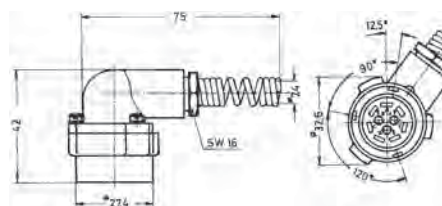
26.1



| 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 |

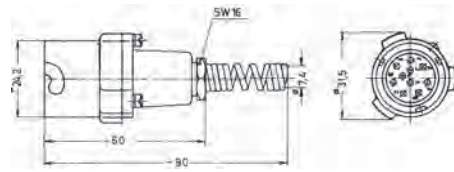
Angle Plug

26.2



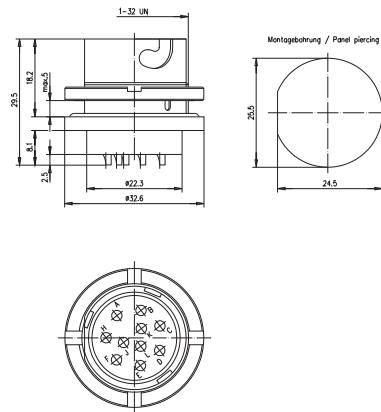
| Order no. | Nato-No. | MIL-Std. | Remarks |
|-------------|-----------------------------------|-----------|--|
| J00014A0586 | 5935-00-577-034, 5935-12-149-7783 | U-127/U | with stainless steel bayonetting and POM backpart, for cable ø 7.5 |
| J00014B0586 | | U-127/U-D | with bayonetting and backpart 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



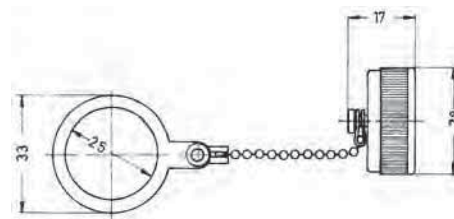
| Order no. | MIL-Std. | Nato-No. | Remarks |
|-------------|----------|------------------|--|
| J00010A0590 | U-78/U | 5935-283-2884 | with stainless steel bayonetting and POM backpart, for cable \varnothing 7.5 |
| J00010A0000 | U-78/U-M | 5935-12-318-9423 | with stainless steel bayonetting and metal backpart, for cable \varnothing 5.5 |

26.4 Jack Receptacle



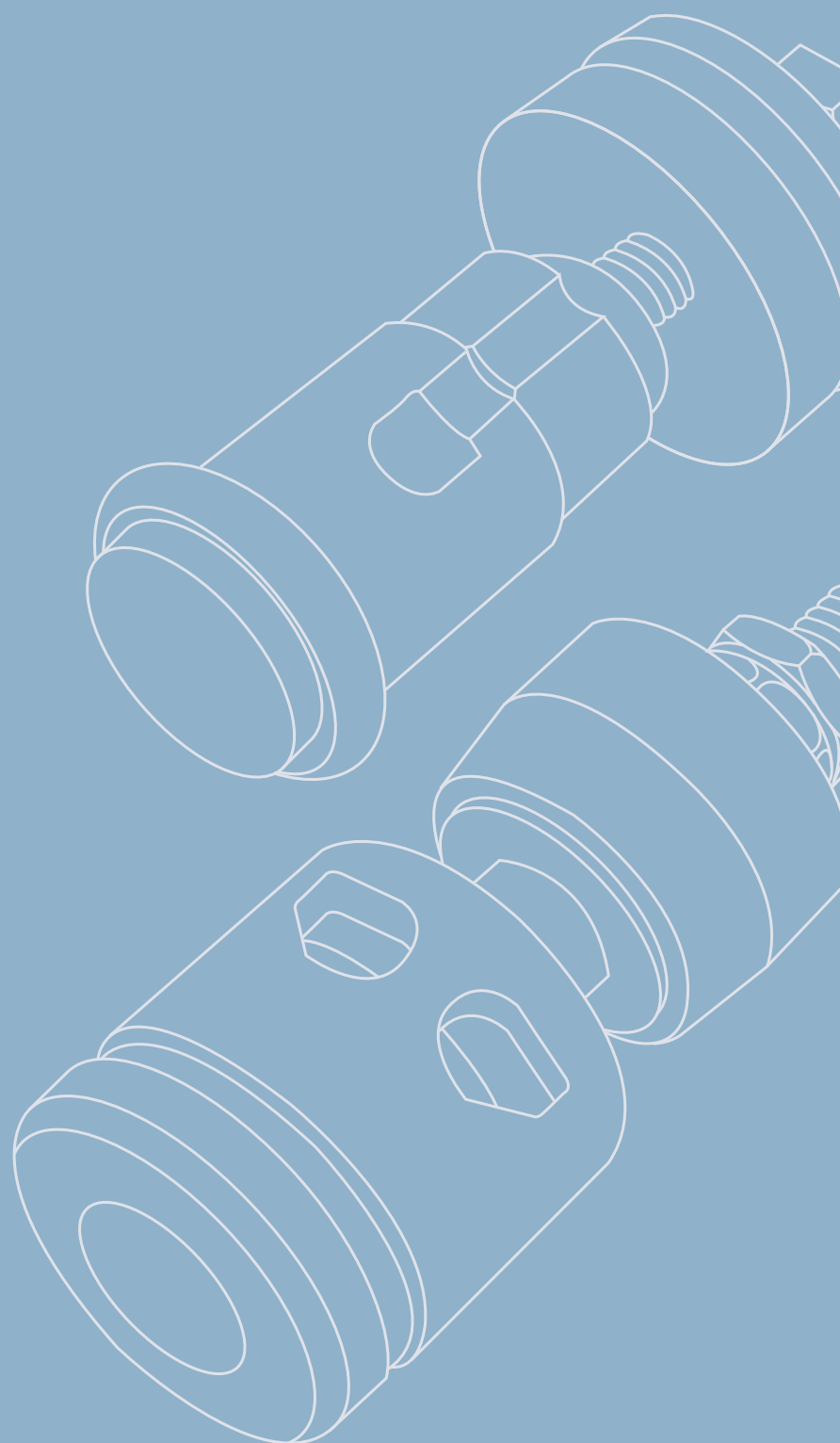
| Order no. | MIL-Std. | Nato-No. |
|-------------|----------|------------------|
| J00050A0587 | U-79/U | 5935-12-187-2716 |

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

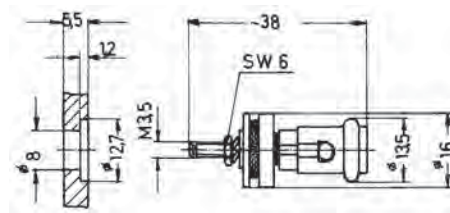
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The binding posts KL 58 and KL 65 are quick connection clamping posts mainly used in radio equipments and their accessories.

| 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 _{eff} / 50 Hz |
| Working current KL 58 | max. 10 A |
| Working current KL 65 | max. 10 A |

Binding Posts KL 58

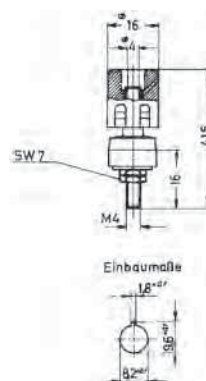
27.1



| Order no. | Remarks | Nato-No. |
|-------------|---------------------|------------------------------------|
| J02010A0650 | waterproof mounting | 5940-00-194-7739; 5940-12-159-7114 |

Binding Posts KL 65

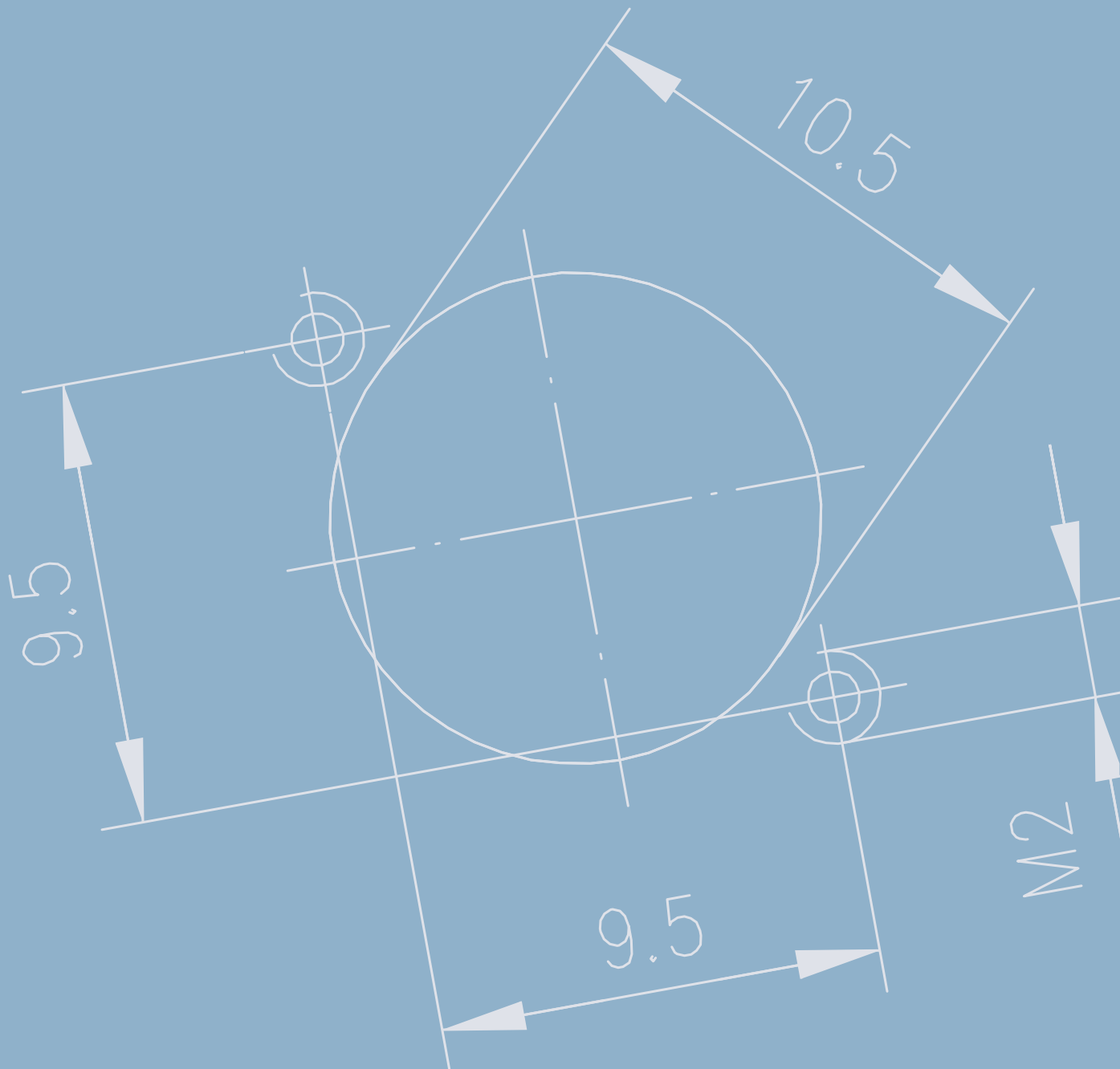
27.2



| 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 |

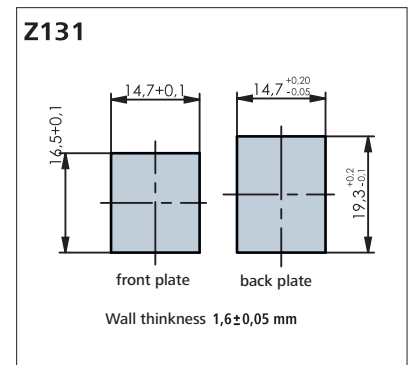
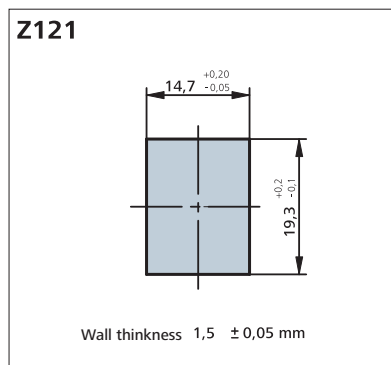
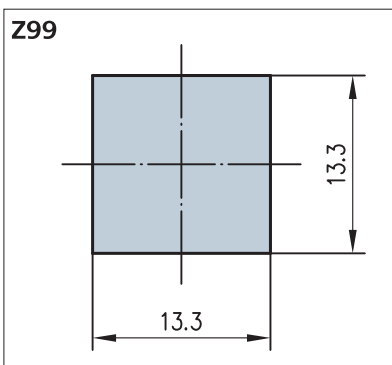
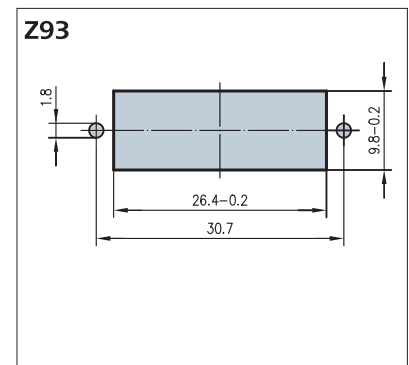
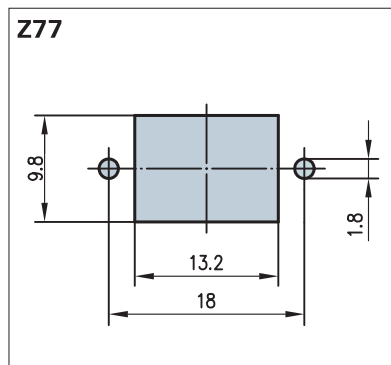
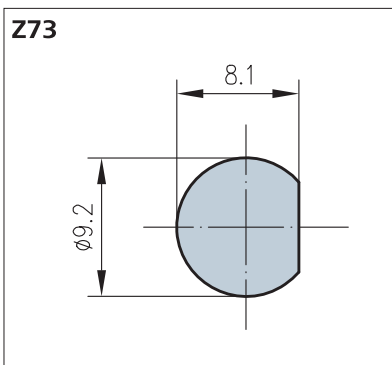
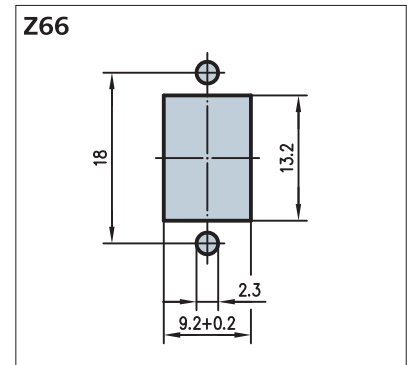
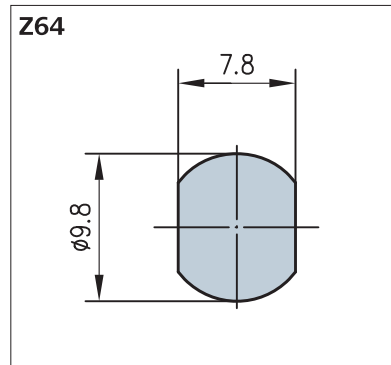
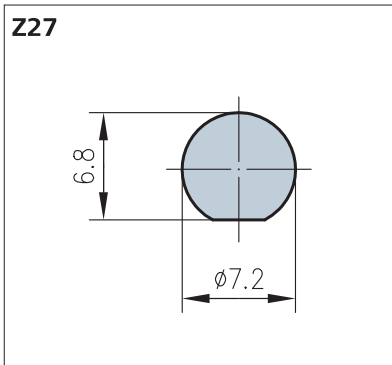
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Panel Piercings



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“.



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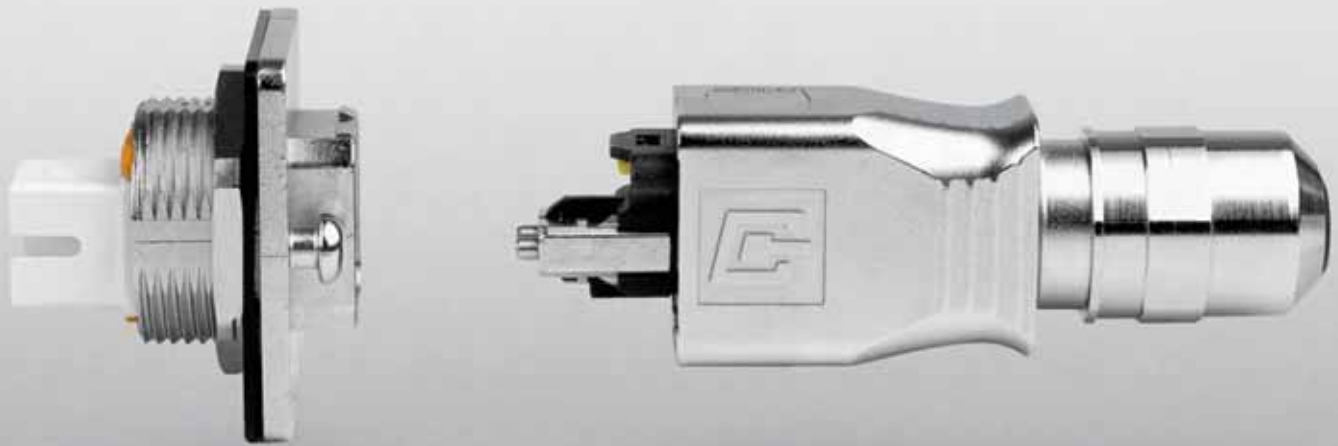
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