

**AMP**  
NETCONNECT **KRONE**  
FROM TE CONNECTIVITY



# ENTERPRISE NETWORKS

EMEA Product Catalog





## DATA CENTERS

...where data is stored and processed



## IN-BUILDING NETWORKS

...where data meets the user

### DATA CENTER AND IN-BUILDING SOLUTIONS FROM TE CONNECTIVITY

All businesses rely upon data and data applications to serve their customers effectively. The data center is at the heart of these applications and TE Connectivity is at the heart of the data center delivering copper and fiber infrastructure solutions that support agile & efficient data center operations.

TE's products for enterprise applications include leading edge fiber, wireless and copper connectivity solutions that build upon our industry leading AMP NETCONNECT and KRONE product lines. We help our customers to build reliable enterprise networks infrastructures and compete in a data intensive world.

[te.com/bns](http://te.com/bns)

EVERY CONNECTION COUNTS



# Contents

## Systems by Name:

|   |     |
|---|-----|
| MPO/MPOptimate System.....                    | 1   |
| MRJ21 System.....                             | 27  |
| Sigma-Link System.....                        | 37  |
| Mixed Media Platform .....                    | 43  |
| FiberGuide System.....                        | 53  |
| Storage Area Management (SAM) .....           | 85  |
| Core VSM System .....                         | 91  |
| Quareo Physical Layer Management System ..... | 97  |
| Optical LAN Solutions .....                   | 139 |
| AMP CO System .....                           | 141 |

## Systems by Technology

|  |     |
|--|-----|
| Fiber Optic Cabling.....                     | 157 |
| Modular Twisted Pair Cabling .....           | 217 |
| Home Net-works Residential Cabling .....     | 289 |
| Commercial and Industrial Ethernet LAN ..... | 295 |
| Administration & Labeling .....              | 303 |
| Part Number Index .....                      | 307 |

## The TE Enterprise Networks Catalog combines AMP NETCONNECT and KRONE portfolios for EMEA

This edition of the Enterprise Networks Product Catalog for our EMEA based customers features products from both the AMP NETCONNECT and KRONE portfolios.

This means that TE Connectivity can offer you a choice from the best of both worlds to address all of your cabling infrastructure needs, no matter if it's a Data Center, an Office Complex or a Campus environment.

In addition to the existing products from these two world class brands, you'll find many exciting, new products as featured on this double page.

The catalog is split into two main sections: the first (chapters 1-10) contains our products organised by the name of the system, and the second (chapters 11-15) makes it easy to find products by technology for example, Twisted Pair or Fiber Optic.

You'll also find useful cross-references in each section to make sure you don't miss the product you are looking for that may be listed in a different section.



### MRJ21 XG System – A Pre-Connectorized Plug & Play 10 GbE Copper System

The MRJ21 XG System supports 10 Gigabit Ethernet throughput in all architectures where copper cabling is required. This pre-terminated Plug & Play system enables the data center manager to quickly add additional capacity or services whilst guaranteeing data throughput performance 100% of the time. Also, the lower cable volume deployed in the data center can reduce containment costs, and present less of an obstruction to the airflow entering and exiting the servers and switches.



[Learn more about the MRJ21 XG System from page 27.](#)

### Sigma-Link Quick-Fit System - A pre-terminated bundled Copper Cabling Solution

The Sigma-Link Quick-Fit System can be deployed in any application that requires copper twisted pair cabling as the medium of transport. It can be used to connect Users to Switches, Switches to other Switches, or Switches to Servers. Ranging from Category 6 to Category 7A, Sigma-Link supports up to 10 Gigabit Ethernet transmission, and beyond, allowing very high bandwidth applications and protocols to be supported in the future. As a Housing-to-Housing solution it can be quickly located into our UCP panels, taking minimal time to deploy and configure a new channel in the network.



[Learn more about the Sigma-Link Quick-Fit System from page 37.](#)

### Storage Area Management – Simplify your Optical Cable Management

TE's Storage Area Management (SAM) Solution for SAN infrastructures is designed to reduce the bulkiness of cabling and connectors in the data center by up to 80% and enable high-density deployment with fewer costly cabinet or infrastructure upgrades. SAM can help you save time, reduce costs, maximize efficiency, and free up much needed space in your data center. It takes the complexity out of cable management, and optimizes the performance of your data center floor space, racks and electronics.

De-clutter your racks for a highly organized, eco-friendly network infrastructure and deliver operational efficiency to your SAN cabling.



[Learn more about the SAM Solution from page 85.](#)



# Data Center and In-Building Solutions

## Core Vertical Switch Management – Deliver Efficiency to the Core of Your DC

The Core Vertical Switch Management platform (Core VSM) is an innovative solution to the challenges posed in the data center by high-density core switches with a vertical blade configuration.

The platform consists of a cable management guide that fits above the switch and copper or fiber modules that provide connections for blades of either media. The complete Core VSM platform can be installed within an 800 mm wide cabinet, saving valuable white space in the data center.

Within the Core VSM platform, all patch cables, whether fiber or copper, are managed vertically with only one length of patch cord being required to patch within a frame which simplifies the build process and ongoing logistics.

**Learn more about the Core VSM Solution from page 91.**



## Physical Layer Management - Know Your Network!

TE's Quareo physical layer management is an end-to-end solution, combining hardware and software elements to provide accurate visibility on the state of the physical network at all times. It enables easier, smarter network management for everyone from cable installers to network managers, strengthening physical security, boosting availability and providing real-time communication with network assets.

The Quareo physical layer management system leverages an innovative technology called connection point identification (CPID) to capture accurate information on the state of the network. This is done by incorporating chips on connectors throughout the network. Factory installed, these chips are programmed with all the pertinent information about a product, starting with the serial number. Once installed in the network, the product becomes fully discoverable, and the information can be accessed by a technician.

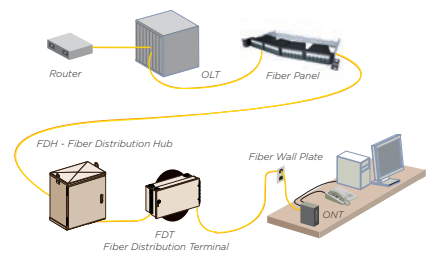
**Learn more about Physical Layer Management from page 97.**



## Optical LAN Solutions – New Ways of Delivering High-Bandwidth to Each Desktop

TE Connectivity offers a complete, end-to-end PON infrastructure solution called Optical LAN Solution (OLS). From the data center to the desktop, our customers have tapped the experience and innovation of TE to build their PON networks. TE's suite of end-to-end connectivity is truly comprehensive and takes a single strand of singlemode fiber from the Data Center all the way to the individual desk or end device location.

**Learn more about OLS from page 139.**



# TE Enterprise Networks 25 Year Warranty

## WARRANTY SUPPORT FOR THE NEXT 25 YEARS

There are many structured cabling warranties available on the market today but only the TE25 Warranty provides all of this in one package, backed by a multi-billion dollar company with connector technology at the heart of its strategy.



TE Connectivity is committed to being the world's leading provider of enterprise networks infrastructure solutions. With connector technology as the prime focus of our business and a track record in the structured cabling industry through our AMP NETCONNECT and KRONE brands, a TE25 warranty provides the added assurance of a warranty backed by a company with long-term industry stability.

## THE TE 25 YEAR SYSTEM WARRANTY PROVIDES COVER ON THE COMPLETE CABLING SYSTEM

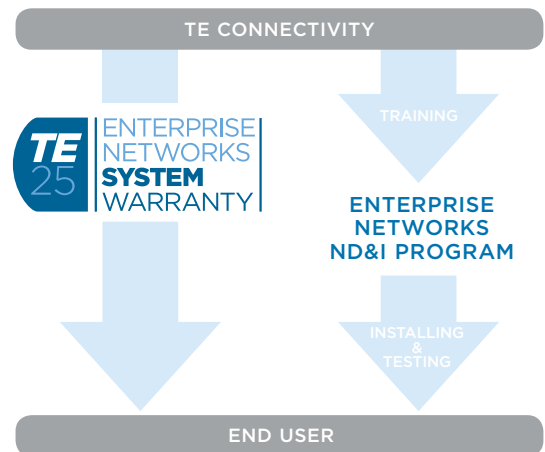
- Comprises cable, connectors, connecting hardware and patch cords
- Covers defects in either materials or workmanship for the full 25 years
- Ensures that all signal carrying components meet the prescribed mechanical and transmission specifications for these products
- Includes repair or replacement of defective products— at our cost
- Includes the labor cost

## DIRECT TO END USER

The TE25 Warranty is a contract made directly between TE Connectivity and the customer.

How It Works:

1. End user selects TE Connectivity Cabling system
2. End user selects ND&I program installer
3. ND&I installs, tests and documents the cabling system
4. ND&I provides defined project documentation and test results to TE Connectivity
5. TE grants warranty to end user



## THE TE25 YEAR COMPONENT WARRANTY

For those occasions when a full system warranty is not appropriate, for example where confidentiality or security issues prevent full details of the system being shared with TE, a component warranty is available. Less stringent in terms of the registration requirements and not as comprehensive as the system warranty, it still provides 25 year cover for all TE components to the latest international standards.



## 1. MPO/MPOptimate System

|  |    |
|--|----|
| MPO/MPOptimate Installation and Polarity ..... | 02 |
| 12 Fiber MPOptimate System.....                | 03 |
| 12 Fiber MPO System.....                       | 09 |
| 24 Fiber MPOptimate System.....                | 14 |
| MPO/MPOptimate Panels & Accessories.....       | 21 |
| Q3000 Series MPO Fiber Panels .....            | 24 |
| MPO/MPOptimate Cleaning Tools.....             | 26 |

# MPO/MPOOptimate System

## MPO/MPOOptimate Installation and Polarity

### MPO/MPOOptimate installation and polarity

In each fiber optic system, the link from source (Tx) to receiver (Rx) needs to be flipped once.

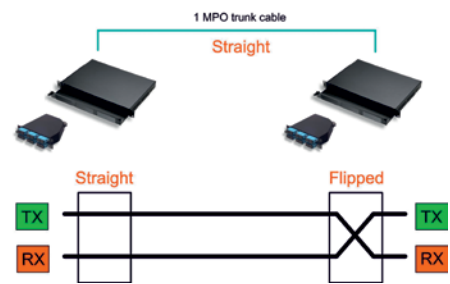
In a complete MPO/MPOOptimate link this flipping is provided by one flipped cassette, while all other components in this link shall be installed as straight version.

### MPOOptimate ready for 10, 40 and 100 Gb/s

The MPOOptimate system is designed to support 10G Ethernet and 4/8/16G Fiber Channel applications through the complete structure of a Data Center, as specified in ISO/IEC 24764, EN 50173-5 and TIA/EIA 942. The MPOOptimate system is designed to have 6 cassettes per link for 10 Gb/s with a full 300 meter support on OM3 fibers and 550 meter on OM4 fibers.

It offers one passive channel from the end equipment to the core switch without the need of repeating signals for amplifying reasons. When using the MPOOptimate cabling system, the owner can replace aggregation switches by a patch cord without changing the passive infrastructure.

The 24 fiber MPOOptimate system is the first choice to design a flexible cabling system that does support 10-40 and 100G Ethernet over the same trunk cable by means of exchanging the cassettes.



| Data Rate | 10 Gb/s   | 40 Gb/s      | 100 Gb/s     |
|-----------|-----------|--------------|--------------|
| LASER     | VCSEL     | VCSEL array  | VCSEL array  |
| Fibers    | 2         | 8            | 20           |
| Connector | LC duplex | 12-fiber MPO | 24-fiber MPO |
| Schematic |           |              |              |
|           |           |              |              |
|           | 1:12      | 1:3          | 1:1          |

### Length tables for MPO/MPOOptimate trunks and fan-out assemblies

LENGTH TABLE A:

| Y- X | Length | Y- X | Length | Y- X | Length | Y- X | Length | Y- X | Length | Y- X | Length | Y- X | Length | Y- X | Length |
|------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|
| 0- 2 | 2 m    | 1- 3 | 13 m   | 2- 4 | 24 m   | 3- 5 | 35 m   | 4- 6 | 46 m   | 5- 7 | 57 m   | 6- 8 | 68 m   | 7- 9 | 79 m   |
| 0- 3 | 3 m    | 1- 4 | 14 m   | 2- 5 | 25 m   | 3- 6 | 36 m   | 4- 7 | 47 m   | 5- 8 | 58 m   | 6- 9 | 69 m   | 8- 0 | 80 m   |
| 0- 4 | 4 m    | 1- 5 | 15 m   | 2- 6 | 26 m   | 3- 7 | 37 m   | 4- 8 | 48 m   | 5- 9 | 59 m   | 7- 0 | 70 m   | 8- 1 | 81 m   |
| 0- 5 | 5 m    | 1- 6 | 16 m   | 2- 7 | 27 m   | 3- 8 | 38 m   | 4- 9 | 49 m   | 6- 0 | 60 m   | 7- 1 | 71 m   | 8- 2 | 82 m   |
| 0- 6 | 6 m    | 1- 7 | 17 m   | 2- 8 | 28 m   | 3- 9 | 39 m   | 5- 0 | 50 m   | 6- 1 | 61 m   | 7- 2 | 72 m   | 8- 3 | 83 m   |
| 0- 7 | 7 m    | 1- 8 | 18 m   | 2- 9 | 29 m   | 4- 0 | 40 m   | 5- 1 | 51 m   | 6- 2 | 62 m   | 7- 3 | 73 m   | 8- 4 | 84 m   |
| 0- 8 | 8 m    | 1- 9 | 19 m   | 3- 0 | 30 m   | 4- 1 | 41 m   | 5- 2 | 52 m   | 6- 3 | 63 m   | 7- 4 | 74 m   | 8- 5 | 85 m   |
| 0- 9 | 9 m    | 2- 0 | 20 m   | 3- 1 | 31 m   | 4- 2 | 42 m   | 5- 3 | 53 m   | 6- 4 | 64 m   | 7- 5 | 75 m   | 8- 6 | 86 m   |
| 1- 0 | 10 m   | 2- 1 | 21 m   | 3- 2 | 32 m   | 4- 3 | 43 m   | 5- 4 | 54 m   | 6- 5 | 65 m   | 7- 6 | 76 m   | 8- 7 | 87 m   |
| 1- 1 | 11 m   | 2- 2 | 22 m   | 3- 3 | 33 m   | 4- 4 | 44 m   | 5- 5 | 55 m   | 6- 6 | 66 m   | 7- 7 | 77 m   | 8- 8 | 88 m   |
| 1- 2 | 12 m   | 2- 3 | 23 m   | 3- 4 | 34 m   | 4- 5 | 45 m   | 5- 6 | 56 m   | 6- 7 | 67 m   | 7- 8 | 78 m   | 8- 9 | 89 m   |

LENGTH TABLE B:

| Y- X | Length | Y- X | Length | Y- X | Length | Y- X | Length | Y- X | Length | Y- X | Length | Y- X | Length | Y- X | Length |
|------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|
| 9- 9 | 100 m  | 1- 1 | 111 m  | 2- 2 | 122 m  | 3- 3 | 133 m  | 4- 4 | 148 m  | 5- 5 | 170 m  | 6- 6 | 192 m  | 7- 7 | 270 m  |
| 0- 1 | 101 m  | 1- 2 | 112 m  | 2- 3 | 123 m  | 3- 4 | 134 m  | 4- 5 | 150 m  | 5- 6 | 172 m  | 6- 7 | 194 m  | 7- 8 | 280 m  |
| 0- 2 | 102 m  | 1- 3 | 113 m  | 2- 4 | 124 m  | 3- 5 | 135 m  | 4- 6 | 152 m  | 5- 7 | 174 m  | 6- 8 | 196 m  | 7- 9 | 290 m  |
| 0- 3 | 103 m  | 1- 4 | 114 m  | 2- 5 | 125 m  | 3- 6 | 136 m  | 4- 7 | 154 m  | 5- 8 | 176 m  | 6- 9 | 198 m  | 8- 0 | 300 m  |
| 0- 4 | 104 m  | 1- 5 | 115 m  | 2- 6 | 126 m  | 3- 7 | 137 m  | 4- 8 | 156 m  | 5- 9 | 178 m  | 7- 0 | 200 m  | 8- 1 | 320 m  |
| 0- 5 | 105 m  | 1- 6 | 116 m  | 2- 7 | 127 m  | 3- 8 | 138 m  | 4- 9 | 158 m  | 6- 0 | 180 m  | 7- 1 | 210 m  | 8- 2 | 340 m  |
| 0- 6 | 106 m  | 1- 7 | 117 m  | 2- 8 | 128 m  | 3- 9 | 139 m  | 5- 0 | 160 m  | 6- 1 | 182 m  | 7- 2 | 220 m  | 8- 3 | 360 m  |
| 0- 7 | 107 m  | 1- 8 | 118 m  | 2- 9 | 129 m  | 4- 0 | 140 m  | 5- 1 | 162 m  | 6- 2 | 184 m  | 7- 3 | 230 m  | 8- 4 | 380 m  |
| 0- 8 | 108 m  | 1- 9 | 119 m  | 3- 0 | 130 m  | 4- 1 | 142 m  | 5- 2 | 164 m  | 6- 3 | 186 m  | 7- 4 | 240 m  | 8- 5 | 400 m  |
| 0- 9 | 109 m  | 2- 0 | 120 m  | 3- 1 | 131 m  | 4- 2 | 144 m  | 5- 3 | 166 m  | 6- 4 | 188 m  | 7- 5 | 250 m  | 8- 6 | 420 m  |
| 1- 0 | 110 m  | 2- 1 | 121 m  | 3- 2 | 132 m  | 4- 3 | 146 m  | 5- 4 | 168 m  | 6- 5 | 190 m  | 7- 6 | 260 m  | 8- 7 | 440 m  |

# MPO/MPOOptimate System

## 12 Fiber MPOOptimate System

### MPOOptimate to LC Micro-Cassettes and Quick-Fit Modules

#### FEATURES:

- Pre-terminated low loss cassettes with protocol for constant and reliable quality
- Up to 2 Micro-Cassettes per Quick-Fit Module, 4 modules per UCP panel (1U)
- Easy upgrade from 1 x 12 to 2 x 12 fiber density
- Optical cassette performance both OM3 and OM4:  
Attenuation  $\leq$  0.35 dB(max.) RL  $\geq$  27 dB(min)
- Double-sided label strip included with Quick-Fit Module  
(Port number labelling either 1-2-3-4-5-6 or 1/6-2/5-3/4-4/3-5/2-6/1)
- Easy to install: front and back access to insert or remove the Micro-Cassette



#### ORDERING INFORMATION

| Description   | Pairs straight<br>Part Number | Pairs flipped<br>Part Number |
|---|-------------------------------|------------------------------|
| 1 x MPOOptimate to 6 x LC Duplex (12 fiber); OM3 XG 10 Gb/s                                 | 2153211-3                     | 1-2153211-3                  |
| 1 x MPOOptimate to 6 x LC Duplex (12 fiber); OM4 XGA 10 Gb/s                                | 2153211-5                     | 1-2153211-5                  |
|   |                               | <b>Part Number</b>           |
| Quick-Fit modules, holding up to 2 Micro-Cassettes (box of 4 modules + 4 blanking plates)   |                               | 2153244-1                    |
| Quick-Fit modules, holding up to 2 Micro-Cassettes (box of 48 modules + 48 blanking plates) |                               | 2153244-2                    |

All cassettes are individually packed per box

### MPOOptimate pre-terminated trunks

#### FEATURES

- Cable terminated with low loss 12 fiber MPOOptimate connectors
- Terminated with female MPO connectors (male versions on request)
- OM3 or OM4 cable performance, LSZH construction
- Connector performance: Attenuation  $\leq$  0.35 dB (max); RL  $\geq$  28 dB (min)
- The trunks are equipped with midi fan-out and 3.2mm round cable MPO tails
- All tails are protected with transparent protection sleeve
- Available in 12, 24 and 48 fiber (other fiber counts on request)
- Factory pre-terminated assemblies with protocol for constant and reliable quality
- Packaging:  $\leq$ 50 m in box,  $>$ 50 m on reel
- Re-usable pulling socks can be ordered separately.  
12 - 24 fiber trunks Part Number 2055567-1  
48 fiber trunks Part Number 2055567-2



#### ORDERING INFORMATION

| Description  | Part Number<br>2-99 m - table A | Part Number<br>100-500 m - table B |
|--|---------------------------------|------------------------------------|
| 12 fiber; OM4 XGA 10 Gb/s; Straight; A wiring                | Y-2055576-X                     | Y-2055577-X                        |
| 12 fiber; OM4 XGA 10 Gb/s; Male/Male Straight; A wiring      | Y-2160658-X                     | Y-2160659-X                        |
| 12 fiber; OM4 XGA 10 Gb/s; Male/Male Total Flipped; B wiring | Y-2160729-X                     | Y-2160730-X                        |
| 24 fiber; OM4 XGA 10 Gb/s; Straight; A wiring                | Y-2055578-X                     | Y-2055579-X                        |
| 48 fiber; OM4 XGA 10 Gb/s; Straight; A wiring                | Y-2160075-X                     | Y-2160076-X                        |
| 12 fiber; OM3 XG 10 Gb/s; A wiring                           | Y-2055611-X                     | Y-2055612-X                        |
| 24 fiber; OM3 XG 10 Gb/s; A wiring                           | Y-2055715-X                     | Y-2055716-X                        |
| 48 fiber; OM3 XG 10 Gb/s; A wiring                           | Y-2160073-X                     | Y-2160074-X                        |

For available lengths: see page 02



# MPO/MPOptimate System

## 12 Fiber MPOptimate System

### MPOptimate to LC Quick-Fit cassettes

#### FEATURES

- Pre-terminated low loss cassettes
- Front: 6 x optimized LC Duplex or 6 x optimized LC Quad
- Back: 1 or 2 low loss MPOptimate connector(s)
- Available in straight or flipped pair version
- Optical cassette performance in OM3 and OM4:  
Attenuation  $\leq$  0.35 dB/cassette (max.)  
RL  $\geq$  27 dB (min)
- All products with protocol, for constant and reliable quality
- Fits in AMP NETCONNECT Quick-Fit patch panels with maximum density of 4 cassettes per 1U
- Port number labeling and additional label strip included



#### ORDERING INFORMATION

| Description   | Pairs straight Part Number | Pairs flipped Part Number |
|---|----------------------------|---------------------------|
| 1 x MPOptimate to 6 x LC Duplex (12 fiber); OM3 XG 10 Gb/s              | 1671226-3                  | 1-1671226-3               |
| 1 x MPOptimate to 6 x LC Duplex (12 fiber); OM4 XG <sub>A</sub> 10 Gb/s | 1671226-5                  | 1-1671226-5               |
| 2 x MPOptimate to 6 x LC Quad (24 fiber); OM3 XG 10 Gb/s                | 1671227-3                  | 1-1671227-3               |
| 2 x MPOptimate to 6 x LC Quad (24 fiber); OM4 XG <sub>A</sub> 10 Gb/s   | 1671227-5                  | 1-1671227-5               |

### MPOptimate to SC Quick-Fit cassettes

#### FEATURES

- Pre-terminated low loss cassettes
- Front: 6 x optimized SC Duplex
- Back: 1 x low loss MPOptimate connector
- Available in straight or flipped pair version
- Optical cassette performance in OM3:  
Attenuation  $\leq$  0.35 dB (max.)  
RL  $\geq$  27 dB (min)
- All products with protocol, for constant and reliable quality
- Fits in AMP NETCONNECT Quick-Fit patch panels with maximum density of 4 cassettes per 1U

Port number labeling and additional label strip included



#### ORDERING INFORMATION

| Description   | Pairs straight Part Number | Pairs flipped Part Number |
|---|----------------------------|---------------------------|
| 1 x MPOptimate to 6 x SC Duplex; (12 fiber): OM3 XG 10 Gb/s | 1671228-3                  | 1-1671228-3               |

# MPO/MPOOptimate System

## 12 Fiber MPOOptimate System

### 12 Fiber MPOOptimate 40Gb/s Quick-Fit cassettes

#### FEATURES

- Pre-terminated low loss cassettes
- Front: 6 x optimized LC Quad or 3x 8 fiber MPOOptimate connectors
- Back: 2 low loss 12 fiber MPOOptimate connector(s)
- OM4 Optical cassette performance  
Attenuation  $\leq 0.35\text{dB}$  (MPO/LC) or  $\leq 0.5\text{dB}$  (MPO/MPO) cassette (max.)  
RL  $\geq 27$  dB (min)
- All products with protocol, for constant and reliable quality
- Fits in AMP NETCONNECT Quick-Fit patch panels with maximum density of 4 cassettes per 1U
- Port number labeling and additional label strip included



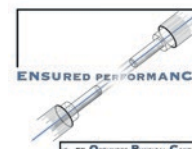
#### ORDERING INFORMATION

| Description   | Pairs straight Part Number | Pairs flipped Part Number |
|---|----------------------------|---------------------------|
| 2 x MPOOptimate to 6 x LC Quad (24 fiber); OM4 XGA 10 Gb/s<br>Note: to be used with 2160056-5 in same channel | 1671227-5                  | n/a                       |
| 2 x MPOOptimate to 3x 8fiber 40Gb/s MPOOptimate   | 216056-5                   | 1-216056-5                |

### MPOOptimate patch cords

#### FEATURES

- Low loss MPOOptimate 12 fiber MPO round cable patch cord
- Terminated with male and/or female MPOOptimate connectors
- Cable performance: OM4; OM3 XG 10 Gb/s; LSZH construction
- Connector performance: Attenuation  $\leq 0.35$  dB (max.); RL  $\geq 28$  dB (min)
- All products with protocol, for constant and reliable quality
- Available in female/female and male/female version in straight "A" wiring and total flipped "B" wiring



**Color:** aqua

#### LENGTH TABLE(MTR):

| Y- -X | Length | Y- -X | Length | Y- -X | Length | Y- -X | Length | Y- -X | Length | Y- -X | Length | Y- -X | Length | Y- -X | Length |       |    |
|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|----|
| 9- -0 | 0,5    | 9- -5 | 5,5    | 1- -1 | 11     | 2- -1 | 21     | 3- -1 | 31     | 4- -1 | 41     | 5- -1 | 51     | 6- -1 | 61     | 7- -1 | 71 |
| 0- -1 | 1,0    | 0- -6 | 6,0    | 1- -2 | 12     | 2- -2 | 22     | 3- -2 | 32     | 4- -2 | 42     | 5- -2 | 52     | 6- -2 | 62     | 7- -2 | 72 |
| 9- -1 | 1,5    | 9- -6 | 6,5    | 1- -3 | 13     | 2- -3 | 23     | 3- -3 | 33     | 4- -3 | 43     | 5- -3 | 53     | 6- -3 | 63     | 7- -3 | 73 |
| 0- -2 | 2,0    | 0- -7 | 7,0    | 1- -4 | 14     | 2- -4 | 24     | 3- -4 | 34     | 4- -4 | 44     | 5- -4 | 54     | 6- -4 | 64     | 7- -4 | 74 |
| 9- -2 | 2,5    | 9- -7 | 7,5    | 1- -5 | 15     | 2- -5 | 25     | 3- -5 | 35     | 4- -5 | 45     | 5- -5 | 55     | 6- -5 | 65     | 7- -5 | 75 |
| 0- -3 | 3,0    | 0- -8 | 8,0    | 1- -6 | 16     | 2- -6 | 26     | 3- -6 | 36     | 4- -6 | 46     | 5- -6 | 56     | 6- -6 | 66     | 7- -6 | 76 |
| 9- -3 | 3,5    | 9- -8 | 8,5    | 1- -7 | 17     | 2- -7 | 27     | 3- -7 | 37     | 4- -7 | 47     | 5- -7 | 57     | 6- -7 | 67     | 7- -7 | 77 |
| 0- -4 | 4,0    | 0- -9 | 9,0    | 1- -8 | 18     | 2- -8 | 28     | 3- -8 | 38     | 4- -8 | 48     | 5- -8 | 58     | 6- -8 | 68     | 7- -8 | 78 |
| 9- -4 | 4,5    | 9- -9 | 9,5    | 1- -9 | 19     | 2- -9 | 29     | 3- -9 | 39     | 4- -9 | 49     | 5- -9 | 59     | 6- -9 | 69     | 7- -9 | 79 |
| 0- -5 | 5,0    | 1- -0 | 10     | 2- -0 | 20     | 3- -0 | 30     | 4- -0 | 40     | 5- -0 | 50     | 6- -0 | 60     | 7- -0 | 70     | 8- -0 | 80 |

#### ORDERING INFORMATION

| Description   | Straight type A wiring Part Number | Total flipped type B wiring Part Number |
|---|------------------------------------|---|
| MPOOptimate female - MPOOptimate female patch cord; OM3 XG 10 Gb/s  | Y-2160135-X                        | Y-2160193-X                             |
| MPOOptimate female - MPOOptimate female patch cord; OM4 XGA 10 Gb/s | Y-2160136-X                        | Y-2160194-X                             |
| MPOOptimate female - MPOOptimate male patch cord; OM3 XG 10 Gb/s    | Y-2160139-X                        | Y-2160197-X                             |
| MPOOptimate female - MPOOptimate male patch cord; OM4 XGA 10 Gb/s   | Y-2160140-X                        | Y-2160198-X                             |

# MPO/MPOptimate System

## 12 Fiber MPOptimate System

### MPOptimate Fan-Out Trunk Cable Assemblies

#### FEATURES

- Low loss transition from 3.2mm MPO to LC or SC tails 2 mm
- Terminated with female or male MPOptimate connectors
- Cable: 6.4mm OM4 or OM3 XG 10 Gb/s; Loose Tube LSZH construction
- Optical performance:  
MPO connector: Attenuation  $\leq$  0.35 dB (max.); RL  $\geq$  28 dB (min)  
LC/SC connector: Attenuation  $\leq$  0.15 dB (max); RL  $\geq$  35 dB (min)
- All products with protocol, for constant and reliable quality
- Tail lengths: 4 x 40 cm, 4 x 50 cm, 4 x 60 cm. Other tail lengths available on request
- All tails are protected with transparent protection sleeve
- Packaging:  $\leq$ 50 m in box, >50 m on reel
- Re-usable pulling socks can be ordered separately. Part Number 2055567-1
- Typical application: inter rack equipment/patch panel connections



#### ORDERING INFORMATION

| Description   | Part Number      | Part Number         |
|---|------------------|---------------------|
|   | 2-99 m - table A | 100-500 m - table B |
| 1 x MPOptimate female to 12 x LC Simplex; OM4 XGA 10 Gb/s | Y-2055580-X      | Y-2055581-X         |
| 1 x MPOptimate female to 12 x SC Simplex; OM4 XGA 10 Gb/s | Y-2160114-X      | Y-2160115-X         |
| 1 x MPOptimate female to 12 x LC Simplex; OM3 XG 10 Gb/s  | Y-2055623-X      | Y-2055624-X         |
| 1 x MPOptimate female to 12 x SC Simplex; OM3 XG 10 Gb/s  | Y-2160112-X      | Y-2160113-X         |
| 1 x MPOptimate male to 12 x LC Simplex; OM4 XGA 10 Gb/s   | Y-2160146-X      | Y-2160147-X         |
| 1 x MPOptimate male to 12 x SC Simplex; OM4 XGA 10 Gb/s   | Y-2160126-X      | Y-2160127-X         |
| 1 x MPOptimate male to 12 x LC Simplex; OM3 XG 10 Gb/s    | Y-2055600-X      | Y-2055704-X         |

For available lengths: see 02

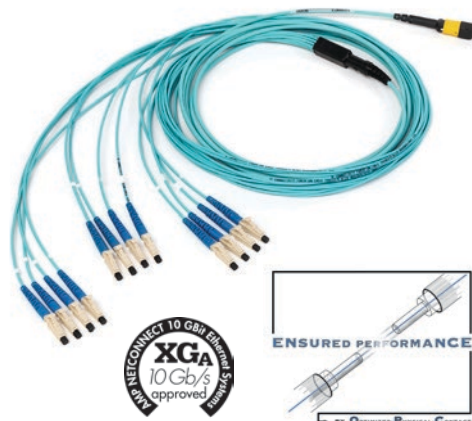
# MPO/MPOptimate System

## 12 Fiber MPOptimate System

### MPOptimate Fan-Out Patch Cable Assemblies

#### FEATURES

- Low loss transition from 3.2mm MPO cable to 2mm LC tails
- Terminated with female or male MPOptimate connectors
- Cable performance: OM4 or OM3 XG 10 Gb/s; LSZH construction
- Optical performance:
  - MPO connector: Attenuation  $\leq$  0.35 dB (max.); RL  $\geq$  28 dB (min)
  - LC connector: Attenuation  $\leq$  0.15 dB (max.); RL  $\geq$  35 dB(min)
- All products with protocol, for constant and reliable quality
- Tail lengths: see table. (Other tail lengths available on request)
- Typical application: intra rack equipment connections



#### ORDERING INFORMATION

| Description   | LC tail length (cm)     | Part Number<br>2-99 m - table A |
|---|-------------------------|---------------------------------|
| 1 x MPOptimate male to 12 x LC Simplex; OM3 XG 10 Gb/s  | 4x 92+ 4x 96 + 4x 100   | 2160069                         |
| 1 x MPOptimate male to 12 x LC Simplex; OM3 XG 10 Gb/s  | 4x40 + 4x50 + 4x60      | 2055691                         |
| 1 x MPOptimate male to 12 x LC Simplex; OM3 XG 10 Gb/s  | 4x20 + 4x24 + 4x28      | 2160693                         |
| 1 x MPOptimate male to 12 x LC Simplex; OM4 XGA 10 Gb/s | 4x 92+ 4x 96 + 4x 100   | 2160067                         |
| 1 x MPOptimate male to 12 x LC Simplex; OM4 XGA 10 Gb/s | 4x 192+ 4x 196 + 4x 200 | 2160546                         |

#### LENGTH TABLE(MTR):

| Y-X | Length | Y-X  | Length | Y-X  | Length | Y-X  | Length | Y-X  | Length | Y-X  | Length | Y-X  | Length | Y-X  | Length |
|-----|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|
| 9-0 | 0,5    | 9-5  | 5,5    | 1--1 | 11     | 2--1 | 21     | 3--1 | 31     | 4--1 | 41     | 5--1 | 51     | 6--1 | 61     |
| 0-1 | 1,0    | 0--6 | 6,0    | 1--2 | 12     | 2--2 | 22     | 3--2 | 32     | 4--2 | 42     | 5--2 | 52     | 6--2 | 62     |
| 9-1 | 1,5    | 9--6 | 6,5    | 1--3 | 13     | 2--3 | 23     | 3--3 | 33     | 4--3 | 43     | 5--3 | 53     | 6--3 | 63     |
| 0-2 | 2,0    | 0--7 | 7,0    | 1--4 | 14     | 2--4 | 24     | 3--4 | 34     | 4--4 | 44     | 5--4 | 54     | 6--4 | 64     |
| 9-2 | 2,5    | 9--7 | 7,5    | 1--5 | 15     | 2--5 | 25     | 3--5 | 35     | 4--5 | 45     | 5--5 | 55     | 6--5 | 65     |
| 0-3 | 3,0    | 0--8 | 8,0    | 1--6 | 16     | 2--6 | 26     | 3--6 | 36     | 4--6 | 46     | 5--6 | 56     | 6--6 | 66     |
| 9-3 | 3,5    | 9--8 | 8,5    | 1--7 | 17     | 2--7 | 27     | 3--7 | 37     | 4--7 | 47     | 5--7 | 57     | 6--7 | 67     |
| 0-4 | 4,0    | 0--9 | 9,0    | 1--8 | 18     | 2--8 | 28     | 3--8 | 38     | 4--8 | 48     | 5--8 | 58     | 6--8 | 68     |
| 9-4 | 4,5    | 9--9 | 9,5    | 1--9 | 19     | 2--9 | 29     | 3--9 | 39     | 4--9 | 49     | 5--9 | 59     | 6--9 | 69     |
| 0-5 | 5,0    | 1--0 | 10     | 2--0 | 20     | 3--0 | 30     | 4--0 | 40     | 5--0 | 50     | 6--0 | 60     | 7--0 | 70     |
|     |        |      |        |      |        |      |        |      |        |      |        |      |        | 8--0 | 80     |

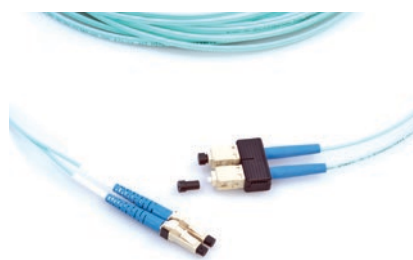
# MPO/MPOptimate System

## 12 Fiber MPOptimate System

### MPOptimate System LC and SC patch cords

#### FEATURES

- Patch cords with optimized LC and SC connectors
- Cable performance: OM4 or OM3 XG 10 Gb/s; LSZH construction
- Optical performance:
  - LC connector: Attenuation  $\leq$  0.15 dB (max); RL  $\geq$  35 dB(min)
  - SC connector: Attenuation  $\leq$  0.15 dB (max); RL  $\geq$  35 dB(min)
- All products with protocol, for constant and reliable quality



| Y- -X | Length |
|-------|--------|
| 0- -1 | 1 m    |
| 0- -3 | 3 m    |
| 0- -5 | 5 m    |
| 1- -0 | 10 m   |

#### ORDERING INFORMATION

| Description                                       | Part Number |
|---|-------------|
| Patch cord LC Duplex - LC Duplex; OM3 XG 10 Gb/s  | Y-1920743-X |
| Patch cord SC Duplex - SC Duplex; OM3 XG 10 Gb/s  | Y-2055108-X |
| Patch cord LC Duplex - SC Duplex; OM3 XG 10 Gb/s  | Y-2055109-X |
| Patch cord LC Duplex - LC Duplex; OM4 XGA 10 Gb/s | Y-2160046-X |
| Patch cord SC Duplex - SC Duplex; OM4 XGA 10 Gb/s | Y-2160047-X |
| Patch cord LC Duplex - SC Duplex; OM4 XGA 10 Gb/s | Y-2160048-X |

### Pre-terminated MPO trunk cable, 12/24/48 fiber

#### FEATURES

- Factory pre-terminated assemblies
- Cables terminated with high density MPO connectors
- All products with protocol, for constant and reliable quality
- In OM3 and OS2 design with LSZH sheath
- Available in lengths from 2 up to 500 m
- The trunks are equipped with midi fan-out and 3.2mm round cable MPO tails
- All tails are protected with transparent protection sleeve
- Available in 12, 24 and 48 fiber (other fiber counts on request)
- Packaging:  $\leq$ 50 m in box,  $>$ 50 m on reel
- Re-usable pulling socks can be ordered separately.
  - 12 and 24 fibre trunks Part number 2055567-1
  - 48 fibre trunks Part number 2055567-2



#### ORDERING INFORMATION

| Description                                   | Part Number      | Part Number         |
|---|------------------|---------------------|
|   | 2-99 m - table A | 100-500 m - table B |
| 12 Fiber; OM3 XG 10 Gb/s; Straight "A" wiring | Y-2055707-X      | Y-2055708-X         |
| 24 Fiber; OM3 XG 10 Gb/s; Straight "A" wiring | Y-2055709-X      | Y-2055710-X         |
| 48 Fiber; OM3 XG 10 Gb/s; Straight "A" wiring | Y-2160071-X      | Y-2160072-X         |
| 12 Fiber; SM; Straight "A" wiring             | Y-2055711-X      | Y-2055712-X         |
| 24 Fiber; SM; Straight "A" wiring             | Y-2055713-X      | Y-2055714-X         |
| 48 Fiber; SM; Straight "A" wiring             | Y-2160077-X      | Y-2160078-X         |

For available lengths: see page 02



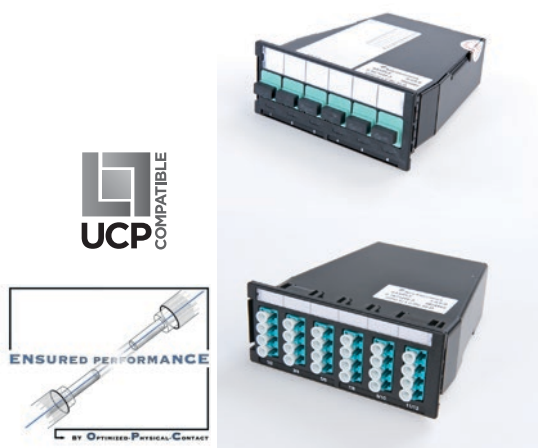
# MPO/MPOptimate System

## 12 Fiber MPO System

### MPO to LC Quick-Fit cassettes

#### FEATURES

- Simple and flexible premises fiber cabling
- Pre-terminated cassettes with either 1 or 2 MPO trunk connections (1 x 12 or 2 x 12 fibers) at rear
- 6 x LC Duplex (12 fibers) or 6 x LC Quad (24 fibers) connection in the front
- All products with protocol, for constant and reliable quality
- Easy installation, moves, adds and changes
- Fits in all AMP NETCONNECT Patch Panels for Quick-Fit Modules
- Panels accept up to 4 cassettes achieving up to 96 fiber connections on 1U



#### ORDERING INFORMATION

| Description                              | Pairs straight Part Number | Pairs flipped Part Number |
|--|----------------------------|---------------------------|
| 1 x MPO to 6 x LC Duplex; OM3 XG 10 Gb/s | 1671205-3                  | 1-1671205-3               |
| 2 x MPO to 6 x LC Quad; OM3 XG 10 Gb/s   | 1671206-3                  | 1-1671206-3               |
| 1 x MPO to 6 x LC Duplex; SM             | 1671205-4                  | 1-1671205-4               |
| 1 x MPO to 6 x LC APC Duplex; SM         | 1671205-6                  | 1-1671205-6               |
| 2 x MPO to 6 x LC Quad; SM               | 1671206-4                  | 1-1671206-4               |
| 2 x MPO to 6 x LC APC Quad; SM           | 1671206-6                  | 1-1671206-6               |

### MPO to SC Quick-Fit cassettes

#### FEATURES

- Simple and flexible premises fiber cabling
- Pre-terminated cassettes with 1 MPO trunk connection (1 x 12 fibers) at rear
- 6 x SC Duplex (12 fibers) connections in the front
- All products with protocol, for constant and reliable quality
- Easy installation, moves, adds and changes
- Fits in all AMP NETCONNECT Patch Panels for Quick-Fit Modules
- Panels accept up to 4 cassettes on 1U



#### ORDERING INFORMATION

| Description                              | Pairs straight Part Number | Pairs flipped Part Number |
|--|----------------------------|---------------------------|
| 1 x MPO to 6 x SC Duplex; OM3 XG 10 Gb/s | 1671207-3                  | 1-1671207-3               |
| 1 x MPO to 6 x SC Duplex; SM             | 1671207-4                  | 1-1671207-4               |
| 1 x MPO to 6 x SC APC Duplex; SM         | 1671207-6                  | 1-1671207-6               |

# MPO/MPOOptimate System

## 12 Fiber MPO System

### MPO patch cords

#### FEATURES

- MPO patch cord
- Cable performance: OM3 or OS2; LSZH 3.2mm round cable construction
- All products with protocol, for constant and reliable quality
- Available in female/female and male/female version in straight "A" wiring and total flipped wiring "B" wiring

**Color:** aqua



#### LENGTH TABLE (MTR):

| Y- -X | Length | Y- -X | Length | Y- -X | Length | Y- -X | Length | Y- -X | Length | Y- -X | Length | Y- -X | Length | Y- -X | Length |       |    |
|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|----|
| 9- -0 | 0,5    | 9- -5 | 5,5    | 1- -1 | 11     | 2- -1 | 21     | 3- -1 | 31     | 4- -1 | 41     | 5- -1 | 51     | 6- -1 | 61     | 7- -1 | 71 |
| 0- -1 | 1,0    | 0- -6 | 6,0    | 1- -2 | 12     | 2- -2 | 22     | 3- -2 | 32     | 4- -2 | 42     | 5- -2 | 52     | 6- -2 | 62     | 7- -2 | 72 |
| 9- -1 | 1,5    | 9- -6 | 6,5    | 1- -3 | 13     | 2- -3 | 23     | 3- -3 | 33     | 4- -3 | 43     | 5- -3 | 53     | 6- -3 | 63     | 7- -3 | 73 |
| 0- -2 | 2,0    | 0- -7 | 7,0    | 1- -4 | 14     | 2- -4 | 24     | 3- -4 | 34     | 4- -4 | 44     | 5- -4 | 54     | 6- -4 | 64     | 7- -4 | 74 |
| 9- -2 | 2,5    | 9- -7 | 7,5    | 1- -5 | 15     | 2- -5 | 25     | 3- -5 | 35     | 4- -5 | 45     | 5- -5 | 55     | 6- -5 | 65     | 7- -5 | 75 |
| 0- -3 | 3,0    | 0- -8 | 8,0    | 1- -6 | 16     | 2- -6 | 26     | 3- -6 | 36     | 4- -6 | 46     | 5- -6 | 56     | 6- -6 | 66     | 7- -6 | 76 |
| 9- -3 | 3,5    | 9- -8 | 8,5    | 1- -7 | 17     | 2- -7 | 27     | 3- -7 | 37     | 4- -7 | 47     | 5- -7 | 57     | 6- -7 | 67     | 7- -7 | 77 |
| 0- -4 | 4,0    | 0- -9 | 9,0    | 1- -8 | 18     | 2- -8 | 28     | 3- -8 | 38     | 4- -8 | 48     | 5- -8 | 58     | 6- -8 | 68     | 7- -8 | 78 |
| 9- -4 | 4,5    | 9- -9 | 9,5    | 1- -9 | 19     | 2- -9 | 29     | 3- -9 | 39     | 4- -9 | 49     | 5- -9 | 59     | 6- -9 | 69     | 7- -9 | 79 |
| 0- -5 | 5,0    | 1- -0 | 10     | 2- -0 | 20     | 3- -0 | 30     | 4- -0 | 40     | 5- -0 | 50     | 6- -0 | 60     | 7- -0 | 70     | 8- -0 | 80 |

#### ORDERING INFORMATION

| Description  | Straight<br>Type A wiring<br>Part Number | Total flipped<br>Type B wiring<br>Part Number |
|--|--|---|
| MPO female - MPO female Patch Cord; OM3 XG 10 Gb/s | Y-2160134-X                              | Y-2160192-X                                   |
| MPO female - MPO female Patch Cord; SM             | Y-2160137-X                              | Y-2160195-X                                   |
| MPO male - MPO female Patch Cord; OM3 XG 10 Gb/s   | Y-2160138-X                              | Y-2160196-X                                   |
| MPO male - MPO female Patch Cord; SM               | Y-2160141-X                              | Y-2160199-X                                   |

# MPO/MPOptimate System

## 12 Fiber MPO System

### MPO Fan-Out Trunk Cable Assemblies

#### FEATURES

- 3.2mm MPO round cable to LC or SC 12 x 2 mm tails
- Terminated with female or male MPO connectors
- Cable: 6.4mm OM3 or OS2, Loose Tube LSZH construction
- All products with protocol, for constant and reliable quality
- Tail lengths: 4 x 40cm, 4 x 50cm, 4 x 60cm (other tail lengths available on request).
- All tails are protected with transparent protection sleeve
- Packaging: ≤50 m in box, >50 m on reel
- Re-usable pulling socks can be ordered separately. Part Number 2055567-1
- Typical application: inter rack equipment/patch panel connections



#### ORDERING INFORMATION

| Description                                       | Part Number<br>2-99 m - table A | Part Number<br>100-500 m - table B |
|---|---------------------------------|------------------------------------|
| 1 x MPO female to 12 x LC Simplex; OM3 XG 10 Gb/s | Y-2160106-X                     | Y-2160107-X                        |
| 1 x MPO female to 12 x LC Simplex; SM             | Y-2160108-X                     | Y-2160109-X                        |
| 1 x MPO female to 12 x SC Simplex; OM3 XG 10 Gb/s | Y-2160110-X                     | Y-2160111-X                        |
| 1 x MPO female to 12 x SC Simplex; SM             | Y-2160116-X                     | Y-2160117-X                        |
| 1 x MPO male to 12 x LC Simplex; OM3 XG 10 Gb/s   | Y-2160012-X                     | Y-2160013-X                        |
| 1 x MPO male to 12 x LC Simplex; SM               | Y-2160122-X                     | Y-2160123-X                        |
| 1 x MPO male to 12 x SC Simplex; OM3 XG 10 Gb/s   | Y-2160124-X                     | Y-2160125-X                        |
| 1 x MPO male to 12 x SC Simplex; SM               | Y-2160128-X                     | Y-2160129-X                        |

For available lengths: see page 02

# MPO/MPOptimate System

## 12 Fiber MPO System

### Patch Leads – Technical Data

#### SC Assemblies

|                 |                 |
|-----------------|-----------------|
| Cable sheath:   | LSZH            |
| Cable diameter: | 2.5 mm Twin Zip |
| Ferrule         | Ceramic         |

#### LC Assemblies

|                 |                      |
|-----------------|----------------------|
| Cable sheath:   | LSZH                 |
| Cable diameter: | 1.8 mm Mini Twin Zip |
| Ferrule         | Ceramic              |

All assemblies are machine polished providing highest quality.

Multimode OM3 and singlemode OS2 assemblies have an ensured performance by Optimized-Physical-Contact (OPC).

All assemblies are factory tested and come with a test protocol.

Insertion Loss and Return Loss values specified against reference connectors.

#### Singlemode Patch Cords

| Connector Type | Attenuation max. | Return loss. min. | Temp. Range   |
|----------------|------------------|-------------------|---------------|
| SC, PC         | 0,3 dB           | > 45 dB           | -10°C / +60°C |
| LC, PC         | 0,3 dB           | > 45 dB           | -10°C / +60°C |

#### Multimode Patch Cords

| Connector Type | Attenuation max. | Return loss. min. | Temp. Range   |
|----------------|------------------|-------------------|---------------|
| SC, PC         | 0,3 dB           | > 20 dB           | -10°C / +60°C |
| LC, PC         | 0,3 dB           | > 20 dB           | -10°C / +60°C |

### LC Duplex / LC Duplex patch cords

#### FEATURES

- All assemblies are machine polished providing highest quality.
- Multimode OM3 and singlemode OS2 assemblies have an ensured performance by Optimized-Physical-Contact (OPC).
- All assemblies are factory tested and come with a test protocol



#### ORDERING INFORMATION

| Description    | Part Number |
|----------------|-------------|
| OS2            | Y-6536501-X |
| OM3 XG 10 Gb/s | Y-6536969-X |

| Y- -X | Length |
|-------|--------|
| 0- -1 | 1 m    |
| 0- -2 | 2 m    |
| 0- -3 | 3 m    |
| 0- -5 | 5 m    |
| 1- -0 | 10 m   |

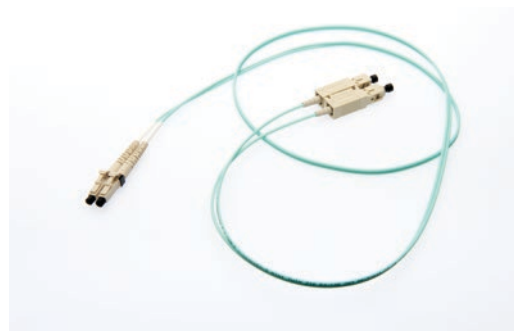
# MPO/MPOptimate System

## 12 Fiber MPO System

### LC Duplex / SC Duplex patch cords

#### FEATURES

- All assemblies are machine polished providing highest quality.
- Multimode OM3 and singlemode OS2 assemblies have an ensured performance by Optimized-Physical-Contact (OPC).
- All assemblies are factory tested and come with a test protocol



#### ORDERING INFORMATION

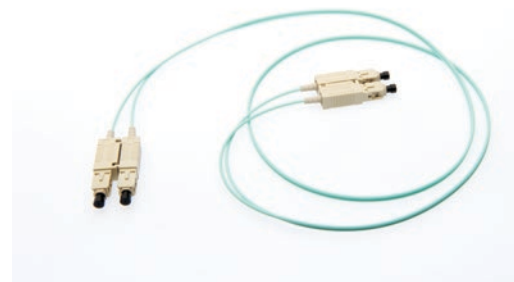
| Description    | Part Number |
|----------------|-------------|
| OS2            | Y-6536508-X |
| OM3 XG 10 Gb/s | Y-6536967-X |

| Y- -X | Length |
|-------|--------|
| 0- -1 | 1 m    |
| 0- -2 | 2 m    |
| 0- -3 | 3 m    |
| 0- -5 | 5 m    |
| 1- -0 | 10 m   |

### SC Duplex / SC Duplex patch cords

#### FEATURES

- All assemblies are machine polished providing highest quality.
- Multimode OM3 and singlemode OS2 assemblies have an ensured performance by Optimized Physical Contact (OPC).
- All assemblies are factory tested and come with a test protocol



#### ORDERING INFORMATION

| Description    | Part Number |
|----------------|-------------|
| OS2            | Y-6348260-X |
| OM3 XG 10 Gb/s | Y-6536464-X |

| Y- -X | Length |
|-------|--------|
| 0- -1 | 1 m    |
| 0- -2 | 2 m    |
| 0- -3 | 3 m    |
| 0- -5 | 5 m    |
| 1- -0 | 10 m   |



# MPO/MPOptimate System

## 24 Fiber MPOptimate System

---

### 24 Fiber MPOptimate System

Demand for bandwidth and storage is expanding at a breathtaking rate within the data center, which means that the environment is rapidly evolving, making the impact on data center design and management profound.

Networks will need to be ready to migrate from 10 to 40 to 100 GbE speeds dynamically, whilst data center managers and designers need to be able to manage this migration to maximize efficiency and responsiveness while minimizing cost.

Preparing for this trend demands a simple yet robust migration pathway.

As part of TE Connectivity's data center solution, the 24 Fiber MPOptimate system enables such a plan, supporting the migration of increasing data speeds required to support the next generation of servers, storage and switching platforms.



#### SYSTEM FEATURES:

- Low-loss 24 fiber MPOptimate modules
- Fast interfacing, "trouble free" of gender and polarity issues
- Low loss 24 fiber MPOptimate trunks
- Supporting 10/40/100GbE throughput
- A single trunking format that can be replicated and upgraded simply and flexibly
- Pre-engineered paths and polarity
- 24 Fiber trunk systems offer higher fiber utilization versus 12 fiber trunk systems
- Fewer trunks: less containment space needed leading to lower initial build costs.
- Fewer connections: faster time to turn up circuits
- Fewer components
- Standardized practices for design, installation, documentation and troubleshooting polarity
- Each product is individually tested to ensure that its performance meets or exceeds the required standard. The test results are supplied with each product.

# MPO/MPOptimate System

## 24 Fiber MPOptimate System

### MPOptimate 24f pre-terminated trunks

#### FEATURES

- Loose tube cable construction, ideal for routing through cable tray or raceway
- Cable terminated with low loss 24 fiber MPOptimate connectors
- Terminated with female MPO connectors (male versions on request)
- OM3, OM4 cable performance, LSZH construction
- Connector performance for OM3/OM4:  
Attenuation  $\leq 0.25$  dB (max.);  
RL  $\geq 28$  dB (min)
- The trunks are equipped with midi fan-out and 3.8mm round cable MPO tails (80cm)
- All tails are protected with transparent protection sleeve
- Factory pre-terminated assemblies
- All products with protocol, for constant and reliable quality
- Packaging:  $\leq 50$  m in box,  $> 50$  m on reel
- Re-usable pulling socks can be ordered separately. Part Number 2055567-1



**Color:** aqua

#### ORDERING INFORMATION

| Description                       | Part Number      | Part Number         |
|-----------------------------------|------------------|---------------------|
|                                   | 2-99 m - table A | 100-500 m - table B |
| 24 fiber; OM3; Straight A wiring; | Y-2160663-X      | Y-2160664-X         |
| 24 fiber; OM4; Straight A wiring; | Y-2160608-X      | Y-2160609-X         |

For available lengths: see 02

# MPO/MPOptimate System

## 24 Fiber MPOptimate System

### 10Gb/s Cassettes – 1x24 fiber MPO to 6 LC Quad connectors



#### FEATURES

- Pre-terminated low loss cassettes
- Front: 6 x optimized LC Quad
- Back: 1 x 24 fiber low loss MPOptimate connector
- Optical cassette performance for OM3/OM4:  
Attenuation ≤ 0.35 dB(max.) RL ≥ 27 dB(min)
- All products with protocol, for constant and reliable quality
- Port number labelling and additional label strip included



#### ORDERING INFORMATION

| Description                      | Part Number straight | Part Number flipped |
|----------------------------------|----------------------|---------------------|
| 1x24 fiber MPO to 6x LC Quad OM4 | 2160266-5            | 1-2160266-5         |
| 1x24 fiber MPO to 6x LC Quad OM3 | 2160266-3            | 1-2160266-3         |

### 40GbE (4 x 10GbE) Cassette – 1x24 fiber MPO to 6 LC Quad connectors



#### FEATURES:

- Quick-Fit design, fits in all UCP products
- OM4 bend insensitive fiber
- For channel with 40G MPO cassettes connected to 40G (4x10G) transceiver
- Cassette attenuation: typical 0.25dB/max. 0.35dB
- Cassette Return Loss: 27dB min



#### ORDERING INFORMATION

| Description                  | Wire map       | Part Number |
|------------------------------|----------------|-------------|
| 1x24 fiber MPO to 6x LC Quad | Special 40/10G | 2160640-5   |

### 40Gb/s Cassette – 1x24 fiber MPO to 3x12 (8) fiber MPO connectors



#### FEATURES:

- Quick-Fit design, fits in all UCP products
- OM4 bend insensitive fiber
- Cassette attenuation: typical 0.36dB/max. 0.5dB
- Cassette Return Loss: 27dB min

#### ORDERING INFORMATION

| Description                         | Wire map  | Part Number |
|-------------------------------------|-----------|-------------|
| 1x24 fiber MPO to 3x12(8) fiber MPO | Universal | 2160639-5   |



# MPO/MPOOptimate System

## 24 Fiber MPOOptimate System

### 40Gb/s Cassette - 2x24 fiber MPO to 6x12 (8) fiber MPO connectors

**FEATURES:**

- Quick-Fit design, fits in all UCP products
- OM4 bend insensitive fiber
- Cassette attenuation: typical 0.36dB/max. 0.5dB
- Cassette Return Loss: 27dB min



**ORDERING INFORMATION**

| Description                         | Wire map  | Part Number |
|-------------------------------------|-----------|-------------|
| 2x24 fiber MPO to 6x12(8) fiber MPO | Universal | 2160649-5   |

### 100Gb/s Cassette - 1x24 fiber MPO to 1x24 fiber MPO connector

**FEATURES:**

- Quick-Fit design, Fits in all UCP products
- OM4 bend insensitive fiber
- Cassette attenuation: typical 0.36dB/max. 0.5dB
- Cassette Return Loss: 27dB min



**ORDERING INFORMATION**

| Description                      | Wire map   | Part Number |
|----------------------------------|------------|-------------|
| 1x24 fiber MPO to 1x24 fiber MPO | Polarity A | 2160650-5   |
| 1x24 fiber MPO to 1x24 fiber MPO | Polarity B | 1-2160650-5 |

### 100Gb/s Cassette - 2x24 fiber MPO to 2x24 fiber MPO connectors

**FEATURES:**

- Quick-Fit design, fits in all UCP products
- OM4 bend insensitive fiber
- Cassette attenuation: typical 0.36dB/max. 0.5dB
- Cassette Return Loss: 27dB min



**ORDERING INFORMATION**

| Description                      | Wire map   | Part Number |
|----------------------------------|------------|-------------|
| 2x24 fiber MPO to 2x24 fiber MPO | Polarity A | 2160651-5   |
| 2x24 fiber MPO to 2x24 fiber MPO | Polarity B | 1-2160651-5 |

# MPO/MPOOptimate System

## 24 Fiber MPOOptimate System

### MPOOptimate 24f patch cords

#### FEATURES

- For direct connection of 100G transceivers
- Construction suited to inter-cabinet patching
- Low loss MPOOptimate 24 fiber MPO round 3.8mm cable patch cord
- OM3 and OM4 cable performance, LSZH construction
- Connector performance for OM3/OM4:  
Attenuation  $\leq$  0.25 dB (max.); RL  $\geq$  28 dB (min)
- All products with protocol, for constant and reliable quality



**Color:** aqua



#### LENGTH TABLE:

| Y- X  | Length | Y- X  | Length | Y- X  | Length | Y- X  | Length | Y- X  | Length | Y- X  | Length | Y- X  | Length | Y- X  | Length |       |    |
|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|----|
| 9- 0  | 0,5    | 9- 5  | 5,5    | 1- -1 | 11     | 2- -1 | 21     | 3- -1 | 31     | 4- -1 | 41     | 5- -1 | 51     | 6- -1 | 61     | 7- -1 | 71 |
| 0- -1 | 1,0    | 0- -6 | 6,0    | 1- -2 | 12     | 2- -2 | 22     | 3- -2 | 32     | 4- -2 | 42     | 5- -2 | 52     | 6- -2 | 62     | 7- -2 | 72 |
| 9- -1 | 1,5    | 9- -6 | 6,5    | 1- -3 | 13     | 2- -3 | 23     | 3- -3 | 33     | 4- -3 | 43     | 5- -3 | 53     | 6- -3 | 63     | 7- -3 | 73 |
| 0- -2 | 2,0    | 0- -7 | 7,0    | 1- -4 | 14     | 2- -4 | 24     | 3- -4 | 34     | 4- -4 | 44     | 5- -4 | 54     | 6- -4 | 64     | 7- -4 | 74 |
| 9- -2 | 2,5    | 9- -7 | 7,5    | 1- -5 | 15     | 2- -5 | 25     | 3- -5 | 35     | 4- -5 | 45     | 5- -5 | 55     | 6- -5 | 65     | 7- -5 | 75 |
| 0- -3 | 3,0    | 0- -8 | 8,0    | 1- -6 | 16     | 2- -6 | 26     | 3- -6 | 36     | 4- -6 | 46     | 5- -6 | 56     | 6- -6 | 66     | 7- -6 | 76 |
| 9- -3 | 3,5    | 9- -8 | 8,5    | 1- -7 | 17     | 2- -7 | 27     | 3- -7 | 37     | 4- -7 | 47     | 5- -7 | 57     | 6- -7 | 67     | 7- -7 | 77 |
| 0- -4 | 4,0    | 0- -9 | 9,0    | 1- -8 | 18     | 2- -8 | 28     | 3- -8 | 38     | 4- -8 | 48     | 5- -8 | 58     | 6- -8 | 68     | 7- -8 | 78 |
| 9- -4 | 4,5    | 9- -9 | 9,5    | 1- -9 | 19     | 2- -9 | 29     | 3- -9 | 39     | 4- -9 | 49     | 5- -9 | 59     | 6- -9 | 69     | 7- -9 | 79 |
| 0- -5 | 5,0    | 1- -0 | 10     | 2- -0 | 20     | 3- -0 | 30     | 4- -0 | 40     | 5- -0 | 50     | 6- -0 | 60     | 7- -0 | 70     | 8- -0 | 80 |

#### ORDERING INFORMATION

| Description                                     | Part Number |
|---|-------------|
| 24 fiber; OM4; Straight A wiring; Female/Female | Y-2160304-X |
| 24 fiber; OM4; Straight A wiring; Female/Male   | Y-2160307-X |
| 24 fiber; OM4; Straight A wiring; Male/Male     | Y-2160738-X |
| 24 fiber; OM4; Flipped B wiring; Female/Male    | Y-2160654-X |
| 24 fiber; OM4; Flipped B wiring; Male/Male      | Y-2160694-X |
| 24 fiber; OM3; Straight A wiring; Female/Female | Y-2160305-X |



# MPO/MPOOptimate System

## 24 Fiber MPOOptimate System

### 40GbE to 10GbE Fan-Out cords - 12 fiber MPO to 4xLC duplex (Fan-Out)



#### FEATURES:

- MPO side connects to 40G QSFP transceiver, LC side connects to 10G SPF+ (channel)
- Wire map: LC 1-MPO fiber 1-12, LC2-MPO fiber 2-11, LC3-MPO fiber 3-10, LC4-MPO fiber 4-9
- 8 fiber 3,2/2,0mm diameter
- OM4 bend insensitive fiber LSZH cable
- Flammability IEC 60332 Parts 1 & 3

Color: Aqua



#### LENGTH TABLE:

| Y- X  | Length | Y- X  | Length | Y- X  | Length | Y- X  | Length | Y- X  | Length | Y- X  | Length | Y- X  | Length | Y- X  | Length | Y- X  | Length | Y- X | Length | Y- X | Length |  |
|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|------|--------|------|--------|--|
| 9- 0  | 0,5    | 9- 5  | 5,5    | 1- -1 | 11     | 2- -1 | 21     | 3- -1 | 31     | 4- -1 | 41     | 5- -1 | 51     | 6- -1 | 61     | 7- -1 | 71     |      |        |      |        |  |
| 0- -1 | 1,0    | 0- -6 | 6,0    | 1- -2 | 12     | 2- -2 | 22     | 3- -2 | 32     | 4- -2 | 42     | 5- -2 | 52     | 6- -2 | 62     | 7- -2 | 72     |      |        |      |        |  |
| 9- -1 | 1,5    | 9- -6 | 6,5    | 1- -3 | 13     | 2- -3 | 23     | 3- -3 | 33     | 4- -3 | 43     | 5- -3 | 53     | 6- -3 | 63     | 7- -3 | 73     |      |        |      |        |  |
| 0- -2 | 2,0    | 0- -7 | 7,0    | 1- -4 | 14     | 2- -4 | 24     | 3- -4 | 34     | 4- -4 | 44     | 5- -4 | 54     | 6- -4 | 64     | 7- -4 | 74     |      |        |      |        |  |
| 9- -2 | 2,5    | 9- -7 | 7,5    | 1- -5 | 15     | 2- -5 | 25     | 3- -5 | 35     | 4- -5 | 45     | 5- -5 | 55     | 6- -5 | 65     | 7- -5 | 75     |      |        |      |        |  |
| 0- -3 | 3,0    | 0- -8 | 8,0    | 1- -6 | 16     | 2- -6 | 26     | 3- -6 | 36     | 4- -6 | 46     | 5- -6 | 56     | 6- -6 | 66     | 7- -6 | 76     |      |        |      |        |  |
| 9- -3 | 3,5    | 9- -8 | 8,5    | 1- -7 | 17     | 2- -7 | 27     | 3- -7 | 37     | 4- -7 | 47     | 5- -7 | 57     | 6- -7 | 67     | 7- -7 | 77     |      |        |      |        |  |
| 0- -4 | 4,0    | 0- -9 | 9,0    | 1- -8 | 18     | 2- -8 | 28     | 3- -8 | 38     | 4- -8 | 48     | 5- -8 | 58     | 6- -8 | 68     | 7- -8 | 78     |      |        |      |        |  |
| 9- -4 | 4,5    | 9- -9 | 9,5    | 1- -9 | 19     | 2- -9 | 29     | 3- -9 | 39     | 4- -9 | 49     | 5- -9 | 59     | 6- -9 | 69     | 7- -9 | 79     |      |        |      |        |  |
| 0- -5 | 5,0    | 1- -0 | 10     | 2- -0 | 20     | 3- -0 | 30     | 4- -0 | 40     | 5- -0 | 50     | 6- -0 | 60     | 7- -0 | 70     | 8- -0 | 80     |      |        |      |        |  |

#### ORDERING INFORMATION

| Description                         | Wire map       | Part Number |
|-------------------------------------|----------------|-------------|
| 12 fiber MPO to 4x LC duplex cable. | Special 40/10G | Y-2160510-X |

# MPO/MPOptimate System

## 24 Fiber MPOptimate System

### 12 Fiber MPOptimate Quick-Fit Cassette – 40Gb/s to 10Gb/s

#### FEATURES

- Pre-terminated low loss cassettes
- Front: 4 x optimized LC Duplex adapters
- Back: 1 x 12 fiber low loss MPOptimate connector
- Optical cassette performance OM4:  
Attenuation  $\leq 0.35$  dB(max.) RL  $\geq 27$  dB(min)
- Special wiremap to be used in combination with 40G QSFP SR4 transceivers
- All products with protocol, for constant and reliable quality
- Port number labelling and additional label strip included



#### ORDERING INFORMATION

| Description                            | Wire map        | Part Number |
|--|-----------------|-------------|
| 12 fiber MPO/LC Quick-Fit cassette OM4 | 40Gb/s to10Gb/s | 2160627-5   |

# MPO/MPOptimate System

## MPO/MPOptimate Panels & Accessories

### UCP Patch Panel Angled and Flushmount

Please refer to Chapter 4, page 50

Note: For angled modular drawer panels see page 167



### Angled Quick-Fit MPO/MPOptimate drawer panel

#### FEATURES

- Accommodates up to 4 MPO/MPOptimate Quick-Fit cassettes
- High-End solution
- Fully integrated and retractable cable management bracket
- Allows for easy Move, Adds and Changes
- Angled style of panels provides additional cable management towards side area

**Color:** black (RAL 9005)



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Modular MPO/MPOptimate drawer panel for 4 Quick-Fit cassettes, angled | 1-1671436-1 |

### Flush Quick-Fit MPO/MPOptimate drawer panel

#### FEATURES

- Accommodates up to 4 MPO/MPOptimate Quick-Fit cassettes
- High-End solution
- Fully integrated and retractable cable management bracket
- Allows for easy Move, Adds and Changes
- Flushmount

**Color:** black (RAL 9005)



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Modular MPO/MPOptimate drawer panel for 4 Quick-Fit cassettes, flush | 1-1671437-1 |

# MPO/MPOptimate System

## MPO/MPOptimate Panels & Accessories

### Modular MPO/MPOptimate front plate for Quick-Fit cassettes

#### FEATURES

- Low cost solution
- Flush mount
- Front plate with no additional cable management
- Does accept copper and fiber in one panel

**Color:** black (RAL 9005)



#### ORDERING INFORMATION

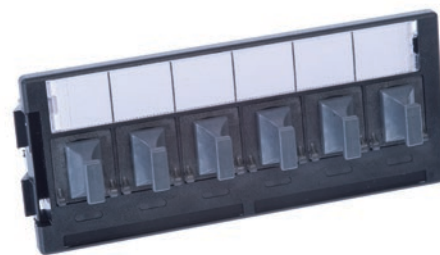
| Description                        | Part Number |
|------------------------------------|-------------|
| Modular MPO/MPOptimate front plate | 1-1671373-1 |

### MPO/MPOptimate coupler Quick-Fit module

#### FEATURES

- Quick-Fit module with 6 x or 12 x MPO coupler
- Port number labeling and additional label strip included
- MPO coupler always used with on one side MPO male and other side MPO female connector

**Color:** black (RAL 9005)



#### ORDERING INFORMATION

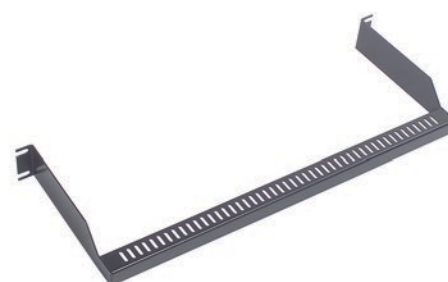
| Description             | Part Number |
|-------------------------|-------------|
| 6 x MPO coupler module  | 1671200-1   |
| 12 x MPO coupler module | 1711987-1   |

### MPO/MPOptimate back cable manager

#### FEATURES

- 19", 1 U rear cable management bar
- Used for MPO front panels
- 3 depths available
- Applications include new installation and retrofit
- Rear or front of rack or cabinet mount

**Color:** black (RAL 9005)



#### ORDERING INFORMATION

| Description                       | Part Number |
|-----------------------------------|-------------|
| Cable management bar 100 mm depth | 1711314-1   |
| Cable management bar 175 mm depth | 1711314-2   |
| Cable management bar 275 mm depth | 1711314-3   |

# MPO/MPOptimate System

## MPO/MPOptimate Panels & Accessories

### MPO/MPOptimate pull protection sleeve

#### FEATURES

- Re-usable installation pull and protection kit
- IP 67 protection
- Must be ordered separately
- One part number contains 1 x installation sleeve with end cap and 1 x pull sleeve with pull eye
- Does fit to:
  - 12 fiber MPO and MPOptimate trunks with midi fan-out
  - 24 fiber MPO and MPOptimate trunks with midi fan-out
  - 12 x MPO to LC or SC MPO and MPOptimate trunk with midi fan-out
  - 48 fiber MPO and MPOptimate trunks with midi fan-out (use 2055567-2)



**Color:** black (RAL 9005)

#### ORDERING INFORMATION

| Description                                      | Part Number |
|--|-------------|
| Protection sleeve kit for 12 and 24 fiber cables | 2055567-1   |
| Protection sleeve kit for 48 fiber cables        | 2055567-2   |

### Hook & Loop Cable Ties

#### FEATURES

- Hook and loop ties
- No risk of damaging cables
- Releasable and reusable
- An order quantity of one equals one roll of 10 ties



#### ORDERING INFORMATION

| Description                       | Part Number |
|-----------------------------------|-------------|
| Hook & Loop Tie 1" x 8" (10pcs.)  | 1375253-2   |
| Hook & Loop Tie 1" x 12" (10pcs.) | 1375254-2   |

### Adhesive Foam Tape

#### FEATURES

- Protects cable jacket when mounted to panels
- No risk of damaging cables
- Dimensions: 15 mm x 1 mm
- 1 roll of 25 m

#### ORDERING INFORMATION

| Description                       | Part Number |
|-----------------------------------|-------------|
| Foam tape 15 mm x 1 mm, 25 m roll | 1671961-1   |

# MPO/MPOptimate System

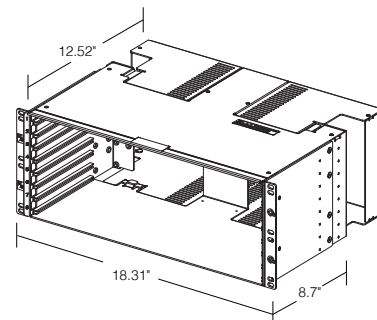
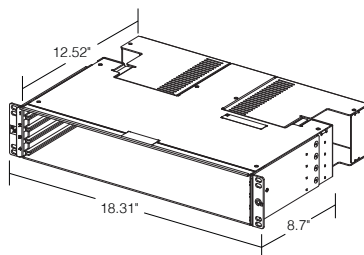
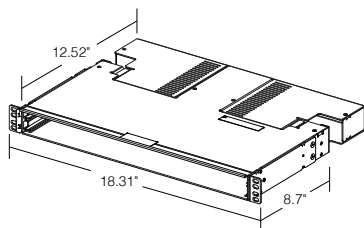
## Q3000 Series MPO Fiber Panels

Q3000 Series Fiber Panels are the latest innovation in our High Fiber Count suite of products. The Q3000 Series provides a traditional fiber enclosure to accommodate applications with high density fiber terminations that require easy access to individual connectors and cable management within the panel. The Q3000 series can accommodate LC or MPO applications in singlemode and multimode fiber types

### FEATURES

- Support IEEE 802.3ae, IEEE 802.3ba, IEEE 802.3z
- Exceed ANSI/TIA-568-C.3 and ISO 11801 Edition 2 cabling system requirements
- OM3, OM4, OS1 and OS2
- 19-Inch rack mountable
- Available in 1, 2, and 4U Chassis
- 48 Fiber (24 Duplex LC) LC-to-MPO Blade
- 192 Fiber (16 Port) MPO-to-MPO Blade

### DIMENSIONS





# MPO/MPOptimate System

## Q3000 Series MPO Fiber Panels

### Q3200, Q3400 and Q3800 Chassis (unloaded)

Q3000 Series base chassis fit in any EIA/TIA 19-inch rack or cabinet. They can be loaded with any of the Q3000 or Q4000 series blades based on the application required. An optional door kit can be purchased to provide additional protection to the fiber patch cords exiting the panel.



#### ORDERING INFORMATION

| Product Description         |  | Part Number |
|-----------------------------|--|-------------|
| <b>Q3000 series chassis</b> | Q3200; 1U (1.75" x 19" x 15"), accommodates 2 blades | QUCH-1RU    |
|                             | Q3400; 2U (3.5" x 19" x 15"), accommodates 4 blades  | QUCH-2RU    |
|                             | Q3800; 4U (7" x 19" x 15"), accommodates 8 blades    | QUCH-4RU    |
| <b>Front door kits</b>      | Q3200; 1U  | QDR-1RU     |
|                             | Q3400; 2U  | QDR-2RU     |
|                             | Q3800; 4U  | QDR-4RU     |

### Q3000 Blades

Q3000 Series blades are offered in LC-MPO, and MPO/MPO adapter only in singlemode, OM3 and OM4. These blades mount in either the Q4000 managed chassis to provide the end-user to upgrade the blade to Q4000 at a later date or into the standard Q3000 base chassis. Each blade is 1/2U in height (0.875 inches).



LC-MPO Blade



MPO-MPO Blade

#### ORDERING INFORMATION

| Product Description  |                                      | Part Number       |
|--|--------------------------------------|-------------------|
| <b>LC to MPO;</b> 24 Duplex LC ports (48 Fibers) distributed from 2 each 12 fiber MPO connectors | Singlemode ultra polish LC-MPO blade | QUFB-48FDLCMSMHR  |
|  | OM3 Multimode LC-MPO blade           | QUFB-48FDLCMM3HR  |
| <b>MPO to MPO;</b> 16 MPO ports with 12 Fibers each (192 fibers)                                 | Singlemode MPO-MPO blade             | QUFB-192FMPOMSMHR |
|  | OM3/OM4 Multimode MPO-MPO blade      | QUFB-192FMPOMMHR  |

# MPO/MPOptimate System

## MPO/MPOptimate Cleaning Tools

### MPO/LC/SC/MT-RJ Cassette Cleaners



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| MTP/MPO with pins; Packaging: 1                           | 1918802-1   |
| 1 Slot Reel Cleaner for MPO/LC/SC and MT-RJ; Packaging: 1 | 1918803-1   |
| 2 Slot reel cleaner for LC and SC; Packaging: 1           | 1918805-1   |
| Cleaner Refill; Packaging: 6 rolls                        | 1918806-1   |

### MPO Coupler Cleaner



#### ORDERING INFORMATION

| Description           | Part Number |
|-----------------------|-------------|
| MPO IBC; Packaging: 1 | 1918809-1   |

### LC/SC bulkhead cleaner



#### ORDERING INFORMATION

| Description                         | Part Number |
|-------------------------------------|-------------|
| SC IBC (In Bulkhead Cleaner)        | 2064499-1   |
| LC IBC (In Bulkhead Cleaner)        | 2064500-1   |
| LC duplex IBC (In Bulkhead Cleaner) | 2111664-1   |

## 2. MRJ21 System

|                                  |    |
|----------------------------------|----|
| MRJ21 XG Cassettes & Panels..... | 28 |
| MRJ21 XG Trunks & Fan-Outs.....  | 29 |
| MRJ21 Cassettes & Panels.....    | 30 |
| MRJ21 Trunks.....                | 32 |
| MRJ21 Fan-Outs.....              | 34 |
| MRJ21 Accessories.....           | 35 |

# MRJ21 System

## MRJ21 XG Cassettes & Panels

### MRJ21 XG Quick-Fit Cassette 8 Port (10 Gb/s)

#### FEATURES

- Optimal for use in combination with UCP patch panels: plug & play deployment
- Compatible with MRJ21 XG cable assemblies for 10GbE performance
- Front side: 8 x RJ45 jack (2 rows of 4 jacks)
- Rear side: 2 x MRJ21 receptacle
- Factory terminated and tested solution
- For AMPTRAC version of MRJ21 XG Quick-Fit cassette please see page 131 in Chapter 8 B

**Color:** black (RAL 9005)



#### ORDERING INFORMATION

| Description                               | Part Number |
|---|-------------|
| MRJ21 XG Quick-Fit cassette for 10GBase-T | 2153115-1   |

### MRJ21 XG 19" Patch Panel, 1U, straight

#### FEATURES

- Optimal for use in environments where high density is required
- Factory terminated and tested solution
- Compatible with MRJ21 XG cable assemblies for 10GbE performance
- Straight panel with either 24 or 48 ports on 1U
- For AMPTRAC version of MRJ21 XG 19" panel please see page 131 in Chapter 8 B

**Color:** black (RAL 9005)



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Straight panel 1U for 10GbE; MRJ21 Plugs: 6; RJ-45 Ports: 24  | 2153041-1   |
| Straight panel 1U for 10GbE; MRJ21 Plugs: 12; RJ-45 Ports: 48 | 2153046-1   |

# MRJ21 System

## MRJ21 XG Trunks & Fan-Outs

### MRJ21 XG to MRJ21 XG trunks

#### FEATURES

- Friendly field installable 10 GbE solution
- Factory terminated and 100% tested solution
- Dense double blade connector with offset jackscrews for latching
- 16 pair shielded cable with AWG 26 solid conductors
- Available with LSZH or CMR sheath

**Color:** white



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| MRJ21 XG to MRJ21 XG, 10 Gb/s, 180°-180° back shell; LSZH sheath | Y-2153052-X |
| MRJ21 XG to MRJ21 XG, 10 Gb/s, 180°-45° back shell; LSZH sheath  | Y-2153078-X |
| MRJ21 XG to MRJ21 XG, 10 Gb/s, 180°-180° back shell; CMR sheath  | Y-2111521-X |
| MRJ21 XG to MRJ21 XG, 10 Gb/s, 180°-45° back shell; CMR sheath   | Y-2111522-X |

| Y- -X | Length |
|-------|--------|
| 0- -3 | 3 m    |
| 0- -5 | 5 m    |
| 1- -0 | 10 m   |
| 1- -5 | 15 m   |
| 2- -0 | 20 m   |
| 2- -5 | 25 m   |
| 3- -0 | 30 m   |
| 3- -5 | 35 m   |
| 4- -0 | 40 m   |

### MRJ21 XG Fan-Out cable to multiple RJ-45 plugs (shielded)

#### FEATURES

- Friendly field installable 10 GbE solution
- Suitable for use in 3-connector models where 10 GbE application is required
- Factory terminated, 100% tested and serialized
- 16 pair, shielded, AWG 26 solid conductors
- MRJ21 to 4xRJ45 fan-out



#### ORDERING INFORMATION

| Description                                    | Part Number |
|--|-------------|
| MRJ21 to 4 RJ-45. 180° back shell; LSZH sheath | Y-2153230-X |

| Y- -X | Length |
|-------|--------|
| 0- -3 | 3 m    |
| 0- -5 | 5 m    |
| 1- -0 | 10 m   |
| 1- -5 | 15 m   |
| 2- -0 | 20 m   |
| 2- -5 | 25 m   |
| 3- -0 | 30 m   |
| 3- -5 | 35 m   |
| 4- -0 | 40 m   |

# MRJ21 System

## MRJ21 Cassettes & Panels

### MRJ21 Quick-Fit Cassette 12 port (1 Gb/s)

#### FEATURES

- Pre-terminated Quick-Fit cassette
- High Performance TP Cabling for guaranteed application performance
- High-density, small form factor connectivity
- Modular pluggable solution
- Automatic bonding by design



#### ORDERING INFORMATION

| Description                             | Part Number |
|---|-------------|
| MRJ21 Quick-Fit cassette for 1000Base-T | 1711970-1   |

### MRJ21 angled patch panel (shielded and unshielded)

#### FEATURES

- High-performance TP cabling for guaranteed application performance
- High-density, small form factor copper connector interface
- Angled panel with 48 ports on 1U
- Factory terminated and tested solution
- Modular, pluggable solution
- Including grounding bolt

**Color:** black (RAL 9005)



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Angled MRJ21 panel for 1000Base-T; MRJ21 Plugs: 8; RJ-45 Ports: 48 | 1-1671143-1 |

# MRJ21 System

## MRJ21 Cassettes & Panels

### MRJ21 patch panel, 1U, straight (shielded)

#### FEATURES

- High performance TP cabling for guaranteed application performance
- High-density, small form factor copper connector interface
- Factory terminated and tested solution
- Straight panel with 24 or 48 ports on 1U
- Modular pluggable solution

**Color:** black (RAL 9005)



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Standard straight panel for 1000Base-T; MRJ21 Plugs: 4; RJ-45 Ports: 24 | 1711944-1   |
| Standard straight panel for 1000Base-T; MRJ21 Plugs: 8; RJ-45 Ports: 48 | 1777098-1   |

### MRJ21 patch panel, 1U, straight (unshielded)

#### FEATURES

- High-performance TP cabling for guaranteed application performance
- High-density, small form factor copper connector interface
- Straight panel with 24 or 48 ports on 1U
- Factory terminated and tested solution
- Modular, pluggable solution

**Color:** black (RAL 9005)



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Standard straight panel for 100Base-T; MRJ21 Plugs: 4; RJ-45 Ports: 48  | 1435965-1   |
| Standard straight panel for 1000Base-T; MRJ21 Plugs: 8; RJ-45 Ports: 48 | 1435971-1   |
| Standard straight panel for 1000Base-T; MRJ21 Plugs: 4; RJ-45 Ports: 24 | 1777029-1   |



# MRJ21 System

## MRJ21 Trunks

### MRJ21 to MRJ21 cable assemblies (shielded)

#### FEATURES

- Friendly field installable 1 Gbs solution
- Enhanced screening and improved EMC
- Factory terminated and 100 % tested solution
- Dense double blade connector with offset jackscrews for latching
- 1.5 to 4 times the port density of 2 x 6 Stacked Mod Jack (RJ-45)
- 24 pair shielded cable with AWG 24 solid conductors

**Color:** white



| Y- -X | Length |
|-------|--------|
| 0- -5 | 5 m    |
| 1- -0 | 10 m   |
| 1- -5 | 15 m   |
| 2- -0 | 20 m   |
| 2- -5 | 25 m   |
| 3- -0 | 30 m   |
| 3- -5 | 35 m   |
| 4- -0 | 40 m   |
| 5- -0 | 50 m   |

#### ORDERING INFORMATION

| Description                                       | Part Number |
|---|-------------|
| MRJ21 to MRJ21, 180°-180° back shell; LSZH sheath | Y-1711758-X |
| MRJ21 to MRJ21, 180°-45° back shell; LSZH sheath  | Y-1711774-X |

### MRJ21 to MRJ21 cable assemblies (unshielded)

#### FEATURES

- Factory terminated and tested solution
- Modular, pluggable solution
- Dense CHAMP style double blade design with offset jackscrew
- Contact layout and footprint for differential pairs creates reduced crosstalk and built-in compensation
- 1.5 to 4 times the port density of 2 x 6 Stacked Mod Jack (RJ-45)
- 3 times the port density of an RJ-21
- Jackscrew for positive latching and secure cable retention

**Color:** gray



| Y- -X | Length |
|-------|--------|
| 0- -5 | 5 m    |
| 1- -0 | 10 m   |
| 1- -5 | 15 m   |
| 2- -0 | 20 m   |
| 2- -5 | 25 m   |
| 3- -0 | 30 m   |
| 3- -5 | 35 m   |
| 4- -0 | 40 m   |
| 5- -0 | 50 m   |

#### ORDERING INFORMATION

| Description                                     | Part Number |
|---|-------------|
| MRJ21 to MRJ21, 180° back shell; CMR sheath     | Y-2111366-X |
| MRJ21 to MRJ21, 180°-45° back shell; CMR sheath | Y-2111371-X |

# MRJ21 System

## MRJ21 Trunks

### MRJ21 to MRJ21 ultra slim cable assemblies (unshielded)

#### FEATURES

- Factory terminated and tested solution
- Modular, pluggable solution
- Dense CHAMP style double blade design with offset screw fixing
- Improves uptime and space efficiency on site
- 9,2mm cable OD
- 50-60% less cable mass in pathways and spaces than comparable 4-pair cabling
- 40% less weight than comparable 4-pair cabling
- Gigabit Ethernet Channel performance
- Jackscrews for positive latching and secure cable retention

**Color:** gray



| Y- -X | Length |
|-------|--------|
| 0- -2 | 2 m    |
| 0- -5 | 5 m    |
| 1- -0 | 10 m   |
| 1- -5 | 15 m   |
| 2- -0 | 20 m   |
| 2- -5 | 25 m   |
| 3- -0 | 30 m   |

#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| MRJ21 to MRJ21 , Ultra slim, 180° back shell; CMR sheath | Y-2111367-X |

\* 30 meters application length restrictions apply

# MRJ21 System

## MRJ21 Fan-Outs

### MRJ21 Fan-Out cable to multiple RJ-45 plugs (shielded)

#### FEATURES

- Friendly field installable 1 Gbs solution
- Enhanced screening and improved EMC
- Factory terminated and 100 % tested solution
- Dense double blade connector with offset jackscrews for latching
- 1.5 to 4 times the port density of 2 x 6 Stacked Mod Jack (RJ-45)
- 24 pair shielded cable with AWG 24 solid conductors



**Color:** white

| Y- -X | Length |
|-------|--------|
| 0- -5 | 5 m    |
| 1- -0 | 10 m   |
| 1- -5 | 15 m   |
| 2- -0 | 20 m   |
| 2- -5 | 25 m   |
| 3- -0 | 30 m   |
| 3- -5 | 35 m   |
| 4- -0 | 40 m   |
| 5- -0 | 50 m   |

#### ORDERING INFORMATION

| Description                                    | Part Number |
|--|-------------|
| MRJ21 to 6 RJ-45, 180° back shell; LSZH sheath | Y-1711789-X |

### MRJ21 Fan-Out cable to multiple RJ-45 plugs (unshielded)

#### FEATURES

- Factory terminated and tested solution
- MRJ21 to RJ45 hydra cable assemblies are wired so that all 4-pairs of the RJ45 are active for Gigabit Ethernet
- New ergonomic features for easier handling
- Modular, pluggable solution
- Dense CHAMP style double blade design with offset screw fixing
- Contact layout and footprint for differential pairs creates reduced crosstalk and built-in compensation
- 3 times the port density of an RJ-21
- Jackscrews for positive latching and secure cable retention
- Other lengths on request



| Y- -X | Length |
|-------|--------|
| 0- -5 | 5 m    |
| 1- -0 | 10 m   |
| 1- -5 | 15 m   |
| 2- -0 | 20 m   |
| 2- -5 | 25 m   |
| 3- -0 | 30 m   |
| 3- -5 | 35 m   |
| 4- -0 | 40 m   |
| 5- -0 | 50 m   |

**Color:** gray

#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| MRJ21 to 6 RJ-45 for 1000Base-T, 180° back shell; CMR sheath | Y-2111370-X |

# MRJ21 System

## MRJ21 Accessories

### UCP Patch Panel Angled and Flushmount

Please refer to Chapter 4, page 50



### MRJ21 cable guiding shelf

#### FEATURES

- 19" 4U shelf with 16 vertical slots
- Each slot accepts max. 8 stacks of MRJ21 cable assemblies
- Tie down capability at the back of the shelf

**Color:** black (RAL 9005)



#### ORDERING INFORMATION

| Description               | Part Number |
|---------------------------|-------------|
| MRJ21 cable guiding shelf | 1671175-1   |

# MRJ21 System

## MRJ21 Accessories

---

### MRJ21 Back cable manager

#### FEATURES

- 19", 1U rear cable management bar
- Used for MRJ21 or other high density copper or fiber optic panels
- Simple on site assembly
- Applications include new installation and retrofit
- Rear or front of rack or cabinet mount
- 4 depths available
- Tie-down capability on side brackets and back tie-down bar
- Tie-down bar is adjustable for horizontal or vertical cable strain relief

**Color:** black (RAL 9005)



#### ORDERING INFORMATION

| Description                           | Part Number |
|---------------------------------------|-------------|
| Back cable manager 6" (150 mm) depth  | 1933352-1   |
| Back cable manager 9" (230 mm) depth  | 1933352-2   |
| Back cable manager 12" (300 mm) depth | 1933352-3   |
| Back cable manager 16" (400 mm) depth | 1933352-4   |

### 3. Sigma-Link System

|   |    |
|---|----|
| Sigma-Link Quick-Fit Class F <sub>A</sub> ..... | 38 |
| Sigma-Link Quick-Fit Class E <sub>A</sub> ..... | 39 |
| Sigma-Link Quick-Fit Class E.....               | 40 |
| Sigma-Link Quick-Fit Panel.....                 | 41 |
| Sigma-Link Quick-Fit Accessories.....           | 42 |

# Sigma-Link Quick-Fit System

## Sigma-Link Quick-Fit Class F<sub>A</sub>

### Σ-Link Quick-Fit Cable Assemblies Class F<sub>A</sub> - PL

#### FEATURES

- 24 ports per 1U, 6 port links
- Lengths 2-90m
- Factory assembled and 100% tested
- Bundle of 6 x 4 pair solid Category 7<sub>A</sub> S/FTP cable (compliant to IEC 61156-5)
- LSFRZH sheath
- Three different types of far end termination available (housing, loose jacks, open cable ends)
- Housing-to-Housing version features integrated Plastic Optical Fiber (POF) for easy tracing of far end



#### Termination guidelines for Σ-Link Housing-to-Open end:

Install jacks with tool (AMP PN 1725150-1) according to instruction sheet 411-93013.  
Use following jacks: AMP-TWIST 7<sub>A</sub>S  
(AMP PN 1711437-1 without dustcover or 1711441-1 with dustcover)

#### Note:

To achieve PL performance cable length should be > 2 m (2 connector model) according to ISO 11801 spec.

| Y- -X | Length |
|-------|--------|
| 0- -2 | 2 m    |
| 0- -5 | 5 m    |
| 1- -0 | 10 m   |
| 1- -5 | 15 m   |
| 2- -0 | 20 m   |
| 2- -5 | 25 m   |
| 3- -0 | 30 m   |
| 3- -5 | 35 m   |
| 4- -0 | 40 m   |
| 5- -0 | 50 m   |
| 6- -0 | 60 m   |
| 7- -0 | 70 m   |
| 8- -0 | 80 m   |
| 9- -0 | 90 m   |

#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Sigma-Link Cable Assembly Housing-to-Housing with POF Class F <sub>A</sub> STP | Y-2153150-X |
| Sigma-Link Cable Assembly Housing-to-Jacks Class F <sub>A</sub> STP            | Y-2153151-X |
| Sigma-Link Cable Assembly Housing-to-Open End Class F <sub>A</sub> STP         | Y-2153152-X |



# Sigma-Link Quick-Fit System

Sigma-Link Quick-Fit Class E<sub>A</sub>

## Σ-Link Quick-Fit Cable Assemblies Class E<sub>A</sub> - PL

### FEATURES

- 24 ports per 1U, 6 port links
- Lengths 2-90m
- Factory assembled and 100% tested
- Bundle of 6 x 4 pair solid Category 7 F/FTP cable
- LSZH sheath
- Four different types of far end termination available (housing, loose jacks, open cable ends, loose plugs)
- Housing-to-Housing version features integrated Plastic Optical Fiber (POF) for easy tracing of far end
- Housing-to-Plugs version for service presentation in mobile Data Centers



### Termination guidelines for Σ-Link Housing-to-Open end:

Install jacks with tool (AMP PN 1725150-1) according to instruction sheet 411-93016.

Use following jacks: AMP-TWIST 6<sub>A</sub>S

(AMP PN 1711716-1 without dustcover or 1711592-1 with dustcover).

### Note:

To achieve PL performance cable length should be > 2 m (2 connector model) according to ISO 11801 spec.

| Y- | -X  | Length |
|----|-----|--------|
| 0- | -2  | 2 m    |
| 0- | -5  | 5 m    |
| 1- | -0  | 10 m   |
| 1- | -5  | 15 m   |
| 2- | -0* | 20 m   |
| 2- | -5* | 25 m   |
| 3- | -0* | 30 m   |
| 3- | -5* | 35 m   |
| 4- | -0* | 40 m   |
| 5- | -0* | 50 m   |
| 6- | -0* | 60 m   |
| 7- | -0* | 70 m   |
| 8- | -0* | 80 m   |
| 9- | -0* | 90 m   |

\* not applicable for Housing-to-Plugs version

### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Sigma-Link Cable Assembly Housing-to-Housing with PoF Class E <sub>A</sub> STP   | Y-2153146-X |
| Sigma-Link Cable Assembly Housing-to-Jacks Class E <sub>A</sub> STP  | Y-2153147-X |
| Sigma-Link Cable Assembly Housing-to-Open End Class E <sub>A</sub> STP   | Y-2153148-X |
| Sigma-Link Cable Assembly Housing-to-Plugs Class E <sub>A</sub> STP<br>(Only available up to 15 m! Shorter lengths between increments on request.) | Y-2153149-X |

# Sigma-Link Quick-Fit System

## Sigma-Link Quick-Fit Class E

### Σ-Link Quick-Fit Cable Assemblies Class E - PL

#### FEATURES

- 24 ports per 1U, 6 port links
- Lengths 2-90m
- Factory assembled and 100% tested
- Bundle of 6 x 4 pair solid Category 6 U/UTP Cable
- LSZH Sheath
- Three different types of far end termination available (housing, loose jacks, open cable ends)
- Housing-to-Housing version features integrated Plastic Optical Fiber (POF) for easy tracing of far end



#### Termination guidelines for Σ-Link Housing-to-Open end:

Install jacks with tool (AMP PN 0-1725150-1) according to instruction sheet 408-8858  
Use following jacks: Cat 6 RJ45 SL 110 connect  
(AMP PN 0-1375055-X without dustcover or 0-1375187-X with dustcover)

#### Note:

To achieve PL performance cable length should be > 2 m (2 connector model) according to ISO 11801 spec.

| Y- -X | Length |
|-------|--------|
| 0- -2 | 2 m    |
| 0- -5 | 5 m    |
| 1- -0 | 10 m   |
| 1- -5 | 15 m   |
| 2- -0 | 20 m   |
| 2- -5 | 25 m   |
| 3- -0 | 30 m   |
| 3- -5 | 35 m   |
| 4- -0 | 40 m   |
| 5- -0 | 50 m   |
| 6- -0 | 60 m   |
| 7- -0 | 70 m   |
| 8- -0 | 80 m   |
| 9- -0 | 90 m   |

#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Sigma-Link Cable Assembly Housing-to-Housing with POF Class E UTP | Y-2153140-X |
| Sigma-Link Cable Assembly Housing-to-Jacks Class E UTP            | Y-2153141-X |
| Sigma-Link Cable Assembly Housing-to-Open End Class E UTP         | Y-2153142-X |

# Sigma-Link Quick-Fit System

Sigma-Link Quick-Fit Panel

---

## UCP Patch Panel Angled and Flushmount

Please refer to Chapter 4, page 50



# Sigma-Link Quick-Fit System

## Sigma-Link Quick-Fit Accessories

---

### Σ-Link identifier lamp

#### FEATURES

- Identifies the far end of the installed link
- Easy mounting on the housings



#### ORDERING INFORMATION

| Description                          | Part Number |
|--------------------------------------|-------------|
| Sigma-Link identifier lamp; blue LED | 1-1671330-1 |

## 4. Mixed Media Platform

### NETpodium

|                      |    |
|----------------------|----|
| Rack & Doors.....    | 44 |
| Panels & Covers..... | 45 |
| Accessories.....     | 46 |

### In-cabinet Management

|                  |    |
|------------------|----|
| Accessories..... | 48 |
|------------------|----|

### Universal Connectivity Platform

|                                      |    |
|--------------------------------------|----|
| Patch Panels.....                    | 50 |
| Mounting Accessories.....            | 51 |
| FiberGuide Mounting Accessories..... | 52 |

# Mixed Media Platform

## NETpodium - Rack & Doors

### NETpodium Rack

#### FEATURES

- Dimensions W x D x H = 1000 x 600 x 2200mm
- 45U
- 2 x 45U Cable managers included
- 2 large vertical cable ducts included
- Universal 19" Mounting rails according EIA 310

**Color:** black (RAL 9005)

#### ORDERING INFORMATION

| Description                           | Part Number |
|---------------------------------------|-------------|
| NETpodium Cross-Connect Rack 1000x600 | 1-1671405-1 |



### Front Doors

#### FEATURES

- Pair of non-perforated doors (left and right)
- Aluminium construction, lightweight yet rigid
- Easy mounting/removal from NETpodium frame, allowing agile installation
- Main Front Doors:
  - One pair covers complete front area of rack
  - Each door double-hinged and pivots both ways (for maximum access during MAC's or installation)
  - Supplied with locks, allowing for secure deployment
- Vertical Pathway Doors:
  - Cover the cords inside the lateral vertical patch bays (for increased physical cable protection)
  - Single hinged, pivoting on the outside edge of NETpodium frame

**Color:** black (RAL 9005)

#### ORDERING INFORMATION

| Description                   | Part Number |
|-------------------------------|-------------|
| Main Front Doors (Pair)       | 1-1671545-1 |
| Vertical Pathway Doors (Pair) | 2269019-1   |



# Mixed Media Platform

## NETpodium - Panels & Covers

### Side Panel

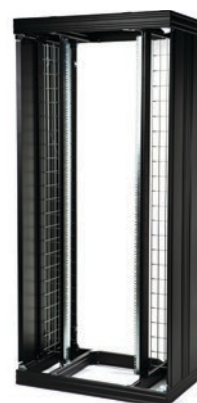
#### FEATURES

- Solid aluminum side panel to cover the sides of the cabinet
- Easy to add and remove

**Color:** black (RAL 9005)

#### ORDERING INFORMATION

| Description      | Part Number |
|------------------|-------------|
| Side Panel Left  | 1-1671578-1 |
| Side Panel Right | 1-1671578-2 |



### Back Panel

#### FEATURES

- Solid aluminum back panel to cover the backside of the cabinet
- Easy to remove

**Color:** black (RAL 9005)

#### ORDERING INFORMATION

| Description               | Part Number |
|---------------------------|-------------|
| Back Panel                | 1-1671579-1 |
| Back Panel with backstrip | 1-1671579-2 |



### Top Cover

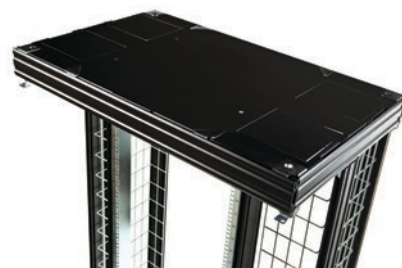
#### FEATURES

- Aluminum top panel with 4 knock-out access ports for optimal cabling access

**Color:** black (RAL 9005)

#### ORDERING INFORMATION

| Description | Part Number |
|-------------|-------------|
| Top Cover   | 1-1671555-1 |



### Bottom Cover

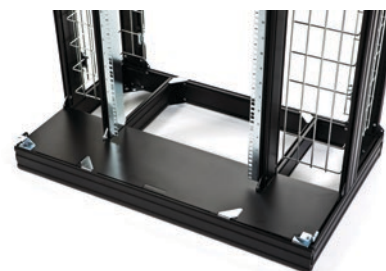
#### FEATURES

- Aluminum bottom panel to block airflow

**Color:** black (RAL 9005)

#### ORDERING INFORMATION

| Description  | Part Number |
|--------------|-------------|
| Bottom Cover | 1-1671554-1 |





# Mixed Media Platform

## NETpodium - Accessories

### Baying Kit

#### FEATURES

- Kit to be used to attach and secure two NETpodium racks side-by-side or back-to-back

**Color:** galvanized

#### ORDERING INFORMATION

| Description         | Part Number |
|---------------------|-------------|
| Baying Kit (12 pcs) | 1-1671587-1 |



### Overhead Cabling Pathway

#### FEATURES

- Overhead cabling pathway, including bend radius control for both balanced copper cabling and fiber optic cabling
- A cost effective way of routing cords from one cabinet to an adjacent cabinet
- Dim holes: 185 x 175mm
- Max capacity = +/- 120 cables with 9mm OD

**Color:** black (RAL 9005)

#### ORDERING INFORMATION

| Description              | Part Number |
|--------------------------|-------------|
| Overhead Cabling Pathway | 1-1671508-1 |



### 4U Pass Through Channel

#### FEATURES

- 4U pass through channel designed to fit at the bottom of a NETpodium rack
- Allows intra-cabinet patching inside the NETpodium rack
- Only fits in NETpodium rack

**Color:** black (RAL 9005)

#### ORDERING INFORMATION

| Description          | Part Number |
|----------------------|-------------|
| Pass Through Channel | 1671614-1   |



# Mixed Media Platform

## NETpodium - Accessories

### FO Slack Storage Spools

#### FEATURES

- Provides overlength capacity for FO cords
- Enables the use of 1 length FO cords in a rack

**Color:** black (RAL 9005)



#### ORDERING INFORMATION

| Description                            | Part Number |
|--|-------------|
| FO Slack Storage Spools (Left + Right) | 1-1671610-1 |

### NETpodium Copper Cable Dividing plate

#### FEATURES

- Designed for X-Connect patching to divide 2 and 4m length of copper cords

**Color:** black (RAL 9005)

#### ORDERING INFORMATION

| Description                           | Part Number |
|---------------------------------------|-------------|
| NETpodium Copper Cable Dividing plate | 1671933-1   |



### NETpodium bracket for wire basket

#### FEATURES

- Bracket to be used onto the wire basket
- Accepts additional accessories

**Color:** galvanized

#### ORDERING INFORMATION

| Description                              | Part Number |
|--|-------------|
| NETpodium bracket for wire basket (4pcs) | 1671938-2   |



### End Caps

#### FEATURES

- Cap to cover the aluminum profile

**Color:** black (RAL 9005)

#### ORDERING INFORMATION

| Description    | Part Number |
|----------------|-------------|
| End Cap (8pcs) | 1-1671609-1 |



**High-Density Front-Loading Cable Managers for Cabinets**

**FEATURES**

- Offers bend radius (according to ISO/IES 11801:2002 table 25) and mechanical protection
- Rubber entry/exit retainers ensure cable captivity preventing accidental disturbance of patch cords
- Suitable for Twisted Pair & Fiber Optic patch cords
- Note: To get a left/right pair order the respective part number twice (higher MOQs may apply)!

**Color:** black (RAL 9005)

**ORDERING INFORMATION**

| Description                                   | Part Number |
|---|-------------|
| High-Density Front-Loading Cable Managers 1U  | 1671495-1   |
| High-Density Front-Loading Cable Managers 2U  | 1671495-2   |
| High-Density Front-Loading Cable Managers 4U  | 1671495-4   |
| High-Density Front-Loading Cable Managers 6U  | 1671495-6   |
| High-Density Front-Loading Cable Managers 15U | 1-1671495-5 |



**Horizontal Slack Storage Panel**

**FEATURES**

- 4U storage panel to store copper overlength in a copper X-connect configuration
- Allows left or right cable entry
- Hinged access cover ensures accessibility and security of installed patch cords

**Color:** black (RAL 9005)

**ORDERING INFORMATION**

| Description                    | Part Number |
|--------------------------------|-------------|
| Horizontal Slack Storage Panel | 1671711-1   |



**2U Pass Through Duct**

**FEATURES**

- 2U pass through duct
- Allows left to right side patching as well as front to back patching and intra-cabinet patching
- Hinged access cover ensures accessibility of installed Patch Cords

**Color:** black (RAL 9005)

**ORDERING INFORMATION**

| Description          | Part Number |
|----------------------|-------------|
| 2U pass through duct | 1-1671080-2 |



# Mixed Media Platform

## In-Cabinet Management - Accessories

### 1U Blanking Plates

#### FEATURES

- 1U blind panels
- Angled version to fill gaps between angled panels
- Straight version to fill gaps between straight panels or active equipment

**Color:** black (RAL 9005)



#### ORDERING INFORMATION

| Description              | Part Number |
|--------------------------|-------------|
| 1 U blind panel angled   | 1671113-1   |
| 1 U blind panel straight | 1671113-2   |

### 1 U Cable Management Panels 19"

#### FEATURES

- Panels mount to the front of 19" racks and provide for the orderly dressing and routing of cable assemblies
- Various ring lengths available
- 1 U high

**Note:** PN 1859160-1 is optimized to be used with panels incl. Quick-Fit modules



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| 4 rings; light gray (RAL 7035); Height: 1 U; Ring length: 60 mm | 9-101019-0  |
| 5 rings; black (RAL 9005); Height: 1 U; Ring length: 95 mm      | 558329-1    |
| 5 rings black (RAL 9005)  | 1859160-1   |

### Mounting Hardware

#### FEATURES

- Hardware to attach panels and equipment to racks and cabinets
- Packaging quantity: 50 and 500

#### ORDERING INFORMATION

| Description                        | Part Number |
|------------------------------------|-------------|
| Screw set (50 pcs) M6              | 1671147-1   |
| Screw set (500 pcs) M6             | 1671147-2   |
| Screw set (500 pcs) M6 + cage nuts | 1671147-4   |
| Screw set (50 pcs) M6 + cage nuts  | 1671147-3   |



M6



M6 + Cage Nuts

# Mixed Media Platform

## Universal Connectivity Platform - Patch Panels

### UCP Patch Panel Angled and Flushmount

#### FEATURES

- 19" 1U unloaded modular patch panel with support for 4 Quick-Fit Modules
- Angled and flush style panels available
- Modular, rear cable management for both horizontal Copper and Fiber cables
- Accepts Pre-terminated Cu or FO cassettes or Field-terminated Copper modules
- Including grounding bolt

**Color:** black (RAL 9005)

#### ORDERING INFORMATION

| Description                                 | Part Number |
|---|-------------|
| UCP Patch Panel 1U Angled                   | 1-1671590-1 |
| UCP Patch Panel 1U Flush                    | 1-1671594-1 |
| UCP Patch Panel 1U Angled w/o cable bracket | 0-1671590-1 |
| UCP Patch Panel 2U Angled w/o cable bracket | 0-1671590-2 |
| UCP Patch Panel 4U Angled w/o cable bracket | 0-1671590-4 |



### Xtra-U Fiber Panel with Cable Management

#### FEATURES

- 3U Bracket to support a single MPOptimate Quick-Fit cassette
- Management rings to store and protect excess MPOptimate trunk cables
- Including grounding bolt

**Color:** black (RAL 9005)

#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Xtra-U Fiber Panel with Cable Management (for standard racks) | 1-1671547-1 |
| Xtra-U Fiber Panel with Cable Management (for NETpodium rack) | 1-1671550-1 |



### Xtra-U Copper Panel without Cable Management

#### FEATURES

- 3U Bracket to support a single Copper Quick-Fit cassette or module
- Including grounding bolt

**Color:** black (RAL 9005)

#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Xtra-U Copper Panel without Cable Management (for standard racks) | 1-1671548-1 |
| Xtra-U Copper Panel without Cable Management (for NETpodium rack) | 1-1671551-1 |



# Mixed Media Platform

## Universal Connectivity Platform - Mounting Accessories

### Xtra-U Vertical Panel Mounting Brackets

#### FEATURES

- Bracket set to install a 1U 19" panel vertically outside of the 19" area of a cabinet/rack
- Available for 1U

**Color:** galvanized



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Xtra-U Vertical Panel Mounting Brackets (2 pcs) (for standard racks) | 1-1671549-1 |
| Xtra-U Vertical Panel Mounting Brackets (2 pcs) (for NETpodium rack) | 1-1671552-1 |

### Xtra-U Subfloor Panel Holder Kit

#### FEATURES

- Bracket set to install 19" panels in the false floor area underneath cabinets/racks
- Suitable for Copper and Fiber installations
- Allows up to 630mm gap between support pillars
- Attachable to support pillars with round or square cross-section (diameters from 14 to 30mm)
- Available for 1, 2 or 4U

**Color:** galvanized



#### ORDERING INFORMATION

| Description                         | Part Number |
|-------------------------------------|-------------|
| Xtra-U Subfloor Panel Holder Kit 1U | 1671189-1   |
| Xtra-U Subfloor Panel Holder Kit 2U | 1671189-2   |
| Xtra-U Subfloor Panel Holder Kit 4U | 1671189-4   |

### Xtra-U Aerial Panel Holder Kit for Wire Mesh Cable Trays

#### FEATURES

- Universal bracket for installing 19" patch panels above cabinets /racks
- Can be attached to wire mesh cable trays
- 2U and 4U version available

**Color:** galvanized



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Xtra-U Aerial Panel Holder Kit (2U) for Wire Mesh Trays | 1-1671603-1 |
| Xtra-U Aerial Panel Holder Kit (4U) for Wire Mesh Trays | 1-1671603-2 |

# Mixed Media Platform

## Universal Connectivity Platform - FiberGuide Mounting Accessories

### Xtra-U FiberGuide System Quick-Fit adaptor

#### FEATURES:

- Fits to FGS products, s.a. 4" Express Exits, 4 x 4 Downspouts
- Can accommodate up to 2 Quick-Fit MPO cassettes or modules
- Integrated strain relief feature
- Including grounding bolt

**Color:** galvanized



#### ORDERING INFORMATION

| Description                  | Part Number |
|------------------------------|-------------|
| Xtra-U FGS Quick-Fit adaptor | 1-1671618-1 |

### Xtra-U Aerial Panel Holder Kit for FiberGuide System

#### FEATURES

- Universal bracket for installing 19" patch panels above cabinets /racks
- Can be attached to FGS channels (4 x 4, 4 x 6 and 4 x 12)
- 2U and 4U version available

**Color:** galvanized



#### ORDERING INFORMATION

| Description                                 | Part Number |
|---|-------------|
| Xtra-U Aerial Panel Holder Kit (2U) for FGS | 1-1671603-3 |
| Xtra-U Aerial Panel Holder Kit (4U) for FGS | 1-1671603-4 |

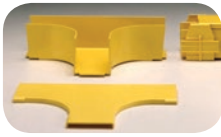


## 5. FiberGuide System

|                               |    |
|-------------------------------|----|
| 2x2 System .....              | 54 |
| 4x4 System.....               | 56 |
| 2x6 System.....               | 62 |
| 4x6 System.....               | 65 |
| 4x12 System .....             | 70 |
| 4x24 System.....              | 72 |
| LighTrax to FGS adaptors..... | 79 |
| Express Exit™ Family.....     | 80 |
| System Support Kits .....     | 82 |

# FiberGuide System

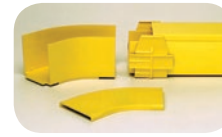
## 2" H x 2" W - Fittings



**Horizontal T**  
(FGS-MHTA-C)



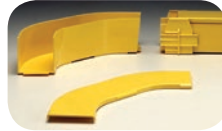
**Horizontal Cross**  
(FGS-MHXP-C)



**45° Horizontal Elbow**  
(FGS-MH4A-C)



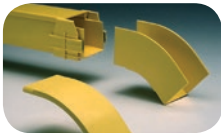
**90° Horizontal Elbow**  
(FGS-MH9A-C)



**90° Extended**  
Horizontal Elbow  
(FGS-MH9A-C-45/2)



**45° Up Elbow**  
(FGS-MU4A-C)



**45° Down Elbow**  
(FGS-MD4A-C)



**2x2 to 4x4**  
Straight Adapter  
(FGS-MDSA-AC)



**End Cap**  
(FGS-HMEC-C)

### ORDERING INFORMATION

| Description  | Number of Junctions | Catalog Number  |
|--|---------------------|-----------------|
|  |                     | Yellow System   |
| <b>2x2 fittings</b>  |                     |                 |
| Horizontal T; <i>cover included</i>  | 3                   | FGS-MHTA-C      |
| Horizontal cross; <i>cover and two 2x2 junctions included; two additional 2x2 junctions required (see p. 22)</i> | 2+2                 | FGS-MHXP-C      |
| 45° horizontal elbow; <i>cover included</i>  | 2                   | FGS-MH4A-C      |
| 90° horizontal elbow; <i>cover included</i>  | 2                   | FGS-MH9A-C      |
| 90° extended horizontal elbow; <i>cover included; similar to two 45° horizontal elbows joined</i>                | 2                   | FGS-MH9A-C-45/2 |
| 45° up elbow; <i>cover included</i>  | 2                   | FGS-MU4A-C      |
| 90° up elbow; <i>cover included</i>  | 2                   | FGS-MU9A-C      |
| 45° down elbow; <i>cover included</i>  | 2                   | FGS-MD4A-C      |
| 90° down elbow; <i>cover included</i>  | 2                   | FGS-MD9A-C      |
| <b>2x2 conversions</b>   |                     |                 |
| 2x2 to 4x4 straight adapter; <i>cover included</i>   | (1) 2x2, (1) 4x4    | FGS-MDSA-AC     |
| <b>2x2 end cap</b>   |                     |                 |
| End cap; <i>junction included</i>  | --                  | FGS-HMEC-C      |

Black versions available

# FiberGuide System

## 2" H x 2" W - Downspouts and Attachments



**2x2 Standard Downspout**  
(FGS-MSDS-C)



**2x2 Extended Downspout**  
(FGS-MDSP-C)



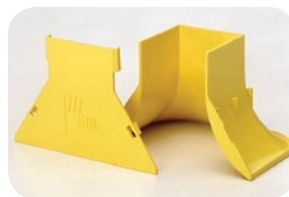
**Extended Downspout**  
(FGS-KDH2-C shown attached to  
2x2 FiberGuide system)



**Dual 7/8" Flex Tube  
Attachment**  
(FGS-KT03-C)



**Dual 7/8" Flex Tube Attachment**  
(FGS-KT03-C shown attached  
to downspout)



**2x2 Trumpet Flare**  
(FGS-MTRM-C)

### ORDERING INFORMATION

| Description   | Number of<br>Junctions | Catalog Number |
|---|------------------------|----------------|
|   |                        | Yellow System  |
| <b>2x2 downspouts</b>   |                        |                |
| Standard downspout; <i>cover included</i>   | 2                      | FGS-MSDS-C     |
| Extended downspout; <i>cover included</i>   | 1                      | FGS-MDSP-C     |
| Extended downspout; <i>cover and 2" flex tube, 2' long, included</i>                              | 1                      | FGS-KDH2-C     |
| Trumpet flare; <i>2x2 junction included</i>   | -                      | FGS-MTRM-C     |
| <b>2x2 attachments</b>  |                        |                |
| <b>2x2 flex tube attachment - 2" flex tube and a 2x2 junction included</b>                        |                        |                |
| 5' length   | -                      | FGS-MEX1-C-5F  |
| 10' length  | -                      | FGS-MEX1-C-10F |
| 15' length  | -                      | FGS-MEX1-C-15F |
| Dual 7/8" flex tube attachment - <i>two lengths of 7/8" flex tube and a 2x2 junction included</i> |                        |                |
| (2) 5' length   | -                      | FGS-KT03-C     |
| (2) 10' length  | -                      | FGS-KT03-C-10F |
| (2) 15' length  | -                      | FGS-KT03-C-15F |
| <b>Flex tube clamp kit of 10;</b><br>attaches 7/8" flex tube to rack                              | -                      | FGS-HSHC-10    |

Black versions available

# FiberGuide System

## 2" H x 2" W - Straight Section and Junction

### Straight Section

The 2x2 straight section is a U-shaped trough that provides a protective raceway for optical fibers. Available in 6-foot lengths, the straight section carries fibers horizontally throughout the system. It can also be installed vertically when routing around obstructions. A warning label indicating caution around fiber optic cable is included with each junction kit.



**Horizontal Straight Section**

### ORDERING INFORMATION

| Description  | Catalog Number<br>Yellow System |
|--|---------------------------------|
| <b>2x2 straight section;</b><br>horizontal straight section; 6' long, cover included | FGS-MSHA-C                      |

Black version available

### Junction

The 2x2 junction is used for mechanically joining FiberGuide® sections. No tools are required for assembly.



**Junction**  
(FGS-MJWR-C)

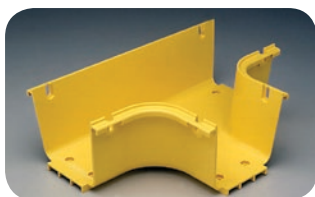
### ORDERING INFORMATION

| Description         | Catalog Number<br>Yellow System |
|---------------------|---------------------------------|
| <b>2x2 junction</b> | FGS-MJWR-C                      |

Black version available

# FiberGuide System

## 4" H x 4" W - Fittings



**Horizontal T**  
(FGS-MHRT-A)



**Horizontal Cross**  
(FGS-MHXP-A)



**90° Horizontal Elbow**  
(FGS-MH9E-A)



**90° Up Elbow**  
Metal Cover Included  
(FGS-MU9E-A)



**90° Down Elbow**  
(FGS-MD9E-A)



**45° Horizontal Elbow**  
(FGS-MH4E-A)



**45° Up Elbow**  
Metal Cover Included  
(FGS-MU4E-A)



**45° Down Elbow**  
(FGS-MD4E-A)



**4x4 to 4x6 Straight Adapter**  
(FGS-MDSA-AB)



**Expandable Straight Section**  
(FGS-MVAR-A)



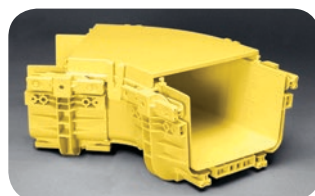
**Cut-in T**  
(FGS-MHIS-A)



**Cut-in T Fixture**  
shown on straight section  
(FGS-MHIS-JIG-A/B/F)



**End Cap**  
(FGS-HMEC-A)



**Snap-on Plastic Cover**  
(FGS-SH4E-A shown attached to 45°  
horizontal elbow with junctions)

# FiberGuide System

## 4" H x 4" W - Fittings

### ORDERING INFORMATION

| Description                             | Number of Junctions | Part Number        |                             |
|---|---------------------|--------------------|-----------------------------|
|   |                     | Yellow System      | Yellow System Snap-on Cover |
| <b>4x4 fittings</b>                     |                     |                    |                             |
| Horizontal T                            | 3                   | FGS-MHRT-A         | FGS-SHRT-A                  |
| Horizontal cross                        | 4                   | FGS-MHXP-A         | FGS-SHXP-A                  |
| 90° horizontal elbow                    | 2                   | FGS-MH9E-A         | FGS-SH9E-A                  |
| 90° up elbow metal cover included       | 2                   | FGS-MU9E-A         | FGS-SU9E-A                  |
| 90° down elbow                          | 2                   | FGS-MD9E-A         | FGS-SD9E-A                  |
| 45° horizontal elbow                    | 2                   | FGS-MH4E-A         | FGS-SH4E-A                  |
| 45° up elbow metal cover included       | 2                   | FGS-MU4E-A         | FGS-SU4E-A                  |
| 45° down elbow                          | 2                   | FGS-MD4E-A         | FGS-SD4E-A                  |
| <b>4x4 conversions</b>                  |                     |                    |                             |
| 4x4 to 4x6 straight adapter             | (1) 4x4,<br>(1) 4x6 | FGS-MDSA-AB        | FGS-SDSA-AB                 |
| 4x4 expandable straight section         | 2                   | FGS-MVAR-A         | -                           |
| 4" Cut-in T assembly hardware included  | -                   | FGS-MHIS-A         | -                           |
| 6" Cut-in T assembly hardware included  | -                   | FGS-MHIS-B         | -                           |
| 12" Cut-in T assembly hardware included | -                   | FGS-MHIS-F         | -                           |
| Cut-in T fixture                        | -                   | FGS-MHIS-JIG-A/B/F | -                           |
| <b>4x4 end cap</b>                      | -                   | FGS-HMEC-A         | -                           |

Black versions available

# FiberGuide System

## 4" H x 4" W - Downspouts and Attachments



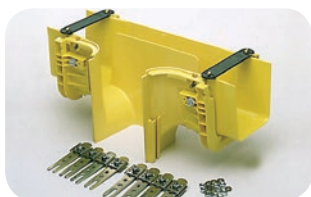
**Downspout**  
(FGS-MDSP-A)



**Cover for 4x4 Downspout**  
(FGS-MCDS-AB)



**Extended Downspout**  
(FGS-MDSP-EX-A)  
shown with and without cover)



**Insertable Downspout**  
(FGS-MDSP-A/I)



**Trumpet Flare**  
(FGS-MTRM-A)



**Downspout Exit  
Junction Kit**  
(FGS-MJWR-A)



**4x4/4x6 Downspout Insert**  
(FGS-HDSI-AB)



**4" Square to 2" Round Adapter  
with Flex Tube**  
(FGS-ASRI)  
requires FGS-MJWR-A  
Junction Kit)



**Dual 2" Flex Tube Attachment**  
(FGS-KT03-A)



**Single 2" Flex Tube Attachment**  
(FGS-KT03-A1)



**2" Quad Flex Tube Attachment**  
(FGS-KT03-A4)

# FiberGuide System

## 4" H x 4" W - Downspouts and Attachments

An array of 4x4 downspout options are available to feed fiber from overhead straight sections into fiber optic equipment below.

### ORDERING INFORMATION

| Description  | Number of Junctions | Part Number     |
|--|---------------------|-----------------|
|  |                     | Yellow System   |
| <b>4x4 downspouts</b>  |                     |                 |
| <b>Downspout</b>   | 2**                 | FGS-MDSP-A      |
| Cover for 4x4 downspout  | -                   | FGS-MCDS-AB     |
| Extended downspout   | 2*                  | FGS-MDSP-EX-A   |
| Cover for 4x4 extended downspout   | -                   | FGS-MCDS-EX-AB  |
| Insertable downspout   | -                   | FGS-MDSP-A/I    |
| Trumpet flare used on both 4x4 and 4x6 downspouts; no 4" junction kit required   | -                   | FGS-MTRM-A      |
| Downspout exit junction kit  | -                   | FGS-MJWR-A      |
| 4x4/4x6 downspout; insert converts bottom of downspout to 2x2" without using 2" to 4" adapter, saving vertical space   | -                   | FGS-HDSI-AB     |
| <b>4x4 attachments</b>   |                     |                 |
| Square to 2" round adapter with flex tube;<br>one 4x4 junction kit (FGS-MJWR-A) required to attach to a downspout drop |                     |                 |
| 5' length  | 1                   | FGS-ASRI-5F     |
| 10' length   | 1                   | FGS-ASRI-10F    |
| 15' length   | 1                   | FGS-ASRI-15F    |
| Dual 2" flex tube attachment; no 4x4 junction kit required   |                     |                 |
| (2) 5' length  | -                   | FGS-KT03-A      |
| (2) 10' length   | -                   | FGS-KT03-A10F   |
| (2) 15' length   | -                   | FGS-KT03-A15F   |
| Single 2" flex tube attachment; no 4x4 junction kit required   |                     |                 |
| 5' length  | -                   | FGS-KT03-A1     |
| 10' length   | -                   | FGS-KT03-A1-10F |
| 15' length   | -                   | FGS-KT03-A1-15F |
| Quad 2" flex tube attachment; no 4x4 junction kit required   |                     |                 |
| (4) 5' length  | -                   | FGS-KT03-A4-5F  |
| (4) 10' length   | -                   | FGS-KT03-A4-10F |
| (4) 15' length   | -                   | FGS-KT03-A4-15F |
| 4x4 quad 7/8" flex tube attachment; no 4x4 junction kit required   |                     |                 |
| (4) 5' length  | -                   | FGS-KT07-A4-5F  |
| (4) 10' length   | -                   | FGS-KT07-A4-10F |
| (4) 15' length   | -                   | FGS-KT07-A4-15F |

\*A third junction is needed if drop is to a fitting or straight section.

\*\*This drop junction must be a junction type FGS-MJWR-A, FGSB-MJWR-A.

Black versions available

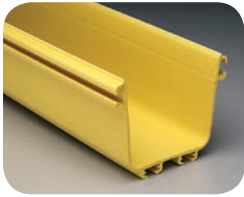


# FiberGuide System

## 4" H x 4" W - Straight Section and Snap-Fit™ Junction

### Straight Section

The unique four-channel design of the 4x4 FiberGuide straight section allows the standard system to be attached to the support structure without the need to cut or drill any holes within the trough. This ensures that the patch cords will not come in contact with any screw heads or bolts, an important consideration in 4x4 systems where higher cable counts apply increased pressure on patch cords at the bottom of the trough.



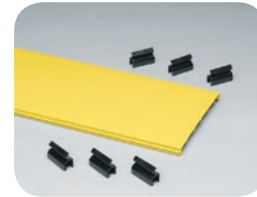
**Horizontal Straight Section**  
(FGS-MSHS-A)



**Expandable Straight Section**  
(FGS-MVAR-A)



**Hinged Cover for Horizontal Straight Section**  
(FGS-MSNC-A)



**Snap-On Cover for Horizontal Straight Section**  
(FGS-MSSC-A)

#### ORDERING INFORMATION

| Description  | Part Number                |
|--|----------------------------|
|  | Yellow System              |
| <b>4x4 straight section</b>  |                            |
| Horizontal straight section; 6' long, cover sold separately  | FGS-MSHS-A                 |
| Expandable straight section  | FGS-MVAR-A                 |
| <b>4x4 accessories</b>   |                            |
| Hinged cover kit for horizontal straight section; includes three mounting hinges and three clips   | FGS-MSNC-A                 |
| Snap-on cover kit for horizontal straight section; includes six capture clips with mounting clasps | FGS-MSSC-A                 |
| Kit - 10 black capture clips   | FGS-DHCP                   |
| Kit - 10 black capture clips and 10 hinges   | FGS-DHHC<br>(Yellow Hinge) |

Black versions available

### Snap-Fit™ Junction

The Snap-Fit™ junction assembly is available for the 4-inch FiberGuide system. The Snap-Fit junction is a completely tool-less junction. No additional tools are required for installation or removal. The junction exhibits superior holding force and accommodates support brackets. A warning label indicating caution around fiber optic cable is included with each junction kit.



**Snap-Fit Junction**  
(FGS-MFAW-A)

#### ORDERING INFORMATION

| Description                   | Part Number   |
|-------------------------------|---------------|
|                               | Yellow System |
| <b>4x4 Snap-Fit™ junction</b> | FGS-MFAW-A    |

Black version available

# FiberGuide System

## 2" H x 6" W - Fittings, Downspouts and Attachments



**2x6 to 2x2 Downspout**  
(FGS-MDSP-G)



**Horizontal T**  
(FGS-MHRT-G)



**Horizontal Cross**  
(FGS-MHXP-G)



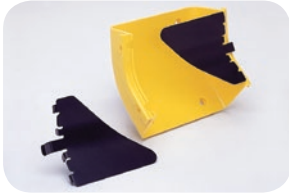
**90° Horizontal Elbow**  
(FGS-MH9E-G)



**90° Down Elbow**  
(FGS-MD9E-G)



**45° Horizontal Elbow**  
(FGS-MH4E-G)



**45° Up Elbow**  
(FGS-MU4E-G)  
(Metal Cover Included)



**45° Down Elbow**  
(FGS-MD4E-G)



**2x6 to 4x4 Adapter**  
(FGS-MDSA-GA)



**2x6 to 4x6 Adapter**  
(FGS-MDSA-GB)



**Trumpet Flare**  
(FGS-MTRM-G)

# FiberGuide System

## 2" H x 6" W – Fittings, Downspouts and Attachments

### ORDERING INFORMATION

| Description                        | Number of Junctions | Part Number   |
|------------------------------------|---------------------|---------------|
|                                    |                     | Yellow System |
| <b>2x6 fittings</b>                |                     |               |
| Horizontal T                       | 3                   | FGS-MHRT-G    |
| Horizontal cross                   | 4                   | FGS-MHXP-G    |
| 90° horizontal elbow               | 2                   | FGS-MH9E-G    |
| 90° down elbow                     | 2                   | FGS-MD9E-G    |
| 45° horizontal elbow               | 2                   | FGS-MH4E-G    |
| 45° up elbow, metal cover included | 2                   | FGS-MU4E-G    |
| 45° down elbow                     | 2                   | FGS-MD4E-G    |
| <b>2x6 conversions</b>             |                     |               |
| 2x6 to 4x4 adapter                 | (1) 2x6, (1) 4x4    | FGS-MDSA-GA   |
| 2x6 to 4x6 adapter                 | (1) 2x6, (1) 4x6    | FGS-MDSA-GB   |
| <b>2x6 downspouts</b>              |                     |               |
| 2x6 to 2x2 downspout               | 2                   | FGS-MDSP-G    |
| Trumpet flare                      | -                   | FGS-MTRM-G    |
| <b>2x6 attachments</b>             |                     |               |
| Dual 2" flex tube attachment       | -                   | FGS-KT03-G-5F |
| 2x6 end cap                        | -                   | FGS-HMEC-G    |

Black versions available

### Low-Profile Express Exit™

Designed for low-ceiling or height restricted environments, the Express Exit™ for the 2x6 FiberGuide system extends only two inches above the straight section sidewall. The Express Exit accommodates up to 150 (3 mm) patch cords, includes removable rear cable guides for additional cable management, and features a 2x2 exit opening. It is designed specifically for the 2x6 FiberGuide system and should not be used on any other FiberGuide system.



**Express Exit**  
(FGS-MEXP-LP-G)

### ORDERING INFORMATION

| Description  | Part Number   |
|--|---------------|
|  | Yellow System |
| Low-Profile Express Exit™ (designed exclusively for the 2x6 system)<br><i>Base, cover, mounting hardware, and support bracket included</i> | FGS-MEXP-LP-G |

Black version available

# FiberGuide System

## 2" H x 6" W – Straight Section and Junction

### Straight Section

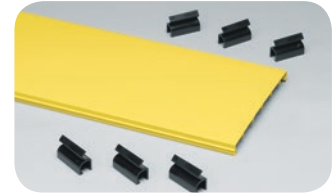
The unique four-channel design of the 2x6 FiberGuide straight section allows the standard system to be attached to the support structure without the need to cut or drill any holes within the trough. This ensures that the patch cords will not come in contact with any screw heads or bolts.



**Straight Section**  
(FGS-MSHS-G)



**Hinged Cover Kit for Horizontal Straight Section**  
(FGS-MSNC-B/G)



**6-inch Snap-on Cover**  
(FGS-MSSC-B/G)

### ORDERING INFORMATION

| Description   | Part Number   |
|---|---------------|
|   | Yellow System |
| 2x6 straight section; horizontal straight section; 6' long, cover sold separately                         | FGS-MSHS-G    |
| <b>2x6 accessories</b>  |               |
| 2x6 hinged cover kit for horizontal straight section; three mounting hinges and three clips included      | FGS-MSNC-B/G  |
| 6-inch snap-on cover kit for horizontal straight section; six capture clips with mounting clasps included | FGS-MSSC-B/G  |
| Kit-10 black capture clips  | FGS-DHCP      |

Black versions available

### Junction

The one-piece junction employs factory-installed set screws to assure strength and durability. No cutting or drilling of the components is required for assembly. A warning label indicating caution around fiber optic cable is included with each junction kit.



**2x6 Junction**  
(FGS-JUNC-G)

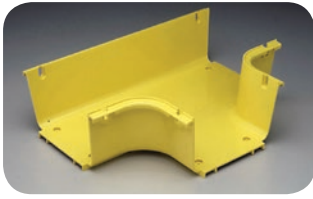
### ORDERING INFORMATION

| Description  | Part Number   |
|--------------|---------------|
|              | Yellow System |
| 2x6 junction | FGS-JUNC-G    |

Black version available

# FiberGuide System

## 4" H x 6" W - Fittings



**Horizontal T**  
(FGS-MHRT-B)



**Horizontal Cross**  
(FGS-MHXP-B)



**90° Horizontal Elbow**  
(FGS-MH9E-B)



**90° Up Elbow**  
Cover Included  
(FGS-MU9E-B)



**90° Down Elbow**  
(FGS-MD9E-B)



**45° Horizontal Elbow**  
(FGS-MH4E-B)



**45° Up Elbow**  
Cover Included  
(FGS-MU4E-B)



**45° Down Elbow**  
(FGS-MD4E-B)



**4x4 to 4x6 Straight Adapter**  
(FGS-MDSA-AB)



**Expandable**  
Straight Section  
(FGS-MVAR-B)



**6" Cut-in T**  
(FGS-MHIS-B)



**Cut-in T Fixture**  
(FGS-MHIS-JIG-A/B/F shown on  
a straight section)



**4x12 to Single 4x6 Adapter**  
(FGS-MDSA-FB)  
(Cover: FGS-SDSA-FB)



**End Cap**  
(FGS-HMEC-B)



**Snap-on Plastic Cover**  
(FGS-SH4E-B shown attached  
to 45° horizontal elbow  
with junctions)

# FiberGuide System

## 4" H x 6" W - Fittings

### ORDERING INFORMATION

| Description                              | Number of Junctions | Part Number        |                             |
|--|---------------------|--------------------|-----------------------------|
|  |                     | Yellow System      | Yellow System Snap-on Cover |
| <b>4x6 fittings</b>                      |                     |                    |                             |
| Horizontal T                             | 3                   | FGS-MHRT-B         | FGS-SHRT-B                  |
| Horizontal cross                         | 4                   | FGS-MHXP-B         | FGS-SHXP-B                  |
| 90° horizontal elbow                     | 2                   | FGS-MH9E-B         | FGS-SH9E-B                  |
| 90° up elbow metal cover included        | 2                   | FGS-MU9E-B         | -                           |
| 90° down elbow                           | 2                   | FGS-MD9E-B         | FGS-SD9E-B                  |
| 45° horizontal elbow                     | 2                   | FGS-MH4E-B         | FGS-SH4E-B                  |
| 45° up elbow metal cover included        | 2                   | FGS-MU4E-B         | FGS-SU4E-B                  |
| 45° down elbow                           | 2                   | FGS-MD4E-B         | FGS-SD4E-B                  |
| <b>4x6 conversions</b>                   |                     |                    |                             |
| 4x4 to 4x6 straight adapter              | (1) 4x4,<br>(1) 4x6 | FGS-MDSA-AB        | FGS-SDSA-AB                 |
| 4x12 to single 4x6 adapter               | -                   | FGS-MDSA-FB        | FGS-SDSA-FB                 |
| 4x6 expandable straight section          | 2                   | FGS-MVAR-B         | -                           |
| 4" Cut-in T; assembly hardware included  | -                   | FGS-MHIS-A         | -                           |
| 6" Cut-in T; assembly hardware included  | -                   | FGS-MHIS-B         | -                           |
| 12" Cut-in T; assembly hardware included | -                   | FGS-MHIS-F         | -                           |
| Cut-in T fixture                         | -                   | FGS-MHIS-JIG-A/B/F | -                           |
| <b>4x6 end cap</b>                       | -                   | FGS-HMEC-B         | -                           |

Black versions available



# FiberGuide System

## 4" H x 6" W - Downspouts and Attachments



**Downspout**  
(FGS-MDSP-B)



**Cover for 4x6 Downspout**  
(FGS-MCDS-AB)



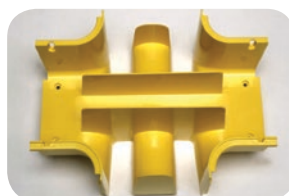
**Extended Downspout**  
(FGS-MDSP-EX-B shown with  
and without cover)



**Insertable Downspout**  
(FGS-MDSP-B/I)



**Dual Downspout**  
(FGS-MDSP-2B)



**Dual Downspout with Divider**  
(FGS-MDSP-2B-IMP)



**Trumpet Flare Kit for 4x6  
Dual Downspout**  
(FGS-MTRM-2B)



**Trumpet Flare Kit for Dual  
Downspout with Divider**  
(FGS-MTRM-2B-IMP)



**Single 2" Flex Tube  
Attachment**  
(FGS-KT03-A1)



**Trumpet Flare Kit**  
(FGS-MTRM-A shown attached  
to downspout)



**4x4/4x6 Downspout Insert**  
(FGS-HDSI-AB)



**Downspout Exit Junction Kit**  
(FGS-MJWR-A)



**4" Square to 2" Round  
Adapter with Flex Tube**  
(FGS-ASRI requires  
FGS-MJWR-A junction kit)



**Dual 2" Flex Tube Attachment**  
(FGS-KT03-A)



**2" Quad Flex  
Flex Tube Attachment**  
(FGS-KT03-A4)

# FiberGuide System

## 4" H x 6" W - Downspouts and Attachments

4x6 downspouts and attachments feed fiber from overhead straight sections into fiber optic equipment below. All 4x6 downspouts feature 4-inch exits and attach to the 4-inch x 4-inch attachments listed below.

### ORDERING INFORMATION

| Description   | Number of Junctions | Part Number     |
|---|---------------------|-----------------|
|   |                     | Yellow System   |
| <b>4x6 downspouts</b>   |                     |                 |
| Downspout <i>Note: If a trumpet flare is required use a 4x4 flare (FGS-MTRM-A)</i>  | 2*                  | FGS-MDSP-B      |
| Cover for 4x6 downspout and dual downspout  | -                   | FGS-MCDS-AB**   |
| Extended downspout  | 2                   | FGS-MDSP-EX-B   |
| Cover for 4x6 extended downspout  | -                   | FGS-MCDS-EX-AB  |
| Insertable downspout  | -                   | FGS-MDSP-B/I    |
| Dual drop downspout   | 2*                  | FGS-MDSP-2B     |
| Trumpet flare for dual drop downspout (kit of 2 FGS-MTRM-A)   | -                   | FGS-MTRM-2B     |
| Dual drop downspout with divider  | 2                   | FGS-MDSP-2B-IMP |
| Trumpet flare for dual drop downspout with divider (kit of 2)   |                     | FGS-MTRM-2B-IMP |
| Junction for downspout exit   |                     | FGS-MJWR-A      |
| 4x4/4x6 downspout insert; <i>converts bottom of downspout to 2x2 without using 2" to 4" adapter, saving vertical space</i>        |                     | FGS-HDSI-AB     |
| 4x4 Trumpet flare; used on exits of 4x4 and 4x6 downspouts — <i>no 4" junction kit required</i>                                   |                     | FGS-MTRM-A      |
| 4x6 Trumpet flare   |                     | FGS-MTRM-B      |
| <b>4x6 attachments</b>  |                     |                 |
| 4x4 square to 2" round adapter with flex tube;<br><i>one 4x4 junction kit (FGS-MJWR-A) required to attach to a downspout drop</i> |                     |                 |
| 5' length   | 1                   | FGS-ASRI-5F     |
| 10' length  | 1                   | FGS-ASRI-10F    |
| 15' length  | 1                   | FGS-ASRI-15F    |
| 4x4 dual 2" flex tube attachment; <i>no 4x4 junction kit required</i>   |                     |                 |
| (2) 5' length   | -                   | FGS-KT03-A      |
| (2) 10' length  | -                   | FGS-KT03-A10F   |
| (2) 15' length  | -                   | FGS-KT03-A15F   |
| 4x4 single 2" flex tube attachment; <i>no 4x4 junction kit required</i>   |                     |                 |
| 5' length   | -                   | FGS-KT03-A1     |
| 10' length  | -                   | FGS-KT03-A1-10F |
| 15' length  | -                   | FGS-KT03-A1-15F |
| 4x4 quad 2" flex tube attachment; <i>no 4x4 junction kit required</i>   |                     |                 |
| (4) 5' length   | -                   | FGS-KT03-A4-5F  |
| (4) 10' length  | -                   | FGS-KT03-A4-10F |
| (4) 15' length  | -                   | FGS-KT03-A4-15F |
| 4x4 quad 7/8" flex tube attachment; <i>no 4x4 junction kit required</i>   |                     |                 |
| (4) 5' length   | -                   | FGS-KT07-A4-5F  |
| (4) 10' length  | -                   | FGS-KT07-A4-10F |
| (4) 15' length  | -                   | FGS-KT07-A4-15F |

\*A 4x4 junction is needed to drop to a fitting or a straight section.  
This drop junction must be a junction type FGS-MJWR-A or FGSB-MJWR-A.  
\*\*Dual downspout requires two covers.

Black versions available



# FiberGuide System

## 4" H x 6" W – Straight Section and Junction

### Straight Section

The unique four-channel design of the 4x6 FiberGuide straight section allows the standard system to be attached to the support structure without the need to cut or drill any holes within the trough. This ensures that the patch cords will not come in contact with any screw heads or bolts, an important consideration in 4x6 systems where higher cable counts apply increased pressure on patch cords at the bottom of the trough.



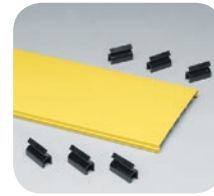
**Horizontal Straight Section**  
(FGS-MSHS-B)



**Expandable Straight Section**  
(FGS-MVAR-B)



**Hinged Cover Kit**  
for Horizontal Straight Section  
(FGS-MSNC-B/G)



**6" Snap-on Cover**  
for Horizontal Straight Section  
(FGS-MSSC-B/G)

### ORDERING INFORMATION

| Description   | Part Number                |
|---|----------------------------|
|   | Yellow System              |
| <b>4x6 straight sections</b>  |                            |
| Horizontal straight section; 6' long, cover sold separately   | FGS-MSHS-B                 |
| Expandable straight section   | FGS-MVAR-B                 |
| Slack storage straight section  | FGS-MSHS-STOR-B            |
| <b>4x6 accessories</b>  |                            |
| Hinged cover kit for horizontal straight section; includes three mounting hinges and three clips      | FGS-MSNC-B/G               |
| 6" snap-on cover kit for horizontal straight section; includes six capture clips with mounting clasps | FGS-MSSC-B/G               |
| Kit - 10 black capture clips  | FGS-DHCP                   |
| Kit - 10 black capture clips and 10 hinges  | FGS-DHHC<br>(Yellow Hinge) |

Black versions available

### Snap-Fit™ Junction

The Snap-Fit™ junction assembly is available for the 6-inch FiberGuide system. The new junction is a completely tool-less junction. No additional tools are required for installation or removal. The Snap-Fit Junction exhibits superior holding force and accommodates support brackets. A warning label indicating caution around fiber optic cable is included with each junction kit.



**Snap-Fit Junction**  
(FGS-MFAW-B)

### ORDERING INFORMATION

| Description                  | Part Number   |
|------------------------------|---------------|
|                              | Yellow System |
| <b>4x6 Snap-fit junction</b> | FGS-MFAW-B    |

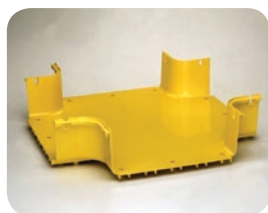
Black version available

# FiberGuide System

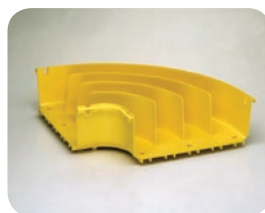
## 4" H x 12" W - Fittings



**Horizontal T**  
(FGS-MHRT-F)



**Horizontal Cross**  
(FGS-MHXP-F)



**90° Horizontal Elbow**  
(FGS-MH9E-F)



**90° Down Elbow**  
(FGS-MD9E-F)



**45° Horizontal Elbow**  
(FGS-MH4E-F)



**45° Up Elbow**  
(FGS-MU4E-F)



**45° Down Elbow**  
(FGS-MD4E-F)



**Horizontal T with Single 6" Exit**  
(FGS-MHRT-F/B)



**Horizontal Cross with Two 6" Exits**  
(FGS-MHXP-B/F)



**4x12 to Dual 4x6 Adapter**  
(FGS-MDSA-F2B)



**4x12 to Single 4x6 Adapter**  
(FGS-MDSA-FB)



**4x12 to 4x6 Adapter - Right**  
(FGS-MDSA-FB-R)



**4x12 to 4x6 Adapter - Left**  
(FGS-MDSA-FB-L)



**End Cap**  
(FGS-HMEC-F)



**Expandable Straight Section**  
(FGS-MVAR-F)



**12" Cut-in T**  
(FGS-MHIS-F)



**Cut-in T Fixture**  
(FGS-MHIS-JIG-A/B/F shown on a straight section)



**Snap-on Cover**  
(FGS-SH4E-F shown separate)



**Snap-on Cover Installation**



**Snap-on Cover**  
(FGS-SH4E-F shown installed)

# FiberGuide System

## 4" H x 12" W – Fittings

### ORDERING INFORMATION

| Description   | Number of Junctions  | Part Number        |                             |
|---|----------------------|--------------------|-----------------------------|
|   |                      | Yellow System      | Yellow System Snap-on Cover |
| <b>4x12 fittings</b>  |                      |                    |                             |
| Horizontal T  | 3                    | FGS-MHRT-F         | FGS-SHRT-F                  |
| Horizontal cross  | 4                    | FGS-MHXP-F         | FGS-SHXP-F                  |
| 90° horizontal elbow  | 2                    | FGS-MH9E-F         | FGS-SH9E-F                  |
| 90° down elbow  | 2                    | FGS-MD9E-F         | FGS-SD9E-F                  |
| 45° horizontal elbow  | 2                    | FGS-MH4E-F         | FGS-SH4E-F                  |
| 45° up elbow, metal cover included  | 2                    | FGS-MU4E-F         | FGS-SU4E-F                  |
| 45° down elbow  | 2                    | FGS-MD4E-F         | FGS-SD4E-F                  |
| Horizontal T with single 6" exit  | (2) 4x12,<br>(1) 4x6 | FGS-MHRT-F/B       | FGS-SHRT-F/B                |
| Horizontal cross with two 6" exits  | (2) 4x12,<br>(2) 4x6 | FGS-MHXP-B/F       | FGS-SHXP-B/F                |
| <b>4x12 conversions</b>   |                      |                    |                             |
| 4x12 to dual 4x6 adapter  | (1) 4x12,<br>(2) 4x6 | FGS-MDSA-F2B       | FGS-SDSA-F2B                |
| 4x12 to single 4x6 adapter  | (1) 4x12,<br>(1) 4x6 | FGS-MDSA-FB        | FGS-SDSA-FB                 |
| 4x12 to 4x6 right adapter;<br><i>includes fastening hardware</i>  |                      | FGS-MDSA-FB-R      |                             |
| Fixed metal cover for right adapter   |                      | FGS-VDSA-FB-R      |                             |
| 4x12 to 4x6 left adapter;<br><i>includes fastening hardware</i>   |                      | FGS-MDSA-FB-L      |                             |
| Fixed metal cover for left adapter  |                      | FGS-VDSA-FB-L      |                             |
| Expandable straight section   | 2                    | FGS-MVAR-F         | -                           |
| 4" Cut-in T;<br><i>assembly hardware included</i>   | -                    | FGS-MHIS-A         | -                           |
| 6" Cut-in T;<br><i>assembly hardware included</i>   | -                    | FGS-MHIS-B         | -                           |
| 12" Cut-in T;<br><i>assembly hardware included</i>  | -                    | FGS-MHIS-F         | -                           |
| Cut-in T fixture  | -                    | FGS-MHIS-JIG-A/B/F | -                           |
| <b>4x12 end cap</b>   |                      | FGS-HMEC-F         |                             |
| <b>4x12 variable support locator kits for;</b> <i>Each kit contains all necessary mounting hardware. Fitting sold separately.</i> |                      |                    |                             |
| FGS-MDSP-F (downspout)  |                      | FGS-MDSP-F-VS      |                             |
| FGS-MHRT-F (horizontal T)   |                      | FGS-MHRT-F-VS      |                             |
| FGS-MHXP-F (horizontal cross)   |                      | FGS-MHXP-F-VS      |                             |
| FGS-MH9E-F (90° horizontal elbow)   |                      | FGS-MH9E-F-VS      |                             |
| FGS-MHRT-F/B (horizontal T - 6"/12")  |                      | FGS-MHRT-F/B-VS    |                             |
| FGS-MHXP-B/F (horizontal cross- 6"/12")   |                      | FGS-MHXP-B/F-VS    |                             |

Black versions available

# FiberGuide System

## 4" H x 12" W – Downspouts and Attachments



**Downspout**  
(FGS-MDSP-F)



**Cover for 4x12 Downspout**  
(FGS-SDSP-F)



**Trumpet Flare**  
(FGS-MTRM-F)



**Downspout with Rear T**  
(FGS-MDRT-F)



**Island T**  
(FGS-ISLAND-F)



**Island T with Recessed Dividing Spool**  
(FGS-ISLAND3-F shown with 12" Junction, 90° Down Elbow and Trumpet Flare)



**4x6 Dual 2" Flex Tube Attachment**  
(FGS-KT03-B)



**4x6 Trumpet Flare Kit**  
(FGS-MTRM-B shown alone and attached to 4x12 Downspout)



**4x12 to 4x4 Downspout Converter**  
(FGS-HDSI-F/D)



The FGS-HDSI-F/D attached to both the 4x12 downspout and the 4x4 slotted duct without the use of hardware

# FiberGuide System

## 4" H x 12" W – Downspouts and Attachments

An array of 4x12 downspouts and attachments are available to feed fiber from overhead straight sections into fiber optic equipment below. The 4x12 downspout features a 4x6 exit and accepts the 4x6 exit attachments listed below.

### ORDERING INFORMATION

| Description  | Number of Junctions | Yellow System Part Number |
|--|---------------------|---------------------------|
| <b>4x12 downspouts</b>   |                     |                           |
| Downspout  | 2*                  | FGS-MDSP-F                |
| Cover for 4x12 downspout   | -                   | FGS-SDSP-F                |
| Insertable downspout   | -                   | FGS-MDSP-F/I              |
| Trumpet flare  | -                   | FGS-MTRM-F                |
| Downspout with rear T  | 3*                  | FGS-MDRT-F                |
| Island T with spool and factory installed trumpet flare  | 2                   | FGS-ISLAND-F              |
| Island T with trumpet and dividing spool;<br><i>Variable Support Locator Kit included</i>        | 2                   | FGS-ISLAND-F-513          |
| Island T with recessed dividing spool  | 3                   | FGS-ISLAND3-F             |
| <b>4x12 attachments</b>  |                     |                           |
| 4x6 dual 2" flex tube attachment   |                     |                           |
| 5' length  | -                   | FGS-KT03-B                |
| 10' length   | -                   | FGS-KT03-B-10F            |
| 15' length   | -                   | FGS-KT03-B-15F            |
| 4x6 trumpet flare kit;<br><i>used on 4x12 downspouts</i>   |                     | FGS-MTRM-B                |
| 4x12 to 4x4 downspout converter;<br><i>converts downspout opening to accept 4x4 slotted duct</i> | -                   | FGS-HDSI-F/D              |
| 4x12 to 2x2 downspout converter  | -                   | FGS-HDSI-F/C              |

\*An additional junction is needed if drop is to fitting or straight section. This 4x6 junction must be a junction type FGS-MFAW-B, FGSB-MFAW-B.

Black versions available

# FiberGuide System

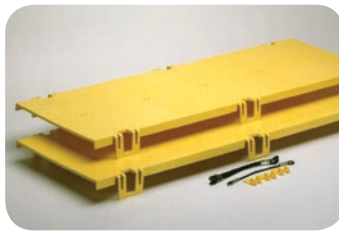
## 4" H x 12" W – Straight Section

The unique nine-channel design of the 4x12 FiberGuide straight section provides unmatched strength and allows the attachment of support structure without the need to cut or drill holes within the raceway. This ensures that the patch cords will not come in contact with any screw heads or bolts, an important consideration in 4x4, 4x6, and 4x12 systems where higher cable counts apply increased pressure on the patch cords at the bottom of the raceway.

The 4x12 system covers feature a snap-on design. This allows the cover to be used in environments with limited headroom. Two 3-foot cover sections come with each order, making it easy for one person to remove the covers. Each cover kit includes a tether kit. The straight section covers are designed to be placed over the 4x12 downspouts, speeding installation time by reducing the number of measurements and cuts that need to be made.



**Horizontal Straight Section**  
(FGS-MSHS-F)



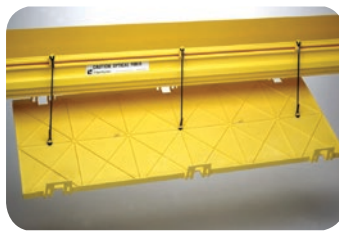
**Horizontal Straight Section Cover**  
(FGS-MSSC-F includes two 3' Lengths and Tethering Hardware)



**Expandable Straight Section**  
(FGS-MVAR-F)



**12" Hinged Cover for Horizontal Straight Section**  
(FGS-MSNC-F)



**Straight Section Cover in Tethered Position**



**Straight Section Cover Attached to Straight Section**

### ORDERING INFORMATION

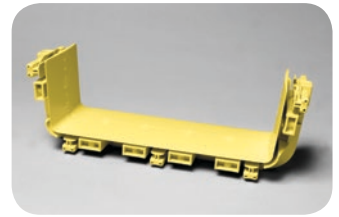
| Description   | Part Number     |
|---|-----------------|
|   | Yellow System   |
| <b>4x12 straight section</b>  |                 |
| Horizontal straight section; 6' long, cover sold separately                                     | FGS-MSHS-F      |
| Expandable straight section   | FGS-MVAR-F      |
| Slack storage straight section  | FGS-MSHS-STOR-F |
| <b>4x12 accessories</b>   |                 |
| Hinged cover kit for horizontal straight section; includes five mounting hinges and three clips | FGS-MSNC-F      |
| Snap-on cover kit for horizontal straight section; includes 3' covers, optional tethering kit   | FGS-MSSC-F      |
| Kit - 10 black capture clips  | FGS-DHCP        |
| Kit - 10 black capture clips and 10 hinges  | FGS-DHHC        |

Black versions available

# FiberGuide System

## 4" H x 12" W – Snap-Fit™ Junction

The new Snap-Fit™ junction is available for the 12-inch FiberGuide system. The Snap-Fit junction is a completely tool-less junction. No additional tools are required for installation or removal. The Snap-Fit junction exhibits superior holding force and accommodates support brackets.



**4x12 Snap-Fit Junction**  
(FGS-MFAW-F)

### ORDERING INFORMATION

| Description             | Part Number   |
|-------------------------|---------------|
| 4x12 Snap-Fit™ junction | Yellow System |
|                         | FGS-MFAW-F    |

Black version available



# FiberGuide System

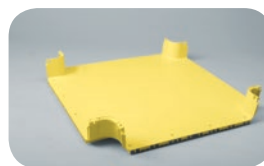
## 4" H x 24" W - Fittings



**End Cap**  
(FGS-HMEC-H)



**Horizontal Cross with Dual 12" Exits**  
(FGS-MHXP-F/H)



**Horizontal Cross**  
(FGS-MHXP-H)



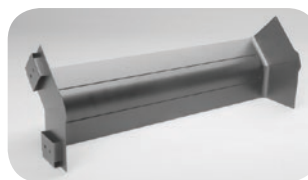
**45° Horizontal Elbow**  
(FGS-MH4E-H)



**Horizontal T with Single 12" Exit**  
(FGS-MHRT-H/F)



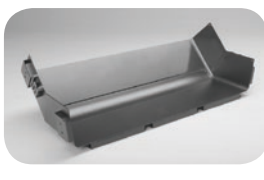
**12" Cut-in T**  
(FGS-MHIS-F/H)



**45° Down Elbow**  
(FGS-MD4E-H)



**4x24 to 4x12 Adapter**  
(FGS-MDSA-HF)



**45° Up Elbow**  
(FGS-MU4E-H)

### ORDERING INFORMATION

| Description                          | Part Number   |
|--------------------------------------|---------------|
|                                      | Yellow System |
| <b>4x24 fittings</b>                 |               |
| 45° horizontal elbow                 | FGS-MH4E-H    |
| Horizontal T with single 12" exit    | FGS-MHRT-H/F  |
| Horizontal T with three 24" exits    | FGS-MHRT-H    |
| Horizontal cross                     | FGS-MHXP-H    |
| Horizontal cross with dual 12" exits | FGS-MHXP-F/H  |
| 45° up elbow                         | FGS-MU4E-H    |
| 45° down elbow                       | FGS-MD4E-H    |
| <b>4x24 conversions</b>              |               |
| 12" cut-in T for 4x24*               | FGS-MHIS-F/H  |
| 6" cut-in T for 4x24*                | FGS-MHIS-B/H  |
| 4" cut-in T for 4x24*                | FGS-MHIS-A/H  |
| 4x24 to 4x12 adapter                 | FGS-MDSA-HF   |
| <b>4x24 end cap</b>                  | FGS-HMEC-H    |

\*Designed exclusively for the 4x24" system.

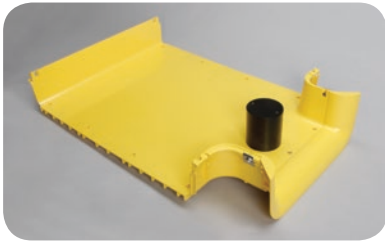
Black versions available



# FiberGuide System

## 4" H x 24" W - Downspouts

4x24 downspouts and attachments feed fiber from overhead straight sections into fiber optic equipment below.



**Island T with Single 12" Exit**  
(FGS-ISLAND-H/F)



**Trumpet Flare**  
(FGS-MTRM-H)

### ORDERING INFORMATION

| Description                   | Part Number    |
|-------------------------------|----------------|
|                               | Yellow System  |
| Island T with single 12" exit | FGS-ISLAND-H/F |
| Trumpet flare                 | FGS-MTRM-H     |

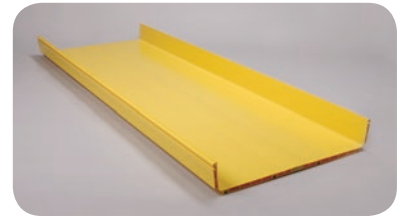
Black version available

# FiberGuide System

## 4" H x 24" W - Straight Section, Snap-Fit™ Junctions and covers

### Straight Section

The unique double wall channel design of the 4x24 straight section provides exceptional strength and durability for high fiber count applications and allows the standard system to be attached to the support structure without the need to cut or drill any holes within the trough. The six channel design ensures that the patch cords will not come in contact with any screw heads or bolts, an important consideration in 4x24 systems where higher cable counts apply increased pressure on patch cords at the bottom of the trough.



**Straight Section**  
(FGS-MSHS-H)

### ORDERING INFORMATION

| Description   | Part Number                 |
|---|-----------------------------|
| 4x24 straight section; horizontal straight section, 6' long | Yellow System<br>FGS-MSHS-H |

Black versions available

### Snap-Fit Junction

The Snap-Fit™ Junction assembly is available for the 24-inch FiberGuide System. The Snap-Fit junction is a completely tool-less junction. No additional tools are required for installation or removal. The junction exhibits superior holding force and accommodates support brackets. A warning label is included with each junction kit.



**Snap-Fit Junction**  
(FGS-MFAW-H)

### ORDERING INFORMATION

| Description             | Part Number                 |
|-------------------------|-----------------------------|
| 4x24 Snap-Fit™ junction | Yellow System<br>FGS-MFAW-H |

Black versions available

### Cover Kits

### ORDERING INFORMATION

| Description   | Part Number  |
|---|--------------|
| Cover for 4"x24"x6' straight section - FGS-MSHS-H                   | FGS-FSFC-H   |
| Cover for 4"x24"horizontal tee with single 12" Exit - FGS-MHRT-H/F  | FGS-FHRT-H/F |
| Cover for 4"x24"horizontal cross with dual 12" Exits - FGS-MHXP-F/H | FGS-FHXP-F/H |
| Cover for 4"x24"horizontal cross - FGS-MHXP-H                       | FGS-FHXP-H   |
| Cover for 4"x24" 45° horizontal elbow - FGS-MH4E-H                  | FGS-FH4E-H   |
| Cover for 4"x24"horizontal tee - FGS-MHRT-H                         | FGS-FHRT-H   |
| Cover for 4"x24" 4° down elbow - FGS-MD4E-H                         | FGS-FD4E-H   |
| Cover for 4"x24" to 4"x12" reducer - FGS-MDSA-HF                    | FGS-FDSA-HF  |

# FiberGuide System

## LighTrax to FGS adaptors

### FiberGuide Adaptation kits

Adaptation kits make it possible to easily migrate from Lightrax to FiberGuide. They are easy to install and offer the opportunity to seamlessly expand your current raceway system.

Adaptation kits are available for the following sizes: 4x4", 4x6/4x8", 4x12/4x8" and 4x12".

#### ORDERING INFORMATION

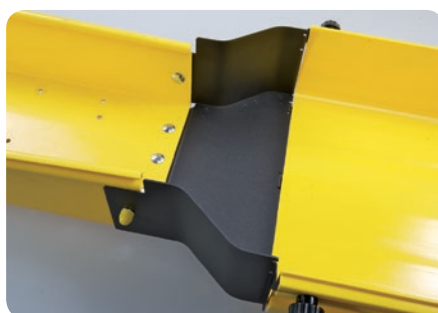
| Description   | Part Number      |
|---|------------------|
| Adapter Kit 4" to 4" (100 to 100mm)                   | FGS-FRH-4/4ADP   |
| Adapter Kit FGS 4x6" to Lightrax 4x8" (150 to 200mm)  | FGS-FRH-6/8ADP   |
| Adapter Kit FGS 4x12" to Lightrax 4x8" (300 to 200mm) | FGS-FRH-12/8ADP  |
| Adapter Kit 12" to 12" (300 to 300mm)                 | FGS-FRH-12/12ADP |



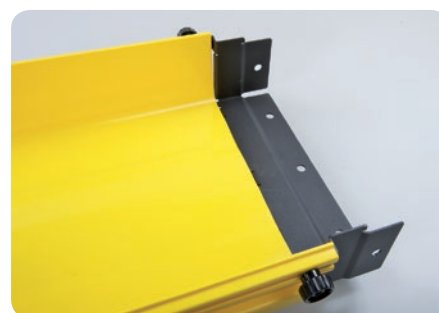
Adapter Kit 4" to 4"



Adapter Kit FGS 4x6" to Lightrax 4x8"



Adapter Kit FGS 4x12" to Lightrax 4x8"



Adapter Kit 12" to 12"

# FiberGuide System

## Express Exit™ Family for 4x4, 4x6 and 4x12 Systems

ADC's patented\* Express Exit™ family accommodates various raceway environments and applications. By simply securing an Express Exit to the sidewall of any 4x4, 4x6, 4x12, or 4x24 FiberGuide straight section, jumpers can be permanently or temporarily routed to fiber optic terminal (FOT) equipment below. No cutting of the FiberGuide system is required. Positioning a drop with a member of the Express Exit family greatly simplifies installation, protects the integrity of fibers already present in the raceway, and increases overall flexibility of the raceway system. All Express Exits guarantee 2-inch bend radius protection.



Express Exit Family

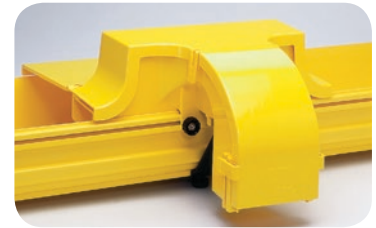
| Express Exit Style       | Height Above Sidewall | Exit Opening         | 3 mm Patch Cord Capacity | 2 mm Patch Cord Capacity | Hinged Rear Cover | Exit Fin Inserts |
|--------------------------|-----------------------|----------------------|--------------------------|--------------------------|-------------------|------------------|
| 2-Inch Express Exit      | 4"                    | 2" x 2" <sup>1</sup> | 150                      | 350                      | No                | No               |
| Low-Profile Express Exit | 2"                    | 2" x 2" <sup>1</sup> | 150                      | 350                      | No                | No               |
| 4-Inch Express Exit      | 4"                    | 4" x 4" <sup>2</sup> | 300                      | 700                      | Yes               | Yes              |

<sup>1</sup>Accepts all standard 2x2" attachments.

<sup>2</sup>Accepts all standard 4x4" attachments.

### 4-Inch Express Exit™

The 4-Inch Express Exit is designed to distribute and manage medium cable counts to FOT or ODF equipment. It features a 4-inch by 4-inch exit opening to accept all standard 4x4 downspout attachments and includes insertable exit fins and removable rear cable guides for additional cable management.



4-Inch Express Exit

### ORDERING INFORMATION

| Description   | Part Number      |
|---|------------------|
|   | Yellow System    |
| <b>4-inch Express Exit™</b>   |                  |
| Express Exit; base, base cover, mounting hardware, support bracket, and exit inserts included | FGS-MEXP-E-A/B/F |
| <b>4-inch accessories</b>   |                  |
| Express Exit rear hinged cover kit; one 4x4, 4x6, 4x12 rear hinged cover                      | FGS-MEXC-E-A/B/F |
| Express Exit rear hinged cover for 4x4 raceway  | FGS-MEXC-E-A     |
| Express Exit rear hinged cover for 4x6 raceway  | FGS-MEXC-E-B     |
| Express Exit rear hinged cover for 4x12 raceway   | FGS-MEXC-E-F     |

\*Other patents pending.

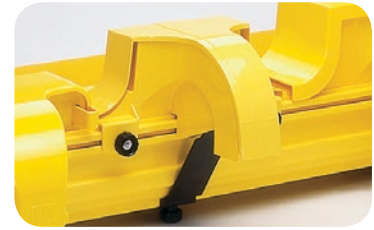
Black versions available

# FiberGuide System

## Express Exit™ Family for 4x4, 4x6 and 4x12 Systems

### 2-Inch Express Exit™

The 2-Inch Express Exit, ADC's initial offering in the Express Exit product family, accommodates up to 350, 2 mm patch cords. The patch cords are routed from a 4x4, 4x6, 4x12 or 4x24 straight section to FOT equipment below the raceway.



2-Inch Express Exit

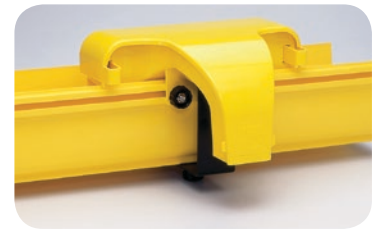
#### ORDERING INFORMATION

| Description  | Part Number                     |
|--|---------------------------------|
| 2-Inch Express Exit™; base, base cover, mounting hardware and support bracket included | Yellow System<br>FGS-MEXP-A/B/F |

Black version available

### Low-Profile Express Exit™

Designed for low-ceiling or height-restricted environments, the Low-Profile Express Exit features a front-removable cover and extends only 2 inches above the FiberGuide straight section sidewall. It also includes removable rear cable guides for additional cable management.



Low-Profile Express Exit

#### ORDERING INFORMATION

| Description   | Part Number                        |
|---|------------------------------------|
| Low-Profile Express Exit™; base, base cover, mounting hardware and support bracket included | Yellow System<br>FGS-MEXP-LP-A/B/F |

Black version available

### Attachments for 2-Inch Express Exit™ and Low-Profile Express Exit™

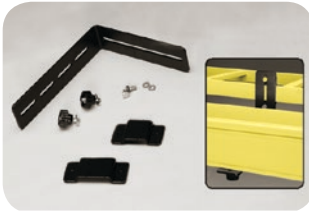
#### ORDERING INFORMATION

| Description  | Part Number                 |
|--|-----------------------------|
| 2x2 trumpet flare; junction included   | Yellow System<br>FGS-MTRM-C |
| <b>Single 2" flex tube attachment; 2" flex tube and a 2x2 junction to attach to Express Exit unit included</b>                 |                             |
| 5' length  | FGS-MEX1-C-5F               |
| 10' length   | FGS-MEX1-C-10F              |
| 15' length   | FGS-MEX1-C-15F              |
| <b>Dual 7/8" flex tube attachment; two lengths of 7/8" flex tube and a 2" junction to attach to Express Exit unit included</b> |                             |
| (2) 5' lengths   | FGS-KT03-C                  |
| (2) 10' lengths  | FGS-KT03-C-10F              |
| (3) 15' lengths  | FGS-KT03-C-15F              |

Black versions available

# FiberGuide System

## System Support Kits for 2x6, 4x4 and 4x6 Systems



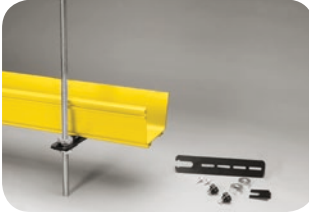
**Ladder Rack Cantilever Support Bracket Kit**  
(FGS-HDLB-4)



**L Bay Support Bracket Kit**  
(FGS-HLBK shown alone and attached to 4x4 FiberGuide)



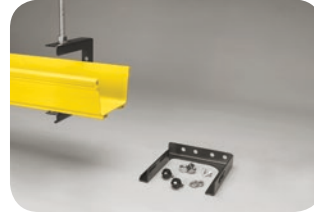
**New Threaded Rod Bracket kit**  
(FGS-HNTR-XX shown alone and attached to threaded rod)



**Existing Threaded Rod Bracket Kit**  
(FGS-HETR-XX shown alone and attached to threaded rod)



**Modified New Threaded Rod Bracket Kit** (FGS-HNTR-5/8-A shown alone and attached to threaded rod)



**Top Support Low Profile C-bracket Kit**  
(FGS-HNTS-XX-LP)



**Top Support C-Bracket Kit**  
(FGS-HNTS-XX)



**Modified Existing Threaded Rod Bracket Kit**  
(FGS-HETR-5/8-A shown alone and attached to threaded rod)



**Center Support Bracket Kit**  
(FGS-HTUB-XX)

### ORDERING INFORMATION

| Description   | Part Number    |
|---|----------------|
| <b>2x6, 4x4, 4x6 system support kits</b>  |                |
| Ladder rack cantilever support bracket kit  | FGS-HDLB-3     |
| L bay support bracket kit   | FGS-HLBK       |
| New threaded rod bracket kit; (XX = size: 1/2", 5/8", 12 mm, 14 mm, 16 mm, 18 mm)   | FGS-HNTR-XX    |
| Existing threaded rod bracket kit; (XX = size: 1/2", 5/8", 12 mm, 14 mm, 16 mm)     | FGS-HETR-XX    |
| Modified new threaded rod bracket kit; 5/8"   | FGS-HNTR-5/8-A |
| Top support low-profile C-bracket kit; (XX = size: 1/2", 5/8", 12 mm, 14 mm, 16 mm) | FGS-HNTS-XX-LP |
| Top support C-bracket kit; (XX = size: 1/2", 5/8", 12 mm, 14 mm, 16 mm)             | FGS-HNTS-XX    |
| Modified existing threaded rod bracket kit; 5/8"                                    | FGS-HETR-5/8-A |
| Center support bracket kit; (XX = size: 1/2", 5/8", 12 mm, 14 mm, 16 mm, 20 mm)     | FGS-HTUB-XX    |
| Digital cableway bracket kit; 305 mm (12")  | FGS-HCBL-12    |
| Digital cableway bracket kit; 381 mm (15")  | FGS-HCBL-15    |
| Ladder rack center support bracket kit  | FGS-HNLR-AB    |
| OMX frame center support bracket kit; 16 mm (.63")                                  | FGS-HOMX-16MM  |
| Under floor support bracket kit   | FGS-HUFB-A     |

For custom brackets please contact your local Sales Representative

# FiberGuide System

## System Support Kits for 4x12 Systems



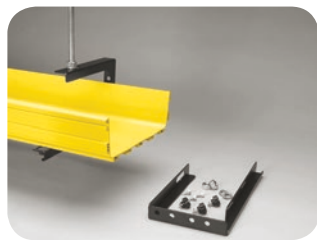
**Existing Threaded Rod  
Trapeze Bracket Kit**  
(FGS-HETP-F-XX)



**Trapeze Bracket Kit**  
(FGS-HNTP-F-XX)



**Center Support Threaded Rod  
Bracket Kit**  
(FGS-HTUB-F-XX shown alone  
and attached to threaded rod)



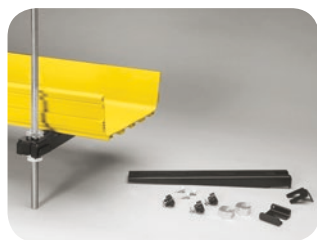
**Top Support Low-Profile  
Threaded Rod Bracket Kit**  
(FGS-HNTS-F-XX-LP shown alone  
and attached to threaded rod)



**Top Support Threaded Rod  
Bracket Kit**  
(FGS-HNTS-F-XX)



**New Threaded Rod Bracket Kit**  
(FGS-HNTR-F-XX)



**Existing Threaded Rod  
Bracket Kit**  
(FGS-HETR-F-XX)

### ORDERING INFORMATION

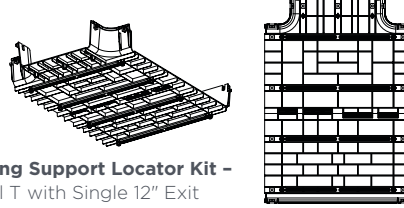
| Description   | Part Number      |
|---|------------------|
| <b>4x12 system support kits</b>   |                  |
| New ladder rack center support bracket kit  | FGS-HNLR-F       |
| Existing threaded rod trapeze bracket kit;<br>(XX = size: 1/2", 5/8", 12 mm, 14 mm, 16 mm)          | FGS-HETP-F-XX    |
| Trapeze bracket kit; (XX = size: 1/2", 5/8", 12 mm, 14 mm, 16 mm)                                   | FGS-HNTP-F-XX    |
| Center support threaded rod bracket kit;<br>(XX = size: 1/2", 5/8", 12 mm, 14 mm, 16 mm, 20 mm)     | FGS-HTUB-F-XX    |
| Top support low-profile threaded rod C-bracket kit;<br>(XX = size: 1/2", 5/8", 12 mm, 14 mm, 16 mm) | FGS-HNTS-F-XX-LP |
| Top support threaded rod C-bracket kit; (XX = size: 1/2", 5/8", 12 mm, 14 mm, 16 mm)                | FGS-HNTS-F-XX    |
| New threaded rod bracket kit; (XX = size: 5/8", 14 mm, 16 mm, 18 mm)                                | FGS-HNTR-F-XX    |
| Existing threaded rod bracket kit; (XX = size: 5/8", 14 mm, 16 mm)                                  | FGS-HETR-F-XX    |

# FiberGuide System

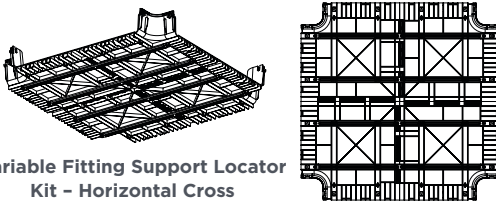
## System Support Kits for 4x24 Systems



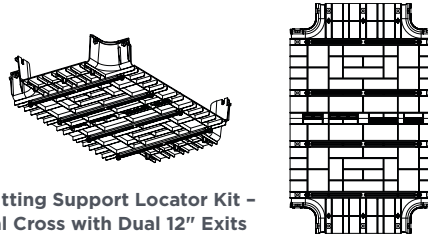
**Variable Fitting Support Locator Kit - Horizontal Elbow**  
(FGS-MH4E-H-VS)



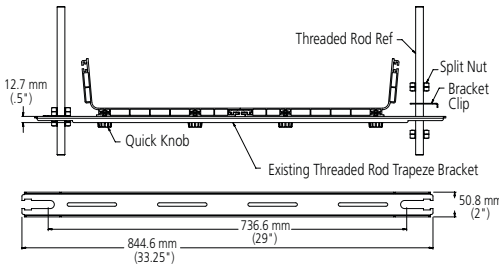
**Variable Fitting Support Locator Kit - Horizontal T with Single 12" Exit**  
(FGS-MHRT-H/F-VS)



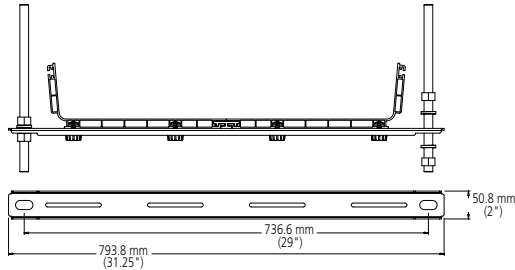
**Variable Fitting Support Locator Kit - Horizontal Cross**  
(FGS-MHXP-H-VS)



**Variable Fitting Support Locator Kit - Horizontal Cross with Dual 12" Exits**  
(FGS-MHXP-F/H-VS)



**Existing 5/8" Threaded Rod Trapeze Bracket Kit**  
(FGS-HETP-H-5/8)



**New 5/8" Threaded Rod Trapeze Bracket Kit**  
(FGS-HNTP-H-5/8)

### ORDERING INFORMATION

| Description                               | Part Number     |
|---|-----------------|
| <b>4x24 System Support Kits</b>           |                 |
| Variable fitting support Locator kit for; |                 |
| Horizontal elbow                          | FGS-MH4E-H-VS   |
| Horizontal T with single 12" exit         | FGS-MHRT-H/F-VS |
| Horizontal cross                          | FGS-MHXP-H-VS   |
| Horizontal cross with dual 12" exits      | FGS-MHXP-F/H-VS |
| Threaded rod trapeze bracket kit for;     |                 |
| Existing; 5/8"                            | FGS-HETP-H-5/8  |
| New; 5/8"                                 | FGS-HNTP-H-5/8  |



## 6. Storage Area Management (SAM)

|  |    |
|--|----|
| Optical Cable Management, Simplified! .....    | 86 |
| Under-chassis Enclosure & Adaptor Plates ..... | 87 |
| Hydra Cable Assemblies .....                   | 88 |
| Far-end Panel Equipment .....                  | 89 |
| Trunk Cable Assemblies .....                   | 90 |

# Storage Area Management (SAM)

## Optical Cable Management, Simplified!

Your data center is managing more information than ever. This is the driving force behind the need for more efficient and effective storage solutions. The increasing complexity of managing a large quantity of devices and data is escalating the cost of software and services, and is drawing most of the IT community's attention. The physical layer drives much of the complexity associated with installing SAN systems, and many of the impediments associated with these implementations.

There are a number of challenges with SAN cabling at the physical layer. High-density port groupings, the sheer volume of patch cords, moves, adds, and changes, and the ports themselves—installing and tracking the actual devices and cables connecting them, can all prove to be difficult. Plus, space is at a premium in most data centers; many have narrow cabinets or four post racks with inadequate cable management space.

TE's Storage Area Management (SAM) Solution for network infrastructures is designed to reduce the bulkiness of cabling and connectors in the data center by up to 80% and enable high-density deployment with fewer costly cabinet or infrastructure upgrades. SAM can help you save time, reduce costs, maximize efficiency, and open up much needed space in your data center. It takes the complexity out of cable management, and optimizes the performance of your data center floor space, racks and electronics.

De-clutter your racks for a highly organized, eco-friendly network infrastructure. SAM delivers operational efficiency to Storage Area Network (SAN) cabling and can help customers:

- Reduce SAN switch cabling volume by up to 80%
- Implement high-density deployment with fewer cabinet or infrastructure upgrades
- Reduce space requirements by managing up to 768 fiber ports within 2 rack units
- Minimize footprint—no additional front vertical, side, or horizontal cable management devices
- Deploy in narrow cabinets or racks and limited space environments
- Minimize cable mass and slack management using linecard-optimized hydra assemblies
- Easily access ports
- Maintain unobstructed linecard maintenance
- Achieve simplified scalability
- Organize with pre-labeled ports
- Speed up deployment and reduce connection errors with color-coded and keyed connections
- Simplify installation, upgrades and migration with dedicated linecard kits
- Improve operational response time
- Remove and redeploy linecards in several quick "clicks"
- Leverage the high density UCP cable management system with MPOptimate Quick-Fit cassettes
- Can be combined with other MPOptimate products in the channel within budget limits of the application



# Storage Area Management (SAM)

## Under-chassis Enclosure & Adaptor Plates

### SAM Rack Mount Optical Fiber Enclosure

#### FEATURES

- Accepts 12 SAM adaptor plates
- Angled front face for improved visibility and cable management
- Rugged aluminum construction
- Internal guides to ease installation of trunk assemblies
- Adjustable front and rear mounting brackets included
- Panel labelling on rear to simplify location and documentation
- Pre-loaded with 12 blank plates



#### ORDERING INFORMATION

| Description                               | Part Number |
|---|-------------|
| Rack Mount Patch Enclosure, 2U MPO SECURE | 1553761-1   |

### SAM MPO Adaptor Plates

#### FEATURES

- Adaptor counts match 16, 32, 48 and 64-port blades
- Color-coded keying on adaptors minimize risk of improper mating (keying on hydra side only—trunk side is not keyed)
- Port numbering matches blades
- Robust screw-in mounting system
- Accepts Multi Mode and Single Mode assemblies



#### ORDERING INFORMATION

| Description                                       | Part Number |
|---|-------------|
| 16-Port blade (2 x MPO secure coupler)            | 2193050-1   |
| 32-Port blade (4 x MPO secure coupler)            | 2193051-1   |
| 48-Port blade (6 x MPO secure coupler)            | 2193052-1   |
| 64-Port blade (8 x MPO secure coupler)            | 2193016-1   |
| Adaptor Plate Blank with 2 Cable Management rings | 2111481-1   |

# Storage Area Management (SAM)

## Hydra Cable Assemblies

### SAM Hydra Cable Assemblies

#### FEATURES

- 8-Port/16-fiber assemblies
- Length optimized for minimum slack
- SECURE MPO or MPOptimate connectors feature color coded keying for proper mating
- Overmolded LSZH cables
- Uniboot universal pitch LC connectors
- Individually labelled legs



#### ORDERING INFORMATION

| Description                                      | Port Label | MPO Color | Part Number<br>MPO OS2 | Part Number<br>MPOptimate OM4 |
|--|------------|-----------|------------------------|-------------------------------|
| Hydra Cable Assembly for 16-Port & 32-Port blade | 0-7        | green     | 2160323-1              | 2160322-1                     |
| Hydra Cable Assembly for 16-Port & 32-Port blade | 8-15       | orange    | 2160325-1              | 2160324-1                     |
| Hydra Cable Assembly for 32-Port blade           | 16-23      | green     | 2160323-2              | 2160322-2                     |
| Hydra Cable Assembly for 32-Port blade           | 24-31      | orange    | 2160325-2              | 2160324-2                     |
| Hydra Cable Assembly for 48-Port blade           | 0-7        | red       | 2160317-1              | 2160503-1                     |
| Hydra Cable Assembly for 48-Port blade           | 8-15       | yellow    | 2160319-1              | 2160318-1                     |
| Hydra Cable Assembly for 48-Port blade           | 16-23      | blue      | 2160321-1              | 2160320-1                     |
| Hydra Cable Assembly for 48-Port blade           | 24-31      | red       | 2160317-2              | 2160503-2                     |
| Hydra Cable Assembly for 48-Port blade           | 32-39      | yellow    | 2160319-2              | 2160318-2                     |
| Hydra Cable Assembly for 48-Port blade           | 40-47      | blue      | 2160321-2              | 2160320-2                     |
| Hydra Cable Assembly for 64-Port blade           | 0-7        | orange    | 2160386-1              | 2160385-1                     |
| Hydra Cable Assembly for 64-Port blade           | 8-15       | slate     | 2160388-1              | 2160387-1                     |
| Hydra Cable Assembly for 64-Port blade           | 16-23      | aqua      | 2160390-1              | 2160389-1                     |
| Hydra Cable Assembly for 64-Port blade           | 24-31      | violet    | 2160392-1              | 2160391-1                     |
| Hydra Cable Assembly for 64-Port blade           | 32-39      | orange    | 2160386-2              | 2160385-2                     |
| Hydra Cable Assembly for 64-Port blade           | 40-47      | slate     | 2160388-2              | 2160387-2                     |
| Hydra Cable Assembly for 64-Port blade           | 48-55      | aqua      | 2160390-2              | 2160389-2                     |
| Hydra Cable Assembly for 64-Port blade           | 56-63      | violet    | 2160392-2              | 2160391-2                     |

# Storage Area Management (SAM)

## Far-End Panel Equipment

### SAM Far-End MPO/MPOptimate Quick-Fit cassettes

#### FEATURES

- 8 port (16 fiber) cassette to replicate 8 SFP ports on director blade
- Rear side: 1 x MPO (to accept one MPO trunk assembly)  
Front side: 4 x LC Quad (to accept eight standard LC duplex assemblies)
- Maintains same port identity and labelling scheme as the hydra assemblies (including 8 pre-numbered port labels)
- To be used in UCP panels



#### ORDERING INFORMATION

| Description                       | Part Number |
|-----------------------------------|-------------|
| MPOptimate OM4 Quick-Fit cassette | 2160270-3   |
| MPO OS2 Quick-Fit cassette        | 2160270-2   |

### UCP Patch Panel Angled and Flushmount

Please refer to Chapter 4, page 50



# Storage Area Management (SAM)

## Trunk Cable Assemblies

### SAM MPO/MPOptimate Trunk Cable Assemblies

#### FEATURES

- 24-fiber assemblies (16 active when mated to hydras) provide an upgrade path to 40 and 100 GbE
- Mate with SAM adaptor plates and SAM Quick-Fit cassettes
- Non-keyed MPO interface
- LSZH rated, indoor outdoor loose tube cable
- Pre-tested and ready to install
- The trunks are equipped with midi fan-out and 3.8mm round cable MPO tails (1.4mtr)
- All tails are protected with transparent protection sleeve



#### ORDERING INFORMATION

| Description    | Part Number |
|----------------|-------------|
| MPOptimate OM4 | Y-2160301-X |
| MPO OS2        | Y-2160302-X |

| Y- X  | Length | Y- X  | Length | Y- X  | Length | Y- X  | Length | Y- X  | Length | Y- X  | Length | Y- X  | Length | Y- X  | Length |
|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|
| 0- -2 | 2 m    | 1- -3 | 13 m   | 2- -4 | 24 m   | 3- -5 | 35 m   | 4- -6 | 46 m   | 5- -7 | 57 m   | 6- -8 | 68 m   | 7- -9 | 79 m   |
| 0- -3 | 3 m    | 1- -4 | 14 m   | 2- -5 | 25 m   | 3- -6 | 36 m   | 4- -7 | 47 m   | 5- -8 | 58 m   | 6- -9 | 69 m   | 8- -0 | 80 m   |
| 0- -4 | 4 m    | 1- -5 | 15 m   | 2- -6 | 26 m   | 3- -7 | 37 m   | 4- -8 | 48 m   | 5- -9 | 59 m   | 7- -0 | 70 m   | 8- -1 | 81 m   |
| 0- -5 | 5 m    | 1- -6 | 16 m   | 2- -7 | 27 m   | 3- -8 | 38 m   | 4- -9 | 49 m   | 6- -0 | 60 m   | 7- -1 | 71 m   | 8- -2 | 82 m   |
| 0- -6 | 6 m    | 1- -7 | 17 m   | 2- -8 | 28 m   | 3- -9 | 39 m   | 5- -0 | 50 m   | 6- -1 | 61 m   | 7- -2 | 72 m   | 8- -3 | 83 m   |
| 0- -7 | 7 m    | 1- -8 | 18 m   | 2- -9 | 29 m   | 4- -0 | 40 m   | 5- -1 | 51 m   | 6- -2 | 62 m   | 7- -3 | 73 m   | 8- -4 | 84 m   |
| 0- -8 | 8 m    | 1- -9 | 19 m   | 3- -0 | 30 m   | 4- -1 | 41 m   | 5- -2 | 52 m   | 6- -3 | 63 m   | 7- -4 | 74 m   | 8- -5 | 85 m   |
| 0- -9 | 9 m    | 2- -0 | 20 m   | 3- -1 | 31 m   | 4- -2 | 42 m   | 5- -3 | 53 m   | 6- -4 | 64 m   | 7- -5 | 75 m   | 8- -6 | 86 m   |
| 1- -0 | 10 m   | 2- -1 | 21 m   | 3- -2 | 32 m   | 4- -3 | 43 m   | 5- -4 | 54 m   | 6- -5 | 65 m   | 7- -6 | 76 m   | 8- -7 | 87 m   |
| 1- -1 | 11 m   | 2- -2 | 22 m   | 3- -3 | 33 m   | 4- -4 | 44 m   | 5- -5 | 55 m   | 6- -6 | 66 m   | 7- -7 | 77 m   | 8- -8 | 88 m   |
| 1- -2 | 12 m   | 2- -3 | 23 m   | 3- -4 | 34 m   | 4- -5 | 45 m   | 5- -6 | 56 m   | 6- -7 | 67 m   | 7- -8 | 78 m   | 8- -9 | 89 m   |

## 7. Core VSM System

|                         |    |
|-------------------------|----|
| Management Panels ..... | 92 |
| Copper Solution.....    | 93 |
| Fiber Solution.....     | 95 |

# Core VSM

## Management Panels

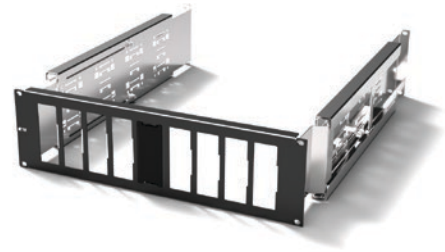
---

### Rack Mount Quick-Fit Panel

#### FEATURES

- Accepts up to 9 Quick-Fit modules
- 3U
- Including cable support bars with tie down options and Fiber Optic tail over length

**Color:** Black (RAL 9005) and galvanised finish



#### ORDERING INFORMATION

| Description                | Part Number |
|----------------------------|-------------|
| Rack Mount Quick-Fit Panel | 1671907-1   |

### Cable Management Tray

#### FEATURES

- Optimized to replace Cisco Nexus 7010 switch cable manager
- Provides vertical patch cord guiding

**Color:** Black (RAL 9005)



#### ORDERING INFORMATION

| Description                                | Part Number |
|--|-------------|
| Cable Management Tray for Cisco Nexus 7010 | 1671633-1   |



### RJ-45 to MRJ21 Quick-Fit Cassettes (1 or 10 Gb/s)

For RJ-45 copper management please use our MRJ21 Quick-Fit cassettes:

- for 10 GbE (XG) see page 26



- for 1 GbE see page 28



### MRJ21 to MRJ21 shielded cable assemblies (1 or 10 Gb/s)

For RJ-45 copper management please use our MRJ21 trunk cable assemblies:

- for 10 GbE (XG) see page 27



- for 1 GbE see page 30



### Category 6<sub>A</sub> S/FTP Patch Cord RJ-45

#### FEATURES

- Exceeds Category 6<sub>A</sub> performance suitable for 10 Gb/s data transmission
- Category 7 S/FTP stranded cable
- LSZH sheath
- Color-matched snagless boots
- Universal B-wiring
- Specially engineered patch cord length allows one length for all patch cords in a rack, reducing inventory holding costs and increasing flexibility for MACs



#### ORDERING INFORMATION

| Description                                      | Part Number |
|--|-------------|
| Patch Cord RJ45 Cat. 6 <sub>A</sub> S/FTP, White | 2153188-1   |

### Category 5e F/UTP Patch Cord RJ-45

#### FEATURES

- Category 5e according to ISO/IEC 11801 and EN-50173-1
- 4 Pair stranded F/UTP cable
- LSZH sheath
- Color-matched snagless boots
- Universal wiring
- Specially engineered patch cord length allows one length for all patch cords in a rack, reducing inventory holding costs and increasing flexibility for MACs



#### ORDERING INFORMATION

| Description                         | Part Number |
|-------------------------------------|-------------|
| Patch Cord RJ45 Cat 5E F/UTP, White | 2153190-1   |

### LC to MPO Quick-Fit cassettes or MPO to MPO modules

For LC or MPO fiber management please use our MPOptimate Quick-Fit cassettes and modules

- for MPO to LC Quick-Fit cassettes see page 4



- for MPO Coupler Quick-Fit modules see page 20



### MPOptimate pre-terminated trunks

For LC or MPO fiber management please use our MPOptimate pre-terminated trunks on page 3



### MPOptimate patch cords

For LC or MPO fiber management please use our MPOptimate pre-terminated patch cords on page 5



**MPOptimate System LC patch cords**

**FEATURES**

- Patch cords with optimized LC connectors
- Cable performance: OM4 XG<sub>A</sub> or OM3 XG 10 Gb/s; LSZH construction  
Optical performance: Attenuation ≤ 0.15 dB; RL ≥ 35 dB
- Specially engineered patch cord length allows one length for all patch cords in a rack, reducing inventory holding costs and increasing flexibility for MACs



**ORDERING INFORMATION**

| Description   | Part Number |
|---|-------------|
| Patch cord LC Duplex - LC Duplex; OM3 XG 10 Gb/s              | 2160506-1   |
| Patch cord LC Duplex - LC Duplex; OM4 XG <sub>A</sub> 10 Gb/s | 2160506-2   |

**MPOptimate Fan-Out cable assemblies**

**FEATURES**

- Low loss transition from MPO to LC tails 2 mm
- Terminated with male MPOptimate connectors
- OM4 cable performance, LSZH construction
- Specially engineered fan-out cable length allows one length for all cable assemblies in a rack, reducing inventory holding costs and increasing flexibility for MACs



**ORDERING INFORMATION**

| Description   | Part Number |
|---|-------------|
| MPO male - LC Fan-out OM4 XG <sub>A</sub> 10 Gb/s for 48 port blade | 2160537-1   |
| MPO male - LC Fan-out OM4 XG <sub>A</sub> 10 Gb/s for 32 port blade | 2160538-1   |

## 8. Quareo Physical Layer Management System

|           |  |     |
|-----------|--|-----|
|           | Quareo Introduction.....                 | 98  |
|           | Quareo Software.....                     | 99  |
| <b>8A</b> | Q4000 Managed Fiber Platform.....        | 102 |
|           | QHDEP High Density Equipment Panels..... | 111 |
|           | Q2000 Copper Network Panels.....         | 122 |
| <b>8B</b> | AMPTRAC Introduction.....                | 126 |
|           | AMPTRAC Analyzer.....                    | 127 |
|           | AMPTRAC Scanning Module Cables.....      | 128 |
|           | AMPTRAC Fiber Platform.....              | 129 |
|           | AMPTRAC Fiber Patch Cords.....           | 130 |
|           | AMPTRAC Copper Platform.....             | 131 |
|           | AMPTRAC Copper Patch Cords.....          | 136 |
|           | AMPTRAC Sensor Strips.....               | 137 |
|           | Accessories.....                         | 138 |

# Quareo Physical Layer Management System

## Introduction

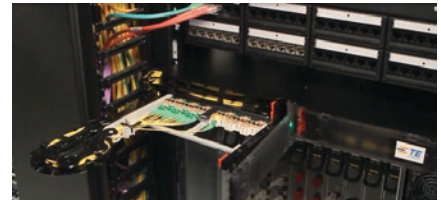
### Understanding Quareo Physical Layer Management

TE's Quareo physical layer management is an end-to-end solution, combining hardware and software elements to provide accurate visibility on the state of the physical network at all times. It enables easier, smarter network management for everyone from cable installers to network managers, strengthening physical security, boosting availability and providing real-time communication with network assets.

The Quareo physical layer management system leverages an innovative technology called connection point identification (CPID) to capture accurate information on the state of the network. This is done by incorporating chips on connectors throughout the network. Factory installed, these chips are programmed with all the pertinent information about a product, starting with the serial number. Once installed in the network, the product becomes fully discoverable, and the information can be accessed by a technician.

The Quareo physical layer management software captures data from the hardware and turns it into information that can be used to more effectively and efficiently manage the network. Field technicians and installers are armed with better, more accurate data, which reduces labor times and errors in service turn up and troubleshooting.

To learn more about Quareo physical layer management solutions, visit: [www.te.com/Quareo](http://www.te.com/Quareo)



# Quareo Physical Layer Management System

Quareo Software

## Quareo Software

TE Connectivity's (TE) Quareo Software is a server software application designed to document and administer both passive and active network connectivity infrastructure. Quareo Software enables documentation of various levels of network components from existing brownfield infrastructure to TE's traditional and automated physical layer management solutions.

As part of the Quareo physical layer management system, Quareo Software enables immediate notification and response to changes in connectivity and automatically records the configurations of the physical layer cabling system and its devices with accurate documentation.

### BENEFITS

- Accountability of assets by location and date
- Availability of assets and utilization is improved
- Reduced operational costs
- Best practice and regulatory requirements are more easily attained
- Network problems are more easily diagnosed and corrected
- Security is greatly enhanced
- Remote visibility of the physical layer
- DoD/DISA/JITC tested

### FEATURES

The advanced system architecture allows full customization of the graphical user interface. Multiple users and multiple screens can be supported enhancing the usefulness of the system. Different color schemes are available that can be applied on a per user basis enhancing the user interface experience.

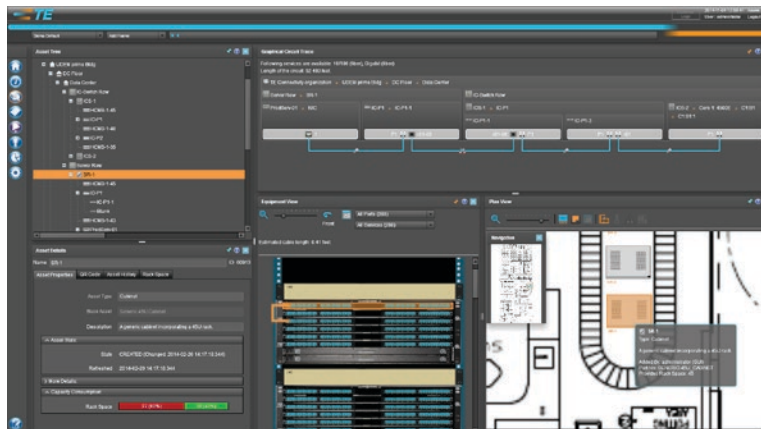
The graphical user interface supports multiple screens that visualize the network physical infrastructure in a detail not previously available. User access and profiles can be secured and controlled to a granular level based on responsibilities, roles and use cases.

The network infrastructure can be viewed in a classical tree hierarchy with branches nested below. Additionally, multiple drawings of a building can be added to the database and these can be allocated to different parts of the building, floor or room that is documented. These drawings can have network assets 'placed' and these assets remain dynamic within the drawing, allowing for information to be coordinated and viewed with a single click.

The network rack, cabinet or closet can be documented and visualized in full detail that shows the front and rear of any installed assets. Patch cables and their planned routing can be viewed including estimated minimum lengths.

Circuit traces can be viewed showing every element of the circuit path from switch port to end device and all intermediate steps.

Asset details are recorded and displayed in multiple screens and views. These details combine discovered and manually provided information. Asset utilization can be continually monitored\* with charts/meters providing instantaneous and real time updates at a glance. All documented information can be searched in real time and items immediately displayed.



# Quareo Physical Layer Management System

Quareo Software

## Quareo Mobile

Download the Quareo mobile app for on-the-go physical network management. Use the app in conjunction with an active Quareo software system. Quareo mobile links with your Quareo software server to coordinate planned work orders and provide direct technician messaging and responses while enabling unprecedented management, details and control of the Information Transport System (ITS).

The Quareo mobile app is supported by select Android and Apple devices\*. The app is available for download from iTunes\* and Google Play\* under the name 'ICM Mobile'.

### Supported Android Handsets and Versions

- Google Nexus S, 4 and 5
- Samsung Galaxy S3, S4 and S5
- Android v4.3 and above

### Supported Apple Devices and iOS Versions

- iPhone 4 and above (Works on iPod, iPad and iPhone devices supporting iOS 6 or greater)
- iOS 6 and above

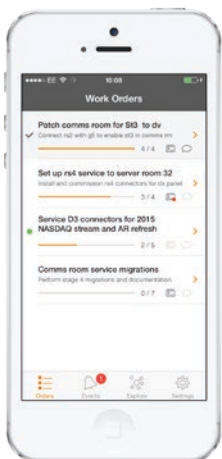


## BENEFITS

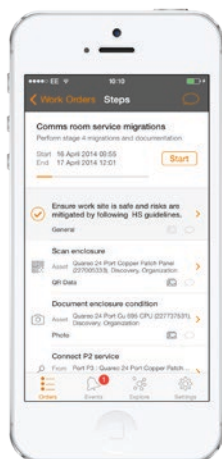
- On-screen guidance tips
- Port level details display
- Work order selection listing
- Work order synchronization
- Work order/LED activation controls
- Work order step selector/manager
- Detailed Work order steps:
  - Connect step
  - Disconnect step
  - Photo requirement step
  - GPS location step
  - Single end insertion/extraction steps
  - QRcode scan step
  - General step
- QR code scan and assist processes
- Switch port validation processes
- Auto-detect completion indicators
- Manual completion indicators
- Enhanced work order error messaging
- Response attachment handling
- Automatic status updates whilst performing managed work orders
- Incident response logging
- Events and alarms
- Guided setup and configuration validation
- QR coded asset management

\*iTunes is a trademark of Apple Inc.

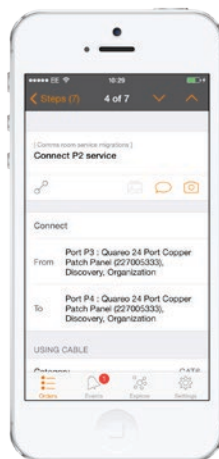
\*Google Play is a service of Google Inc.



WO List



Step List



Step Detail



QR Scan



Attachments



# Quareo Physical Layer Management System

Quareo Software

## Ordering Information

### QUAREO SOFTWARE QR CODES

Download the Quareo mobile app for on-the-go physical network management. Use the app in conjunction with an active Quareo software system. Quareo mobile links with your Quareo software server to coordinate planned work orders and provide direct technician messaging and responses while enabling unprecedented management, details and control of the Information Transport System (ITS).

| Description   | Part Number |
|---|-------------|
| Quareo QR Code Label Sheet - 5 sheets of 39 adhesive labels | 2286081-1   |

### QUAREO SOFTWARE

|   | Description  | Part Number     |
|---|--|-----------------|
| <b>Quareo Software</b> is a per server license available in the following license blocks by managed-monitored port counts. Included with the initial license purchase is 1 year of annual maintenance and support as described below.   | Quareo Software: Server and Port License: 1-7000 port                        | QS-SPL-7000     |
|   | Quareo Software: Server and Port License: 7001-20000 port                    | QS-SPL-20000    |
|   | Quareo Software: Server and Port License: 20001-50000 port                   | QS-SPL-50000    |
|   | Quareo Software: Server and Port License: 50001-Unlimited port               | QS-SPL-UNLTD    |
| <b>Annual Maintenance</b><br>The Quareo Software MLA covers updates and help desk support on an annual basis based on the port thresholds as shown in the following table. Technical Assistance Center (TAC) access includes patches, bug fixes as well as minor release revisions. | Quareo Software Maintenance: 1 year Maintenance Support 1-7000 port          | QSM-1YRMS-7000  |
|   | Quareo Software Maintenance: 1 year Maintenance Support 7001-20000 port      | QSM-1YRMS-20000 |
|   | Quareo Software Maintenance: 1 year Maintenance Support 20001-50000 port     | QSM-1YRMS-50000 |
|   | Quareo Software Maintenance: 1 year Maintenance Support 50001-Unlimited port | QSM-1YRMS-UNLTD |

NOTE: Major release revisions may contain new feature enhancements or modules and are subject to potential upgrade fees to existing licenses.

### MINIMUM SERVER HARDWARE REQUIREMENTS:

- **Processor:** Dual core 2 GHz or higher (x64) processor required
- **Memory:** 8 GB
- **Available Disk Space:** 20 GB
- **Network connection:** 1 GB Network card

### MICROSOFT® WINDOWS SERVER® 2008 R2

- Microsoft® Windows Server® 2012 R2
- Red Hat® Enterprise Linux® 6 - 64 bit
- CentOS-6 - 64 bit

### DATABASE REQUIREMENTS

As part of the installation process, the following database platform will be installed on your server:

- PostgreSQL 9.1
- Apache™ Tomcat™ web server

### OTHER REQUIREMENTS

- **Java Runtime Engine 1.6 or higher** (can be installed as part of the software installation)
- **Adobe Flash Player 11.1.102.62 or higher** (client desktop only)
- **Administrator log in privileges on the server for installation**

### SUPPORTED WEB BROWSERS

- IE 8 or higher
- Firefox 10.0.2 or higher

(Although Quareo Software may work in other browsers, they have not been tested, and are not supported at this time)

Microsoft Windows Server, Red Hat Enterprise Linux, Apache Tomcat, Adobe, and Firefox are trademarks.

# Quareo Physical Layer Management System

## Q4000 Managed Fiber Platform

### Q4000 Series Network Chassis

Q4000 Series featuring Quareo Technology allows network personnel to view, manage and audit the physical layer. This means, for the first time, the physical layer is now subject to the same compliance policy as higher layers of the network. With 70% of network outages attributed to errors made in the physical layer, TE introduces a new category of products. Simply put, Quareo enables physical layer management using connection point identification (CPID) technology.

#### FEATURES

- Support IEEE 802.3ae and IEEE 802.3ba (10-40-100 GB/s)
- Exceeds ANSI/TIA-568-C.3 and ISO 11801 Edition 2 cabling system requirements
- OM3/OM4 and OS1
- 19-Inch rack mountable
- Available in 2, 4, and 8 slot chassis
- 48 Fiber (24 Duplex LC) LC-to-LC or LC to MPOptimate blade
- 192 Fiber (16 MPO Ports) MPO-to-MPO blade



**1 RU Chassis**  
(shown loaded)



**2 RU Chassis**  
(shown loaded)



**4RU Chassis**  
(shown loaded)

#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| 1RU Network Chassis, Accommodates 2 x Q4 series blades | QCH-1RU     |
| 2RU Network Chassis, Accommodates 4 x Q4 series blades | QCH-2RU     |
| 4RU Network Chassis, Accommodates 8 x Q4 series blades | QCH-4RU     |

#### SPECIFICATIONS

##### 1RU NETWORK CHASSIS

|                            |   |
|----------------------------|---|
| <b>Rack Mounting:</b>      | EIA/ETSI/WECO/IEC 60297 19-inch equipment racks       |
| <b>Height in Rack:</b>     | 1RU 44.5 mm, (1.75")                                  |
| <b>Dimensions (HxWxD):</b> | 44.5 mm x 483 mm x 338 mm (1.75" x 19" x 13.3")       |
| <b>Grounding:</b>          | 2-screw grounding location for standard grounding lug |

##### 2RU NETWORK CHASSIS

|                            |   |
|----------------------------|---|
| <b>Rack Mounting:</b>      | EIA/ETSI/WECO/IEC 60297 19-inch equipment racks       |
| <b>Height in Rack:</b>     | 2RU 88.9 mm, (3.5")                                   |
| <b>Dimensions (HxWxD):</b> | 87.63 mm x 482.85 mm x 338 mm (3.45" x 19" x 13.3")   |
| <b>Grounding:</b>          | 2-screw grounding location for standard grounding lug |

##### 4RU NETWORK CHASSIS

|                            |   |
|----------------------------|---|
| <b>Rack Mounting:</b>      | EIA/ETSI/WECO/IEC 60297 19-inch equipment racks       |
| <b>Height in Rack:</b>     | 4RU 177.8 mm, (7")                                    |
| <b>Dimensions (HxWxD):</b> | 177.8 mm x 483 mm x 338 mm (7" x 19" x 13.3")         |
| <b>Grounding:</b>          | 2-screw grounding location for standard grounding lug |

#### ENVIRONMENTAL

|                               |  |
|-------------------------------|--|
| <b>Operating Temperature:</b> | -10 °C to +60° C (+14 °F to +140° F)       |
| <b>Storage Temperature:</b>   | -40 °C to +85° C (-40°F to +185° F)        |
| <b>Humidity:</b>              | 5% to 95% non-condensing<br>RoHS Compliant |

#### SAFETY

|                      |   |
|----------------------|---|
| <b>Flammability:</b> | (UL), c(UL), CE, A-TICK<br>(UL) 94 V-0<br>UL 1863 |
|----------------------|---|

#### EMC

EMC Directive, 2004/108/EEC

# Quareo Physical Layer Management System

## Q4000 Managed Fiber Platform

### Door Kits

#### ORDERING INFORMATION

| Product Description       | Part Number |
|---------------------------|-------------|
| Quareo 1RU Front Door Kit | QDR-1RU     |
| Quareo 2RU Front Door Kit | QDR-2RU     |
| Quareo 4RU Front Door Kit | QDR-4RU     |

### Blank Chassis Covers

#### ORDERING INFORMATION

| Product Description  | Part Number |
|--|-------------|
| Front Blank Cover (used to cover up unpopulated chassis positions) | QBCB-HR     |

### Chassis Controller

#### COMPATIBLE WITH Q4000 NETWORK CHASSIS

#### FEATURES

- Chassis controller (one per chassis) operates with the Q4000 series
- Designed to fit with the rear of the chassis, does not require additional rack space
- Power can be supplied through IEEE 802.3af compliant switch port (class 0) or auxiliary power supply (can be simultaneous)



#### ORDERING INFORMATION

| Product Description                          | Part Number |
|--|-------------|
| Chassis Controller for Q4000 Network Chassis | QCPU-MCBM-1 |
| ASSY, Power Supply without Cord              | QPWRS-NO    |

#### SPECIFICATIONS

##### PHYSICAL:

|                      |  |
|----------------------|--|
| Dimensions (HxWxD):  | 25.2 mm x 87.9 mm x 124.7 mm (0.99" x 3.46" x 4.91") |
| Electrical I/F:      | RJ45   |
| Electrical Aux. I/F: | 2-Pin Micro-Fit 3.0™                                 |

##### ENVIRONMENTAL:

|                        |  |
|------------------------|--|
| Operating Temperature: | -10° C to +60° C (+14° F to +140° F)     |
| Storage Temperature:   | -40° C to +85° C (-40° F to +185° F)     |
| Humidity:              | 5% to 95% non-condensing, RoHS compliant |

##### ELECTRICAL:

|                             |                      |                             |
|-----------------------------|----------------------|-----------------------------|
| PoE Power:                  | IEEE 802.3af Class 0 |                             |
| Auxiliary Input Power:      | +48VDC @ 270mA       |                             |
| Function                    | Unit                 | Notes                       |
| Input Voltage:              | 36 - 56 Volts        | PoE 37.5 - 56V              |
| Input Current:              | .360 Amps            | Max current at 36V input    |
| Output Voltage:             | 5.0VDC +/- 5% Volts  |                             |
| Output Current:             | 2.2 Amps             | Max Continuous              |
| Efficiency:                 | 85%                  | Peak Efficiency @48V input  |
| Transition Time PoE to AUX: | Seamless Sec         |                             |
| Transition Time AUX to PoE: | <30 Sec              | Depends on PoE power supply |
| PoE Classification:         |                      | Class 0                     |

**SAFETY:** (UL), c(UL), CE, A-TICK, UL 1863

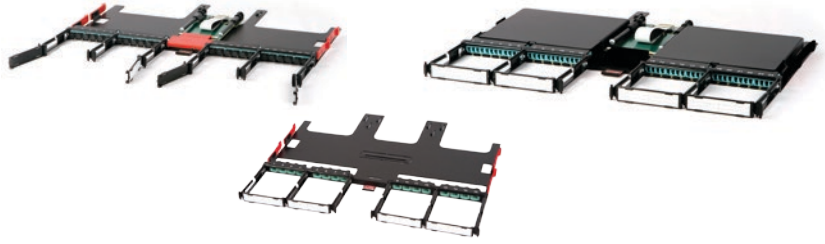
**EMC:** EMC Directive, 2004/108/EEC

**NETWORK:** Supports 10Base-T and 100Base-TX

# Quareo Physical Layer Management System

## Q4000 Managed Fiber Platform

### Q4000 Series Network Blades



#### FEATURES

- Available in multimode and singlemode
- Blade controller is hot swappable in blade
- Front cable management with removable designation labels
- Rear cable management tie down points to work with Q4000 Series Network Chassis Rear Cable Management
- Blade remains powered when extended to the first position
- User Indicators blade controller (LED) Power; green alert: yellow/green
- User Indicators blade (LED) duplex ports: yellow/green for user guidance and feedback

#### ORDERING INFORMATION

| Product Description  | Polarity           | Mode                | Part Number      |
|--|--------------------|---------------------|------------------|
| LC-to-LC Q4000 chassis blade; fiber, 24 port duplex LC, 1/2 RU blade   | Adapter Only       | Multimode (OM3/OM4) | QFB-48FDLCLMMHR  |
|  | Adapter Only       | Singlemode          | QFB-48FDLCLSMHR  |
| LC-to-MPOptimate (12-fiber) Q4000 chassis blade; fiber, 24 port duplex LC, 1.2 RU blade  | A-A/B-B (Straight) | Singlemode          | QFB-48FDLCMSMHR  |
|  | A-A/B-B (Straight) | Multimode - OM3/OM4 | QFB-48FDLCMMHR   |
| Multimode: MPOptimate Performance: Factory measured maximum measured 0.35 dB loss maximum per MPO-LC OM4 module<br>Singlemode: (<0.75 dB) @ 1310 nm/1550 nm) | A-B/B-A (Flipped)  | Singlemode          | QFB-48FDLCM2BSHR |
|  | A-B/B-A (Flipped)  | Multimode - OM3/OM4 | QFB-48FDLCM2BPHR |

# Quareo Physical Layer Management System

## Q4000 Managed Fiber Platform

### 10/40/100 Gigabit Blades



#### ORDERING INFORMATION

| Product Description  | Polarity           | Mode       | Part Number      |
|--|--------------------|------------|------------------|
| Q4000 Blades   |                    |            |                  |
| LC to MPOptimate (24-Fiber)  | A-A/B-B (Straight) | Multimode  | QFB-48FDLCM4APHR |
|  | A-A/B-B (Straight) | Singlemode | QFB-48FDLCM4ASHR |
|  | A-B/B-A (Flipped)  | Multimode  | QFB-48FDLCM4BPHR |
|  | A-B/B-A (Flipped)  | Singlemode | QFB-48FDLCM4BSHR |
|  | 10G HD             | Multimode  | QFB-48FDLCM4FPHR |
|  | 10G HD             | Singlemode | QFB-48FDLCM4FSHR |
| LC-to-MPOptimate (12-fiber)  | 10G HD             | Multimode  | QFB-48FDLCM2FPHR |
|  | 10G HD             | Singlemode | QFB-48FDLCM2FSHR |
| MPOptimate (24-Fiber) to MPOptimate (8-Fiber)                        | A-A/B-B (Straight) | Multimode  | QFB-96FMM264APHR |
|  | A-A/B-B (Straight) | Singlemode | QFB-96FMM264ASHR |
|  | A-B/B-A (Flipped)  | Multimode  | QFB-96FMM264BPHR |
|  | A-B/B-A (Flipped)  | Singlemode | QFB-96FMM264BSHR |
| MPO-to-MPO Q4000 Chassis Blade;<br>fiber, 16 MPO Ports, 1/2 RU blade | MPO Adapters Only  | Multimode  | QFB-192FMPOMMHR  |
|  | MPO Adapters Only  | Singlemode | QFB-192FMPOSMHR  |

#### BLADE SPECIFICATIONS

##### PHYSICAL

**Dimensions (HxWxD):** 19.3 mm x 438.4 mm x 373.1 mm (0.76" x 17.26" x 14.69")

##### ENVIRONMENTAL

**Operating Temperature:** -10° C to +60° C (+14° F to +140° F)

**Storage Temperature:** -40° C to +85° C (-40° F to +185° F)

**Humidity:** 5% to 95% non-condensing

##### ELECTRICAL

**Input Power:** 1.0 W Max.

##### COMPLIANCE

**Safety:** RoHS Compliant  
(UL), c(UL), CE, A-TICK

**Flammability:** (UL) 94 V-0  
UL 1863

**EMC:** EMC Directive, 2004/108/EEC

# Quareo Physical Layer Management System

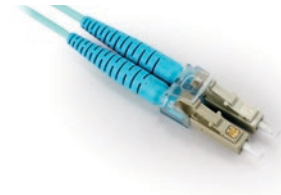
## Q4000 Managed Fiber Platform

### Quareo Managed Fiber Cables

#### MULTIMODE AND SINGLEMODE - MANAGED FIBER CABLES WITH CPID

##### FEATURES

- Standard colors: aqua for multimode, yellow for singlemode
- Standard materials:
  - Plenum PVC / LSZH
- Performance specifications: ANSI/TIA-568-C.3 and ISO 11801, Edition 2 for OM3/OM4 multimode, OS1 for singlemode



##### SPECIFICATIONS

|   |                |
|---|----------------|
| <b>Singlemode Ultra Polish Connectors (UPC)</b> | <b>LC</b>      |
| <b>Insertion Loss:</b>                          | 0.3 dB max.    |
| <b>(1310 and 1550 nm):</b>                      | 0.1 dB typical |
| <b>Return Loss:</b>                             | -55 dB min.    |
| <b>(1310 and 1550 nm)</b>                       |                |
| <b>Fiber Recess:</b>                            | -100 to +50 nm |
| <b>Apex Offset:</b>                             | 50 µm max      |
| <b>Radius of Curvature:</b>                     | 10-25 mm       |
| <b>Multimode (PC)</b>                           | <b>LC</b>      |
| <b>Insertion Loss:</b>                          | 0.3 dB max     |
| <b>(850 and 1300 nm):</b>                       | 0.2 dB typical |
| <b>Return Loss:</b>                             | -20 dB max     |
| <b>(850 and 1300 nm)</b>                        |                |

##### ENVIRONMENTAL:

|                               |                                      |
|-------------------------------|--------------------------------------|
| <b>Operating Temperature:</b> | -10° C to +60° C (+14° F to +140° F) |
| <b>Storage Temperature:</b>   | -40° C to +85° C (-40° F to +185° F) |
| <b>Humidity:</b>              | 5% to 95% non-condensing             |
| <b>RoHS Compliant</b>         |                                      |

##### TRANSMISSION PERFORMANCE AND RELILABILITY:

ANSI/TIA 568-C.3  
ISO/IEC 11801, Edition 2

##### SAFETY:

UL/CSA Approved, IEC 60950, A-TICK

##### ORDERING INFORMATION

| Description      | Fiber Type |     | Polarity | Part Number       |
|------------------|------------|-----|----------|-------------------|
| LC-to-LC<br>LSZH | Multimode  | OM3 | A-to-A   | QFPC-MPPM3ZA-xxxM |
|                  |            |     | A-to-B   | QFPC-MPPM3ZB-xxxM |
|                  |            | OM4 | A-to-A   | QFPC-MPPM4ZA-xxxM |
|                  |            |     | A-to-B   | QFPC-MPPM4ZB-xxxM |
|                  | Singlemode |     | A-to-A   | QFPC-MKKSMZA-xxxM |
|                  |            |     | A-to-B   | QFPC-MKKSMZB-xxxM |

Replace xxx with desired length in metres or feet.

# Quareo Physical Layer Management System

## Q4000 Managed Fiber Platform

### Quareo Managed Trunk and Fanout with Array Cables

#### OM3/OM4 AND SINGLEMODE LSZH

#### FEATURES

- Round design eliminates preferential bend issues which results in increased density and greater manageability
- Each LC leg clearly labeled and identified
- Standard breakout length 18-inches, which is optimum to connect to active equipment



#### ORDERING INFORMATION

| Description   | Fiber Type | Managed  |  | Part Number  |                    |
|---------------|------------|--|--|--|--------------------|
|               |            | Cable Type   | Connectors   |  |                    |
| 12 Fiber LSZH | Multimode  | OM3  | Array  | 12F MPO (pinned/male)-LC                             | QFC-1MPPM3ZPxxxMNN |
|               |            |  | Trunk  | LC-to-LC   | QFC-1PPM3ZPxxxMBB  |
|               |            | 12F MPO (no pins/female) to 12F MPO (no pins/female) |  | QFA-1FFM3ZPxxxMNN                                    |                    |
|               |            | OM4  | Array  | MPO (pinned/male)-LC                                 | QFC-1MPPM4ZPxxxMNN |
|               |            |  | Trunk  | LC-to-LC   | QFC-1PPM4ZPxxxMBB  |
|               |            |  |  | 12F MPO (no pins/female) to 12F MPO (no pins/female) |                    |
|               | Singlemode | Array  | 12F MPO (pinned/male)-LC                             | QFC-1RKSMZPxxxMNN                                    |                    |
|               |            |  | LC-to-LC   | QFC-1KKSMZPxxxMNN                                    |                    |
|               |            | 12F MPO (no pins/female) to 12F MPO (no pins/female) |  | QFA-1WWSMZPxxxMNN                                    |                    |
| 24 Fiber LSZH | Multimode  | OM3  | Trunk  | LC-to-LC   | QFC-2PPM3ZNxxxMBB  |
|               |            |  |  | 12F MPO (no pins/female) to 12F MPO (no pins/female) |                    |
|               |            | OM4  | Trunk  | LC-to-LC   | QFC-2PPM4ZNxxxMBB  |
|               |            |  |  | 12F MPO (no pins/female) to 12F MPO (no pins/female) |                    |
|               | Singlemode | Trunk  | LC-to-LC   | QFC-2KKSMZNxxxMBB                                    |                    |
|               |            |  | 12F MPO (no pins/female) to 12F MPO (no pins/female) |  | QFA-2WWSMZPxxxMNN  |
| 48 Fiber LSZH | Multimode  | OM3  | Trunk  | LC-to-LC   | QFC-4PPM3ZNxxxMBB  |
|               |            |  |  | 12F MPO (no pins/female) to 12F MPO (no pins/female) |                    |
|               |            | OM4  | Trunk  | LC-to-LC   | QFC-4PPM4ZNxxxMBB  |
|               |            |  |  | 12F MPO (no pins/female) to 12F MPO (no pins/female) |                    |
|               | Singlemode | Trunk  | LC-to-LC   | QFC-4KKSMZNxxxMBB                                    |                    |
|               |            |  | 12F MPO (no pins/female) to 12F MPO (no pins/female) |  | QFA-4WWSMZPxxxMNN  |
| 96 Fiber LSZH | Multimode  | OM3  | Trunk  | LC-to-LC   | QFC-8PPM3ZNxxxMBB  |
|               |            |  |  | 12F MPO (no pins/female) to 12F MPO (no pins/female) |                    |
|               |            | OM4  | Trunk  | LC-to-LC   | QFC-8PPM4ZNxxxMBB  |
|               |            |  |  | 12F MPO (no pins/female) to 12F MPO (no pins/female) |                    |
|               | Singlemode | Trunk  | LC-to-LC   | QFC-8KKSMZNxxxMBB                                    |                    |
|               |            |  | 12F MPO (no pins/female) to 12F MPO (no pins/female) |  | QFA-8WWSMZPxxxMNN  |

Replace xxx with desired length in meters. Other materials available upon request.

# Quareo Physical Layer Management System

## Q4000 Managed Fiber Platform

### Quareo Managed Trunk and Fanout with Array Cables

#### MPOPTIMATE OM3/OM4 LSZH

##### FEATURES

- Round design eliminates preferential bend issues which results in increased density and greater manageability
- Each LC leg clearly labeled and identified
- Standard breakout length 18-inches, which is optimum to connect to active equipment



##### ORDERING INFORMATION

| Description   | Fiber Type | Managed Cable Type | Connectors | Part Number  |                   |
|---------------|------------|--------------------|------------|--|-------------------|
| 12 Fiber LSZH | Multimode  | OM3                | Array      | 12F MPO (pinned/male)-LC                             | QFC-128M3ZPxxxMNN |
|               |            |                    | Trunk      | LC-to-LC   | QFC-188M3ZPxxxMBB |
|               |            |                    |            | 12F MPO (no pins/female) to 12F MPO (no pins/female) | QFA-122M3ZPxxxMNN |
|               |            | OM4                | Array      | MPO (pinned/male)-LC                                 | QFC-128M4ZPxxxMNN |
|               |            |                    | Trunk      | LC-to-LC   | QFC-188M4ZPxxxMBB |
|               |            |                    |            | 12F MPO (no pins/female) to 12F MPO (no pins/female) | QFA-122M4ZPxxxMNN |
| 24 Fiber LSZH | Multimode  | OM3                | Trunk      | LC-to-LC   | QFC-288M3ZNxxxMBB |
|               |            |                    |            |  |                   |
|               |            | OM4                | Trunk      | LC-to-LC   | QFC-288M4ZNxxxMBB |
|               |            |                    |            |  |                   |
| 48 Fiber LSZH | Multimode  | OM3                | Trunk      | LC-to-LC   | QFC-488M3ZNxxxMBB |
|               |            |                    |            |  |                   |
|               |            | OM4                | Trunk      | LC-to-LC   | QFC-488M4ZNxxxMBB |
|               |            |                    |            |  |                   |
| 96 Fiber LSZH | Multimode  | OM3                | Trunk      | LC-to-LC   | QFC-888M3ZNxxxMBB |
|               |            |                    |            |  |                   |
|               |            | OM4                | Trunk      | LC-to-LC   | QFC-888M4ZNxxxMBB |
|               |            |                    |            |  |                   |

Replace xxx with desired length in meters. Other materials available upon request.



# Quareo Physical Layer Management System

## Q4000 Managed Fiber Platform

### 24-Fiber MPO Trunks for 10/40/100

#### BENEFITS

- Connectivity and breakouts are optimized for use with 10, 40 and 100 Gigabit fiber management systems
- Small profile – 24-fiber trunks are only 3.8 mm (0.150”) In diameter
- Less clutter at the panel – Each MPO connects 24 pre-terminated fibers at once
- Uniform polarity, pins and path – TE’s 10/40/100 fiber roadmap assures that the components are interoperable and will work without having to configure a fiber map with every MAC
- OM4 fiber – the highest standard for multimode Ethernet transmission
- Assured performance – Each assembly is pre-tested in the factory, and test data is traceable via a bar code to a test database
- Re-usable – can be upgraded by simply changing the components (blades, cassettes, adaptors) at the end
- Color coding – Unique strain relief indicators clearly indicate the fiber count and type
- Field cleaning – using TE products especially designed to work with LC and MPO connectivity, you can always “clean before you connect”, greatly reducing end-face contamination and risk of negative impact on system performance
- Warranted – when deployed by an approved TE Connectivity installer, MPO trunks are covered under our 25 year system warranty (please see our warranty statement for details)



#### SPECIFICATIONS:

##### MPOptimate Performance:

Advanced components and assembly techniques, coupled with stringent acceptance criteria, provide low loss and greater system flexibility

##### Standard Fiber Path:

Compatible with TIA 568-C.0-2 draft standard for polarity Method “A” (for 40 and 100 Gigabit Ethernet)

##### 24-Fiber System Compatible:

Fiber path supports 10, high density 10, 40 and 100 Gigabit deployment

##### Non-Pinned Trunks:

Pins are resident in the panels, greatly reducing the risk of pin damage during MACs

#### ORDERING INFORMATION

| Description   | Connectors   | Jacket Type | Part Number       |
|---|--|-------------|-------------------|
| <b>Quareo Trunk Cables</b>  |  |             |                   |
| <b>24-Fiber MPO to 24-Fiber MPO</b>                                   |  |             |                   |
| Multimode OM4, MPOptimate<br>24-Fiber Cable 24” Breakouts on each end | 24-Fiber MPO (no pins) to<br>24-Fiber MPO (no pins)    | LSZH        | QFA-244M4ZNxxxMBB |
| Singlemode, 24-Fiber Cable<br>24” Breakouts on each end               | 24-Fiber MPO (no pins) to<br>24-Fiber MPO (no pins)    | LSZH        | QFA-266SMZNxxxMBB |
| <b>(1) 24-Fiber MPO to (3) 8-Fiber MPO</b>                            |  |             |                   |
| Multimode OM4, MPOptimate<br>24” Breakouts on each end                | 24-Fiber MPO (no pins) to<br>(3) 8-Fiber MPO (no pins) | LSZH        | QFA-242M4ZYxxxMBB |
| Singlemode<br>24” Breakouts on each end                               | 4-Fiber MPO (no pins) to<br>(3) 8-Fiber MPO (no pins)  | LSZH        | QFA-26WSMZyxxxMBB |

Note: Additional configurations and lengths are available. Contact TE for assistance.

# Quareo Physical Layer Management System

## Q4000 Managed Fiber Platform

---

### SPECIFICATIONS FOR ARRAY CABLE: MEASURED THROUGH MPO MATED PAIR TO LC ADAPTER

#### Multimode (OM3, OM4)

|                            |               |                |
|----------------------------|---------------|----------------|
| <b>Insertion Loss (dB)</b> | <b>850 nm</b> | <b>1300 nm</b> |
| <b>Maximum:</b>            | 0.70 dB       | 0.70 dB        |
| <b>Typical:</b>            | 0.25 dB       | 0.4 dB         |
| <b>Return Loss (dB)</b>    |               |                |
| <b>Maximum:</b>            | -20 dB        | -20 dB         |

#### Singlemode

|                            |                |                |
|----------------------------|----------------|----------------|
| <b>Insertion Loss (dB)</b> | <b>1310 nm</b> | <b>1550 nm</b> |
| <b>Maximum:</b>            | 1.0 dB         | 1.0 dB         |
| <b>Typical:</b>            | 0.25 dB        | 0.35 dB        |
| <b>Return Loss (dB)</b>    |                |                |
| <b>Minimum:</b>            | -55 dB         | -55 dB         |

### SPECIFICATIONS FOR TRUNK CABLE : MPO-TO-MPO AND LC-TO-LC

#### Multimode (OM3, OM4)

|                            |               |                |
|----------------------------|---------------|----------------|
| <b>Insertion Loss (dB)</b> | <b>850 nm</b> | <b>1310 nm</b> |
| <b>Maximum:</b>            | 0.70 dB       | 0.70 dB        |
| <b>Typical:</b>            | 0.25 dB       | 0.4 dB         |
| <b>Return Loss (dB)</b>    |               |                |
| <b>Maximum:</b>            | -20 dB        | -20 dB         |

#### Singlemode

|                            |                |                |
|----------------------------|----------------|----------------|
| <b>Insertion Loss (dB)</b> | <b>1310 nm</b> | <b>1550 nm</b> |
| <b>Maximum:</b>            | 1.0 dB         | 1.0 dB         |
| <b>Typical:</b>            | 0.25 dB        | 0.35 dB        |
| <b>Return Loss (dB)</b>    |                |                |
| <b>Minimum:</b>            | -55 dB         | -55 dB         |

# Quareo Physical Layer Management System

## QHDEP High Density Equipment Panels

### Overview

#### HIGH DENSITY EQUIPMENT PANEL FEATURING QUAREO TECHNOLOGY (QHDEP)

The QHDEP is a 1RU (1.75") fiber optic connector panel with six technician-friendly access trays. Each tray features a mounting location for holding one LC or MPO adapter pack, or MPO module or cabled module. A single access tray can serve up to 24 LC fiber connections or 8 MPO fiber connections. At full capacity, the QHDEP panel will hold up to 144 (LC) or 48 (MPO) fiber connections. Each panel includes mounting brackets for 19-inch (48.26cm), 23-inch, or ETSI mounting applications.



#### CONNECTION POINT IDENTIFICATION (CPID)

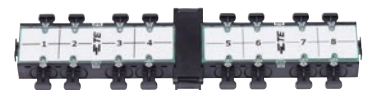
TE's CPID technology provides a unique identifier for every Quareo-enabled component in the network – enabling immediate recognition of a patch cord upon installing or removing. CPID gives network operators complete visibility to all connection events in the network and provides detailed information on the network elements being used.

#### ADAPTER PACKS

Adapter packs are designed to provide easy connector insertion/removal, and clearer adapter port identification. Adapter packs are available in 24-fiber (12 duplex) LC or eight MPO adapter pack configurations. Each tray supports one adapter pack, for a total of up to six packs per chassis.



24 port LC adapter pack



8 port MPO adapter pack

#### MPO MODULES

MPO modules offer the same craft-friendly interface management as adapter packs, but include a low-loss MPO adapter at the rear for connecting an MPO trunk cable. MPO modules are available in 12-fiber LC-MPO, or 24-fiber LC-MPO configurations. Support for MPOptimate performance.



LC to MPO module

#### CABLED MODULES

Cabled modules have the same factory tested termination as MPO modules or adapter packs except they have a fiber cable pigtail exiting the rear. These pigtails can be directly terminated or spliced at the other end to eliminate excess cable length. Cabled modules are available in LC (24-fiber) configurations.



24 fiber LC cabled module

# Quareo Physical Layer Management System

## QHDEP High Density Equipment Panels

### High Density Equipment Panel featuring Quareo Technology (QHDEP)

The 1RU QHDEP is part of the end-to-end Quareo physical layer management system utilizing CPID technology. It is designed to hold LC or MPO adapter packs, LC-MPO modules, or LC cabled modules.



- Supports Quareo 1RU Panel Controller
- Quareo user LED indicators
  - Chassis status
  - Tray level / work order (one LED per each access tray)
  - Port level / work order
- Panel doors, mounting ears and vertical cable guides are included with the panel
- Mounting dimensions HxWxD: 1.75 x 19/23 x 20 inches (4.5 x 48.3/58.4 x 50.8 cm)
- Cable clamps and breakout cable management solutions are available for incoming trunk cables
- Maintenance Services available



### PANEL CAPACITY

| Connector Type | Fibers   |
|----------------|--|
| LC             | 144-fiber (72 duplex ports)  |
| MPO            | 48 ports (576 fibers using 12-fiber MPO or 1152 fibers using 24-fiber MPO) |

### ORDERING INFORMATION

| Description                     | Part Number       |
|---------------------------------|-------------------|
| 1RU QHDEP Empty Panel           | QE-HEP-1000000000 |
| 1RU QHDEP Panel with Controller | QE-HEP-10000S0000 |

### SPECIFICATIONS

#### MECHANICAL

Dimensions DxWxH: 19.64" x 19.09" x 1.7"  
(49.9 cm x 48.5 cm x 4.32 cm)

Weight: 14.9 lb (8.1 kg)

#### ELECTRICAL

Power consumption: 12.95W max  
Voltage: 37-57 VDC, 48VDC nominal  
Input current: 350mA @ 37VDC

#### ENVIRONMENTAL

Operating conditions: +14° F to +140° F (-10° C to +60° C)  
5% to 95% RH

Storage conditions: -40° F to +158° F (-40° C to +70° C)  
10% to 95% RH

#### COMPONENTS

See following pages for supported adapter packs and modules.

# Quareo Physical Layer Management System

## QHDEP High Density Equipment Panels

### Controller

The controller unit mounts into a slot on the front side of a single high density equipment panel to provide power and functionality for communicating over the network with the Quareo software / middleware.

#### FEATURES

- Supports a 1RU high density fiber panel
- User Indicators:
  - Power - Green
  - Status - Red/Green
  - Ethernet Jack - Green - Link/Activity
  - Ethernet Jack - Yellow - 100 Base-TX
- Maintenance Services available on this product

#### SPECIFICATIONS

##### PHYSICAL

Dimensions (HxWxD): 25.2 mm x 76.2 mm x 113mm  
(0.99"x 3"x 4.45")  
Electrical I/F: RJ45  
Electrical Aux. I/F: 4-Pin pluggable terminal

##### ENVIRONMENTAL

Operating Temperature: +14° F to +140° F  
(-10° C to +60° C)  
Storage Temperature: -40° C to +70° C  
(-40° F to +158° F)  
Humidity: 5% to 95% non-condensing  
RoHS Compliant

##### ELECTRICAL

Power Input (or Aux Supply)  
Power Over Ethernet (PoE) Input:  
- IEEE 802.3af - class 0 PD - 12.95W max

##### AUX INPUT

- Dual input, diode or'd  
- Input Voltage: 37-57 VDC, 48 VDC nominal  
- Input Current: 350mA at 37VDC  
- Mating Connector: TE 284506-4 or equivalent

##### AC POWER SUPPLY

- Input Voltage: 100-240VAC  
- Input Current: 0.5A max  
- Output Voltage: 48V  
- Output Current Max: 0.40A  
- Max Watts: 19.2W

##### AUX CONNECTOR

- 4 Position Terminal Block (TE Part 284506-4)  
- Pitch: 3.5mm  
- Wire Gauge Range: 30-14  
- Current Rating: 11A  
- Voltage Rating: 300VAC

##### COMMUNICATIONS

- 10/100Base-T/TX



#### ORDERING INFORMATION

| Description                    | Part Number       |
|--------------------------------|-------------------|
| Controller for 1RU QHDEP panel | QE-HEP-CTR1000000 |

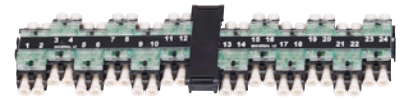
\*Controller can be ordered separately or included with the network chassis

# Quareo Physical Layer Management System

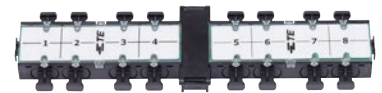
## QHDEP High Density Equipment Panels

### Adapter Packs

Universal adapter packs are designed to accept a variety of connector types, including singlemode and multimode, angled and ultra-polished connections. The flexibility of the universal adapter pack helps service providers reduce ordering SKU's and total inventory requirements. The staggered adapter pack design helps installers access connectors without pinching or moving adjacent connections; it also eliminates the need for installers to use an extraction tool, and helps clearly identify individual fiber ports. One 24-fiber (12 duplex port) LC adapter pack can be installed per tray or one eight-port MPO adapter pack (12- or 24-fiber MPO) per tray; up to six total adapter packs per panel. A specially designed latch window on the rear of the adapter pack allows easy identification of the connector type on the front side of the unit. As a result, technicians will always know the connector type installed on the unit, no matter if they are working from the front or rear side of the panel.



LC adapter pack



MPO adapter pack

### ORDERING INFORMATION

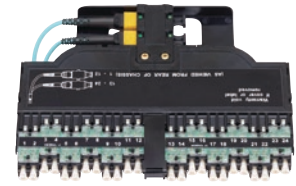
| Description  | Part Number        |
|--|--------------------|
| Managed Adapter Pack, LC-LC Black, 24 fibers (24 simplex ports, managed front and rear)    | QE-ADP-24HPLCS000  |
| Managed Adapter Pack, LC-LC Black, 24 fibers (12 duplex ports, managed front and rear)     | QE-ADP-24HPLCD000  |
| Managed Adapter Pack, LC-LC Black, 24 fibers (12 duplex ports, managed front only)         | QE-ADP-24HPLCE000  |
| Managed Adapter Pack, LC-LC Black, 24 fibers (24 simplex ports, managed front only)        | QE-ADP-24HPLCF000  |
| Managed Adapter Pack, MPO-MPO Black, 96 fibers (8, 12F MPO, managed front and rear)        | QE-ADP-96HPMPG000  |
| Managed Adapter Pack, MPO-MPO Black, 96 fibers (8, 12F MPO, managed front only)            | QE-ADP-96HPMPF000  |
| Managed Adapter Pack, LC-LC Aqua, 24 fibers (12 duplex ports, managed front and rear)      | QE-ADP-24HP0CD000  |
| Managed Adapter Pack, LC-LC Blue, 24 fibers (12 duplex ports, managed front and rear)      | QE-ADP-24HP0KD000  |
| Managed Adapter Pack, LC-LC Green, 24 fibers (12 duplex ports, managed front and rear)     | QE-ADP-24HP0MD000  |
| Managed Adapter Pack, MPO-MPO Aqua, 192 fibers (8, 24F MPO ports, managed front and rear)  | QE-ADP-192HPMAG000 |
| Managed Adapter Pack, MPO-MPO Green, 192 fibers (8, 24F MPO ports, managed front and rear) | QE-ADP-192HPMGG000 |

# Quareo Physical Layer Management System

## QHDEP High Density Equipment Panels

### MPO Modules

The MPO module offers a craft-friendly interface for connecting 24 LC connectors to an MPO adapter – enabling a rapid connection to electronics or a fiber tie panel such as TE’s Rapid Fiber panel solution. Leveraging an MPO architecture, technicians can route and install higher fiber counts faster and easier, while simplifying cable inventory and ordering requirements. Up to 6 MPO modules can be loaded per panel and are available as a dual 12-fiber LC-MPO for singlemode and multimode configurations or a single 24-fiber LC-MPO multimode configurations. Support for MPOptimate performance.



LC-MPO module - right orientation

### SPECIFICATIONS

#### MPOptimate Performance:

- o Multimode 12f MPO – LC: Factory measured 0.35 dB loss maximum per MPO-LC OM4 module
- o Multimode 24f MPO – LC: Factory measured 0.35 dB loss maximum per MPO-LC OM4 module

#### Singlemode Performance:

(<0.75 dB) @ 1310 nm/1550 nm)

#### Insertion & Return Loss:

IL <= 0.35dB

RL >= 27dB

#### Traceable:

Each module is uniquely identified and linked to factory measurement data

#### Standard Fiber Path:

Compatible with TIA 568-C.0-2 draft standard for Method A

#### 24-Fiber Trunk Compatible:

Fiber path supports 24-fiber deployment

#### Pinned Cassettes:

MPO alignment pins are maintained inside the module, reducing damage risk

#### Used in Pairs:

Assures proper fiber map, polarity and location of MPO alignment pins

# Quareo Physical Layer Management System

## QHDEP High Density Equipment Panels

### ORDERING INFORMATION

|   | Module Orientation | Adapter Color | LC Port Monitoring | Polarity           | Part Number        |                  |
|---|--------------------|---------------|--------------------|--------------------|--------------------|------------------|
| <b>LC-to-MPOptimate (2x12-fiber MPO) QHDEP Module</b><br>Multimode MPOptimate (OM4); Loss (<0.35 dB @ 850 nm/1300 nm) | Left               | Black         | Simplex            | A-A/B-B (Straight) | QE-MPM-24HPCUMLA   |                  |
|   | Right              |               |                    |                    | QE-MPM-24HPCUMRA   |                  |
|   | Left               |               | Duplex             |                    | QE-MPM-24HPDUMLA   |                  |
|   | Right              |               |                    |                    | QE-MPM-24HPDUMRA   |                  |
|   | Left               | Aqua          | Duplex             | A-A/B-B (Straight) | QE-MPM-24HPFAHLA   |                  |
|   | Right              |               |                    |                    | QE-MPM-24HPFAHRA   |                  |
|   | Left               |               |                    |                    | A-B/B-A (Straight) | QE-MPM-24HPFAHLB |
|   | Right              |               |                    |                    |                    | QE-MPM-24HPFAHRB |
| <b>LC-to-MPOptimate (1x24-fiber MPO) QHDEP Module</b><br>Multimode MPOptimate (OM4); Loss (<0.35 dB @ 850 nm/1300 nm) | Left               | Aqua          |                    | Duplex             | A-A/B-B (Straight) | QE-MPM-24HPFAJLA |
|   | Right              |               |                    |                    |                    | QE-MPM-24HPFAJRA |
|   | Left               |               |                    |                    | A-B/B-A (Flipped)  | QE-MPM-24HPFAJLB |
|   | Right              |               |                    |                    |                    | QE-MPM-24HPFAJRB |
|   | Left               |               | 10G HD             | QE-MPM-24HPFAJLG   |                    |                  |
|   | Right              |               |                    | QE-MPM-24HPFAJRG   |                    |                  |
| <b>MPO (1x24-Fiber) to MPO (3x8-Fiber) QHDEP</b><br>Multimode MPOptimate (OM4); Loss (<0.35 dB @ 850 nm/1300 nm)      | Straight           | Black         | MPO                | A-A/B-B (Straight) | QE-MPM-48GAGUA     |                  |
| <b>LC-to-MPO(2x12-fiber MPO) QHDEP Module</b><br>Singlemode; Loss (<0.75 dB @ 1310 nm/1550 nm)                        | Left               | Black         | Simplex UPC        | A-A/B-B (Straight) | QE-MPM-24HPKUELA   |                  |
|   | Right              |               |                    |                    | QE-MPM-24HPKUERA   |                  |
|   | Left               |               | Simplex APC        |                    | QE-MPM-24HPMUELA   |                  |
|   | Right              |               |                    |                    | QE-MPM-24HPMUERA   |                  |
|   | Left               | Blue          | Duplex UPC         | A-A/B-B (Straight) | QE-MPM-24HPNBELA   |                  |
|   | Right              |               |                    |                    | QE-MPM-24HPNBERA   |                  |

Order "L" option for mounting MPO module on left side of chassis (LC connectors facing forward)



Order "R" option for mounting MPO module on right side of chassis (LC connectors facing forward)

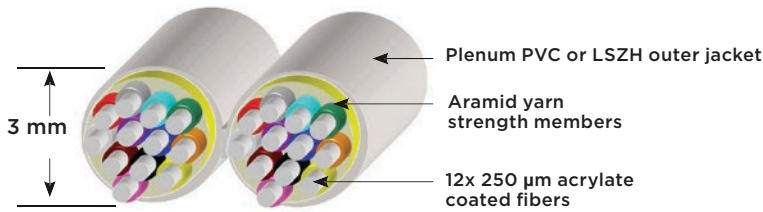


# Quareo Physical Layer Management System

## QHDEP High Density Equipment Panels

### Multifiber Cable Assemblies

TE's Quareo-enabled multifiber cable assemblies are LSZH, GR 409 compliant, and designed for use in a variety of in-building environments. Built with reduced bend radius technology, each cable assembly provides ideal cable protection and reduces concerns around proper handling, slack storage and attenuation loss from tight bends. The robust microcable design offers maximum space savings, and is available in Singlemode and multimode configurations.



24-fiber dual-zip microcable



MPO Trunk Cable



### Cabled Modules

Cabled modules will save operators significant time and cost in their cable deployments. Using the LC cabled module, for example, an installer can route a 24-fiber cable to any access tray in the panel, then rapidly terminate the module's 24-fiber connectors with a single click, rather than installing 24 individual connectors. Cabled modules are available in 24-fiber (12 duplex) LC in Singlemode or multimode configurations. Each module is designed for craft friendliness. Individual adapter ports are labeled for easy identification. Cabled modules are ordered as part of a multifiber cable assembly.



LC cabled module with 24-fiber microcable installed in panel



24-fiber LC cabled module

# Quareo Physical Layer Management System

## QHDEP High Density Equipment Panels

### Cable Specifications for 3 mm 24-Fiber Zip LSZH Rated Microcable

#### JACKET COLOR

Singlemode Plenum Rated: Yellow  
Multimode OM4: Aqua

#### ENVIRONMENTAL

Storage Temperature: -40° to 70° C (-40° to 158° F)  
Operating Temperature: 0° to 70° C (32° to 158° F)  
Installation Temperature: 0° to 50° C (32° to 122° F)

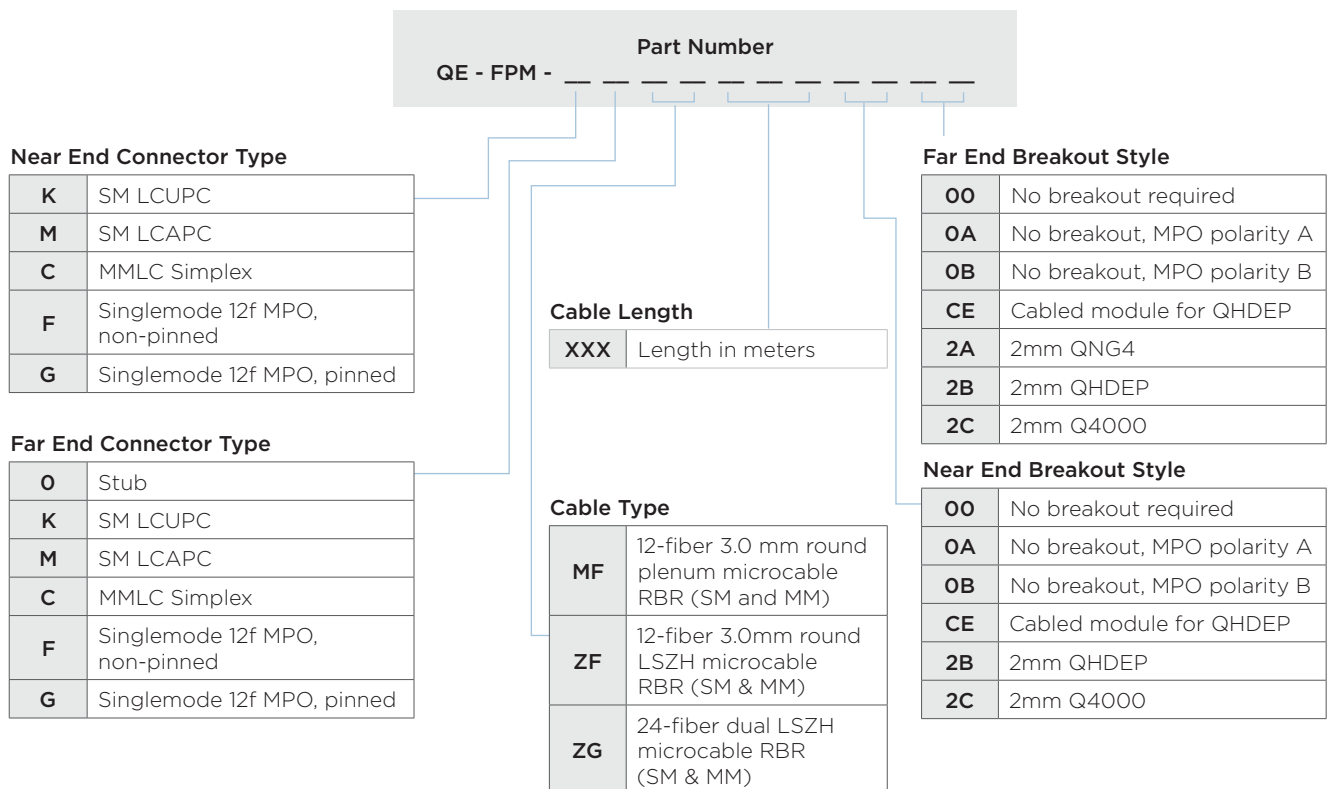
#### MECHANICAL

Number of Fibers: 24  
Maximum Tensile Load  
Short Term: 660 N (150 lbf)  
Long Term: 200 N (45 lbf)  
Minimum Bend Radius  
Installed: 30mm (1.18")  
Loaded: 60mm (2.36")  
Maximum Compression: 10 N/mm (57 lbf/in)  
Maximum Impact: 2.94 N•m (2.17 lbf•ft)

#### COMPLIANCES

- Telcordia GR-409-CORE Interconnect Category, Impact and compression compliant to horizontal and vertical backbone cable requirements
  - Tensile compliant to horizontal backbone cable requirements
  - UL 910 plenum flammability rating
  - EIA/TIA FOTPS  
EIA/TIA 568-B  
NFPA 262, NEC OFNP, FT-6
  - Restriction of the use of hazardous substances. RoHS (2002/95/EC)
  - California Prop 65 for Safe Drinking Water and Toxic Enforcement Act
- <sup>1</sup>Reduced Bend Radius Fiber is compliant to ITU-T G.652.D, ITU-T G.657A&B, and IEC 60793-2-50 Type B.1.3

### ORDERING INFORMATION



Note: For multimode MPO cable assembly options, see TE document no. 109883AE.



# Quareo Physical Layer Management System

## QHDEP High Density Equipment Panels

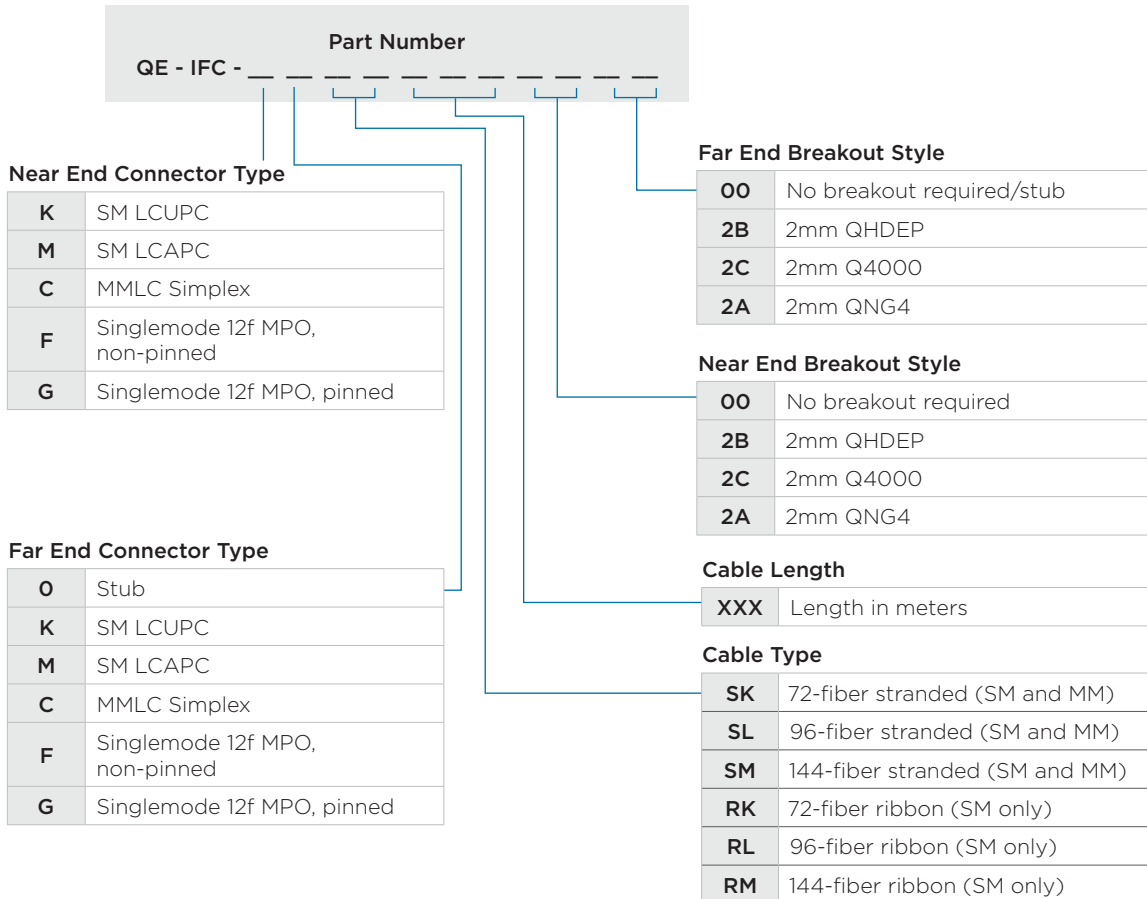
### Intrafacility Cable

TE's Quareo-enabled intrafacility cable is designed to meet fire resistant characteristics for in-building applications. Fiber counts range from 72 to 144. Standard IFC assemblies are riser rated and meet UL-1666 OFNR. Two types of IFC cable are available: stranded and ribbon.



Preterminated IFC Cable with LC Connectors

### ORDERING INFORMATION



\*LSZH cables available upon request

### CONNECTOR SPECIFICATIONS

#### QUAREO FIBER CABLES

##### SINGLEMODE ULTRA POLISH CONNECTORS (UPC) LC

|                      |                |
|----------------------|----------------|
| Insertion Loss:      | 0.3 dB max     |
| (1310 and 1550nm):   | 0.1 dB typical |
| Return Loss:         | -55 dB min     |
| (1310 and 1550nm)    |                |
| Fiber Recess:        | -100 TO +50 nm |
| Apex Offset:         | 50 μm max      |
| Radius of Curvature: | 10-25 MM       |

##### MULTIMODE (PC) LC

|                   |                |
|-------------------|----------------|
| Insertion Loss:   | 0.3 dB max     |
| (850 and 1300nm): | 0.2 dB typical |
| Return Loss:      | -20 dB max     |
| (850 and 1300nm)  |                |

##### SINGLEMODE LOW LOSS MPO CONNECTOR

|                              |             |
|------------------------------|-------------|
| Insertion Loss:              | 0.45 dB max |
| (1310 1490, 1550 and 1625nm) |             |
| Return Loss:                 | -55 dB min  |
| (1310 1490, 1550 AND 1625NM) |             |

##### ENVIRONMENTAL:

|                        |                                      |
|------------------------|--------------------------------------|
| Operating Temperature: | -10° C to +60° C (+14° F to +140° F) |
| Storage Temperature:   | -40° C to +85° C (-40° F to +185° F) |
| Humidity:              | 5% to 95% non-condensing             |
| RoHS Compliant         |                                      |

##### TRANSMISSION PERFORMANCE AND RELIABILITY:

ANSI /TIA 568-C.3, ISO /IEC 11801, Edition 2

**Safety:** U L/CSA Approved, IEC 60950, A-TICK

# Quareo Physical Layer Management System

## QHDEP High Density Equipment Panels

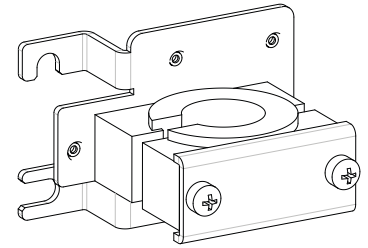
### ACCESSORIES FOR THE QHDEP

#### Cable Clamp Kits

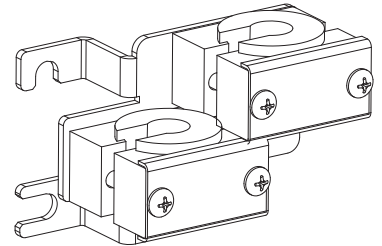
To be used for cable to chassis fixation. Not included with the panel.

##### ORDERING INFORMATION

| Description   | Part Number        |
|---|--------------------|
| <b>Cable Clamp Kit - Large</b><br>For cable diameters 0.81" through 1.10".<br>Includes one bracket with a mounting location and hardware for one cable                      | QE-HEP-ACCUCCL0000 |
| <b>Cable Clamp Kit - Small</b><br>Universal cable clamp kit for cable diameters .40" through .80". Includes one bracket with mounting locations and hardware for two cables | QE-HEP-ACCUCCS0000 |



Large Cable Clamp



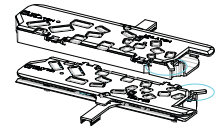
Small Cable Clamp

#### IFC Breakout Cable Management

To be used for multi-fiber breakout cable installations. Not included with the panel.

##### ORDERING INFORMATION

| Description   | Part Number        |
|---|--------------------|
| <b>Fanout Installation kit, 900 μm fibers</b><br>Secures 900 μm fanout and manages un-reinforced 900 μm fibers installed in the chassis |                    |
| Left  | QE-HEP-ACCUFKR0000 |
| Right   | QE-HEP-ACCUFKL0000 |



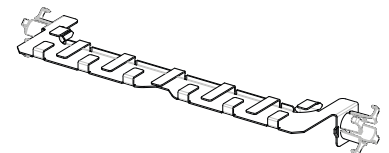
Left and Right Tray Fanout Kit

#### Cable Cross-Over Manager

To be used for addressing cable exit to one side only, typically cabinet applications.

##### ORDERING INFORMATION

| Description  | Part Number        |
|--|--------------------|
| Snap-on bracket to manage cables crossing over or underneath a 1RU chassis | QE-HEP-ACCIDRK0000 |

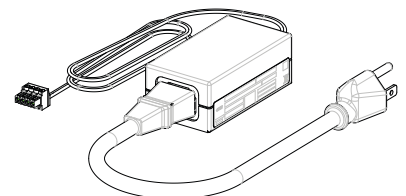


Cable Cross-Over Manager

#### Power Cable Kit

##### ORDERING INFORMATION

| Description   | Part Number        |
|---|--------------------|
| Power Supply with US Cable (Power Supply Optional when not using PoE) | QE-HEP-ACCUPWR0000 |
| Power Supply without Cable  | QE-HEP-ACCUPWR0001 |



Power Cable Kit

# Quareo Physical Layer Management System

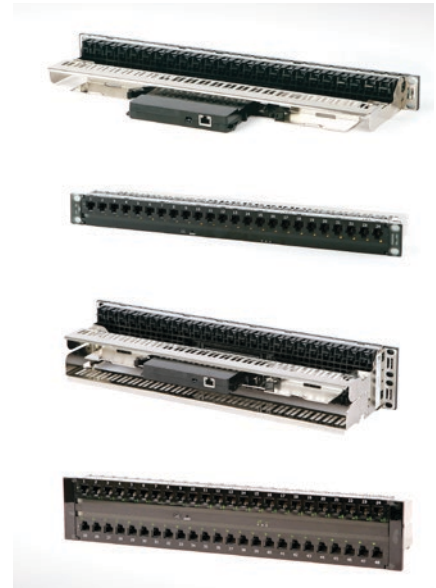
## Q2000 Copper Network Panels

### Q2000 Series Network Panels

Q2000 series network panels featuring Quareo technology allow network personnel to view, manage and audit the physical layer. This means, for the first time, the physical layer is now subject to the same compliance policy as higher layers of the network. With 70% of network outages attributed to errors made in the physical layer, TE introduces a new category of products. Simply put, Quareo enables managed connectivity using connection point identification (CPID) technology.

#### FEATURES

- Quareo enabled functionality with dual color port illumination (LED)
- Integral cable management bar
- 45° IDC contacts providing secure, gas-tight connections
- Accepts 110 style termination tools
- Universal 568A/B wiring
- Discrete labeling system



#### PANEL SPECIFICATIONS

##### 1RU 24-PORT PHYSICAL

**Rack Mounting:** 44.5 mm x 1.75 mm (19" x 1RU)

##### 2RU 48-PORT PHYSICAL

**Rack Mounting:** 88.9 mm, x 3.50 mm (19" x 2RU)

#### ENVIRONMENTAL

**Operating Temperature:** -40° to 70° C (104 to 158° F)  
**Number of Plug Insertions:**  $\geq 750$  (IEC/EN 60603-7)

#### CABLE DIAMETER RANGE

**Solid and Stranded Copper Conductors:** 26 AWG to 22 AWG (0.4 mm dia to 0.6 mm dia) solid core cable and 24 AWG stranded cable.

**Wire Insulation Diameter Range:** 1.04 mm to 1.60 mm (0.041" x 0.063")

**Insulation Resistance:** at 40° C and 93% RH  $\geq 500$  M $\Omega$

**Contact Resistance:**  $\leq 1$  m $\Omega$  typical

**Jack Contact Re-terminations:**  $\geq 200$

#### COMPLIANCE :

UL/CSA Approved, CE, A-TICK  
UL 94 V-0  
UL186  
RoHS compliant  
Performance to ANSI/TIA-568-C.2 and ISO 11801, Edition 2 for Category 6/Class E and Category 6a/Class EA.  
Independently certified  
RJ socket, 8 positions FCC Part (IEC 60603-7)

#### ORDERING INFORMATION

| Product Description                    | Part Number  |
|--|--------------|
| 24 port (1RU) network panel with jacks |              |
| CAT 6A U/UTP                           | QCPP-24MC6AU |
| CAT 6A STP                             | QCPP-24MC6AS |
| CAT 6 U/UTP                            | QCPP-24MC6U  |
| 48 port (2RU) network panel with jacks |              |
| CAT 6A U/UTP                           | QCPP-48MC6AU |
| CAT 6A STP                             | QCPP-48MC6AS |
| CAT 6 U/UTP                            | QCPP-48MC6U  |

# Quareo Physical Layer Management System

## Q2000 Copper Network Panels

### Panel Controller for Q2000 Network Panels

#### FEATURES

- Panel controller operates with the Q2000 family of network panels
- Designed to fit inside the rear cable manager without interfering with panel connectivity, does not require additional rack space
- Power can be supplied through IEEE 802.3af PoE class 0 compliant switch port or additional auxiliary power supply (can be simultaneous)
- Link and activity status LEDs at the rear of unit
- Seamless power transition from PoE to aux supply



#### CONTROLLER SPECIFICATIONS

**Product Dimensions (HxWxD):** 21 mm x 143 mm x 105 mm (0.82" x 5.62" x 4.142")

#### Environmental

**Operating Temperature:** -10° C to +60° C (+14° F to +140° F)

#### Compliance

**Flammability:** (UL) 94 V-0  
RoHS Compliant  
UL/CSA Approved, CE, C-TICK  
Conformance with 8 way modular (RJ45) jack requirements according to IEC-60603-7 series and TIA/EIA-968-A (FCC 68.500)

**Alternate Input Power:** Alternate power source to comply with AC/DC desktop power supply brick

#### MINIMUM REQUIREMENTS:

**Input Voltage:** 100-240VAC, 50-60Hz, 0.5A

**Output Voltage:** 48VDC, 0.4A

#### ELECTRICAL

Input Voltage:

Input Current:

Efficiency:

Transition Time PoE to AUX:

Transition Time AUX to PoE:

PoE Classification:

Network

#### FUNCTION

36 - 56 Volts

.200 Amps

85%

Seamless Sec

<30 Sec

Class 0

Supports 10BASE-T  
and 100BASE-TX

#### NOTES

PoE 37.5 - 56V

Max current at 36V input

Peak Efficiency @48V input

Depends on PoE Power Supply

15.4 Watt max power consumption if using PoE (power consumption based on the switch providing power).

#### ORDERING INFORMATION

##### Product Description

##### Part Number

Panel controller for Q2000 Network Panels

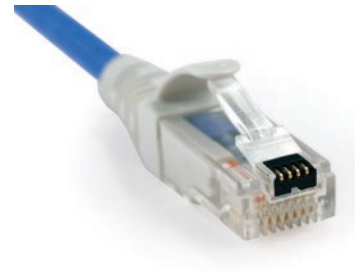
QCPU-MPPM-1



# Quareo Physical Layer Management System

## Q2000 Copper Network Panels

### Copper Cables for Q2000 Network Panels



#### FEATURES

- Quareo technology with connection point identification
- Connector interface: plug type RJ45 shielded/unshielded that conforms to 8 way modular RJ45 jack in accordance with IEC 60603-7 series and TIA/EIA-968-A
- Latch type: snagless
- Boot: flexible with built in strain relief to maintain proper bend radius
- Wiring configuration: T568A, T568B and T568A - T568B (cross-over)

#### SPECIFICATIONS

|                               |   |
|-------------------------------|---|
| <b>Electrical:</b>            | ANSI/TIA-568-C.2 and ISO 11801, Edition 2 for Category 6/Class E and Category 6A/Class Ea<br>Category 5e, 5 and 3 backward compatible   |
| <b>Environmental:</b>         | Controlled Environment<br>GR-63, Section 4.1.2  |
| <b>Operating Temperature:</b> | -10° C to +60° C  |
| <b>Storage Temperature:</b>   | -0° C to +50° C   |
| <b>Relative Humidity:</b>     | 5% to 90% non-condensing  |
| <b>Relative Humidity:</b>     | 5% to 95% non-condensing  |
| <b>Compliance:</b>            | UL 94 V-0<br>TICK N355<br>C(UL)us 49S3<br>CE<br>RoHS and IEEE 2002/95/EC Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment |

#### ORDERING INFORMATION

| Product Description                    | Available Colors<br>Replace XX  | Available Lengths<br>Replace YY |      | LSZH | Part Number |                   |
|--|---|---------------------------------|------|------|-------------|-------------------|
|  |   |                                 |      |      |             |                   |
| Category 6 U/UTP managed copper cable  | BK = Black<br>BL = Blue<br>GN = Green<br>OR = Orange<br>RD = Red<br>GY = Gray<br>VT = Violet<br>WT = White<br>YL = Yellow | 04'                             | 15'  | LSZH | T568A       | QCPC-6RUZA-XXYYM  |
|  |   | 07'                             | 25'  |      | T568B       | QCPC-6RUZB-XXYYM  |
|  |   | 10'                             | 50'  |      | Crossover   | QCPC-6RUZX-XXYYM  |
| Category 6A U/UTP managed copper cable | GY = Gray<br>VT = Violet<br>WT = White<br>YL = Yellow   | 01 m                            | 02 m | LSZH | T568A       | QCPC-6ARUZA-XXYYM |
|  |   | 03 m                            | 05 m |      | T568B       | QCPC-6ARUZB-XXYYM |
|  |   | 7.5 m                           |      |      | Crossover   | QCPC-6ARUZX-XXYYM |
| Category 6A S/FTP managed copper cable | BL = Blue<br>GY = Gray<br>WT = White  | 01 m                            | 02 m | LSZH | T568A       | QCPC-6ARSZA-XXYYM |
|  |   | 03 m                            | 05 m |      | T568B       | QCPC-6ARSZB-XXYYM |
|  |   | 7.5 m                           |      |      | Crossover   | QCPC-6ARSZC-XXYYM |



# Quareo Physical Layer Management System

## Q2000 Copper Network Panels

---

### Accessories for the Q2000 Network Panels

#### ORDERING INFORMATION

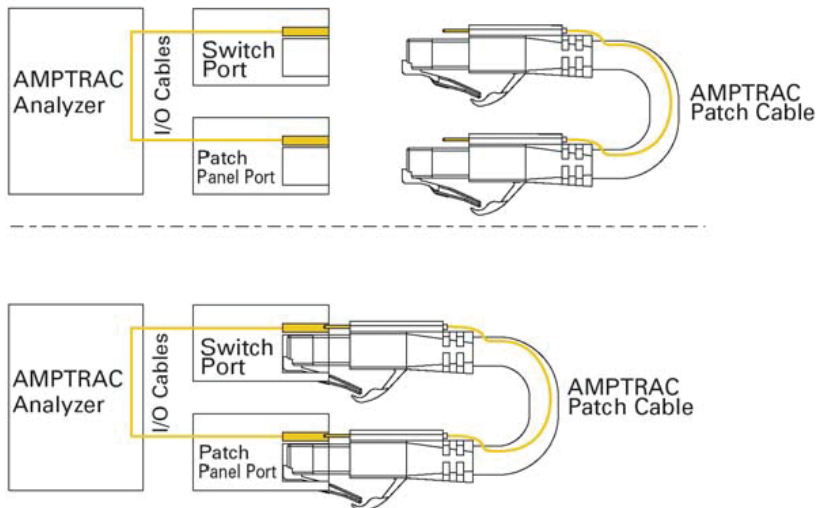
| Product Description  | Part Number   |
|--|---------------|
| <b>Power Supply</b>  |               |
| ASSY, Power Supply with US Cord (power supply optional when using PoE) | QPWRS-USA     |
| No ASSY, Power Supply without Cord                                     | QPWRS-NO      |
| <b>Quareo Jacks</b>  |               |
| CAT 6 U/UTP Quareo Jack 12 per package                                 | 1-1671660-3   |
| CAT 6A U/UTP Quareo Jack 12 per package                                | 1-1671660-2   |
| CAT 6A STP Quareo Jack 12 per package                                  | 1-1671660-1   |
| Quareo Jack Punch down Pads  | 6645 1 180-01 |

# Quareo Physical Layer Management System

AMPTRAC Technology

## AMPTRAC introduction

The TE AMPTRAC product series is a physical layer management solution based on the 9th wire technology. The AMPTRAC products can be used with the Quareo software and provide the ability to know, in real time, when & where physical connectivity changes take place in the network



## BASIC OPERATING PRINCIPLE

- Robust 9th wire in patch cords establishes open and closed circuits which can be monitored
- Analyzer monitors open/closed circuit and tracks connectivity
- Analyzer sends data to Quareo Software data base

The AMPTRAC Infrastructure Management System discovers connects/disconnects and communicates the port ID information in real-time to the Quareo Software database over a TCP-IP connection via the AMPTRAC Analyzer. When a patch cord is inserted or removed from a port, the AMPTRAC sensory circuit immediately notifies the database software to update and document the change in connectivity. Any change in connectivity can be checked and authorization verified, and if appropriate, action taken if the action is unauthorized.

To gain all this information every port on patch panels and switches is equipped with a sensor pad. All sensor pads are connected to the analyzer

## PRODUCT FACTS

- Fully automated documentation system
- Real time monitoring
- Automatic database update on changes
- Self-discovers patch cords

# Quareo Physical Layer Management System

## AMPTRAC Analyzer

### AMPTRAC Analyzers

#### FEATURES

- Adds the physical layer to your network documentation system
- Universal analyzer design
  - Analyzer can be configured as a master or slave unit
  - Any unit can directly communicate to database server or through another analyzer
  - Virtually unlimited in number of ports/drops which can be monitored
- Very flexible design and implementation allowing for use in office buildings, data centers and remote/branch offices
- Analyzers sold with Quareo Software license
- Available in 384 port, 768 port or 1152 port versions (19", 1U)
- Shallow depth at 6.25" (160 mm)
- Suitable for shelve or 19" rack or cabinet mounting
- Large 4 line LCD display providing interactive communications with the database
- Use of latest and current circuitry design
- Minimum heat dissipation - no concerns over heat management in rack or cabinet
- Low power consumption and long lifetime
- Dual external PSUs supported



*Remote Scanning module required*

#### ORDERING INFORMATION

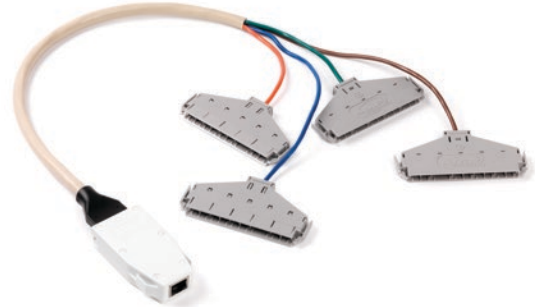
| Description   | Part Number |
|---|-------------|
| AMPTRAC ANALYZER HD 1152 (Quareo Software Included) | 1-1591360-1 |
| AMPTRAC ANALYZER HD 768 (Quareo Software Included)  | 2-1591360-3 |
| AMPTRAC ANALYZER HD 384 (Quareo Software Included)  | 3-1591360-1 |
| Additional External PSU                             | 1-1591364-0 |
| Scanning Module                                     | 1-1591363-0 |

# Quareo Physical Layer Management System

## AMPTRAC Scanning Module Cables

### AMPTRAC Scanning Module Cable Assemblies

Every patch panel or switch port has a copper sensor pad associated with it. All sensor pads are connected to the AMPTRAC analyzer via a scanning module and scanning module cable. The scanning module has two types of connector, an RJ45 connector, which is used to connect the module to the analyzer via a standard Category 5 or Category 6 patch cable and a 2.0mm AMPMODU connector, which connects the module to the switch or patch panel via the scanning module cable. For monitored devices of less than 24 ports, multiple cables can be inserted into the AMPMODU connector equal to the 24 port total. Each scanning module cable is between 2-4 feet long allowing the scanning module to be located on the left or the right and be secured on the cable support management bar or onto the rack/cabinet.



### ORDERING INFORMATION

| Description  | # Positions | Length (ft) | Part Number |
|--|-------------|-------------|-------------|
| AMPTRAC patch panels utilizing the 6-position SL Interface Module, i.e. SL panels, HD Panels, Quick-Fit Panels; 110 Plug-n-Play to 2.0mm MODU Latching | 24          | 2           | 2111440-2   |
| 24-port Sensor Strips for electronics, EMEA AMPTRAC Ready and EMEA 7AS Panels (rear attachment); 2.0 mm MODU to 2.0mm MODU Latching                    | 24          | 2           | 2111441-2   |
|  | 24          | 4           | 2111441-4   |
| AMPTRAC MRJ-21 patch panels, EMEA AMPTRAC Ready patch panels (front attachment), ACO; HD-22 to 2.0mm MODU Latching                                     | 24          | 2           | 2111442-2   |
| AMPTRAC Fiber Optic MPO Cassettes; RJ-11 to 2.0mm MODU Non-Latching  | 6           | 1.5         | 2111443-1   |
| AMPTRAC MRJ21 XG quick fit Cassette  | 8           | 2           | 2153175-2   |
|  | 2           | 4           | 2111444-4   |
|  | 6           | 4           | 2111445-4   |
|  | 8           | 4           | 2111446-4   |
|  | 12          | 4           | 2111447-4   |
|  | 16          | 4           | 2111448-4   |

# Quareo Physical Layer Management System

## AMPTRAC Fiber Platform

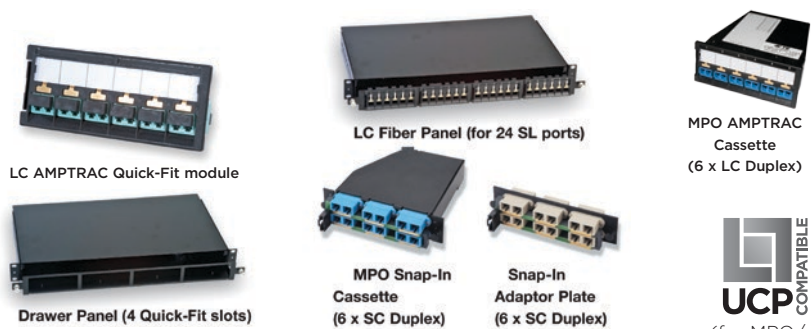
### AMPTRAC Optical Fiber Patch Panels

#### FEATURES

- Available for LC Duplex and SC Duplex systems
- Available in OM3, OM4 and singlemode
- Support field termination or use with MPO cassettes
- Duplex LC SL Series inserts sold separately.

#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Snap-In SC Adaptor Plate, 6 ports (12 fibers); Fiber Type: Multimode (beige)                   | 1435657-1   |
| Snap-In SC Adaptor Plate, 6 ports (12 fibers); Fiber Type: Singlemode (blue)                   | 1435657-2   |
| Snap-In SC Adaptor Plate, 6 ports (12 fibers); Fiber Type: Singlemode APC (green)              | 1435657-3   |
| MPO/SC Snap-In Cassette, 6 ports (12 fibers); Pairs: straight; Fiber Type: OM3 XG 10 Gb/s      | 1435688-1   |
| MPO/SC Snap-In Cassette, 6 ports (12 fibers); Pairs: flipped; Fiber Type: OM3 XG 10 Gb/s       | 1435688-2   |
| MPO/SC Snap-In Cassette, 6 ports (12 fibers); Pairs: straight; Fiber Type: Singlemode          | 1435689-1   |
| MPO/SC Snap-In Cassette, 6 ports (12 fibers); Pairs: flipped; Fiber Type: Singlemode           | 1435689-2   |
| MPO/LC Quick-Fit Cassette, 6 ports (12 fibers); Pairs: straight; Fiber Type: OM3 XG 10 Gb/s    | 1671209-3   |
| MPO/LC Quick-Fit Cassette, 6 ports (12 fibers); Pairs: flipped; Fiber Type: OM3 XG 10 Gb/s     | 1-1671209-3 |
| MPO/LC Quick-Fit Cassette, 6 ports (12 fibers); Pairs: straight; Fiber Type: Singlemode        | 1671209-4   |
| MPO/LC Quick-Fit Cassette, 6 ports (12 fibers); Pairs: flipped; Fiber Type: Singlemode         | 1-1671209-4 |
| MPOOptimate/LC Quick-Fit Cassette, 6 ports (12 fibers); Pairs: straight; Fiber Type: OM4       | 1671229-5   |
| MPOOptimate/LC Quick-Fit Cassette, 6 ports (12 fibers); Pairs: flipped; Fiber Type: OM4        | 1-1671229-5 |
| LC AMPTRAC Quick-Fit Module, 6 ports (12 fibers); Fiber Type: OM3 XG 10 Gb/s                   | 1933420-2   |
| LC AMPTRAC Quick-Fit Module, 6 ports (12 fibers); Fiber Type: SM                               | 1933420-3   |
| 1U drawer loaded with 24 LC Duplex AMPTRAC Inserts (48 fibers); Fiber Type: Singlemode         | 1671149-1   |
| 1U drawer for loaded with 24 LC Duplex AMPTRAC Inserts (48 fibers); Fiber Type: OM3 XG 10 Gb/s | 1671149-3   |
| 1U Drawer for 4 MPO AMPTRAC Quick-Fit Cassettes or Quick-Fit modules                           | 1671149-5   |



  
 (for MPO/  
 MPOOptimate Quick-Fit  
 Cassettes)

# Quareo Physical Layer Management System

## AMPTRAC Fiber Patch Cords

### AMPTRAC Fiber Optic Patch Cords

#### FEATURES

- Exceeds optical performance specifications for OM3, OM4 and single mode
- Patch Cord assemblies contain copper conductor connected to external pin
- External pin makes contact with sensor pad on Patch Panel or switch
- Cable is a mini-tri-zip design for flexibility and small size
- Available for LC Duplex and SC Duplex assemblies
- MPOptimate Optical performance:  
Attenuation :IL  $\leq$  0.15dB, Return Loss: RL  $\geq$  35dB
- SM Optical performance:  
Attenuation: IL  $\leq$ 0.5 dB, return Loss: RL  $\geq$ 20dB



LC DUPLEX



SC DUPLEX

#### ORDERING INFORMATION

| Description                            | Part Number | Y- -X | Length |
|--|-------------|-------|--------|
| LC Duplex to LC Duplex; MPOptimate OM4 | Y-2160052-X | 0- -1 | 1 m    |
| LC Duplex to LC Duplex; OM3 XG 10 Gb/s | Y-2055438-X | 0- -2 | 2 m    |
| LC Duplex to LC Duplex; Singlemode     | Y-1435791-X | 0- -3 | 3 m    |
| LC Duplex to SC Duplex; OM3 XG 10 Gb/s | Y-1435796-X | 0- -5 | 5 m    |
| LC Duplex to SC Duplex; Singlemode     | Y-1435797-X | 0- -7 | 7 m    |
| SC Duplex to SC Duplex; OM3 XG 10 Gb/s | Y-1435725-X | 1- -0 | 10 m   |
| SC Duplex to SC Duplex; Singlemode     | Y-1435726-X |       |        |

# Quareo Physical Layer Management System

## AMPTRAC Copper Platform

### MRJ21 XG Quick-Fit AMPTRAC Cassette 8 Port (10 Gb/s)

#### FEATURES

- Adds AMPTRAC functionality to MRJ21 XG cabling
- Compatible to MRJ21 XG cable assemblies for 10GbE performance

**Color:** black (RAL 9005)

#### ORDERING INFORMATION



| Description                                       | Part Number |
|---|-------------|
| MRJ21 XG Quick-Fit AMPTRAC cassette for 10GBase-T | 2153091-1   |

### MRJ21 XG 19" AMPTRAC Patch Panel, 1U, straight

#### FEATURES

- Adds AMPTRAC functionality to MRJ21 XG cabling
- Factory terminated and tested solution
- Compatible with MRJ21 XG cable assemblies for 10GbE performance
- Straight panel with either 24 or 48 ports on 1U

**Color:** black (RAL 9005)

#### ORDERING INFORMATION



| Description   | Part Number |
|---|-------------|
| Straight AMPTRAC panel 1U for 10GbE; MRJ21 Plugs: 6; RJ-45 Ports: 24  | 2153040-1   |
| Straight AMPTRAC panel 1U for 10GbE; MRJ21 Plugs: 12; RJ-45 Ports: 48 | 2153049-1   |

### MRJ21 AMPTRAC Patch Panels

#### FEATURES

- High-density, small form factor connectivity
- Factory terminated and tested
- Modular, pluggable design
- 4 pair MRJ21 Patch Panels for 10Base, 100Base-T and 1000Base-T
- 2 pair MRJ21 Patch Panels for 10Base and 100Base-T

#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Shielded 24 port straight Patch Panel; 4 pair (10/100/1000Base-T)   | 1711944-2   |
| Unshielded 24 port straight Patch Panel; 4 pair (10/100/1000Base-T) | 1777029-2   |
| Unshielded 48 port straight Patch Panel; 4 pair (10/100/1000Base-T) | 1777041-1   |
| Unshielded 48 port straight Patch Panel; 2 pair (10/100Base-T)      | 1777042-1   |
| Unshielded 48 port angled Patch Panel; 4 pair (10/100/1000Base-T)   | 1777053-1   |



# Quareo Physical Layer Management System

## AMPTRAC Copper Platform

### Category 6 - AMPTRAC PCB Patch Panel (STP)

#### FEATURES

- 19", 1U, RJ-45 Patch Panel with 24 ports
- Category 6 Pyramid tested
- LSA-Plus® tool compatible enhanced 110 IDC blocks
- 10 Gigabit Ethernet ready
- Rear cable management
- Cover adapts to different cable diameters via variable snap-in position
- Shield connection separated from strain relief
- Including grounding bolt
- Universal wiring - T568 A or B wiring pattern
- Protected PCB

**Color:** black (RAL 9005)



#### ORDERING INFORMATION

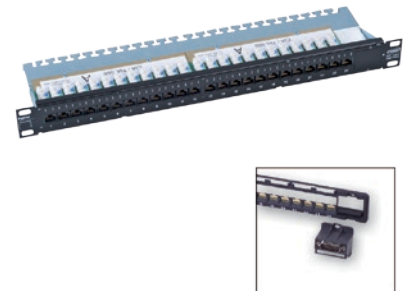
| Description  | Part Number |
|--|-------------|
| Shielded Cat. 6 Full AMPTRAC 24 port Patch Panel, Color: black | 1644042-1   |

### Category 6 - AMPTRAC PCB Patch Panel (UTP)

#### FEATURES

- 19", 1U, RJ-45 Patch Panel with 24 ports
- Category 6 Pyramid tested
- LSA-Plus® tool compatible enhanced 110 IDC blocks
- 10 Gigabit Ethernet ready
- Rear cable management
- Including grounding bolt
- Universal wiring - T568 A or B wiring pattern
- Protected PCB

**Color:** black (RAL 9005)



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Unshielded Cat. 6 Full AMPTRAC 24 port Patch Panel, Color: black | 1711147-1   |



# Quareo Physical Layer Management System

## AMPTRAC Copper Platform

### STP/UTP SL 110C Jack Patch Panels (w/o Rear Cable Management)

#### FEATURES

- Available in standard straight version or in angled version for improved cable and space management
- Uses AMP NETCONNECT high-performance SL Series 110C Modular Jacks
- I/O connection made with 110C PlugnPlay Cable Assembly
- Cost-effective AMPTRAC *Ready!* solution: install AMPTRAC Patch Panels now and analyzer and software later
- Category 6 Patch Panels come with Modular Jacks bagged separately (unloaded) for field termination with SL Series Modular Jack Termination Tool.



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Unshielded Cat. 6, 24 port panel; Type: Straight; Height: 1U | 1933327-1   |
| Unshielded Cat. 6, 48 port panel; Type: Straight; Height: 2U | 1933328-1   |
| Unshielded Cat. 6, 24 port panel; Type: Angled; Height: 1U   | 1933329-1   |
| Unshielded Cat. 6, 48 port panel; Type: Angled; Height: 2U   | 1933330-1   |
| Shielded XG 24 Port Panel; Type: Straight; Height: 1U        | 1933331-1   |
| Shielded XG 48 Port Panel; Type: Straight; Height: 2U        | 1933332-1   |
| Shielded XG 24 Port Panel; Type: Angled; Height: 1U          | 1933333-1   |
| Shielded XG 48 Port Panel; Type: Angled; Height: 2U          | 1933334-1   |

### Category 3 - AMPTRAC *Ready!* 50 Port Telephone Patch Panel

#### FEATURES

- 19", 1U, Telephone Panel with 50 ports
- AMPTRAC *Ready!* high-end version
- Active Pin-out: 36,45
- Conductor diameter range from AWG 26-22 (0.4-0.65 mm)
- Easy upgrade to AMPTRAC Infrastructure Management
- Rear cable management for multipair cables
- 110Connect blocks for conductor insulation diameters up to 1.28 mm



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| AMPTRAC <i>Ready!</i> 50 port panel; Color: light gray (RAL 7035) | 1394060-1   |
| AMPTRAC <i>Ready!</i> 50 port panel; Color: black (RAL 9005)      | 1394060-2   |
| I/O upgrade kit to full AMPTRAC                                   | 1435954-1   |

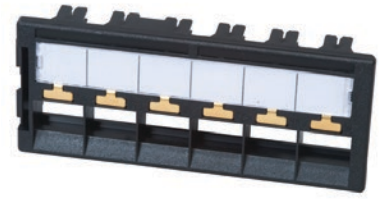
# Quareo Physical Layer Management System

## AMPTRAC Copper Platform

### STP & UTP Quick-Fit Modules

#### FEATURES

- Used to add AMPTRAC functionality to AMP-TWIST SL Jack cabling
- STP version has automatic bonding by design
- Labels included
- Set of 4 modules



#### ORDERING INFORMATION

| Description                                | Part Number |
|--|-------------|
| STP AMPTRAC ready Quick-Fit module (4 pcs) | 1933196-1   |
| UTP AMPTRAC ready Quick-Fit module (4 pcs) | 1933197-1   |

### Angled AMPTRAC Modular Quick-Fit Panel (unloaded)

#### FEATURES

- 19" 1U angled modular Patch Panel to be equipped with different SlimLine jacks without dust cover
- Adjustable & removable rear cable bracket incl. easy to use cable organizing CaRe-clips
- Including grounding bolt



**Color:** black (RAL 9005)

#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Angled Full AMPTRAC Modular panel for UTP SL Jacks | 1-1671136-3 |
| Angled Full AMPTRAC Modular panel for STP SL Jacks | 1-1671136-4 |

### Flushmount AMPTRAC Modular Quick-Fit Panel (unloaded)

#### FEATURES

- 19" 1U unloaded flushmount panel to be equipped with different SlimLine jacks
- Suitable for UTP and STP jacks
- Including grounding bolt

**Color:** black (RAL 9005)



#### ORDERING INFORMATION

| Description                           | Part Number |
|---------------------------------------|-------------|
| Flushmount Full AMPTRAC Modular Panel | 1-1671187-1 |

# Quareo Physical Layer Management System

## AMPTRAC Copper Platform

### Flushmount AMPTRAC Standard Patch Panel (unloaded)

#### FEATURES

- 19" unloaded flushmount Patch Panel to be equipped with different SlimLine jacks
- Full AMPTRAC
- Accepts up to 24 SL Jacks without dust cover
- Including grounding bolt



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Full AMPTRAC unloaded Panel for AMP-TWIST 6 jacks; Color: black (RAL 9005) | 1711685-4   |
| Full AMPTRAC unloaded Panel for AMP-TWIST 7 jacks; Color: black (RAL 9005) | 1711742-1   |

### AMPTRAC Scanning Module Upgrade Kit for 1U Patch Panels

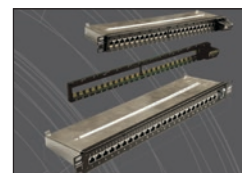
#### FEATURES

- Brings AMPTRAC functionality to AMPTRAC *Ready!* Patch Panels
- Front and rear Scanning Module cable connection



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| AMPTRAC Upgrade Kit with front Scanning Module port, Color: black                  | 1711148-1   |
| AMPTRAC Upgrade Kit with rear Scanning Module port, Color: black                   | 1711148-4   |
| AMPTRAC Cat. 7 $\Delta$ S Upgrade Kit with rear Scanning Module port; Color: black | 1711749-1   |



# Quareo Physical Layer Management System

## AMPTRAC Copper Patch Cords

### Twisted Pair Patch Cords Assemblies

#### FEATURES

- Patch Cord assemblies contain 9th conductor that is connected to external probe molded into the modular plug boot
- External probe makes contact with sensor pad on Patch Panel or switch
- Off-center probe designed to accommodate stacked-jack LAN switch configurations
- LSZH jacket
- Over-molded snagless boots

**Color:** white



#### ORDERING INFORMATION

| Description  | Performance                                | Part Number |
|--|--|-------------|
| 4pr AMPTRAC: AMP-TWIST 7 <sub>A</sub> S to AMP-TWIST 7 <sub>A</sub> S; LSZH S/FTP  | Cat. 7 <sub>A</sub> / Class F <sub>A</sub> | Y-1711755-X |
| 4pr AMPTRAC: AMP-TWIST 7 <sub>A</sub> S to RJ-45; LSZH S/FTP                       | Cat. 6 <sub>A</sub> / Class E <sub>A</sub> | Y-1711756-X |
| 4pr AMPTRAC: RJ-45 to RJ-45; LSZH S/FTP  | Cat. 6/ Class E <sub>A</sub>               | Y-1711548-X |
| 2pr AMPTRAC: AMP-TWIST 7 <sub>A</sub> S to RJ-45, Ethernet pinout 1236; LSZH S/FTP | Cat. 5E/ Class D                           | Y-1711757-X |
| 2pr AMPTRAC: AMP-TWIST 7 <sub>A</sub> S to RJ-45, ISDN pinout 3645; LSZH S/FTP     | Cat. 5E/ Class D                           | Y-1711760-X |
| 4pr AMPTRAC: RJ-45 to RJ-45; LSZH UTP, 1 m   | Cat. 6/ Class E <sub>A</sub>               | 1711351-5   |
| 4pr AMPTRAC: RJ-45 to RJ-45; LSZH UTP, 2 m   | Cat. 6/ Class E <sub>A</sub>               | 1711351-6   |
| 4pr AMPTRAC: RJ-45 to RJ-45; LSZH UTP, 3 m   | Cat. 6/ Class E <sub>A</sub>               | 1711351-7   |
| 4pr AMPTRAC: RJ-45 to RJ-45; LSZH UTP, 5 m   | Cat. 6/ Class E <sub>A</sub>               | 1711351-8   |

| Y- X  | Length |
|-------|--------|
| 0- -1 | 1 m    |
| 0- -2 | 2 m    |
| 0- -3 | 3 m    |
| 0- -5 | 5 m    |

# Quareo Physical Layer Management System

## AMPTRAC Sensor Strips

### Sensor Strips for LAN Electronics

#### FEATURES

- Sensor strips are readily available for a number of LAN electronic equipment types
- Easy mounting and installation
- The below Product Parts shows a selection of commonly used switch models
- Custom sensor strips can be designed on request to work with other LAN electronic equipment (LAN equipment manufacturer, model number, and model revision are required in determining the selection of the proper sensor strip)

**Important note:** Port footprint of LAN electronic model may be changed by manufacturer without notification! To prevent sensor pad mismatch, always double-check your actual LAN electronics model with scaled sensor strip template (PDF). For switch models not listed or additional information ask your local AMP NETCONNECT sales contact.



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Ports per Strip: 24; Typical Switch: CISCO 4000 and 6000, 48-Port Blades  | 1435346-1   |
| Ports per Strip: 24; Typical Switch: CISCO 3500 and 4548, 48-Port         | 1435346-4   |
| Ports per Strip: 26; Typical Switch: CISCO 2950, 24-Port + 2 Uplink Ports | 1435827-1   |
| Ports per Strip: 24; Typical Switch: NORTEL BAYSTACK 470-48T, 48-Port     | 1435939-1   |
| Ports per Strip: 8; Typical Switch: HP Procurve J4111A                    | 1933098-1   |
| Ports per Strip: 24; Typical Switch: HP Procurve J8702A & 3500yl          | 1933899-1   |
| Ports per Strip: 24; Typical Switch: CISCO 2960                           | 1933241-1   |

More sensor strips available, contact local sales team for details.

# Quareo Physical Layer Management System

## Accessories

### Cable Management Brackets and Bars

#### FEATURES

- Brackets and bars provide support for Scanning Module cables or Patch Cords
- Front mount to monitored Patch Panels and switches
- Adjustable universal brackets for use at left or right panel edge



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Universal Scanning Module cable bracket 40 mm, single-side-mount  | 1499659-1   |
| Universal Scanning Module cable bracket 100 mm, single-side-mount | 1499659-2   |
| Universal Scanning Module cable bracket 448 mm, double-side-mount | 1499659-3   |
| 1U Cable Management Bar Rack Mounting                             | 1557548-1   |
| 1U Cable Management Bar Patch Panel Mounting                      | 1933425-1   |

## 9. Optical LAN Solutions

|               |     |
|---------------|-----|
| Overview..... | 140 |
|---------------|-----|

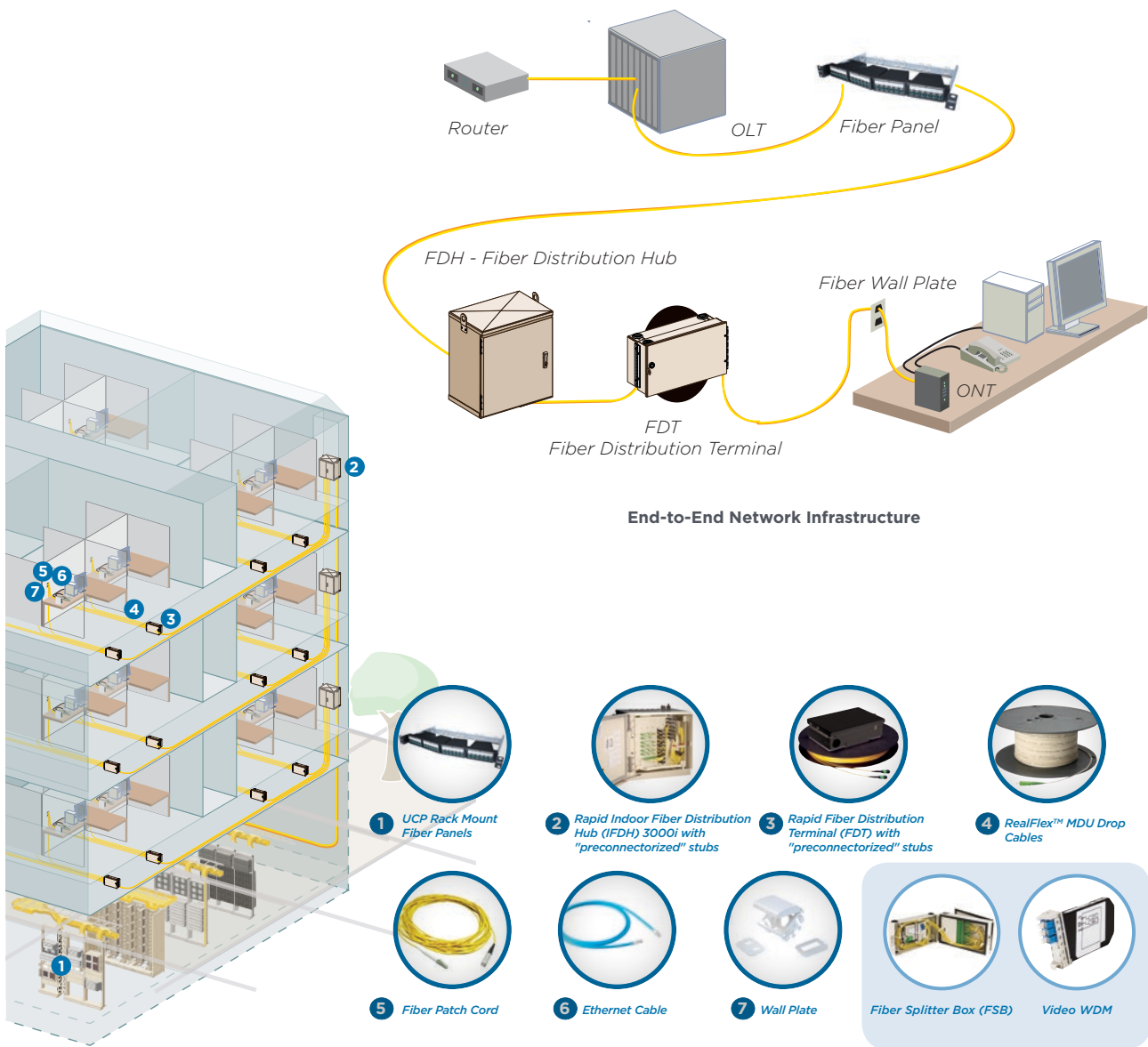
# Optical LAN Solution

## Overview

As optical fiber moves closer to end users, rapid changes are underway in both the data center and the equipment closet. As a result, new installation and maintenance techniques are being employed within enterprise applications. Passive Optical Network (PON) applications are now being deployed. Fiber is no longer limited to just access equipment. Fiber connectivity to a single user is a reality.

TE Connectivity offers complete, end-to-end PON infrastructure solutions called Optical LAN Solution (OLS). From the data center to the desktop, our customers have tapped the experience and innovation of TE to build their PON networks. TE's suite of end-to-end connectivity solutions is truly comprehensive. This ordering guide highlights the most commonly used components that feature field-proven attributes that can save time, money and help improve customer satisfaction.

The diagram below highlights an example of PON deployment using a TE OLS solution. Each number corresponds to a specific innovative TE product which is described in more details in the OLS System Solution Guide, available on TE website.





## 10. AMP CO System

|                                 |     |
|---------------------------------|-----|
| AMP CO Ultra Panels .....       | 142 |
| AMP CO Ultra Outlets .....      | 145 |
| AMP CO Inserts.....             | 149 |
| AMP CO Tools & Accessories..... | 156 |

### AMP CO Ultra Quick-Fit 8 Port Patch Panel

#### FEATURES

- 19" 1U patch panel for 8 AMP CO Ultra Inserts
- Fast termination and easy assembly
- Shielded housing with patented automatic shielding clamp
- Straight cable exit plus management bar
- Kit includes 4 AMP CO Ultra Quick-Fit Kits, mounting material and grounding bolt
- Performance up to 2.0 GHz



#### ORDERING INFORMATION

| Description                               | Color                 | Part Number |
|---|-----------------------|-------------|
| AMP CO Ultra Quick-Fit 8 Port Patch Panel | Light grey (RAL 7035) | 2153112-1   |
|   | Black (RAL 9005)      | 2153112-3   |

### AMP CO Ultra Quick-Fit 16 Port Patch Panel

#### FEATURES

- 19" 2U patch panel for 16 AMP CO Ultra Inserts
- Fast termination and easy assembly
- Shielded housing with patented automatic shielding clamp
- Straight cable exit plus management bar
- Kit includes 8 AMP CO Ultra Quick-Fit Kits, mounting material and grounding bolt
- Performance up to 2.0 GHz



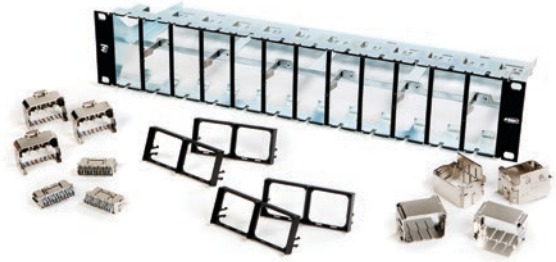
#### ORDERING INFORMATION

| Description                                | Color                 | Part Number |
|--|-----------------------|-------------|
| AMP CO Ultra Quick-Fit 16 Port Patch Panel | Light Grey (RAL 7035) | 2153113-1   |
|  | Black (RAL 9005)      | 2153113-3   |

### AMP CO Ultra 24 Port High Density Patch Panel

#### FEATURES

- 19" 2U patch panel for 24 AMP CO Ultra Inserts
- Fast termination and easy assembly
- Shielded housing with patented automatic shielding clamp
- Straight cable exit plus management bar
- Kit includes 24 die cast housings, 24 AMP CO Plus Edge Connectors, frames, mounting material and grounding bolt
- Performance up to 2.0 GHz



#### ORDERING INFORMATION

| Description                                   | Color                 | Part Number |
|---|-----------------------|-------------|
| AMP CO Ultra 24 Port High Density Patch Panel | Light Grey (RAL 7035) | 1711686-1   |
|   | Black (RAL 9005)      | 1711686-3   |

### UCP Patch Panel Angled and Flushmount

Please refer to Chapter 4, page 50



# AMP CO System

## AMP CO Ultra Panels

### AMP CO Ultra Quick-Fit Kit

#### FEATURES

- Fits in UCP Patch Panel angled and flush mount as well as consolidation point boxes
- Fast termination and easy assembly
- Shielded housing with patented automatic shielding clamp
- Kit includes 2 die-cast housings, 2 shielded edge connectors and frame for labelling
- Performance up to 2.0 GHz



#### ORDERING INFORMATION

| Description                | Color            | Part Number |
|----------------------------|------------------|-------------|
| AMP CO Ultra Quick-Fit Kit | Black (RAL 9005) | 2153014-1   |

### CP Box for Quick-Fit Cassettes & Modules

#### FEATURES

- Consolidation point box ready for 1 AMP CO Ultra Quick-Fit Kits
- Robust sheet metal construction
- Two separate zones; installation zone and user zone
- Hinged cover with knurled screw
- Dust protection for the full connection
- Grounding bolt included



#### ORDERING INFORMATION

| Description                              | Color            | Part Number |
|--|------------------|-------------|
| CP Box for Quick-Fit Cassettes & Modules | Black (RAL 9005) | 1-1671414-1 |

### AMP CO Ultra Distribution Box

#### FEATURES

- 1U distribution box for surface mount or raised floor use for 8 AMP CO Ultra Inserts
- Robust sheet metal construction
- Fast termination and easy assembly
- Shielded housing with patented automatic shielding clamp
- Kit includes 4 AMP CO Ultra Quick-Fit Kits, mounting material and grounding bolt
- Performance up to 2.0 GHz



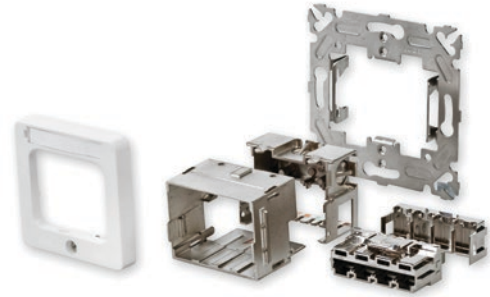
#### ORDERING INFORMATION

| Description                   | Color            | Part Number |
|-------------------------------|------------------|-------------|
| AMP CO Ultra Distribution Box | Black (RAL 9005) | 2153173-3   |

### AMP CO Ultra Installation Kit DIN 50x50

#### FEATURES

- Fast termination and easy assembly
- Shielded installation kit flush mount
- DIN faceplate 50 x 50 mm
- Compatible with standard and designer frame series
- Metal frame ready for different footprint or fixation configurations
- Shielded edge connector for AWG 22-24 twisted pair cables
- Shielded housing with tangible screen termination
- Strain relief by cable tie
- Top, left or right cable entry
- 2.0 GHz performance



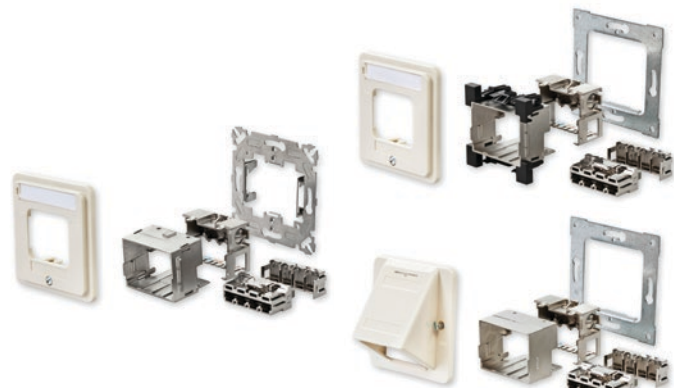
#### ORDERING INFORMATION

| Description                             | Color                 | Part Number |
|---|-----------------------|-------------|
| AMP CO Ultra Installation Kit DIN 50x50 | Almond (RAL 1013)     | 1711655-1   |
|   | Black (RAL 9005)      | 1711655-3   |
|   | Pure White (RAL 9010) | 2-1711655-1 |

### AMP CO Ultra Installation Kits DIN 68x68

#### FEATURES

- Fast termination and easy assembly
- Shielded installation kit flush mount
- Straight or angled versions
- DIN faceplate 68 x 68 mm
- Metal frame ready for different footprint or fixation configurations
- Shielded edge connector for AWG 2-24 twisted pair cables
- Shielded housing with tangible screen termination
- Strain relief by cable tie
- Top, left or right cable entry
- 2.0 GHz performance



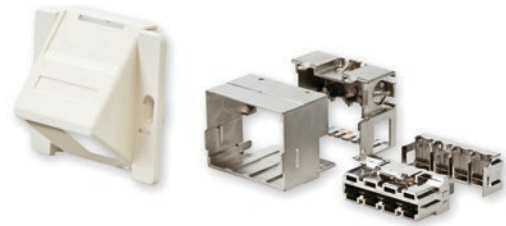
#### ORDERING INFORMATION

| Description                                    | Color                 | Part Number |
|--|-----------------------|-------------|
| AMP CO Ultra Installation Kit DIN 68x68        | Almond (RAL 1013)     | 1711856-1   |
| AMP CO Ultra Installation Kit DIN 68x68        | Pure White (RAL 9010) | 2-1711856-1 |
| AMP CO Ultra Installation Kit DIN 68x68 Top    | Almond (RAL 1013)     | 1711870-1   |
| AMP CO Ultra Installation Kit DIN 68x68 Top    | Pure White (RAL 9010) | 2-1711870-1 |
| AMP CO Ultra Installation Kit DIN 68x68 Angled | Almond (RAL 1013)     | 1711875-1   |
| AMP CO Ultra Installation Kit DIN 68x68 Angled | Pure White (RAL 9010) | 2-1711875-1 |

### AMP CO Ultra Installation Kit DIN Floor Box

#### FEATURES

- Fast termination and easy assembly
- Shielded installation kit floor box
- Shielded edge connector for AWG 22-24 twisted pair cables
- Shielded housing with tangible screen termination
- Strain relief by cable tie
- Bottom cable entry
- 2.0 GHz performance



#### ORDERING INFORMATION

| Description                                       | Color             | Part Number |
|---|-------------------|-------------|
| AMP CO Ultra Installation Kit DIN 50x50 Floor Box | Almond (RAL 1013) | 1711876-1   |
| AMP CO Ultra Installation Kit DIN 70x58 Floor Box | Almond (RAL 1013) | 1711855-1   |

### AMP CO Ultra Installation Kit Swiss “EDIZIOdue Compatible”

#### FEATURES

- Fast termination and easy assembly
- Shielded installation kit flush mount and surface mount
- Faceplate applicable to “EDIZIOdues Compatible” systems
- Shielded edge connector for AWG 22-24 twisted pair cables
- Shielded housing with tangible screen termination
- Strain relief by cable tie
- Top, left or right cable entry
- 2.0 GHz performance



#### ORDERING INFORMATION

| Description  | Color                 | Part Number |
|--|-----------------------|-------------|
| AMP CO Ultra Installation Kit Swiss EDIZIOdue Compatible AP  | Pure White (RAL 9010) | 1711869-1   |
| AMP CO Ultra Installation Kit Swiss EDIZIOdue Compatible UP  | Pure White (RAL 9010) | 1711859-1   |
| AMP CO Ultra Installation Kit Swiss EDIZIOdue Compatible UP  | Black (RAL 9005)      | 1711859-2   |
| AMP CO Ultra Installation Kit Swiss EDIZIOdue Compatible KNL | Black (RAL 9005)      | 1711858-3   |
| AMP CO Ultra Installation Kit Swiss EDIZIOdue Compatible KNL | Pure White (RAL 9010) | 1711858-4   |

### AMP CO Ultra Installation Kit Swiss “Standard”

#### FEATURES

- Fast termination and easy assembly
- Shielded installation kit flush mount and surface mount
- Faceplate applicable to “Standard” systems
- Shielded edge connector for AWG 22-24 twisted pair cables
- Shielded housing with tangible screen termination
- Strain relief by cable tie
- Top, left or right cable entry
- 2.0 GHz performance



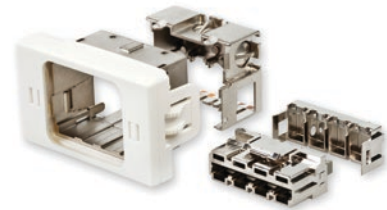
#### ORDERING INFORMATION

| Description                             | Color                 | Part Number |
|---|-----------------------|-------------|
| AMP CO Ultra Installation Kit Swiss UP  | Pure White (RAL 9010) | 1711861-1   |
| AMP CO Ultra Installation Kit Swiss AP  | Pure White (RAL 9010) | 1711862-1   |
| AMP CO Ultra Installation Kit Swiss KNL | Pure White (RAL 9010) | 1711864-1   |

### AMP CO Ultra Installation Kit Swiss “FLF”

#### FEATURES

- Fast termination and easy assembly
- Shielded installation kit flush mount and surface mount
- Faceplate applicable to “FLF” systems
- Shielded edge connector for AWG 22-24 twisted pair cables
- Shielded housing with tangible screen termination
- Top, left or right cable entry (90°) and rear cable exit (180°)
- 2.0 GHz performance



#### ORDERING INFORMATION

| Description   | Color                 | Part Number |
|---|-----------------------|-------------|
| AMP CO Ultra Installation Kit Swiss FLF, Cable exit 90°     | Pure White (RAL 9010) | 1711865-1   |
| AMP CO Ultra Installation Kit Swiss FLF AP, Cable exit 90°  | Pure White (RAL 9010) | 1711866-1   |
| AMP CO Ultra Installation Kit Swiss FLF, Cable exit 180°    | Pure White (RAL 9010) | 2153074-1   |
| AMP CO Ultra Installation Kit Swiss FLF AP, Cable exit 180° | Pure White (RAL 9010) | 2153075-1   |

# AMP CO System

## AMP CO Ultra Outlets

### AMP CO Ultra Installation Kit 45 x 45

#### FEATURES

- Fast termination and easy assembly
- Shielded installation kit flush mount
- Faceplate 45 x 45 mm
- Shielded edge connector for AWG 22-24 twisted pair cables
- Shielded housing with tangible screen termination
- Strain relief by cable tie
- Top, left or right cable entry
- 2.0 GHz performance



#### ORDERING INFORMATION

| Description                         | Color                 | Part Number |
|-------------------------------------|-----------------------|-------------|
| AMP CO Ultra Installation Kit 45x45 | Almond (RAL 1013)     | 1711860-1   |
| AMP CO Ultra Installation Kit 45x45 | Pure White (RAL 9010) | 1711860-2   |
| Adaptor Frame to 50 x 50 mm         | Almond (RAL 1013)     | 1379156-1   |



# AMP CO System

## AMP CO Inserts

### AMP CO Plus Category 7<sub>A</sub> AMP-TWIST 7<sub>AS</sub> Style Insert

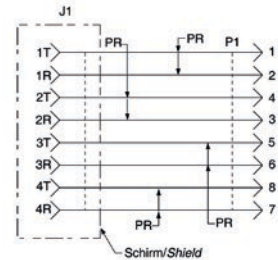
#### FEATURES

- Exchangeable system insert for 1 x ISO Category 7<sub>A</sub> (acc. IEC 61076-3-104)
- Class F<sub>A</sub>, supports 1 GHz bandwidth
- Application: All services incl. 10 Gigabit Ethernet (10GBASE-T)

**Pin out:** EIA/TIA 568A; 8 pins, shielded

#### ORDERING INFORMATION

| Description  | Color                 | Part Number |
|--|-----------------------|-------------|
| Insert Cat. 7 <sub>A</sub> AMP-TWIST 7 <sub>AS</sub> Style | Almond (RAL 1013)     | 1711409-1   |
|  | Black (RAL 9005)      | 1711409-3   |
|  | Pure White (RAL 9010) | 1711409-5   |



### AMP CO Plus Category 7<sub>A</sub> ARJ-45 Insert

#### FEATURES

- Exchangeable system insert for 1 x ISO Category 7<sub>A</sub> (compatible with IEC 60603-7-7)
- Class F<sub>A</sub>, supports 1 GHz bandwidth
- Application: All Ethernet services incl. 10 Gigabit Ethernet (10GBASE-T)

**Pin out:** EIA/TIA 568A; 8 pins, shielded

#### ORDERING INFORMATION

| Description                       | Color                 | Part Number |
|-----------------------------------|-----------------------|-------------|
| Insert Cat. 7 <sub>A</sub> ARJ-45 | Almond (RAL 1013)     | 1711609-1   |
|                                   | Black (RAL 9005)      | 1711609-3   |
|                                   | Pure White (RAL 9010) | 1711609-5   |



### AMP CO Plus Category 7 Dual RJ-45 Insert for ATM

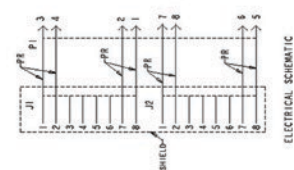
#### FEATURES

- Exchangeable system insert 2 x RJ-45
- Category 7 / Class F
- Application: 2 x ATM 622 MBit/s

**Pin out:** 12.78 + 12.78; 2 x 4 pins, shielded

#### ORDERING INFORMATION

| Description             | Color                 | Part Number |
|-------------------------|-----------------------|-------------|
| Insert 2 x RJ-45 Cat. 7 | Almond (RAL 1013)     | 336556-1    |
|                         | Black (RAL 9005)      | 336556-3    |
|                         | Pure White (RAL 9010) | 336556-5    |



# AMP CO System

## AMP CO Inserts

### AMP CO Plus Broadband Inserts for “Triple Play”

#### FEATURES

- Exchangeable system insert with F-series connector and 2 x RJ-45
- Application: 1 x CATV + 1 x Fast Ethernet (100BASE-TX) + 1x ISDN

**Pin out:** Balun 75Ω + 12.36 + 45; shielded



#### ORDERING INFORMATION

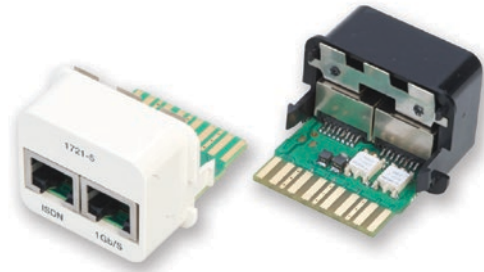
| Description                 | Color                 | Part Number |
|-----------------------------|-----------------------|-------------|
| Insert F-Series + 2 x RJ-45 | Almond (RAL 1013)     | 1711336-1   |
|                             | Black (RAL 9005)      | 1711336-3   |
|                             | Pure White (RAL 9010) | 1711336-5   |

### AMP CO Plus Splitter Insert for Gigabit Ethernet and ISDN

#### FEATURES

- Exchangeable system insert 2 x RJ-45
- Application: 1 x Gigabit Ethernet (1000BASE-T) + 1x ISDN
- ITU I.430 services
- ISDN port is a 4 wire s-bus basic rate interface (BRI) including power feeding
- Two splitters required for system operation

**Pin out:** EIA/TIA 568 A: 8 pins, shielded



#### ORDERING INFORMATION

| Description            | Color                 | Part Number |
|------------------------|-----------------------|-------------|
| Insert 2 x RJ-45 mixed | Almond (RAL 1013)     | 1591721-1   |
|                        | Black (RAL 9005)      | 1591721-3   |
|                        | Pure White (RAL 9010) | 1591721-5   |

### AMP CO Plus Category 6<sub>A</sub> RJ-45 Insert for 10 Gigabit Ethernet

#### FEATURES

- Exchangeable system insert 1 x RJ-45
- Category 6<sub>A</sub> / Class E<sub>A</sub>
- Application: All Ethernet services incl. 10 Gigabit Ethernet (10GBASE-T) or ATM 1.2 GBit/s

**Pin out:** EIA/TIA 568A; 8 pins, shielded



#### ORDERING INFORMATION

| Description                          | Color                 | Part Number |
|--------------------------------------|-----------------------|-------------|
| Insert 1 x RJ-45 Cat. 6 <sub>A</sub> | Almond (RAL 1013)     | 1711796-1   |
|                                      | Black (RAL 9005)      | 1711796-3   |
|                                      | Pure White (RAL 9010) | 1711796-5   |

# AMP CO System

## AMP CO Inserts

### AMP CO Plus Category 6<sub>A</sub> Dual RJ-45 Insert for Fast Ethernet

#### FEATURES

- Exchangeable system insert 2 x RJ-45
- Category 6<sub>A</sub> / Class E<sub>A</sub>
- Application: 2 x Fast Ethernet (100BASE-TX)

**Pin out:** 12.36 + 12.36; 2 x 4 pins, shielded

#### ORDERING INFORMATION

| Description                                   | Color                 | Part Number |
|---|-----------------------|-------------|
| Insert 2 x RJ-45 Cat. 6 <sub>A</sub> Ethernet | Almond (RAL 1013)     | 1711801-1   |
|   | Black (RAL 9005)      | 1711801-3   |
|   | Pure White (RAL 9010) | 1711801-5   |



### AMP CO Plus Category 6<sub>A</sub> Dual RJ-45 Insert for Fast Ethernet + Voice/Data

#### FEATURES

- Exchangeable system insert 2 x RJ-45
- Category 6<sub>A</sub> / Class E<sub>A</sub>
- Application: 1 x Fast Ethernet (100BASE-TX) + 1 x ISDN, xDSL or Token Ring

**Pin out:** 36.45 + 12.36; 2 x 4 pins, shielded

#### ORDERING INFORMATION

| Description                                | Color                 | Part Number |
|--|-----------------------|-------------|
| Insert 2 x RJ-45 Cat. 6 <sub>A</sub> mixed | Almond (RAL 1013)     | 1711804-1   |
|  | Black (RAL 9005)      | 1711804-3   |
|  | Pure White (RAL 9010) | 1711804-5   |



### AMP CO Plus Category 6<sub>A</sub> Dual RJ-45 Insert for Voice/Data

#### FEATURES

- Exchangeable system insert 2 x RJ-45
- Category 6<sub>A</sub> / Class E<sub>A</sub>
- Application: 2 x ISDN, xDSL or Token Ring

**Pin out:** 36.45 + 36.45; 2 x 4 pins, shielded

#### ORDERING INFORMATION

| Description                               | Color                 | Part Number |
|---|-----------------------|-------------|
| Insert 2 x RJ-45 Cat. 6 <sub>A</sub> ISDN | Almond (RAL 1013)     | 1711807-1   |
|   | Black (RAL 9005)      | 1711807-3   |
|   | Pure White (RAL 9010) | 1711807-5   |



# AMP CO System

## AMP CO Inserts

### AMP CO Plus Category 6 RJ-45 Insert for 1 Gigabit Ethernet

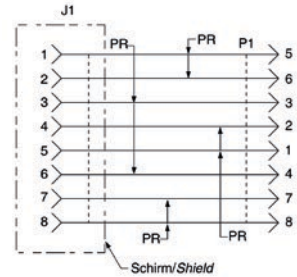
#### FEATURES

- Exchangeable system insert 1 x RJ-45
- Category 6 / Class E
- Application: 1x Gigabit Ethernet (1000BASE-T), 1 x Fast Ethernet (100BASE-TX) or ATM 1.2 GBit/s

**Pin out:** EIA/TIA 568A; 8 pins, shielded

#### ORDERING INFORMATION

| Description             | Color                 | Part Number |
|-------------------------|-----------------------|-------------|
| Insert 1 x RJ-45 Cat. 6 | Almond (RAL 1013)     | 336548-1    |
|                         | Black (RAL 9005)      | 336548-3    |
|                         | Pure White (RAL 9010) | 336548-5    |



### AMP CO Plus Category 5e RJ-45 Insert for Gigabit Ethernet

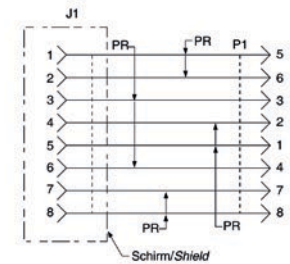
#### FEATURES

- Exchangeable system insert 1 x RJ-45
- Category 5e / Class D
- Application: 1x Gigabit Ethernet (1000BASE-T) or 1 x Fast Ethernet (100BASE-TX)

**Pin out:** EIA/TIA 568 A; 8 pins, shielded

#### ORDERING INFORMATION

| Description              | Color                 | Part Number |
|--------------------------|-----------------------|-------------|
| Insert 1 x RJ-45 Cat. 5e | Almond (RAL 1013)     | 284584-1    |
|                          | Black (RAL 9005)      | 284584-3    |
|                          | Pure White (RAL 9010) | 284584-5    |



### AMP CO Plus Category 5e Dual RJ-45 Insert for Fast Ethernet

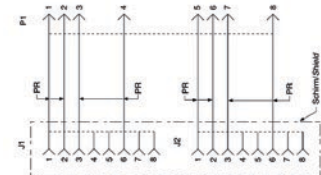
#### FEATURES

- Exchangeable system insert 2 x RJ-45
- Category 5e / Class D
- Application: 2 x Fast Ethernet (100 Base-TX)

**Pin out:** 12.36 + 12.36; 2 x 4 pins, shielded

#### ORDERING INFORMATION

| Description                       | Color                 | Part Number |
|-----------------------------------|-----------------------|-------------|
| Insert 2 x RJ-45 Cat. 5e Ethernet | Almond (RAL 1013)     | 183636-1    |
|                                   | Black (RAL 9005)      | 183636-3    |
|                                   | Pure White (RAL 9010) | 183636-5    |



# AMP CO System

## AMP CO Inserts

### AMP CO Plus Category 5e Dual RJ-45 Insert for Fast Ethernet + Voice/Data

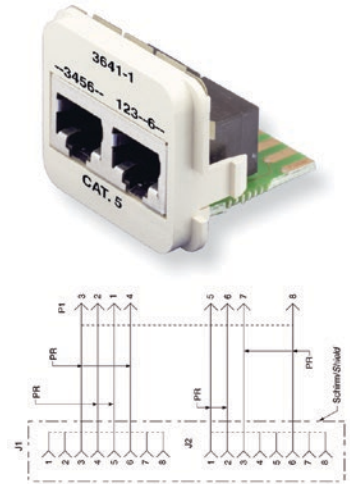
#### FEATURES

- Exchangeable system insert 2 x RJ-45
- Category 5e / Class D
- Application: 1 x Fast Ethernet (100BASE-TX) + 1 x ISDN, xDSL or Token Ring

**Pin out:** 36.45 + 12.36; 2 x 4 pins, shielded

#### ORDERING INFORMATION

| Description                    | Color                 | Part Number |
|--------------------------------|-----------------------|-------------|
| Insert 2 x RJ-45 Cat. 5e mixed | Almond (RAL 1013)     | 183641-1    |
|                                | Black (RAL 9005)      | 183641-3    |
|                                | Pure White (RAL 9010) | 183641-5    |



### AMP CO Plus Category 5e Dual RJ-45 Insert for Voice/Data

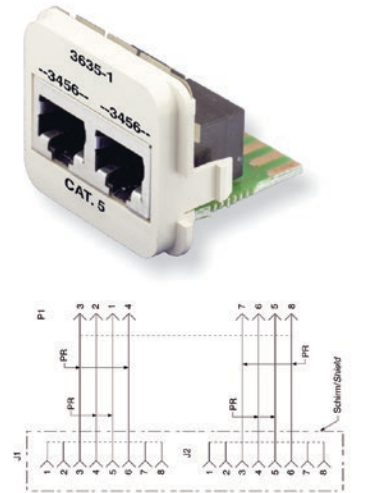
#### FEATURES

- Exchangeable system insert 2 x RJ-45
- Category 5e / Class D
- Application: 2 x ISDN, xDSL or Token Ring

**Pin out:** 36.45 + 36.45; 2 x 4 pins, shielded

#### ORDERING INFORMATION

| Description                   | Color                 | Part Number |
|-------------------------------|-----------------------|-------------|
| Insert 2 x RJ-45 Cat. 5e ISDN | Almond (RAL 1013)     | 183635-1    |
|                               | Black (RAL 9005)      | 183635-3    |
|                               | Pure White (RAL 9010) | 183635-5    |



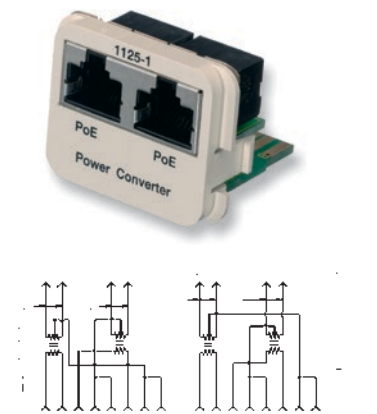
### AMP CO Plus Dual Patch Panel Insert PoE Power Conversion

#### FEATURES

- Exchangeable system insert 2 x RJ-45
- Converts IEEE 802.3af mode B input to mode A output
- Uses Power Mux/Demux Technology
- For use with midspan units providing power over unused pairs
- Application: 2 x PoE (input mode independent), e.g. VoIP, over a 4 pair cable (sheath sharing)

#### ORDERING INFORMATION

| Description                     | Color                 | Part Number |
|---------------------------------|-----------------------|-------------|
| Insert 2 x PoE Power Conversion | Almond (RAL 1013)     | 1711125-1   |
|                                 | Black (RAL 9005)      | 1711125-3   |
|                                 | Pure White (RAL 9010) | 1711125-5   |



# AMP CO System

## AMP CO Inserts

### AMP CO Plus Dual Insert PoE Mode A

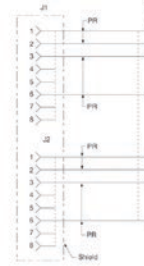
#### FEATURES

- Exchangeable system insert 2 x RJ-45
- 2 x PoE IEEE 802.3af Mode A
- For use in outlet or with phantom power midspan units
- Application: 2 x PoE, e.g. VoIP, over a 4 pair cable (sheath sharing)

**Pin out:** 12.36 + 12.36; 2 x 4 pins; shielded

#### ORDERING INFORMATION

| Description           | Color                 | Part Number |
|-----------------------|-----------------------|-------------|
| Insert 2 x PoE Mode A | Almond (RAL 1013)     | 1711135-1   |
|                       | Black (RAL 9005)      | 1711135-3   |
|                       | Pure White (RAL 9010) | 1711135-5   |



### AMP CO Plus 3-Port Insert Standard Phones

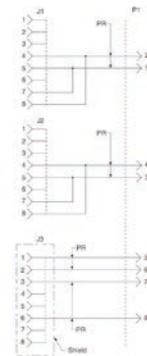
#### FEATURES

- Exchangeable system insert 3 x RJ-45
- 1 x Category 6 / Class E + 2 x Category 3 / Class C
- Application: 1 x Fast Ethernet (100BASE-TX) + 2 x Phones (2 wire use)

**Pin out:** 12.36 + 45 + 45; 1 x 4 pins shielded and 2 x 2 pins unshielded

#### ORDERING INFORMATION

| Description                         | Color                 | Part Number |
|-------------------------------------|-----------------------|-------------|
| Insert 3 x RJ-45 for Standard phone | Almond (RAL 1013)     | 1711100-1   |
|                                     | Black (RAL 9005)      | 1711100-3   |
|                                     | Pure White (RAL 9010) | 1711100-5   |



### AMP CO Plus 3-Port Insert Shunt Phones

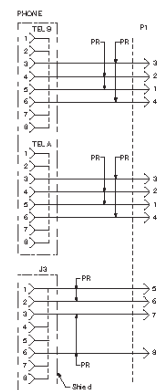
#### FEATURES

- Exchangeable system insert 3 x RJ-45
- 1 x Category 6 / Class E + 2 x Category 3 / Class C
- Application: 1 x Fast Ethernet (100BASE-TX) + 2 x Phones (parallel use)

**Pin out:** 12.36 + 36.45 + 36.45; 1 x 4 pins shielded and 2 x 4 pins unshielded

#### ORDERING INFORMATION

| Description                      | Color                 | Part Number |
|----------------------------------|-----------------------|-------------|
| Insert 3 x RJ-45 for Shunt phone | Almond (RAL 1013)     | 1711450-1   |
|                                  | Black (RAL 9005)      | 1711450-3   |
|                                  | Pure White (RAL 9010) | 1711450-5   |





# AMP CO System

## AMP CO Inserts

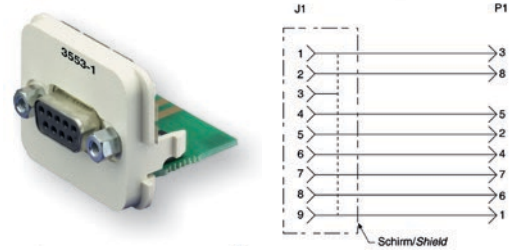
### AMP CO Plus 4 Pair Sub-D 9pos Insert

#### FEATURES

- Exchangeable system insert 1 x Sub-D 9pos
- Includes M3 nuts for locking

#### ORDERING INFORMATION

| Description       | Color             | Part Number |
|-------------------|-------------------|-------------|
| Insert Sub-D 9pos | Almond (RAL 1013) | 183553-1    |



### AMP CO Inserts for Voice Applications

#### FEATURES

- Exchangeable system insert 2 x or 4 x RJ-11 or RJ-45
- 2 x or 4 x Category 3 / Class C
- Application: ISDN, So or UpN



#### ORDERING INFORMATION

| Description  | Shielded | Terminated | Part Number | -X | Color                 |
|--|----------|------------|-------------|----|-----------------------|
| Insert 2 x RJ-45; Use at: outlet/panel; Note: French version         | Yes      | No         | 183578-1    | -1 | Almond (RAL 1013)     |
| Insert 2 x RJ11; Use at: outlet; Note: panel side 284584-X           | No       | No         | 555614-1    | -3 | Black (RAL 9005)      |
| Insert 4 x RJ-45; Use at: outlet/panel; Note: French version         | No       | No         | 1644016-X   | -5 | Pure White (RAL 9010) |
| Insert 4 x RJ-45; Use at: outlet/panel; Note: panel + outlet         | No       | No         | 1711000-X   |    |                       |
| Insert 4 x RJ-45; Use at: outlet; Note: panel side 183635-X          | No       | 100Ω       | 1711001-X   |    |                       |
| Insert 2 x RJ-45 parallel; Use at: outlet; Note: panel side 284584-X | No       | No         | 1711339-1   |    |                       |

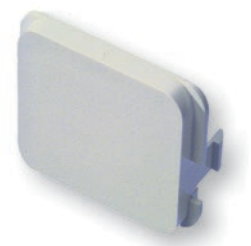
### AMP CO Plus Blank Insert

#### FEATURES

- Blank insert
- Dust protection for unused ports

#### ORDERING INFORMATION

| Description  | Color                 | Part Number |
|--------------|-----------------------|-------------|
| Blank Insert | Almond (RAL 1013)     | 555644-1    |
|              | Black (RAL 9005)      | 555644-3    |
|              | Grey (RAL 7035)       | 555644-5    |
|              | Pure White (RAL 9010) | 555644-9    |



# AMP CO System

## AMP CO Tools & Accessories

### AMP CO Ultra Pistol-Grip Tool

#### FEATURES

- Pistol grip tool for fast and easy termination of AMP CO Ultra modules
- Ensures repeatable high termination quality
- Considerable reduction of termination time
- Including adapter piece for termination of AMP CO Ultra modules
- AMP CO Ultra Tool Adapter-Gauge and Blade are also available as spare parts



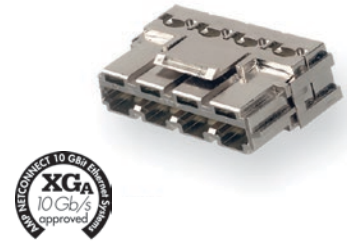
#### ORDERING INFORMATION

| Description                     | Part Number |
|---------------------------------|-------------|
| AMP CO Ultra Pistol-Grip Tool   | 1711500-1   |
| AMP CO Ultra Tool Adapter-Gauge | 2153264-1   |
| AMP CO Ultra Tool Blade         | 2153117-1   |

### AMP CO Plus Edge Connector

#### FEATURES

- Shielded edge connector for AWG 22-24 twisted pair cables
- 2.0 GHz performance
- 110C compatible IDC block
- Universal color code
- Fully shielded



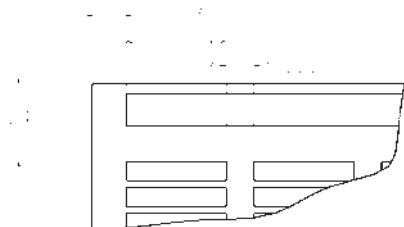
#### ORDERING INFORMATION

| Description                | Quantity   | Part Number |
|----------------------------|------------|-------------|
| AMP CO Plus Edge Connector | 100 pieces | 336455-1    |
|                            | 8 pieces   | 336455-2    |
|                            | 10 pieces  | 336455-3    |

### Printer Labels for AMP CO Installation Kits

#### FEATURES

- Self-adhesive A4 sheets with printer labels for AMP CO Installation Kits
- Uses standard MS Excel sheet



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Labels (6 x 32 mm, 170 pcs per sheet); Packaging 10 sheets | 969704-1    |



## 11. Fiber Optic Cabling

|                                      |     |
|--------------------------------------|-----|
| System Cable .....                   | 158 |
| Patch Panels .....                   | 167 |
| Accessories for Patch Panels .....   | 171 |
| Quick-Fit Modules.....               | 173 |
| Wall Mount Enclosures.....           | 174 |
| Snap-In Modules.....                 | 176 |
| Pre-assembled LC & SC Trunks.....    | 178 |
| Patch Cords and Pigtails.....        | 179 |
| Outlets.....                         | 187 |
| Adaptors .....                       | 190 |
| LightCrimp and LightCrimp Plus ..... | 193 |
| Epoxy Connectors .....               | 197 |
| Splicing Products.....               | 200 |
| Fiber Optic Tools.....               | 203 |
| Fiber Cleaning and Inspection.....   | 216 |

# Fiber Optic Cabling

## System Cable

### Technical Data

#### FIRE PERFORMANCE

Sheathing materials for internal cables comply fully with the following standards:

#### ASPECT

#### NORM

- Flammability
- Smoke emission
- Acid gas emission
- Toxicity
- IEC 60332 Parts 1 and 3
- IEC 61034 Parts 1 and 2
- IEC 60754 Parts 1 and 2
- NES 713

| Drum Ref | Barrel (mm) | Flange (mm) | Traverse (mm) | Weight (kg) |
|----------|-------------|-------------|---------------|-------------|
| P5       | 300         | 500         | 400           | 5.5         |
| P6       | 300         | 600         | 400           | 7           |
| P8       | 400         | 800         | 400           | 12.5        |
| P10      | 400         | 1000        | 500           | 20          |
| P12      | 400         | 1200        | 500           | 32          |
| P14      | 700         | 1400        | 700           | 65          |
| L (P17)  | 1000        | 1700        | 800           | 180         |
| M (P20)  | 1200        | 2000        | 800           | 250         |
| N (P22)  | 1200        | 2200        | 800           | 420         |

#### MULTIMODE FIBERS

| ISO/IEC 11801 and EN 50173 | Overfill Bandwidth (MHz x km) |         | Max. Link Length for 1 GBit/s (m) |                        | Max. Link Length for 10 GBit/s (m) |                       | Fiber Attenuation (dB/km) |         |       |
|----------------------------|-------------------------------|---------|-----------------------------------|------------------------|------------------------------------|-----------------------|---------------------------|---------|-------|
|                            | 850 nm                        | 1300 nm | 850 nm (1000Base-SX)              | 1300 nm (1000 Base-LX) | 850 nm (10GBase-SR) (10GBase-SW)   | 1300 nm (10GBase-LX4) | 850 nm                    | 1300 nm |       |
| OM1                        | 62.5 μm                       | ≥ 200   | ≥ 600                             | 275                    | 550*                               | 33                    | 360*                      | ≤ 2.9   | ≤ 0.7 |
| OM1 <i>Plus</i>            | 62.5 μm                       | ≥ 250   | ≥ 800                             | 400                    | 1000*                              | 65                    | 450*                      | ≤ 2.9   | ≤ 0.7 |
| OM2                        | 50 μm                         | ≥ 500   | ≥ 500                             | 550                    | 550*                               | 83                    | 300*                      | ≤ 2.4   | ≤ 0.6 |
| OM2 <i>Plus</i>            | 50 μm                         | ≥ 600   | ≥ 1200                            | 750                    | 2000*                              | 150                   | 1000*                     | ≤ 2.4   | ≤ 0.6 |
| OM3 (XG)                   | 50 μm                         | ≥ 1500  | ≥ 500                             | 1000                   | 600                                | 300                   | 300                       | ≤ 2.4   | ≤ 0.6 |
| OM4 (XG <sub>A</sub> )     | 50 μm                         | ≥ 3500  | ≥ 500                             | 1040                   | 600                                | 550**                 | 300                       | ≤ 2.4   | ≤ 0.6 |

\* Mode conditioning patchcords required

\*\* According to the IEEE 10Gb Ethernet model

#### SINGLEMODE FIBERS

| ISO/IEC 11801 and EN 50173 | Chromatic Dispersion (ps/nm x km) |         | Cut-off Wavelength, cabled | Point Discontinuity | Fiber Attenuation (dB/km) |              |         |
|----------------------------|-----------------------------------|---------|----------------------------|---------------------|---------------------------|--------------|---------|
|                            | 1310 nm                           | 1550 nm | (nm)                       | (dB)                | 1310 nm                   | 1380-1386 nm | 1550 nm |
| OS2 (ITU-T G.652D)         | ≤ 3.5                             | ≤ 18,0  | ≤ 1260                     | ≤ 0.05              | ≤ 0.34                    | ≤ 0.34       | ≤ 0.22  |

#### GEOMETRICAL FIBER PROPERTIES

| Fiber Type  | Core/Mode-field (nm) | Cladding (nm) | Coating (nm) |
|---|----------------------|---------------|--------------|
| OM1, OM1 <i>Plus</i>                                  | 62.5 ± 3             | 125 ± 2       | 245 ± 10     |
| OM2, OM2 <i>Plus</i> , OM3(XG), OM4(XG <sub>A</sub> ) | 50 ± 2.5             | 125 ± 2       | 245 ± 5      |
| OS2   | 9.2 ± 0.4            | 125 ± 1       | 245 ± 5      |



For all OM4 XG<sub>A</sub> System Cables

#### OPTICAL CABLE SPECIFICATIONS

|                   | Maximum Attenuation (dB/km) |                |                |                |
|-------------------|-----------------------------|----------------|----------------|----------------|
|                   | Loose Tube/Dry Tube         |                | Tight Buffered |                |
| <b>Multimode</b>  | <b>850 nm</b>               | <b>1300 nm</b> | <b>850 nm</b>  | <b>1300 nm</b> |
| 50/125            | 2.5                         | 0.7            | 2.5            | 0.7            |
| 62.5/125          | 2.9                         | 0.9            | 2.7            | 0.9            |
| <b>Singlemode</b> | <b>1310 nm</b>              | <b>1550 nm</b> | <b>1310 nm</b> | <b>1550 nm</b> |
| OS2               | 0.4                         | 0.25           | 0.4            | 0.25           |

NOTE: For higher fiber performance please contact our local sales teams.

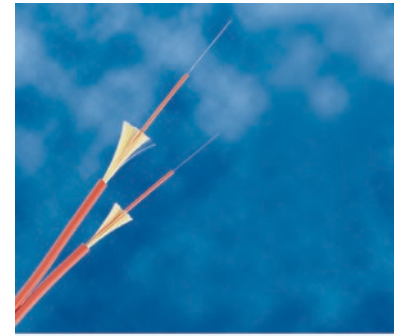
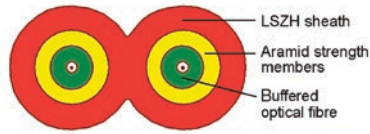
# Fiber Optic Cabling

## System Cable

### Zip Twin and Mini Zip Twin Cable

#### FEATURES

- Low Smoke Zero Halogen (LSZH)
- Available buffer designs:
  - Zip Twin: Tight-Buffer (900µm)
  - Mini Zip Twin: Tight-Buffer (600µm)
- Fiber categories: OM1, OM1 **Plus**, OM2, OM2 **Plus**, OM3 **XG**, OM4 **XG<sub>A</sub>**, OS2
- Tight buffer versions suitable for TE CONNECTIVITY Quick Termination Products (i.e. LightCrimp or LightCrimp Plus)



| Y- | Reel size   | -X | Fiber category            |
|----|-------------|----|---------------------------|
| 1- | 1 Kilometer | -2 | OM4 <b>XG<sub>A</sub></b> |
| 2- | 2 Kilometer | -3 | OM3 <b>XG</b>             |
| 3- | 3 Kilometer | -4 | OS2                       |
| 4- | 4 Kilometer | -5 | OM1                       |
|    |             | -6 | OM2 <b>Plus</b>           |
|    |             | -7 | OM2                       |
|    |             | -9 | OM1 <b>Plus</b>           |

#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Fiber count: 2; Cable type: Zip Twin TB (Tight Buffered Construction)      | Y-599142-X  |
| Fiber count: 2; Cable type: Mini Zip Twin TB (Tight Buffered Construction) | Y-6206650-X |

#### MECHANICAL PERFORMANCE

| Fiber count   | Overall Ø (mm) | Weight (kg/km) | Installation tension max. during installation (N) | Crush resistance (N) | Minimum bend radius during installation (mm) |
|---------------|----------------|----------------|---|----------------------|--|
| ZipTwin       | 2.5 x 5.0      | 14             | 300   | 1000                 | 40   |
| Mini Zip Twin | 1.8 x 3.75     | 6.6            | 220   | 2000                 | 25   |

#### TEMPERATURE RANGE

| Cable type              | Transport/Storage | Installation   | Operation       |
|-------------------------|-------------------|----------------|-----------------|
| Zip Twin, Mini Zip Twin | - 10 to + 70 °C   | - 5 to + 70 °C | - 10 to + 70 °C |

#### PACKAGING

For drum size see page 158

| Cable Type    | 1km | 2km | 3km | 4km |
|---------------|-----|-----|-----|-----|
| Zip Twin      | P5  | P5  | P6  | P6  |
| Mini Zip Twin | P5  | P5  | P5  | P5  |

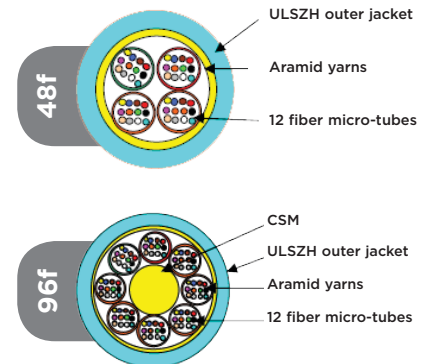
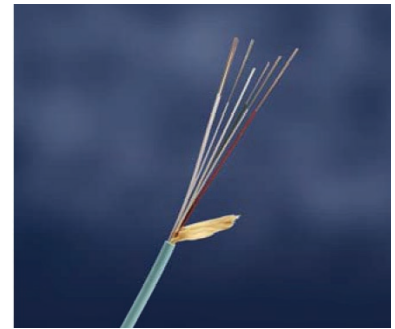
# Fiber Optic Cabling

## System Cable

### Internal Microtube Cable

#### FEATURES

- Compact construction for optimum space utilisation
- Totally non-metallic – light and easy to install
- ULSZH flame retardant outer jacket
- Sub units and fibers color coded according to TIA/EIA-569
- Crush resistance : 1000 N
- Impact resistance : 2J



#### ORDERING INFORMATION

| Description      | Fiber Type  | Y- | Reel size    | -X | Fiber category      |
|------------------|-------------|----|--------------|----|---------------------|
| Fiber count: 8   | Y-1716293-X | 2- | 2 Kilometers | -2 | OM4 XG <sub>A</sub> |
| Fiber count: 12  | Y-1716294-X |    |              | -3 | OM3 XG              |
| Fiber count: 24  | Y-1716295-X |    |              | -4 | OS2                 |
| Fiber count: 36  | Y-1716296-X |    |              | -7 | OM2                 |
| Fiber count: 48  | Y-1716297-X |    |              |    |                     |
| Fiber count: 60  | Y-1716298-X |    |              |    |                     |
| Fiber count: 72  | Y-1716299-X |    |              |    |                     |
| Fiber count: 96  | Y-1716300-X |    |              |    |                     |
| Fiber count: 144 | Y-1716301-X |    |              |    |                     |

#### MECHANICAL PERFORMANCE

| Fiber count | No. of tubes/fillers | Nominal cable diameter (mm) | Nominal weight (kg/km) | Tensile strength (N) | Min. installation bend radius (mm) | Combustion energy (MJ/m) |
|-------------|----------------------|-----------------------------|------------------------|----------------------|------------------------------------|--------------------------|
| 8/12        | 1/3                  | 5.0                         | 23                     | 700                  | 60                                 | 0.35                     |
| 24          | 2/2                  | 5.0                         | 23                     | 700                  | 60                                 | 0.35                     |
| 36          | 3/1                  | 5.0                         | 23                     | 700                  | 60                                 | 0.33                     |
| 48          | 4                    | 5.0                         | 23                     | 700                  | 60                                 | 0.30                     |
| 60          | 5/1                  | 6.1                         | 34                     | 1250                 | 70                                 | 0.48                     |
| 72          | 6                    | 6.1                         | 34                     | 1250                 | 70                                 | 0.45                     |
| 96          | 8                    | 6.8                         | 45                     | 1500                 | 70                                 | 0.57                     |
| 144         | 12                   | 8.6                         | 70                     | 1500                 | 100                                | 0.93                     |

#### TEMPERATURE RANGE

| Cable type               | Transport/Storage | Installation   | Operation       |
|--------------------------|-------------------|----------------|-----------------|
| Internal Microtube Cable | -40°C to 70°C     | - 5 to + 60 °C | - 20 to + 70 °C |

#### PACKAGING

| Fiber count | 2km |
|-------------|-----|
| 8-48        | P6  |
| 60-72       | P8  |
| 96          | P8  |
| 144         | P10 |

# Fiber Optic Cabling

## System Cable

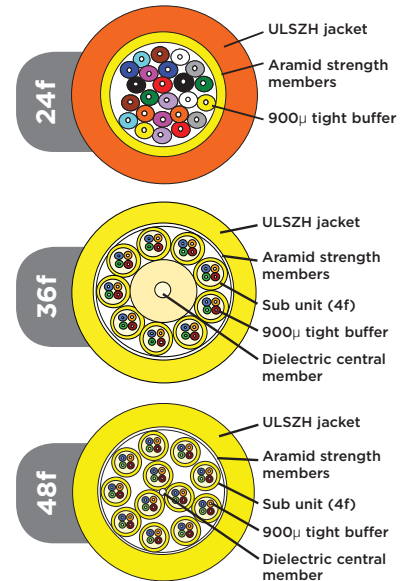
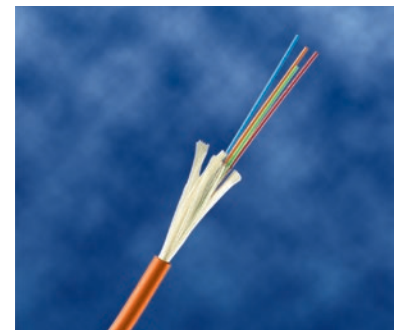
### Internal/External Office Distribution Cable

#### FEATURES

- Universal Low Smoke Zero Halogen (ULSZH)
- For indoor and outdoor applications
- Suitable for backbone and Fiber-to-the-Desk
- Increased strength and durability
- Tight-Buffer construction
- Suitable for all termination techniques
- Fiber categories: OM1, OM1 *Plus*, OM2, OM2 *Plus*, OM3 XG, OM4 XG<sub>A</sub>, OS2
- Aramid strength members

#### ORDERING INFORMATION

| Description     | Part Number | Y- | Reel size    | -X | Fiber category      |
|-----------------|-------------|----|--------------|----|---------------------|
| Fiber count: 4  | Y-599144-X  | 1- | 1 Kilometer  | -2 | OM4 XG <sub>A</sub> |
| Fiber count: 6  | Y-599145-X  | 2- | 2 Kilometers | -3 | OM3 XG              |
| Fiber count: 8  | Y-599146-X  | 3- | 3 Kilometers | -4 | OS2                 |
| Fiber count: 12 | Y-599148-X  | 4- | 4 Kilometers | -5 | OM1                 |
| Fiber count: 16 | Y-599149-X  |    |              | -6 | OM2 Plus            |
| Fiber count: 24 | Y-1716029-X |    |              | -7 | OM2                 |
| Fiber count: 36 | Y-599602-X  |    |              | -9 | OM1 Plus            |
| Fiber count: 48 | Y-599603-X  |    |              |    |                     |



#### MECHANICAL PERFORMANCE

| Fiber count | Overall Ø (mm) | Weight (kg/km) | Installation tension max. during installation (N) | Crush resistance (N) | Combustion Energy (MJ/m) | Minimum bend radius during installation (mm) |
|-------------|----------------|----------------|---|----------------------|--------------------------|--|
| 4           | 5              | 27             | 650   | 2000                 | 0.424                    | 75   |
| 6           | 6              | 33             | 1000  | 2000                 | 0.714                    | 90   |
| 8           | 6              | 35             | 1000  | 2000                 | 0.742                    | 90   |
| 12          | 7.5            | 56             | 1000  | 2000                 | 0.953                    | 115  |
| 16          | 8              | 61             | 1000  | 2000                 | 1.175                    | 120  |
| 24          | 9.5            | 80             | 1000  | 2000                 | 1.513                    | 240  |
| 36          | 17             | 280            | 2000  | 2000                 | 6.199                    | 430  |
| 48          | 17.3           | 230            | 2000  | 2000                 | 6.018                    | 430  |

#### TEMPERATURE RANGE

| Cable type                | Transport/Storage | Installation   | Operation       |
|---------------------------|-------------------|----------------|-----------------|
| Office Distribution Cable | - 20 to + 70 °C   | - 5 to + 50 °C | - 10 to + 70 °C |

#### PACKAGING

For drum size see page 158

| Fiber count | 1km | 2km | 3km | 4km |
|-------------|-----|-----|-----|-----|
| 4           | P5  | P6  | P8  | P8  |
| 6,8         | P6  | P8  | P8  | P10 |
| 12          | P8  | P10 | P10 | P10 |
| 16          | P8  | P10 | P10 | P10 |
| 24          | P10 | P10 | P12 | P12 |
| 36,48       | P12 | P14 | P17 | P20 |

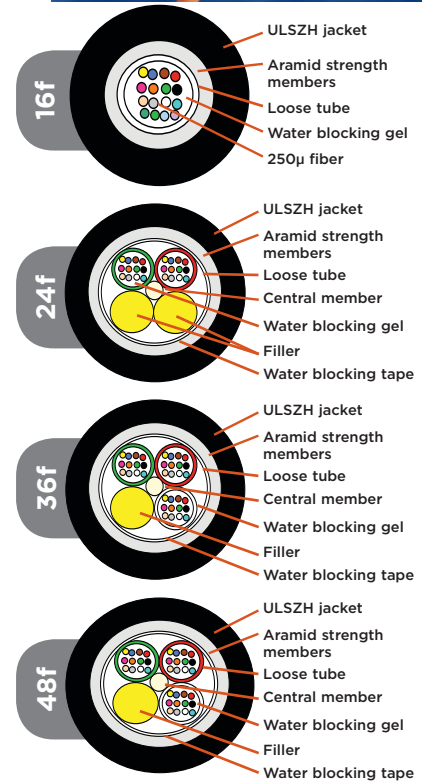
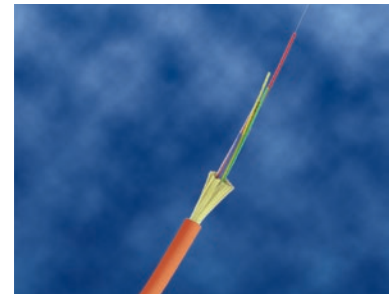
# Fiber Optic Cabling

## System Cable

### Internal/External Loose Tube Cable

#### FEATURES

- Universal Low Smoke Zero Halogen (ULSZH)
- For indoor and outdoor applications
- Loose tube construction
- Dry tube construction also available
- Suitable for all termination techniques
- Fiber categories: OM1, OM1 *Plus*, OM2, OM2 *Plus*, OM3 *XG*, OM4 *XG<sub>A</sub>*, OS2
- Aramid strength members



#### ORDERING INFORMATION

| Description                     | Gel filled tube version<br>Part Number | Dry tube version<br>Part Number | Y-        | Reel size                 |
|---------------------------------|--|---------------------------------|-----------|---------------------------|
| Fiber count: 4                  | Y-599160-X                             | Y-599152-X                      | 1-        | 1 Kilometer               |
| Fiber count: 6                  | Y-599161-X                             | Y-599153-X                      | 2-        | 2 Kilometer               |
| Fiber count: 8                  | Y-599162-X                             | Y-599154-X                      | 3-        | 3 Kilometer               |
| Fiber count: 12                 | Y-599164-X                             | Y-599156-X                      | 4-        | 4 Kilometer               |
| Fiber count: 16                 | Y-599165-X                             | Y-599157-X                      |           |                           |
| Fiber count: 24<br>(multi-tube) | Y-599167-X                             | Y-599159-X                      | <b>-X</b> | <b>Fiber category</b>     |
| Fiber count: 24<br>(uni-tube)   | Y-1716000-X                            | -                               | -2        | OM4 <i>XG<sub>A</sub></i> |
| Fiber count: 48                 | Y-599609-X                             | Y-599605-X                      | -3        | OM3 <i>XG</i>             |
| Fiber count: 72                 | Y-599610-X                             | Y-599606-X                      | -4        | OS2                       |
| Fiber count: 96                 | Y-599611-X                             | Y-599607-X                      | -5        | OM1                       |
|                                 |  |                                 | -6        | OM2 <i>Plus</i>           |
|                                 |  |                                 | -7        | OM2                       |
|                                 |  |                                 | -9        | OM1 <i>Plus</i>           |

#### MECHANICAL PERFORMANCE

| Fiber count | No. of tubes/fillers | Overall Ø (mm) | Weight (kg/km) | Installation tension max. during installation (N) | Crush resistance (N) | Combustion Energy (MJ/m) | Minimum bend radius during installation (mm) |
|-------------|----------------------|----------------|----------------|---|----------------------|--------------------------|--|
| 4, 6, 8, 12 | 1                    | 6.4            | 33             | 500   | 2000                 | 0.886                    | 140  |
| 16, 24      | 1                    | 7.5            | 44             | 500   | 2000                 | 1.65                     | 150  |
| 24, 48      | 4                    | 11.5           | 125            | 1000  | 2000                 | 3.35                     | 170  |
| 72          | 6                    | 12.7           | 155            | 2700  | 2000                 | 4.302                    | 250  |
| 96          | 8                    | 15             | 210            | 2700  | 2000                 | 6.076                    | 300  |

#### TEMPERATURE RANGE

| Cable type             | Transport/Storage | Installation   | Operation       |
|------------------------|-------------------|----------------|-----------------|
| Dry, loose tube        | - 10 to + 60 °C   | - 5 to + 50 °C | - 10 to + 60 °C |
| Gel filled, loose tube | - 20 to + 60 °C   | - 5 to + 50 °C | - 20 to + 60 °C |

#### PACKAGING

For drum size see page 158

| Fiber count  | 1km | 2km | 3km | 3km |
|--------------|-----|-----|-----|-----|
| 4,6,8,12     | P8  | P8  | P10 | P10 |
| 16, 24 uni   | P8  | P10 | P10 | P10 |
| 24 multi, 48 | P12 | P12 | P12 | P14 |
| 72           | P12 | P12 | P14 | P17 |
| 96           | P12 | P14 | P17 | P17 |

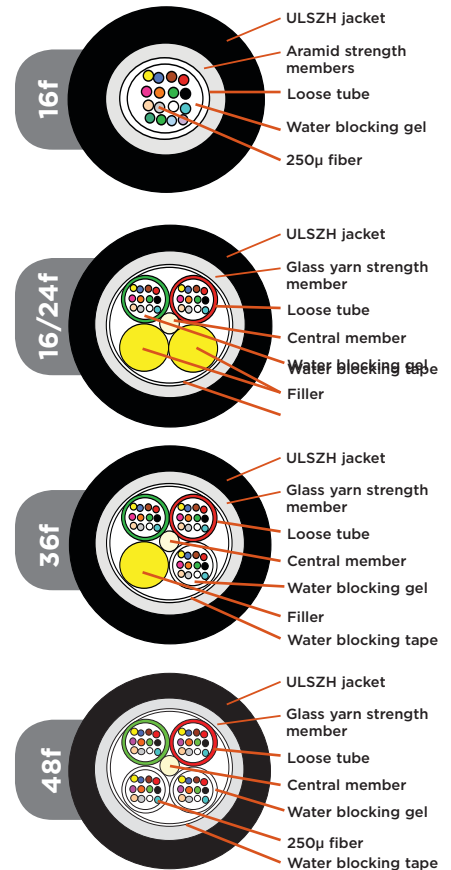
# Fiber Optic Cabling

## System Cable

### Internal/External Loose Tube System Cable with non-metallic rodent resistance

#### FEATURES

- Universal Low Smoke Zero Halogen (ULSZH)
- LLDPE (Linear Low Density Polyethylene) sheath
- For indoor and outdoor applications
- For use in ducts and direct burial applications
- Non-metallic rodent resistant with peripheral strength members
- Water blocking E-glass yarn (moisture protection)
- Loose tube construction
- Dry tube construction also available
- Suitable for all termination techniques
- Fiber categories:
  - OM1, OM1 Plus, OM2, OM2 Plus, OM3 XG, OM4 XGA, OS2



#### ORDERING INFORMATION

| Description                  | Gel filled tube version<br>Part Number | Dry tube version<br>Part Number |
|------------------------------|--|---------------------------------|
| Fiber count: 4               | Y-599622-X                             | Y-599614-X                      |
| Fiber count: 6               | Y-599623-X                             | Y-599615-X                      |
| Fiber count: 8               | Y-599624-X                             | Y-599616-X                      |
| Fiber count: 12              | Y-599625-X                             | Y-599617-X                      |
| Fiber count: 16              | Y-599626-X                             | Y-599618-X                      |
| Fiber count: 24 (multi-tube) | Y-599627-X                             | Y-599619-X                      |
| Fiber count: 24 (uni-tube)   | Y-1716001-X                            | -                               |
| Fiber count: 36              | Y-599628-X                             | Y-599620-X                      |
| Fiber count: 48              | Y-599629-X                             | Y-599621-X                      |

| Y- | Reel size   |
|----|-------------|
| 1- | 1 Kilometer |
| 2- | 2 Kilometer |
| 3- | 3 Kilometer |
| 4- | 4 Kilometer |

| -X | Fiber category      |
|----|---------------------|
| -2 | OM4 XG <sub>A</sub> |
| -3 | OM3 XG              |
| -4 | OS2                 |
| -5 | OM1                 |
| -6 | OM2 <i>Plus</i>     |
| -7 | OM2                 |
| -9 | OM1 <i>Plus</i>     |

#### MECHANICAL PERFORMANCE

| Fiber count | No. of tubes/fillers | Overall Ø (mm) | Weight (kg/km) | Installation tension max. during installation (N) | Crush resistance (N) | Combustion Energy (MJ/m) | Minimum bend radius during installation (mm) |
|-------------|----------------------|----------------|----------------|---|----------------------|--------------------------|--|
| 4, 6, 8, 12 | 1                    | 6.4            | 48             | 1250  | 1000                 | 0.677                    | 140  |
| 16, 24      | 1                    | 8              | 74             | 1250  | 1000                 | 1.271                    | 160  |
| 24, 36, 48  | 4                    | 11.5           | 105            | 2000  | 2000                 | 3.171                    | 230  |

#### TEMPERATURE RANGE

| Cable type             | Transport/Storage | Installation   | Operation       |
|------------------------|-------------------|----------------|-----------------|
| Dry, loose tube        | - 10 to + 70 °C   | - 5 to + 50 °C | - 10 to + 70 °C |
| Gel filled, loose tube | - 20 to + 70 °C   | - 5 to + 50 °C | - 20 to + 70 °C |

#### PACKAGING

For drum size see page 158

| Fiber count      | 1km | 2km | 3km | 4km |
|------------------|-----|-----|-----|-----|
| 4, 6, 8, 12      | P8  | P8  | P10 | P10 |
| 16, 24 uni       | P8  | P10 | P10 | P10 |
| 24 multi, 36, 48 | P12 | P12 | P12 | P14 |

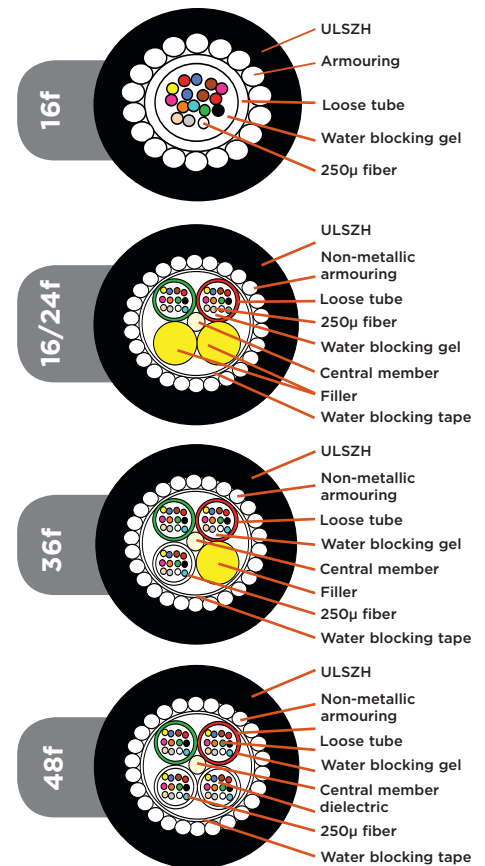
# Fiber Optic Cabling

## System Cable

### External Rodent Resistant Loose Tube System Cable with Non-Metallic Armour

#### FEATURES

- Universal Low Smoke Zero Halogen (ULSZH)
- LDPE sheath upon request
- For external applications where increased resistance to rodent attack is required
- For use in ducts and direct burial applications
- Longitudinal and lateral water resistance
- High crush resistance and high tensile strength
- Non-metallic rodent resistant Glass Reinforced Plastic armouring
- Gel filled loose tube construction
- Suitable for all termination techniques
- Fiber categories: OM1, OM1 Plus, OM2, OM2 Plus, OM3 XG, OM4 XGA, OS2



#### ORDERING INFORMATION

| Description     | Part Number |
|-----------------|-------------|
| Fiber count: 4  | Y-599168-X  |
| Fiber count: 6  | Y-599169-X  |
| Fiber count: 8  | Y-599170-X  |
| Fiber count: 12 | Y-599172-X  |
| Fiber count: 16 | Y-599173-X  |
| Fiber count: 24 | Y-599175-X  |
| Fiber count: 36 | Y-599612-X  |
| Fiber count: 48 | Y-599613-X  |

| Y- | Reel size           |
|----|---------------------|
| 1- | 1 Kilometer         |
| 2- | 2 Kilometer         |
| 3- | 3 Kilometer         |
| 4- | 4 Kilometer         |
| -X | Fiber category      |
| -2 | OM4 XG <sub>A</sub> |
| -3 | OM3 XG              |
| -4 | OS2                 |
| -5 | OM1                 |
| -6 | OM2 <i>Plus</i>     |
| -7 | OM2                 |
| -9 | OM1 <i>Plus</i>     |

#### MECHANICAL PERFORMANCE

| Fiber count | No of tubes/fillers | Overall Ø (mm) | Weight (kg/km) | Installation tension max. during installation (N) | Crush resistance (N) | Combustion Energy (MJ/m) | Minimum bend radius during installation (mm) |
|-------------|---------------------|----------------|----------------|---|----------------------|--------------------------|--|
| 4, 6, 8, 12 | 1                   | 9              | 94             | 2000  | 3000                 | 1.973                    | 230  |
| 16          | 1                   | 11             | 143            | 3000  | 3000                 | 3.038                    | 280  |
| 24, 36, 48  | 4                   | 15             | 236            | 6000  | 4000                 | 4.671                    | 465  |

#### TEMPERATURE RANGE

| Cable type  | Transport/Storage | Installation   | Operation       |
|-------------|-------------------|----------------|-----------------|
| Single tube | - 20 to + 70 °C   | - 5 to + 50 °C | - 20 to + 70 °C |
| Multi tube  | - 30 to + 70 °C   | - 5 to + 50 °C | - 30 to + 70 °C |

#### PACKAGING

For drum size see page 158

| Fiber count | 1km | 2km | 3km | 4km |
|-------------|-----|-----|-----|-----|
| 4, 6, 8, 12 | P8  | P10 | P10 | P12 |
| 16          | P10 | P12 | P12 | P14 |
| 24, 36, 48  | P12 | P14 | P17 | P17 |



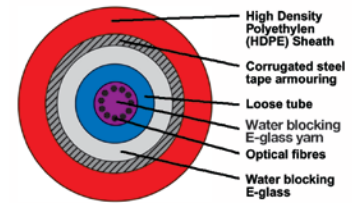
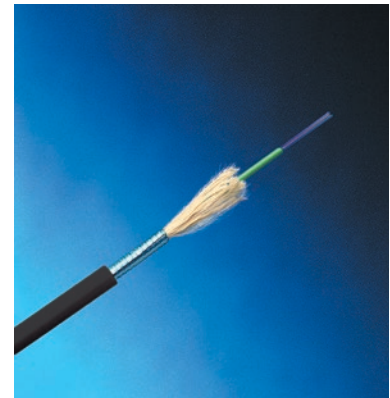
# Fiber Optic Cabling

## System Cable

### External Rodent Resistant Loose Tube System Cable with corrugated steel armour

#### FEATURES

- LLDPE (Linear Low Density Polyethylene)
- Metallic rodent resistant (corrugated steel)
- For use in ducts and in direct burial applications
- Longitudinal and lateral water resistance
- Central gel-filled loose tube construction
- Excellent crush and impact resistance
- Suitable for all termination techniques
- Fiber categories: OM1, OM1 Plus, OM2, OM2 Plus, OM3 XG, OM4 XGA, OS2
- Option: ULSZH sheath for internal and external applications



#### ORDERING INFORMATION

| Description     | Part Number |
|-----------------|-------------|
| Fiber count: 4  | Y-599681-X  |
| Fiber count: 6  | Y-599682-X  |
| Fiber count: 8  | Y-599692-X  |
| Fiber count: 12 | Y-599683-X  |
| Fiber count: 24 | Y-599690-X  |

| Y- | Reel size   | -X | Fiber category      |
|----|-------------|----|---------------------|
| 1- | 1 Kilometer | -2 | OM4 XG <sub>A</sub> |
| 2- | 2 Kilometer | -3 | OM3 XG              |
| 3- | 3 Kilometer | -4 | OS2                 |
| 4- | 4 Kilometer | -5 | OM1                 |
|    |             | -6 | OM2 <i>Plus</i>     |
|    |             | -7 | OM2                 |
|    |             | -9 | OM1 <i>Plus</i>     |

#### MECHANICAL PERFORMANCE

| Fiber count | No. of tubes/fillers | Overall Ø (mm) | Weight (kg/km) | Installation tension max. during installation (N) | Crush resistance (N) | Minimum bend radius during installation (mm) |
|-------------|----------------------|----------------|----------------|---|----------------------|--|
| 4, 6, 8, 12 | 1                    | 10             | 104            | 1250  | 3000                 | 200  |
| 24          | 1                    | 10.5           | 120            | 1250  | 3000                 | 200  |

#### TEMPERATURE RANGE

| Cable type             | Transport/Storage | Installation   | Operation       |
|------------------------|-------------------|----------------|-----------------|
| Gel filled, loose tube | - 20 to + 70 °C   | - 5 to + 50 °C | - 20 to + 70 °C |

#### PACKAGING

For drum size see page 158

| Fiber count | 1km | 2km | 3km | 4km |
|-------------|-----|-----|-----|-----|
| 4, 6, 8, 12 | P10 | P10 | P12 | P12 |
| 24          | P10 | P12 | P12 | P14 |

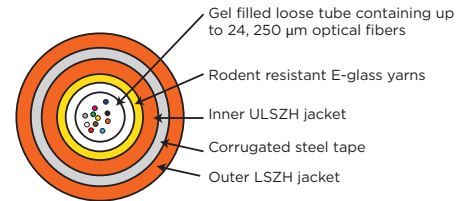
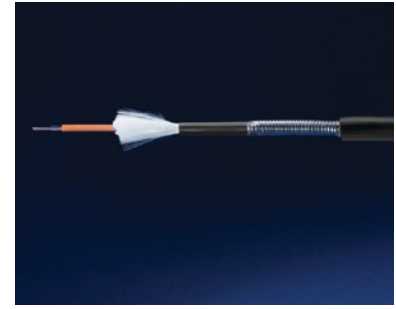
# Fiber Optic Cabling

## System Cable

### Internal/External Fire Survival Loose Tube Cable

#### FEATURES

- Circuit Integrity for 90 minutes at 750°C (following IEC 60331-25)
- Low Smoke Zero Halogen (LSZH)
- For use in ducts and direct burial applications
- Longitudinal and lateral water resistance
- Metallic CST armour between 2 jackets provides excellent crush resistance
- Gel filled loose tube construction
- Suitable for all termination techniques
- Fiber categories: OM1, OM1 Plus, OM2, OM2 Plus, OM3 XG, OM4 XGA, OS2



#### ORDERING INFORMATION

| Description     | Part Number |
|-----------------|-------------|
| Fiber count: 4  | Y-1716219-X |
| Fiber count: 6  | Y-1716218-X |
| Fiber count: 8  | Y-1716217-X |
| Fiber count: 12 | Y-1716211-X |
| Fiber count: 16 | Y-1716220-X |
| Fiber count: 24 | Y-1716216-X |

| Y- | Reel size   | -X | Fiber category            |
|----|-------------|----|---------------------------|
| 1- | 1 Kilometer | -2 | OM4 <b>XG<sub>A</sub></b> |
| 2- | 2 Kilometer | -3 | OM3 <b>XG</b>             |
| 3- | 3 Kilometer | -4 | OS2                       |
| 4- | 4 Kilometer | -5 | OM1                       |
|    |             | -6 | OM2 <b>Plus</b>           |
|    |             | -7 | OM2                       |
|    |             | -9 | OM1 <b>Plus</b>           |

#### MECHANICAL PERFORMANCE

| Fiber count         | Overall Ø (mm) | Weight (kg/km) | Installation tension max. during installation (N) | Crush resistance (N) | Combustion Energy (MJ/m) | Minimum bend radius during installation (mm) |
|---------------------|----------------|----------------|---|----------------------|--------------------------|--|
| 4, 6, 8, 12, 16, 24 | 12.7           | 216            | 1400  | 3000                 | 6.2                      | 255  |

#### TEMPERATURE RANGE

| Cable type          | Transport/Storage | Installation | Operation   |
|---------------------|-------------------|--------------|-------------|
| Fire Survival Cable | -20 to +70 C      | -5 to +50 C  | -20 to +70C |

#### PACKAGING

For drum size see page 158

| Fiber count         | 1km | 2km | 3km | 4km |
|---------------------|-----|-----|-----|-----|
| 4, 6, 8, 12, 16, 24 | P12 | P10 | P14 | P17 |

# Fiber Optic Cabling

## Patch Panels

### Angled modular fiber optic panel

#### FEATURES

- Drawer style, 1U, 19"
- Plexi transparent cover
- 4 Quick-Fit cutouts
- One pin splice tray fixation (splice tray NOT included)

**Color:** black (RAL 9005)



#### ORDERING INFORMATION

| Description             | Part Number |
|-------------------------|-------------|
| Angled modular FO panel | 1-1671260-1 |

### 1U Modular fiber optic panel flushmount style

#### FEATURES

- Drawer style, 1U, 19"
- Exchangeable adaptor panels (to be ordered separately)
- Unloaded and half-loaded (12 adaptors) panels available on request
- ST-style loaded adaptor panels available on request
- Plexi transparent cover
- Pull-out labeling strip
- Cable entrance by means of cable termination kit with glands (PN 1671273-1) or cable termination kit with flex tube (PN 1671274-1) in case of limited space in the back see accessories page 190
- Maximum 2 Splice Trays can be stored in the panel (2 x 24 = 48 splices)
- One pin Splice Tray fixation (splice tray NOT included)
- For splicing accessories see page 200 for cable management see page 171



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Modular fiber panel - drawer; Color: black (RAL 9005)  | 1-1671262-1 |
| Modular fiber panel - drawer with pre-installed adaptor panel for 4 Quick-Fit modules; color: black (RAL 9005) | 1-1671365-1 |
| Adaptor panel with 24 x SC duplex; Color: black (RAL 9005)   | 2-1671268-X |
| Adaptor panel with 24 x LC duplex; Color: black (RAL 9005)   | 2-1671271-X |
| Adaptor panel for 4 Quick-Fit modules; Color: black (RAL 9005)   | 1671263-1   |
| Modular fiber panel - drawer; Color: grey (RAL 7035)   | 1-1671262-2 |
| Adaptor panel with 24 x SC duplex; Color: grey (RAL 7035)  | 2-1671269-X |
| Adaptor panel with 24 x LC duplex; Color: grey (RAL 7035)  | 2-1671272-X |
| Adaptor panel for 4 Quick-Fit modules; Color: grey (RAL 7035)  | 1671263-2   |

| -X | Fiber type | Color |
|----|------------|-------|
| -1 | OM1        | beige |
| -2 | OM2        | black |
| -3 | OM3        | aqua  |
| -4 | OS2        | blue  |

# Fiber Optic Cabling

## Patch Panels

### 1U - LC, SC, ST-Style patch panel, international version

#### FEATURES

- Drawer style, 1U, 19"
- Preinstalled dust covers on unpopulated ports
- Incl. management rings and metric glands
- Available in 300 mm and 220 mm depth
- Available in ST-Style, SC and LC
- Supplied without splicing tray

**Color:** black (RAL 9005)



#### ORDERING INFORMATION

| Description  | 220 mm<br>Part Number | 300 mm<br>Part Number |
|--|-----------------------|-----------------------|
| 24 x ST-Style, Multimode and Singlemode; Unpopulated               | 1206480-8             | 1206114-8             |
| 24 x ST-Style, Multimode; With 12 adapters                         | 2-1206480-4           | 2-1206114-4           |
| 24 x ST-Style, Multimode; With 24 adapters and pigtails (OM2)      | -                     | 4-1206114-0           |
| 24 x ST-Style, Multimode; With 24 adapters                         | 4-1206480-4           | 4-1206114-4           |
| 12 x SC Duplex, Multimode and Singlemode; unpopulated              | 1206505-8             | 1206138-8             |
| 12 x SC Duplex, Multimode; With 6 adapters                         | 2-1206505-4           | 2-1206138-4           |
| 12 x SC Duplex, Multimode; With 12 adapters and 24 pigtails (OM3)  | -                     | 4-1206138-0           |
| 12 x SC Duplex, Multimode; With 12 adapters                        | 4-1206505-4           | 4-1206138-4           |
| 24 x SC Duplex, Multimode and Singlemode; Unpopulated              | -                     | 1206343-4             |
| 24 x SC Duplex, Multimode; with 24 adapters                        | -                     | 4-1206343-4           |
| 24 x SC Duplex, Singlemode; with 24 adapters                       | -                     | 4-1671002-4           |
| 12 x SC Duplex, Singlemode; With 6 adapters                        | 2-1671017-4           | 2-1348960-4           |
| 12 x SC Duplex, Singlemode; With 12 adapters and 24 pigtails (OS2) | -                     | 4-1348960-0           |
| 12 x SC Duplex, Singlemode; With 12 adapters                       | 4-1671017-4           | 4-1348960-4           |
| 24 x LC Duplex, Multimode and Singlemode; unpopulated              | -                     | 1671000-8             |
| 24 x LC Duplex, Singlemode; With 12 adapters                       | -                     | 2-1671000-4           |
| 24 x LC Duplex, Multimode; With 12 adapters                        | -                     | 2-1671000-8           |
| 24 x LC Duplex, Singlemode; with 24 adapters                       | -                     | 4-1671000-4           |
| 24 x LC duplex, Multimode, with 12 adaptors AQUA                   | -                     | 2-1671000-2           |
| 24 x LC Duplex, Multimode; With 24 adapters                        | -                     | 4-1671000-8           |
| 24 x LC duplex, Multimode; with 24 adaptors AQUA                   | -                     | 4-1671000-2           |

# Fiber Optic Cabling

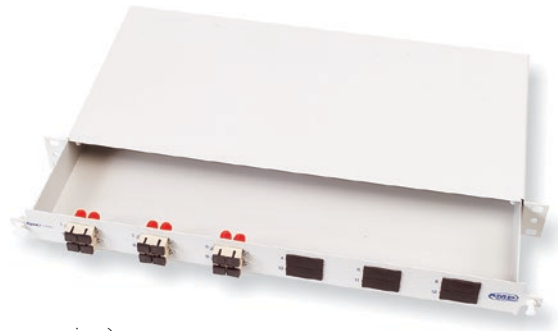
## Patch Panels

### 1U - LC, SC, ST-Style patch panel, German version

#### FEATURES

- 1U, 19", metal, Supplied with ANT splicing trays
- Pre-installed adapters
- Pre-installed dust covers on unpopulated ports
- Alignment sleeve material: Multimode = Metal;  
Singlemode = Ceramic
- 2 rear cable entries
- Incl. 1 blindcover and 1 metric pre-installed cable entry plate (German version)
- Populated fix style versions comes with cable management rings

**Color:** light grey (RAL 7035)



#### ORDERING INFORMATION

| Description  | Fix style<br>Part Number | Drawer style<br>Part Number |
|--|--------------------------|-----------------------------|
| 24 x LC Duplex/LC Duplex, unpopulated                  | 1671121-8                | 1671130-8                   |
| 24 x LC Duplex/LC Duplex, Multimode; With 24 adapters  | 4-1671121-8              | 4-1671130-8                 |
| 24 x LC Duplex/LC Duplex, Multimode; With 12 adapters  | 2-1671121-4              | 2-1671130-8                 |
| 24 x LC Duplex/LC Duplex, Singlemode; With 24 adapters | 4-1671121-4              | 4-1671130-4                 |
| 24 x LC Duplex/LC Duplex, Singlemode; With 12 adapters | 2-1671121-4              | 2-1671130-4                 |
| 24 x SC Duplex/SC Duplex; Unpopulated                  | 1418734-1                | 1418735-1                   |
| 12 x SC Duplex/SC Duplex; Unpopulated                  | 969615-1                 | 969994-1                    |
| 12 x SC Duplex/SC Duplex, Multimode; With 12 adapters  | 1-969619-1               | 969631-1                    |
| 12 x SC Duplex/SC Duplex, Multimode; With 6 adapters   | 1-969617-1               | 969629-1                    |
| 12 x SC Duplex/SC Duplex, Singlemode; With 12 adapters | 1418731-1                | 1418733-1                   |
| 12 x SC Duplex/SC Duplex, Singlemode; With 6 adapters  | 1418730-1                | 1418732-1                   |
| 24 x ST Style; Unpopulated                             | 969614-1                 | 969993-1                    |
| 24 x ST Style Multimode; With 24 adapters              | 1-969618-1               | 969630-1                    |
| 24 x ST Style Multimode; With 12 adapters              | 1-969616-1               | 969628-1                    |

### 1U MT-RJ patch panel, international version

#### FEATURES

- MT-RJ panel, 1U, 19"
- Holds up to 24 MT-RJ Jacks or up to 24 MT-RJ pigtails
- Drawer style, slide and tilt
- Incl. management rings
- Splice tray not included

**Color:** black (RAL 9005)



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| 24 positions for MT-RJ jacks accepts: MT-RJ panel jack or MT-RJ pigtails with 6 cable entries, incl. 2 metric glands | 1206704-4   |

# Fiber Optic Cabling

## Patch Panels

### Fiber Optic 1U Plastic Fiber Patch Panel

#### FEATURES

- 1U sliding panel for ease of access and standard deployment into 19 inch racks
- Internal cable management protects splices and pigtails and maintains bend radius
- A PC-ABS construction means that the tray is both lightweight whilst retaining mechanical strength
- UL94V -0 flammability rating, allows usage within a building



#### ORDERING INFORMATION

| Description               | Color | Adaptor        | Fiber type | Part Number   |
|---------------------------|-------|----------------|------------|---------------|
| Fiber patch panel 12 port | grey  | 6 x SC Duplex  | multimode  | 7033 1 080-12 |
| Fiber patch panel 24 port | grey  | 12 x SC Duplex | multimode  | 7033 1 080-24 |
| Fiber Patch Panel 12 Port | black | 6 x SC Duplex  | multimode  | 7033 1 180-12 |
| Fiber Patch Panel 24 Port | black | 12 x SC duplex | multimode  | 7033 1 180-24 |
| Fiber Patch Panel 12 Port | grey  | 12 x ST        | multimode  | 7033 1 082-12 |
| Fiber Patch Panel 24 Port | grey  | 24 x ST        | multimode  | 7033 1 082-24 |
| Fiber Patch Panel 12 Port | black | 12 x ST        | multimode  | 7033 1 182-12 |
| Fiber Patch Panel 24 Port | black | 24 x ST        | multimode  | 7033 1 182-24 |
| Fiber patch panel 24 port | grey  | 12x LC Duplex  | multimode  | 7033 1 103-12 |
| Fiber patch panel 48 port | grey  | 24 x LC Duplex | multimode  | 7033 1 103-24 |
| Fiber patch panel 12 port | grey  | 6 x SC Duplex  | singlemode | 7033 1 101-12 |
| Fiber patch panel 24 port | grey  | 12 x SC Duplex | singlemode | 7033 1 101-24 |
| Fiber patch panel 24 port | grey  | 12 x LC Duplex | singlemode | 7033 1 084-12 |
| Fiber patch panel 48 port | grey  | 24 x LC Duplex | singlemode | 7033 1 084-24 |

# Fiber Optic Cabling

## Accessories for Patch Panels

### Accessories for Patch Panels, 1U Modular Fiber Optic Panel Flushmount Style

#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Cable management kit with glands;<br>Packaging: 1; For 1U - Modular Fiber<br>Optic Panel - Flushmount style     | 1671273-1   |
| Cable termination kit with flex tube;<br>Packaging: 1; For 1U - Modular Fiber<br>Optic Panel - Flushmount style | 1671274-1   |



### Accessories for Patch Panels, German Version

#### ORDERING INFORMATION

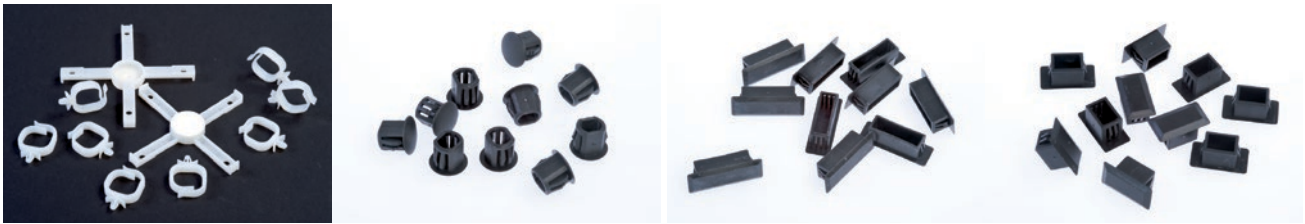
| Description   | Part Number |
|---|-------------|
| 45° cable entry plate for metric glands<br>(german style panels only); Packing: 1 | 1418770-1   |



# Fiber Optic Cabling

## Patch Panels

### Accessories for all Patch Panels



### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Dust cover for SC Duplex Cut-Out; Packaging: 100             | 1206121-2   |
| Dust cover for ST-Style Cut-Out; Packaging: 100              | 1206134-1   |
| PG 9 Gland (3.5-8 mm); Packaging: 50                         | 1206144-1   |
| PG 16 Gland (9-14 mm); Packaging: 50                         | 1206145-1   |
| Cable management ring kit (2 rings); Packaging: 1            | 1206146-1   |
| Dust cover for SC Simplex/LC Simplex Cut-Out; Packaging: 100 | 1418800-1   |
| M 20; Packaging: 50  | 1671054-1   |
| M 25; Packaging: 50  | 1671054-2   |



# Fiber Optic Cabling

## Quick-Fit Modules

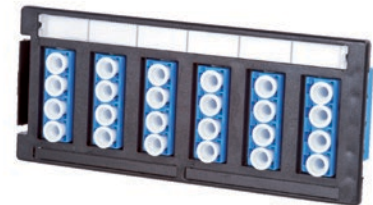
### Quick-Fit Fiber Modules

#### FEATURES

- Universal Modules with Quick-Fit footprint
- Fit in all TE CONNECTIVITY Patch Panels with Quick-Fit footprint
- Not interchangeable with push pin fixation

**Color:** black (RAL 9005)

Note: MT-RJ panel jacks NOT include



#### ORDERING INFORMATION

| Description  | Color | Part Number |
|--|-------|-------------|
| 6 x LC duplex; Fiber Type: OM2; Ferrule: Ceramic                 | Black | 1671196-2   |
| 6 x LC duplex; Fiber Type: OM3 XG 10 Gb/s; Ferrule: Ceramic      | Aqua  | 1671196-3   |
| 6 x LC duplex; Fiber Type: OS2; Ferrule: Ceramic                 | Blue  | 1671196-1   |
| 6 x LC/APC duplex; Fiber Type: OS2; Ferrule: Ceramic             | Green | 1671196-4   |
| 6 x LC quad; Fiber Type: OM2; Ferrule: Composite                 | Beige | 1671202-2   |
| 6 x LC quad; Fiber Type: OM3 XG 10 Gb/s; Ferrule: Ceramic        | Aqua  | 1671202-3   |
| 6 x LC quad; Fiber Type: OS2; Ferrule: Ceramic                   | Blue  | 1671202-1   |
| 6 x LC/APC quad; Fiber Type: OS2; Ferrule: Ceramic               | Green | 1671202-4   |
| 6 x MT-RJ*; Fiber Type: OM2; Ferrule: Composite                  | Black | 1671197-2   |
| 6 x MT-RJ*; Fiber Type: OM3 XG 10 Gb/s; Ferrule: Ceramic         | Aqua  | 1671197-3   |
| 6 x MT-RJ*; Fiber Type: OS2; Ferrule: Ceramic                    | Blue  | 1671197-1   |
| 6 x SC duplex; Fiber Type: OM2; Ferrule: Ceramic                 | Beige | 1671201-2   |
| 6 x SC duplex; Fiber Type: OM3 XG 10 Gb/s; Ferrule: Ceramic      | Aqua  | 1671201-3   |
| 6 x SC duplex; Fiber Type: OS2; Ferrule: Ceramic                 | Blue  | 1671201-1   |
| 6x SC/APC duplex; Fiber Type: OS2; Ferrule: Ceramic              | Green | 1671201-4   |
| 6 x ST; Fiber Type: Multimode; metallic body; Ferrule: Composite |       | 1671195-2   |
| 6 x ST; Fiber Type: Singlemode; metallic body; Ferrule: Ceramic  |       | 1671195-1   |
| Blank module   |       | 1479698-1   |

### MPO/MPOptimate coupler Quick-Fit module

#### FEATURES

- Quick-Fit module with 6 x MPO coupler
- Port number labeling and additional label strip included
- MPO coupler always used with on one side MPO male and other side MPO female connector

**Color:** black (RAL 9005)

#### ORDERING INFORMATION

| Description             | Part Number |
|-------------------------|-------------|
| 6 x MPO coupler module  | 1671200-1   |
| 12 x MPO coupler module | 1711987-1   |



# Fiber Optic Cabling

## Wall Mount Enclosures

### Wall Mount Enclosure for 6 Modules, Unloaded, with Side Door

#### FEATURES

- Accepts 6 Snap-In-Modules (Snap-In Modules)
- Optional lock available (559501-2)
- Optional grommets available
- Splice tray holder available
- Designed for intrabuilding or campus backbone applications
- Reversible cable strain relief bracket
- Recessed, easy-to-use door latches
- Dimensions (for exact dimensions consult customer drawing):  
16.5" (40 cm) H x 14" (35.5 cm) D x 5" (13 cm) W

**Color:** black (RAL 9005)



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| With grommets, cable glands and splice tray holder | 1278755-4   |
| Splice tray holder kit                             | 1374526-1   |
| Grommets   | 559496-2    |
| Lock   | 559501-2    |

### Wall Mount Enclosure 2F/4F (Plastic)

#### FEATURES

- Pre-installed adapter
- Size: 125 x 150 x 65 mm (W x H x D)
- IP 53 rated

#### ORDERING INFORMATION

| Description                                | Part Number |
|--|-------------|
| Wall Mount Enclosure 2F, 1 x SC Duplex, MM | 1671116-1   |
| Wall Mount Enclosure 2F, 1 x SC Duplex, SM | 1671116-2   |
| Wall mount enclosure 4F, 1 x LC quad, MM   | 1671116-3   |
| Wall mount enclosure 4F, 1 x LC quad, SM   | 1671116-4   |



# Fiber Optic Cabling

## Wall Mount Enclosures

### Wall Mount Enclosure 6F/12F (Plastic)

#### FEATURES

- Pre-installed adapters
- Incl. management ring
- Size: 225 x 280 x 85 mm (W x H x D)
- IP 53 rated

#### ORDERING INFORMATION

| Description                                | Part Number |
|--|-------------|
| Wall Mount Enclosure 6F, 1 x SC Duplex, MM | 1671117-1   |
| Wall Mount Enclosure 6F, 1 x SC Duplex, SM | 1671117-2   |
| Wall Mount Enclosure 12F, 3 x LC quad, MM  | 1671117-3   |
| Wall Mount Enclosure 12F, 3 x LC quad, SM  | 1671117-4   |



# Fiber Optic Cabling

## Snap-In Modules

### MPO/MPOptimate Snap-In module

#### FEATURES

- Fits in all TE CONNECTIVITY patch panels for Snap-In modules

**Color:** black (RAL 9005)



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| MPO coupler 6 x 12 fibers (multimode + singlemode); Packaging: 1 | 1374598-1   |

### LC Snap-In-Modules

#### FEATURES

- Fits in all TE CONNECTIVITY patch panels for Snap-In modules

#### ORDERING INFORMATION

| Description                                     | Part Number |
|---|-------------|
| LC Duplex, 12 fibers (Singlemode), Packaging: 1 | 1374463-1   |
| LC Duplex, 12 fibers (Multimode), Packaging: 1  | 1374463-2   |



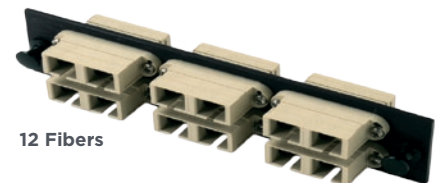
### SC Snap-In-Modules

#### FEATURES

- Fits in all TE CONNECTIVITY Patch Panels for Snap-In-Modules

#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Duplex SC, 6 fibers; Packaging: 1; Fiber type: Multimode   | 559558-1    |
| Duplex SC, 6 fibers; Packaging: 1; Fiber type: Singlemode  | 559558-2    |
| Duplex SC, 12 fibers; Packaging: 1; Fiber type: Multimode  | 559596-1    |
| Duplex SC, 12 fibers; Packaging: 1; Fiber type: Singlemode | 559596-2    |



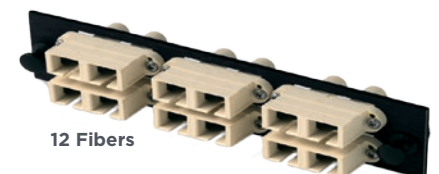
### SC to ST-Style Snap-In-Modules

#### FEATURES

- Fits in all TE CONNECTIVITY Patch Panels for Snap-In-Modules

#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Duplex SC to ST-Style, 12 fibers (Multimode), Packaging: 1 | 1278368-1   |
| Duplex SC to ST-Style, 6 fibers (Multimode), Packaging: 1  | 559601-1    |



# Fiber Optic Cabling

## Snap-In Modules

### ST-Style Snap-In-Modules

#### ORDERING INFORMATION

| Description                                    | Part Number |
|--|-------------|
| ST-Style, 12 fibers (Multimode); Packaging: 1  | 1278567-1   |
| ST-Style, 12 fibers (Singlemode); Packaging: 1 | 1278567-2   |
| ST-Style, 6 fibers (Singlemode); Packaging: 1  | 559515-2    |
| ST-Style, 6 fibers (Multimode); Packaging: 1   | 559557-1    |



### MT-RJ Snap-In-Modules

#### FEATURES

- Holds up to six MT-RJ Jacks or MT-RJ Jack pigtails
- Individual ports icon-able

#### ORDERING INFORMATION

| Description                                       | Part Number |
|---|-------------|
| Snap-In-Module for 6 MT-RJ Jacks or Jack Pigtails | 1278328-3   |



### Snap-In-Modules for Micro-Cassettes

#### FEATURES

- Holds up to two Micro-Cassettes (see page 3)

#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Snap-In-Modules, for up to 2 Micro-Cassettes (box of 6 modules + 6 blanking plates)   | 2153245-1   |
| Snap-In-Modules, for up to 2 Micro-Cassettes (box of 48 modules + 48 blanking plates) | 2153245-2   |



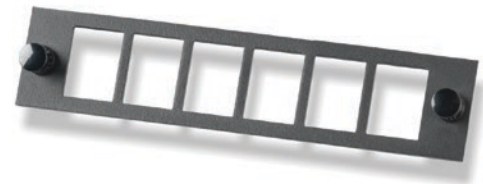
### Snap-In-Modules for SL Jacks

#### FEATURES

- Holds up to six jacks/couplers with SL footprint

#### ORDERING INFORMATION

| Description            | Part Number |
|------------------------|-------------|
| 6 port SL, black       | 1479506-1   |
| 6 port SL, not painted | 1671168-1   |



### Snap-In blank modules

#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Blank module for panel ≥2 U and wall mount box; Packaging: 1 | 559523-1    |
| Blank module, Packaging: 1                                   | 1671146-1   |



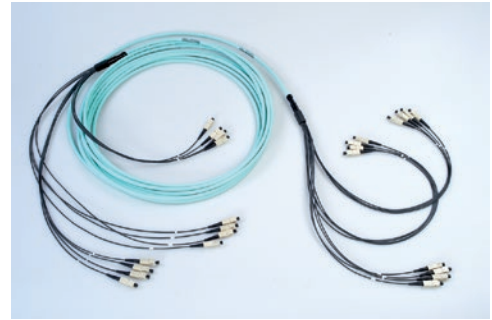
# Fiber Optic Cabling

## Pre-assembled LC & SC Trunks

### Multi fiber pre-assembled trunk cables

#### FEATURES:

- Factory pre-assembled 6 or 12 fiber trunks
- Simplex connectors at each end (LC/LC, SC/SC or LC/SC)
- LSZH cable loose tube indoor/outdoor cable
- Staggered tails provide easy cable management
- Tail lengths: 4x40+4x50+4x60 (6x50 for 6 fiber cables)
- Other cable constructions/configurations available on request
- The trunks are equipped with midi fan-out and 2mm round tails protected with transparent protection sleeve
- All cords with protocol, for constant and reliable quality
- Packaging: ≤50 m in box, >50 m on reel
- Re-usable pulling socks can be ordered separately (Part Number 2055567-1, see page 21)



#### ORDERING INFORMATION

|                          |       | Fiber type | Part Number     | Part Number       |
|--------------------------|-------|------------|-----------------|-------------------|
|                          |       |            | 2-99 m table A* | 100-500m table B* |
| <b>12 fiber assembly</b> | SC/SC | OM3        | Y-2055665-X     | Y-2055666-X       |
|                          | SC/SC | OM4        | Y-2055613-X     | Y-2055614-X       |
|                          | SC/SC | SM         | Y-2055687-X     | Y-2055688-X       |
|                          | LC/LC | OM3        | Y-2055725-X     | Y-2055726-X       |
|                          | LC/LC | OM4        | Y-2055583-X     | Y-2055584-X       |
|                          | LC/LC | SM         | Y-2055727-X     | Y-2055728-X       |
|                          | LC/SC | OM3        | Y-2055667-X     | Y-2055668-X       |
|                          | LC/SC | SM         | Y-2255669-X     | Y-2055670-X       |
| <b>6 fiber assembly</b>  | LC/LC | OM3        | Y-2160142-X     | Y-2160143-X       |
|                          | LC/LC | OM4        | Y-2160144-X     | Y-2160145-X       |
|                          | LC/LC | SM         | Y-2055740-X     | Y-2055741-X       |

\* For length tables A and B please refer to page 2 in the MPO/MPOptimate Chapter.

# Fiber Optic Cabling

## Patch Cords and Pigtails/Technical Data

### Technical Data for Patch Cords & Pigtails

- All assemblies are machine polished providing highest quality.
- Multimode OM3, OM4 and singlemode OS2 assemblies have an ensured performance by Optimized-Physical-Contact (OPC).
- All assemblies are factory tested and come with a test protocol.
- Attenuation and Return Loss values specified against reference connectors.



For all OM4 assemblies



For all OM3, OM4 & OS2 assemblies

#### PATCH CORDS

| Fiber Cable           |                    | Connector Ferrule Material |            |               |
|-----------------------|--------------------|----------------------------|------------|---------------|
| Cable sheath material | LSZH               |                            | LC, SC, ST | ceramic       |
| LC                    | mini twinzip 1.8mm |                            | MT-RJ, MPO | thermoplastic |
| SC, ST                | twinzip 2.5mm      |                            |            |               |
| LC duplex uniboot     | dualan round 2mm   |                            |            |               |
| MT-RJ                 | mini twinzip 1.8mm |                            |            |               |

| MULTIMODE                | FIBER TYPE | MAX. ATTENUATION [dB]* | MIN. RETURN LOSS [dB]* | TEMP RANGE    |
|--------------------------|------------|------------------------|------------------------|---------------|
| LC/PC & SC/PC & ST/PC    | OM1, OM2   | 0.3                    | 20                     | -10°C / +60°C |
| LC/PC & SC/PC            | OM3        | 0.3                    | 25                     | -10°C / +60°C |
| LC/PC & SC/PC (LOW LOSS) | OM3, OM4   | 0.15                   | 35                     | -10°C / +60°C |
| MT-RJ                    | OM1, OM2   | 0.5                    | 20                     | -10°C / +60°C |
| MT-RJ                    | OM3        | 0.5                    | 25                     | -10°C / +60°C |
| MPO                      | OM1, OM2   | 0.75                   | 20                     | -10°C / +60°C |
| MPO                      | OM3        | 0.5                    | 25                     | -10°C / +60°C |
| MPOptimate               | OM3, OM4   | 0.35                   | 28                     | -10°C / +60°C |

#### SINGLEMODE

|                       |     |      |    |               |
|-----------------------|-----|------|----|---------------|
| LC/PC & SC/PC & ST/PC | OS2 | 0.3  | 45 | -10°C / +60°C |
| LC/APC & SC/APC       | OS2 | 0.3  | 65 | -10°C / +60°C |
| MT-RJ                 | OS2 | 0.75 | 35 | -10°C / +60°C |
| MPO, MPO/APC          | OS2 | 0.6  | 35 | -10°C / +60°C |

\* Attenuation and return loss values against reference connector

#### PIGTAILS

| Fiber Cable                 | Connector Ferrule Material |            |               |
|-----------------------------|----------------------------|------------|---------------|
| Tight buffer or semi-tight  |                            | LC, SC, ST | ceramic       |
| (specified per part number) |                            | MT-RJ      | thermoplastic |

| MULTIMODE                | FIBER TYPE | MAX. ATTENUATION [dB]* | MIN. RETURN LOSS [dB]* | TEMP RANGE    |
|--------------------------|------------|------------------------|------------------------|---------------|
| LC/PC & SC/PC & ST/PC    | OM1, OM2   | 0.3                    | 20                     | -10°C / +60°C |
| LC/PC & SC/PC            | OM3        | 0.3                    | 25                     | -10°C / +60°C |
| LC/PC & SC/PC (LOW LOSS) | OM3, OM4   | 0.15                   | 35                     | -10°C / +60°C |
| MT-RJ                    | OM1, OM2   | 0.5                    | 20                     | -10°C / +60°C |
| MT-RJ                    | OM3        | 0.5                    | 25                     | -10°C / +60°C |

#### SINGLEMODE

|                       |     |      |    |               |
|-----------------------|-----|------|----|---------------|
| LC/PC & SC/PC & ST/PC | OS2 | 0.3  | 45 | -10°C / +60°C |
| LC/APC & SC/APC       | OS2 | 0.3  | 65 | -10°C / +60°C |
| MT-RJ                 | OS2 | 0.75 | 35 | -10°C / +60°C |

\* Attenuation and return loss values against reference connector



# Fiber Optic Cabling

## Patch Cords and Pigtails

### LC Duplex Uniboot - LC Duplex Uniboot

#### FEATURES

- All assemblies are machine polished providing the highest quality
- Multimode OM3, OM4 and singlemode assemblies have an ensured performance by Optimized-Physical-Contact (OPC)
- All assemblies are factory tested and come with a test protocol



#### ORDERING INFORMATION

| Description | Part Number |
|-------------|-------------|
| OM2         | Y-2160404-X |
| OM3         | Y-2160349-X |
| OM4         | Y-2160588-X |

| Y- -X | Length |
|-------|--------|
| 0- -1 | 1 m    |
| 0- -2 | 2 m    |
| 0- -3 | 3 m    |
| 0- -5 | 5 m    |
| 1- -0 | 10 m   |

### LC Duplex / LC Duplex Patch Cords

#### FEATURES

- All assemblies are machine polished providing highest quality.
- Multimode OM3, OM4 and singlemode OS2 assemblies have an ensured performance by Optimized-Physical-Contact (OPC).
- All assemblies are factory tested and come with a test protocol.



#### ORDERING INFORMATION

| Description    | Part Number |
|----------------|-------------|
| OS2            | Y-6536501-X |
| OS2/APC        | Y-2160008-X |
| OM2            | Y-6536502-X |
| OM1            | Y-6536503-X |
| OM3 XG 10 Gb/s | Y-6536969-X |
| OM4            | Y-2160046-X |

| Y- -X | Length |
|-------|--------|
| 0- -1 | 1 m    |
| 0- -2 | 2 m    |
| 0- -3 | 3 m    |
| 0- -5 | 5 m    |
| 1- -0 | 10 m   |



# Fiber Optic Cabling

## Patch Cords and Pigtails

### LC Duplex / SC Duplex Patch Cords

#### FEATURES

- All assemblies are machine polished providing highest quality.
- Multimode OM3, OM4 and singlemode OS2 assemblies have an ensured performance by Optimized-Physical-Contact (OPC).
- All assemblies are factory tested and come with a test protocol.



#### ORDERING INFORMATION

| Description    | Part Number | Y- -X | Length |
|----------------|-------------|-------|--------|
| OS2            | Y-6536508-X | 0- -1 | 1 m    |
| OM2            | Y-6536509-X | 0- -2 | 2 m    |
| OM1            | Y-6536510-X | 0- -3 | 3 m    |
| OM3 XG 10 Gb/s | Y-6536967-X | 0- -5 | 5 m    |
| OM4            | Y-2160048-X | 1- -0 | 10 m   |

### LC Duplex / ST-Style Patch Cords

#### FEATURES

- All assemblies are machine polished providing highest quality.
- Multimode OM3 and singlemode OS2 assemblies have an ensured performance by Optimized-Physical-Contact (OPC).
- All assemblies are factory tested and come with a test protocol.



#### ORDERING INFORMATION

| Description    | Part Number | Y- -X | Length |
|----------------|-------------|-------|--------|
| OS2            | Y-6695657-X | 0- -1 | 1 m    |
| OM2            | Y-1568757-X | 0- -2 | 2 m    |
| OM1            | Y-6695121-X | 0- -3 | 3 m    |
| OM3 XG 10 Gb/s | Y-6695697-X | 0- -5 | 5 m    |
|                |             | 1- -0 | 10 m   |

# Fiber Optic Cabling

## Patch Cords and Pigtails

### SC Duplex / SC Duplex Patch Cords

#### FEATURES

- All assemblies are machine polished providing highest quality.
- Multimode OM3, OM4 and singlemode OS2 assemblies have an ensured performance by Optimized-Physical-Contact (OPC).
- All assemblies are factory tested and come with a test protocol.



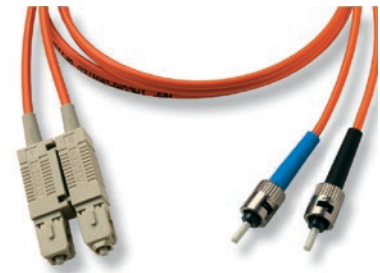
#### ORDERING INFORMATION

| Description    | Part Number | Y- -X | Length |
|----------------|-------------|-------|--------|
| OS2            | Y-6348260-X | 0- -1 | 1 m    |
| OS2/APC        | Y-6536767-X | 0- -2 | 2 m    |
| OM2            | Y-5349565-X | 0- -3 | 3 m    |
| OM1            | Y-5349578-X | 0- -5 | 5 m    |
| OM3 XG 10 Gb/s | Y-6536464-X | 1- -0 | 10 m   |
| OM4            | Y-2160047-X |       |        |

### SC Duplex / ST-Style Duplex Patch Cords

#### FEATURES

- All assemblies are machine polished providing highest quality.
- All assemblies are factory tested and come with a test protocol.



#### ORDERING INFORMATION

| Description | Part Number | Y- -X | Length |
|-------------|-------------|-------|--------|
| OM2         | Y-5349567-X | 0- -1 | 1 m    |
| OM1         | Y-5349580-X | 0- -2 | 2 m    |
|             |             | 0- -3 | 3 m    |
|             |             | 0- -5 | 5 m    |
|             |             | 1- -0 | 10 m   |

### ST-Style Duplex / ST-Style Duplex Patch Cords

#### FEATURES

- All assemblies are machine polished providing highest quality.
- Singlemode OS2 assemblies have an ensured performance by Optimized-Physical-Contact (OPC).
- All assemblies are factory tested and come with a test protocol.



#### ORDERING INFORMATION

| Description | Part Number | Y- -X | Length |
|-------------|-------------|-------|--------|
| OS2         | Y-6206158-X | 0- -1 | 1 m    |
| OM2         | Y-5349561-X | 0- -2 | 2 m    |
| OM1         | Y-5349574-X | 0- -3 | 3 m    |
|             |             | 0- -5 | 5 m    |
|             |             | 1- -0 | 10 m   |

# Fiber Optic Cabling

## Patch Cords and Pigtails

### MT-RJ/MT-RJ Patch Cords

#### FEATURES

- All assemblies are machine polished providing highest quality.
- Multimode OM3 and singlemode OS2 assemblies have an ensured performance by Optimized-Physical-Contact (OPC).
- All assemblies are factory tested and come with a test protocol.



#### ORDERING INFORMATION

| Description    | Part Number | Y- -X | Length |
|----------------|-------------|-------|--------|
| OS2            | Y-6206621-X | 0- -1 | 1 m    |
| OM2            | Y-6206617-X | 0- -2 | 2 m    |
| OM1            | Y-6206613-X | 0- -5 | 5 m    |
| OM3 XG 10 Gb/s | Y-6536462-X | 1- -0 | 10 m   |

### MT-RJ/LC Duplex Patch Cords

#### FEATURES

- All assemblies are machine polished providing highest quality.
- Multimode OM3 and singlemode OS2 assemblies have an ensured performance by Optimized-Physical-Contact (OPC).
- All assemblies are factory tested and come with a test protocol.



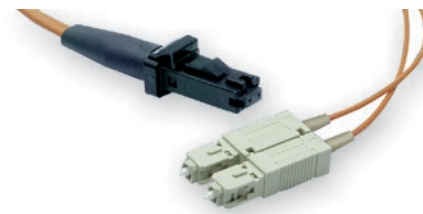
#### ORDERING INFORMATION

| Description    | Part Number | Y- -X | Length |
|----------------|-------------|-------|--------|
| OS2            | Y-6536511-X | 0- -1 | 1 m    |
| OM2            | Y-6536512-X | 0- -2 | 2 m    |
| OM1            | Y-6536513-X | 0- -3 | 3 m    |
| OM3 XG 10 Gb/s | Y-6536968-X | 0- -5 | 5 m    |
|                |             | 1- -0 | 10 m   |

### MT-RJ/SC Duplex Patch Cords

#### FEATURES

- All assemblies are machine polished providing highest quality.
- Multimode OM3 and singlemode OS2 assemblies have an ensured performance by Optimized-Physical-Contact (OPC).
- All assemblies are factory tested and come with a test protocol.



#### ORDERING INFORMATION

| Description    | Part Number | Y- -X | Length |
|----------------|-------------|-------|--------|
| OS2            | Y-6206623-X | 0- -1 | 1 m    |
| OM2            | Y-6206619-X | 0- -2 | 2 m    |
| OM1            | Y-6206615-X | 0- -3 | 3 m    |
| OM3 XG 10 Gb/s | Y-6536463-X | 0- -5 | 5 m    |
|                |             | 1- -0 | 10 m   |

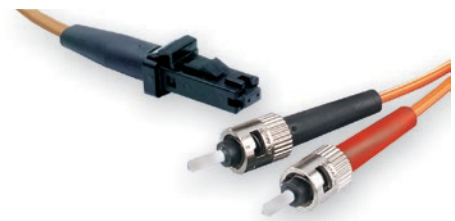
# Fiber Optic Cabling

## Patch Cords and Pigtails

### MT-RJ/ST-Style Duplex Patch Cords

#### FEATURES

- All assemblies are machine polished providing highest quality.
- Multimode OM3 and singlemode OS2 assemblies have an ensured performance by Optimized-Physical-Contact (OPC).
- All assemblies are factory tested and come with a test protocol.



| Y- -X | Length |
|-------|--------|
| 0- -1 | 1 m    |
| 0- -2 | 2 m    |
| 0- -3 | 3 m    |
| 0- -5 | 5 m    |
| 1- -0 | 10 m   |

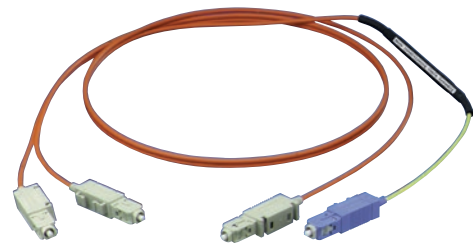
#### ORDERING INFORMATION

| Description | Part Number |
|-------------|-------------|
| OM2         | Y-6206620-X |
| OM1         | Y-6206616-X |

### Mode Conditioning Patch Cords

#### FEATURES

- Used for the implementation of Gigabit and 10 Gigabit Ethernet laser based transmissions over multimode fiber (MMF)
- For 50  $\mu\text{m}$  and 62,5  $\mu\text{m}$  fibers
- LSZH sheath
- Standard length 3 m



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| LC Duplex (SM) to LC Duplex, OM2; Length: 3 m       | 6536803-3   |
| LC Duplex (SM) to SC Duplex, OM2; Length: 3 m       | 6536810-3   |
| LC Duplex (SM) to SC Duplex, OM1; Length: 3 m       | 6536811-3   |
| LC Duplex (SM) to ST-Style Duplex, OM1; Length: 3 m | 6695313-3   |
| SC Duplex to SC Duplex; OM2; Length: 3 m            | 6206820-3   |
| SC Duplex to SC Duplex; OM2; Length: 3 m            | 6206821-3   |
| SC Duplex (SM) to ST-Style Duplex; OM2; Length: 3 m | 6348269-3   |
| SC Duplex to ST-Style Duplex; OM1; Length: 3 m      | 6348271-3   |
| SC Duplex (SM) to MT-RJ; OM2; Length: 3 m           | 6536769-3   |
| SC Duplex (SM) to MT-RJ; OM1; Length: 3 m           | 6536770-3   |
| MT-RJ (SM) to SC Duplex; OM2; Length: 3 m           | 6536447-3   |
| MT-RJ (SM) to SC Duplex; OM; Length: 3 m            | 6536446-3   |
| MT-RJ (SM) to ST-Style Duplex; OM2; Length: 3 m     | 6536445-3   |
| MT-RJ (SM) to ST-Style Duplex; OM1; Length: 3 m     | 6536444-3   |

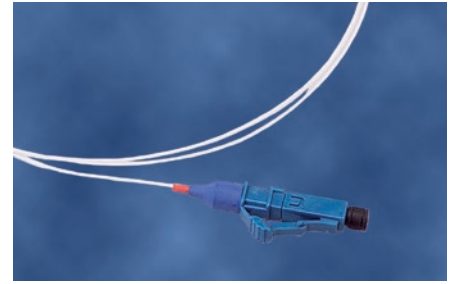
# Fiber Optic Cabling

## Patch Cords and Pigtails

### LC Pigtails

#### FEATURES

- All assemblies are machine polished providing highest quality.
- Multimode OM3, OM4 and singlemode OS2 assemblies have an ensured performance by Optimized-Physical-Contact (OPC).
- All assemblies are factory tested and come with a test protocol.



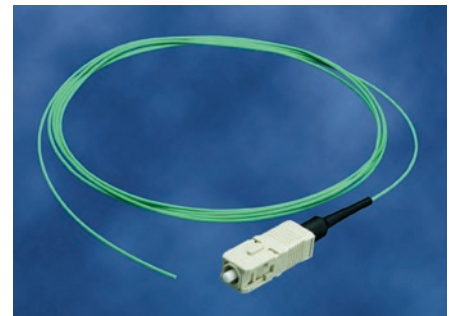
#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| LC tuned; OS2; Strip: semi-tight; Length: 2 m      | 6536880-2   |
| LC tuned; OS2; Strip: tight; Length: 2 m           | 6695512-2   |
| LC/APC; OS2; Strip: semi-tight; Length: 2 m        | 2055425-2   |
| LC; OM1; Strip: semi-tight; Length: 2 m            | 6536974-2   |
| LC; OM1; Strip: tight; Length: 2 m                 | 6695510-2   |
| LC; OM2; Strip: semi-tight; Length: 2 m            | 6536975-2   |
| LC; OM2; Strip: tight; Length: 2 m                 | 6695509-2   |
| LC; OM3 XG 10 Gb/s; Strip: semi-tight; Length: 2 m | 6536966-2   |
| LC; OM3 XG 10 Gb/s; Strip: tight; Length: 2 m      | 6695511-2   |
| LC; OM4; Strip: semi-tight buffer; Length: 2 m     | 2160042-2   |
| LC; OM4; Strip: tight buffer; Length: 2 m          | 2160040-2   |

### SC Pigtails

#### FEATURES

- All assemblies are machine polished providing highest quality.
- Multimode OM3, OM4 and singlemode OS2 assemblies have an ensured performance by Optimized-Physical-Contact (OPC).
- All assemblies are factory tested and come with a test protocol.



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| SC/PC tuned; OS2; Strip: semi-tight; Length: 2 m                           | 5233582-2   |
| SC/PC tuned; OS2; Strip: tight; Length: 2 m                                | 6695508-2   |
| SC/APC; OS2; Strip: semi-tight; Length: 2 m                                | 5233103-2   |
| SC; OM1; Strip: semi-tight; Length: 2 m                                    | 5349584-4   |
| SC; OM1; Strip: tight buffer; Length: 2 m                                  | 6695506-2   |
| SC; OM2; Strip: semi-tight; Length: 2 m                                    | 5349568-4   |
| SC; OM2; Strip: tight buffer; Length: 2 m                                  | 6695505-2   |
| SC OM3 XG 10 Gb/s (Strip length ca. 0.8 m); Strip: semi-tight; Length: 2 m | 6536555-2   |
| SC OM3 XG 10 Gb/s; Strip: tight; Length: 2 m                               | 6695507-2   |
| SC; OM4; Strip: semi-tight buffer; Length: 2 m                             | 2160043-2   |
| SC; OM4; Strip: tight buffer; Length: 2 m                                  | 2160041-2   |

# Fiber Optic Cabling

## Patch Cords and Pigtails

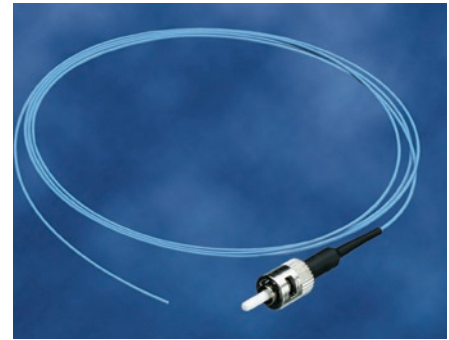
### ST-Style Pigtails

#### FEATURES

- All assemblies are machine polished providing highest quality.
- All assemblies are factory tested and come with a test protocol.

#### ORDERING INFORMATION

| Description                | Part Number |
|----------------------------|-------------|
| ST-Style; OM2; Length: 2 m | 5349569-4   |
| ST-Style; OM1; Length: 2 m | 5349582-4   |



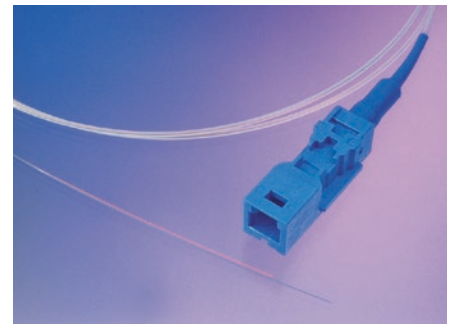
### MT-RJ Pigtails

#### FEATURES

- Fits in all TE CONNECTIVITY MT-RJ Patch Panels
- Multimode OM3 and singlemode OS2 assemblies have an ensured performance by Optimized-Physical-Contact (OPC).
- Colored housing optional available

#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| MT-RJ SL Series Housing; Color: almond                        | 1374416-1   |
| MT-RJ SL Series Housing; Color: black                         | 1374416-2   |
| MT-RJ SL Series Housing; Color: white                         | 1374416-3   |
| MT-RJ SL Series Housing; Color: grey                          | 1374416-4   |
| MT-RJ SL Series Housing; Color: electrical ivory              | 1-1374416-1 |
| MT-RJ Jack Pigtail; OM1; Color: black; Length: 3 m;           | 6348941-1   |
| MT-RJ Jack Pigtail; OM2; Color: black; Length: 3 m;           | 6348942-1   |
| MT-RJ Jack Pigtail; OS2; Color: blue; Length: 3 m;            | 6391366-1   |
| MT-RJ Jack Pigtail; OM3 10Gbit XG; Color: black; Length: 3 m; | 6536556-1   |



# Fiber Optic Cabling

## Outlets

### Universal Fiber Optic wall outlets

#### FEATURES

- Unpopulated wall outlets for all Fiber-to-the-Desk applications (Inserts to be ordered separately)

**Color:** pure white (RAL 9010)



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| "45x45" Outlet 45 x 45 mm for SC-Duplex, ST-Style, SL adaptor or MT-RJ jack; Color: white (RAL 9010) | 183931-1    |
| DIN Outlet for SC Duplex or SC/ST-Style Duplex Adaptor; Frame: No; Color: almond (RAL 1013)          | 966936-2    |
| DIN Outlet for SC Duplex or SC/ST-Style Duplex Adaptor; Frame: No; Color: white (RAL 9010)           | 2-966936-2  |

### DIN Dual Angled Outlet

#### FEATURES

- Dual outlet to accept either up to 2 SL Series Jacks
- To be used with single or multiple gang DIN faceplates
- Supplied complete with back plate, adapter plate and shutters
- Individual ports are icon-able



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| DIN Dual Angled Outlet, for 2x Slim Line Jack; Color: almond (RAL 1013)     | 966936-5    |
| DIN Dual Angled Outlet, for 2x Slim Line Jack; Color: pure white (RAL 9010) | 2-966936-5  |

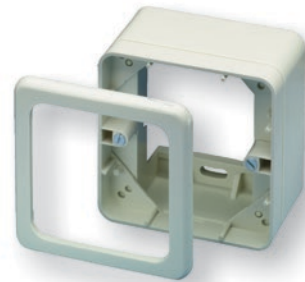
# Fiber Optic Cabling

## Outlets

### DIN Surface Mount Outlet Back Box

#### FEATURES

- Back Box for Surface Mounting
- Available individually or as a complete kit with a single faceplate
- Not suitable for use with multiple faceplates



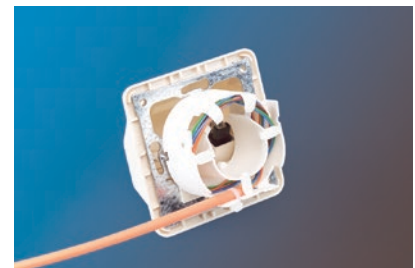
#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Surface Mount Outlet Back Box; almond (RAL 1013); Back box only            | 966740-1    |
| Surface Mount Outlet Back Box; almond (RAL 1013); Back box + faceplate     | 966740-2    |
| Surface Mount Outlet Back Box; pure white (RAL 9010); Back box only        | 2-966740-1  |
| Surface Mount Outlet Back Box; pure white (RAL 9010); Back box + faceplate | 2-966740-2  |
| Adaptor DIN RAIL to DIN Surface Mount Outlet Back Box                      | 1671164-1   |

### Cable Management for 2 Port Wall Outlets

#### FEATURES

- Cable management with strain relief for the cable
- For all DIN style wall outlets



#### ORDERING INFORMATION

| Description      | Part Number |
|------------------|-------------|
| Cable management | 1534332-1   |



# Fiber Optic Cabling

## Outlets

### Fiber Optic Wall Outlet

#### FEATURES

- Designed for modern small-form-factor deployments and into legacy Gigabit Ethernet deployments.
- MT-RJ offers both singlemode and multimode solutions, whilst LC, SC, and ST are available as a multimode solution.
- Integrated cable management allows diverse routing for excess spool management and maintenance of bend radius whilst the Fiber optic cable is housed in the solution.
- The footprint suits standard (BS4660) electrical wall back boxes for deployment in trunking and walls.
- Designed to allow the insertion of heat shrink splice protection holders giving the flexibility to choose between direct termination and splicing.
- Anchor points allow the Fiber optic cable to be tied-off at the point of entry into the base which prevents the cable from slipping back into a wall recess during installation.
- Per port labelling provides easy identification of each subscriber network link.



#### ORDERING INFORMATION

| Description          | Part Number |
|----------------------|-------------|
| 1 x SC duplex outlet | 7033106902  |
| 2 x SC duplex outlet | 7033106904  |
| 2 x ST outlet        | 7033107102  |
| 4 x ST outlet        | 7033107104  |
| 1 x LC quad outlet   | 1350376     |
| 2 x LC quad outlet   | 1350377     |

# Fiber Optic Cabling

## Adaptors

### LC Duplex/LC Duplex Adaptors

#### FEATURES

- Suitable for any LC Duplex connector
- Fits in any SC Simplex cut-out
- Available for singlemode and multimode



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Housing: Plastic; Sleeve: Ceramic; Color: blue; Mounting: Clip/Screw; Application: SM            | 6457567-4   |
| Housing: Plastic; Sleeve: Ceramic; Color: almond; Mounting: Clip/Screw; Application MM           | 6457567-5   |
| Housing: Plastic; Sleeve: Ceramic; Color: green; Mounting: Clip/Screw; Application: SM           | 2125019-2   |
| Housing: Plastic; Sleeve: Metal; Color: almond; Mounting: Clip/Screw; Application: MM            | 6457567-8   |
| Housing: Plastic; Sleeve: Ceramic; Color: aqua; Mounting: Clip/Screw; Application: OM3 XG 10Gb/s | 1-6457567-6 |

### LC Quad/LC Quad Adaptors

#### FEATURES

- Suitable for any LC Duplex connector
- Fits in any SC Duplex cut-out
- Available for singlemode and multimode



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Housing: Plastic; Sleeve: Ceramic; Color: blue; Mounting: Clip/Screw; Application: SM            | 1695790-4   |
| Housing: Plastic; Sleeve: Metal; Color: beige; Mounting: Clip/Screw; Application: MM             | 1695790-5   |
| Housing: Plastic; Sleeve: Ceramic; Color: aqua; Mounting: Clip/Screw; Application: OM3 XG 10Gb/s | 1-1695790-0 |
| Housing: Plastic; Sleeve: Ceramic; Color: green; Mounting: Clip/Screw; Application : SM          | 1695790-6   |

### SC Duplex/SC Duplex Adaptors

#### FEATURES

- Suitable for any SC duplex connector
- Available for singlemode and multimode



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Housing: Plastic; Sleeve: Ceramic; Color: blue; Mounting: Clip/Screw; Application: SM      | 1-5502776-1 |
| Housing: Plastic; Sleeve: Ceramic; Color: almond; Mounting: Clip/Screw; Application: MM    | 1-5502776-2 |
| Housing: Plastic; Sleeve: Ceramic; aqua; Mounting: Clip/Screw; Application: OM3 XG 10 Gb/s | 2-5502776-6 |
| Housing: Plastic; Sleeve: Metal; Color: almond; Mounting: Clip/Screw; Application: MM      | 5504640-1   |
| Housing: Plastic; Sleeve: Ceramic; Color: green; Mounting: Clip/Screw; Application SM      | 2-5502776-3 |
| Housing: Plastic; Sleeve: Ceramic; Color: nickel; Mounting: Clip/Screw; Application: SM/MM | 6278049-3   |

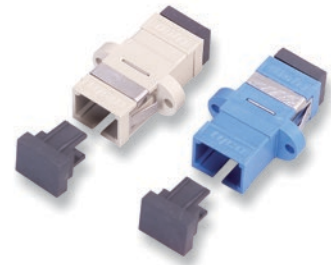
# Fiber Optic Cabling

## Adaptors

### SC Simplex/SC Simplex Adaptors

#### FEATURES

- Suitable for any SC Simplex connector
- Available for singlemode and multimode



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Housing: Plastic; Sleeve: Ceramic; Color: blue; Mounting: Clip/Screw; Application: SM            | 1-5502632-1 |
| Housing: Plastic; Sleeve: Ceramic; Color: almond; Mounting: Clip/Screw; Application: MM          | 1-5502632-2 |
| Housing: Plastic; Sleeve: Ceramic; Color: aqua; Mounting: Clip/Screw; Application: OM3 XG 10Gb/s | 2-5502632-4 |
| Housing: Plastic; Sleeve: Metal; Color: almond; Mounting: Clip/Screw; Application: MM            | 5504614-1   |

### SC-APC/SC-APC Adaptors

#### FEATURES

- Suitable for any SC-APC connector



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Simplex: Housing: Plastic; Sleeve: Ceramic; Color: green; Mounting: Clip/Screw; Application: SM | 023826-000  |
| Duplex: Housing: Plastic; Sleeve: Ceramic; Color: green; Mounting: Clip/Screw; Application: SM  | 2-5502776-3 |

### ST-Style Simplex/ST-Style Simplex 2.5 mm Bayonet Adaptors

#### FEATURES

- Suitable for any ST-style simplex connector
- Available for singlemode and multimode



#### ORDERING INFORMATION

| Description                                      | Part Number |
|--|-------------|
| Housing: Metal; Sleeve: Polymer; Application: MM | 501381-1    |
| Housing: Metal; Sleeve: Ceramic; Application: SM | 502750-1    |
| Housing: Metal; Sleeve: Metal; Application: MM   | 504021-1    |
| Housing: Metal; Sleeve: Metal; Application: MM   | 504021-2    |

# Fiber Optic Cabling

## Adaptors

### SC Duplex/ST-Style Duplex Adaptors

#### FEATURES

- Available for singlemode and multimode
- Suitable for any ST-Style and SC connector



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Housing: Plastic; Sleeve: Ceramic; Color: blue; Mounting: Clip/Screw; Application: SM; Packaging: 10            | 5503137-5   |
| Housing: Plastic; Sleeve: Ceramic; Color: almond; Mounting: Clip/Screw; Application: MM Standard; Packaging: 10 | 5503137-6   |
| Housing: Plastic; Sleeve: Metal; Color: almond; Mounting: Clip/Screw; Application: MM Standard; Packaging: 10   | 5504663-4   |

### SC Simplex/ST-Style Simplex Adaptors

#### FEATURES

- Suitable for any ST and SC Simplex connector
- Available for singlemode and multimode



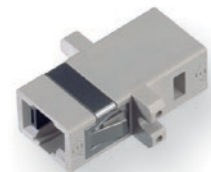
#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Housing: Plastic; Sleeve: Metal; Color: almond; Mounting: Clip/Screw; Application: MM;  | 5502780-3   |
| Housing: Plastic; Sleeve: Ceramic; Color: blue; Mounting: Clip/Screw; Application: SM;  | 5502780-5   |
| Housing: Plastic; Sleeve: Ceramic; Color: almond; Mounting: Clip/Screw; Application: MM | 5502780-6   |

### MT-RJ/MT-RJ Adaptors

#### FEATURES

- Suitable for MT-RJ connectors  
(1 connector with guide pins, the other without pins)
- Simplex coupler fits in SC simplex cut-out
- Duplex coupler fits in SC duplex cut out
- Available for singlemode and multimode



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Simplex; Housing: Plastic; Color: almond; Mounting: Clip/Screw; Application: MM/SM | 1278017-1   |
| Duplex; Housing: Plastic; Color: almond; Mounting: Clip/Screw; Application: MM     | 6374906-1   |
| Duplex; Housing: Plastic; Color: blue; Mounting: Clip/Screw; Application: SM       | 6374906-5   |

# Fiber Optic Cabling

## LightCrimp and LightCrimp Plus

### AMP LightCrimp Plus Connectors

#### FEATURES

- Easiest and quickest fiber termination (less than one minute)
- Factory polished for consistent high quality and finish (no paper required)
- No epoxy, curing or UV-light required
- Available for ST-Style, SC and LC
- Complies with the relevant TIA/EIA, IEC, CECC und EN/IS standards
- Durability: 500 cycles



#### TECHNICAL DATA

- Ferrule: Ceramic
  - Attenuation typical (dB): 0.3 (MM/SM)
  - Temperature range: -10°C to +60°C
- LightCrimp Plus ST-Style; English; Part Number: 408-4457

#### INSTRUCTION SHEET LIGHTCRIMP PLUS

LightCrimp Plus LC; English; Part Number: 408-8925  
 LightCrimp Plus SC; English; Part Number: 408-4471

### LightCrimp Plus LC Connectors

#### FEATURES

- LC connector (simplex or duplex)
- Ceramic ferrule
- With pre-installed and pre-polished fiber



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Simplex LC OS2 (1.6 to 2.0 mm Jacketed Cable); Housing: Blue; Boot: Blue; Packaging: 10                         | 1918626-1   |
| Simplex LC OM1 (1.6 to 2.0 mm Jacketed Cable); Housing: Beige; Boot: Beige; Packaging: 10                       | 1918627-1   |
| Simplex LC OM2 (1.6 to 2.0 mm Jacketed Cable); Housing: Beige; Boot: Black; Packaging: 10                       | 1918627-2   |
| Simplex LC OM3 XG/OM4 XG <sub>A</sub> (1.6 to 2.0 mm Jacketed Cable); Housing: Beige; Boot: Aqua; Packaging: 10 | 1918627-3   |
| Simplex LC OS2 APC (250 μm + 900 μm only); Housing: green; Boot: blue; Packaging: 10                            | 2064181-1   |
| Simplex LC OS2 (250 μm + 900 μm only); Housing: blue; Boot: blue; Packaging: 10                                 | 6754482-1   |
| Simplex LC OM1 (250 μm + 900 μm only); Housing: Beige; Boot: Beige; Packaging: 10                               | 6754483-1   |
| Simplex LC OM2 (250 μm + 900 μm only); Housing: Beige; Boot: black; Packaging: 10                               | 6754483-2   |
| Simplex LC OM3 XG/OM4 XG <sub>A</sub> (250 μm + 900 μm only); Housing: Beige; Boot: Aqua; Packaging: 10         | 6754483-4   |
| Clip to connect two LC simplex to one LC duplex connector; Black (6pc per bag)                                  | 1754371-2   |
| Clip to connect two LC simplex to one LC duplex connector; Blue   | 1754371-4   |
| Clip to connect two LC simplex to one LC duplex connector; Beige  | 1754371-5   |

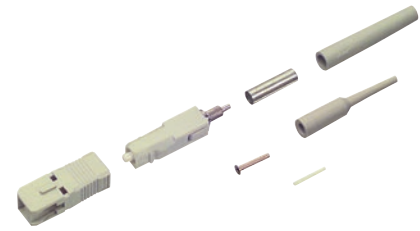
# Fiber Optic Cabling

## LightCrimp and LightCrimp Plus

### LightCrimp Plus SC Connectors

#### FEATURES

- SC connector (simplex)
- Ceramic ferrule
- With pre-installed and pre-polished fiber



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Simplex SC OS2 APC; (250 μm + 900 μm only); Body: green; Boot: Blue; Packaging: 10   | 2064184-1   |
| Simplex SC OM1 (250 μm + 900 μm + 3 mm jacketed cable); Body: Beige; Boot: Beige; Packaging: 10;                               | 5492643-1   |
| Simplex SC OM2 (250 μm + 900 μm + 3 mm jacketed cable); Body: Beige; Boot: black; Packaging: 10;                               | 6278079-2   |
| Simplex SC OM3 XG/OM4 XG <sub>A</sub> 10 Gb/s (250 μm + 900 μm + 3 mm jacketed cable); Body: Beige; Boot: Aqua; Packaging: 10; | 6588291-2   |
| Simplex SC OS2 (250 μm + 900 μm + 3 mm jacketed cable); Body: blue; Boot: blue; Packaging: 10                                  | 6693276-1   |
| Clips to connect two SC simplex connectors to one SC duplex connector (2 clips needed); black                                  | 6348522-1   |
| Clips to connect two SC simplex connectors to one SC duplex connector (2 clips needed); green                                  | 6348522-2   |
| Clips to connect two SC simplex connectors to one SC duplex connector (2 clips needed); blue                                   | 6348522-3   |
| Clips to connect two SC simplex connectors to one SC duplex connector (2 clips needed); beige                                  | 6348522-4   |



### LightCrimp Plus ST-Style Connectors

#### FEATURES

- ST-Style Connectors
- Ceramic ferrule
- With pre-installed and pre-polished fiber



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Simplex ST OS2 (250 μm + 900 μm + 3 mm jacketed cable); Boot: black; Packaging: 10                       | 1828953-3   |
| Simplex ST OM1 (250 μm + 900 μm + 3 mm jacketed cable); Boot: Beige; Packaging: 10                       | 5492642-2   |
| Simplex ST OM2 (250 μm + 900 μm + 3 mm jacketed cable); Boot: black; Packaging: 10                       | 6278082-1   |
| Simplex ST OM3 XG/OM4 XG <sub>A</sub> (250 μm + 900 μm + 3 mm jacketed cable); Boot: Aqua; Packaging: 10 | 6278082-2   |



# Fiber Optic Cabling

## LightCrimp and LightCrimp Plus

### LightCrimp Splice

#### FEATURES

- Terminates 250 micron coated and 900 micron tight buffered and 2.0 mm jacketed fibers
- Use with MM and SM 125 micron fibers
- Use with termination toolkit Part Number 1553212-1
- Typical attenuation 0.1 dB
- Typical return loss >20 dB MM and >35 dB SM
- Instruction sheets LightCrimp Splice: Part Number 408-10193



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| LightCrimp Splice for 250 micron coated and 900 micron tight buffered fibers | 1985374-1   |
| LightCrimp Splice for 2.0 mm jacketed fiber cable                            | 1985805-1   |

### AMP LightCrimp Connector

#### FEATURES

- Cleave, crimp, polish and connect
- High performance pre-radiussed ferrules
- Reduced polishing time
- Durability: 500 cycles
- Each connector comes in a kit containing accessories needed to terminate to 900  $\mu\text{m}$  buffer, 250  $\mu\text{m}$  coating and 3 mm cable
- Compliant with TIA/EIA, IEC, CECC and EN standards
- No epoxy - just polish



#### TECHNICAL DATA

- Ferrule: Ceramic or stainless steel
- Attenuation (dB): 0.3
- Temperature range: -40 °C (ceramic) or -25 °C (stainless steel) to +65 °C

#### INSTRUCTION SHEET LIGHTCRIMP

LightCrimp ST-Style; English: Part Number: 408-9860

LightCrimp SC; English; Part Number: 408-4066

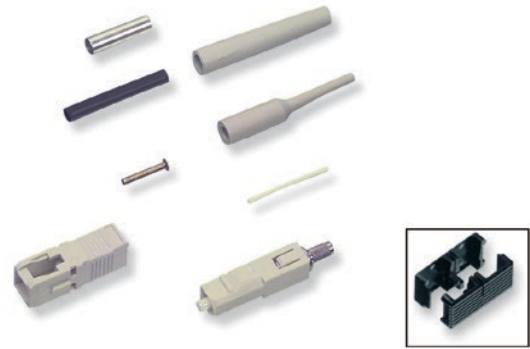
# Fiber Optic Cabling

## LightCrimp and LightCrimp Plus

### LightCrimp SC Connector

#### FEATURES

- SC connector (simplex or duplex)
- Ceramic ferrule
- With strain relief and crimp eyelet



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Simplex SC MM; Ferrule: Ceramic; Packaging: 10   | 5503692-1   |
| Duplex SC MM; Ferrule: Ceramic; Packaging: 10  | 5503693-1   |
| Clip to connect two SC simplex connectors to one SC duplex connector (2 clips needed); black | 6348522-1   |
| Clip to connect two SC simplex connectors to one SC duplex connector (2 clips needed); green | 6348522-2   |
| Clip to connect two SC simplex connectors to one SC duplex connector (2 clips needed); blue  | 6348522-3   |
| Clip to connect two SC simplex connectors to one SC duplex connector (2 clips needed); beige | 6348522-4   |

### LightCrimp ST-Style Connector

#### FEATURES

- ST-Style connector
- Multimode and singlemode
- With strain relief and crimp eyelet



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Singlemode ST-Style; Ferrule: Ceramic; Packaging: 1          | 5504000-1   |
| Multimode ST-Style; Ferrule: Stainless steel; Packaging: 100 | 5504034-1   |
| Multimode ST-Style; Ferrule: Ceramic; Packaging: 100         | 5504600-1   |



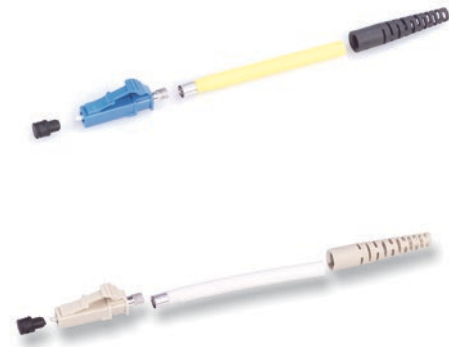
# Fiber Optic Cabling

## Epoxy Connectors

### LC Connector Kits

#### FEATURES

- Multimode and singlemode (Telcordia GR-326 tested and TIA/EIA 568-B.3 qualified)
- Universal connector body:
  - common body for simplex or duplex
  - common body for jumper or buffer applications
- Field installable duplex clip
- Improved side load strength
- Attenuation typ. < 0.2 dB
- Temperature range -40 °C to +85 °C
- Durability: 0.2 dB change after 500 cycles (MM)



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Type: Simplex; Ferrule: Ceramic; Boot: 1.6-2.0 mm; Fiber type: SM                | 1918266-1   |
| Type: Simplex; Ferrule: Ceramic; Boot: 1.6-2.0 mm; Fiber type: MM                | 1918267-1   |
| Type: Duplex; Ferrule: Ceramic; Boot: 1.6-2.0 mm; Fiber type: SM                 | 1918372-1   |
| Type: Duplex; Ferrule: Ceramic; Boot: 1.6-2.0 mm; Fiber type: MM                 | 1918373-1   |
| Type: Simplex; Ferrule: Ceramic; Boot: 3.0 mm; Fiber type: SM                    | 1918374-1   |
| Type: Simplex; Ferrule: Ceramic; Boot: 3.0 mm; Fiber type: MM                    | 1918375-1   |
| Type: Duplex; Ferrule: Ceramic; Boot: 3.0 mm; Fiber type: SM                     | 1918376-1   |
| Type: Duplex; Ferrule: Ceramic; Boot: 3.0 mm; Fiber type: MM                     | 1918377-1   |
| Type: Simplex; Ferrule: Ceramic; Boot: 0.9 mm; Fiber type: SM                    | 1918384-1   |
| Type: Simplex; Ferrule: Ceramic; Boot: 0.9 mm; Fiber type: MM                    | 1918385-1   |
| Type: Duplex; Ferrule: Ceramic; Boot: 0.9 mm; Fiber type: MM                     | 1918388-1   |
| Clip to connect two LC simplex to one LC duplex connector, Black                 | 1754371-1   |
| Clip to connect two LC simplex to one LC duplex connector, Black (6pc per bag)   | 1754371-2   |
| Clip to connect two LC simplex to one LC duplex connector, Black (72 pc per bag) | 1754371-3   |
| Clip to connect two LC simplex to one LC duplex connector, Blue                  | 1754371-4   |

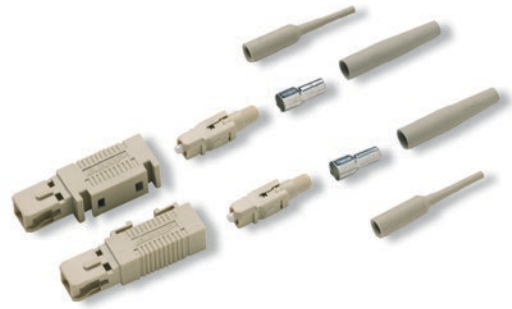
# Fiber Optic Cabling

## Epoxy Connectors

### SC Connector Kits

#### FEATURES

- High performance pre-radiussed ferrules
- SC compatible JIS C-5973
- Multimode or singlemode
- Durability: 0.2 dB change after 1000 cycles (MM)
- Temperature range: -40°C to +85°C
- Attenuation typ. < 0.2 dB
- Available in simplex and duplex



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Bend limiting buffer boots (100 pcs); 0.9 mm; beige                       | 6457493-9   |
| Bend limiting buffer boots (100 pcs); 0.9 mm; black                       | 6457493-3   |
| Bend limiting cable boots (100 pcs); short; 3 mm; beige                   | 5503971-1   |
| Bend limiting cable boots (100 pcs); short; 3 mm; black                   | 1-5503971-0 |
| Bend limiting cable boots (100 pcs); short; 3 mm; red                     | 1-5503971-1 |
| Duplex; Ferrule: Ceramic; Boot: 3 mm; Crimp eyelet: yes; Fiber type: MM   | 5504657-1   |
| Duplex; Ferrule: Ceramic; Boot: 3 mm; Crimp eyelet: yes; Fiber type: SM   | 5504655-1   |
| Simplex; Ferrule: Ceramic; Boot: 0.9 mm; Crimp eyelet: no; Fiber type: MM | 5504932-1   |
| Simplex; Ferrule: Ceramic; Boot: 0.9 mm; Crimp eyelet: no; Fiber type: SM | 5492123-1   |
| Simplex; Ferrule: Ceramic; Boot: 3 mm; Crimp eyelet: yes; Fiber type: MM  | 5503948-1   |
| Simplex; Ferrule: Ceramic; Boot: 3 mm; Crimp eyelet: yes; Fiber type: SM  | 5504646-1   |
| Clip to connect two SC simplex- to one SC duplex connector; black.        | 6348522-1   |
| Clip to connect two SC simplex- to one SC duplex connector; green.        | 6348522-2   |
| Clip to connect two SC simplex- to one SC duplex connector; blue.         | 6348522-3   |
| Clip to connect two SC simplex- to one SC duplex connector; beige.        | 6348522-4   |

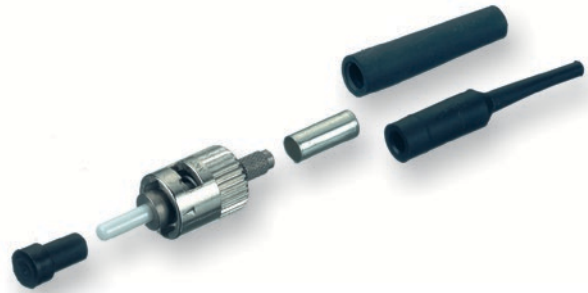
# Fiber Optic Cabling

## Epoxy Connectors

### ST-Style Connector Kits

#### FEATURES

- High performance pre-radiussed ferrules
- ST-Style compatible bayonet coupling
- Multimode or singlemode
- Durability: 0,2 dB change after 1000 cycles (MM)
- Temperature range: -20°C to +75°C
- Attenuation typ. < 0,3 dB
- Available in DieCast and overmolded (OVM) version



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Bend limiting buffer boots (100 pcs); 0.9 mm; black   | 5503628-2   |
| Bend limiting cable boots (100 pcs); short; 3 mm; black   | 501457-1    |
| Bend limiting cable boots (100 pcs); short; 3 mm; red   | 501457-3    |
| Ferrule: Ceramic; Connector body/bayonet: DieCast/Metal; 3 mm boot: no; 0.9 mm boot: yes; Crimp eyelet: yes; Fiber type: SM | 502613-2    |
| Ferrule: Ceramic; Connector body/bayonet: DieCast/Metal; 3 mm boot: yes; 0.9 mm boot: no; Crimp eyelet: yes; Fiber type: SM | 5502580-2   |
| Ferrule: Ceramic; Connector body/bayonet: OVM/Metal; 3 mm boot: no; 0.9 mm boot: no; Crimp eyelet: yes; Fiber type: MM      | 503676-1    |
| Ferrule: Ceramic; Connector body/bayonet: OVM/Metal; 3 mm boot: yes; 0.9 mm boot: no; Crimp eyelet: yes; Fiber type: MM     | 503677-1    |

# Fiber Optic Cabling

## Splicing Products

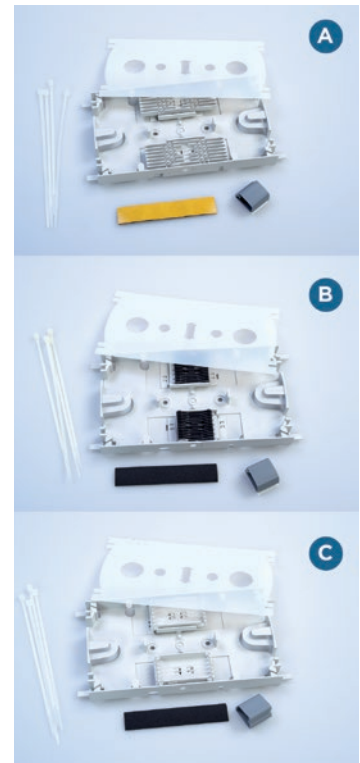
### Splice Trays

#### FEATURES

- Splice trays delivered with cover
- Splice protectors not included in tray

#### ORDERING INFORMATION

| Description                                       | Part Number |
|---|-------------|
| For 24 SMOUV (62 mm) splice protectors, picture A | 1671281-1   |
| For 24 ANT splice protectors, picture B           | 1671281-2   |
| For 24 RECORDsplice splices, picture C            | 1671281-3   |
| ANT splice protector; Packaging: 150              | 182398-000  |
| SMOUV splice protector (62 mm); Packaging: 100    | 657054-000  |



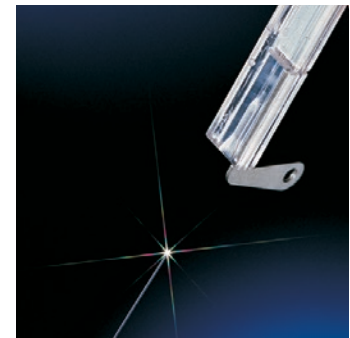
# Fiber Optic Cabling

## Splicing Products

### AMP CORELINK Mechanical Splice

#### Mechanical Quick Termination

The CORELINK splice is easy to use, high performance mechanical splice for 125  $\mu\text{m}$  singlemode and multimode fibers. Its unique clamping mechanism is activated with a simple key, no other tool is required. The splice is remateable - either fiber can be removed and replaced in the splice at any time.



#### FEATURES

- No fusion splice necessary
- Torsion resistant
- Bellcore TR-765 tested
- For multimode and singlemode
- For tight buffer, semi-tight and loose tube
- For 250  $\mu\text{m}$  coating and 900  $\mu\text{m}$  buffer
- Cleaning Tools
- Light Crimp Universal Cleave Tool
- Fiber Optic Cleave Tool for Field Installations

#### TECHNICAL DATA:

##### Singlemode

- Color: transparent
- Attenuation typical (dB):  $\leq 0.3$
- Return loss typical (dB): -35 dB (min)
- Application: SM
- Temperature range: -10°C to +60°C
- Dimensions: 51 x 7.6 x 3.3 mm

##### Multimode

- Color: transparent blue
- Attenuation typical (dB):  $\leq 0.3$
- Return loss typical (dB): -20 dB (min)
- Application: MM
- Temperature range: -10°C to +60°C
- Dimensions: 51 x 7.6 x 3.3 mm

### CORELINK Splices

#### FEATURES

- Mechanical splice
- Re-usable



#### ORDERING INFORMATION

| Description                                   | Part Number |
|---|-------------|
| 12 CORELINK Splices for single- and multimode | 503577-1    |
| 2 Replacement keys in key holder              | 503681-1    |

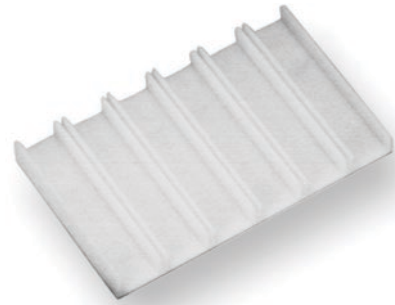
# Fiber Optic Cabling

## Splicing Products

### Splice Holder for CORELINK Splices

#### FEATURES

- 31.8 x 61.0 mm Elastomer holder for 6 or 12 CORELINK splices
- For mount in splice boxes or in distribution boxes



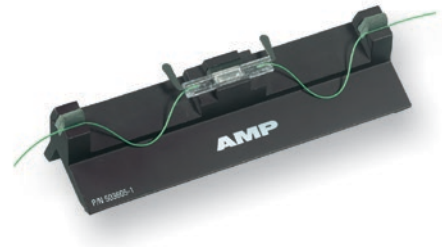
#### ORDERING INFORMATION

| Description                           | Part Number |
|---------------------------------------|-------------|
| Splice holder for 6 CORELINK splices  | 559066-1    |
| Splice holder for 12 CORELINK splices | 559087-1    |

### Workstation for CORELINK Splices

#### FEATURES

- For easy and safe installation of the CORELINK splices



#### ORDERING INFORMATION

| Description          | Part Number |
|----------------------|-------------|
| CORELINK Cleave tool | 1871696-1   |
| CORELINK Workstation | 503605-1    |

# Fiber Optic Cabling

## Fiber Optic Tools

### LightCrimp Plus Termination Tool Kits

#### FEATURES

- Termination Tool kit includes:
  - Pro-Crimper II Hand Tool and appropriate die set
  - Stripper tools
  - Kevlar scissor
  - Cable holder
  - Cleave tool



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| LightCrimp Plus ST-Style Connector Termination Tool Kit without microscope                         | 492697-1    |
| LightCrimp Plus ST-Style Connector Termination Tool Kit with microscope                            | 492697-2    |
| LightCrimp Plus ST-Style, SC, LC Connectors and MT-RJ Jack Termination Tool Kit without microscope | 1278118-4   |
| LightCrimp Plus ST-Style, SC, LC Connectors and MT-RJ Jack Termination Tool Kit with microscope    | 1278118-5   |
| LightCrimp Plus LC/SC and LightCrimp Splice Termination Tool Kit without microscope                | 1553212-1   |
| LightCrimp Plus LC + SC Connector Termination Tool Kit without microscope                          | 1754845-1   |
| LightCrimp Plus LC + SC Connector Termination Tool Kit with microscope                             | 1754845-2   |

### LightCrimp Termination Tool Kit

#### FEATURES

- Termination tool kit includes:
  - PRO-CRIMPER II Hand Tool and appropriate die set
  - Stripper tools
  - Kevlar scissor
  - Template strip
  - Cleave tool
  - Polishing bushings
  - Polishing films
  - Polishing plate
  - Microscope as listed
- Microscope separately available



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| LightCrimp SC and ST-Style; Type: Mini Tool Kit; Microscope: No Microscope        | 492543-1    |
| LightCrimp ST-Style; Type: Termination Kit; Microscope: No Microscope             | 503330-1    |
| LightCrimp SC and ST-Style; Type: Termination Kit; Microscope: No Microscope      | 503957-1    |
| LightCrimp SC and ST-Style; Type: Termination Kit; Microscope: Premium Microscope | 503957-2    |

# Fiber Optic Cabling

## Fiber Optic Tools

### MT-RJ Jack Termination Tool Kit

#### FEATURES

- Termination tool kit includes:
  - Soft case
  - Kevlar scissors
  - MT-RJ strip length template
  - Miller strip tool
  - Actuator key
  - Cable stripper
  - Alcohol wipes
  - Micro stripper



#### ORDERING INFORMATION

| Description                       | Part Number |
|-----------------------------------|-------------|
| MT-RJ Tool Kit without microscope | 1278346-1   |
| MT-RJ Tool Kit with microscope    | 1278346-2   |

### Pro-Installer Epoxy/Polish Type Connector Termination Tool Kit

#### FEATURES

- Includes all tools necessary to install the following connectors:
  - ST-Style, TE CONNECTIVITY SC, FSD, FC, D4, FSMA
  - (Epoxy sold separately)
- Tool kits include (except otherwise specified):
  - PRO-CRIMPER II Hand Tool and crimping dies
  - Polishing bushings
  - Polishing film
  - Cable and fiber strippers
  - Scissors
  - Scribe tool
  - Microscope with tripod and power source
  - Epoxy curing oven



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Tool kit with 240V curing oven and with microscope | 501258-8    |
| LC Upgrade Kit                                     | 1754462-1   |



# Fiber Optic Cabling

## Fiber Optic Tools

### Epoxy/Polish Type Connector Termination Tool Kit

#### FEATURES

- Tool kits include:
  - Carrying case
  - PRO-CRIMPER II Hand Tool and crimping dies
  - Polishing bushings
  - Polishing film
  - Cable and fiber strippers
  - Scissors
  - Scribe tool
- Kits contain polishing materials for approximately 60 connectors (consumables can be purchased separately)
- SC tool kit can also be used to install FC Connectors



#### ORDERING INFORMATION

| Description    | Part Number |
|----------------|-------------|
| LC Upgrade Kit | 1754603-1   |
| ST-Style       | 503746-1    |
| SC/FC          | 503746-7    |

### Universal No Epoxy Termination Tool Kit

#### FEATURES

- Includes all tools necessary for installing:
  - MT-RJ jacks and MT-RJ Secure jacks
  - LightCrimp Plus ST-Style, SC and LC connectors
  - LightCrimp ST-Style and SC connectors
- Termination Tool kit includes:
  - PRO-CRIMPER II Hand Tool and appropriate die set
  - Stripper tools
  - Kevlar scissor
  - Cable holder
  - Cleave tool
  - LightCrimp Plus Termination Video CD-Rom



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Universal no epoxy termination tool kit without microscope | 1278949-2   |
| Universal no epoxy termination tool kit with microscope    | 1278949-3   |

# Fiber Optic Cabling

## Fiber Optic Tools

### LightCrimp Universal Cleave Tool

#### FEATURES

- Used in both SC and ST-Style LightCrimp connector terminations
- Included in all LightCrimp tool kits



#### ORDERING INFORMATION

| Description                      | Part Number |
|----------------------------------|-------------|
| LightCrimp Universal Cleave Tool | 503705-1    |

### LightCrimp Plus Cable Holder

#### FEATURES

- Stripping template and cable holder for LightCrimp Plus terminations
- Included in the LightCrimp Plus tool kit



#### ORDERING INFORMATION

| Description                    | Part Number |
|--------------------------------|-------------|
| LightCrimp splice cable holder | 1985771-1   |
| LC and SC                      | 2064540-1   |
| ST-Style                       | 492703-1    |

### Fiber Optic Cleave Tool for Field Installations

#### FEATURES

- Applicable to LightCrimp Plus Connector, MT-RJ and CORELINK termination:
- Lifespan of blade is approximately 10000 cycles
- Cleaving length: 4, 6, 8, 10, 16 mm
- For 900  $\mu$ m and 250  $\mu$ m fiber



#### ORDERING INFORMATION

| Description             | Part Number |
|-------------------------|-------------|
| Fiber Optic Cleave Tool | 1871696-1   |

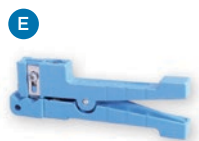
# Fiber Optic Cabling

## Fiber Optic Tools

### Separate Tools

#### FEATURES

- Stripping tools, Micro-Stripper and Kevlar scissor for easy and save fiber preparation



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Solid Steel Kevlar Scissor   | 501014-1    |
| Stripping tool for cable jackets, picture A  | 1278531-1   |
| Cable Jacket Clamp   | 1278625-1   |
| Kevlar shears  | 1278637-1   |
| Miller Stripping tool for buffer, fiber coating and 2-3 mm jackets, picture B      | 1754708-1   |
| 2 mm Cable Jacket Splitter, picture C  | 1553661-1   |
| Micro-Stripper for 900 µm buffer (mandatory for MT-RJ jack termination), picture D | 492109-2    |
| Jacket stripper, picture E   | 501198-1    |

### Pro Crimper II Hand Tool and Fiber Optic Die Sets

#### FEATURES

- Hand tool and die sets for fiber optic connectors



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Die Set: LC Epoxy; Cable Jacket Diameter: 1.6-2.0 & 2.4 & 3.0 mm   | 1588175-1   |
| Die Set: LightCrimp Plus and LightCrimp ST-Style; Cable Jacket Diameter: 2.0, 2.5 & 3.0 mm               | 492622-1    |
| Die Set: LightCrimp Plus and LightCrimp SC; Cable Jacket Diameter: 2.5 & 3.0 mm                          | 492783-1    |
| Die Set: LightCrimp Plus LC and SC and LightCrimp Splice; Cable Diameter: 2.0 mm                         | 1985766-1   |
| Die Set: SC; Cable Jacket Diameter: 2.0&2.4 / 2.5 & 3.0 mm   | 492025-1    |
| Die Set: SC; Cable Jacket Diameter: 3.0 mm   | 503910-1    |
| Die Set: ST-Style; Cable Jacket Diameter: 3.0 mm   | 58424-1     |
| Hand Tool and Die Set: LC Epoxy; Cable Jacket Diameter: 1.6 - 2.0 & 2.4 & 3.0 mm                         | 1588176-1   |
| Hand Tool and Die Set: LightCrimp Plus and LightCrimp SC; Cable Jacket Diameter: 2.5 & 3.0 mm            | 492782-1    |
| Hand Tool and Die Set: LightCrimp Plus and LightCrimp ST-Style; Cable Jacket Diameter: 2.0, 2.5 & 3.0 mm | 492623-1    |
| Hand Tool and Die Set: LightCrimp Plus LC and SC and LightCrimp Splice; Cable Jacket Diameter: 2.0 mm    | 2064603-1   |
| Hand Tool and Die Set: LightCrimp Plus LC; Cable Jacket Diameter: 1.6-2.0 mm                             | 1754137-1   |
| Hand Tool and Die Set: SC; Cable Jacket Diameter: 2.0&2.4/2.5&3.0 mm                                     | 492026-1    |
| Hand Tool and Die Set: SC; Cable Jacket Diameter: 3.0 mm   | 503911-1    |
| Hand Tool and Die Set: ST-Style; Cable Jacket Diameter: 3.0 mm   | 58433-4     |
| PRO-CRIMPER II Hand Tool only  | 2064431-1   |

# Fiber Optic Cabling

## Fiber Optic Tools

### Sapphire Tipped Scribe Tool and Accessories

#### FEATURES

- Long-lasting sapphire blade
- Pen-type casing
- For epoxy style connectors only



#### ORDERING INFORMATION

| Description                 | Part Number |
|-----------------------------|-------------|
| Sapphire tipped Scribe Tool | 504064-1    |
| Replacement Blades          | 504290-1    |

### Polishing Bushings, Curing Sleeves and Strip Card Kit

#### FEATURES

- Polishing bushings for all polishing processes
- Curing sleeves for safe oven application



Polishing Bushing 2.5 mm

#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Curing sleeve; Used with: LC 900 µm; Notes: 12 pcs   | 1457630-1   |
| Curing sleeve; Used with: LC jacketed cable; Notes: 12 pcs   | 1457630-2   |
| Strip Card Kit; Used with: LC Connectors; Notes: -   | 1588756-1   |
| Polishing bushing; Used with: Ceramic LC Connectors; Notes: -  | 1754074-1   |
| Strip Card Kit; Used with: ST-Style and SC Connectors  | 501818-1    |
| Alcohol Wipes 200 packet/box   | 501857-2    |
| Curing sleeve; Used with: Ceramic, stainless steel and Polymer composite ST-Style connectors; Notes: 12 pcs.           | 502259-1    |
| Polishing bushing; Used with: SC Connectors; Notes: black Polymer  | 502631-1    |
| Curing sleeve; Used with: SC Connectors; Notes: 1 pc.  | 502656-1    |
| Polishing bushing; Used with: Ceramic, stainless steel and Polymer composite ST-Style connectors; Notes: black Polymer | 503304-1    |
| Polishing bushing; Used with: Ceramic and stainless steel ST-Style connectors; Notes: Metal                            | 503337-1    |
| Polishing bushing; Used with: SC Connectors; Notes: Metal  | 503787-1    |



Polishing Bushing SC



SC Curing Sleeve

ST-Style Curing Sleeve  
2.5 mm bayonette

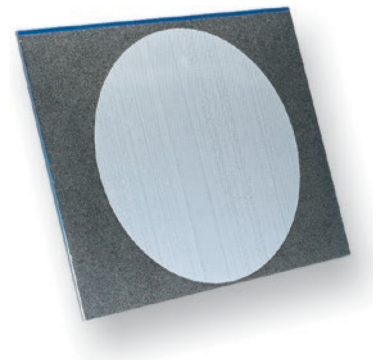
# Fiber Optic Cabling

## Fiber Optic Tools

### Polish Pads

#### FEATURES

- Acryl polishing plate
- Self-adhesive polishing pad



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Polishing plate 8.5x11 inch   | 501197-1    |
| Polishing pad for polymer ferrules 21 cm diameter, white, self-adhesive | 501523-1    |
| Polishing pad for ceramic ferrules 21 cm diameter, white, self-adhesive | 501858-1    |

### Epoxy Curing Oven

#### FEATURES

- Reduces time required to cure epoxy in fiber optic connectors
- Accepts all TE CONNECTIVITY Fiber Optic Connectors that require epoxy
- Comes equipped to cure up to four duplex connectors and 12 simplex connectors at once
- Optional blocks to allow up to 8 duplex and 24 simplex connectors available
- Variable temperature control (60°C to 125°C)
- Includes thermometer and cable support bracket



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Adapter block for 1.6, 2.0 and 2.4 mm SC and LC connectors   | 1457628-1   |
| Adapter block for 24 single connectors                       | 502129-1    |
| Curing oven (220 Volt) incl. adapter block for 16 connectors | 502134-2    |
| Adapter block for 8 duplex connectors                        | 502222-1    |

### EPO-TEK 353ND epoxy

#### FEATURES

- Pre-measured bi-packs for consistent results
- Ideal for bonding fibers and optical components
- Long pot life
- Heat-cured and room-temperature epoxy
- High service temperature
- Supplied in 4-gram packs



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| EPO-TEK 353ND; Cure time/Temp.: 10min @ 115°C; Pot life: +/- 30 min; Color after Curing: red; Viscosity (cps): 2000; Max. Temp.: 200°C; Glass transition-temp: 124°C | 504035-1    |

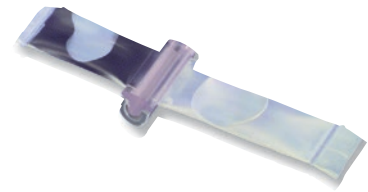
# Fiber Optic Cabling

## Fiber Optic Tools

### TRA-CON (R) and Hysol (R) Epoxy

#### FEATURES

- General purpose epoxy for SC and ST-Style epoxy polish connectors
- Long pot life
- Heat-cured and room-temperature epoxy
- High service temperature



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Application: For manufacturing and field use; Connectors: FDDI, ESCON, ST-Style, FSMA; Cure time and temperature: 24 hr@ 25°C, 2 hr @ 65°C; Pot life: 30 mins; Color: blue; Packaging: 25 x 2 g; Connectors pro package: 250 | 1918652-1   |
| Application: For manufacturing and field-use; Connectors: all; Cure time and temperature: 30 mins @ 100°C; Pot life: 30 mins; Color: blue; Packaging: 1 x 70.8 g + 1 x 22.6 g; Connectors pro package: 400                   | 502418-1    |

### Adhesive Applicator Syringe and Polishing Films

#### FEATURES

- 3 ccl capacity
- Ideal for epoxy



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Hand Polishing Film (Packet of 15); Connector Type: Epoxy-Polish LC; Grit Grade: 0.9 µm   | 1374484-1   |
| Polishing Consumables; Hand Polishing Film (Packet of 10); Connector Type: Epoxi-Polish SC, Epoxi-Polish Singlemode ST-Style, Epoxi-Polish Multimode ST-Style, LightCrimp SC and ST-Style; Grit Grade: 0.3 µm | 228433-5    |
| Polishing Consumables; Hand Polishing Film (Packet of 10); Connector Type: Epoxi-Polish Multimode ST-Style, LightCrimp SC and ST-Style; Grit Grade: 1 µm  | 228433-7    |
| Polishing Consumables; Hand Polishing Film (Packet of 10); Connector Type: Epoxi-Polish SC, Epoxi-Polish Singlemode ST-Style, Epoxi-Polish Multimode ST-Style, LightCrimp SC and ST-Style; Grit Grade: 5 µm   | 228433-8    |
| Polishing Consumables; Hand Polishing Film (Packet of 10); Connector Type: LightCrimp SC and ST-Style; Grit Grade: 15 µm  | 228433-9    |
| Adhesive applicator syringe   | 501473-3    |
| Mixing cup  | 502282-2    |
| Polishing Consumables; Hand Polishing Film (Packet of 5); Connector Type: Epoxi-Polish SC, Epoxi-Polish Singlemode ST-Style   | 502748-2    |

# Fiber Optic Cabling

## Fiber Cleaning and Inspection

### Optical Fiber Inspection and Cleaning Kits

#### FEATURES

- Densely woven micro-fiber cloth cleans fiber optic connector tips and reduces static charge
- Reel cleaners that work with FC, SC, ST and MT-RJ connectors, as well as PARA-OPTIX products
- Stick cleaners with perforated handles for customizing length and angle
- High resolution, 200x microscope to visual inspect connectors before mating



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Optical Fiber and Cleaning Kit A<br>1x Visual Fault Locator (VFL) with 1.25 mm Adapter<br>1x 200x Microscope with 2.5 mm Adapter<br>1x 1.25 mm (LC) Microscope Adapter<br>1x MT-RJ Microscope Adapter<br>1x MPOA Microscope Adapter<br>1x MPO Microscope Adapter<br>1x Termination Training, CD-ROM<br>5x 2.5 mm Stick Cleaners (10/Package)<br>5x 1.25 mm Stick Cleaners (10/Package)<br>1x One Slot Reel Cleaner<br>1x MT-RJ w/pins Reel Cleaner<br>1x SC in Bulkhead Cleaner (IBC)<br>1x LC IBC<br>1x MPO IBC<br>1x Premium Hardcase | 2064651-1   |
| Optical Fiber and Cleaning Kit B<br>1x Visual Fault Locator (VFL) with 1.25 mm Adapter<br>1x 200x Microscope with 2.5 mm Adapter<br>1x 1.25 mm (LC) Microscope Adapter<br>1x MT-RJ Microscope Adapter<br>1x Termination Training, CD-ROM<br>5x 2.5 mm Stick Cleaners (10/Package)<br>5x 1.25 mm Stick Cleaners (10/Package)<br>1x One Slot Reel Cleaner<br>1x MT-RJ w/pins Reel Cleaner<br>1x SC in Bulkhead Cleaner (IBC)<br>1x LC IBC<br>1x Premium Hardcase  | 2064651-2   |
| Optical Fiber and Cleaning Kit C<br>1x Visual Fault Locator (VFL) with 1.25 mm Adapter<br>1x 200x Microscope with 2.5 mm Adapter<br>1x 1.25 mm (LC) Microscope Adapter<br>1x Termination Training, CD-ROM<br>5x 2.5 mm Stick Cleaners (10/Package)<br>5x 1.25 mm Stick Cleaners (10/Package)<br>1x One Slot Reel Cleaner<br>1x SC in Bulkhead Cleaner (IBC)<br>1x LC IBC<br>1x Premium Hardcase   | 2064651-3   |



# Fiber Optic Cabling

## Fiber Cleaning and Inspection

### MPO/LC/SC/MT-RJ Cassette Cleaners

#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| MTP/MPO with pins; Packaging: 1                           | 1918802-1   |
| 1 Slot Reel Cleaner for MPO/LC/SC and MT-RJ; Packaging: 1 | 1918803-1   |
| MT-RJ with pins Reel Cleaner; Packaging: 1                | 1918804-1   |
| 2 Slot reel cleaner for LC and SC; Packaging: 1           | 1918805-1   |
| Cleaner Refill; Packaging: 6 rolls                        | 1918806-1   |



### MPO Coupler Cleaner

#### ORDERING INFORMATION

| Description           | Part Number |
|-----------------------|-------------|
| MPO IBC; Packaging: 1 | 1918809-1   |



### Card Cleaner

#### ORDERING INFORMATION

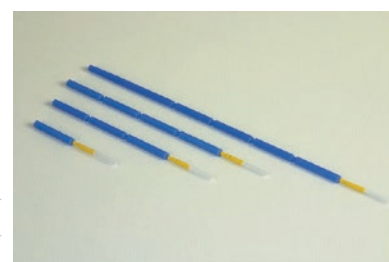
| Description                                | Part Number |
|--|-------------|
| Card Cleaner; Packaging: 1                 | 1918810-1   |
| Card Cleaner Refill; Packaging: 100 sheets | 1918811-1   |



### Cleaning Sticks for Single Fiber Couplers

#### ORDERING INFORMATION

| Description                               | Part Number |
|---|-------------|
| 2.5 mm stick cleaner; Packaging: 25 x 10  | 1918807-1   |
| 1.25 mm stick cleaner; Packaging: 25 x 10 | 1918808-1   |



### LC/SC bulkhead cleaner

#### ORDERING INFORMATION

| Description                         | Part Number |
|-------------------------------------|-------------|
| SC IBC (In Bulkhead Cleaner)        | 2064499-1   |
| LC IBC (In Bulkhead Cleaner)        | 2064500-1   |
| LC duplex IBC (In Bulkhead Cleaner) | 0-2111664-1 |





# Fiber Optic Cabling

## Fiber Cleaning and Inspection

### Inspection Microscope

#### FEATURES

- Optimal visual examination of terminated ends
  - 500 µm field of view
  - Dual illumination
  - Coaxial for inspecting polish quality
  - Oblique for general conditions
  - Field and laboratory examination for multimode and singlemode fibers
  - Portable
  - Integral infrared filters for safety
  - Do NOT use any microscope to view active fiber signals
  - Disposable, Type LR44 batteries
  - Long-life LED (appr. 100.000 hours of operation)
- 
- Each kit contains:
    - 10-power objective microscope with an impact resistant ergonomic rubber shell and high quality glass optics
    - 20-power eyepiece
    - Padded carrying case with an integrated belt loop and internal adapter storage pocket
    - Neck lanyard with safety breakaway feature
    - Universal 2.5 mm ferrule adapter (for SC, ST and FC)



#### ORDERING INFORMATION

| Description                             | Part Number |
|---|-------------|
| 1.25 mm universal (LC and MU)           | 1754765-1   |
| 2.50 mm universal (SC, ST-Style and FC) | 1754766-1   |
| Inspection Microscope Kit               | 1754767-1   |
| MT-RJ                                   | 1754768-1   |
| SC/APC                                  | 1828833-1   |
| MPO Microscope Adapter                  | 1828836-1   |
| MPOA Microscope Adapter                 | 1828837-1   |
| 1.25 mm universal LC duplex adapter     | 2123273-1   |
| 1.25 mm LC APC adapter                  | 1553785-1   |

# Fiber Optic Cabling

## Fiber Cleaning and Inspection

### Visual Fault Locator

#### FEATURES

- 650 µm (visible) Class 2 1.0 mW max. Diode Laser
- Continuous and flashing (2-3 Hz pulsed) modes
- Uses 1 “AA” style battery for >30 hours of continuous use
- Standard 2.5 mm adaptor for SC, ST, and FC connectors
- Optional 1.25 mm adaptor for LC and MU connectors



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Hand Held Visual Fault Locator incl. 2.5 mm adaptor        | 1828352-1   |
| Hand Held Visual Fault Locator incl. 2.5 + 1.25 mm adaptor | 1828352-2   |
| Adaptor for Hand Held VFL 1.25 mm                          | 1828353-1   |

### OTDR Launch Lead Kits for Optical Testing and Certification

#### FEATURES

- Each kit contains:
  - Launch and tail lead
  - Length 400 m (MM) and 500 m (SM)
  - Data sheet of end face geometry
  - Coupling bushings
  - Cleaning aides
  - Instruction manual



| Y- -X | Connector Type | Y- -X | Connector Type | Y- -X | Connector Type | Y- -X | Connector Type |
|-------|----------------|-------|----------------|-------|----------------|-------|----------------|
| 0- -1 | SC/PC to SC/PC | 0- -6 | ST/PC to SC/PC | 1- -1 | LC/PC to SC/PC | 1- -6 | FC/PC to SC/PC |
| 0- -2 | SC/PC to ST/PC | 0- -7 | ST/PC to ST/PC | 1- -2 | LC/PC to ST/PC | 1- -7 | FC/PC to ST/PC |
| 0- -3 | SC/PC to LC/PC | 0- -8 | ST/PC to LC/PC | 1- -3 | LC/PC to LC/PC | 1- -8 | FC/PC to LC/PC |
| 0- -4 | SC/PC to PC/PC | 0- -9 | ST/PC to PC/PC | 1- -4 | LC/PC to PC/PC | 1- -9 | FC/PC to PC/PC |
| 0- -5 | SC/PC to MT-RJ | 1- -0 | ST/PC to MT-RJ | 1- -5 | LC/PC to MT-RJ | 2- -0 | FC/PC to MT-RJ |

#### ORDERING INFORMATION

| Description                 | Part Number |
|-----------------------------|-------------|
| OM2-OM3 and OM4 Launch Lead | Y-6695240-X |
| OM1 Launch Lead             | Y-6695242-X |
| OS2 Launch Lead             | Y-6695244-X |

# Fiber Optic Cabling

## Fiber Cleaning and Inspection

---

### Power meter testlead Kits for Optical Testing and Certification

#### FEATURES:

- Simplex Test leads
- LSZH cable, Length 3 meter
- Data sheet of end face geometry packed per assembly
- MOQ: 6 per item

#### ORDERING INFORMATION



| Description  | Part Number |
|--|-------------|
| <b>50 micron test lead for OM2-OM3 and OM4 Attenuation test</b>  |             |
| SC/PC to SC/PC   | 2160547-3   |
| SC/PC to LC/PC   | 2160548-3   |
| LC/PC to LC/PC   | 2160549-3   |
| <b>9 micron test lead for SM OS1 and SM OS2 Attenuation test</b> |             |
| SC/PC to SC/PC   | 2160550-3   |
| SC/PC to LC/PC   | 2160551-3   |
| LC/PC to LC/PC   | 2160552-3   |



## 12. Modular Twisted Pair Cabling

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

|                          |     |
|--------------------------|-----|
| Cable .....              | 218 |
| Jacks.....               | 219 |
| Consolidation Point..... | 220 |
| Patch Cords.....         | 221 |

### Category 7

|            |     |
|------------|-----|
| Cable..... | 225 |
|------------|-----|

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

|                          |     |
|--------------------------|-----|
| Cable .....              | 226 |
| Jacks.....               | 227 |
| Consolidation Point..... | 229 |
| Patch Cords.....         | 230 |

### Category 6

|                          |     |
|--------------------------|-----|
| Cable .....              | 231 |
| Jacks.....               | 232 |
| Patch Panels.....        | 236 |
| Consolidation Point..... | 238 |
| Patch Cords.....         | 239 |

### Category 5e

|                          |     |
|--------------------------|-----|
| Cable .....              | 242 |
| Jacks.....               | 244 |
| Patch Panels.....        | 246 |
| Consolidation Point..... | 249 |
| Patch Cords.....         | 250 |

### Voice

|                     |     |
|---------------------|-----|
| Backbone Cable..... | 253 |
| Jacks .....         | 254 |
| Patch Panels.....   | 256 |
| LSA-PLUS.....       | 257 |
| Indoor Boxes.....   | 262 |

### Unloaded Hardware

|                          |     |
|--------------------------|-----|
| Patch Panels.....        | 265 |
| Consolidation Point..... | 268 |
| Mini Pods.....           | 269 |
| Outlets.....             | 270 |
| Surface Mount Boxes..... | 275 |

|                                 |     |
|---------------------------------|-----|
| <b>Twisted Pair Tools</b> ..... | 286 |
|---------------------------------|-----|

# Modular Twisted Pair

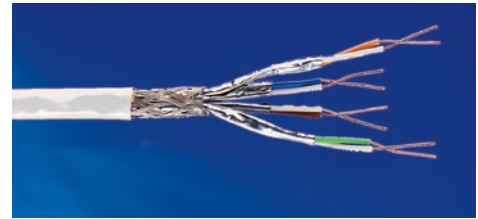
## Category 7<sub>A</sub> - Cable

### Category 7<sub>A</sub> S/FTP Cable AWG 22

#### FEATURES

- High performance S/FTP cable
- Enables broadband applications like CATV, multimedia etc.
- Qualified against IEC 61156-7 and tested up to 1500MHz
- Individually foiled pairs plus overall copper braid
- AWG 22 solid conductor
- Fire retardant LSZH sheath

**Color:** white



#### ORDERING INFORMATION

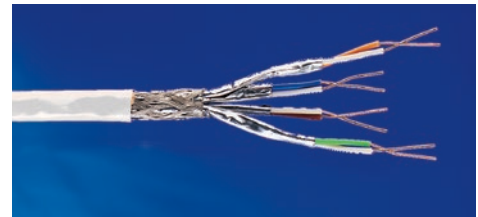
| Description   | Part Number |
|---|-------------|
| AWG 22; Type: Simplex; OD 8.1 mm; Packaging: 1000 m/Reel      | 1499101-1   |
| AWG 22; Type: Duplex; OD 8.1 x 16.5 mm; Packaging: 500 m/Reel | 1711003-1   |

### Category 7<sub>A</sub> S/FTP Cable AWG 23

#### FEATURES

- High performance S/FTP cable
- Qualified against IEC 61156-5 Category 7<sub>A</sub> and tested up to 1200MHz
- Individually foiled pairs plus overall copper braid
- AWG 23 solid conductor
- Fire retardant LSZH sheath

**Color:** white



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| AWG 23; Type: Simplex; OD 7.9 mm; Packaging: 1000 m/Reel      | 1711910-1   |
| AWG 23; Type: Duplex; OD 7.9 x 16.0 mm; Packaging: 500 m/Reel | 1711913-1   |

# Modular Twisted Pair

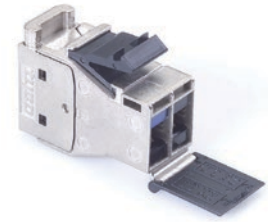
## Category 7<sub>A</sub> - Jacks

---

### AMP-TWIST 7<sub>A</sub>S SL Jack

#### FEATURES

- 4 chamber connector, fully compatible to IEC 61076-3-104 Ed. 2, 1000 MHz
- Class F<sub>A</sub> / Category 7<sub>A</sub> as per ISO/IEC 11801 Ed.2 Amd.2
- Termination time less than 1.5 minutes using TE's AWC technique
- Easiest installation with only 2 parts
- Patented shield clamp with integrated strain relief
- Available with or without dust cover
- Optional colored dust covers available



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Cat. 7 <sub>A</sub> die-cast Jack without dust cover, 180° cable exit | 1711437-1   |
| Cat. 7 <sub>A</sub> die-cast Jack with dust cover, 180° cable exit    | 1711441-1   |
| Colored dust cover (in bag of 50 pieces); Color: blue                 | 1-1711481-6 |
| Colored dust cover (in bag of 50 pieces); Color: red                  | 1-1711481-7 |
| Colored dust cover (in bag of 50 pieces); Color: yellow               | 1-1711481-8 |
| Colored dust cover (in bag of 50 pieces); Color: green                | 1-1711481-9 |

# Modular Twisted Pair

## Category 7<sub>A</sub> - Consolidation Point

### AMP-TWIST 7<sub>A</sub>S Consolidation Point Transition Cable Assemblies

#### FEATURES

- Assembly to connect the work area outlet with the consolidation or transition point
- Saves time and money on moves, adds and changes
- Slim line design for High-Density solutions
- According to ISO/IEC 11801
- Cat. 7<sub>A</sub> S/FTP solid cable acc. to IEC 61156-7
- LSFRZH sheath

**Color:** white



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| AMP-TWIST 7 <sub>A</sub> S SL jack w/o dust cover to AMP-TWIST 7 <sub>A</sub> S plug; Class F <sub>A</sub>  | Y-1711579-X |
| AMP-TWIST 7 <sub>A</sub> S SL jack with dust cover to AMP-TWIST 7 <sub>A</sub> S plug; Class F <sub>A</sub> | Y-1711776-X |

| Y- -X | Length |
|-------|--------|
| 0- -5 | 5.0 m  |
| 1- -4 | 7.5 m  |
| 1- -0 | 10.0 m |
| 1- -5 | 15.0 m |
| 2- -0 | 20.0 m |
| 3- -0 | 30.0 m |

*Other lengths on request.*



# Modular Twisted Pair

## Category 7<sub>A</sub> - Patch Cords

### AMP-TWIST 7<sub>A</sub>S to AMP-TWIST 7<sub>A</sub>S Patch Cord

#### FEATURES

- Slim line design for High-Density solutions
- Category 7<sub>A</sub> S/FTP stranded cable
- LSZH sheath
- Black boot on AMP-TWIST 7<sub>A</sub>S plug

**Color:** white

#### ORDERING INFORMATION

| Description                   | Part Number |
|-------------------------------|-------------|
| Pairs: 4; Cat. 7 <sub>A</sub> | Y-1711637-X |

*Other lengths on request.*



| Y- -X | Length |
|-------|--------|
| 1- -1 | 0.5 m  |
| 0- -1 | 1.0 m  |
| 0- -2 | 2.0 m  |
| 0- -3 | 3.0 m  |
| 0- -5 | 5.0 m  |
| 1- -0 | 10.0 m |

### AMP-TWIST 7<sub>A</sub>S to RJ-45 Patch Cord

#### FEATURES

- Slim line design for High-Density solutions
- Category 7 S/FTP stranded cable
- LSZH sheath
- Black boot on AMP-TWIST 7<sub>A</sub>S plug

**Color:** white

#### ORDERING INFORMATION

| Description                   | Part Number |
|-------------------------------|-------------|
| Pairs: 4; Cat. 6 <sub>A</sub> | Y-336488-X  |

*Other lengths on request.*



| Y- -X | Length |
|-------|--------|
| 1- -1 | 0.5 m  |
| 0- -1 | 1.0 m  |
| 0- -2 | 2.0 m  |
| 0- -3 | 3.0 m  |
| 0- -5 | 5.0 m  |
| 1- -0 | 10.0 m |

# Modular Twisted Pair

## Category 7<sub>A</sub> - Patch Cords

### AMP-TWIST 7<sub>A</sub>S (2 Pair) to RJ-45 Patch Cord

#### FEATURES

- Slim line design for High-Density solutions
- Stranded shielded cable
- LSZH sheath
- Black boot on AMP-TWIST 7<sub>A</sub>S plug

**Color:** white



#### ORDERING INFORMATION

| Description                        | Part Number |
|------------------------------------|-------------|
| Pairs: 2 (Ethernet 12/36); Cat. 5E | Y-1711613-X |
| Pairs: 2 (ISDN 36/45); Cat. 5E     | Y-1711618-X |

| Y- -X | Length |
|-------|--------|
| 1- -1 | 0.5 m  |
| 0- -1 | 1.0 m  |
| 0- -2 | 2.0 m  |
| 0- -3 | 3.0 m  |
| 0- -5 | 5.0 m  |
| 1- -0 | 10.0 m |

*Other lengths on request.*

### AMP-TWIST 7<sub>A</sub>S Telephone Patch Cord (1 Pair)

#### FEATURES

- Slim line design for High-Density solutions
- RJ-11 to 1pair plug acc. to IEC 61076-3-104
- LSZH sheath
- Black boot

**Color:** black



#### ORDERING INFORMATION

| Description                          | Part Number |
|--------------------------------------|-------------|
| Pairs: 1 (Voice Application); Cat. 3 | Y-1711623-X |

| Y- -X | Length |
|-------|--------|
| 1- -1 | 0.5 m  |
| 0- -1 | 1.0 m  |
| 0- -2 | 2.0 m  |
| 0- -3 | 3.0 m  |
| 0- -5 | 5.0 m  |
| 1- -0 | 10.0 m |

*Other lengths on request.*

# Modular Twisted Pair

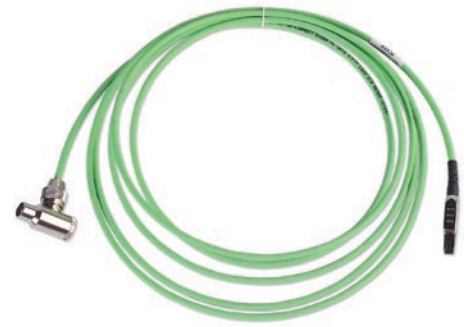
## Category 7<sub>A</sub> - Patch Cords

### AMP-TWIST 7<sub>A</sub>S CATV Patch Cord (1 Pair)

#### FEATURES

- Slim line design for High-Density solutions
- PAL or male F-Series connector with integrated balun to 1 pair plug acc. to IEC 61076-3-104
- Category 7 S/FTP stranded cable
- LSZH sheath
- Black boot

**Color:** green



#### ORDERING INFORMATION

| Description                        | Part Number |
|------------------------------------|-------------|
| Pairs: 1 (F-conn with Balun); CATV | Y-1711624-X |
| Pairs: 1 (Coax with Balun); CATV   | Y-1711659-X |

| Y- -X | Length |
|-------|--------|
| 1- -1 | 0.5 m  |
| 0- -1 | 1.0 m  |
| 0- -2 | 2.0 m  |
| 0- -3 | 3.0 m  |
| 0- -5 | 5.0 m  |
| 1- -0 | 10.0 m |

*Other lengths on request.*

### AMP-TWIST 7<sub>A</sub>S Single End Patch Cord

#### FEATURES

- Slim line design for High-Density solutions
- Category 7<sub>A</sub> S/FTP cable
- LSZH sheath
- Black boot on AMP-TWIST 7<sub>A</sub>S plug

**Color:** white



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Pairs: 4; Cat. 7 <sub>A</sub> ; Construction: Stranded | Y-1711580-X |
| Pairs: 4; Cat. 7 <sub>A</sub> ; Construction: Solid    | Y-1711787-X |

| Y- -X | Length |
|-------|--------|
| 0- -5 | 5.0 m  |
| 1- -4 | 7.5 m  |
| 1- -0 | 10.0 m |
| 1- -5 | 15.0 m |
| 2- -0 | 20.0 m |
| 3- -0 | 30.0 m |

*Other lengths on request.*

# Modular Twisted Pair

## Category 7<sub>A</sub> - Patch Cords

### Category 7<sub>A</sub> ARJ-45 Patch Cord

#### FEATURES

- Ideal for installations in combination with AMP CO Plus ARJ-45 Cat. 7<sub>A</sub>
- Category 7<sub>A</sub> S/FTP stranded cable
- ARJ-45 plug acc. to IEC 60603-7-7
- LSZH sheath

**Color:** white



#### ORDERING INFORMATION

| Description                           | Part Number |
|---------------------------------------|-------------|
| ARJ-45 to ARJ-45; Cat. 7 <sub>A</sub> | Y-1711563-X |
| ARJ-45 to RJ-45; Cat. 6 <sub>A</sub>  | Y-1711564-X |

| Y- -X | Length |
|-------|--------|
| 0- -1 | 1.0 m  |
| 0- -2 | 2.0 m  |
| 0- -3 | 3.0 m  |
| 0- -5 | 5.0 m  |
| 1- -0 | 10.0 m |

# Modular Twisted Pair

## Category 7 - Cable

### Category 7 S/FTP Cable

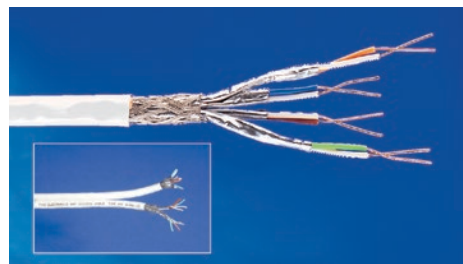
#### FEATURES

- Qualified against IEC 61156-5 Category 7 and EN 50288-4-1
- Individually foiled pairs plus overall copper braid
- AWG 23 solid conductor
- Fire retardant LSZH sheath

**Color:** white

#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| AWG 23; Type: Simplex; OD: 7.3 mm; Packaging: 1000 m/Reel      | 57893-1     |
| AWG 23; Type: Duplex; OD: 7.6 x 16.0 mm; Packaging: 500 m/Reel | 1711005-1   |



### Category 7 F/FTP Cable

#### FEATURES

- Qualified against IEC 61156-5 Category 7 and EN 50288-4-1
- Individually foiled pairs plus overall foil shield and drain wire
- AWG 23 solid conductor
- LSZH sheath

**Color:** white

#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| AWG 23; Type: Simplex; OD: 7.4 mm; Packaging: 500 m/Reel       | 1711163-1   |
| AWG 23; Type: Duplex; OD: 7.2 x 15.0 mm; Packaging: 500 m/Reel | 1711195-1   |



### Category 7 S/FTP Outdoor Cable

#### FEATURES

- Qualified against IEC 61156-5 Category 7 and EN 50288-4-1 and tested up to 600MHz
- Suitable for 10GBase-T applications
- Can be used for direct burial and cable duct installation
- Individually foiled pairs plus overall copper braid
- Double jacketed:
- Inner jacket material: LSZH
- Outer jacket material: PE black, UV resistant
- Moisture barrier (plastic coated aluminum tape) in between jackets
- AWG 23 solid conductor

**Color:** black

#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| AWG 23; Type: Simplex; OD 11.7 mm; Packaging: 1000 m/Reel | 2153161-1   |



# Modular Twisted Pair

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

### Category 6<sub>A</sub> F/FTP Cable AWG 23

#### FEATURES

- Qualified against IEC 61156-5 Cat. 6<sub>A</sub> and EN 50288-10-1
- Suitable for 10GBase-T applications
- Individually foiled pairs plus overall foil shield and drain wire
- AWG 23 solid conductor
- LSZH sheath according to IEC 60332-1 fire rating

**Color:** white



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| AWG 23; Type: Simplex; OD 7.0mm; Packaging: 500 m/Reel | 2153290-2   |

### Category 6<sub>A</sub> F/UTP Cable AWG 24

#### FEATURES

- Qualified against IEC 61156-5 Category 6<sub>A</sub> and EN 50288-10-1
- Suitable for 10GBase-T applications
- Overall foil shield, embedded in between synthetic tapes, with drain wire
- AWG 24 solid conductor
- LSZH sheath according to IEC 60332-1 fire rating

**Color:** white



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| AWG 24; Type: Simplex; OD 7.1mm; Packaging: 500 m/Reel | 2153022-3   |

### Category 6<sub>A</sub> U/UTP Cable AWG 23

#### FEATURES

- Supports 10Gigabit Ethernet to a full 100m up to 500MHz
- UTP cable, qualified against IEC 61156-5 Category 6<sub>A</sub>
- Patented technology with oblique elliptical offset filler to minimise the effect of alien crosstalk and insertion loss
- AWG 23 solid conductor
- LSZH sheath acc. to IEC 60332-1 fire rating

**Color:** blue



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| AWG 23; Type: Simplex; OD: 7.62mm - 6.5mm x 8.4mm; Packaging: 305m/Reel | 2171014-1   |

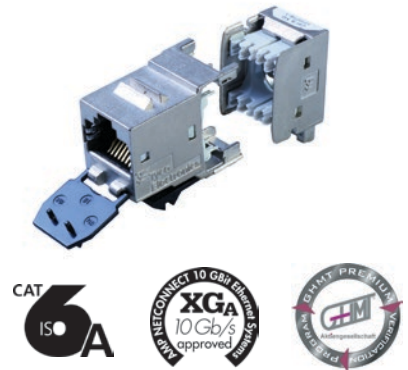
# Modular Twisted Pair

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

### AMP-TWIST 6<sub>A</sub> S SL Jack

#### FEATURES

- Class E<sub>A</sub> / Category 6<sub>A</sub> as per ISO/IEC 11801 Ed.2 Amd.2
- Termination time less than 1 minute using TE's AWC technique
- Easiest installation with only 2 parts
- Patented shield clamp with integrated strain relief
- Available with or without dust cover
- Optional colored dust covers available



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Cat. 6 <sub>A</sub> RJ-45 die-cast Jack without dust cover, 180° cable exit | 1711716-1   |
| Cat. 6 <sub>A</sub> RJ-45 die-cast Jack with dust cover, 180° cable exit    | 1711592-1   |
| Colored dust cover (bag of 50 pieces); Color: blue                          | 1-1711691-6 |
| Colored dust cover (bag of 50 pieces); Color: red                           | 1-1711691-7 |
| Colored dust cover (bag of 50 pieces); Color: yellow                        | 1-1711691-8 |
| Colored dust cover (bag of 50 pieces); Color: green                         | 1-1711691-9 |

### Q- Jack (STP)

#### FEATURES

- Class E<sub>A</sub> / Category 6<sub>A</sub> as per ISO/IEC 11801 Ed.2 Amd.2
- Suitable for Q-Jack Patch Panels (Page 287)
- Punch down termination onto LSA-PLUS contacts to ensure swift installation
- Shielded cap ensures full 360° bonding and grounding
- Universal wiring - T568 A or B wiring pattern



#### ORDERING INFORMATION

| Description  | Part Number  |
|--|--------------|
| Cat. 6 <sub>A</sub> RJ-45 shielded Jack without dust cover (blister pack of 12 units); Color: black (RAL 9005) | 300001743975 |

### RJ45 STP KM8 Modular Jacks

#### FEATURES

- Class E<sub>A</sub> / Category 6<sub>A</sub> as per ISO/IEC 11801 Ed.2 Amd.2
- Keystone design ensures compatibility with a range of faceplates and adaptors
- KM8 design provide built-in conductor management
- LSA-PLUS quick connection technique with highly reliable wire termination method
- Shielding clamp ensures full 360° bonding and grounding
- Universal wiring - T568 A or B wiring pattern



#### ORDERING INFORMATION

| Description   | Part Number   |
|---|---------------|
| Cat. 6 <sub>A</sub> RJ-45 shielded Jack without dust cover; Color: white (RAL 9010) | 6830 1 811-01 |
| Cat. 6 <sub>A</sub> RJ-45 shielded Jack without dust cover; Color: black (RAL 9005) | 6830 1 811-04 |

# Modular Twisted Pair

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

### AMP-TWIST 6<sub>A</sub>U SL Jack

#### FEATURES

- Class E<sub>A</sub> as per ISO/IEC 11801 Ed.2 Amd.2
- Termination time less than 1 minute using TE's AWC technique
- Easiest installation with only 2 parts
- Superior technology to reduce alien crosstalk
- Available with or without dust cover
- UL listed
- Universal wiring - T568 A or B wiring pattern
- Several colors available on demand



| X  | Color  |
|----|--------|
| -1 | Almond |
| -2 | Black  |
| -4 | Gray   |
| -5 | Orange |
| -6 | Blue   |
| -7 | Red    |
| -8 | Yellow |
| -9 | Green  |

#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Cat. 6 <sub>A</sub> RJ-45 unshielded Jack without dust cover, 180° cable exit | 1933476-X   |
| Cat. 6 <sub>A</sub> RJ-45 unshielded Jack with dust cover, 180° cable exit    | 2111676-X   |

### Q- Jack (UTP)

#### FEATURES

- Class E<sub>A</sub> / Category 6<sub>A</sub> as per ISO/IEC 11801 Ed.2 Amd.2
- Suitable for Q-Jack Patch Panels (Page 287)
- Punch down termination onto LSA-PLUS contacts to ensure swift installation
- Universal wiring - T568 A or B wiring pattern



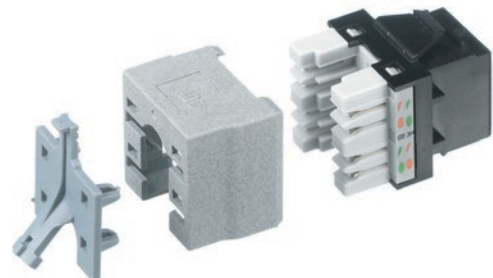
#### ORDERING INFORMATION

| Description  | Part Number  |
|--|--------------|
| Cat. 6 <sub>A</sub> RJ-45 unshielded Jack without dust cover (blister pack of 12 units); Color: black (RAL 9005) | 300001743978 |

### RJ45 UTP Modular Jack

#### FEATURES

- Class E<sub>A</sub> / Category 6<sub>A</sub> as per ISO/IEC 11801 Ed.2 Amd.2
- Keystone design ensures compatibility with a range of faceplates and adaptors
- Punch down termination onto LSA-PLUS contacts to ensure swift installation
- Cap with metallic particles to mitigate alien crosstalk
- Universal wiring - T568 A or B wiring pattern



#### ORDERING INFORMATION

| Description   | Part Number   |
|---|---------------|
| Cat. 6 <sub>A</sub> RJ-45 unshielded Jack without dust cover; Color: white (RAL 9010) | 6830 1 885-01 |
| Cat. 6 <sub>A</sub> RJ-45 unshielded Jack without dust cover; Color: black (RAL 9005) | 6830 1 885-04 |



# Modular Twisted Pair

## Category 6<sub>A</sub> - Consolidation Point

### AMP-TWIST 6<sub>A</sub>S Consolidation Point Transition Cable Assemblies

#### FEATURES

- Assembly to connect the work area outlet with the consolidation or transition point
- Saves time and money on moves, adds and changes
- According to ISO/IEC 11801
- Category 7 F/FTP solid cable according to IEC 61156-5 and EN 50288-4-1
- LSZH sheath
- Universal wiring



**Color:** white



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| AMP-TWIST 6 <sub>A</sub> S SL jack w/o dust cover to RJ-45 plug; Class E <sub>A</sub>  | Y-1711825-X |
| AMP-TWIST 6 <sub>A</sub> S SL jack with dust cover to RJ-45 plug; Class E <sub>A</sub> | Y-1711851-X |

| Y- -X | Length |
|-------|--------|
| 0- -5 | 5.0 m  |
| 1- -4 | 7.5 m  |
| 1- -0 | 10.0 m |
| 1- -5 | 15.0 m |
| 2- -0 | 20.0 m |
| 3- -0 | 30.0 m |

# Modular Twisted Pair

## Category 6<sub>A</sub> - Patch Cords

### Category 6<sub>A</sub> S/FTP Patch Cord RJ-45 LSZH

#### FEATURES

- Category 7 S/FTP stranded cable
- LSZH sheath
- Color-matched snagless boots



#### ORDERING INFORMATION

| Description   | Part Number | Y- -X | Length |
|---------------|-------------|-------|--------|
| Color: white  | Y-1711815-X | 1- -1 | 0.5 m  |
| Color: blue   | Y-1711816-X | 0- -1 | 1.0 m  |
| Color: gray   | Y-1711817-X | 0- -2 | 2.0 m  |
| Color: yellow | Y-1711818-X | 0- -3 | 3.0 m  |
| Color: red    | Y-1711819-X | 0- -5 | 5.0 m  |
| Color: green  | Y-1711820-X | 1- -0 | 10.0 m |

Other colors and lengths are available upon request.

### Category 6<sub>A</sub> UTP Patch Cord RJ-45 LSZH

#### FEATURES

- Supports 10 Gigabit Ethernet to a full 100m
- Exceeds the requirements of IEEE 802.3an (10GBASE-T) and ISO/IEC 11801:2002 amendment/channel requirements
- Superior cable flexibility from stranded cores
- Boot maintains correct bend radius to ensure maximum performance



#### ORDERING INFORMATION

| Description  | Cable Color | Cable Type | Part Number   | -XX | Length |
|--|-------------|------------|---------------|-----|--------|
| Augmented Category 6 LSZH Patch Cord RJ45 plug to RJ45 plug, T568B | Blue        | LSZH UTP   | 6645-2-827-XX | -04 | 1.0 m  |
|  |             |            |               | -07 | 2.0 m  |
|  |             |            |               | -10 | 3.0 m  |
|  |             |            |               | -15 | 5.0 m  |
|  |             |            |               | -25 | 7.5 m  |
|  |             |            |               | -33 | 10.0 m |

Other colors and lengths are available upon request.

### Category 6<sub>A</sub> F/FTP Solid Patch Cord RJ-45

#### FEATURES

- Performance exceeding Category 6<sub>A</sub> specifications
- 4 Pair solid F/FTP cable
- LSZH sheath according to IEC 60332-1 fire rating
- Slim-line plug
- White, short boot
- Wired to T568-B

| Y- -X | Length |
|-------|--------|
| 1- -0 | 10.0 m |
| 1- -5 | 15.0 m |
| 2- -0 | 20.0 m |
| 3- -0 | 30.0 m |
| 4- -0 | 40.0 m |
| 5- -0 | 50.0 m |



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Patch Cord, Solid, Category 6 <sub>A</sub> F/FTP, LSZH, white | Y-1711826-X |

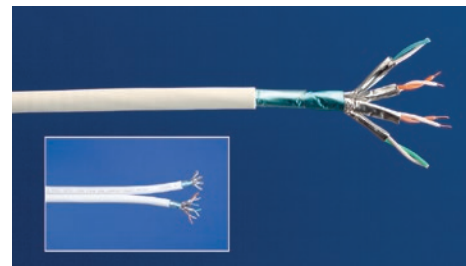
# Modular Twisted Pair

## Category 6 - Cable

### Category 6 F/FTP Cable

#### FEATURES

- Qualified against IEC 61156-5 Category 6 and EN 50288-5-1
- Individually foiled pairs plus overall foil shield
- AWG 23 solid conductor
- LSZH sheath



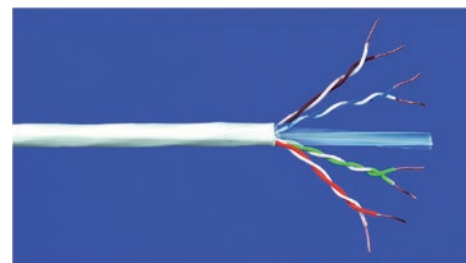
#### ORDERING INFORMATION

| Description  | Color | Part Number |
|--|-------|-------------|
| AWG 23; Type: Simplex; OD: 7.3 mm; Packaging: 500 m/Reel       | White | 1711007-1   |
| AWG 23; Type: Duplex; OD: 7.6 x 15.5 mm; Packaging: 500 m/Reel | White | 1711008-1   |

### Category 6 U/UTP Cable

#### FEATURES

- 250 MHz Category 6 U/UTP Cable
- Qualified against IEC 61156-5 Category 6 and EN 50288-6-1
- AWG 24 solid conductor (except for LSFRZH : AWG 23)
- Cross web filler to separate the pairs



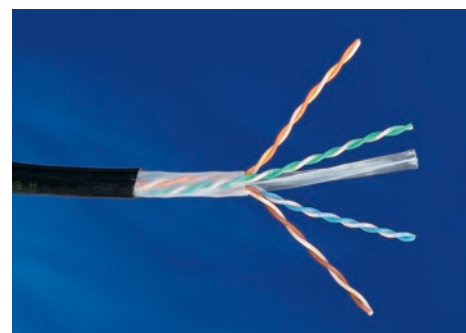
#### ORDERING INFORMATION

| Description   | Color | Part Number |
|---|-------|-------------|
| Sheathing: PVC; Type: Simplex; OD 6.0 mm; Packaging: 305 m/Reel-In-A-Box  | White | 219584-2    |
| Sheathing: PVC; Type: Simplex; OD 6.0 mm; Packaging: 1000 m/Reel          | White | 219584-3    |
| Sheathing: LSZH; Type: Simplex; OD 6.0 mm; Packaging: 305 m/Reel-In-A-Box | White | 219585-2    |
| Sheathing: LSZH; Type: Simplex; OD 6.0 mm; Packaging: 1000 m/Reel         | White | 219585-3    |
| Sheathing: LSZH; Type: Duplex; OD 6.2 x 13.0 mm; Packaging: 500 m/Reel    | White | 1711053-1   |
| Sheathing: LSFRZH; Type: Simplex; OD: 6.3 mm; Packaging: 500 m/Reel       | White | 4-1859345-2 |

### Category 6 U/UTP Outdoor Cable

#### FEATURES

- 250 MHz Category. 6 U/UTP Cable
- Double jacketed:
  - inner jacket material: LSZH
  - outer jacket material: PE
- AWG 24
- For aerial use
- Suitable in an IP65 environment



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Sheathing: LSZH; OD: 7.2 mm; Packaging: 500 m/Reel | 1711006-1   |

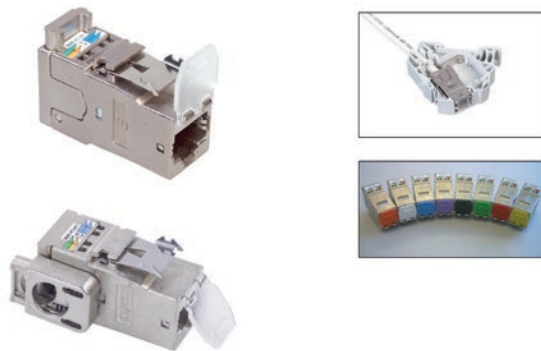
# Modular Twisted Pair

## Category 6 - Jacks

### AMP-TWIST 6S SL Jack

#### FEATURES

- Category 6 as per ISO/IEC 11801 Ed.2 Amd.2
- Class E<sub>A</sub> as per ISO/IEC 11801 Ed.2 Amd.1
- Termination time less than 1 minute using TE's AWC technique
- Easiest installation with only 2 parts
- Patented shield clamp with integrated strain relief
- Available with or without dust cover
- Available with rear (180°) or side (90°) cable exit
- Available DIN Rail Kit
- Optional colored dust covers available



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Cat. 6 RJ-45 die-cast Jack without dust cover, 180° cable exit | 1711342-1   |
| Cat. 6 RJ-45 die-cast Jack without dust cover, 90° cable       | 1711343-1   |
| Cat. 6 RJ-45 die-cast Jack with dust cover, 180° cable exit    | 1711160-1   |
| Cat. 6 RJ-45 die-cast Jack with dust cover, 90° cable exit     | 1711295-1   |
| Colored dust cover (bag of 50 pieces); Color: blue             | 1-1711691-6 |
| Colored dust cover (bag of 50 pieces); Color: red              | 1-1711691-7 |
| Colored dust cover (bag of 50 pieces); Color: yellow           | 1-1711691-8 |
| Colored dust cover (bag of 50 pieces); Color: green            | 1-1711691-9 |

### RJ45 STP KM8 Modular Jack

#### FEATURES

- Class E / Category 6 as per ISO/IEC 11801 Ed.2 Amd.2
- Keystone design ensures compatibility with a range of faceplates and adaptors
- KM8 design provide built-in conductor management
- LSA-PLUS quick connection technique with highly reliable wire termination method
- Shielding clamp ensures full 360° bonding and grounding
- Universal wiring - T568 A or B wiring pattern



#### ORDERING INFORMATION

| Description  | Part Number   |
|--|---------------|
| Cat. 6 RJ-45 Shielded Jack without dust cover; Color: white (RAL 9010) | 6830 1 810-01 |
| Cat. 6 RJ-45 Shielded Jack without dust cover; Color: black (RAL 9005) | 6830 1 810-04 |

# Modular Twisted Pair

## Category 6 - Jacks

### SL Series 110Connect Jacks (STP)

#### FEATURES

- Category 6 Pyramid Tested
- Universal wiring - T568 A or B wiring pattern



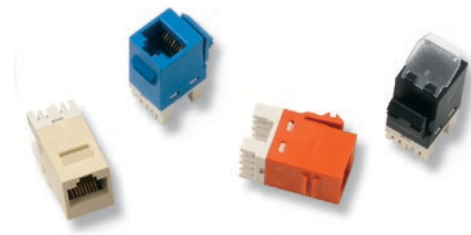
#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Cat. 6 RJ-45 shielded Jack without dust cover, 180° cable exit | 1375188-1   |

### SL Series 110Connect Jacks (UTP)

#### FEATURES

- SlimLine (SL) Series: Thin profile improves outlet density
- Category 6 Pyramid Tested
- Available with or without dust cover
- 90° or 180° cable dress for easy termination
- Bend-limiting strain relief included
- UL listed
- Universal wiring - T568 A or B wiring pattern
- Several colors available on demand



#### ORDERING INFORMATION

| Description                                     | Part Number |
|---|-------------|
| Cat. 6 RJ-45 unshielded Jack without dust cover | Y-1375055-X |
| Cat. 6 RJ-45 unshielded Jack with dust cover    | Y-1375187-X |

| Y- -X | Color |
|-------|-------|
| 0- -1 | Beige |
| 0- -2 | Black |
| 0- -3 | White |
| 0- -6 | Blue  |
| 0- -7 | Red   |

# Modular Twisted Pair

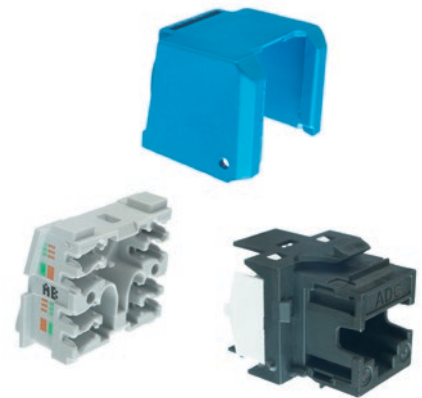
## Category 6 - Jacks

---

### RJ45 UTP KM8 Modular Jack

#### FEATURES

- Class E / Category 6 as per ISO/IEC 11801 Ed.2 Amd.2
- Keystone design ensures compatibility with a range of faceplates and adaptors
- KM8 design provide built-in conductor management
- LSA-PLUS quick connection technique with highly reliable wire termination method
- Universal wiring - T568 A or B wiring pattern
- Several colors available on demand



#### ORDERING INFORMATION

| Description  | Part Number   |
|--|---------------|
| Cat. 6 RJ-45 Unshielded Jack without dust cover; Color: white (RAL 9010) | 6830 1 800-01 |
| Cat. 6 RJ-45 Unshielded Jack without dust cover; Color: black (RAL 9005) | 6830 1 800-04 |

# Modular Twisted Pair

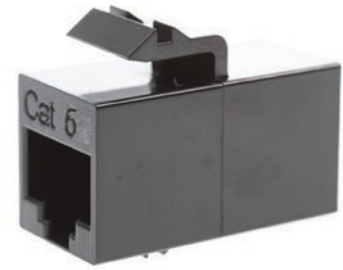
## Category 6 - Jacks

---

### SL Series Modular Coupler

#### FEATURES

- Straight Category 6 coupler
- Compact coupler for two modular plugs
- SL Series: Thin profile improves outlet density



#### ORDERING INFORMATION

| Description                     | Part Number |
|---------------------------------|-------------|
| Cat. 6 RJ-45 unshielded Coupler | 2111123-1   |
| Cat. 6 RJ-45 shielded Coupler   | 2111124-1   |

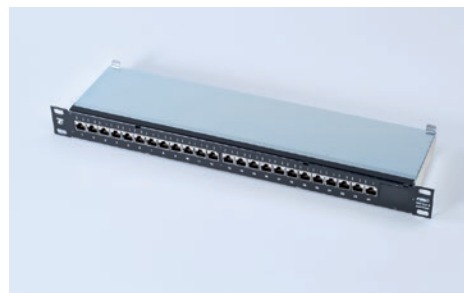
# Modular Twisted Pair

## Category 6 - Patch Panels

### Category 6 24 Ports Shielded Patch Panel

#### FEATURES

- 19", 1U, RJ-45 Patch Panel with 24 ports
- Class E<sub>A</sub> Permanent Link and Category 6 Pyramid Tested
- Prepared for AMPTRAC upgrade
- Enhanced 110 IDC blocks compatible with 110C Impact or LSA-PLUS Insertion tool
- Rear cable management
- Cover adapts to different cable diameters via variable snap-in position
- Shield connection separated from strain relief
- Universal wiring - T568 A or B wiring pattern
- Including grounding bolt
- Protected PCB



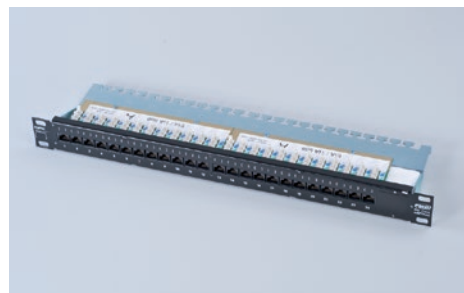
#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Cat. 6 24 Ports Shielded Patch Panel; Color: black (RAL 9005)      | 1644042-2   |
| Cat. 6 24 Ports Shielded Patch Panel; Color: light grey (RAL 7035) | 1644042-3   |

### Category 6 24 Ports Unshielded Patch Panel

#### FEATURES

- 19", 1U, RJ-45 Patch Panel with 24 ports
- Category 6 Pyramid Tested
- Prepared for AMPTRAC upgrade
- Enhanced 110 IDC blocks compatible with 110C Impact or LSA-PLUS Insertion tool
- Rear cable management
- Universal wiring - T568 A or B wiring pattern
- Including grounding bolt
- Protected PCB



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Cat. 6 24 Ports Unshielded Patch Panel; Color: black (RAL 9005) | 1711147-2   |



# Modular Twisted Pair

## Category 6 - Patch Panels

---

### MiniPods

#### FEATURES

- External mounting points
- Can be passed through standard floor grommets
- Incorporated dust protection on each port
- Pre-loaded with modular connectivity (including CL jacks)
- 3, 4 and 6 port versions available



#### ORDERING INFORMATION

| Description                  | Part Number   |
|------------------------------|---------------|
| MiniPod Cat. 6 CL UTP 3 port | 6540 1 684-03 |
| MiniPod Cat. 6 CL UTP 4port  | 6540 1 678-04 |
| MiniPod Cat. 6 CL UTP 6 port | 6540 1 678-06 |



# Modular Twisted Pair

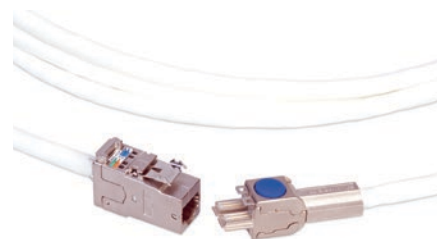
## Category 6 - Consolidation Point

### AMP-TWIST 6S to AMP-TWIST 7<sub>A</sub>S Consolidation Point Transition Cable Assembly

#### FEATURES

- Assembly to connect the work area outlet with the consolidation or transition point
- Saves time and money on moves, adds and changes
- According to ISO/IEC 11801
- Category 7 S/FTP solid cable acc. to IEC 61156-5 and EN 50288-4-1
- LSFRZH sheath
- Universal wiring

**Color:** white



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| AMP-TWIST 6S SL jack w/o dust cover to AMP-TWIST 7 <sub>A</sub> S plug; Class E <sub>A</sub>  | Y-1711666-X |
| AMP-TWIST 6S SL jack with dust cover to AMP-TWIST 7 <sub>A</sub> S plug; Class E <sub>A</sub> | Y-1711777-X |

| Y- -X | Length |
|-------|--------|
| 0- -5 | 5.0 m  |
| 1- -4 | 7.5 m  |
| 1- -0 | 10.0 m |
| 1- -5 | 15.0 m |
| 2- -0 | 20.0 m |
| 3- -0 | 30.0 m |

### Unshielded Consolidation Point Transition Cable Assemblies

#### FEATURES

- Assembly to connect the work area outlet with the consolidation or transition point (SL 110C Jack to modular plug)
- Meets ISO/IEC 11801 and EN 50173-1
- 4 pair solid U/UTP cable
- LSZH sheath
- Universal wiring

**Color:** white



#### ORDERING INFORMATION

| Description     | Part Number |
|-----------------|-------------|
| Cat. 6; Class E | Y-1711027-X |

| Y- -X | Length |
|-------|--------|
| 0- -5 | 5.0 m  |
| 1- -4 | 7.5 m  |
| 1- -0 | 10.0 m |
| 1- -5 | 15.0 m |
| 2- -0 | 20.0 m |

# Modular Twisted Pair

## Category 6 - Patch Cords

---

### Modular Solid Core Patch Cords

#### FEATURES

- Performance exceeding Category 6 specifications up to 250MHz
- Wired to T568-B
- Complete with integrated strain relief to protect terminations within the plug
- Fully interoperable and backwards compatible
- Maximum throughput, reliability and performance in your IT network
- Covered by the System Warranty



#### ORDERING INFORMATION

| Description            | Length | Part Number |
|------------------------|--------|-------------|
| Modular White LSZH UTP | 20m    | 2-1711171-0 |
|                        | 30m    | 3-1711171-0 |
|                        | 40m    | 4-1711171-0 |
|                        | 50m    | 5-1711171-0 |

*Other colors and lengths are available upon request*

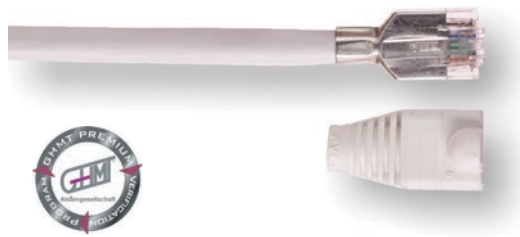
# Modular Twisted Pair

## Category 6 - Patch Cords

### Category 6 S/FTP Patch Cord RJ-45 LSZH

#### FEATURES

- Category 7 S/FTP stranded cable
- LSZH sheath
- Color-matched snagless boots
- Universal B-wiring



#### ORDERING INFORMATION

| Description   | Part Number |
|---------------|-------------|
| Color: white  | Y-959385-X  |
| Color: gray   | Y-1711076-X |
| Color: green  | Y-1711077-X |
| Color: yellow | Y-1711078-X |
| Color: blue   | Y-1711079-X |

Other colors and lengths are available upon request.

### Category 6 U/UTP Patch Cord RJ-45

#### FEATURES

- Support of POE and POE+
- Slim-line plug
- Transparent, short boot
- Universal wiring scheme (B-wiring)
- 4 pairs of AWG 24 stranded copper wires
- Jacket material complies to LSZH overall diameter: 5,4 mm ( $\pm 0,3\text{mm}$ )



#### ORDERING INFORMATION

| Description                     | Cable Color | Part Number | Y- | -X | Length |
|---------------------------------|-------------|-------------|----|----|--------|
| Category 6 UTP Patch Cord RJ-45 | White       | Y-1711990-X | 0- | -1 | 1.0m   |
|                                 | Blue        | Y-1711991-X | 0- | -2 | 2.0m   |
|                                 | Grey        | Y-1711992-X | 0- | -3 | 3.0m   |
|                                 | Yellow      | Y-1711993-X | 0- | -5 | 5.0m   |
|                                 | Red         | Y-1711994-X | 1- | -0 | 10m    |
|                                 | Green       | Y-1711995-X |    |    |        |
|                                 | Black       | Y-1711996-X |    |    |        |
|                                 | Orange      | Y-2153217-X |    |    |        |

Other lengths on request.

# Modular Twisted Pair

## Category 6 - Patch Cords

### Category 6 U/UTP Patch Cord RJ-45 LSZH

#### FEATURES

- Category 6 according to ISO/IEC 11801 and EN-50173-1
- 4 Pair stranded U/UTP cable
- LSZH sheath
- Color-matched snagless boots
- Universal wiring



#### ORDERING INFORMATION

| Description  | Part Number | Y- -X | Length |
|--------------|-------------|-------|--------|
| Color: white | Y-1711091-X | 1- -1 | 0.5 m  |
| Color: gray  | Y-1711093-X | 0- -1 | 1.0 m  |
| Color: blue  | Y-1711094-X | 0- -2 | 2.0 m  |
| Color: green | Y-1711095-X | 0- -3 | 3.0 m  |
| Color: red   | Y-1711096-X | 0- -5 | 5.0 m  |
|              |             | 1- -0 | 10.0 m |

*Other colors and lengths are available upon request.*

# Modular Twisted Pair

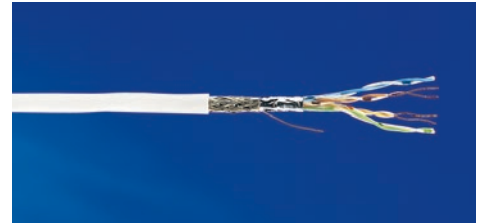
## Category 5e - Cables

### Category 5e SF/UTP Cable

#### FEATURES

- Qualified against IEC 61156-5 Category 5e and EN 50288-2-1
- Overall copper braid plus foil shield
- Very low delay skew, suitable for 1000Base-T
- AWG 24 solid conductor

**Color:** white



#### ORDERING INFORMATION

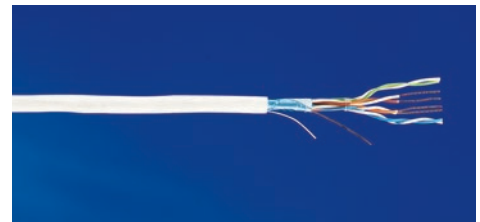
| Description  | Part Number |
|--|-------------|
| Sheathing: LSZH; Type: Simplex; OD 6.5 mm; Packaging: 500 m/Reel | 219484-2    |

### Category 5e F/UTP Cable

#### FEATURES

- Qualified against IEC 61156-5 Category 5e and EN 50288-2-1
- Overall foil shield with drain wire
- Very low delay skew, suitable for 1000Base-T
- AWG 24 solid conductor

**Color:** white



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Sheathing: PVC; Type: Simplex; OD 6.2 mm; Packaging: 305 m, Pull-box   | 219413-2    |
| Sheathing: PVC; Type: Simplex; OD 6.2 mm; Packaging: 1000 m/Reel       | 219413-3    |
| Sheathing: LSZH; Type: Simplex; OD 6.2 mm; Packaging: 305 m, Pull-box  | 219420-2    |
| Sheathing: LSZH; Type: Simplex; OD 6.2 mm; Packaging: 1000 m/Reel      | 219420-3    |
| Sheathing: LSZH; Type: Duplex; OD 5.9 x 12.2 mm; Packaging: 500 m/Reel | 136816-1    |

# Modular Twisted Pair

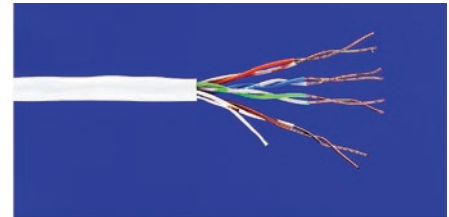
## Category 5e - Cables

### Category 5e U/UTP Cable

#### FEATURES

- 100 MHz Category 5e UTP Cable
- AWG 24

**Color:** white



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Sheathing: PVC; Type: Simplex; OD 5.1 mm; Packaging: 305 m, Pull-Box   | 57535-2     |
| Sheathing: PVC; Type: Simplex; OD 5.1 mm; Packaging: 1000 m/Reel       | 57535-3     |
| Sheathing: LSZH; Type: Simplex; OD 5.1 mm; Packaging: 305 m, Pull-Box  | 57538-2     |
| Sheathing: LSZH; Type: Simplex; OD 5.1 mm; Packaging: 1000 m/Reel      | 57538-3     |
| Sheathing: LSZH; Type: Duplex; OD 5.5 x 11.5 mm; Packaging: 500 m/Reel | 1711043-1   |

### 25 Pair Category 5e PowerSum Backbone Cable

#### FEATURES

- Category 5e UTP Backbone Cable
- 25 Pair Construction
- AWG 24
- UL listed

**Color:** white



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Sheathing: CMR; OD: 13.0 mm; Packaging: 305 m/Reel | 1499418-1   |

# Modular Twisted Pair

## Category 5e - Jacks

### SL Series 110Connect Jacks (STP)

#### FEATURES

- Universal wiring-T568 A or B wiring pattern
- Category 5e

#### ORDERING INFORMATION

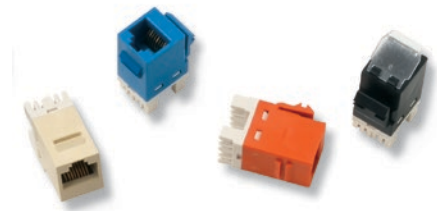
| Description   | Part Number |
|---|-------------|
| Cat. 5e RJ-45 shielded Jack without dust cover, 180° cable exit | 1375189-1   |



### SL Series 110Connect Jacks (UTP)

#### FEATURES

- SlimLine (SL) Series: Thin profile improves outlet density
- Category 5e
- Available with or without dust cover
- 90° or 180° cable dress for easy termination
- Bend-limiting strain relief included
- UL listed
- Universal wiring - T568 A or B wiring pattern
- Several colors available on demand



#### ORDERING INFORMATION

| Description                                      | Part Number |
|--|-------------|
| Cat. 5e RJ-45 unshielded Jack without dust cover | Y-1375191-X |
| Cat. 5e RJ-45 unshielded Jack with dust cover    | Y-1375190-X |

| Y- -X | Color |
|-------|-------|
| 0- -1 | Beige |
| 0- -2 | Black |
| 0- -3 | White |
| 0- -6 | Blue  |
| 0- -7 | Red   |



# Modular Twisted Pair

## Category 5e - Jacks

---

### SL Series Modular Coupler

#### FEATURES

- Straight Category 5e coupler
- Compact coupler for two modular plugs
- SL Series: Thin profile improves outlet density



#### ORDERING INFORMATION

| Description                      | Part Number |
|----------------------------------|-------------|
| Cat. 5e RJ-45 unshielded Coupler | 2111121-1   |
| Cat. 5e RJ-45 shielded Coupler   | 2111122-1   |

# Modular Twisted Pair

## Category 5e - Patch Panels

---

### Category 5e 24 Ports Shielded Patch Panel

#### FEATURES

- 19", 1U, RJ-45 Patch Panel with 24 ports
- Category 5e
- Available as LSA-PLUS and 110Connect Version
  - LSA-PLUS Version: Enhanced LSA-PLUS IDC blocks compatible with LSA-PLUS Insertion tool
  - 110Connect Version: Enhanced 110C IDC blocks compatible with 110C Impact tool and LSA-PLUS Insertion tool
- Rear cable management
- Shield connection separated from strain relief
- Universal wiring - T568 A or B wiring pattern
- Including grounding bolt
- Protected PCB

**Color:** black (RAL 9005)



#### ORDERING INFORMATION

| Description  | Part Number   |
|--|---------------|
| Cat. 5e 24 Ports Shielded Patch Panel with 110C IDC blocks     | 336671-2      |
| Cat. 5e 24 Ports Shielded Patch Panel with LSA-PLUS IDC blocks | 7022 1 015-24 |

# Modular Twisted Pair

## Category 5e - Patch Panels

### Category 5e 6Block Unshielded Patch Panel

#### FEATURES

- 19", RJ-45 Patch Panel with 24 (1U) or 48 (2U) ports
- Category 5e
- Enhanced 110 IDC blocks compatible with 110C Impact or LSA-PLUS Insertion tool
- Universal wiring - T568 A or B wiring pattern

**Color:** black (RAL 9005)



#### ORDERING INFORMATION

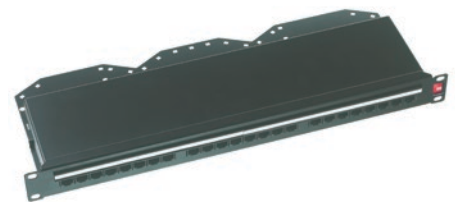
| Description  | Part Number |
|--|-------------|
| Cat. 5e 6Block Unshielded Patch Panel; N° of Ports: 24 | 406330-1    |
| Cat. 5e 6Block Unshielded Patch Panel; N° of Ports: 48 | 406331-1    |

### Category 5e 24 Ports Unshielded Patch Panel

#### FEATURES

- 19", 1U, RJ-45 Patch Panel with 24 ports
- Category 5e
- Enhanced LSA-PLUS IDC blocks compatible with LSA-PLUS Insertion tool
- Rear cable management
- Universal wiring - T568 A or B wiring pattern
- Including grounding bolt
- Protected PCB

**Color:** black (RAL 9005)



#### ORDERING INFORMATION

| Description                             | Part Number   |
|---|---------------|
| Cat. 5e 24 Ports Unshielded Patch Panel | 6527 1 607-24 |

# Modular Twisted Pair

## Category 5e - Patch Panels

---

### MiniPods

#### FEATURES

- External mounting points
- Can be passed through standard floor grommets
- Incorporated dust protection on each port
- Pre-loaded with modular connectivity (including CL jacks)
- 4 and 6 port versions available



#### ORDERING INFORMATION

| Description                   | Part Number   |
|-------------------------------|---------------|
| MiniPod Cat. 5e CL UTP 4 port | 6540 1 677-04 |
| MiniPod Cat. 5e CL UTP 6 port | 6540 1 677-06 |

# Modular Twisted Pair

## Category 5e - Consolidation Point

### Unshielded Consolidation Point Transition Cable Assemblies

#### FEATURES

- Assembly to connect the work area outlet with the consolidation or transition point (SL 110C Jack to modular plug)
- Meets ISO/IEC 11801 and EN 50173-1
- 4 pair solid U/UTP cable
- LSZH sheath
- Universal wiring

**Color:** white



#### ORDERING INFORMATION

| Description      | Part Number |
|------------------|-------------|
| Cat. 5e; Class D | Y-1711040-X |

| Y- -X | Length |
|-------|--------|
| 0- -5 | 5.0 m  |
| 1- -4 | 7.5 m  |
| 1- -0 | 10.0 m |
| 1- -5 | 15.0 m |
| 2- -0 | 20.0 m |

# Modular Twisted Pair

## Category 5e - Patch Cords

### Category 5e F/UTP Stranded Patch Cord RJ-45

#### FEATURES

- Category 5e according to ISO/IEC 11801 and EN-50173-1
- 4 Pair stranded F/UTP cable
- LSZH sheath
- Color-matched snagless boots
- Universal wiring

#### ORDERING INFORMATION

| Description          | Part Number |
|----------------------|-------------|
| F/UTP; Color: gray   | Y-959305-X  |
| F/UTP; Color: green  | Y-959306-X  |
| F/UTP; Color: yellow | Y-959307-X  |
| F/UTP; Color: blue   | Y-959308-X  |
| F/UTP; Color: red    | Y-959309-X  |
| F/UTP; Color: white  | Y-1644077-X |



| Y- -X | Length |
|-------|--------|
| 1- -1 | 0.5 m  |
| 0- -1 | 1.0 m  |
| 0- -2 | 2.0 m  |
| 0- -3 | 3.0 m  |
| 0- -5 | 5.0 m  |
| 1- -0 | 10.0 m |

*Other colors and lengths are available upon request*

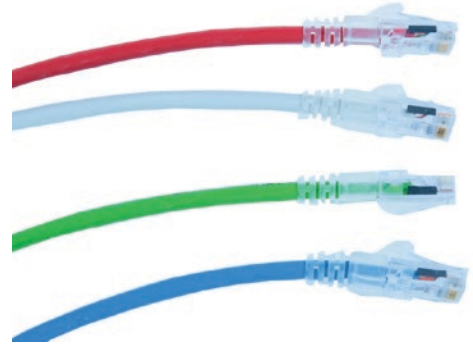
# Modular Twisted Pair

## Category 5e - Patch Cords

### Category 5e UTP Stranded Patch Cord RJ-45

#### FEATURES

- Support of POE and POE+
- Slim-line plug
- Transparent, short boot
- Universal wiring scheme (B-wiring)
- 4 pairs of AWG 24 stranded copper wires
- Available with LSZH jacket material  
overall diameter: 5,2 mm (± 0,3mm)



#### ORDERING INFORMATION

| Description                               | Color  | Part Number (LSZH jacket) | Y- | -X | Length |
|---|--------|---------------------------|----|----|--------|
| Category 5e UTP Stranded Patch Cord RJ-45 | White  | Y-2153241-X               | 0- | -1 | 1.0m   |
|   | Blue   | Y-2153275-X               | 0- | -2 | 2.0m   |
|   | Grey   | Y-2153278-X               | 0- | -3 | 3.0m   |
|   | Yellow | Y-2153277-X               | 0- | -5 | 5.0m   |
|   | Red    | Y-2153273-X               | 1- | -0 | 10m    |
|   | Green  | Y-2153274-X               |    |    |        |
|   | Black  | Y-2153279-X               |    |    |        |
|   | Orange | Y-2153276-X               |    |    |        |

*Other lengths on request.*

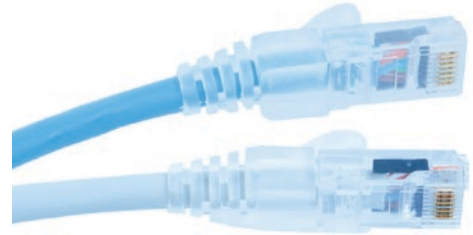
# Modular Twisted Pair

## Category 5e - Patch Cords

### Category 5e UTP Solid Patch Cord RJ-45

#### FEATURES

- Support of POE and POE+
- Slim-line plug
- Transparent, short boot
- Universal wiring scheme (B-wiring)
- 4 pairs of AWG 24 solid copper wires
- LSZH jacket material overall diameter: 5,0 mm ( $\pm$  0,3mm)



#### ORDERING INFORMATION

| Description                            | Color  | Part Number | Y- | -X | Length |
|--|--------|-------------|----|----|--------|
| Category 5e UTP Solid Patch Cord RJ-45 | White  | Y-2153240-X | 0- | -1 | 1,0m   |
|  | Blue   | Y-2153285-X | 0- | -5 | 5,0m   |
|  | Orange | Y-2153286-X | 1- | -0 | 10,0m  |
|  |        |             | 2- | -0 | 20,0m  |
|  |        |             | 3- | -0 | 30,0m  |

*Other lengths on request.*



# Modular Twisted Pair

## Voice - Backbone Cable

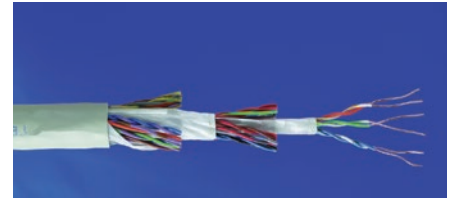
---

### 25 Pair Category 5e PowerSum Backbone Cable

#### FEATURES

- Category 5e UTP Backbone Cable
- 25 Pair Construction
- AWG 24
- UL listed

**Color:** white



#### ORDERING INFORMATION

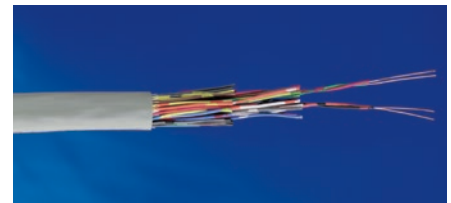
| Description  | Part Number |
|--|-------------|
| Sheathing: CMR; OD: 13.0 mm; Packaging: 305 m/Reel | 1499418-1   |

### Multi-Pair Category 3 Backbone Cable

#### FEATURES

- Category 3 Telephone Backbone Cable
- AWG 24
- LSZH Jacket

**Color:** white



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| 25 Pairs; OD: 13.0 mm; Packaging: 500 m/Reel        | 1711494-1   |
| 50 Pairs; OD: 16.0 x 29.0 mm; Packaging: 500 m/Reel | 1711495-1   |
| 100 Pairs; OD: 35.0 mm; Packaging: 500 m/Reel       | 1711496-1   |

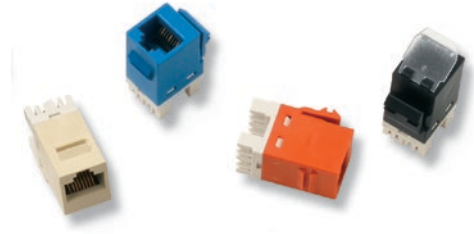
# Modular Twisted Pair

## Voice - Jacks

### SL Series Modular Jack (UTP)

#### FEATURES

- SlimLine (SL) Series: Thin profile improves outlet density
- Category 3
- 90° or 180° cable dress for easy termination
- Bend-limiting strain relief included
- UL listed
- Universal wiring - T568 A or B wiring pattern
- Several colors available on demand



#### ORDERING INFORMATION

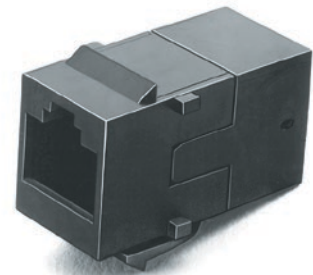
| Description                                     | Part Number |
|---|-------------|
| Cat. 3 RJ-11 unshielded Jack without dust cover | Y-1375192-X |

| Y- -X | Color        |
|-------|--------------|
| 0- -1 | Beige        |
| 0- -2 | Black        |
| 0- -6 | Blue         |
| 1- -3 | Alpine White |

### Modular Coupler

#### FEATURES

- Straight Category 3 telephone coupler
- Compact coupler for two modular plugs



#### ORDERING INFORMATION

| Description                             | Part Number |
|---|-------------|
| Cat. 3 RJ-11 (6 pos) unshielded Coupler | 555050-1    |
| Cat. 3 RJ-45 (8 pos) unshielded Coupler | 555052-1    |

# Modular Twisted Pair

## Voice - Jacks

### SL Series Multimedia Inserts

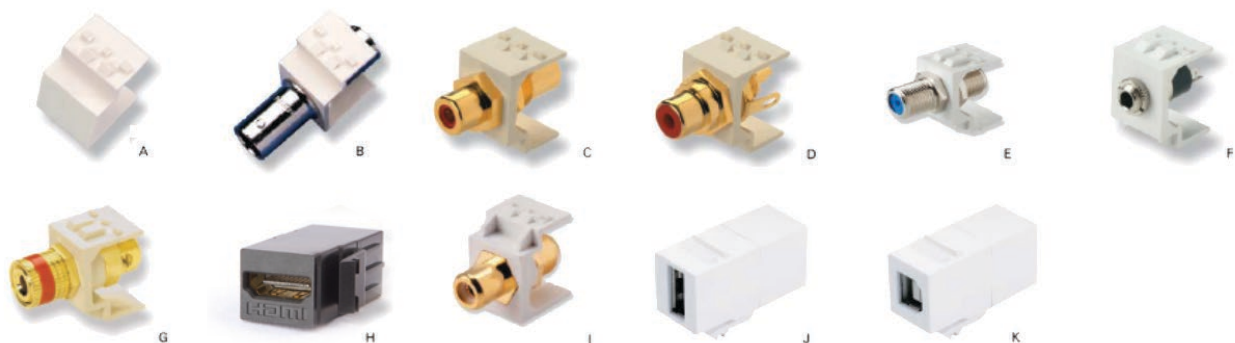
| Y- -X | Color        |
|-------|--------------|
| 0- -1 | Light Almond |
| 0- -2 | Black        |
| 1- -3 | Alpine White |

#### FEATURES

- The inserts offer flexibility and density at the work area outlet
- Can be installed in any faceplate or outlet designed to the SL series jack footprint
- Some couplers may not be available in all colors

#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| ST Coupler; Fiber Type: Multimode  | Y-1339123-X |
| ST Coupler; Fiber Type: Singlemode   | Y-1479181-X |
| BNC Coupler Insert; Figure B   | Y-2111615-X |
| MT-RJ SL Series Housing  | Y-1374416-X |
| RCA Coupler, Red Dielectric  | Y-1375361-X |
| RCA Coupler, White Dielectric  | Y-1375362-X |
| RCA Coupler, Yellow Dielectric   | Y-1375363-X |
| RCA Solder Termination, Red Dielectric   | Y-1375364-X |
| RCA Solder Termination, White Dielectric   | Y-1375365-X |
| RCA Solder Termination, Yellow Dielectric  | Y-1375366-X |
| RCA Coupler, Green Dielectric  | Y-1933192-X |
| RCA Coupler, Blue Dielectric   | Y-1933193-X |
| RCA Coupler, Orange Dielectric   | Y-1933194-X |
| RCA to F-Connector; Figure I   | Y-1933096-X |
| F-Connector Coupler, 2 GHz; Figure E   | Y-1499855-X |
| 3.5 mm Stereo Mini-Headphone, Screw Terminal, Figure F                                 | Y-1933582-X |
| Speaker Post, Black Stripe   | Y-1479190-X |
| Speaker Post, Red Stripe; Figure G   | Y-1479191-X |
| SC Simplex Coupler; Fiber Type: Multimode or Singlemode                                | Y-1499836-X |
| LC Coupler; Fiber Type: Singlemode APC; LC Coupler and Housing, Green                  | 1933286-3   |
| LC Coupler; Fiber Type: Singlemode; LC Coupler and Housing, Blue                       | 1933286-4   |
| LC Coupler; Fiber Type: XG LO 850 nm 50/125µm; LC Coupler and Housing, Aqua, OM3 & OM4 | 1933286-6   |
| LC Coupler; Fiber Type: 50/125µm; LC Coupler and Housing, Black, OM2                   | 1-1933286-1 |
| LC Coupler; Fiber Type: 62.5/125µm; LC Coupler and Housing, Beige, OM1                 | 1-1933286-2 |
| USB A-A Coupler; Figure J  | Y-1933659-X |
| USB B-A Coupler; Figure K  | Y-1933661-X |
| HDMI Coupler Figure H  | 2111500-2   |
| Blank Insert Figure A  | Y-1116412-X |



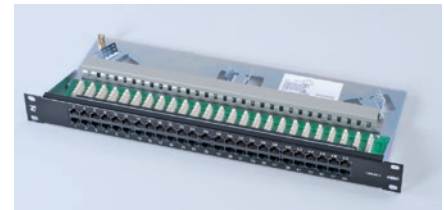
# Modular Twisted Pair Voice - Patch Panels

## Category 3 Telephone Patch Panel - fixed

### FEATURES

- 19", 1U, Telephone Panel with 50 ports
- Prepared for AMPTRAC upgrade
- Active Pin-out: 36,45
- Enhanced 110 IDC blocks compatible with 110C Impact or LSA-PLUS Insertion tool
- Conductor diameter range from AWG 26-22 (0.4-0.65 mm)
- Rear cable management for multipair cables
- 110 IDC blocks for conductor insulation diameters up to 1.28 mm

**Color:** black (RAL 9005)



### ORDERING INFORMATION

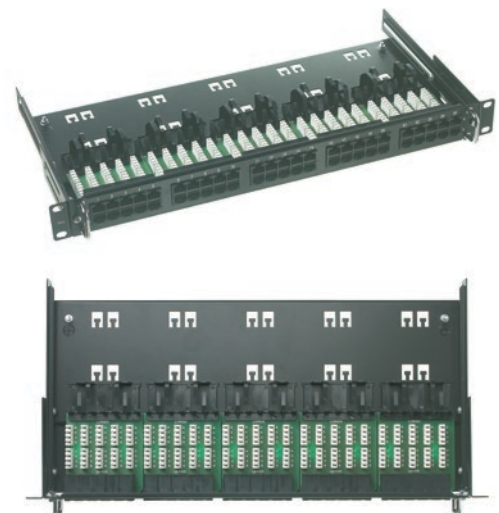
| Description   | Part Number |
|---|-------------|
| Cat. 3; 50 Ports Telephone Patch Panel - fixed; 110C IDC blocks | 1394060-2   |

## Category 3 Telephone Patch Panel - sliding

### FEATURES

- 19", 1U, Telephone Panel with 25 or 50 ports
- Active Pin-out: 36,45
- Enhanced LSA-PLUS IDC blocks compatible with LSA-PLUS Insertion tool
- Expansive cable management for maximum cable protection
- Innovative sliding panel mechanism for improved ease of installation

**Color:** black (RAL 9005)



### ORDERING INFORMATION

| Description   | Part Number   |
|---|---------------|
| Cat. 3; 25 Ports Telephone Patch Panel - sliding; LSA-PLUS blocks | 7022 4 001-25 |
| Cat. 3; 50 Ports Telephone Patch Panel - sliding; LSA-PLUS blocks | 7022 4 001-50 |

# Modular Twisted Pair

## Voice - LSA-PLUS

### LSA-PLUS Series 2 Backmount Disconnection Module

10 pair LSA-PLUS modules which contain two piece contacts normally closed. Has advantage of individual pair disconnection and four wire test access.



#### ORDERING INFORMATION

| Description  | Part Number   |
|--|---------------|
| LSA-PLUS Backmount Disconnection Module, White, Pack of 10 | 6089 1 102-02 |
| LSA-PLUS Backmount Disconnection Module, Cream, Pack of 10 | 6089 1 810-00 |

### 10 Pair Label Holder and Labels

Easy identification of terminations and groups of modules. Label holders are available for mounting on 10 pair LSA-PLUS modules and for mounting directly onto the backmount frame. Labels can be ordered separately.



#### ORDERING INFORMATION

| Description   | Quantity          | Part Number   |
|---|-------------------|---------------|
| Double Sided Hinged Label Holder Grey                                       | Pack of 10        | 6092 1 810-00 |
| Label Holder Complete with Label, fits on one position on backmount frame   | Pack of 10 Strips | 6092 1 820-00 |
| Blank white labels for use with label holders 6092 1 810-00 & 6092 1 840-00 | Pack of 100       | 6534 1 001-00 |

### PROFIL Module Label Holder

Designed for universal use with backmount frame and PROFIL rod systems. For vertical identification

Label size: 95 x 18 mm for 2/10

Requires the space of one connection module in the backmount frame / PROFIL rod system.



#### ORDERING INFORMATION

| Description                | Part Number   |
|----------------------------|---------------|
| PROFIL Module Label Holder | 6753 2 009-00 |

# Modular Twisted Pair

## Voice - LSA-PLUS

### LSA-PLUS Series 2 Connection Cord

Equipped with a plug at each end of the cord. Primarily used for interconnecting separate circuits either on the same or between different LSA-PLUS modules.



#### ORDERING INFORMATION

| Description  | Quantity   | Part Number   |
|--|------------|---------------|
| 2 Pole. For use with LSA-PLUS connection and disconnection modules, cord length 1.5m | Pack of 10 | 6529 1 022-01 |
| 4 Pole. For use with LSA-PLUS switching and disconnection modules, cord length 1.5m  | Pack of 10 | 6529 1 042-01 |

### ComProtect Series B

Compact plug-in single pair overvoltage protection for LSA-PLUS series. ComProtect Series B protects from damage caused by overvoltage with a 3-pole GDT with failsafe (primary circuit) and transient secondary elements (Diodes) for quick responding fine protection. Additional overcurrent protection is realised with reversible thermistors (PTCs) that complete the 5 point protective circuitry. These devices are designed for use in exchanges and terminal equipment in both analogue and ISDN (<2MBps) systems. All include earthing rail.



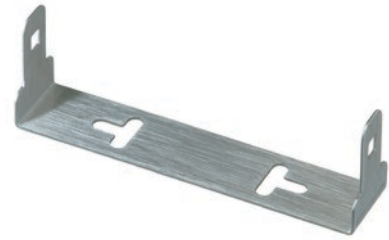
#### ORDERING INFORMATION

| Description  | Quantity | Part Number   |
|--|----------|---------------|
| CP BI12A1 - 5 point and transient protection, max. operating voltage is 12V, GDT with failsafe | 10       | 5909 1 084-00 |
| CP BI24A1 - as above, max. operating voltage is 24V  | 10       | 5909 1 083-00 |
| CP BI70A1 - as above, max. operating voltage is 70V  | 10       | 5909 1 082-00 |
| CP BI180A1 - as above, max. operating voltage is 180V  | 10       | 5909 1 076-00 |
| CP BOD180A2 - high GDT clamping voltage (>250V)  | 10       | 5909 1 078-10 |

# Modular Twisted Pair Voice - LSA-PLUS

## Backmount Frames

Backmount frames in a variety of sizes, suitable for LSA-PLUS Series 2 Modules.



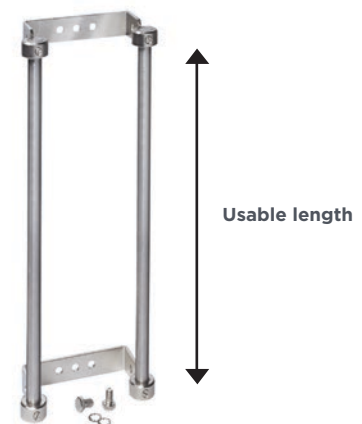
### ORDERING INFORMATION

| Description           | Quantity | Part Number   |
|-----------------------|----------|---------------|
| 11mm Deep, 1 Module   | 1        | 6424 3 005-01 |
| 11mm Deep, 2 Modules  | 1        | 6424 3 005-02 |
| 11mm Deep, 7 Modules  | 1        | 6424 3 005-07 |
| 30mm Deep, 10 Modules | 1        | 6424 3 007-10 |
| 50mm Deep, 30 Modules | 1        | 6424 3 009-30 |
| 60mm Deep, 34 Modules | 1        | 6424 3 010-34 |

## PROFIL Frame 95/46

For installation in already set-up distribution frames and distribution cabinets.

- The frame consists of:
  - 2 PROFIL rods, 12mm in diameter (stainless steel)
  - An adequate number of PROFIL holders with a depth of 46mm
- Completely assembled PROFIL frame:
  - PROFIL frame 95 for accommodation of LSA PROFIL modules 2/10, 2/8-95, LS 10 pairs and HighBand\*



### ORDERING INFORMATION

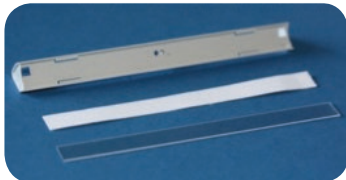
| Description                               | Part Number   |
|---|---------------|
| PROFIL Frame 95/46, length of rods 299mm  | 6577 2 812-01 |
| PROFIL Frame 95/46, length of rods 574mm  | 6577 2 812-02 |
| PROFIL Frame 95/46, length of rods 861mm  | 6577 2 812-03 |
| PROFIL Frame 95/46, length of rods 1136mm | 6577 2 812-04 |
| PROFIL Frame 95/46, length of rods 1423mm | 6577 2 812-05 |
| PROFIL Frame 95/46, length of rods 1698mm | 6577 2 812-06 |

# Modular Twisted Pair

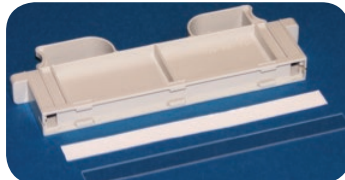
## Voice - LSA-PLUS

### LSA-PROFIL Series HD180 Disconnection module

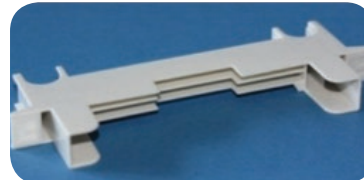
Space saving module for 10 copper pairs. The cable side is to be permanent connected to to back side. The front side is for test access and jumper wires. Mounting pitch on PROFIL rods is 13.5 mm.



**Hinged label holder for LSA-PLUS HD180 modules**  
(LSA-7014 2 058-00)



**LSA-PLUS HD180 Label holder for backmount-frames and Profile rods**  
(LSA-7014 2 065-00)



**Mounting aid for LSA-PROFIL HD180 disconnection modules**  
(LSA-7014 3 252-00)



**LSA-PLUS HD180 test cord**  
(7014 2 003-00)



**LSA-PLUS HD180 test cord**  
(7014 2 004-00)

### ORDERING INFORMATION

| Description  | Part Number       |
|--|-------------------|
| LSA-PROFIL HD180 Disconnection Module, 10 pairs  | LSA-7014 2 250-00 |
| Hinged label holder for LSA-PLUS HD180 modules, with clear cover and blank paper label. Label size: 98.5 x 8.2 mm. Fits directly on a HD180 module and covers it                             | LSA-7014 2 058-00 |
| LSA-PLUS HD180 Label holder for backmount-frames and PROFIL rods. Label Size: 98,5 x 8,2 mm. Does not cover a module; needs a mounting position on backmount-frames or PROFIL rods (10.5 mm) | LSA-7014 2 065-00 |
| Mounting aid for LSA-PROFIL HD180 disconnection modules. Helps to hold the module in place during back side cable termination  | LSA-7014 3 252-00 |
| LSA-PLUS HD180 test cord, 2-pin<br>Length: 0.2 m<br>Suitable for LSA-PLUS HD180 connection and disconnection modules<br>Parallel test access   | 7014 2 003-00     |
| LSA-PLUS HD180 test cord, 4-lead parallel tap for individual testing in both directions. Interrupts the line.<br>Length: 0.2 m<br>Suitable for LSA-PLUS HD180 disconnection modules          | 7014 2 004-00     |



# Modular Twisted Pair

## Voice - LSA-PLUS

---

### NTP OD180A2

Recommended for protection of distribution and terminal equipment in analog, ISDN, HDSL and ADSL telecommunication systems. Designed for the partial or complete equipping of HD180 disconnection or switching modules in conjunction with a 10-pair earth bar (Order No.: PRO-7019 3 237-00).

The protection circuit consists of a 3-pole overvoltage arrestor, fail-safe contact, reversible overcurrent protection components and diodes for secondary overvoltage protection. The overcurrent protection functions as a reversible line fuse.



### ORDERING INFORMATION

| Description | Part Number   |
|-------------|---------------|
| NTP OD180A2 | 7019 1 214-00 |

# Modular Twisted Pair

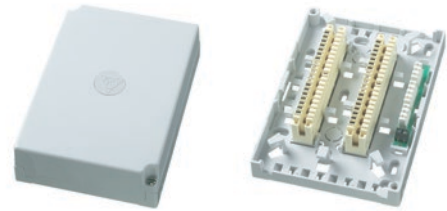
## Voice - Indoor Boxes

---

### Connection Box 201D

Low profile plastic box accommodates up to 20 pairs or 2 LSA-PLUS modules.

Dimensions: 170(H) x 120(W) x 43(D)mm



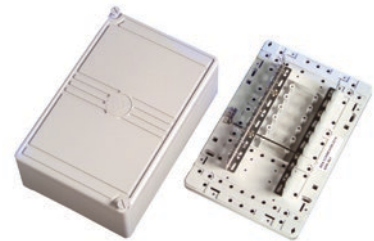
#### ORDERING INFORMATION

| Description                  | Part Number   |
|------------------------------|---------------|
| Connection Box 201D, 20 Pair | 6429 1 076-00 |
| Connection Box 201D, 10 Pair | 6429 1 078-00 |

### Connection Box 301A

Plastic modular box, for 100 pairs designed to accommodate 10 LSA-PLUS 10 pair modules.

Dimensions: 320(H) x 210(W) x 120(D)mm



#### ORDERING INFORMATION

| Description  | Part Number   |
|--|---------------|
| Connection Box 301A<br>(Includes 1 backmount frame 5/30/10A equivalent and earthing) | 6530 1 017-00 |

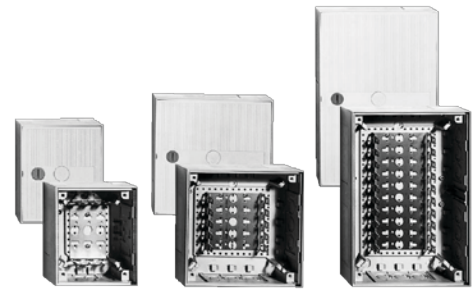
# Modular Twisted Pair

## Voice - Indoor Boxes

### KRONECTION Boxes

#### FEATURES

- Plastic Distribution Box for Surface- and flush-mounted applications
- KRONECTION boxes with back-mount frames are designed for installation of overvoltage protection elements (additional wall attachment frame required)
- Protection class: IP 30 according to DIN 40050. These distribution boxes are designed for indoor use.
- Flammability class: UL 94V-0



**Color:** RAL 7035 (polystyrene-compatible paintings possible).

#### ORDERING INFORMATION

| Description   | H x W x D (mm) | Part Number   |
|---|----------------|---------------|
| KRONECTION-Box I (outfitted with 1 back-mount frame for 3 LSA-PLUS modules 2/10)    | 170 x 140 x 75 | 6436 1 013-xx |
| KRONECTION-Box II (outfitted with 1 back-mount frame for 5 LSA-PLUS modules 2/10)   | 215 x 215 x 75 | 6406 1 015-xx |
| KRONECTION-Box III (outfitted with 1 back-mount frame for 10 LSA-PLUS modules 2/10) | 320 x 215 x 75 | 6437 1 020-xx |

xx = 20 for door with turnbuckle

xx = 21 for door with cylinder lock and one key

### Accessories for KRONECTION-Box I, II, III

#### FEATURES

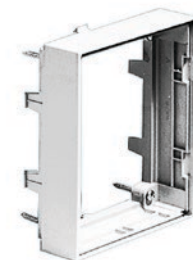
- Mounting frames available as flush-mount or for attachment
- Attachment frames for increasing the installation depth by 37 mm for overvoltage protection applications

#### ORDERING INFORMATION

| Description  | Part Number   |
|--|---------------|
| Flush-mounting frame for KRONECTION-Box I                | 6436 2 004-20 |
| Attachment frame for KRONECTION-Box I                    | 6436 3 003-20 |
| Flush-mounting frame for KRONECTION-Box II               | 6406 2 004-20 |
| Attachment frame for KRONECTION-Box II                   | 6406 3 003-20 |
| Flush-mounting frame for KRONECTION-Box III              | 6437 2 004-20 |
| Attachment frame for for KRONECTION-Box III              | 6437 3 003-20 |
| Cylinder lock for replacing the turnbuckle incl. one key | 6437 2 010-00 |
| Jumper pin as wire guide (6 pieces)                      | 6406 2 013-00 |



**Flush-mounting frame**



**Attachment frame**

# Modular Twisted Pair Voice - Indoor Boxes

## LSA Connection Boxes

### FEATURES

- Manufactured from lightweight 1mm mild steel
- Removable top and bottom gland plates and internal jumper rings
- Quick release hinges
- Doors can be hinged either left or right
- Strong, robust and durable solution
- Tidy cable management
- Quick release hinges aid and simplify installations
- Increased flexibility



### ORDERING INFORMATION

| Description               | Pairs Capacity | Backmount Frames | Dimensions (mm) WxHxD | Weight (Kg) | Jumper rings | Pack Qty | Part Number.  |
|---------------------------|----------------|------------------|-----------------------|-------------|--------------|----------|---------------|
| Connection Box 500 Series | 100            | 1 x 10 way       | 235x350x115           | 3.2         | 4            | 1        | 6428 2 421-00 |
| Connection Box 500 Series | 200            | 1 x 20 way       | 235x700x115           | 5.2         | 6            | 1        | 6428 2 420-00 |
| Connection Box 500 Series | 200            | 2 x 10 way       | 425x350x115           | 5.4         | 6            | 1        | 6428 2 418-00 |
| Connection Box 500 Series | 400            | 2 x 20 way       | 425x700x115           | 8.6         | 9            | 1        | 6428 2 419-00 |
| Connection Box 510        | 340            | 1 x 34 way       | 300x1000x140          | 11          | 8            | 1        | 6428 2 423-00 |
| Connection Box 520        | 680            | 2 x 34 way       | 500x1000x140          | 17          | 12           | 1        | 6428 2 424-00 |
| Connection Box 530        | 1020           | 3 x 34 way       | 750x1000x140          | 25          | 16           | 1        | 6428 2 425-00 |
| Connection Box 540        | 1340           | 4 x 34 way       | 1000x1000x140         | 32          | 20           | 1        | 6428 2 422-00 |

# Modular Twisted Pair

## Unloaded Hardware - Patch Panels

### UCP Patch Panel Angled and Flushmount

#### FEATURES

- 19" 1U unloaded modular patch panel with support for 4 Quick-Fit Modules
- Angled and flush style panels available
- Modular, rear cable management for both horizontal Copper and Fiber cables
- Accepts Pre-terminated Cu or FO cassettes or Field-terminated Copper modules
- Including grounding bolt

**Color:** black (RAL 9005)

#### ORDERING INFORMATION

| Description                                 | Part Number |
|---|-------------|
| UCP Patch Panel 1U Angled                   | 1-1671590-1 |
| UCP Patch Panel 1U Flush                    | 1-1671594-1 |
| UCP Patch Panel 1U Angled w/o cable bracket | 0-1671590-1 |
| UCP Patch Panel 2U Angled w/o cable bracket | 0-1671590-2 |
| UCP Patch Panel 4U Angled w/o cable bracket | 0-1671590-4 |



### Angled 1U Modular Panel (unloaded)

#### FEATURES

- 19" 1U angled modular Patch Panel to be equipped with different Slim Line jacks
- Adjustable & removable rear cable bracket incl. easy to use cable organizing CaRe-clips
- Including grounding bolt

**Color:** black (RAL 9005)

#### ORDERING INFORMATION

| Description              | Part Number |
|--------------------------|-------------|
| Angled modular panel UTP | 1-1671157-1 |
| Angled modular panel STP | 1-1671157-2 |



# Modular Twisted Pair

## Unloaded Hardware - Patch Panels

### Flushmount AMPTRAC *Ready!* Patch Panel (unloaded)

#### FEATURES

- 19" 1U unloaded flushmount panel to be equipped with different SlimLine jacks
- AMPTRAC *Ready!* version: prepared for AMPTRAC upgrade
- Holds up to 24 SL jacks

**Color:** black (RAL 9005)

#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| AMPTRAC <i>Ready!</i> unloaded panels for all SL jacks;<br>Color: black (RAL 9005)      | 1711685-1   |
| AMPTRAC <i>Ready!</i> unloaded panels for all SL jacks;<br>Color: light gray (RAL 7035) | 1711685-2   |



### Flushmount Modular Patch Panel (unloaded)

#### FEATURES

- 19" 1U unloaded flushmount panel to be equipped with different SlimLine jacks
- Suitable for UTP and STP SL Series jacks
- Including grounding bolt

**Color:** black (RAL 9005)

#### ORDERING INFORMATION

| Description              | Part Number |
|--------------------------|-------------|
| Flushmount Modular Panel | 1-1671183-1 |



### Flushmount Standard Patch Panels (unloaded)

#### FEATURES

- 19" Standard unloaded flushmount panel to be equipped with different SlimLine jacks
- Accepts up to 24 SL jacks
- Including grounding bolt

#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| 24 port panel; Height: 1U; Color: black (RAL 9005)      | 336526-1    |
| 24 port panel; Height: 1U; Color: light gray (RAL 7035) | 336526-4    |



# Modular Twisted Pair

## Unloaded Hardware - Patch Panels

### Modular Q-Jack Patch Panel (unloaded)

#### FEATURES

- 19" unloaded 1U flushmount patch panel to be used with Q-Jacks (see page 268)
- UTP and STP configuration possible
- Integral cable management bar
- 45° IDC contacts providing secure, gas-tight connections
- Accepts 110 style termination tools
- Universal 568A/B wiring
- Discrete labelling system



#### ORDERING INFORMATION

| Description                           | Part Number  |
|---------------------------------------|--------------|
| 24 port Q-Jack Patch Panel (unloaded) | 300001739943 |
| 48 port Q-Jack Patch Panel (unloaded) | 300001739995 |
| Blank plugs 12 per pack               | 300001741753 |

### Modular KM8 Jack Patch Panel (unloaded)

#### FEATURES

- 19" unloaded 1U flushmount patch panel to be used with KM8 Jacks (see pages 267, 272 and 274)
- UTP and STP configuration possible
- Integral cable management bar
- KM8 termination tool
- Discrete labelling system



#### ORDERING INFORMATION

| Description                        | Part Number   |
|------------------------------------|---------------|
| 24 port KM8 Patch Panel (unloaded) | 7022 2 155-24 |
| 32 port KM8 Patch Panel (unloaded) | 7022 2 155-32 |

# Modular Twisted Pair

## Unloaded Hardware - Consolidation Box

### Quick-Fit Consolidation Point Box

#### FEATURES

- Wall mount or raised floor use
- Hinged cover with knurled screw
- Low profile (H = 56mm)
- High flexibility, accepts copper and fiber Quick-Fit modules and/or cassettes
- Installer friendly
- Dust resistant
- Easy access for cleaning fiber optic connectors
- Robust construction
- Integrated strain relief feature
- Including grounding bolt

**Color:** Black (RAL 9005)



#### ORDERING INFORMATION

| Description                       | Part Number |
|-----------------------------------|-------------|
| Quick-Fit Consolidation Point Box | 1-1671414-1 |

### Unloaded Copper Quick-Fit Modules

- To be equipped with six SL Jacks
- Available for STP and UTP
- Automatic bonding by design
- Labels included

#### ORDERING INFORMATION

| Description            | Part Number |
|------------------------|-------------|
| STP Quick-Fit module   | 2111093-1   |
| UTP Quick-Fit module   | 2111117-1   |
| Blank Quick-Fit module | 1479698-1   |





# Modular Twisted Pair

## Unloaded Hardware - Mini-Pods

---

### MiniPods

#### FEATURES

- External mounting points
- Can be passed through standard floor grommets
- Incorporated dust protection on each port
- 3, 4 and 6 port versions available
- Unloaded version for AMP-TWIST jacks (STP & UTP) and SL Series 110C Jacks



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| MiniPod Unloaded 3 port w/angled adaptor for AMP-TWIST & SL jacks | 2153216-3   |
| MiniPod Unloaded 4 port w/angled adaptor for AMP-TWIST & SL jacks | 2153216-4   |
| MiniPod Unloaded 6 port w/angled adaptor for AMP-TWIST & SL jacks | 2153216-6   |

# Modular Twisted Pair

## Unloaded Hardware - Outlets 80 x 80 mm (DIN)

### DIN Flushmount 3 Port Angled Outlet

#### FEATURES

- 3 port outlet to accept up to 3 SL Series Jacks
- Compatible with standard and designer 50 x 50 faceplates and 80 x 80 frames
- Ports are iconable Links to labeling in by name



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| DIN flushmount 3 port angled outlet (incl. 50 x 50 faceplate); Color: almond (RAL 1013)                     | 1711485-1   |
| DIN flushmount 3 port angled outlet (incl. 50 x 50 faceplate); Color: pure white (RAL 9010)                 | 1711485-2   |
| DIN flushmount 3 port angled outlet UP0 (mounting frame only)   | 1711490-1   |
| DIN flushmount 3 port angled outlet (incl. 50 x 50 faceplate & 80 x 80 frame); Color: almond (RAL 1013)     | 1711537-1   |
| DIN flushmount 3 port angled outlet (incl. 50 x 50 faceplate & 80 x 80 frame); Color: pure white (RAL 9010) | 1711537-2   |

### DIN 3 Port Angled Outlet

#### FEATURES

- 3 Port outlet to accept up to 3 SL Series Jacks
- 50 x 50 mm footprint
- Supplied complete with 2 removable / replaceable blanking plates



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| 50 x 50 mm DIN 3 port angled outlet without plastic frame; Color: almond (RAL 1013)             | 336613-1    |
| 50 x 50 mm DIN 3 port angled outlet without plastic frame; Color: pure white (RAL 9010)         | 2-336613-1  |
| 50 x 50 mm DIN 3 port angled outlet with 80 x 80 mm plastic frame; Color: almond (RAL 1013)     | 336614-1    |
| 50 x 50 mm DIN 3 port angled outlet with 80 x 80 mm plastic frame; Color: pure white (RAL 9010) | 2-336614-1  |

# Modular Twisted Pair

## Unloaded Hardware - Outlets 80 x 80 mm (DIN)

### DIN Dual Angled Outlet

#### FEATURES

- Dual outlet to accept either up to 2 SL Series Jacks
- To be used with single or multiple gang DIN faceplates
- Supplied complete with back plate, adapter plate and shutters
- Individual ports are icon-able



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| DIN Dual Angled Outlet, for 2x Slim Line Jack; Color: almond (RAL 1013)     | 966936-5    |
| DIN Dual Angled Outlet, for 2x Slim Line Jack; Color: pure white (RAL 9010) | 2-966936-5  |

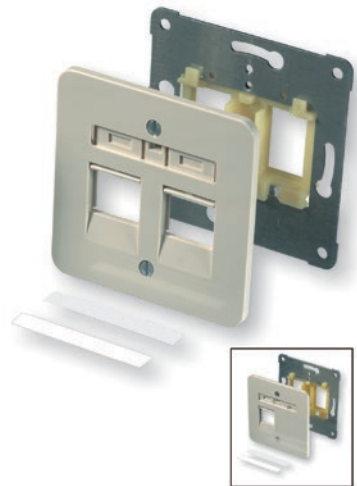
### DIN Standard Outlet for Recessed Mounting

#### FEATURES

- Outlet for recessed mounting
- To be used with single or multiple gang DIN faceplates
- Supplied complete with spring loaded shutter

#### ORDERING INFORMATION

| Description                                     | Part Number |
|---|-------------|
| DIN standard outlet; almond (RAL 1013)          | 966223-1    |
| DIN standard outlet; pure white (RAL 9010)      | 2-966223-1  |
| DIN dual straight outlet; almond (RAL 1013)     | 966224-1    |
| DIN dual straight outlet; pure white (RAL 9010) | 2-966224-1  |



### European Keystone Faceplate for HK and KM8

#### FEATURES

- Two port faceplate, 50x50
- For use with Cat5e HK and Cat6 KM8 jacks
- Complete with integrated dust protection
- Removable corners for installation in areas with restricted space



#### ORDERING INFORMATION

| Description                               | Part Number   |
|---|---------------|
| Unloaded Keystone Faceplate, 50x50, White | 6690 2 675-01 |
| Faceplate, 80x80, White                   | 6690 3 725-05 |

Note: Unloaded faceplates compatible with HK jacks:

Cat 5e HK UTP Pure White (6540 1 130-01)

Cat 5e HK UTP Black (6540 1 130-04)

Cat 5e HK STP Metal (6540 1 154-02)

# Modular Twisted Pair

## Unloaded Hardware - Outlets 80 x 80 mm (DIN)

### DIN 50 x 50 mm Faceplate Frame

#### FEATURES

- Faceplate suitable for all outlets with a 50 x 50 mm footprint
- External Dimensions 80 x 80 mm

#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| 80 x 80 mm Faceplate Frame for 50 x 50 mm outlets; pure white (RAL 9010)    | 5-336608-1  |
| 80 x 80 mm Faceplate Frame for 50 x 50 mm outlets; Color: almond (RAL 1013) | 5-336608-2  |
| 80 x 80 mm Faceplate Frame for 50 x 50 mm outlets; Color: black (RAL 9005)  | 5-336608-3  |



### Single and Multiple DIN Faceplate Frames

#### FEATURES

- Faceplate for suitable for all outlets with a 75 x 75 mm footprint
- External Dimensions 80 x 80 mm

#### ORDERING INFORMATION

| Description                                   | Part Number |
|---|-------------|
| Single Faceplate Frame; almond (RAL 1013)     | 964830-1    |
| Single Faceplate Frame; pure white (RAL 9010) | 2-964830-1  |
| Dual Faceplate Frame; almond (RAL 1013)       | 964361-2    |
| Dual Faceplate Frame; pure white (RAL 9010)   | 2-964361-2  |
| Triple Faceplate Frame; almond (RAL 1013)     | 964361-3    |
| Triple Faceplate Frame; pure white (RAL 9010) | 2-964361-3  |



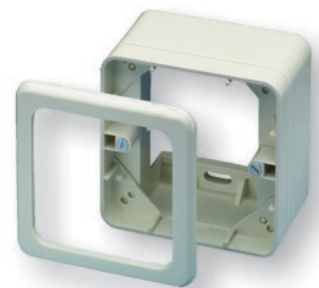
### DIN Surface Mount Outlet Back Box

#### FEATURES

- Back Box for Surface Mounting
- Available individually or as a complete kit with a single faceplate
- Not suitable for use with multiple faceplates

#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Surface Mount Outlet Back Box; almond (RAL 1013); Back box only            | 966740-1    |
| Surface Mount Outlet Back Box; almond (RAL 1013); Back box + faceplate     | 966740-2    |
| Surface Mount Outlet Back Box; pure white (RAL 9010); Back box only        | 2-966740-1  |
| Surface Mount Outlet Back Box; pure white (RAL 9010); Back box + faceplate | 2-966740-2  |
| Adaptor DIN RAIL to DIN Surface Mount Outlet Back Box;                     | 1671164-1   |



# Modular Twisted Pair

## Unloaded Hardware - Outlets 80 x 80 mm (DIN)

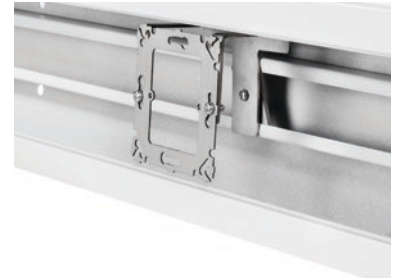
### Universal Mounting Bracket

#### FEATURES

- Universal Mounting Bracket for installations into trunking
- Available in two sizes:
  - for installation into trunking with a small "C-Profile"
  - for installation into trunking with a big "C-Profile"

#### ORDERING INFORMATION

| Description                                    | Part Number |
|--|-------------|
| Universal Mounting Bracket for small C-profile | 966498-1    |
| Universal mounting bracket for big C-profile   | 1671925-1   |



# Modular Twisted Pair

## Unloaded Hardware - Outlets 80 x 80 mm (DIN)

### Floor box Bracket for OBO Bettermann GESR 7/10

#### FEATURES

- Mounting Bracket for installations into Ackerman floor boxes
- Supplied complete with fixing screws
- Stainless Steel bracket
- Complete with strain relief handle
- 2 lengths available - with or without cable management
- Blanking Plate available separately



#### ORDERING INFORMATION

| Description                                  | Part Number |
|--|-------------|
| Blanking Plate (Pearl white)                 | 964719-1    |
| Floor box Bracket; 3 Gang without Management | 1394294-1   |
| Floor box Bracket; 2 Gang without Management | 1394294-3   |

### SL Jack Mounting Frame for Bettermann Floor Boxes

#### FEATURES

- High density SL applications in floor box environments
- Angled geometry for easy cable management
- Frame is iconable and provides labeling space
- May be modified to suit almost any floor box application
- SL Jacks with dust covers recommended for use within these frames
- Patent pending
- Available unpainted or in black
- Unpainted parts are equipped with VDE grounding bolt



**Color:** black

#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| SL Jack mounting frame; 6 Ports black (short version)     | 1711255-1   |
| SL Jack mounting frame; 9 Ports black (long version)      | 1711255-2   |
| SL Jack mounting frame; 6 Ports unpainted (short version) | 1711255-3   |
| SL Jack mounting frame; 9 Ports unpainted (long version)  | 1711255-4   |

# Modular Twisted Pair

## Unloaded Hardware - Outlets Swiss Installation

### “EDIZIOdue” 2 Port Straight

#### FEATURES

- “EDIZIOdue” 2 port faceplates suitable for trunking, recessed or surface mounting
- Accepts all SL Series Jacks
- Individual ports are icon-able



#### ORDERING INFORMATION

| Description                       | Part Number |
|-----------------------------------|-------------|
| AP; Color: pure white (RAL 9010)  | 5-101016-7  |
| UP; Color: pure white (RAL 9010)  | 1711168-1   |
| UP; Color: black (RAL 9005)       | 1711168-4   |
| KNL; Color: pure white (RAL 9010) | 1711169-1   |
| KNL; Color: black (RAL 9005)      | 1711169-4   |

### Kallysto 2 Port Angled with Adaptor Plate

#### FEATURES

- Kallysto 2 port angled faceplate suitable for trunking, recessed or surfaced mounting
- Accepts all SL Series Jacks
- Large labeling field



#### ORDERING INFORMATION

| Description                       | Part Number |
|-----------------------------------|-------------|
| UP; Color: pure white (RAL 9010)  | 1711604-1   |
| UP; Color: black (RAL 9005)       | 1711604-4   |
| KNL; Color: pure white (RAL 9010) | 1711632-1   |
| KNL; Color: black (RAL 9005)      | 1711632-4   |
| AP; Color: pure white (RAL 9010)  | 1711633-1   |
| AP; Color: black (RAL 9005)       | 1711633-4   |

### “FLF” 2 Port with Adaptor Plate

#### FEATURES

- Dual faceplate suitable for floor box mounting
- Accepts all SL Series Jacks



#### ORDERING INFORMATION

| Description            | Part Number |
|------------------------|-------------|
| FLF; Color: pure white | 1711606-1   |
| FLF; Color: black      | 1711606-2   |

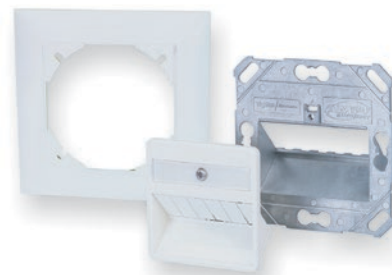
# Modular Twisted Pair

## Unloaded Hardware - Outlets Swiss Installation

### “EDIZIOdue Compatible” 3 Port DIN Flushmount Angled

#### FEATURES

- “EDIZIOdue compatible” 3 port angled faceplates suitable for trunking or recessed mounting
- Accepts all SL Series Jacks (except AMP-TWIST 7<sub>A</sub>S)
- Self-adhesive labels are available
- Individual ports are icon-able



#### ORDERING INFORMATION

| Description                               | Part Number |
|---|-------------|
| UP, 3 port; Color: pure white (RAL 9010)  | 1711625-1   |
| KNL, 3 port; Color: pure white (RAL 9010) | 1711626-1   |

### “EDIZIOdue Compatible” 3 Port DIN Angled

#### FEATURES

- “EDIZIOdue compatible” 3 port DIN angled faceplates suitable for trunking or recessed mounting
- Accepts all SL Series Jacks
- Self-adhesive labels are available
- Individual ports are icon-able



#### ORDERING INFORMATION

| Description                               | Part Number |
|---|-------------|
| UP, 3 port; Color: pure white (RAL 9010)  | 1711082-1   |
| KNL, 3 port; Color: pure white (RAL 9010) | 1711083-1   |

### “EDIZIOdue Compatible” 4 Port Straight

#### FEATURES

- “EDIZIOdue compatible” 4 port straight faceplates
- Accepts all SL Series Jacks
- Self-adhesive labels are available
- Individual ports are icon-able



#### ORDERING INFORMATION

| Description                    | Part Number |
|--------------------------------|-------------|
| KNL, 4 Port; Color: pure white | 1711282-1   |
| KNL, 4 port; Color: black      | 1711282-2   |



# Modular Twisted Pair

## Unloaded Hardware - Outlets Swiss Installation

### “Standard” 2 Port Straight

#### FEATURES

- “Standard” Style 2 port faceplates suitable for trunking or recessed mounting
- Accepts all SL Series Jacks
- Individual ports are icon-able



#### ORDERING INFORMATION

| Description                       | Part Number |
|-----------------------------------|-------------|
| UP; Color: pure white (RAL 9010)  | 7-101016-3  |
| KNL; Color: pure white (RAL 9010) | 7-101016-5  |

### Basico 2 Port Angled with Adaptor Plate

#### FEATURES

- Basico 2 port angled faceplates suitable for trunking, recessed or surface mounting
- Accepts all SL series jacks
- Large labeling field



#### ORDERING INFORMATION

| Description                       | Part Number |
|-----------------------------------|-------------|
| UP; Color: pure white (RAL 9010)  | 1711605-1   |
| AP; Color: pure white (RAL 9010)  | 1711634-1   |
| KNL; Color: pure white (RAL 9010) | 1711644-1   |

### Blanking plate

#### FEATURES

- Blanking plate to be inserted from frontside



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Blanking Plate for EDIZIOdue 2port + 4port and Standard Outlets; Color: pure white | 1711283-1   |
| Blanking Plate for EDIZIOdue 2port + 4port and Standard Outlets; Color: black      | 1711283-2   |
| Blanking Plate for Kallysto, Basico and FLF; Color: pure white                     | 1711937-1   |
| Blanking Plate for Kallysto, Basico and FLF; Color: black                          | 1711937-2   |

# Modular Twisted Pair

## Unloaded Hardware - Outlets UK Style (BS)

### BS 50 mm Unloaded Faceplates and Shuttered Modules

#### FEATURES

- Unloaded faceplate accepts either 2 or 4 BS 50 mm shuttered modules
- Single shuttered 50 mm module (spring loaded shutter)
- Dimensions module: 25 x 50 mm

**Color:** signal white (RAL 9003)



#### ORDERING INFORMATION

| Description                                     | Part Number |
|---|-------------|
| Single shuttered 25 x 50 mm angled module       | 1711275-1   |
| Single gang faceplate (for 2 shuttered modules) | 1711399-1   |
| Dual gang faceplates (for 4 shuttered modules)  | 1711400-1   |
| Triple gang faceplate (for 3 shuttered modules) | 1711963-1   |
| Blanking plate 25 x 50 mm                       | 1711403-1   |
| Blanking plate 12.5 x 50 mm                     | 1711404-1   |

### UK Style Faceplates & Adaptors

#### FEATURES

- For use with CL keystone jacks
- In-line and angled options available
- Single and Double gang faceplates



#### ORDERING INFORMATION

| Description   | Part Number   |
|---|---------------|
| RJ-K CL Standard 25x50 adaptor white (pack of 20)                           | 6540 1 801-00 |
| RJ-K CL Angled 25x50 adaptor white (pack of 20)                             | 6540 1 802-00 |
| Keystone Angled 25x50 adaptor white (pack of 1)                             | 6538 4 111-05 |
| Unloaded Deep Faceplate, UK style, 50x50 (single-gang), White (Pack of 10)  | 6540 1 812-04 |
| Unloaded Deep Faceplate, UK style, 50x100 (double-gang), White (Pack of 10) | 6540 1 812-05 |

Note: Unloaded adaptors compatible with jacks:  
 Cat 5e CL UTP White shutter RJ45 (6540 1 200-01)  
 Cat 6 CL UTP White RJ45 (6537 1 010-00)

# Modular Twisted Pair

## Unloaded Hardware - Outlets UK Style (BS)

### BS LJ6C Unloaded Faceplates and Shuttered Modules

#### FEATURES

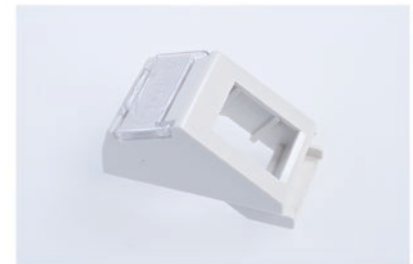
- Unloaded faceplate accepts either 1 or 2 LJ6C shuttered modules
- Dimensions faceplate: 86 x 86 mm (single and dual port)
- Single shuttered LJ6C module (spring loaded shutter)
- Dimensions module 25 x 39 mm

**Color:** signal white (RAL 9003)



#### ORDERING INFORMATION

| Description                           | Part Number |
|---------------------------------------|-------------|
| Single port LJ6C unloaded faceplate   | 1711301-1   |
| Dual port LJ6C unloaded faceplate     | 1711302-1   |
| Quad port LJ6C unloaded faceplate     | 2153004-1   |
| Single shuttered LJ6C module          | 1711348-1   |
| Blanking plate                        | 1711491-1   |
| Single unshuttered angled LJ6C module | 1711775-1   |
| Single shuttered angled LJ6C module   | 1859096-1   |



### LJ6C UK Style Faceplates & Adaptors

#### FEATURES

- Adaptors for use with CL keystone jacks
- In-line and angled options available

#### ORDERING INFORMATION

| Description                                | Part Number   |
|--|---------------|
| CL Standard LJ6C Adaptor (pack of 20)      | 6540 1 810-00 |
| CL Angled LJ6C Adaptor (pack of 20)        | 6540 1 813-00 |
| Keystone Standard LJ6C Adaptor (pack of 1) | 6830 2 402-00 |
| Keystone Angled LJ6C Adaptor (pack of 1)   | 6540 1 814-01 |

Note: Unloaded adaptors compatible with jacks:  
Cat 5e CL UTP White shutter RJ45 (6540 1 200-01)  
Cat 6 CL UTP White RJ45 (6537 1 010-00)



# Modular Twisted Pair

## Unloaded Hardware - Outlets UK Style (BS)

### Keystone UK Style Faceplate

#### FEATURES

- UK style faceplate with integrated dust protection
- For accommodating Category 5e HK and Category 6 KM8 and keystone jacks
- Dimensions: 85 x 85mm



#### ORDERING INFORMATION

| Description   | Part Number   |
|---|---------------|
| Unloaded Faceplate, Keystone, UK Style, White, Single | 6538 3 111-03 |
| Unloaded Faceplate, Keystone, UK Style, White, Double | 6538 3 111-04 |

Note: Unloaded faceplates compatible with HK jacks:  
Cat 5e HK UTP Pure White (6540 1 130-01)  
Cat 5e HK UTP Black (6540 1 130-04)  
Cat 5e HK STP Metal (6540 1 154-02)

### Back Boxes for UK Style Outlets

#### FEATURES

- Designed for surface installations
- Dimensions: 86 x 86 x 27mm



#### ORDERING INFORMATION

| Description                 | Part Number   |
|-----------------------------|---------------|
| Back Box, Single Gang White | 6536 1 005-00 |
| Back Box, Double Gang White | 6536 3 044-00 |

# Modular Twisted Pair

## Unloaded Hardware - Outlets 45 x 45 mm (“Mosaic”)

### Single and Dual Outlets 45 x 45 mm in Angled and Flat versions

#### FEATURES

- Unloaded Single Port half width shuttered module (spring loaded) with 22.5 x 45 mm footprint
- Unloaded Dual and Single Port full width shuttered module (spring loaded) with 45 x 45 mm footprint
- Frame outer dimension 86 x 86 mm
- Frame mounting dimension 60 mm

**Color:** pure white (RAL 9010)

#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Dual/Single Port angled outlet for 2 SL jacks or 1 AMP-TWIST Jack; Size: 45 x 45 mm; Picture: A       | 336793-1    |
| Dual Port shuttered angled outlet for 2 AMP-TWIST Jacks; Size: 45 x 45 mm; Picture: B                 | 1711797-1   |
| Single Port shuttered angled outlet for 1 SL jack or 1 AMP-TWIST Jack; Size: 22.5 x 45 mm; Picture: C | 1711664-1   |
| Single Port shuttered angled outlet for 2 AMP-TWIST Jacks; Size: 45 x 45 mm;                          | 1711653-1   |
| Single Port shuttered flat outlet for 1 SL jack or 1 AMP-TWIST Jack; Size: 22.5 x 45 mm, Picture: D   | 1711349-1   |
| Single Port shuttered flat outlet for 1 SL jack or 1 AMP-TWIST Jack; Size: 45 x 45 mm; Picture: E     | 1711277-1   |
| Dual Port shuttered flat outlet 2 SL jacks; Size: 45 x 45 mm  | 1711276-1   |
| “45x45” Outlet 45 x 45 mm for SC-Duplex, ST-Style, SL adaptor or MT-RJ jack; Picture: F               | 183931-1    |
| Frame for 1x 45 x45 module or 2x 22.5x45 modules; Size: 45 x 45 mm; Picture: G                        | 1-1711307-1 |
| Blind cover; Size: 22.5 x 45 mm   | 1711306-1   |
| Adapter Frame to 50 x 50 mm; Color: almond (RAL 1013); Picture: H                                     | 1379156-1   |
| Adapter Frame 50 x 50 mm to Legrand Valena™ frames  | 1859130-1   |
| 85 x 85 Surface mount box; accepts frame 1-1711307-1; 45 mm deep                                      | 185705-1    |



# Modular Twisted Pair

## Unloaded Hardware - Outlets 45 x 45 mm ("Mosaic")

### 45x45 Adaptors and Faceplate

#### FEATURES

- For use with Category 5e HK and Category 6 RJ45 Keystone jacks
- Adaptors come complete with integrated dust protection

#### ORDERING INFORMATION

| Description                       | Part Number   |
|-----------------------------------|---------------|
| Adaptor 22,5x45mm, Single, White  | 6690 1 825-10 |
| Adaptor 45x45mm, Single,White     | 6690 1 825-00 |
| Unloaded Faceplate,45x45mm, White | 6690 3 745-01 |

Note: Unloaded adaptors compatible with HK jacks:

Cat 5e HK UTP Pure White (6540 1 130-01)

Cat 5e HK UTP Black (6540 1 130-04)

Cat 5e HK STP Metal (6540 1 154-02)



# Modular Twisted Pair

## Unloaded Hardware - Outlets Single/Double Gang (US Installation)

### Standard USA Faceplates

#### FEATURES

- Accepts all AMP-TWIST jacks, SL Series jacks, MT-RJ outlet jacks and SL Series inserts
- Faceplate dimensions:  
2.75 in (69.85 mm) x 4.5 in (114.30 mm) x 0.22 in (5.59 mm)
- Label viewing area with  
integrated label covers that flip down and Snap-in place
- Extender kits are used to add 0.5 inches of space between the mounting surface and the faceplate



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Port Count: 1; Single Gang; Orientation: Vertical   | 2111008-1   |
| Port Count: 2; Single Gang; Orientation: Vertical   | 2111009-1   |
| Port Count: 3; Single Gang; Orientation: Vertical   | 2111010-1   |
| Port Count: 4; Single Gang; Orientation: Vertical   | 2111011-1   |
| Port Count: 6; Single Gang; Orientation: Vertical   | 2111012-1   |
| Port Count: 6; Double Gang; Orientation: Vertical   | 2111013-1   |
| Port Count: 8; Double Gang; Orientation: Vertical   | 2111014-1   |
| Port Count: 12; Double Gang; Orientation: Vertical  | 2111015-1   |
| Extender Kit  | 2111201-1   |
| Port Count: 4; Single Gang; Orientation: Horizontal | 2111203-1   |

| Y- -X | Color            |
|-------|------------------|
| 0- -1 | Almond           |
| 0- -2 | Black            |
| 0- -3 | White            |
| 0- -4 | Gray             |
| 1- -1 | Electrical Ivory |

### Surface Boxes

#### FEATURES

- Back Box for Surface Mounting
- 44.5 mm depth and one piece construction simplifies installation

#### ORDERING INFORMATION

| Description             | Part Number |
|-------------------------|-------------|
| Single Gang; almond     | 558251-1    |
| Single Gang; pure white | 558251-3    |



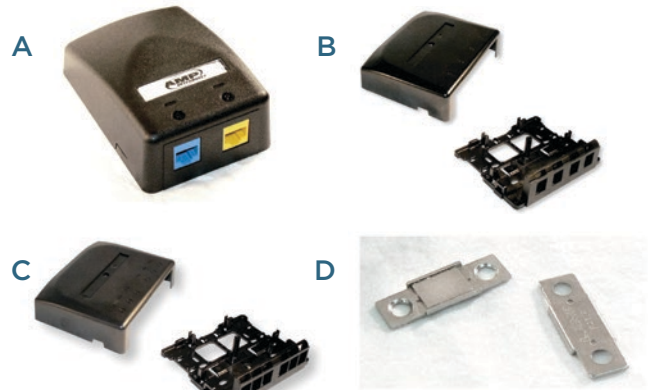
# Modular Twisted Pair

## Unloaded Hardware - Surface Mount Boxes

### Surface Mount Modules and Accessories

#### FEATURES

- Accept AMP-TWIST modular jacks and all SL Series modular jacks and inserts
- Can accommodate fiber cable and connectors (MT-RJ, LC, simplex SC, and ST) and includes fiber loop management
- Allows access to jacks and inserts while module is mounted
- Cable exits located on rear, bottom and both sides of modules Features cable entry strain relief
- Provided with label and clear label cover, squares of double-sided foam tape, self-tapping screws, and cable ties



| Y- -X | Color            |
|-------|------------------|
| 0- -1 | Almond           |
| 0- -2 | Black            |
| 0- -3 | White            |
| 0- -4 | Gray             |
| 1- -1 | Electrical Ivory |

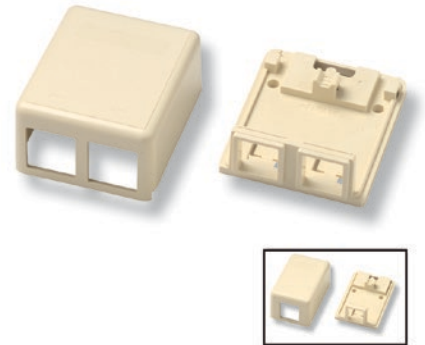
#### ORDERING INFORMATION

| Description                                 | Part Number |
|---|-------------|
| Surface Mount Module; 2-Port; Figure A      | Y-1933668-X |
| Surface Mount Module; 4-Port; Figure B      | Y-1933671-X |
| Surface Mount Module; 6-Port; Figure C      | Y-1933674-X |
| Magnet for Metal Surface Mounting; Figure D | 1933677-1   |

### Modular Jack Boxes

#### FEATURES

- Accepts unshielded Standard 110Connect, any SL Series Jacks and MT-RJ
- Very compact
- Individual outlets are icon-able
- Patented invisible icon holes remain invisible when not used



#### ORDERING INFORMATION

| Description        | Part Number |
|--------------------|-------------|
| 1 Port; almond     | 1-1116697-1 |
| 1 Port; pure white | 1-1116697-3 |
| 2 Port; almond     | 1-1116698-1 |
| 2 Port; pure white | 1-1116698-3 |



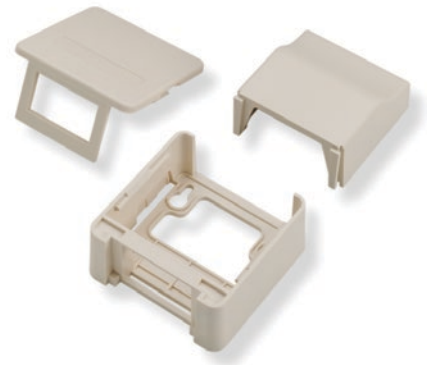
# Modular Twisted Pair

## Unloaded Hardware - Surface Mount Boxes

### AMP-TWIST SL Jack Office Boxes

#### FEATURES

- Accepts AMP-TWIST jacks and all SL series jacks
- Compatible with most trunking
- High density
- Individual outlets are icon-able
- Patented invisible icon holes remain invisible when not used



#### ORDERING INFORMATION

| Description               | Part Number |
|---------------------------|-------------|
| 2 Port; Color: almond     | 1933287-1   |
| 2 Port; Color: black      | 1933287-2   |
| 2 Port; Color: pure white | 1933287-3   |
| 4 Port; Color: almond     | 1933288-1   |
| 4 Port; Color: black      | 1933288-2   |
| 4 Port; Color: pure white | 1933288-3   |

### Surface Mount Boxes

#### FEATURES

- Dimensions enable it to be used in restricted spaces
- Flammability class: UL94 V0



#### ORDERING INFORMATION

| Description                            | Part Number   |
|--|---------------|
| Surface Mount, unloaded for KM8, 1port | 7080 2 064-10 |
| Surface Mount, unloaded for KM8, 2port | 7080 2 065-10 |



### RJ-45 Dust Cap

#### FEATURES

- Re-usable rubber dust caps
- Fits in all RJ 45 Jacks
- Available in 7 colors



#### ORDERING INFORMATION

| Description    | Part Number |
|----------------|-------------|
| RJ-45 dust cap | Y-969556-X  |

| Y- -X | Color  |
|-------|--------|
| 0- -1 | Red    |
| 0- -2 | Yellow |
| 0- -3 | Green  |
| 0- -4 | Blue   |
| 0- -5 | Black  |
| 0- -6 | Gray   |
| 0- -7 | White  |

# Modular Twisted Pair

## Twisted Pair Tools

### AMP-TWIST & SL Series Modular Jack Termination Tool Kit

#### FEATURES

- Terminates all AMP-TWIST and SL Series Modular Jacks
- Strips cable, marks foil, terminates and cuts 8 conductors at once
- Maintains twisted pair integrity
- Reliable connections every time
- Time and cost saving simplifying lacing process and speeding up the termination
- Lacing fixture assures simple and efficient use (not used for AMP-TWIST Jacks)



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Handheld termination tool kit with lacing fixture                          | 1725150-1   |
| Handheld termination tool kit without lacing fixture (for AMP-TWIST jacks) | 1725150-3   |
| Lacing fixture - Spare Part  | 1673956-1   |

### 110C Impact Tools

#### FEATURES

- Industry standard termination tools for SL Modular, 110Connect, AMP CO Ultra and other LSA-PLUS compatible IDC blocks
- Available as impact tool (premium or standard version) or as non-impact tool
- Tools are delivered with blade
- Extended-life blades have a lifetime three times longer than standard blades

#### ORDERING INFORMATION

| Description                                  | Part Number |
|--|-------------|
| Premium Impact Tool with Extended-Life Blade | 1375308-1   |
| Standard Impact Tool with Standard Blade     | 1583608-1   |
| Non-Impact Tool with Standard Blade          | 1583236-1   |
| Replacement Blade (Extended-Life)            | 1375309-1   |
| Replacement Blade (Standard)                 | 1375310-1   |



# Modular Twisted Pair

## Twisted Pair Tools

### Cable Preparation Tools

#### FEATURES

- Easy, safe and fast cable preparation
- Diagonal Cutter for precise cutting of wire
- JackKnack cuts the cable sheath
- LightKnack is designed to provide light anywhere



#### ORDERING INFORMATION

| Description     | Part Number |
|-----------------|-------------|
| Diagonal Cutter | 1116571-1   |
| JackKnack       | 2119000-1   |
| LightKnack      | 2119700-1   |



### Q-Jack Punchdown Pad

#### FEATURES

- Q-Jack Punchdown Pad helps the termination process
- Q-Jack Punchdown Pad also support RJ45 UTP Modular Jacks

#### ORDERING INFORMATION

| Description                       | Part Number   |
|-----------------------------------|---------------|
| Q-Jack Punchdown Pad (Pack of 10) | 6537 1 610-00 |



### LSA-PLUS Insertion Tool

#### FEATURES

- For termination of wires with the conductor diameter range 0.35 - 0.9mm and overall diameter range 0.7 - 2.6mm
- Insert and cut wires simultaneously
- Insertion sensor ensures the conductor is fully inserted into the block contacts before allowing any excess wire to be cut off
- An inhibitor lock prevents the scissors from operating, particularly useful in applications in which conductors are daisy-chained through several contacts
- Specially designed wire hook removes terminated conductors
- Blade helps to remove blocks easily from back mount frames



#### ORDERING INFORMATION

| Description             | Part Number   |
|-------------------------|---------------|
| LSA-PLUS Insertion Tool | 6417 2 055-01 |

# Modular Twisted Pair

## Twisted Pair Tools

### KM8 Termination Tool

#### FEATURES

- Tool for swift terminating KM8 style jacks
- Hundreds of KM8 jack terminations from one tool



#### ORDERING INFORMATION

| Description          | Part Number   |
|----------------------|---------------|
| KM8 Termination Tool | 6830 1 490-00 |

### Multimate termination Tool

#### FEATURES

- Terminates RJ45 UTP Modular Jack ensuring a significant saving of installation time
- Inserts and crops wire simultaneously in one single handed easy action
- Replacement blade units can be purchased and replaced without the need for special tooling
- Carry pouch with belt loop helps conveniently store and protect the tool and its contents



#### ORDERING INFORMATION

| Description                            | Part Number   |
|--|---------------|
| Multimate Termination Tool Pack        | 6467 1 140-00 |
| Replacement Head, C6A Keystone (White) | 6467 2 142-00 |
| Replacement Blade Unit                 | 6467 2 149-00 |

## 13. Home Networks Residential Cabling

|                          |     |
|--------------------------|-----|
| Enclosures & Panels..... | 290 |
| Modules.....             | 291 |
| Connectivity.....        | 292 |
| Accessories.....         | 294 |

# Home Net-Works Residential Cabling

## Enclosures & Panels

### Home Net-Works Enclosures Surface Mount

#### FEATURES

- Aesthetic surface mount enclosure
- Solid steel construction with hingeable cover
- Knockout ports for cable entry on top and bottom
- 1" x 1" mounting grid for maximum versatility
- Accommodates multiple 18-Port connectivity panels
- Including grounding bolt



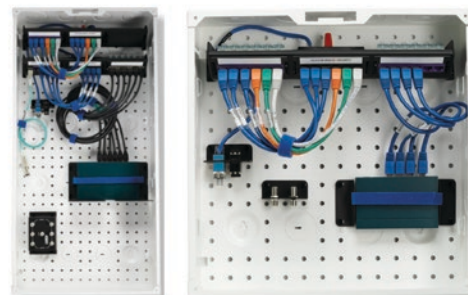
#### ORDERING INFORMATION

| Description                    | Color            | Part Number |
|--------------------------------|------------------|-------------|
| Home Net-Works Enclosure Small | White (RAL 9003) | 1-1671331-1 |
| Home Net-Works Enclosure Large | White (RAL 9003) | 1-1671331-2 |

### Home Net-Works Enclosures Flush Mount

#### FEATURES

- Aesthetic flush mount enclosure with cover (all AWG 20 steel)
- Multiple double knockouts for cable entry on all surfaces
- Multiple cable tie tabs for cable management
- 1" x 1" mounting grid for maximum versatility
- Recess or surface option
- Dual knockouts for electrical j-box
- Accommodates multiple 18-Port connectivity panels



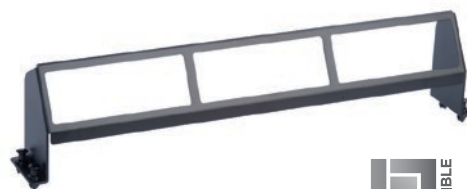
#### ORDERING INFORMATION

| Description              | Color | Part Number |
|--------------------------|-------|-------------|
| 14" Enclosure with Cover | White | 1933691-1   |
| 28" Enclosure with Cover | White | 1933692-1   |

### Connectivity Panels

#### FEATURES

- Inclined panel accepting up to 3 x 6-port modules
- Available for UTP and STP
- STP version including a PEC and grounding point



#### ORDERING INFORMATION

| Description        | Color            | Part Number |
|--------------------|------------------|-------------|
| Angled Bracket STP | Black (RAL 9005) | 1933776-1   |
| Angled Bracket UTP | Black (RAL 9005) | 1933693-1   |

# Home Net-Works Residential Cabling

## Modules

### AMP CO Ultra Quick-Fit Kit

#### FEATURES

- Fast termination and easy assembly
- Shielded housing with patented automatic shielding clamp
- Kit includes 2 die-cast housings, 2 AMP CO Plus Edge Connectors and frame for labeling. (AMP CO Inserts to be ordered separately)
- Performance up to 2.0 GHz



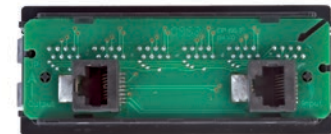
#### ORDERING INFORMATION

| Description                            | Color | Part Number |
|--|-------|-------------|
| AMP CO Ultra Quick-Fit Kit; (RAL 9005) | Black | 2153014-1   |

### Standard Telecom Bridge

#### FEATURES

- 6 Ports - 4 lines per port
- For basic telephone, fax and dial-op modem service
- Bridge for incoming lines to six output ports



#### ORDERING INFORMATION

| Description                            | Part Number |
|--|-------------|
| Front-Loadable Standard Telecom Bridge | 1479701-1   |

### Unloaded Connectivity Module

#### FEATURES

- 6 port module, accepts all SL series jacks
- Available for UTP and STP



#### ORDERING INFORMATION

| Description             | Part Number |
|-------------------------|-------------|
| Connectivity Module STP | 2111093-1   |
| Connectivity Module UTP | 2111117-1   |
| Blank module            | 1479698-1   |

# Home Net-Works Residential Cabling

## Connectivity

### SL Series Multimedia Inserts

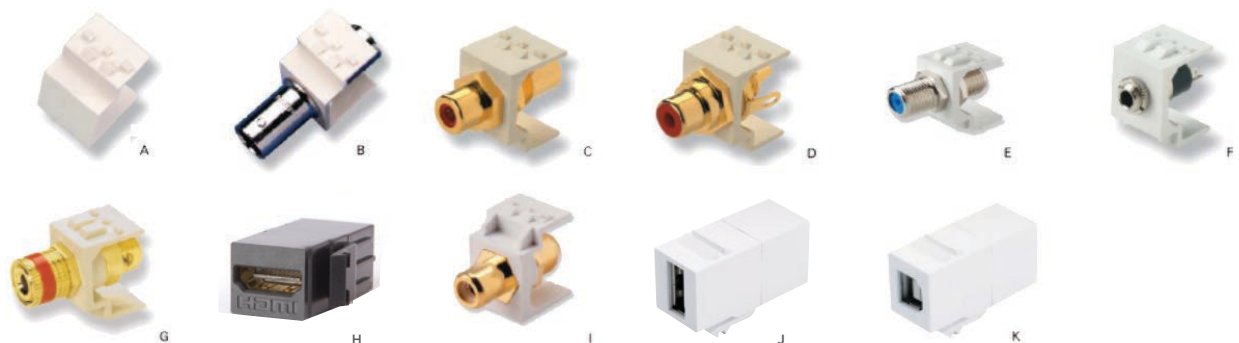
#### FEATURES

- The inserts offer flexibility and density at the work area outlet
- Can be installed in any faceplate or outlet designed to the SL series jack footprint
- Some couplers may not be available in all colors

| Y- -X | Color        |
|-------|--------------|
| 0- -1 | Light Almond |
| 0- -2 | Black        |
| 1- -3 | Alpine White |

#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| ST Coupler; Fiber Type: Multimode  | Y-1339123-X |
| ST Coupler; Fiber Type: Singlemode   | Y-1479181-X |
| BNC Coupler Insert; Figure B   | Y-2111615-X |
| MT-RJ SL Series Housing  | Y-1374416-X |
| RCA Coupler, Red Dielectric  | Y-1375361-X |
| RCA Coupler, White Dielectric  | Y-1375362-X |
| RCA Coupler, Yellow Dielectric   | Y-1375363-X |
| RCA Solder Termination, Red Dielectric   | Y-1375364-X |
| RCA Solder Termination, White Dielectric   | Y-1375365-X |
| RCA Solder Termination, Yellow Dielectric  | Y-1375366-X |
| RCA Coupler, Green Dielectric  | Y-1933192-X |
| RCA Coupler, Blue Dielectric   | Y-1933193-X |
| RCA Coupler, Orange Dielectric   | Y-1933194-X |
| RCA to F-Connector; Figure I   | Y-1933096-X |
| F-Connector Coupler, 2 GHz; Figure E   | Y-1499855-X |
| 3.5 mm Stereo Mini-Headphone, Screw Terminal, Figure F                                 | Y-1933582-X |
| Speaker Post, Black Stripe   | Y-1479190-X |
| Speaker Post, Red Stripe; Figure G   | Y-1479191-X |
| SC Simplex Coupler; Fiber Type: Multimode or Singlemode                                | Y-1499836-X |
| LC Coupler; Fiber Type: Singlemode APC; LC Coupler and Housing, Green                  | 1933286-3   |
| LC Coupler; Fiber Type: Singlemode; LC Coupler and Housing, Blue                       | 1933286-4   |
| LC Coupler; Fiber Type: XG LO 850 nm 50/125µm; LC Coupler and Housing, Aqua, OM3 & OM4 | 1933286-6   |
| LC Coupler; Fiber Type: 50/125µm; LC Coupler and Housing, Black, OM2                   | 1-1933286-1 |
| LC Coupler; Fiber Type: 62.5/125µm; LC Coupler and Housing, Beige, OM1                 | 1-1933286-2 |
| USB A-A Coupler; Figure J  | Y-1933659-X |
| USB B-A Coupler; Figure K  | Y-1933661-X |
| HDMI Coupler Figure H  | 2111500-2   |
| Blank Insert Figure A  | Y-1116412-X |





# Home Net-Works Residential Cabling

## Connectivity

### SL Series Multimedia Jacks

#### FEATURES

- For use when distances are less than 130 ft.
- Uses Standard 110 Termination and will accept 26-22 AWG conductors
- RCA Multimedia Jack
  - For audio and visual signals
  - Uses one pair of twisted-pair-cable white,red or yellow dielectrics to match home theater equipment
- S-Video Multimedia Jack
  - For S-Video Y/C (Luminance/Chrominance black and white/Color) signals
  - Uses two pairs of a standard twisted-pair cable



#### ORDERING INFORMATION

| Description                              | Part Number |
|--|-------------|
| S-Video                                  | 1375149-2   |
| RCA to 110 Punch Down, Red Dielectric    | Y-1479230-X |
| RCA to 110 Punch Down, White Dielectric  | Y-1479231-X |
| RCA to 110 Punch Down, Yellow Dielectric | Y-1479232-X |

| Y- -X | Color        |
|-------|--------------|
| 0- -1 | Light Almond |
| 1- -3 | Alpine White |

# Home Net-Works Residential Cabling

## Accessories

### Hook & Loop Cable Ties

#### FEATURES

- Hook and loop ties
- No risk of damaging cables
- Releasable and reusable
- An order quantity of one equals one roll of 10 ties



#### ORDERING INFORMATION

| Description                       | Part Number |
|-----------------------------------|-------------|
| Hook & Loop Tie 1" x 8" (10pcs.)  | 1375253-2   |
| Hook & Loop Tie 1" x 12" (10pcs.) | 1375254-2   |

### Accessories

#### FEATURES

- Demarcation bracket: SL Series bracket accepts 2 SL Series jacks for incoming data service demarcation
- Hook & Loop Hold-Down Bracket: Used to secure network electronics such as cable/DSL routers
- Network Shelf: Accommodates network electronics such as DSL modems, routers and switches



#### ORDERING INFORMATION

| Description                   | Part Number |
|-------------------------------|-------------|
| Dual Demarcation Bracket      | 1479441-1   |
| Hook & Loop Hold-Down Bracket | 1479440-1   |
| Network Shelf                 | 1479437-1   |

## 14. Commercial and Industrial Ethernet LAN

|                                  |     |
|----------------------------------|-----|
| Power-over-Ethernet .....        | 296 |
| LAN Media Converters.....        | 297 |
| Industrial Media Converters..... | 299 |
| Industrial Switches .....        | 300 |
| SFP Transceiver.....             | 302 |

# Commercial and Industrial Ethernet LAN

## Power-over-Ethernet

### 8 Port Modular PoE Gigabit Midspan Unit

#### FEATURES

- 8 Port PoE Midspan Unit
- 19" rack mountable (with mounting frame)
- Universal 110/220V (50/60Hz) power supply
- Full power on every port (15.4 W)
- Up to 3 devices can be mounted into a 19", 1U mounting frame



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| 19", mounting frame 1U for 3 Midspans units        | 1591185-0   |
| 8 Port PoE Midspan unit; Power Cord for Europe     | 1591188-2   |
| 8 Port PoE Midspan unit; Power Cord for UK/Ireland | 1591188-7   |

# Commercial and Industrial Ethernet LAN

## LAN Media Converters

### Ethernet Media Converter

#### FEATURES

- 10 Slot 19" Rack Mount Chassis System
- Supports up to 10 Media Converters
- Different Media Converter types can be mixed
- Hot-Swappable Converters
- A second power supply can be fitted
- Exceptionally reliable dual redundant power system can be Hot-Swapped
- Dimensions: 440 x 226 x 133 mm (W x D x H)
- Internal cooling fan
- Includes kit for mounting in 19" racking



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| 10 Slot Chassis System with 1 Power Unit; Europe     | 1591032-2   |
| 10 Slot Chassis System with 1 Power Unit; UK/Ireland | 1591032-7   |
| Spare/Redundant AC Power Unit for Chassis            | 1591034-0   |

### 10/100 MBit/s Ethernet Media Converter

#### FEATURES

- 10/100 MBit/s RJ-45 Copper port
- Auto-MDI/MDI-X detection
- 100Base-FX fiber port
- Dimensions: 85 x 120 x 26 mm (W x D x H)



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| 10/100M Multimode SC Media Converter; Europe                        | 1591024-2   |
| 10/100M Multimode SC Media Converter; UK/Ireland                    | 1591024-7   |
| 10/100M Multimode ST-Style Media Converter; Europe                  | 1591026-2   |
| 10/100M Multimode ST-Style Media Converter; UK/Ireland              | 1591026-7   |
| 10/100M Singlemode - Single Fiber WDM 1550 nm Converter; Europe     | 1591029-2   |
| 10/100M Singlemode - Single Fiber WDM 1550 nm Converter;UK/Ireland  | 1591029-7   |
| 10/100M Singlemode SC Media Converter; Europe                       | 1591030-2   |
| 10/100M Singlemode SC Media Converter; UK/Ireland                   | 1591030-7   |
| 10/100M Singlemode - Single Fiber WDM 1310 nm Converter; Europe     | 1591031-2   |
| 10/100M Singlemode - Single Fiber WDM 1310 nm Converter; UK/Ireland | 1591031-7   |

# Commercial and Industrial Ethernet LAN

## LAN Media Converters

### Gigabit Ethernet Media Converter

#### FEATURES

- 10/100/1000 MBit/s RJ-45 Copper port
- Auto-MDI/MDI-X detection
- 1000Base-SX or 1000Base-LX fiber port
- Dimensions: 85 x 120 x 26 mm (W x D x H)



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| 1000Base-SX (multimode) Media Converter; Europe      | 1591020-2   |
| 1000Base-SX (multimode) Media Converter; UK/Ireland  | 1591020-7   |
| 1000Base-LX (singlemode) Media Converter; Europe     | 1591022-2   |
| 1000Base-LX (singlemode) Media Converter; UK/Ireland | 1591022-7   |

# Commercial and Industrial Ethernet LAN

## Industrial Media Converters

### Industrial Copper-to-Fibre Media Converter

#### FEATURES

- Suitable for plant rooms, factory floor, oil and gas terminal rail and marine and many more harsh environments
- Provides High / low temperature range with rugged construction Compact housing, 140 x 30 x 95 mm
- IP30 protection
- Store-and-Forward Switching Architecture
- RJ-45 port support MDI/MDI-X auto-crossover
- Autonegotiation Speed, Half/Full Duplex
- Signal indicating LEDs
- Built-In Link Lose Forwarding (LLF) & Link Fault Pass-Through (LFP) Technology
- Redundant wide range power input +12 to +48 V DC
- Flexible mounting: DIN-rail and panel mounting
- Operating Temperatures -40°C up to +75 °C



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| 10/100 Multimode Ethernet Media converter- TEC-100-MM-XE | 1987152-2   |

# Commercial and Industrial Ethernet LAN

## Industrial Switches

### Fast Ethernet Industrial Switches (Unmanaged)

#### FEATURES

- Suitable for factories, rail and road side deployment
- Compact housing, 140 x 30 x 95 mm
- IP30 protection
- Relay output
- Store-and-Forward Switching Architecture
- RJ-45 port support MDI/MDI-X
- Broadcast storm protection
- Embedded switch controller
- supports auto negotiation
- Signal indicating LEDs
- Network Cable Redundant wide range power input +12 to +48 V DC
- Flexible mounting: DIN-rail and panel mounting
- Operating Temperatures -40°C up to +75 °C



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| 4 Port 10/100 Ethernet Switch with single MM SC Uplink Port - TES-401-MM-XE | 1987033-2   |
| 5 Port 10/100 Ethernet Switch --TES-500-XE                                  | 1987031-2   |
| 8 Port 10/100 Ethernet Switch - TES 800-XE                                  | 1987032-2   |

### Gigabit Ethernet Industrial Switches (Unmanaged)

#### FEATURES

- Suitable for factories, rail and road side deployment
- Compact housing, 140 x 30 x 95 mm
- IP30 protection
- Relay output
- Store-and-Forward Switching Architecture
- RJ-45 port support MDI/MDI-X
- Broadcast storm protection
- Embedded switch controller
- Supports auto negotiation
- Signal indicating LEDs
- Network Cable Redundant wide range power input +12 to +48 V DC
- Flexible mounting: DIN-rail and panel mounting
- Operating Temperatures -40°C up to +75 °C



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| 4 Port 10/100/1000 Ethernet Switch with single SFP Uplink Port - TES-4001-SFP-XE | 1987155-2   |
| 8 Port 10/100/1000 Ethernet Switch - TES 8000-XE                                 | 1987154-2   |



# Commercial and Industrial Ethernet LAN

## Industrial Switches

---

### 10/100 Managed Industrial Switches (with Gigabit Uplink)

#### FEATURES

- Layer 2
- Gigabit Uplink: 2 Ports RJ-45 / SFP fiber
- Combo function (SFP or Gigabit Copper)
- Robust housing, 152 x 72 x 106 mm
- IP30 protection
- Relay output
- Store-and-Forward Switching Architecture
- RJ-45 port support MDI/MDI-X
- Signal indicating LEDs



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| 16 Port Unmanaged 10/100 Ethernet With Dual SFP Uplink Combo ports - TES 162M-GU-SFP-COMBO | 1987256-2   |
| 8 Port 10/100 Ethernet Switch with Dual SFP Uplink Combo ports - TES-802M-GU-SFP-CO        | 1987257-2   |

### SFP (Small Form Factor Pluggable) Transceiver



#### ORDERING INFORMATION

| Description                    | Part Number |
|--------------------------------|-------------|
| SFP Transceiver SFP-100-FX-MM  | 1987195-1   |
| SFP Transceiver SFP-1000-SX-MM | 3-1987195-3 |
| SFP Transceiver SFP-100-FX-SM  | 1591530-1   |
| SFP Transceiver SFP-1000-LX-SM | 1591313-1   |

## 15. Administration & Labeling

|                            |     |
|----------------------------|-----|
| Icons.....                 | 304 |
| Printer Labels.....        | 305 |
| Quick-Fit Port Labels..... | 306 |

# Administration & Labeling

## Icons

### Icons

#### FEATURES

- Icons for port identification applicable to various faceplates of 110Connect and AMP CO series
- Different colors and different symbols available



| Y- X  | Color  |
|-------|--------|
| 0- -1 | Almond |
| 0- -2 | Red    |
| 0- -3 | Green  |
| 0- -4 | Blue   |
| 0- -5 | Yellow |
| 0- -6 | Black  |
| 0- -7 | Orange |
| 0- -8 | White  |
| 0- -9 | Violet |
| 1- -0 | Gray   |

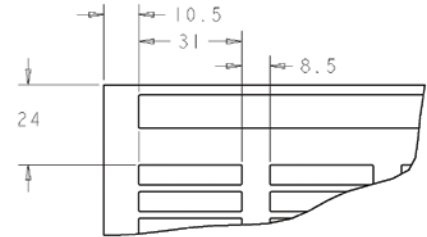
#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| 16 x data   | Y-558198-X  |
| 16 x phone  | Y-558199-X  |
| 16x neutral; available in -1, -6, -8 and 1- -0                          | Y-558821-X  |
| 4x neutral, 2x Cat. 5E, 2x Cat. 6 and 1x V1, V2, V3, V4, D1, D2, D3, D4 | Y-1375092-X |

### Printer Labels for AMP CO Installation Kits

#### FEATURES

- Self-adhesive A4 sheets with printer labels for AMP CO Installation Kits
- Uses standard MS Excel sheet



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| Labels (6 x 32 mm, 170 pcs per sheet); Packaging 10 sheets | 969704-1    |

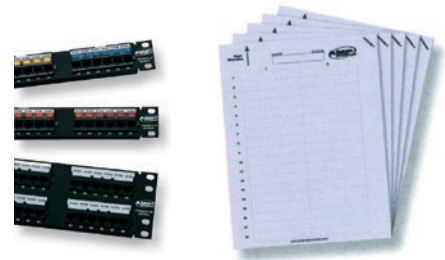
# Administration & Labeling

## Printer Labels

### Patch Panel Labels

#### FEATURES

- Labels are designed to fit AMP NETCONNECT and similar patch panels
- Card stock labels are perforated and compatible with inkjet and laser printers
- Self-adhesive polyester labels are pre-cut and compatible with laser printers
- Labels are supplied on 8.5" x 11" (21,6 x 27,9 cm) sheets
- Special 0.25" (6,4 mm) high label is provided for use when icons are also desired
- For use with 110Connect and SL-style panels



#### ORDERING INFORMATION

| Description   | Part Number |
|---|-------------|
| Self-adhesive Polyester; Label Size (w x h): 3.10" x 0.50" (7.9 x 1.3 cm); Labels per Sheet: 36; Standard Package: 5 sheets (180 labels)  | 1375352-1   |
| Self-adhesive Polyester (also for use with 110Connect Office Box, 2 Port und 4 Port); Label Size (w x h): 3.30" x 0.25" (8.4 x 0.6 cm); Labels per Sheet: 72; 5 Sheets (360 labels) | 1375353-1   |

### Labels for Cable and Cable-Assemblies

#### FEATURES

- Labels are designed for use on cable and cable assemblies
- Labels are pre-cut and compatible with laser printers



#### ORDERING INFORMATION

| Description  | Part Number |
|--|-------------|
| 4-Pair Cable; Label size (w x h): 0.984" x 1.496" (2.5 x 3.8 cm); Labels per Sheet: 48; Standard Package: 5 sheets (240 labels)                          | 1479002-1   |
| Self-adhesive Polyester 25-Pair Cable; Label size (w x h): 0.984" x 2.480" (2.5 x 6.3 cm); Labels per Sheet: 24; Standard Package: 5 sheets (120 labels) | 1479003-1   |

# Administration & Labeling

## Quick-Fit Port Labels

### Port ID labels for Quick-Fit modules and cassettes

#### FEATURES

- Number identification of ports
- MOQ = 100 pcs



#### ORDERING INFORMATION

| Description                   | Part number |
|-------------------------------|-------------|
| Port ID label 1...6           | 1933140-1   |
| Port ID label 7...12          | 1933140-2   |
| Port ID label 13...18         | 1933140-3   |
| Port ID label 19...24         | 1933140-4   |
| Port ID label 1/2...11/12     | 1671415-1   |
| Port ID label 13/14...23/24   | 1671415-2   |
| Port ID label 25/26...35/36   | 1671415-3   |
| Port ID label 37/38...47/48   | 1671415-4   |
| Port ID label MRJ21 XG, 1-4   | 2153093-1   |
| Port ID label MRJ21 XG, 5-8   | 2153093-2   |
| Port ID label MRJ21 XG, 9-12  | 2153093-3   |
| Port ID label MRJ21 XG, 13-16 | 2153093-4   |
| Port ID label MRJ21 XG, 17-20 | 2153093-5   |
| Port ID label MRJ21 XG, 21-24 | 2153093-6   |
| Port ID label MRJ21 XG, 25-28 | 2153093-7   |
| Port ID label MRJ21 XG, 29-32 | 2153093-8   |

## Index

|                           |     |
|---------------------------|-----|
| Part Number Index.....    | 308 |
| Reliable Performance..... | 318 |

# Index

## Part Number Index

| Part Number | Page          | Part Number | Page     | Part Number | Page     |
|-------------|---------------|-------------|----------|-------------|----------|
| <b>0</b>    |               | 1375192     | 254      | 1499418     | 243, 253 |
| 023826      | 191           | 1375253     | 23, 294  | 1499659     | 138      |
| <b>1</b>    |               | 1375254     | 294      | 1499836     | 255, 292 |
| 101016      | 275, 277      | 1375308     | 286      | 1499855     | 255, 292 |
| 101019      | 49            | 1375309     | 286      | 1534332     | 188      |
| 136816      | 242           | 1375310     | 286      | 1553212     | 203      |
| 182398      | 200           | 1375352     | 305      | 1553661     | 207      |
| 183553      | 155           | 1375353     | 305      | 1553761     | 87       |
| 183578      | 155           | 1375361     | 255, 292 | 1553785     | 213      |
| 183635      | 153           | 1375362     | 255, 292 | 1557548     | 138      |
| 183636      | 152           | 1375363     | 255, 292 | 1568757     | 181      |
| 183641      | 153           | 1375364     | 255, 292 | 1583236     | 286      |
| 183931      | 187, 281      | 1375365     | 255, 292 | 1583608     | 286      |
| 185705      | 281           | 1375366     | 255, 292 | 1588175     | 207      |
| 969704      | 304           | 1379156     | 148, 281 | 1588176     | 207      |
| 1116412     | 255, 292      | 1394060     | 133, 256 | 1588756     | 208      |
| 1116571     | 287           | 1394294     | 274      | 1591020     | 298      |
| 1116697     | 284           | 1418730     | 169      | 1591022     | 298      |
| 1116698     | 284           | 1418731     | 169      | 1591024     | 297      |
| 1206114     | 168           | 1418732     | 169      | 1591026     | 297      |
| 1206121     | 172           | 1418733     | 169      | 1591029     | 297      |
| 1206134     | 172           | 1418734     | 169      | 1591030     | 297      |
| 1206138     | 168           | 1418735     | 169      | 1591031     | 297      |
| 1206144     | 172           | 1418770     | 171      | 1591032     | 297      |
| 1206145     | 172           | 1418800     | 172      | 1591034     | 297      |
| 1206146     | 172           | 1435346     | 137      | 1591185     | 296      |
| 1206343     | 168           | 1435657     | 129      | 1591188     | 296      |
| 1206480     | 168           | 1435688     | 129      | 1591313     | 302      |
| 1206505     | 168           | 1435689     | 129      | 1591360     | 127      |
| 1206704     | 169           | 1435725     | 130      | 1591363     | 127      |
| 1278017     | 192           | 1435726     | 130      | 1591364     | 127      |
| 1278118     | 203           | 1435791     | 130      | 1591530     | 302      |
| 1278328     | 177           | 1435796     | 130      | 1591721     | 150      |
| 1278346     | 204           | 1435797     | 130      | 1644016     | 155      |
| 1278368     | 176           | 1435827     | 137      | 1644042     | 132, 236 |
| 1278531     | 207           | 1435939     | 137      | 1644077     | 250      |
| 1278625     | 207           | 1435954     | 133      | 1671000     | 168      |
| 1278637     | 207           | 1435965     | 31       | 1671002     | 168      |
| 1278755     | 174           | 1435971     | 31       | 1671017     | 168      |
| 1278949     | 205           | 1457628     | 209      | 1671054     | 172      |
| 1339123     | 255, 292      | 1457630     | 208      | 1671080     | 48       |
| 1348960     | 168           | 1479002     | 305      | 1671113     | 49       |
| 1350376     | 189           | 1479003     | 305      | 1671116     | 174      |
| 1350377     | 189           | 1479181     | 255, 292 | 1671117     | 175      |
| 1374416     | 186, 255, 292 | 1479190     | 255, 292 | 1671121     | 169      |
| 1374463     | 176           | 1479191     | 255, 292 | 1671130     | 169      |
| 1374484     | 210           | 1479230     | 293      | 1671136     | 134      |
| 1374526     | 174           | 1479231     | 293      | 1671143     | 30       |
| 1374598     | 176           | 1479232     | 293      | 1671146     | 177      |
| 1375055     | 233           | 1479437     | 294      | 1671147     | 49       |
| 1375092     | 304           | 1479440     | 294      | 1671149     | 129      |
| 1375149     | 293           | 1479441     | 294      | 1671157     | 265      |
| 1375187     | 233           | 1479506     | 177      | 1671164     | 188, 272 |
| 1375189     | 244           | 1479698     | 173, 291 | 1671168     | 177      |
| 1375190     | 244           | 1479701     | 291      | 1671175     | 35       |
| 1375191     | 244           | 1499101     | 218      | 1671183     | 266      |



# Index

## Part Number Index

---

| Part Number | Page     | Part Number | Page     | Part Number | Page     |
|-------------|----------|-------------|----------|-------------|----------|
| 1671187     | 134      | 1671660     | 125      | 1711342     | 232      |
| 1671189     | 51       | 1671711     | 48       | 1711343     | 232      |
| 1671195     | 173      | 1671907     | 92       | 1711348     | 279      |
| 1671196     | 173      | 1671925     | 273      | 1711349     | 281      |
| 1671197     | 173      | 1671933     | 47       | 1711351     | 136      |
| 1671200     | 22, 173  | 1671938     | 47       | 1711399     | 278      |
| 1671201     | 173      | 1671961     | 23       | 1711400     | 278      |
| 1671202     | 173      | 1673956     | 286      | 1711403     | 278      |
| 1671205     | 09       | 1695790     | 190      | 1711404     | 278      |
| 1671206     | 09       | 1711000     | 155      | 1711409     | 149      |
| 1671207     | 09       | 1711001     | 155      | 1711437     | 219      |
| 1671209     | 129      | 1711003     | 218      | 1711441     | 219      |
| 1671226     | 04       | 1711005     | 225      | 1711450     | 154      |
| 1671227     | 04, 05   | 1711006     | 231      | 1711481     | 219      |
| 1671228     | 04       | 1711007     | 231      | 1711485     | 270      |
| 1671229     | 129      | 1711008     | 231      | 1711490     | 270      |
| 1671262     | 167      | 1711027     | 238      | 1711491     | 279      |
| 1671263     | 167      | 1711040     | 249      | 1711494     | 253      |
| 1671268     | 167      | 1711043     | 243      | 1711495     | 253      |
| 1671269     | 167      | 1711053     | 231      | 1711496     | 253      |
| 1671271     | 167      | 1711076     | 240      | 1711500     | 156      |
| 1671272     | 167      | 1711077     | 240      | 1711537     | 270      |
| 1671273     | 171      | 1711078     | 240      | 1711548     | 136      |
| 1671274     | 171      | 1711079     | 240      | 1711563     | 224      |
| 1671281     | 200      | 1711082     | 276      | 1711564     | 224      |
| 1671330     | 42       | 1711083     | 276      | 1711579     | 220      |
| 1671331     | 290      | 1711091     | 241      | 1711580     | 223      |
| 1671365     | 167      | 1711093     | 241      | 1711592     | 227      |
| 1671373     | 22       | 1711094     | 241      | 1711604     | 275      |
| 1671405     | 44       | 1711095     | 241      | 1711605     | 277      |
| 1671414     | 144, 268 | 1711096     | 241      | 1711606     | 275      |
| 1671415     | 306      | 1711100     | 154      | 1711609     | 149      |
| 1671436     | 21       | 1711125     | 153      | 1711613     | 222      |
| 1671437     | 21       | 1711135     | 154      | 1711618     | 222      |
| 1671495     | 48       | 1711147     | 132, 236 | 1711623     | 222      |
| 1671508     | 46       | 1711148     | 135      | 1711624     | 223      |
| 1671545     | 44       | 1711160     | 232      | 1711625     | 276      |
| 1671547     | 50       | 1711163     | 225      | 1711626     | 276      |
| 1671548     | 50       | 1711168     | 275      | 1711632     | 275      |
| 1671549     | 51       | 1711169     | 275      | 1711633     | 275      |
| 1671550     | 50       | 1711171     | 239      | 1711634     | 277      |
| 1671551     | 50       | 1711195     | 225      | 1711637     | 221      |
| 1671552     | 51       | 1711255     | 274      | 1711644     | 277      |
| 1671554     | 45       | 1711275     | 278      | 1711653     | 281      |
| 1671555     | 45       | 1711276     | 281      | 1711655     | 145      |
| 1671578     | 45       | 1711277     | 281      | 1711659     | 223      |
| 1671579     | 45       | 1711282     | 276      | 1711664     | 281      |
| 1671587     | 46       | 1711283     | 277      | 1711666     | 238      |
| 1671590     | 265      | 1711295     | 232      | 1711685     | 135, 266 |
| 1671594     | 265      | 1711301     | 279      | 1711686     | 143      |
| 1671603     | 51, 52   | 1711302     | 279      | 1711691     | 227, 232 |
| 1671609     | 47       | 1711306     | 281      | 1711716     | 227      |
| 1671610     | 47       | 1711307     | 281      | 1711742     | 135      |
| 1671614     | 46       | 1711314     | 22       | 1711749     | 135      |
| 1671618     | 52       | 1711336     | 150      | 1711755     | 136      |
| 1671633     | 92       | 1711339     | 155      | 1711756     | 136      |

# Index

## Part Number Index

| Part Number | Page    | Part Number | Page     | Part Number | Page     |
|-------------|---------|-------------|----------|-------------|----------|
| 1711757     | 136     | 1716217     | 166      | 1918802     | 26, 212  |
| 1711758     | 32      | 1716218     | 166      | 1918803     | 26, 212  |
| 1711760     | 136     | 1716219     | 166      | 1918804     | 212      |
| 1711774     | 32      | 1716220     | 166      | 1918805     | 26, 212  |
| 1711775     | 279     | 1716293     | 160      | 1918806     | 26, 212  |
| 1711776     | 220     | 1716294     | 160      | 1918807     | 212      |
| 1711777     | 238     | 1716295     | 160      | 1918808     | 212      |
| 1711787     | 223     | 1716296     | 160      | 1918809     | 26, 212  |
| 1711789     | 34      | 1716297     | 160      | 1918810     | 212      |
| 1711796     | 150     | 1716298     | 160      | 1918811     | 212      |
| 1711797     | 281     | 1716299     | 160      | 1920743     | 08       |
| 1711801     | 151     | 1716300     | 160      | 1933096     | 255, 292 |
| 1711804     | 151     | 1716301     | 160      | 1933098     | 137      |
| 1711807     | 151     | 1725150     | 286      | 1933140     | 306      |
| 1711815     | 230     | 1754074     | 208      | 1933192     | 255, 292 |
| 1711816     | 230     | 1754137     | 207      | 1933193     | 255, 292 |
| 1711817     | 230     | 1754371     | 193, 197 | 1933194     | 255, 292 |
| 1711818     | 230     | 1754462     | 204      | 1933196     | 134      |
| 1711819     | 230     | 1754603     | 205      | 1933197     | 134      |
| 1711820     | 230     | 1754708     | 207      | 1933241     | 137      |
| 1711825     | 229     | 1754765     | 213      | 1933286     | 255, 292 |
| 1711826     | 230     | 1754766     | 213      | 1933287     | 285      |
| 1711851     | 229     | 1754767     | 213      | 1933288     | 285      |
| 1711855     | 146     | 1754768     | 213      | 1933327     | 133      |
| 1711856     | 145     | 1754845     | 203      | 1933328     | 133      |
| 1711858     | 146     | 1777029     | 31, 131  | 1933329     | 133      |
| 1711860     | 148     | 1777041     | 131      | 1933330     | 133      |
| 1711861     | 147     | 1777042     | 131      | 1933331     | 133      |
| 1711862     | 147     | 1777053     | 131      | 1933332     | 133      |
| 1711864     | 147     | 1777098     | 31       | 1933333     | 133      |
| 1711865     | 147     | 1828352     | 214      | 1933334     | 133      |
| 1711866     | 147     | 1828353     | 214      | 1933352     | 36       |
| 1711869     | 146     | 1828833     | 213      | 1933420     | 129      |
| 1711870     | 145     | 1828836     | 213      | 1933425     | 138      |
| 1711875     | 145     | 1828837     | 213      | 1933476     | 228      |
| 1711876     | 146     | 1828953     | 194      | 1933582     | 255, 292 |
| 1711910     | 218     | 1859096     | 279      | 1933659     | 255, 292 |
| 1711913     | 218     | 1859130     | 281      | 1933661     | 255, 292 |
| 1711937     | 277     | 1859160     | 49       | 1933668     | 284      |
| 1711944     | 31, 131 | 1859345     | 231      | 1933671     | 284      |
| 1711963     | 278     | 1871696     | 202, 206 | 1933674     | 284      |
| 1711970     | 30      | 1918266     | 197      | 1933677     | 284      |
| 1711987     | 22, 173 | 1918267     | 197      | 1933691     | 290      |
| 1711990     | 240     | 1918372     | 197      | 1933692     | 290      |
| 1711991     | 240     | 1918373     | 197      | 1933693     | 290      |
| 1711992     | 240     | 1918374     | 197      | 1933776     | 290      |
| 1711993     | 240     | 1918375     | 197      | 1933899     | 137      |
| 1711994     | 240     | 1918376     | 197      | 1985374     | 195      |
| 1711995     | 240     | 1918377     | 197      | 1985766     | 207      |
| 1711996     | 240     | 1918384     | 197      | 1985771     | 206      |
| 1716000     | 162     | 1918385     | 197      | 1985805     | 195      |
| 1716001     | 163     | 1918388     | 197      | 1987031     | 300      |
| 1716029     | 161     | 1918626     | 193      | 1987032     | 300      |
| 1716211     | 166     | 1918627     | 193      | 1987033     | 300      |
| 1716216     | 166     | 1918652     | 210      | 1987152     | 299      |

# Index

## Part Number Index

---

| Part Number | Page | Part Number | Page     | Part Number | Page |
|-------------|------|-------------|----------|-------------|------|
| 1987154     | 300  | 2055727     | 178      | 2153040     | 131  |
| 1987155     | 300  | 2055728     | 178      | 2153041     | 28   |
| 1987195     | 302  | 2055740     | 178      | 2153046     | 28   |
| 1987256     | 301  | 2055741     | 178      | 2153049     | 131  |
| 1987257     | 301  | 2064181     | 193      | 2153052     | 29   |
| <b>2</b>    |      | 2064184     | 194      | 2153074     | 147  |
| 216056      | 05   | 2064431     | 207      | 2153075     | 147  |
| 219413      | 242  | 2064499     | 26, 212  | 2153078     | 29   |
| 219420      | 242  | 2064500     | 26, 212  | 2153091     | 131  |
| 219484      | 242  | 2064540     | 206      | 2153093     | 306  |
| 219584      | 231  | 2064603     | 207      | 2153112     | 142  |
| 219585      | 231  | 2064651     | 211      | 2153113     | 142  |
| 228433      | 210  | 2111008     | 283      | 2153115     | 28   |
| 284584      | 152  | 2111009     | 283      | 2153117     | 156  |
| 2055108     | 08   | 2111010     | 283      | 2153140     | 40   |
| 2055109     | 08   | 2111011     | 283      | 2153141     | 40   |
| 2055425     | 185  | 2111012     | 283      | 2153142     | 40   |
| 2055438     | 130  | 2111013     | 283      | 2153146     | 39   |
| 2055567     | 23   | 2111014     | 283      | 2153147     | 39   |
| 2055576     | 03   | 2111015     | 283      | 2153148     | 39   |
| 2055577     | 03   | 2111093     | 291      | 2153149     | 39   |
| 2055578     | 03   | 2111117     | 291      | 2153150     | 38   |
| 2055579     | 03   | 2111121     | 245      | 2153151     | 38   |
| 2055580     | 06   | 2111122     | 245      | 2153152     | 38   |
| 2055581     | 06   | 2111123     | 235      | 2153161     | 225  |
| 2055583     | 178  | 2111124     | 235      | 2153173     | 144  |
| 2055584     | 178  | 2111201     | 283      | 2153175     | 128  |
| 2055600     | 06   | 2111203     | 283      | 2153188     | 94   |
| 2055611     | 03   | 2111366     | 32       | 2153190     | 94   |
| 2055612     | 03   | 2111367     | 33       | 2153211     | 03   |
| 2055613     | 178  | 2111370     | 34       | 2153216     | 269  |
| 2055614     | 178  | 2111371     | 32       | 2153217     | 240  |
| 2055623     | 06   | 2111440     | 128      | 2153230     | 29   |
| 2055624     | 06   | 2111441     | 128      | 2153240     | 252  |
| 2055665     | 178  | 2111442     | 128      | 2153241     | 251  |
| 2055666     | 178  | 2111443     | 128      | 2153244     | 03   |
| 2055667     | 178  | 2111444     | 128      | 2153245     | 177  |
| 2055668     | 178  | 2111445     | 128      | 2153264     | 156  |
| 2055670     | 178  | 2111446     | 128      | 2153273     | 251  |
| 2055687     | 178  | 2111447     | 128      | 2153274     | 251  |
| 2055688     | 178  | 2111448     | 128      | 2153275     | 251  |
| 2055691     | 07   | 2111481     | 87       | 2153276     | 251  |
| 2055704     | 06   | 2111500     | 255, 292 | 2153277     | 251  |
| 2055707     | 08   | 2111521     | 29       | 2153278     | 251  |
| 2055708     | 08   | 2111522     | 29       | 2153279     | 251  |
| 2055709     | 08   | 2111615     | 255, 292 | 2153285     | 252  |
| 2055710     | 08   | 2111664     | 26, 212  | 2153286     | 252  |
| 2055711     | 08   | 2111676     | 228      | 2153290     | 226  |
| 2055712     | 08   | 2119000     | 287      | 2160008     | 180  |
| 2055713     | 08   | 2119700     | 287      | 2160012     | 11   |
| 2055714     | 08   | 2123273     | 213      | 2160013     | 11   |
| 2055715     | 03   | 2125019     | 190      | 2160040     | 185  |
| 2055716     | 03   | 2153004     | 279      | 2160041     | 185  |
| 2055725     | 178  | 2153014     | 144, 291 | 2160042     | 185  |
| 2055726     | 178  | 2153022     | 226      | 2160043     | 185  |

# Index

## Part Number Index

---

| Part Number | Page | Part Number | Page | Part Number  | Page |
|-------------|------|-------------|------|--------------|------|
| 2160046     | 08   | 2160199     | 10   | 2160729      | 03   |
| 2160047     | 08   | 2160266     | 16   | 2160730      | 03   |
| 2160048     | 08   | 2160270     | 89   | 2160738      | 18   |
| 2160052     | 130  | 2160301     | 90   | 2171014      | 226  |
| 2160067     | 07   | 2160302     | 90   | 2193016      | 87   |
| 2160069     | 07   | 2160304     | 18   | 2193050      | 87   |
| 2160071     | 08   | 2160305     | 18   | 2193051      | 87   |
| 2160072     | 08   | 2160307     | 18   | 2193052      | 87   |
| 2160073     | 03   | 2160317     | 88   | 2255669      | 178  |
| 2160074     | 03   | 2160318     | 88   | 2269019      | 44   |
| 2160075     | 03   | 2160319     | 88   | 2286081      | 101  |
| 2160076     | 03   | 2160320     | 88   | <b>3</b>     |      |
| 2160077     | 08   | 2160321     | 88   | 336455       | 156  |
| 2160078     | 08   | 2160322     | 88   | 336488       | 221  |
| 2160106     | 11   | 2160323     | 88   | 336526       | 266  |
| 2160107     | 11   | 2160324     | 88   | 336548       | 152  |
| 2160108     | 11   | 2160325     | 88   | 336556       | 149  |
| 2160109     | 11   | 2160349     | 180  | 336608       | 272  |
| 2160110     | 11   | 2160385     | 88   | 336613       | 270  |
| 2160111     | 11   | 2160386     | 88   | 336614       | 270  |
| 2160112     | 06   | 2160387     | 88   | 336671       | 246  |
| 2160113     | 06   | 2160388     | 88   | 336793       | 281  |
| 2160114     | 06   | 2160389     | 88   | 300001739943 | 267  |
| 2160115     | 06   | 2160390     | 88   | 300001739995 | 267  |
| 2160116     | 11   | 2160391     | 88   | 300001741753 | 267  |
| 2160117     | 11   | 2160392     | 88   | 300001743975 | 227  |
| 2160122     | 11   | 2160404     | 180  | 300001743978 | 228  |
| 2160123     | 11   | 2160503     | 88   | <b>4</b>     |      |
| 2160124     | 11   | 2160506     | 96   | 406330       | 247  |
| 2160125     | 11   | 2160510     | 19   | 406331       | 247  |
| 2160126     | 06   | 2160537     | 96   | 492025       | 207  |
| 2160127     | 06   | 2160538     | 96   | 492026       | 207  |
| 2160128     | 11   | 2160546     | 07   | 492109       | 207  |
| 2160129     | 11   | 2160547     | 215  | 492543       | 203  |
| 2160134     | 10   | 2160548     | 215  | 492622       | 207  |
| 2160135     | 05   | 2160549     | 215  | 492623       | 207  |
| 2160136     | 05   | 2160550     | 215  | 492697       | 203  |
| 2160137     | 10   | 2160551     | 215  | 492703       | 206  |
| 2160138     | 10   | 2160552     | 215  | 492782       | 207  |
| 2160139     | 05   | 2160588     | 180  | 492783       | 207  |
| 2160140     | 05   | 2160608     | 15   | <b>5</b>     |      |
| 2160141     | 10   | 2160609     | 15   | 5909 1 076   | 258  |
| 2160142     | 178  | 2160627     | 20   | 5909 1 078   | 258  |
| 2160143     | 178  | 2160639     | 16   | 5909 1 082   | 258  |
| 2160144     | 178  | 2160640     | 16   | 5909 1 083   | 258  |
| 2160145     | 178  | 2160649     | 17   | 5909 1 084   | 258  |
| 2160146     | 06   | 2160650     | 17   | 57535        | 243  |
| 2160147     | 06   | 2160651     | 17   | 57538        | 243  |
| 2160192     | 10   | 2160654     | 18   | 57893        | 225  |
| 2160193     | 05   | 2160658     | 03   | 58424        | 207  |
| 2160194     | 05   | 2160659     | 03   | 58433        | 207  |
| 2160195     | 10   | 2160663     | 15   | 501014       | 207  |
| 2160196     | 10   | 2160664     | 15   | 501197       | 209  |
| 2160197     | 05   | 2160693     | 07   | 501198       | 207  |
| 2160198     | 05   | 2160694     | 18   | 501258       | 204  |

# Index

## Part Number Index

---

| Part Number | Page | Part Number | Page | Part Number | Page     |
|-------------|------|-------------|------|-------------|----------|
| 501381      | 191  | 599145      | 161  | 5349561     | 182      |
| 501457      | 199  | 599146      | 161  | 5349565     | 182      |
| 501473      | 210  | 599148      | 161  | 5349567     | 182      |
| 501523      | 209  | 599149      | 161  | 5349568     | 185      |
| 501818      | 208  | 599152      | 162  | 5349569     | 186      |
| 501857      | 208  | 599153      | 162  | 5349574     | 182      |
| 501858      | 209  | 599154      | 162  | 5349578     | 182      |
| 502129      | 209  | 599156      | 162  | 5349580     | 182      |
| 502134      | 209  | 599157      | 162  | 5349582     | 186      |
| 502222      | 209  | 599159      | 162  | 5349584     | 185      |
| 502259      | 208  | 599160      | 162  | 5492123     | 198      |
| 502282      | 210  | 599161      | 162  | 5492642     | 194      |
| 502418      | 210  | 599162      | 162  | 5492643     | 194      |
| 502613      | 199  | 599164      | 162  | 5502580     | 199      |
| 502631      | 208  | 599165      | 162  | 5502632     | 191      |
| 502656      | 208  | 599167      | 162  | 5502776     | 190, 191 |
| 502748      | 210  | 599168      | 164  | 5502780     | 192      |
| 502750      | 191  | 599169      | 164  | 5503137     | 192      |
| 503304      | 208  | 599170      | 164  | 5503628     | 199      |
| 503330      | 203  | 599172      | 164  | 5503692     | 196      |
| 503337      | 208  | 599173      | 164  | 5503693     | 196      |
| 503577      | 201  | 599175      | 164  | 5503948     | 198      |
| 503605      | 202  | 599602      | 161  | 5503971     | 198      |
| 503676      | 199  | 599603      | 161  | 5504000     | 196      |
| 503677      | 199  | 599605      | 162  | 5504034     | 196      |
| 503681      | 201  | 599606      | 162  | 5504600     | 196      |
| 503705      | 206  | 599607      | 162  | 5504614     | 191      |
| 503746      | 205  | 599609      | 162  | 5504640     | 190      |
| 503787      | 208  | 599610      | 162  | 5504646     | 198      |
| 503910      | 207  | 599611      | 162  | 5504655     | 198      |
| 503911      | 207  | 599612      | 164  | 5504657     | 198      |
| 503957      | 203  | 599613      | 164  | 5504663     | 192      |
| 504021      | 191  | 599614      | 163  | 5504932     | 198      |
| 504035      | 209  | 599615      | 163  | <b>6</b>    |          |
| 504064      | 208  | 599616      | 163  | 6089 1 102  | 257      |
| 504290      | 208  | 599617      | 163  | 6089 1 810  | 257      |
| 555050      | 254  | 599618      | 163  | 6092 1 810  | 257      |
| 555052      | 254  | 599619      | 163  | 6092 1 820  | 257      |
| 555614      | 155  | 599620      | 163  | 6406 1 015  | 263      |
| 555644      | 155  | 599621      | 163  | 6406 2 004  | 263      |
| 558198      | 304  | 599622      | 163  | 6406 2 013  | 263      |
| 558199      | 304  | 599623      | 163  | 6406 3 003  | 263      |
| 558251      | 283  | 599624      | 163  | 6417 2 055  | 287      |
| 558329      | 49   | 599625      | 163  | 6424 3 005  | 259      |
| 558821      | 304  | 599626      | 163  | 6424 3 007  | 259      |
| 559066      | 202  | 599627      | 163  | 6424 3 009  | 259      |
| 559087      | 202  | 599628      | 163  | 6424 3 010  | 259      |
| 559496      | 174  | 599629      | 163  | 6428 2 418  | 264      |
| 559501      | 174  | 599681      | 165  | 6428 2 419  | 264      |
| 559523      | 177  | 599682      | 165  | 6428 2 420  | 264      |
| 559558      | 176  | 599683      | 165  | 6428 2 421  | 264      |
| 559596      | 176  | 599690      | 165  | 6428 2 422  | 264      |
| 559601      | 176  | 599692      | 165  | 6428 2 423  | 264      |
| 599142      | 159  | 5233103     | 185  | 6428 2 424  | 264      |
| 599144      | 161  | 5233582     | 185  | 6428 2 425  | 264      |

# Index

## Part Number Index

| Part Number | Page | Part Number | Page          | Part Number | Page     |
|-------------|------|-------------|---------------|-------------|----------|
| 6429 1 076  | 262  | 6206650     | 159           | 6695506     | 185      |
| 6429 1 078  | 262  | 6206820     | 184           | 6695507     | 185      |
| 6436 1 013  | 263  | 6206821     | 184           | 6695508     | 185      |
| 6436 2 004  | 263  | 6278049     | 190           | 6695509     | 185      |
| 6436 3 003  | 263  | 6278079     | 194           | 6695510     | 185      |
| 6437 1 020  | 263  | 6278082     | 194           | 6695511     | 185      |
| 6437 2 004  | 263  | 6348260     | 13, 182       | 6695512     | 185      |
| 6437 2 010  | 263  | 6348269     | 184           | 6695657     | 181      |
| 6437 3 003  | 263  | 6348271     | 184           | 6695697     | 181      |
| 6467 1 140  | 288  | 6348522     | 194, 196, 198 | 6754482     | 193      |
| 6467 2 142  | 288  | 6348941     | 186           | 6754483     | 193      |
| 6467 2 149  | 288  | 6348942     | 186           | <b>7</b>    |          |
| 6527 1 607  | 247  | 6374906     | 192           | 7014 2 003  | 260      |
| 6529 1 022  | 258  | 6391366     | 186           | 7014 2 004  | 260      |
| 6529 1 042  | 258  | 6457493     | 198           | 7014 2 058  | 260      |
| 6530 1 017  | 262  | 6457567     | 190           | 7014 2 065  | 260      |
| 6534 1 001  | 257  | 6536444     | 184           | 7014 2 250  | 260      |
| 6536 1 005  | 280  | 6536445     | 184           | 7014 3 252  | 260      |
| 6536 3 044  | 280  | 6536446     | 184           | 7019 1 214  | 261      |
| 6537 1 610  | 287  | 6536447     | 184           | 7022 1 015  | 246      |
| 6538 3 111  | 280  | 6536462     | 183           | 7022 2 155  | 267      |
| 6538 4 111  | 278  | 6536463     | 183           | 7022 4 001  | 256      |
| 6540 1 677  | 248  | 6536464     | 13, 182       | 7033 1 080  | 170      |
| 6540 1 678  | 237  | 6536501     | 12, 180       | 7033 1 082  | 170      |
| 6540 1 684  | 237  | 6536502     | 180           | 7033 1 084  | 170      |
| 6540 1 801  | 278  | 6536503     | 180           | 7033 1 101  | 170      |
| 6540 1 802  | 278  | 6536508     | 13, 181       | 7033 1 103  | 170      |
| 6540 1 810  | 279  | 6536509     | 181           | 7033 1 180  | 170      |
| 6540 1 812  | 278  | 6536510     | 181           | 7033 1 182  | 170      |
| 6540 1 813  | 279  | 6536511     | 183           | 7080 2 064  | 285      |
| 6540 1 814  | 279  | 6536512     | 183           | 7080 2 065  | 285      |
| 6577 2 812  | 259  | 6536513     | 183           | 7033106902  | 189      |
| 6645 1 180  | 125  | 6536555     | 185           | 7033106904  | 189      |
| 6645-2-827  | 230  | 6536556     | 186           | 7033107102  | 189      |
| 6690 1 825  | 282  | 6536767     | 182           | 7033107104  | 189      |
| 6690 2 675  | 271  | 6536769     | 184           | <b>9</b>    |          |
| 6690 3 725  | 271  | 6536770     | 184           | 959305      | 250      |
| 6690 3 745  | 282  | 6536803     | 184           | 959306      | 250      |
| 6753 2 009  | 257  | 6536810     | 184           | 959307      | 250      |
| 6830 1 490  | 288  | 6536811     | 184           | 959308      | 250      |
| 6830 1 800  | 234  | 6536880     | 185           | 959309      | 250      |
| 6830 1 810  | 232  | 6536966     | 185           | 959385      | 240      |
| 6830 1 811  | 227  | 6536967     | 13, 181       | 964361      | 272      |
| 6830 1 885  | 228  | 6536968     | 183           | 964719      | 274      |
| 6830 2 402  | 279  | 6536969     | 12, 180       | 964830      | 272      |
| 657054      | 200  | 6536974     | 185           | 966223      | 271      |
| 6206158     | 182  | 6536975     | 185           | 966224      | 271      |
| 6206613     | 183  | 6588291     | 194           | 966498      | 273      |
| 6206615     | 183  | 6693276     | 194           | 966740      | 188, 272 |
| 6206616     | 184  | 6695121     | 181           | 966936      | 187, 271 |
| 6206617     | 183  | 6695240     | 214           | 969556      | 285      |
| 6206619     | 183  | 6695242     | 214           | 969614      | 169      |
| 6206620     | 184  | 6695244     | 214           | 969615      | 169      |
| 6206621     | 183  | 6695313     | 184           | 969616      | 169      |
| 6206623     | 183  | 6695505     | 185           | 969617      | 169      |

# Index

## Part Number Index

| Part Number      | Page           | Part Number       | Page                   | Part Number        | Page       |
|------------------|----------------|-------------------|------------------------|--------------------|------------|
| 969618           | 169            | FGS-HSHC-10       | 55                     | FGS-MFAW-A         | 61         |
| 969619           | 169            | FGS-HTUB-F-XX     | 83                     | FGS-MFAW-F         | 75         |
| 969628           | 169            | FGS-HTUB-XX       | 82                     | FGS-MFAW-H         | 78         |
| 969629           | 169            | FGS-HUFB-A        | 82                     | FGS-MH4A-C         | 54         |
| 969630           | 169            | FGS-ISLAND3-F     | 73                     | FGS-MH4E-A         | 58         |
| 969631           | 169            | FGS-ISLAND-F      | 73                     | FGS-MH4E-B         | 66         |
| 969704           | 156            | FGS-ISLAND-F-513  | 73                     | FGS-MH4E-F         | 71         |
| 969993           | 169            | FGS-ISLAND-H/F    | 77                     | FGS-MH4E-G         | 63         |
| 969994           | 169            | FGS-JUNC-G        | 64                     | FGS-MH4E-H         | 76         |
|                  |                | FGS-KDH2-C        | 55                     | FGS-MH4E-H-VS      | 84         |
| <b>F</b>         |                | FGS-KT03-         | 55, 60, 63, 68, 73, 81 | FGS-MH9A-C         | 54         |
|                  |                | FGS-KT07-         | 60, 68                 | FGS-MH9A-C-45/2    | 54         |
| <b>F</b>         |                | FGS-MCDS-AB       | 60                     | FGS-MH9E-A         | 58         |
| FGS-ASRI-        | 60, 68         | FGS-MCDS-AB**     | 68                     | FGS-MH9E-B         | 66         |
| FGS-DHCP         | 61, 64, 69, 74 | FGS-MCDS-EX-AB    | 60, 68                 | FGS-MH9E-F         | 71         |
| FGS-DHHC         | 61, 69, 74     | FGS-MD4A-C        | 54                     | FGS-MH9E-F-VS      | 71         |
| FGS-FD4E-H       | 78             | FGS-MD4E-A        | 58                     | FGS-MH9E-G         | 63         |
| FGS-FDSA-HF      | 78             | FGS-MD4E-B        | 66                     | FGS-MHIS-A         | 58, 66, 71 |
| FGS-FH4E-H       | 78             | FGS-MD4E-F        | 71                     | FGS-MHIS-A/H       | 76         |
| FGS-FHRT-H       | 78             | FGS-MD4E-G        | 63                     | FGS-MHIS-B         | 58, 66, 71 |
| FGS-FHRT-H/F     | 78             | FGS-MD4E-H        | 76                     | FGS-MHIS-B/H       | 76         |
| FGS-FHXP-F/H     | 78             | FGS-MD9A-C        | 54                     | FGS-MHIS-F         | 58, 66, 71 |
| FGS-FHXP-H       | 78             | FGS-MD9E-A        | 58                     | FGS-MHIS-F/H       | 76         |
| FGS-FRH-         | 79             | FGS-MD9E-B        | 66                     | FGS-MHIS-JIG-A/B/F | 58, 66, 71 |
| FGS-FSFC-H       | 78             | FGS-MD9E-F        | 71                     | FGS-MHRT-A         | 58         |
| FGS-HCBL-12      | 82             | FGS-MD9E-G        | 63                     | FGS-MHRT-B         | 66         |
| FGS-HCBL-15      | 82             | FGS-MDRT-F        | 73                     | FGS-MHRT-F         | 71         |
| FGS-HDLB-3       | 82             | FGS-MDSA-AB       | 58, 66                 | FGS-MHRT-F/B       | 71         |
| FGS-HDSI-AB      | 60, 68         | FGS-MDSA-AC       | 54                     | FGS-MHRT-F/B-VS    | 71         |
| FGS-HDSI-F/C     | 73             | FGS-MDSA-F2B      | 71                     | FGS-MHRT-F-VS      | 71         |
| FGS-HDSI-F/D     | 73             | FGS-MDSA-FB       | 66, 71                 | FGS-MHRT-G         | 63         |
| FGS-HETP-F-XX    | 83             | FGS-MDSA-FB-L     | 71                     | FGS-MHRT-H         | 76         |
| FGS-HETP-H-5/8   | 84             | FGS-MDSA-FB-R     | 71                     | FGS-MHRT-H/F       | 76         |
| FGS-HETR-5/8-A   | 82             | FGS-MDSA-GA       | 63                     | FGS-MHRT-H/F-VS    | 84         |
| FGS-HETR-F-XX    | 83             | FGS-MDSA-GB       | 63                     | FGS-MHTA-C         | 54         |
| FGS-HETR-XX      | 82             | FGS-MDSA-HF       | 76                     | FGS-MHXP-A         | 58         |
| FGS-HLBK         | 82             | FGS-MDSP-2B       | 68                     | FGS-MHXP-B         | 66         |
| FGS-HMEC-A       | 58             | FGS-MDSP-2B-IMP   | 68                     | FGS-MHXP-B/F       | 71         |
| FGS-HMEC-B       | 66             | FGS-MDSP-A        | 60                     | FGS-MHXP-B/F-VS    | 71         |
| FGS-HMEC-C       | 54             | FGS-MDSP-A/I      | 60                     | FGS-MHXP-C         | 54         |
| FGS-HMEC-F       | 71             | FGS-MDSP-B        | 68                     | FGS-MHXP-F         | 71         |
| FGS-HMEC-G       | 63             | FGS-MDSP-B/I      | 68                     | FGS-MHXP-F/H       | 76         |
| FGS-HMEC-H       | 76             | FGS-MDSP-C        | 55                     | FGS-MHXP-F/H-VS    | 84         |
| FGS-HNLR-AB      | 82             | FGS-MDSP-EX-A     | 60                     | FGS-MHXP-F-VS      | 71         |
| FGS-HNLR-F       | 83             | FGS-MDSP-EX-B     | 68                     | FGS-MHXP-G         | 63         |
| FGS-HNTP-F-XX    | 83             | FGS-MDSP-F        | 73                     | FGS-MHXP-H         | 76         |
| FGS-HNTP-H-5/8   | 84             | FGS-MDSP-F/I      | 73                     | FGS-MHXP-H-VS      | 84         |
| FGS-HNTR-5/8-A   | 82             | FGS-MDSP-F-VS     | 71                     | FGS-MJWR-A         | 60, 68     |
| FGS-HNTR-F-XX    | 83             | FGS-MDSP-G        | 63                     | FGS-MJWR-C         | 56         |
| FGS-HNTR-XX      | 82             | FGS-MEX1-C-       | 55, 81                 | FGS-MSDS-C         | 55         |
| FGS-HNTS-F-XX    | 83             | FGS-MEXC-         | 80                     | FGS-MSHA-C         | 56         |
| FGS-HNTS-F-XX-LP | 83             | FGS-MEXP-A/B/F    | 81                     | FGS-MSHS-A         | 61         |
| FGS-HNTS-XX      | 82             | FGS-MEXP-E-A/B/F  | 80                     | FGS-MSHS-B         | 69         |
| FGS-HNTS-XX-LP   | 82             | FGS-MEXP-LP-A/B/F | 81                     | FGS-MSHS-F         | 74         |
| FGS-HOMX-16MM    | 82             | FGS-MEXP-LP-G     | 63                     | FGS-MSHS-G         | 64         |







### XG<sub>A</sub> 10 Gb/s Approved

#### High-speed 10 Gigabit Ethernet over Twisted Pair and Fiber Optic Cabling

The AMP NETCONNECT XG Systems, comprising Cat. 6 Copper and OM3 Fiber products have become firmly established industry-leading portfolios with excellent 10 Gb/s performance.

As transmission and connectivity technologies have progressed, TE has developed products which exploit these technological advantages: our AMP NETCONNECT XG<sub>A</sub> Systems include our Cat. 6<sub>A</sub> Copper and OM4 Fiber portfolios to become an end-to-end 10 Gb/s infrastructure solutions. They are fully compliant with the latest ISO/IEC 11801 Amendment 2 specifications.

The **XG<sub>A</sub> 10 Gb/s approved** seal is an indicator for all products of the XG<sub>A</sub> family.



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

#### An augmented Category 6 specification

All products in this catalog that feature the **ISO Cat. 6<sub>A</sub>** seal are compliant with the global cabling standard ISO/IEC 11801 Amendment 2.

This amendment defines specifications for Cat. 6<sub>A</sub> components and Class E<sub>A</sub> permanent links. These global Cat. 6<sub>A</sub> / Class E<sub>A</sub> specifications require a generation of connecting hardware offering far superior performance compared to the existing products which are based on the American TIA standard.

Benefits of this higher standard include more headroom, “mix & match” capability, enabling short links, and removing the requirement for ANEXT testing.



### Ensured Performance

#### Optimized Physical Contact (OPC) enhances your link parameters

Why do you require a controlled ferrule end face? Enhanced services such as Gigabit, 10 Gigabit and soon 40/100 Gigabit Ethernet require a high quality cabling system. Therefore, IEC 608749 specifies the dimensional details of fiber optic connectors in order to ensure interoperability and performance within an ISO 11801 specified application. These dimensional requirements are directly related to the endface characteristics of a polished ferrule, namely its **radius, dome offset** and **fiber position**.

If these ferrule characteristics are optimal, an **Optimized Physical Contact (OPC)** between the two connectors is guaranteed. This will enhance data transmission parameters like **optical performance, Attenuation, Return Loss** and **data link stability**.

Also, the optical **interoperability** between connectors of different suppliers can be ensured by controlled endfaces. As a result of **OPC** a stable physical contact between the endfaces is achieved. This provides a very low Insertion Loss as well as a high Return Loss in order to run high speed applications like 10/40/100 Gigabit Ethernet. All products in this catalog that feature the **Ensured Performance** logo provide **OPC** at all time. AMP NETCONNECT guarantees a controlled endface for all OM3, OM4 and OS2 assemblies and field installable products (MT-RJ and LightCrimp Plus).



### Universal Connectivity Platform

#### Rack efficiency and multiple media deployment

The Universal Connectivity Platform (UCP) is designed to deliver rack efficiency and multiple media deployment. It comprises a versatile range of components that include patch panels, subfloor panel and overhead panel mounts, pre-terminated links and adaptor modules. One common patch panel, either angled or flat, is used to accommodate both copper and fiber, and the units can be installed within or outside the 19-inch envelope. Side mounting brackets maximize usable space along the vertical posts of the rack system, while adaptive mounting brackets can be used strategically above and below the racks.

The UCP accepts pre-terminated copper assemblies, fiber cassettes and MRJ21 high density copper connectivity cassettes, for faster deployment and high reliability. It is also fully compatible with TE Connectivity's AMPTRAC managed connectivity solution.

Products which can be used inside the Universal Connectivity Platform are marked with the **UCP Compatible** seal.



### RoHS Ready

#### Restriction on the Use of Hazardous Substances

TE Connectivity will support your RoHS requirements. We've assessed more than 1.5 million end items/components for RoHS compliance, and issued new part numbers where required in the process of eliminating the restricted materials. All part numbers in this catalog are RoHS compliant. These products comply with European Union Directive 2002/95/EC as amended 1 January 2006 that restricts the use of lead, mercury, cadmium, hexavalent chromium, PBB, and PBDE in certain electrical and electronic products sold into the EU as of 1 July 2006.

NOTE: For purposes of this catalog, included within the definition of RoHS Compliant are:

- Products that are clearly "Out of Scope" of the RoHS Directive such as hand tools and other non-electrical accessories.
- Products that contain lead in solderable interfaces (they do not contain any of the other five restricted substances above allowable limits). However, these products are covered by an application-based exception for lead in solders, such as the server, storage, or networking infrastructure exemption of the same directive.

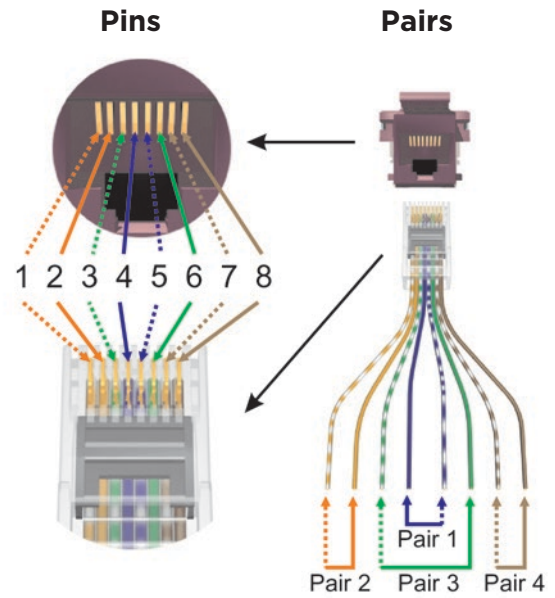
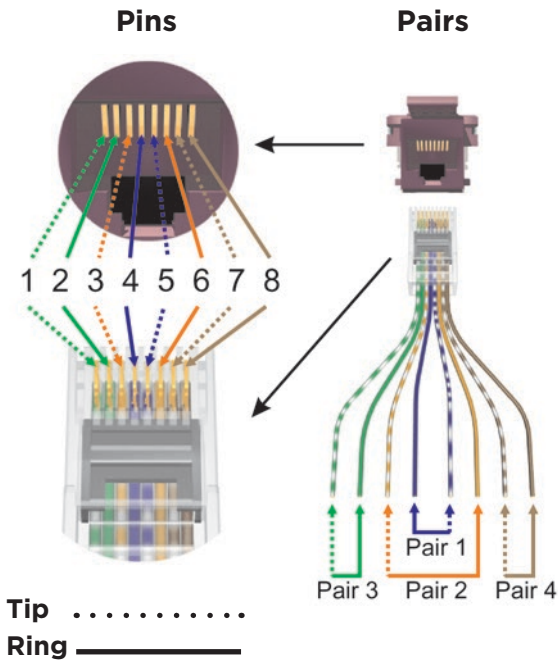
NOTE: Information regarding RoHS compliance is provided based on reasonable inquiry of our suppliers and represents our current actual knowledge based on the information provided by our suppliers. This information is subject to change.



# Wiring Diagrams for Modular Plugs and Jacks

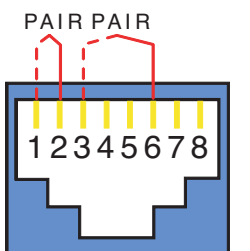
## T568A Wiring

## T568B Wiring

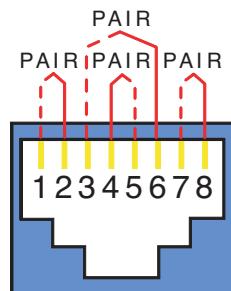


## Application Wiring Diagrams for Modular Jacks

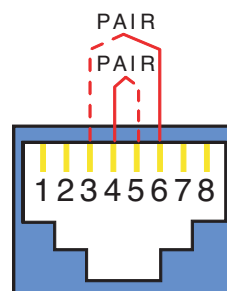
- 10Base-T
- 100Base-TX



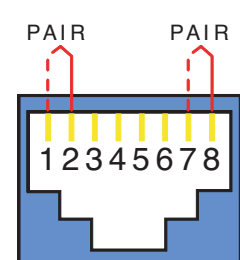
- 1000Base-T
- 10GBase-T



- Token Ring
- ISDN, xDSL



- ATM/TP-PMD
- 1000Base-TX2



Tip .....  
 Ring \_\_\_\_\_

Note: All of the applications listed above (as well as most other communications applications) can be implemented on both T568A and T568B jacks.



EVERY CONNECTION COUNTS



# THE WORLD LEADER IN FIBER CONNECTIVITY

## DELIVERING FIBER CONNECTIVITY FROM ORIGINATION TO DESTINATION

Fiber is the backbone of the world's information infrastructure, enabling society's ever-increasing reliance on high-speed, media-rich communications. TE builds the critical connections that make fiber deployment faster, capacity greater, installation simpler and network reliability better. From design to delivery to what comes next, we make sure every connection counts.



## TE BROADBAND NETWORK SOLUTIONS REGIONAL SALES HEADQUARTERS:

|   |   |   |  |   |   |
|---|---|---|--|---|---|
| <b>North America</b><br>Greensboro, NC, USA<br>Ph: +1-800-553-0938<br>Fx: +1-717-986-7406 | <b>Latin America</b><br>Buenos Aires, Argentina<br>Ph: +54-11-4733-2200<br>Fx: +54-11-4733-2282 | <b>EMEA</b><br>Kessel-Lo, Belgium<br>Ph: +32-16-35-1321<br>Fx: +32-16-35-2188 | <b>SAARC</b><br>Bangalore, India<br>Ph: +91-80-4011-5000<br>Fx: +91-80-4011-5030 | <b>Asia</b><br>Hong Kong, China<br>Ph: +852-2735-1628<br>Fx: +852-2735-1625 | <b>Pacific</b><br>Sydney, Australia<br>Ph: +61-2-8748-9500<br>Fx: +61-2-9748-8487 |
|---|---|---|--|---|---|

## TE BROADBAND NETWORK SOLUTIONS IN EUROPE, MIDDLE EAST AND NORTH AFRICA:

|  |   |   |  |  |   |
|--|---|---|--|--|---|
| <b>Austria</b><br>Vienna<br>Ph: +43-1-90560-1204<br>Fx: +43-1-90560-1270                 | <b>Denmark</b><br>Glostrup<br>Ph: +45-70-15-52-00<br>Fx: +45-43-44-14-14      | <b>Hungary</b><br>Budapest<br>Ph: +36-1-289-1007<br>Fx: +36-1-289-1010            | <b>Norway</b><br>Nesbru<br>Ph: +47-99-66-77-50<br>Fx: +47-66-77-88-98    | <b>Spain</b><br>Montcada (Barcelona)<br>Ph: +34-93-291-0330<br>Fx: +34-93-291-0608 | <b>UK</b><br>Tewkesbury, Glos<br>Ph: +44-1684-857966<br>Fx: +44-1684-857988 |
| <b>Belarus</b><br>Minsk<br>Ph: +375-17-237-47-94<br>Fx: +375-17-237-47-94                | <b>Egypt</b><br>Cairo<br>Ph: +20-2-2419-2334<br>Fx: +20-2-2417-7647           | <b>Italy</b><br>Collegno (Torino)<br>Ph: +39-011-4012-111<br>Fx: +39-011-4012-268 | <b>Poland</b><br>Warsaw<br>Ph: +48-22-4576-700<br>Fx: +48-22-4576-720    | <b>Sweden</b><br>Upplands Väsby<br>Ph: +46-8-5072-5000<br>Fx: +46-8-5072-5001      | <b>Ukraine</b><br>Kiev<br>Ph: +380-44-206-2265<br>Fx: +380-44-206-2264      |
| <b>Belgium</b><br>Kessel-Lo<br>Ph: +32-16-35-2326<br>Fx: +32-16-35-2353                  | <b>Finland</b><br>Helsinki<br>Ph: +358-95-12-34-20<br>Fx: +358-95-12-34-250   | <b>Kazakhstan</b><br>Almaty<br>Ph: +7-327-244-5875<br>Fx: +7-327-244-5877         | <b>Portugal</b><br>Evora<br>Ph: +351-961-377-331<br>Fx: +351-211-454-506 | <b>Switzerland</b><br>Steinach<br>Ph: +41-71-447-0-447<br>Fx: +41-71-447-0-423     |   |
| <b>Bulgaria</b><br>Sofia<br>Ph: +359-2-971-2152<br>Fx: +359-2-971-2153                   | <b>France</b><br>Cergy-Pontoise<br>Ph: +33-1-3420-2122<br>Fx: +33-1-3420-2268 | <b>Lithuania</b><br>Vilnius<br>Ph: +370-5-213-1402<br>Fx: +370-5-213-1403         | <b>Romania</b><br>Bucharest<br>Ph: +40-31-860-2113                       | <b>Turkey</b><br>Istanbul<br>Ph: +90-212-339-92-00<br>Fx: +90-212-339-92-02        |   |
| <b>Czech Rep. &amp; Slovakia</b><br>Brno<br>Ph: +420-541-162-112<br>Fx: +420-541-162-223 | <b>Germany</b><br>Darmstadt<br>Ph: +49-6151-607-1547<br>Fx: +49-6151-607-1219 | <b>Netherlands</b><br>Den Bosch<br>Ph: +31-73-6246-246<br>Fx: +31-73-6246-958     | <b>Russia</b><br>Moscow<br>Ph: +7-495-790-7902<br>Fx: +7-495-721-1894    | <b>U.A.E.</b><br>Dubai<br>Ph: +971 4 2117000<br>Fx: +971 4 2117001                 |   |

### te.com

TE Connectivity, TE connectivity (logo), TE (logo), AMP CO, AMP NETCONNECT, AMPMODU, CORELINK, Every Connection Counts, FiberGuide, KRONE, KRONECTION, LightCrimp, LSA-PLUS, LSA PROFIL, MPOptimate, MRJ21, NETpodium, Quareo, QUICK FIT, Rapid Fiber, Sigma Link are trademarks. All other logos, products and/or company names referred to herein might be trademarks of their respective owners.

The information given herein, including drawings, illustrations and schematics which are intended for illustration purposes only, is believed to be reliable. However, TE Connectivity makes no warranties as to its accuracy or completeness and disclaims any liability in connection with its use. TE Connectivity's obligations shall only be as set forth in TE Connectivity's Standard Terms and Conditions of Sale for this product and in no case will TE Connectivity be liable for any incidental, indirect or consequential damages arising out of the sale, resale, use or misuse of the product. Users of TE Connectivity products should make their own evaluation to determine the suitability of each such product for the specific application.

© 2015 TE Connectivity Ltd. family of companies All Rights Reserved.

313956AE 02/15 Revision 5

### EMEA PRODUCT CATALOG

#### TE Connectivity Broadband Network Solutions - EMEA

Please contact us at one of the regional offices shown above.

[www.te.com/enterprise-eu](http://www.te.com/enterprise-eu)  
[www.te.com/bns](http://www.te.com/bns)

Tyco Electronics Raychem bvba,  
a TE connectivity company.