

Quareo Physical Layer Management System

Q2000 Managed Copper Platform

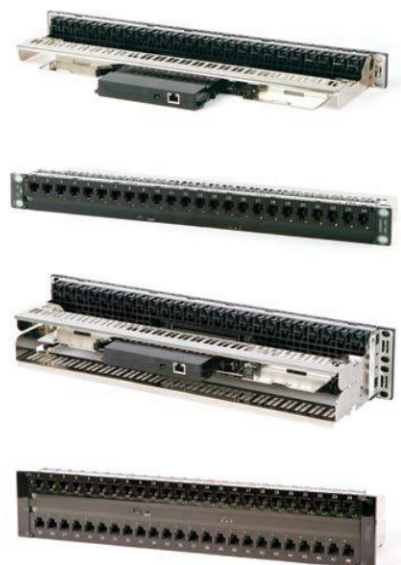
Quareo forms one of the two hardware base technologies within TE's Managed Connectivity Solution. The Copper solution comprises of patch panel (1 and 2U) in shielded and unshielded variants and is supported by a range of managed network cables.

Patch Panels: Q2324 and Q2348

Q2000 Series Patch 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).

FEATURES

- Quareo enabled functionality with dual color port illumination via LEDs
- Integral cable management bar
- 45° IDC contacts providing secure, gas-tight connections
- Accepts 110 style termination tools
- Universal 568A/B wiring
- Discrete labeling system
- Maintenance services available on this product



SPECIFICATIONS

PHYSICAL:

Rack Mounting:	EIA/ETSI/WECO/IEC 60297 19" equipment racks
Dimensions (HxWxD):	Q2324 , 1U: 44.5 mm x 483 mm x 120 mm (1.75" x 19" x 4.75") Q2348 , 2U: 88.9 mm x 483 mm x 120 mm (3.50" x 19" x 4.75")

ENVIRONMENTAL

Operating temperature:	-40° to 70° C (104 to 158° F)
Number of plug insertions:	≥750 (IEC/EN 60603-7)
Diameter range:	
solid and stranded copper conductors:	26AWG to 22 AWG (0.4 mm dia to 0.6 mm dia) solid core cable and 24AWG 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 ≥500 MΩ
Contact resistance:	≤1 mΩ typical
Contact re-terminations:	≥200

COMPLIANCE

UL/CSA Approved, CE, A-TICK
UL 94 V-0
UL1863
RoHS compliant
Performance to ANSI/TIA-568-C.2 and ISO 11801, Edition 2 for Category 6/
Class E and Category 6_A/Class E_A.
Independently certified.
RJ socket, 8 positions FCC Part (IEC 60603-7)

ORDERING INFORMATION

Description	Part Number
Q2324 ; 24 Port Patch panel WITH jacks, Cat. 6 _A , UTP	QCPP-24MC6AU
Q2348 ; 48 Port Patch Panel WITH jacks, Cat. 6 _A , UTP	QCPP-48MC6AU
Q2324 ; 24 Port Patch Panel WITH jacks, Cat. 6 _A , STP	QCPP-24MC6AS
Q2348 ; 48 Port Patch Panel WITH jacks, Cat. 6 _A , STP	QCPP-48MC6AS

Quareo Physical Layer Management System

Q2000 Managed Copper Platform

QPC-2 Panel Controller Compatible with Q2000 Patch Panels



FEATURES

- Panel controller operates with the Q2000 family of Network Patch 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 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
- Maintenance services available on this product

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

ORDERING INFORMATION

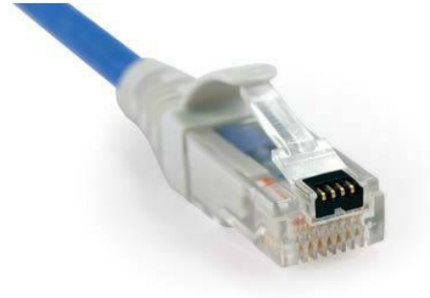
Description	Part Number
QPC-2; Panel Controller for Q2000 Patch Panels	QCPU-MPPM-1

Quareo Physical Layer Management System

Quareo Managed Copper Patch Cords

Category 6_A U/UTP and S/FTP

These managed cables exceed all performance requirements for Augmented Category 6 (Cat 6_A). The plug is designed with integrated strain relievers that prevent the cable from moving at the termination point when the cable is flexed, safeguarding circuit integrity and guaranteeing maximum performance. The strain relievers also ensure that proper bend radii are maintained throughout the network.



FEATURES

- Quareo Technology with connection point identification
- Connector Interface: Plug type RJ45 shielded/unshielded that conforms to 8 way modular RJ45 Jack according with IEC 60603-7 series and TIA/EIA-968-A.
- Latch Type: Snag-less
- Boot: Flexible with built in strain relief to maintain proper bend radius
- Wiring Configuration: T568A, T568B and Cross-over

SPECIFICATIONS

ELECTRICAL

ANSI/TIA-568-C.2 and ISO 11801, Edition 2 Category 6_A/Class E_A
Category 6, 5e, 5 and 3 backward compatible

ENVIRONMENTAL

Controlled Environment

GR-63, Section 4.1.2

Operating Temperature:

-10° C to +60° C

Storage Temperature:

-0° C to +50° C

Relative Humidity:

5% to 90% non-condensing

Relative Humidity:

5% to 95% non-condensing

COMPLIANCE

UL 94 V-0

TICK N355

C(UL)us 49S3

CE

RoHS and WEEE 2002/95/EC Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment

ORDERING INFORMATION

Description	Available Colors Replace XX	Available Lengths Replace YY	Part Number		
Category 6 _A U/UTP Managed Copper Cable	BL = Blue RD = Red OR = Orange GY = Grey	01 = 1 m 02 = 2 m 03 = 3 m	LSZH	T568B	QCPC-6ARUZZB-XXYYM
Category 6 _A S/FTP Managed Copper Cable	GN = Green WT = White YL = Yellow	05 = 5 m 07.5 = 7.5 m 10 = 10 m			

Note: Not all S/FTP types available in all colors. Please check with Customer Services.

Additional lengths, wiring schemes and shielding types available upon request.

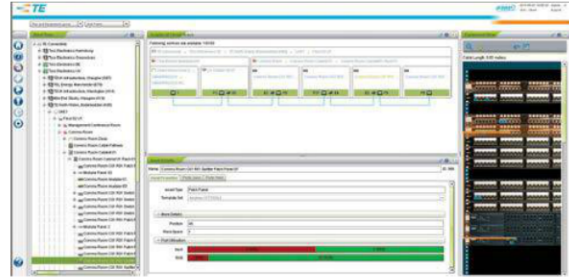
Quareo Physical Layer Management System

Quareo ICM for AMPTRAC Technology

Quareo ICM for AMPTRAC Technology

FEATURES

- Fully automated documentation system
- Real time monitoring
- Automatic database update on changes
- Self-discovers Patch Cords
- Event logs and data base reports
- Programmable alerts
- Automated work order processing
- Auto-discovers IP devices
- Automatic re-synchronization on power outages
- User management
- Supports ITIL best practices
- ISO 20000 and BS 15000 compliant
- CSV data import
- Easy to use and intuitive menu structure
- Support for ICM Mobile Software App (available from Apple iTunes™)



ORDERING INFORMATION

Description	Part Number
ICM Software License	Sold with Analyzer

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 AMPTRAC ICM Software license
- Available in 384 port, 768 port or 1152 port versions (19", 1U)
- Shallow depth at 6.25" (160 mm)
- Suitable for shelf 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 (ICM Included)	1-1591360-1
AMPTRAC ANALYZER HD 768 (ICM Included)	2-1591360-3
AMPTRAC ANALYZER HD 384 (ICM Included)	3-1591360-1
Additional External PSU	1-1591364-0
Scanning Module	1-1591363-0

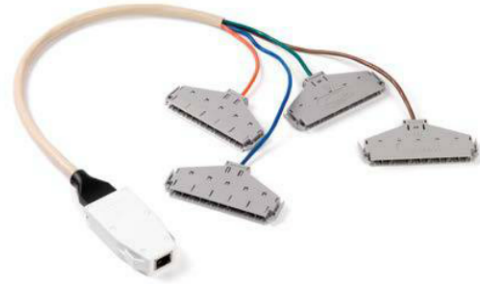
ICM also available without analyzer. Ask TE for more details

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
AMPTRAC Sensor Strips for LAN electronics based on # positions; 2.0 mm MODU to 2.0mm MODU Non-Latching	16	4	2111448-4

Quareo Physical Layer Management System

AMPTRAC Fiber Platform

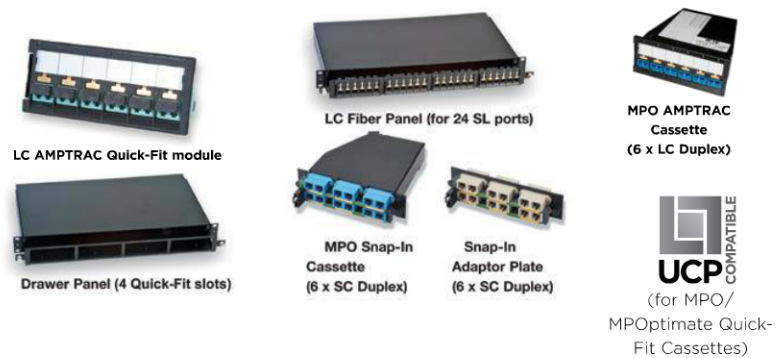
AMPTRAC Optical Fiber Patch Panels

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



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 4S Upgrade Kit with rear Scanning Module port; Color: black	1711749-1

Quareo Physical Layer Management System

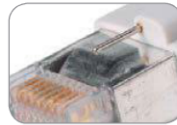
AMPTRAC Copper Patch Cords

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 _A S to AMP-TWIST 7 _A S; LSZH S/FTP	Cat. 7 _A / Class F _A	Y-1711755-X
4pr AMPTRAC: AMP-TWIST 7 _A S to RJ-45; LSZH S/FTP	Cat. 6 _A / Class E _A	Y-1711756-X
4pr AMPTRAC: RJ-45 to RJ-45; LSZH S/FTP	Cat. 6/ Class E _A	Y-1711548-X
2pr AMPTRAC: AMP-TWIST 7 _A S to RJ-45, Ethernet pinout 1236; LSZH S/FTP	Cat. 5E/ Class D	Y-1711757-X
2pr AMPTRAC: AMP-TWIST 7 _A 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 _A	1711351-5
4pr AMPTRAC: RJ-45 to RJ-45; LSZH UTP, 2 m	Cat. 6/ Class E _A	1711351-6
4pr AMPTRAC: RJ-45 to RJ-45; LSZH UTP, 3 m	Cat. 6/ Class E _A	1711351-7
4pr AMPTRAC: RJ-45 to RJ-45; LSZH UTP, 5 m	Cat. 6/ Class E _A	1711351-8

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

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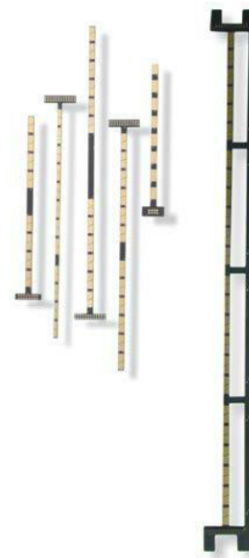
AMPTRAC Sensor Strips

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: 24; Typical Switch: CISCO 2950, 3500, 3750, 24-Port	1435346-5
Ports per Strip: 2; Typical Switch: CISCO 3500 Fiber Uplink Ports	1435818-1
Ports per Strip: 16; Typical Switch: CISCO GBIC, 16-Port Blade	1435820-1
Ports per Strip: 26; Typical Switch: CISCO 2950, 24-Port + 2 Uplink Ports	1435827-1
Ports per Strip: 16; Typical Switch: EXTREME Summit 48i	1435927-1
Ports per Strip: 24; Typical Switch: NORTEL BAYSTACK 450-24T, 24-Port	1435933-1
Ports per Strip: 24; Typical Switch: CISCO MT-RJ 6000, 24-Port Blade	1435937-1
Ports per Strip: 24; Typical Switch: NORTEL BAYSTACK 470-48T, 48-Port	1435939-1
Ports per Strip: 2; Typical Switch: Generic Fiber Uplink Ports	1435950-1
Ports per Strip: 12; Typical Switch: EXTREME Summit 1i & 5i and Alpine 3808	1435952-1
Ports per Strip: 2; Typical Switch: ALCATEL 6648 Fiber Uplink Ports	1479890-1
Ports per Strip: 48; Typical Switch: CISCO 6148, 48 ports	1499651-1
Ports per Strip: 48; Typical Switch: NORTEL BAYSTACK 5520	1499660-1
Ports per Strip: 24; Typical Switch: ALCATEL OmniSwitch OS6624, 24-Port	1777005-1
Ports per Strip: 24; Typical Switch: NORTEL PASSPORT 8648, 24-Port	1777014-1
Ports per Strip: 12; Typical Switch: Generic Stacked, 14 mm Spacing, 12-Port	1777019-1
Ports per Strip: 8; Typical Switch: HP Procurve J4111A	1933098-1
Ports per Strip: 24; Typical Switch: HP Procurve J8702A & 3500yl	1933899-1

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
Scanning Module cable retainer bracket for CISCO 3500, 48 port switch	1435779-1
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
Patch Cord management bar	1711344-1
1U Cable Management Bar Patch Panel Mounting	1933425-1

9. Optical LAN Solutions

Introduction.....	118
Fiber Distribution Hub	119
Fiber Distribution Terminal	120
Splitter Modules.....	121
Splitter Adapter Plate & Drop Cable.....	122

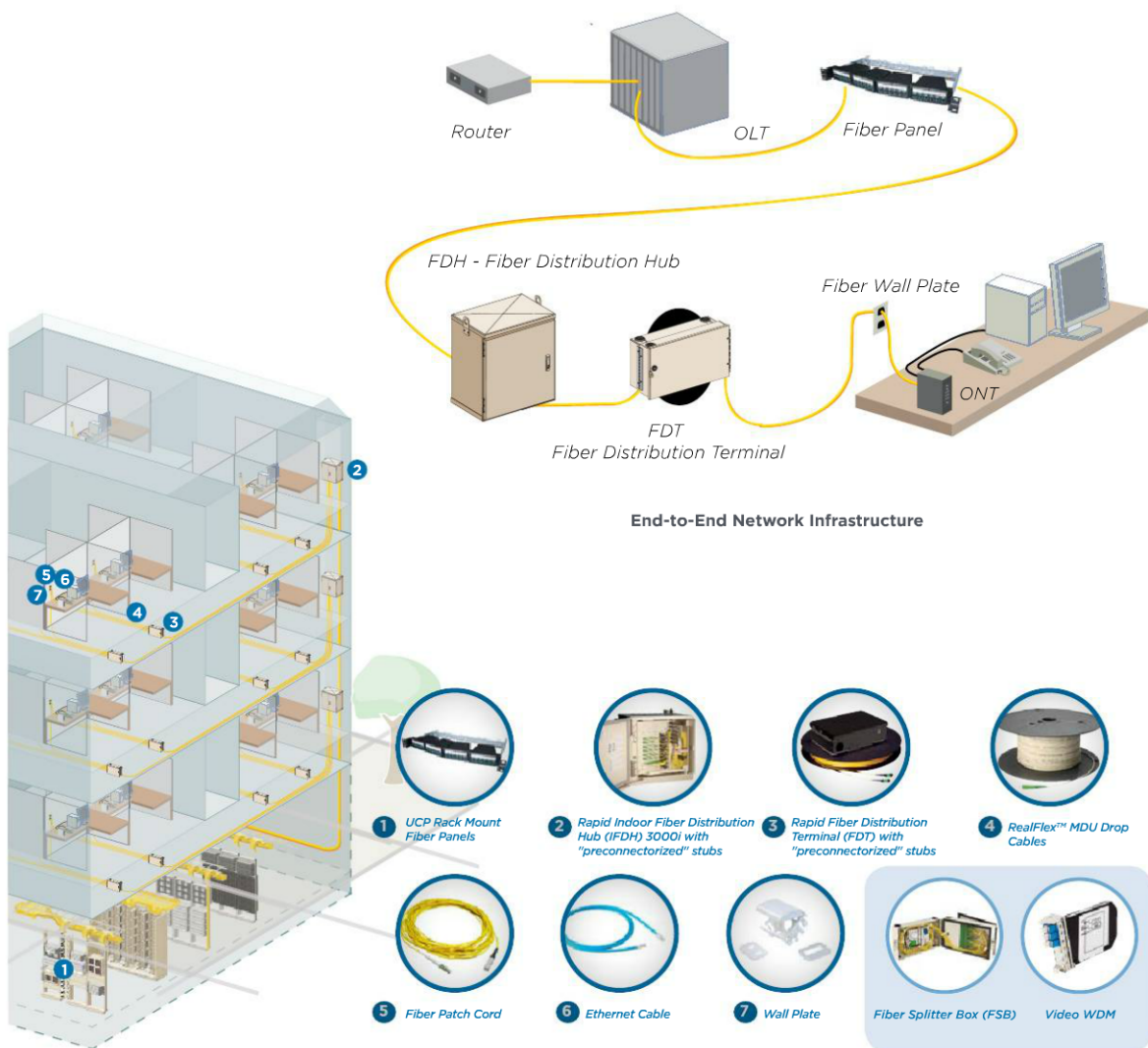
Optical LAN Solution

Introduction

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 this System Solution Guide.



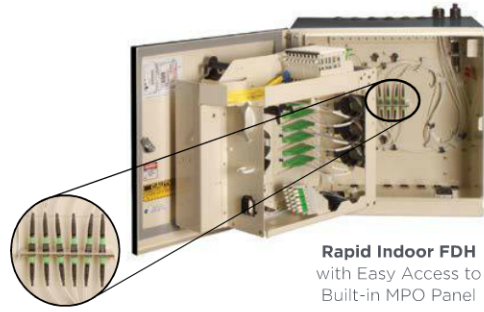
Optical LAN Solution

Fiber Distribution Hub

Rapid Fiber Distribution Hub (iFDH)

FEATURES

- Supports plug-and-play termination
- Can be either wall or rack mounted with the hardware provided
- Traditional swing-frame design allows superior rear access
- Includes RapidReel feeder cable
- Designed to meet NEMA-12 requirements
- UL 1863 Listed



Rapid Indoor FDH
with Easy Access to
Built-in MPO Panel

ORDERING INFORMATION

Description	Feeder Cable Type	Distribution Type	Feeder Stub Length	Part Number
72-Port with 9 splitter ports	12-fiber plenum	6 MPO adapters	100'	OLH-MK072J00M0MKCA
			250'	OLH-MK072J00M0MKEA
			500'	OLH-MK072J00M0MKBA
72-Port Empty Hub	No feeder cable**			OLH-MK072J00M0M000
288-Port with 18 splitter ports	24-fiber plenum	24 MPO adapters	100'	OLH-MM288J00M0MKCB
			250'	OLH-MM288J00M0MKEB
			500'	OLH-MM288J00M0MKBB
288-Port Empty Hub	No feeder cable**			OLH-MM288J00M0M000
432-Port with 22 splitter ports	24-fiber plenum	36 MPO adapters	100'	OLH-MN432J00M0MKCB
			250'	OLH-MN432J00M0MKEB
			500'	OLH-MN432J00M0MKBB
432-Port Empty Hub	No feeder cable**			OLH-MN432J00M0M000

*Note: Splitters are purchased separately; ordering information on the following page.

Optical LAN Solution

Fiber Distribution Terminal

Rapid Fiber Distribution Terminal

FEATURES

- Built-in RapidReel technology allows for easy payoff of MPO stub
- Patented break-away spool flanges reduce slack storage size to within the enclosures footprint
- Utilizes reduced bend radius fiber
- UL 1863 listed

ORDERING INFORMATION

Description	Stub	Feeder Stub Length	Part Number
Rapid FDT 12-fiber Loose tube cable	MPO	100'	OLR-SJ12J00D1002A
		200'	OLR-SJ12J00D2002A
		300'	OLR-SJ12J00D3002A
Rapid FDT 24-fiber Loose tube cable		100'	OLR-SJ24J00D1002A
		200'	OLR-SJ24J00D2002A
		300'	OLR-SJ24J00D3002A
Mini-RDT 12-fiber : Lengths over 100 ft use external reel	500'	OLR-SJ24J00D5002A	
	100'	ODT-SM12J00D03090	
	200'	ODT-SM12J00D0619A	
	300'	ODT-SM12J00D0929A	
	400'	ODT-SM12J00D1229A	
	500'	ODT-SM12J00D1529A	

*Note: Other cable lengths available. Contact your local TE sales engineer.



Rapid FDT



Rapid FDT
using slider adapter packs



Mini RDT Open and Pulling Rapid



Mini RDT and Spool



Mini RDT
12 Fiber

Optical LAN Solution

Splitter Modules

Mini Plug-and-Play Splitter Modules

FEATURES

- Bend-optimized fiber and ruggedized extreme temperature cabling
- Operating temperature range -55° to +85° C
- Wavelength range of 1260-1635 nm
- Easy to insert and remove without affecting adjacent splitters
- UL 1863 Listed



Plug and Play splitter

SPECIFICATIONS:

Splitter Type	Max Loss	Typical Loss	Uniformity	Return Loss	Directivity	PDL	Wavelength Range
1x16	13.5 dB	12.8 dB	1.0 dB	55 dB	60 dB	0.3 dB	1260-1635 nm
1x32	16.7 dB	16.0 dB	1.3 dB	55 dB	60 dB	0.3 dB	1260-1635 nm

ORDERING INFORMATION

Description	Part Number	
Mini Plug-and-Play Splitter Angled SC Pigtailed, Used with iFDH, FSB, Splitter Drawer, and Splitter Panels	1 x 32 splitter	OLS-MPP13266
	1 x 16 splitter	OLS-MPP11666
	1 x 8 splitter	OLS-MPP10866
	2 x 16 splitter	OLS-MPP1P66
	2 x 32 WDM Splitter	OLS-MPP1E66
1RU FMT Rack Mount Splitter with Splitter	1 x 32 splitter	OPS-FMTSP-AJJ01
	2 x 32 splitter	OPS-FMTSP-GJJ01
1 RU Rack Mount Splitter Drawer Accommodates up to 4 mini Plug-and-Play Splitters (purchased separately)	OPS-MPPACRMPNL	



FMT Rack Mounted Splitter Panel



1RU Rack Mount Splitter Drawer

Fiber Splitter Boxes

FEATURES

- Dual hinge design creates separation between rear splitter section and front patching access
- Splitters can be easily installed after wall box installation allowing for separate purchase
- Provides up to 32 customer access ports per splitter
 - Dual hinge provides small footprint on the wall while maintaining excellent hand access to connectors
- Accepts standard mini-PNP splitter modules (same as iFDH)
- UL 1863 Listed



FSB-32 Indoor Enclosure

ORDERING INFORMATION

Description	Part Number	
FSB-32 Indoor Enclosure; with SC/APC adapters, 32-fiber distribution	No splitters, no splice trays	OSB-SBJ032000000
	No splitters, with heat shrink splice trays	OSB-SBJ232000000
	(1) 1x32 splitter installed, no splice trays	OSB-SBJ032A10000
	(1) 1x32 splitter installed, with heat shrink splice trays	OSB-SBJ232A10000
	2 x 32 splitter installed, no splice trays	OSB-SBJ032G10000
	2 x 32 splitter installed, with heat shrink splice trays	OSB-SBJ232G10000
Optical Splitter Module - Angled SC Pigtailed	1x32 splitter	OLS-MPP13266
	1x16 splitter	OLS-MPP11666
	1x8 splitter	OLS-MPP10866
	2x16 splitter	OLS-MPP1P66
	2x32 splitter	OLS-MPP12A66

Optical LAN Solution

Splitter Adapter Plate & Drop Cable

Splitter Adapter Plate

FEATURES

- Extreme temperature cabling (Operating temperature: -55°C to +85°C)
- Superior loss performance at 1310nm to 1490nm and 1550nm
- Meets requirements of GR-1209 and GR-1221
- Optional front side input connection
- Terminated with SC/APC connectors
- Bend-optimized and rugged fiber
- 54 inch cable length



SPECIFICATIONS

Splitter Type	Max Loss	Typical Loss	Uniformity	Return Loss	Directivity	PDL	Wavelength Range
1x16	13.5 dB	12.8 dB	1.0 dB	55 dB	60 dB	0.3 dB	1260-1635 nm
1x32	16.7 dB	16.0 dB	1.3 dB	55 dB	60 dB	0.3 dB	1260-1635 nm

ORDERING INFORMATION

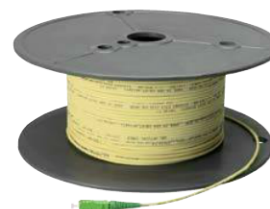
Description	Part Number
Splitter Adapter Plate	
1 x 32 Splitter Adapter Plate with splitter	2111684-1
1 x 16 Splitter Adapter Plate with splitter	2111684-2
Front input kit (cable assembly and adapter)	2111699-1
96 Fiber output, 3 Fiber input, Rack Mount Enclosure	
4RU Enclosure (1 pc)	559552-2
12 SC/APC Adapter Plate (9 pcs)	559596-3
Splitter Adapter Plate (3 pcs)	2111684-1
Optional SC/APC MPO Cassette	1918447-1
96 Fiber output, 3 Fiber input, Rack Mount Panels	
1RU Rack Mount Panel (4 pcs)	1777125-1
12 SC/APC Adapter Plate (9 pcs)	559596-3
Splitter Adapter Plate(3 pcs)	2111684-1
Optional SC/APC MPO Cassette	1918447-1
32 Fiber Wall Mount Box	
Double Sided, Single Door Wall Mount Box	1435128-1
12F SC/APC Adapter Plate (3 pcs)	559596-3
Splitter Adapter Plate (1 pc)	2111684-1



SC Simplex Drop Cable

ORDERING INFORMATION

Description	Part Number
SC/APC-SC/APC Simplex Drop Cable G.657-A.2, yellow	Y-2160593-X
SC/APC-SC/UPC Simplex Drop Cable G.657-A.2, yellow	Y-2160594-X



Y- X	Length	Y- X	Length	Y- X	Length	Y- X	Length	Y- X	Length	Y- X	Length	Y- X	Length
0- -1	1 m	0- -4	4 m	1- -5	15 m	3- -0	30 m	4- -5	45 m	6- -0	60 m	7- -5	75 m
0- -2	2 m	0- -5	5 m	2- -0	20 m	3- -5	35 m	5- -0	50 m	6- -5	65 m	8- -0	80 m
0- -3	3 m	1- -0	10 m	2- -5	25 m	4- -0	40 m	5- -5	55 m	7- -0	70 m	8- -5	85 m

10. AMP CO System

AMP CO Ultra Panels	124
AMP CO Ultra Outlets	127
AMP CO Inserts.....	131
AMP CO Tools & Accessories.....	138

AMP CO System

AMP CO Ultra Panels

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

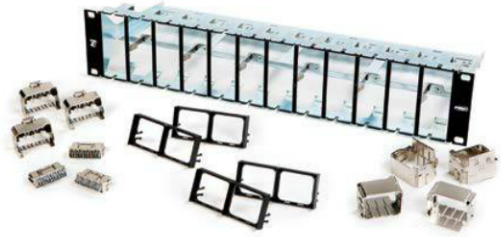
AMP CO System

AMP CO Ultra Panels

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 48



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

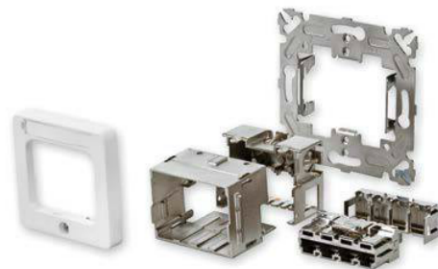
AMP CO System

AMP CO Ultra Outlets

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 System

AMP CO Ultra Outlets

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	Light Gray	1711858-1
AMP CO Ultra Installation Kit Swiss EDIZIOdue Compatible KNL	Dark Gray	1711858-2
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 System

AMP CO Ultra Outlets

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



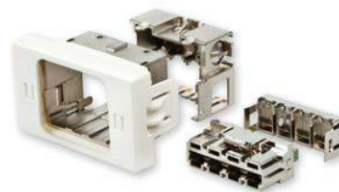
ORDERING INFORMATION

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_A AMP-TWIST 7_AS Style Insert

FEATURES

- Exchangeable system insert for 1 x ISO Category 7_A (acc. IEC 61076-3-104)
- Class F_A, 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 _A AMP-TWIST 7 _A S Style	Almond (RAL 1013)	1711409-1
	Black (RAL 9005)	1711409-3
	Pure White (RAL 9010)	1711409-5



AMP CO Plus Category 7_A ARJ-45 Insert

FEATURES

- Exchangeable system insert for 1 x ISO Category 7_A (compatible with IEC 60603-7-7)
- Class F_A, 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 _A 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

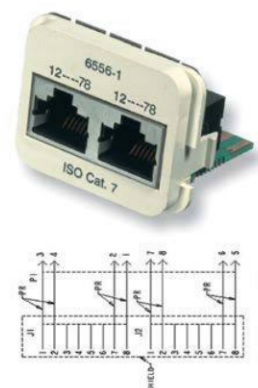
FEATURES

- 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 6A RJ-45 Insert for 10 Gigabit Ethernet

FEATURES

- Exchangeable system insert 1 x RJ-45
- Category 6A / Class EA
- 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. 6A	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 6A Dual RJ-45 Insert for Fast Ethernet

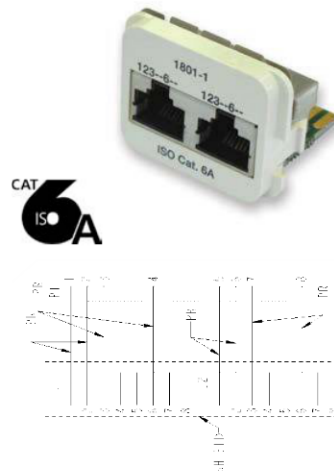
FEATURES

- Exchangeable system insert 2 x RJ-45
- Category 6A / Class EA
- 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. 6A Ethernet	Almond (RAL 1013)	1711801-1
	Black (RAL 9005)	1711801-3
	Pure White (RAL 9010)	1711801-5



AMP CO Plus Category 6A Dual RJ-45 Insert for Fast Ethernet + Voice/Data

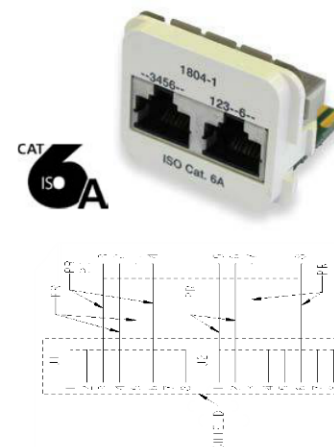
FEATURES

- Exchangeable system insert 2 x RJ-45
- Category 6A / Class EA
- 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. 6A mixed	Almond (RAL 1013)	1711804-1
	Black (RAL 9005)	1711804-3
	Pure White (RAL 9010)	1711804-5



AMP CO Plus Category 6A Dual RJ-45 Insert for Voice/Data

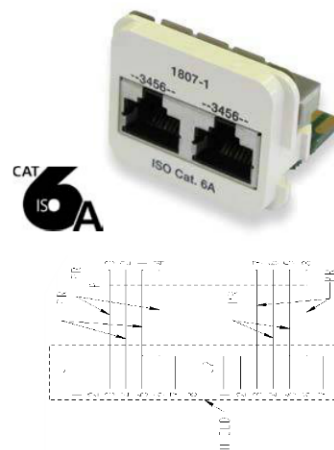
FEATURES

- Exchangeable system insert 2 x RJ-45
- Category 6A / Class EA
- 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. 6A 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

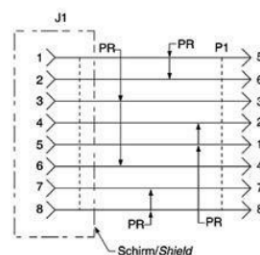
FEATURES

- 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

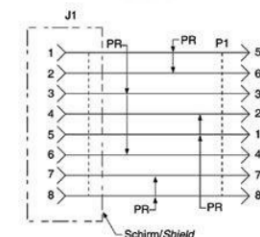
FEATURES

- 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

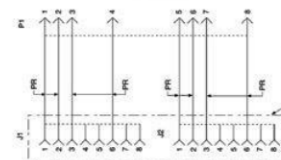
FEATURES

- 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

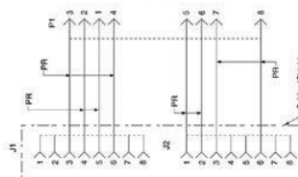
FEATURES

- 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

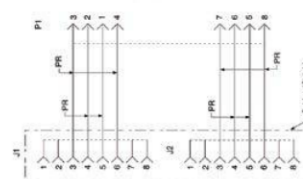
FEATURES

- 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



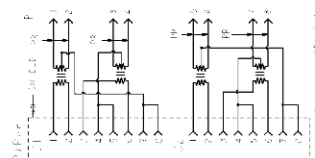
AMP CO Plus Dual Patch Panel Insert PoE Power Conversion

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



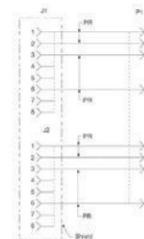
AMP CO System

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

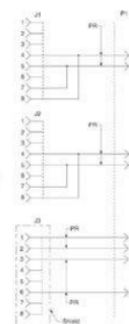
ORDERING INFORMATION

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

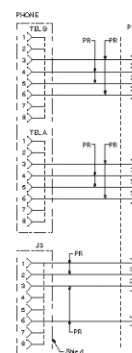
ORDERING INFORMATION

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

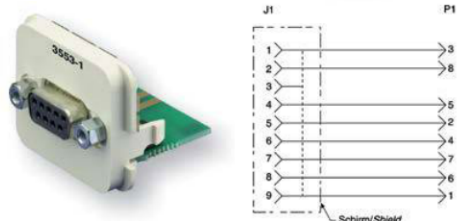
AMP CO System

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		
Insert 2 x RJ11; Use at: outlet; Note: panel side 284584-X	No	No	555614-1	-1	Almond (RAL 1013)
Insert 4 x RJ-45; Use at: outlet/panel; Note: French version	No	No	1644016-X	-3	Black (RAL 9005)
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	-5	Pure White (RAL 9010)
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

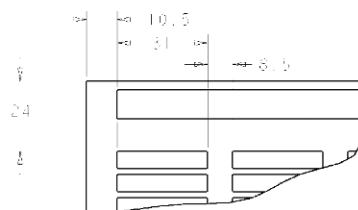
Printer Labels for AMP CO Installation Kits

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	140
Patch Panels	148
Accessories for Patch Panels	152
Quick-Fit Modules.....	154
Wall Mount Enclosures.....	155
Snap-In Modules.....	157
Pre-assembled LC & SC Trunks.....	159
Patch Cords and Pigtails.....	160
Outlets.....	168
Adaptors	171
LightCrimp and LightCrimp Plus	174
Epoxy Connectors.....	178
Splicing Products.....	181
Fiber Optic Tools.....	184
Fiber Cleaning and Inspection.....	192

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

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 _A)	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 (nm)	Point Discontinuity (dB)	Fiber Attenuation (dB/km)		
	1310 nm	1550 nm			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 _A)	50 ± 2.5	125 ± 2	245 ± 5
OS2	9.2 ± 0.4	125 ± 1	245 ± 5



For all OM4 XG_A System Cables

OPTICAL CABLE SPECIFICATIONS

	Maximum Attenuation (dB/km)			
	Loose Tube/Dry Tube		Tight Buffered	
Multimode	850 nm	1300 nm	850 nm	1300 nm
50/125	2.5	0.7	2.5	0.7
62.5/125	2.9	0.9	2.7	0.9
Singlemode	1310 nm	1550 nm	1310 nm	1550 nm
OS2	0.4	0.25	0.4	0.25

NOTE: For higher fiber performance please contact our local sales teams.

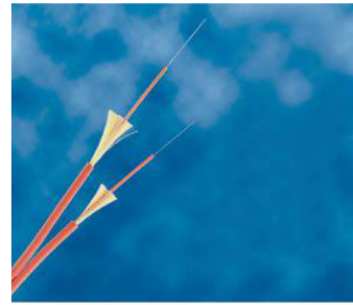
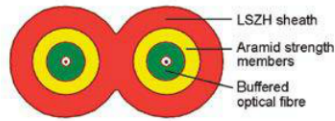
Fiber Optic Cabling

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_A**, OS2
- Tight buffer versions suitable for TE CONNECTIVITY Quick Termination Products (i.e. LightCrimp or LightCrimp Plus)



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

Y-	Reel size	-X	Fiber category
1-	1 Kilometer	-2	OM4 XG_A
2-	2 Kilometer	-3	OM3 XG
3-	3 Kilometer	-4	OS2
4-	4 Kilometer	-5	OM1
		-6	OM2 Plus
		-7	OM2
		-9	OM1 Plus

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 140

Cable Type	1km	2km	3km	4km
Zip Twin	P5	P5	P6	P6
Mini Zip Twin	P5	P5	P5	P5

Fiber Optic Cabling

System Cable

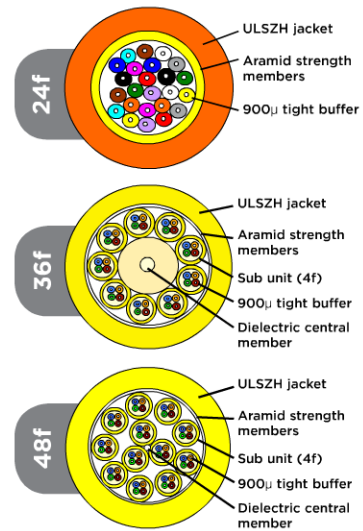
Internal/External Office Distribution Cable

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_A**, 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 _A
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 140

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

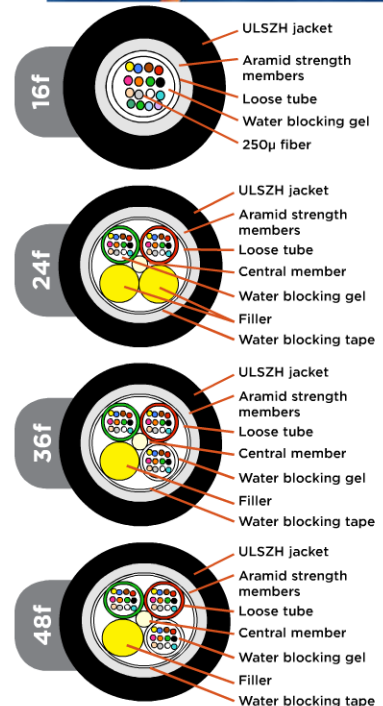
- Universal Low Smoke Zero Halogen (ULSZH)
- For indoor and outdoor applications
- Loose tube construction
- Dry tube construction also available
- Suitable for all termination techniques
- Fiber categories: OM1, OM1 *Plus*, OM2, OM2 *Plus*, OM3 *XG*, OM4 *XG_A*, OS2
- Aramid strength members

ORDERING INFORMATION

Description	Gel filled tube version Part Number	Dry tube version Part Number
Fiber count: 4	Y-599160-X	Y-599152-X
Fiber count: 6	Y-599161-X	Y-599153-X
Fiber count: 8	Y-599162-X	Y-599154-X
Fiber count: 12	Y-599164-X	Y-599156-X
Fiber count: 16	Y-599165-X	Y-599157-X
Fiber count: 24 (multi-tube)	Y-599167-X	Y-599159-X
Fiber count: 24 (uni-tube)	Y-1716000-X	-
Fiber count: 48	Y-599609-X	Y-599605-X
Fiber count: 72	Y-599610-X	Y-599606-X
Fiber count: 96	Y-599611-X	Y-599607-X

Y-	Reel size
1-	1 Kilometer
2-	2 Kilometer
3-	3 Kilometer
4-	4 Kilometer

-X	Fiber category
-2	OM4 <i>XG_A</i>
-3	OM3 <i>XG</i>
-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	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 140

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

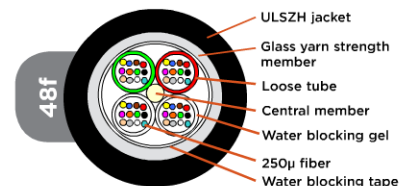
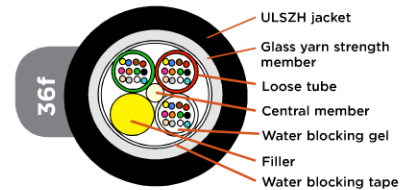
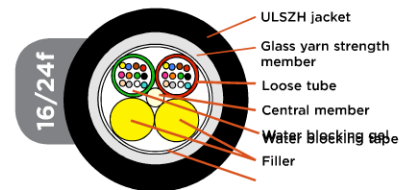
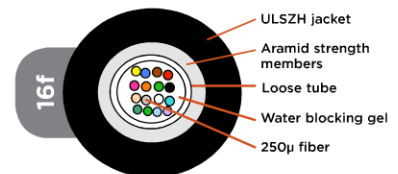
Description	Gel filled tube version Part Number	Dry tube version Part Number
Fiber count: 4	Y-599622-X	Y-599614-X
Fiber count: 6	Y-599623-X	Y-599615-X
Fiber count: 8	Y-599624-X	Y-599616-X
Fiber count: 12	Y-599625-X	Y-599617-X
Fiber count: 16	Y-599626-X	Y-599618-X
Fiber count: 24 (multi-tube)	Y-599627-X	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 _A
-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 140

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

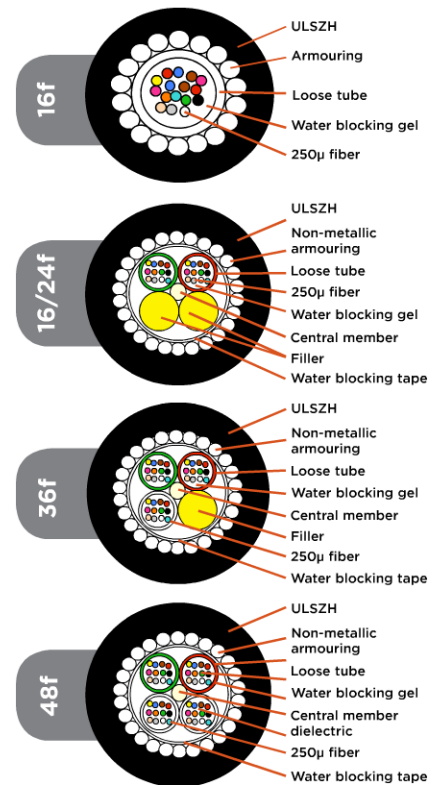


ORDERING INFORMATION

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_A
-3	OM3 XG
-4	OS2
-5	OM1
-6	OM2 Plus
-7	OM2
-9	OM1 Plus



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 140

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

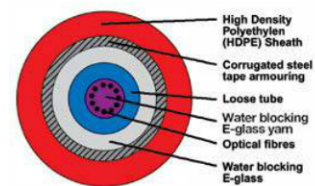
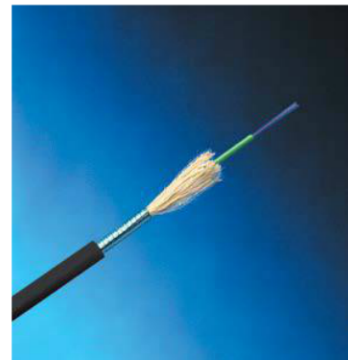
Fiber Optic Cabling

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 _A
2-	2 Kilometer	-3	OM3 XG
3-	3 Kilometer	-4	OS2
4-	4 Kilometer	-5	OM1
		-6	OM2 Plus
		-7	OM2
		-9	OM1 Plus

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 140

Fiber count	1km	2km	3km	4km
4, 6, 8, 12	P10	P10	P12	P12
24	P10	P12	P12	P14

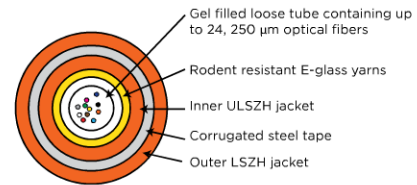
Fiber Optic Cabling

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 XG_A
2-	2 Kilometer	-3	OM3 XG
3-	3 Kilometer	-4	OS2
4-	4 Kilometer	-5	OM1
		-6	OM2 Plus
		-7	OM2
		-9	OM1 Plus

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 140

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 adaptor 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 152
- 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 181 for cable management see page 152



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 Part Number	300 mm Part Number
24 x ST-Style, Multimode and Singlemode; Unpopulated	1206480-8	206114-8
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

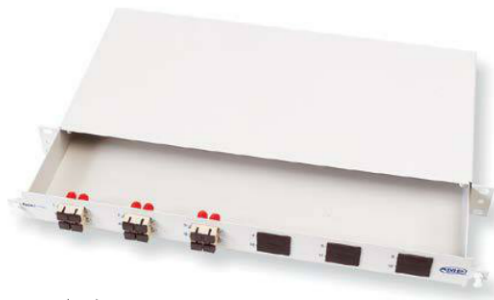
Fiber Optic Cabling

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 Part Number	Drawer style 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