

# Telecom Networks





## Commitment to quality

A growing number of companies now realize that investing in quality is one of the most important commitments they can make for their future.

Various quality standards have existed in Europe for many years, each focusing on a particular industry sector or market segment.

In 1985 the International Standards Organisation (ISO) brought these standards together to form the ISO 9000 series of norms, which were adopted by the European Commission as general guidelines for all companies in the member countries of the European Union.

Therefore common with other companies TE Connectivity has made the commitment to invest in quality for its future and has achieved ISO 9001 certification - the most comprehensive norm of the ISO 9000 series.

This is an on-going process which guarantees the consistent quality of our products to our customers.

We, at TE Connectivity, are not content to stop there and we will continue to strive for even higher quality standards.





## CERTIFICATE OF APPROVAL

This is to certify that the Quality Management System of:

**TE Connectivity  
Telecom Networks and Enterprise Networks  
Kessel-Lo  
Belgium**

has been approved by Lloyd's Register Quality Assurance  
to the following Quality Management System Standards:

**ISO 9001:2008**

The Quality Management System is applicable to:

**Sales, design, manufacture, service and marketing products  
for copper, fibre and wireless telecommunication networks.  
Design, development and manufacture of components and  
products for voice and data premises cabling systems.**

This certificate is valid only in association with the certificate schedule bearing the same  
number on which the locations applicable to this approval are listed.

Approval  
Certificate No: LRQ 0890986

Original Approval: 10 April 1990

Current Certificate: 1 April 2011

Certificate Expiry: 31 March 2014

  
Issued by: Lloyd's Register Quality Assurance Limited



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This document is subject to the provision on the reverse  
71 Fenchurch Street, London EC3M 4BS United Kingdom. Registration number 1879370  
This approval is carried out in accordance with the LRQA assessment and certification procedures and monitored by LRQA.  
The use of the LRQA Accreditation Mark indicates Accreditation in respect of those activities covered by the Accreditation Certificate Number 001.  
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TE Connectivity is an international company with nearly 100,000 employees in over 50 countries. The company develops, manufactures and markets high performance products using specialized materials for electronic, energy, industrial and telecommunications applications.

The Telecom Networks group operates facilities throughout the world, including Europe. The headquarters for Telecom Networks is in Kessel-Lo, Belgium, just outside the city of Leuven. This is a fully integrated site, including research and development, manufacturing, sales and marketing. It serves all of Europe, Africa, the Middle East and supports the Far East and the Americas.

TE Connectivity offers a variety of products that seal, connect and protect the outside plant telephone network, including copper cable closures, environmentally sealed terminals and fiber optic cable closures. The Telecom Networks group also offers a family of copper transmission enhancement systems, and a range of fiber optic management systems for the access network.



We are committed to provide

- product and service quality
- rapid market response
- timely delivery
- leading-edge product technology.

Other literature is available which provides in more detail the specifications and characteristics of our complete product range for the telecommunications, electronics, energy and process industries.

The products presented in this product guide are standard products for the telecommunications and energy industries.

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Fiber optic solutions



Unpressurized copper closures  
and cable accessories



Pressurized copper closures  
and cable accessories



Duct seals/cable feedthrough



Copper connectivity solutions



Copper splicing

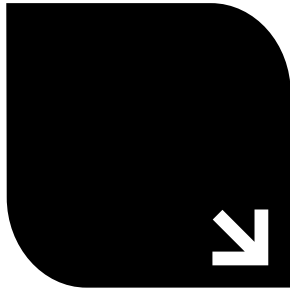


CATV/COAX

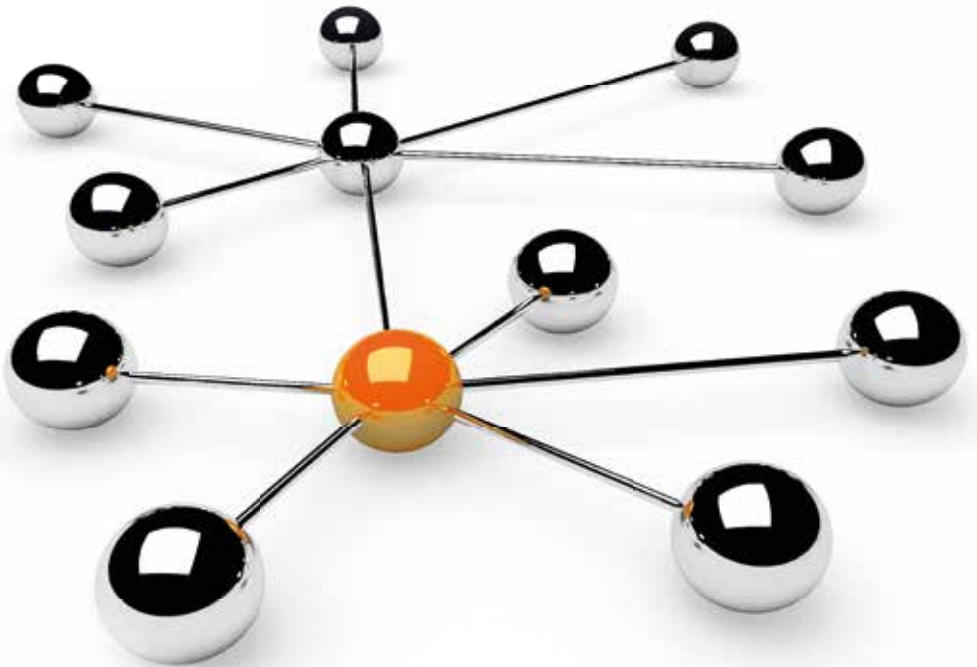


Miscellaneous products and informations





Fiber optic  
solutions



# FIST and FOSC

## Fiber optic infrastructure system technology

In the early 1980s TE Connectivity pioneered the first integrated fiber management and enclosure system for fiber trunk networks under the family name of FOSC.

In the 1990s TE Connectivity introduced a modular, end-to-end fiber infrastructure system for metro and access networks using the family name of FIST. It expanded the application range from outside plant to exchanges, head-ends, street cabinets and customer premises sites. In addition it expanded the fiber management capability from mass storage to single cable element and single circuit.

Over the past two decades many new capabilities and features, including the integration of passive devices such as connectors, splitters and WDM's have been added to both product families in response to customer needs around the world.

FIST and FOSC products have been installed in large volumes on all continents.

The efficiency and reliability of the products have made TE Connectivity a synonym for high quality and cost-effective fiber infrastructure.

# FIST-SOSA2

## Splice only sub-assembly



At the heart of the FIST system lies the unique sub-assembly concept. Splicing sub-assemblies are the essential building blocks that allow the user to build a variety of networks..

A SOSA2 sub-assembly consists of the following parts:

- Organizer trays, designed to store fiber and splices
- A "wraparound" groove plate designed with slots for routing fiber to and from the organizer trays

Different types are designed to allow for:

- Single element management: fibers may be spliced according to their cable construction
- Single circuit management: The unique and essential ability to manage fibers in a single circuit fashion
- Single ribbon fiber management

### Features

- Total fiber management
- Full fiber containment
- Full bend radius control
- Physical protection
- Independent of any cable construction
- Compliant with most splice types
- Loop-back facility allowing for single circuit uncut looped fiber storage on the tray



## FIST-FSASA2

### FIST field installable splitter sub-assembly

FIST is a Fiber Infrastructure System Technology.

At the heart of the system lies the unique subassembly concept. The FIST-FSASA2 allows integration of splitters in any FIST network element in an easy and cost-effective way.

The FIST-FSASA2 passive optical devices are factory-mounted in a closed housing which is labeled to indicate the factory measured insertion loss per port.

The splitter tray can be clipped onto the base plate of a standard single fiber FIST-SOSA2 array of splicing trays which is built into the various FIST network products, e.g. splicing shelves (FIST-GSS2), (FIST-GSS3), patching shelves (GMS2), closures (FIST-GCO2, FIST-GCOG2) and boxes (BUDI).

Provision for fiber, device and cable element identification is integrated in the design either by labeling and by using colored fibers.

The splitter components are based on FBT (fused biconic tapered) technology for low split ratios. For higher split ratios, planar waveguide technology is used.



# FIST-GR3

## FIST blue label rack

FIST is a fiber infrastructure system technology.

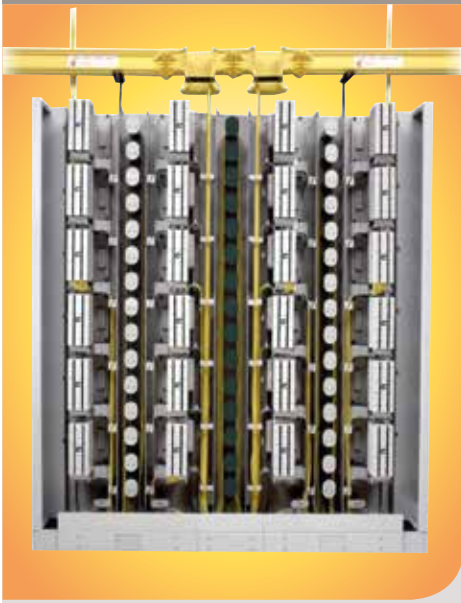
The FIST-GR3 is an all-purpose, easy-to-install, metal rack designed to accommodate the FIST and FOMS fiber management system in an exchange, head-end or customer premises environment.

FIST-GR3 is typically used to house connector panels and separate shelves for splicing, patching, equipment and devices. The rack is designed to allow proper management and storage of overlengths of pigtailed and patch cords.

### Features

- Less packaging waste
- Easy to transport, store, handle and install due to compact design
- Universal installation manual (drawings/no wording)
- Compatible with TE Connectivity FIST-GR2, FIST-GSS2/GPS2, and FIST-GSS3/GPS3 range
- Depth and width in accordance with ETSI
- ETSI mounting profiles with cage nuts for shelf mounting are provided at the rear of the rack, allowing optimal access from the front
- Possible horizontal and vertical patch cord management (HPM and VPM) for storage of functional patch cord overlength
- Possible horizontal and vertical patch cord storage (HPS and VPS) for excess patch cord overlength between the shelves and either the equipment or adjacent racks
- Bend control on all fiber routing
- A structured division and distribution of the cable elements
- A wide variety of options
  - Cable attachment plates are integrated in the top/bottom of the side duct
  - Easy access to cables, pigtailed and jumpers during installation, maintenance and upgrade
  - Easy adaptation to specific applications by variation of the rack configuration, the shelf configuration and routings of pigtailed and jumpers
- Various mounting options
  - Wall mounting: stand-alone or multiple side-to-side mounting (optional kit)
  - Back-to-back mounting





# NGF

## Next Generation frame

The Next Generation Frame product line has fiber frames designed to fit a variety of patch, splice, and storage applications. Frames accommodate up to 1152 (standard connector)/1728 (small-form-factor connectors) fibers per frame. Each frame option is designed with an emphasis on superior cable management and ease of use, including features such as ample trough space for cable and jumpers, easy access to connectors, and storage for jumpers. The frame sections are shipped from the factory fully equipped with all cable management hardware including a built-in jumper storage panel.

### Fiber termination blocks (FTB)

Fiber Termination Blocks (FTBs) are available with SC, FC and E2000 adapters in block configurations of 72- or 96-positions. Also, 144-position FTBs are available using LC adapters. FTBs utilize sliding adapter packs to gain easy access to both the front and rear of connectors.

There is also a block configuration available to accommodate Value-Added Modules (MicroVAMs) for applications requiring splitters or WDMs. FTBs can be ordered with or without intrafacility (IFC) or outside plant cable.

### Fiber combination blocks (FCB)

Fiber Combination Blocks (FCBs) provide patching and on-frame splicing capabilities, all in one block. The block occupies two mounting positions on the frame section. They are available with SC, FC and E2000 adapters in block configurations of 72- or 96-positions. 144-position FCBs are also available using LC adapters.

### Features

- Ample through space
- Built-in jumper storage panel
- Sliding adapter packs
- Intelligent cable routing system

# OMX

## Optical Distribution Frame

As the number of installed fibers grows, the capability of a service provider's optical distribution frame to handle large amounts of fiber becomes crucial. Often, too, office floor space is at a premium and saving floor space by increasing the optical distribution frame density can provide significant cost-savings. At the same time, service providers require a flexible optical distribution frame that enables them to quickly respond to the changing needs of their customers.

Working closely with service providers, TE Connectivity has developed the OMX optical distribution frame to address these key requirements. Designed with total front access, the OMX can be installed back-to-back or against a wall to save valuable office floor space.



This high-density frame terminates and splices up to 576 fibers in a 600mm x 300mm (ETSI) footprint and 864 fibers in a 800mm x 300mm footprint. The OMX fiber frame protects fiber cable and connections through use of the patented angled adapter/retainers and design features that maintain correct bend radius throughout the frame. Adding signal management and enhancement functions, such as splitters, couplers and wavelength division multiplexers, optimizes the value of the fiber network by providing nonintrusive access to the optical signal for monitoring and testing signal integrity.

### Features

- Modular solution
- High density solution
- Total front access frame
- Superior cable management
- Completely enclosed and lockable



## FIST-GSS2

### FIST generic splicing shelf

The Generic Splicing Shelf, FIST-GSS2 is a multi-purpose mechanical shelf assembly for the FIST fiber management system in a rack environment.

The product is typically used to store splices of:

- external to external/indoor cable
- external/indoor cable to pigtails
- pigtails to pigtails

### Features

- Can be installed in TE Connectivity FIST racks and other 19" or metric (ETSI) rack sizes
- Accessories are available for termination of most common cable types e.g. loose tube, central core, ribbon fiber
- The UMS (Universal Mounting System) profiles provide the foundation for mounting combinations of SOSA2 (Splice Only Sub-Assembly) and/or SASA2 (Splitter Array Sub-Assembly) modules, which consist of a modular groove plate and trays
- Aramid yarns Termination Units (KTUs) can be mounted in the shelf to provide the necessary strain relief when terminating common pigtail types
- Factory-installed tubes for guiding fiber and bend controls allow for easy but controlled access to fibers and splices
- Wraparound side panel and pigtail guide for easy addition of pigtails

# FIST-GPS2

## FIST generic splice/patch shelf

The Generic Splice/Patch Shelf FIST-GPS2 is a mechanical shelf assembly for the FIST fiber management system in a rack environment. FIST-GPS2 is typically used in conjunction with FIST splice and patch trays (FIST-GPST-12).

### To patch

- Between patch cords
- Pre-connectorized breakout cable to patch cords
- Pre-connectorized intrafacility cable to patch cords

### To splice

- Loose tube cable to pigtails and patch these pigtails to patch cords
- Pre-connectorized intrafacility cable to pigtails and patch these pigtails to patch cords
- Non pre-connectorized breakout cable to pigtails and patch these pigtails to patch cords

### Features

- Can be installed in TE Connectivity FIST racks and other 19" or metric (ETSI) racks
- Available in different heights and capacities
  - 167 mm high: max. 8 trays
  - 125 mm high: max. 6 trays



- 88 mm high: max. 4 trays
- 44 mm high: max. 2 trays
- Each tray can accommodate 12 standard or 24 small-form-factor connectors
- Full patching capability on the tray and between the trays of one shelf. Patching trays are used instead of front patch panels
- Patch cords are better managed in a horizontal plane
- Full access at both sides of the connection
- Re-connection to other positions in the same tray or shelf does not result in uncontrolled overlengths
- The 88, 125 and 167 mm version has a wraparound side panel and patch cord guide for improved access
- Various connector adapters can be located in the patching area
- Kits to attach cables at the side or the back of the shelf are available
- Optional jumper overlength storage facility



# FIST-GSS3

## FIST blue label splicing shelf

The blue label splicing shelf FIST-GSS3 is a multi-purpose mechanical shelf assembly for the FIST fiber management system in a FIST-GR3 rack.

The product is typically used to store splices of:

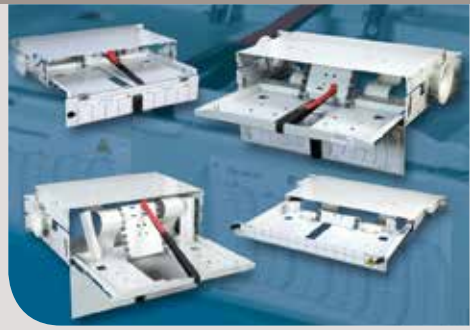
- external to external/ indoor cable
- external/indoor cable to pigtails
- to store splices of cable to intrafacility cable (IFC)
- pigtails to pigtails

### Features

- Accessories are available for termination of most common cable types e.g. loose tube, central core, ribbon fiber
- 15" or 19" with shelves available can be ordered
- Mounting bracket:
  - 15" version includes a FIST-GR3F mounting bracket
  - 19" version includes a FIST-GR3 ETSI mounting bracket
- The UMS (Universal Mounting System) profiles provide the foundation for mounting combinations of SOSA2 (Splice Only Sub-Assembly) and/or SASA2 (Splitter Array Sub-Assembly) modules, which consist of a modular groove plate and trays
- Aramid strength member Termination Units (KTUs) can be mounted in the shelf to provide the necessary strain relief when terminating common pigtail types
- Factory-installed tubes for guiding fiber and bend controls for easy but controlled access to fibers and splices
- Wraparound side panel and pigtail guide designed for easy addition of pigtails

# FIST-GPS3

## FIST blue label splice/patch shelf



The blue label splice/patch shelf, FIST-GPS3 is a mechanical shelf assembly for the FIST fiber management system in a FIST-GR3 rack.

FIST-GPS3 is typically used in conjunction with FIST splice and patch trays (FIST-GPST-12).

### Features

- Patching only, using patch cords, connectorized breakout or intrafacility cables
- Splicing loose tube cables, non-connectorized intrafacility or breakout cables to pigtails and patching these pigtails to patch cords
- Possibility to integrate passive optical components
- 15" or 19" width shelves available
- 15" includes a FIST-GR3F mounting bracket
- 19" includes a FIST-GR3 ETSI mounting bracket
- Available in 4 different heights (44, 88, 125 and 167 mm)
- Kits available to attach cables at the side or the back of the shelf
- Wraparound side panel and pigtail guide for easy repatching (not for 44 mm version)

### Tray features

Since patch cords are better managed in a horizontal plane, patching trays are used instead of front panels.

#### Tray features

- Clean: both sides are easily accessible for cleaning the adapter
- Safe: laser light is oriented perpendicularly towards the operator
- Accessible: full access at both sides of the connection
- Reconnection to other positions in the same tray or shelf does not result in uncontrolled overlengths
- Various connector/adapter styles are possible
- Bend controls guide and protect the pigtail cable and ensure controlled cable bending



## FIST-GPST-12

### FIST generic patching shelf tray

The Generic Splice/Patch Shelf Tray FIST-GPST-12 is a mechanical tray assembly for the FIST fiber management system in a rack environment.

FIST-GPST-12s are typically used in conjunction with a FIST splice and patch shelf (FIST-GPS2)

#### To patch

- Between patch cords
- Pre-connectorized breakout cable to patch cords
- Pre-connectorized intrafacility cable to patch cords

#### To splice

- Loose tube cable to pigtails and patch these pigtails to patch cords
- Non pre-connectorized intrafacility cable to pigtails and patch these pigtails to patch cords
- Non pre-connectorized breakout cable to pigtails and patch these pigtails to patch cords

#### Features

- Full patching capability on the tray and between the trays of one shelf
- Patching trays are used instead of front patch panels:
  - Patch cords are better managed in a horizontal plane
  - Full access at both sides of the connection
  - Reconnection to other positions in the same tray or shelf does not result in uncontrolled overlengths
- Various adapters can be located in the patching area (to accommodate 12 standard or 24 small-form-factor connectors per tray)
- Bend controls guide and protect the pigtail cable and ensure controlled cable bending



# FOMS-FPS-HD

## Front patching/splicing shelf



The front patching/splicing shelf, FOMS-FPS-HD, is a multi-purpose mechanical shelf assembly for a fiber management system in a rack environment. Its compact design and high-density capacity allow the FOMS-FPS-HD to deliver carrier-class fiber management to central offices, POPs, FTTx, mobile systems and LANs.

### Two versions are available.

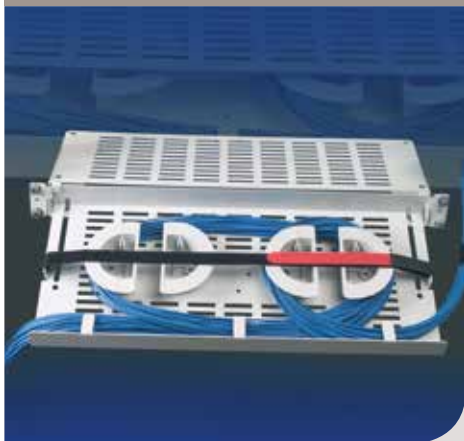
- Patching only and
- Patching and splicing to terminate loose tube, central core, IFC and ribbon cables

### Features

- 19" size: suitable for any 19" electronic equipment rack (also compatible with ETSI or TE Connectivity FIST-GR3 fiber frames using adapter brackets)
- Accommodates up to 48 standard or 96 small form factor connectors on the shelf front. Different connector types can be mixed in the same shelf
- A 1HU version for 48 SC adapters and a 2HU version for 96 SC adapters are available in pre-fibered version (includes adapters and pigtails)
- Pivoting tray allows easy access to the interior of the shelf, even when equipment jumpers have been installed
- Angled connector patch panel reduces the risk of eye damage and ensures a positive fiber management for the equipment jumpers
- Restricted depth guarantees optimum access to the back for cable termination
- Repair facility when terminating IFC cable
- Mounting brackets can be installed at the front or back of the shelf
- Trumpet to protect the incoming pigtails at the side or the back of the shelf
- Proven FOSC tray splicing concept ensures bend radius protection and solutions for all types of fibers and splice protectors (SMOUV/ANT)
- Shelf can be delivered with pigtails and connector adapters in the kit

# FOMS-STORAGE

## Patch cord storage shelf



The patch cord storage shelf is a mechanical shelf assembly for patch cord management in a rack environment.

The product has been designed to store overlength of patch cords in 19" equipment racks. Two versions are available: with or without roof.

### Features

- 19" wide, 44 mm high (1U)
- ETSI mounting brackets (optional) are available
- Front or back mounting
- Front entrance and exit at the left and/or right
- Accommodates up to 24 patch cords of 3 m or 48 patch cords of 1.5 m
- Perforated roof and bottom tray to allow ventilation of active equipment
- Drums to ensure bend radius protection

# FIST-GCO2

## FIST generic closure organizer



The generic closure FIST-GCO2 is the environmentally sealed enclosure for the fiber management system that provides the functions of splice and passive component integration in the external network.

### Features

- Single-ended design
- Base and dome are sealed with a clamp and O-ring system
- 6 or 16 round entry/exit ports for drop cables and 1 oval port for looped cable
- The UMS (Universal Mounting System) profiles provide the foundation for mounting combinations of SOSA2 (Splice Only Sub-Assembly) and/or SASA2 (Splitter Array Sub-Assembly) modules, which consist of a modular groove plate and trays
- Compatible with most common cable types: e.g. loose tube, central core, ribbon fiber
- Uncut fibers can be stored as single circuits in trays and/or as cable elements in the storage space between the profiles. Storage baskets are available for mass storage of central core cable constructions



The generic closure FIST-GCO2-F is an environmentally sealed enclosure for the fiber management system that provides the functions of splice and passive component integration in the external network.

## FIST-GCO2-F

### Flat FIST generic closure organizer

#### Features

- Single-ended design
- Base and dome are sealed with latches and O-ring system
- 6 or 8 round ports for drop cables and 1 oval port for looped cable
- The single side UMS (Universal Mounting System) frame provides the foundation for mounting combinations of SOSA2 (Splice Only Sub-Assembly) and/or FSASA2 (Splitter Array Sub-Assembly) modules, which consist of a modular grooveplate and trays
- Compatible with most common cable types: e.g. loose tube, central core, ribbon fiber
- Uncut fibers can be stored as single circuits in trays and/or as cable elements in the storage space
- The closure can be used as in aerial, pedestal and underground (up to 5 meters) environments

# FIST-GCOG2

## FIST gel sealed generic closure organizer



The generic gel closure FIST-GCOG2 is an environmentally sealed, fully mechanical enclosure for the fiber management system that provides the functions of splicing and passive component integration in the external network.

### Features

- Single-ended design
- Base and dome are sealed with a clamp and O-ring system
- 6 round cable ports are provided in a wraparound block with pre-installed gel profile for cable sealing. This block can be opened and closed repeatedly without the need to remove or replace the gel
- The UMS (Universal Mounting System) profiles provide the foundation for mounting combinations of SOSA2 (Splice Only Sub-Assembly) and/or SASA2 (Splitter Array Sub-Assembly) modules, which consist of a modular groove plate and trays
- Compatible with most common cable types: e.g. loose tube, central core, slotted core
- Uncut fibers can be stored as single circuits in trays and/or as cable elements in the storage space between the profiles. Storage baskets are available for mass storage of fibers of central core cable constructions



The Sewage Closure Organizer, FIST-SCO2 is an environmentally sealed enclosure for the fiber management system that provides the functions of splicing and passive component integration in the external network. This slim metal closure is specially designed to fit in small sewage canal systems and is therefore resistant to very aggressive environments.

## FIST-SCO2

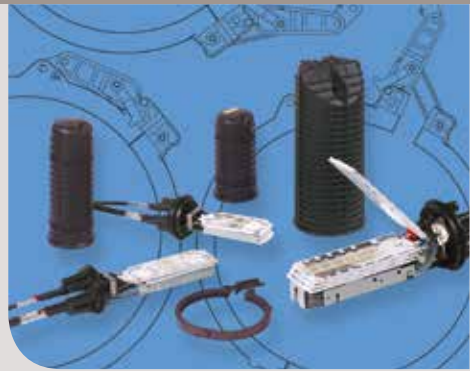
### FIST sewage closure organizer

#### Features

- Single-ended design
- Base and dome are made in AISI 316L stainless steel and are sealed with an O-ring under controlled compression
- Base and dome contain fixation holes to mount the closure against a wall
- 6 or 10 round entry/exit ports for drop cables and 1 oval port for looped (uncut) cable
- Heat-shrinkable cable seals
- The base has an earthing provision and a 'flash test' valve
- The UMS (Universal Mounting System) profiles provide the foundation for mounting combinations of SOSA2 (Splicing Only Sub-Assembly) and/or SASA2 (Splitter Array Sub-Assembly) modules, which consist of a modular groove plate and trays
- The FIST MK2 organizer system allows fiber management in a single circuit or single element way
- Uncut fibers can be stored as single circuits in SC trays, as single element in SE trays or as loose buffer tubes at the back side of the UMS profile
- FIST-SCO2 with 10 ports is specifically developed for loose tube cable, whereas the FIST-SCO2 with 6 ports is compatible with most common cable types: e.g. loose tube, central core, micro-sheath cable

# FOSC-400

## Fiber optic splice closures



FOSC-400 closures combine proven fiber management hardware from the earlier FOSC-100 closures with a completely new sealing system.

Base-to-dome seals on the FOSC-400 are mechanical for ease of installation and re-entry. Cable seals feature a new TE Connectivity heat-shrink sleeve and hot-melt adhesive system that is installed with a hot-air gun. Common materials, accessories and practices are used throughout the product line to simplify training, reduce inventory and enhance productivity.

The FOSC name is synonymous with excellence in sealing, fiber management, ease of use and design flexibility. The original FOSC-100 was introduced in 1986. FOSC closures are engineered specially for fiber-optic applications. FOSC clients ask for and get high quality standards.

FOSC 400 fiber-optic splice closures are available in various sizes with different capacities.

All sizes are designed for use with any cable construction (loose buffer tube, central core tube, loose fiber, ribbon), in any environment (aerial, pedestal, buried, handhole, manhole) and for numerous splice applications (expressed, tap-off, branch and repair).

Closure	Splices fiber storage capacity			Slack storage capacity		
	Single fusion	Single mechanical	Mass fusion	Buffer tubes	Stranded fibers	12 fiber ribbons
FOSC-400 A4	72 (1)	24 (2)	24	8	96	6
FOSC-400 A8	96	32	24	8	96	6
FOSC-400 AS	72 (1)	-	-	-	-	-
FOSC-400 B2, B4	144	48	288	6	96	24
FOSC-400 D5	768	288	1152	18	96	96

(1) Only recommended with TE Connectivity 45 mm SMOUV fusion splice protectors.

(2) Varies with splice type. Capacity is 16 for most commonly used mechanical splices.



## FOSC-400G

**Fiber optic closure  
with multi-out gel seals**

The FOSC-400G is a single-ended environmentally sealed enclosure for fiber management in the outside plant network. FOSC-400G closures have the same splice capacity as FOSC-400 closures and feature the same reliable and easy-to-use dome-to-base clamping system. The major difference with FOSC-400G closures is that the cable sealing terminations are done by using multi-out gel sealing technology instead of heat-shrink.

This allows up to 16 cables, to be sealed in a single round port. It is easy to remove cables, and gel seals are completely re-usable.

### Features

- Single-ended design
- Available in 4 sizes
- Base and dome are sealed with a clamp and O-ring system
- 2 or 5 round cable ports are provided
- FOSC splice trays are hinged for access to any splice without disturbing other trays
- Compatible with most common cable types: e.g. loose tube, central core, slotted core, ribbon fiber
- Uncut or expressed loose tubes can be stored in storage baskets
- The closure can be used in aerial, pedestal and underground (up to 2 meters) environments



# FOSC-450

## Fiber optic gel closure

The industry leading FOSC-400 family of fiber optic splice closures is now available with gel seal technology for cable terminations.

The FOSC-450 family can be used in any environment (aerial, pedestal, buried, underground) and for numerous splice applications (expressed, ap-off, branch and repair).

FOSC-450 gel splice closures have the same splice capacity as FOSC-400 closures and feature the same reliable and easy-to-use dome-to-base clamping system. The big difference with FOSC-400 gel closures is that the cable sealing terminations use gel-sealing technology instead of heat shrink. Gel seal cable terminations automatically adjust to cable size and shape, and they require no special tools, tapes or mastics to install. It is also easy to remove cables, and gel seals are completely re-usable.

### Features

- Single-ended design
- Available in 3 sizes (A4, BS and D6)



- Base and dome are sealed with a clamp and O-ring system
- 4 or 6 round cable ports are provided in a wraparound block with pre-installed gel profile for cable sealing. This block can be opened and closed repeatedly without the need to remove or replace the gel. With the use of special kits, multiple cables per port can be installed.
- FOSC splice trays are hinged for access to any splice without disturbing other trays
- Compatible with most common cable types: e.g. loose tube, central core, slotted core, ribbon fiber
- Uncut or expressed loose tubes can be stored in storage baskets
- The closure can be used as in aerial, pedestal and underground (up to 5 m) environments

### Dimensions (in mm)

Closure size	A4	BS	D6
Diameter (incl. clamp)	205	232	291
Length (without gel block trigger)	485	490	753
Splice capacity	(in # of fibers)		
Single fiber	96	144	768
Ribbon	12	11	52



## FOSC-500AA

### FOSC slim in-line closure

The in-line closure FOSC-500AA is an environmentally sealed enclosure for fiber management in the outside plant network for aerial, underground or direct buried applications.

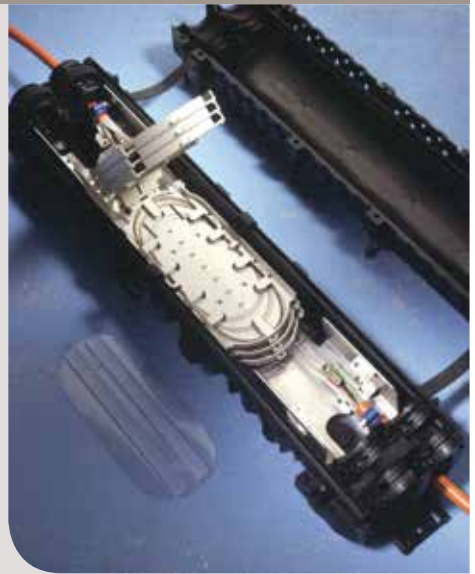
It is a cold applied, re-usable closure housing with one mass splicing tray and cable attachment units. They fit perfectly well as a customer drop, tap-off or in-line splice closure in the low fiber count part of the network.

#### Features

- Slim, elegant, compact in-line design
- Easy re-entry and re-closure mechanism with hinge and latches
- 2 cable ports are provided at each side of the closure
- Cold applied cable sealing based on gel technology (2 knobs for gel compression)
- Integrated cable jacket gripping devices
- Compatible with most existing cable constructions (loose tube, central core, slotted core)
- The closure can be used in aerial, pedestal and underground (up to 5 meters) environments

# FOSC-500B

## FOSC in-line closure



The in-line closure FOSC-500B is an environmentally sealed enclosure for fiber management in the outside plant network.

This product is a cold applied, re-usable closure system housing FOSC mass splicing trays and cable attachment units.

### Dimensions (in mm)

Length (without fixation parts)	636
Length (with fixation parts)	648
Internal diameter	100
External width	160

### Splicing capacity (in # fibers)

Number of FOSC trays	6
Splice tray holding 24 splices	144
Splice tray holding 16 splices	96

### Features

- In-line design
- Suitable for repair, tap-off (taut-sheath) and in-line splice applications
- The wraparound thermoplastic housing consists of 2 half shells which are sealed with an O-ring system
- 2 cable ports at one side and 4 at the other side are provided in the housing
- Cable sealing is based on geltape technology
- Cut-to-fit axial pull tapes provide mechanical cable retention
- A metal basket houses cable attachment units and the FOSC splicing trays
- Easy re-entry and re-closure
- The closure can be used in aerial, pedestal and underground (up to 5 meters) environments



## FOSC-350C

### In-line fiber optic splice closure

FOSC-300C in-line closure is an environmentally sealed enclosure for fiber management in the outside plant network for aerial, underground or direct buried application.

It is a cold applied, re-enterable closure housing with maximum 4 mass splicing tray and cable attachment unit. They fit perfectly well as a customer drop, tap-off or in-line splice closure in the low or middle fiber count part of the network.

#### Features

- Slim, elegant, compact inline design
- Easy closing mechanism with hinge and latches
- Suitable for construction and maintenance, aerial, ducted underground networks
- No special tools, non-heat shrinkable, no screws or nuts
- Compatible with most existing cable constructions

#### Dimensions (in mm)

Length	369
Width	182
Height	106
Max. splicing capacity	144F

# FOSC-600

## Fiber optic splice closure



The FOSC-600 C and D closures are more than just fiber optic splice closures. They are rugged and versatile platforms that can be deployed anywhere in the outside plant for a multitude of functions including the splicing of any type and size of cable, the housing of connectorized distribution and demarcation points, and the deployment of optical passive components.

The sealing system for FOSC-600 closures builds on the proven reliability of FOSC-400 closures and features the versa-tile and popular gel seal technology for terminating cables and a unique latching system for quickly opening and closing the body.

### Features

- Up to sixteen separate cable ports
- Sized for cables up to 35 mm in diameter and 1728 fibers
- Field configurable for butt or in-line splicing
- All internal parts can be removed for reconfiguration
- Storage basket included with all closures can be extended in length or repositioned vertically depending on application
- Slack ribbon storage on the same tray as mass fusion splices is now possible with a new ribbon tray

### Dimensions (in mm)

	FOSC 600-C		FOSC 600-D	
Length	828		828	
Height	152		254	
Width	274		274	
Splicing capacity	In-line	Butt	In-line	Butt
Number of D splice trays	3	5	7	9
Number of splices on D splice trays	288	480	672	864
Number of D ribbon trays	2	3	4	6
Number of splices on D ribbon trays	576	864	1152	1728



## FOSC-OPGW

### FOSC optical grounding wire closure

The FOSC-OPGW is a single-ended closure system specially developed for use on the optical grounding wires of overhead electrical power lines.

The closure is suitable for use above ground; it can be attached to high voltage towers, poles, walls or other support structures.

One model can be used for track and spur joint applications.

#### Features

- Single-ended design with valve
- A galvanized steel mounting frame holds the thermoplastic dome and base and the OPGW cable clamps
- A pole mounting kit is included which allows the closure to be mounted on a traverse strut of a high voltage tower without the need to drill holes in the metal construction
- A stainless steel shot-gun protection enclosure is optionally available
  - It permits the termination and sealing of
    - 2/4 OPGW cables
    - 2 ADSS or conventional buried fiber optic cables
    - cable seals are manufactured from heat shrinkable material
    - internal storage utilizes FOSC splice trays which are hinged for access to any splice without disturbing other trays

# OFDC-B8

## Outdoor fiber distribution closure

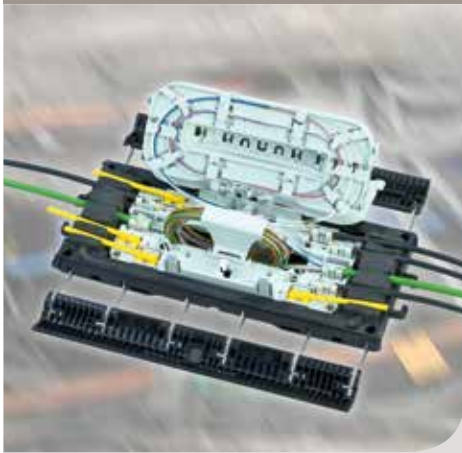


The gel sealed outdoor distribution closure is used to break out fibers from a looped cable to connect business customers, MDUs or single living units. The closure can be used as well in aerial, pedestal and underground (up to 2 m) environments.

The gel, used for both, closure and cable seals, allows easy access and is fully re-useable.

### Features

- Single-ended design
- Compact enclosure (326 L x 163 W x 102 H mm)
- Gel block with spring loading for the cable seal
- No need to cut loop-through fiber of the feeding cable
- Organizer can be removed from closure body
- Compatible with RECORDsplice, SMOUV and ANT splice protectors
- Transient-free customer provisioning
- Drop cables are terminated individually
- Separate storage of unconnected fibers from spliced drop fibers
- Possibility to integrate PON splitters
- Main cable up to 18 mm diameter
- Drop cable up to 6 mm diameter
- Easy drop cable termination on strain relief device



## OFMC

### Outdoor fiber micro-closure

The gel sealed in-line OFMC closure offers mechanical and waterproof protection (IP 68) for fiber splices in FTTH network (aerial, manholes).

The housing is in two parts openable by using 2 long latches.

Cables entries are easily accessible and allow cable loop-through configuration in combination with up to eight drop cables. Depending on the configuration, the OFMC can be used as a track joint, a direct cable access or in a loop through application.

The central base plate allows cables fixation and protection of the tube loop (micro sheet construction).

A hingeable splicing tray offers perfect protection for storage of bare fiber, fiber splices or optical splitter.

#### Features

- In-line compact closure  
250 L x 100 W x 70 H mm = 1,75 dm<sup>3</sup>
- Latch closing system
- Sealing made by compressing gel during closing
- Tool-less product
- Compatible with RECORDsplice, SMOUV and ANT splice protectors
- Easy individual drop cable termination on strain relief device
- Main cable sealing from 4-10 mm
- Drop cable sealing from 4-6 mm
- The closure can be used as well in aerial, pedestal and underground (up to 2 meters) environments
- For G fibers only



# OFDR

## Outdoor fiber drop repair closure



The gel sealed drop repair closure is used as a repair splice for fiber only or hybrid drop cables

The closure can be used as well in aerial, pedestal and underground (up to 2 m) environment.

The gel, used for both, closure and cable seals, allows easy access and is fully re-useable.

### Features

- Single-ended or in-line design
- Compact enclosure
  - In-line: 415 L x 76 W x 71 H mm
  - Butt: 297 L x 76 W x 71 H mm
- Cable seal with gel plug
- Organizer can be removed from closure body
- Compatible with RECORDsplice, SMOUV and ANT splice protectors
- Round cable 7-9 mm diameter
- Fiber bend radius of 20 mm
- Closure with over-centering "ski boot" type of latches
- Integrated mounting brackets



# FTUO

## Termination unit outdoor

This box is typically used as a transition point where OSP cable is spliced to indoor cable.

### Features

- Compact enclosure (168 H x 132W x33 D mm)
- The box allows the installation of fibers with a minimum bend radius of 25 mm over a length of 2 m
- In-line and butt configuration possible for main cable
- Universal splice holder for 8 splices: SMOUV, ANT, RECORDsplice
- Ready for TE Connectivity OCC1 splitter installation
- Cable inlet provided at bottom left side. Optionally main cable can continue at top left side (wraparound pass-through)
- Cable outlet ports (max. 2 cables) provided at 5 sides: left, right, top, bottom, back
- IP rating, vertically mounted: IP43 (not for inline application: IP40)
- Impact rating: IK08
- UV resistant housing
- Standard color: RAL7035 grey
- Gas venting provided
- Locking with screw, optionally with security seal
- Main cable up to 12 mm diameter
- Drop cable up to 5 mm diameter

# IFDB-M

## Indoor fiber distribution box



The IFDB-M is an enclosure to break out fibers from an indoor riser cable into individual drops to the living units of an MDU. These drops provide a fiber optic connection to the living units.

The IFDB-M allows the user to breakout fiber from certain riser cables by making a window cut not larger than 70 mm without interrupting the strength member.

To connect the drop to the riser cable, fiber splices or drop connectors can be used.

### Features

- Compact enclosure (200 H x 126 W x 50 D mm)
- Free-breathing enclosure for indoor use
- In-line and butt configuration possible for main cable
- Wraparound cable seals for main cable and drops
- No need to cut loop-through fibers from riser cable
- Window cuts as small as 70 mm possible with certain cable constructions
- Compatible with SMOUV and ANT splice protectors
- Low smoke zero halogen enclosure material
- Transient-free customer provisioning
- Drop cables terminated individually
- Separate storage of unconnected fibers from spliced drop fibers
- Possibility to integrate PON splitters
- Main cable up to 11 mm diameter
- Drop cable up to 6 mm diameter
- Easy drop cable termination on strain relief device



## IFDB-S

### Indoor fiber distribution box

The IFDB-S is a small size indoor fiber distribution box to allow to break out fibers from a riser cable to individual drops that bring the fiber from this point to the living units of an MDU.

The IFDB-S is designed for riser cables that allow access through a small window cut or incision. For cable constructions that require larger window cuts, fiber overlength can be stored in the base module.

To connect the drop fibers to the riser fibers both splices and connector can be used.

The splice capacity of the IFDB-S splice module is 4 splices.

#### Features

- Very compact enclosure with dimensions: 80 W x 80 H x 35 D mm for integration into small sized floor boxes
- Window cuts as small as 50mm possible with specific cable constructions such as the TE Mini-breakout cable
- Drop cables can be directed to 4 different sides by rotating the splice module on the base module
- For indoor use only
- Flame retardant LSZH material
- Front accessible
- Wrap around riser cable installation
- Not required to cut loop-through fibers from riser cable
- Can hold 4 LC connectors or 2 SC connectors
- Compatible with SMOUV and ANT splice protectors in the same splice holder
- Drop cable diameter up to 5 mm
- Main cable diameter up to 10,5 mm

# BUDI-S and BUDI-M

## Building distribution enclosure



BUDI is a product range of compact wall mountable fiber enclosures for indoor and outdoor use. The enclosures are specifically designed for fast FTTH deployment and easy customer connection.

The BUDI product range offers service providers different capacities to fit all types of MDUs.

### Features

- The BUDI wall boxes are designed to operate in category C (controlled), category G (outdoor ground level) and category A (aerial) as characterized by IEC 61753-1
- Materials are LSZH; fire retardant
- UV stable material for outdoor, above ground use
- Multiple cable ports available and bottom cable seal blocks are wrap-around
- Possibility to integrate passive optical components
- Dimensions

BUDI-S

500 H (with cover) x 295 W x 145 D

BUDI-M

550 H (with cover) x 360 W x 175 D

- Removable enclosure lid
- Capacity of 24 SC connectors or 48 LC for the BUDI-S and 48/96 connectors for the BUDI-M. Other connector types available
- Compatible with pre-tailed Mini-Breakout cable
- 4 to 6 OCM6 splitter modules can be integrated
- Demarcation between residential customers and business customers
- For FIST splice applications, minimum 28 UMS units for BUDI-S and 36 UMS units for the BUDI-M are available FIST-SOSA2 splice modules (Single Element and Single Circuit).
- FIST splice version and BUDI-M with connectors can accommodate a cable loop
- Lock with key available
- Multiple accessories available to terminate and seal different cable types
- OCM6 splitter compatible with 62 cm pigtail for BUDI-S and 71 cm pigtail for BUDI-M



## BUDI-1S

### Building distribution enclosure

#### Features

- Splice and splice-patch application
- The BUDI wall boxes are designed to operate in category C (controlled), category G (outdoor ground level) and category A (aerial) as characterized by IEC 61753-1
- Materials are LSZH; fire retardant
- UV stable material for outdoor above ground use
- Multiple cable ports available and bottom cable seal blocks are wrap around
- Possibility to integrate passive optical components
- Removable enclosure lid
- The splice-patch version has a capacity of 16 SC connectors or 32 LC. Other connector types can be made available
- Compatible with pre-tailed Mini-Breakout cable
- For FIST splice applications minimum 16 UMS units for splice version and 8 UMS for splice/patch version, available to mount FIST-SOSA splice cassette system
- A cable loop can be stored for mid-span access
- Lock with key available
- Multiple accessories available to terminate and seal different cable types
- Dimensions  
420 H (with cover) x 240 W x 120 D

# BUDI-2S

## Building distribution enclosure



### Features

- Designed to operate in outdoor locations (IEC61753-1 cat. C), outdoor ground location (IEC 61753-1 cat G) and aerial locations (IEC61753-1 cat. A)
- Material: LSZH, flame retardant and UV stable
- Multiple cable ports and all wraparound
- Possibility to integrate optical components such as pre-connectorized splitter for example
- Capacity of 6 SC or 12 LC connectors
- Cable can be conventional cable or blown fiber (with gas block)
- Dimensions  
285 H (with cover) x 155 W x 60 D



# COWO

## Customer wall outlet

COWO is a fiber optic customer outlet that allows easy and unobtrusive termination of fiber optic cables in an office, home or communications room.

### Features

- Accommodates two termination/splice connections
  - 2 SC simplex or 1 LC duplex adapters
  - 2 crimp, mechanical or heat shrink splices
- IP20 rated
- Very flat design, mounts on a standard flush mount electrical outlet
- Utilizes reduced bend radius fiber (G657.a and B)
- Possibility to invert the adapter in the holder to prevent disconnection when pulling the patch cords
- RoHS compliant
- Conforms to UL 94 V-O
- Lockable with screw or lead-wire seal
- Cable entrance from the bottom, left and rear
- Made of molded plastic (halogen free, LSZH-1), white (RAL 9010)
- Dimensions:
  - 115 H (with cover) x 80 W x 24.5 D



# UFTU

## Fiber termination unit with NTU interface



The UFTU is a universal fiber termination unit with an open NTU interface for finishing of incoming fiber optic cable in FTTH projects. The UFTU is the connection between the fiber network and the Network Termination Unit (NTU), the active device that provides access to the home network of the end user. The UFTU fits all manufacturers' NTUs using a universal open interface. This helps end users and reduces operational costs for network operators.

### Features

- Dimensions  
210 H (with cover) x 210 W x 50 D
- Has an open NTU interface to which all NT equipment makers can participate
- Mounts on the most common fiber optic cables
- Based on SC connectivity (both PC and APC)
- Quick and easy for end-users to install (by pre-mounted connectors) at any time
- Can connect to two NTUs (one per fiber)
- Features secure fiber optic cable protection
- Includes protection of optical connectors
- NTU installed by the end user (slide and click system)
- Cable entry possible at various places
- Blind cap available in orange (RAL 2008) and white (RAL9003)
- Color: white RAL9003
- Fits all fiber types (G652 and G657x)
- Qualified for transmission windows from 1310 up to 1650nm.
- Indoor use



# FOWB

## Fiber optic wall box

### Applications

- Dimensions  
220 H (with cover) x 140 W x 35 D
- Mounts either directly to a wall, to a mounting plate or in a 19-inch rack
- The 19-inch panel can be mounted without any accessories
- The panel supports three mounting directions for the wall box: left, middle and right
- Cable entrance from top and bottom for cable diameters from 3 to 7 mm

### Features

- Accommodates up to 24 termination/splice connections
- Up to 12 SC simplex or 12 LC duplex adapters
- Up to 12 mechanical or 24 heat shrink splices
- Lockable with encoded screw or lead-wire seal
- When mounted on a wall, an additional cover protects patch cords and drop cables from unintended or unauthorized disconnection
- IP20 rated
- RoHS compliant

# HFTP

## Customer premises wall outlet



The HFTP is a compact fiber terminal for use at the final fiber termination point in the customer premises.

The HFTP provides mechanical protection and managed fiber control in an attractive format suitable for use inside customer premises. A variety of possible fiber termination techniques are accommodated.

### Features

- Splicing to factory-terminated pigtails
- Positive fiber management
- Direct termination with field installable connectors
- Attractive design for indoor use
- Holds up to 4 mechanical splices (RECORDsplice) and fusion splice protectors (SMOUV and ANT) and mechanical SC connectors can be integrated as well
- Splice cable to cable
- Compatible with 2 SC simplex adapters
- Multiple cable entry points (cable diameter  $\leq 6$  mm)
- Can be wall mounted and mounted on wall boxes with fixation points of 60 mm
- Laser safe with individual shutters



## YPSO

### Tap-off enclosure for mini-breakout riser cable

YPSO is an enclosure to cover the incision in the TE Connectivity Mini-Breakout cable with 12 and 24 fibers. This cable is an individual fiber reinforced cable developed for riser applications in MDU environments.

This cable allows the user to retract specific fibers from the cable at each floor access point.

This enclosure is integrally part of the TE Connectivity MDU system solution.

This YPSO device allows tapping off individual fibers from the riser cable and protects the transition into a protective tube that protects the retracted fiber from the riser cable up to the splice extension or the horizontal duct.

#### Features

- Very compact size: dimension 80mm x 30mm diameter for integration into small floor boxes
- Capacity to tap off at least 6 fibers (3 left/3 right)
- Restores integrity of TE Connectivity Mini-Breakout cable after making an incision for fiber access
- Mini-Breakout cable incision of only 55 mm
- Designed for indoor use
- Flame retardant LSZH material
- Front accessible

# PICO/RICO breakout cable

## Horizontal cabling solution



TE Connectivity Mini-Breakout cable is a compact and flexible riser cabling solution combining the fibers of multiple residents in an MDU. To connect the premises of these residents, few fibers from this riser cable have to be connected to a horizontal cable which leads the fibers into the customer's premises termination point.

For this horizontal cabling, TE Connectivity proposes two solutions, each with their own properties: PICO-Breakout is the smallest available horizontal cable with a diameter < 1 mm combined with a pulling strength of 300N. This is ideal for installation through in-the-wall embedded pipes/ducts that terminate in standard building wall sockets.

RICO-Breakout is an overtubed PICO-Breakout. The 2.6 mm overtube protects the fiber against overbending of the PICO-Breakout during installation and for installations where the horizontal cabling is routed on the walls or through pipes/ducts with sharp crossings.

### Features

- Very compact and flexible riser cable construction for fast installation and installation in existing building conduits
- Low smoke zero halogen, flame retardant materials
- G.657A1 bend optimized fibers
- Cable pulling strength of 300N
- Designed for indoor use
- -30/+60°C temperature range
- Connectors terminated to PICO-Breakout in a robust way

Connector types can be both SC and LC or others on request. Connector specification according to IEC61755-1 Grade C.



## SMOUV

### Fiber optic fusion splice protector

SMOUV splice protector sleeves provide mechanical and environmental protection for fusion splices of single and ribbon fiber.

The SMOUV sleeve consists of

- clear outer heat shrink material
- low temperature hot melt adhesive to encapsulate the splice
- stainless steel rod for single fiber splices and a ceramic rod for ribbon fiber splices to ensure proper alignment and rigidity

SMOUV-1120 sleeves for single fibers are ideal for protecting single fusion splices of primary and secondary tight or semi-tight coated fibers.

SMOUV-1120 sleeves for multiple fibers to protect mass fusion splices of ribbons with two to twelve fibers

All SMOUV-1120 sleeves are compatible with the most commonly used fiber management systems and organizers.

SMOUV-0120 sleeves are designed for protecting single fusion splices of primary and secondary semi-tight coated fibers in high density fiber management systems.

#### Features

- 30 years of global proven field performance
- Compatible with all common fiber coatings
- Optimal design for simple and correct fiber entrance
- Hot melt adhesive especially developed for optimal flow
- Transparent heat shrinkable tube for simple installation verification
- Short installation cycle and compatible with most common ovens
- Available as separate item or as part of an application kit

# Pigtails, jumpers and adapters

## Single mode connectorized single fiber cables



Connectorized single fiber cables (pigtails and jumpers) are used in almost all products for cable termination of the FIST system.

TE Connectivity offers 3 ranges of cable assemblies:

- standard
- low loss
- consumer grade

Pigtails are single fiber cables pre-assembled with a connector at one end. They are typically used to terminate primary coated fiber to an optical distribution frame.

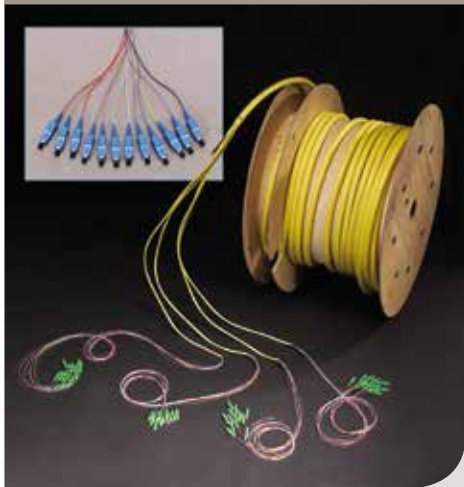
Jumpers are single fiber cables pre-assembled with a connector at both ends.

They are typically used to cross-connect patch panel to patch panel and to connect patch panels to optical equipment. For special applications (such as in FIST-boxes) pigtails are available which are factory-stripped up to the secondary coating and have a pre-installed length of FOPT transportation tube. The FOPT transportation tube can be cut to length to suit the precise distance from the patch panel or optical equipment to the corresponding single element tray.

For all connectors used on the pigtails and jumpers, the matching connector mating adapters are available and can be ordered separately.

### Connector types supported

SC/UPC	
SC/APC	E2000
FC/UPC	
FC/APC	
LC/UPC	
LC/APC	



## Intrafacility and breakout cable

### Single mode connectorized cable assemblies

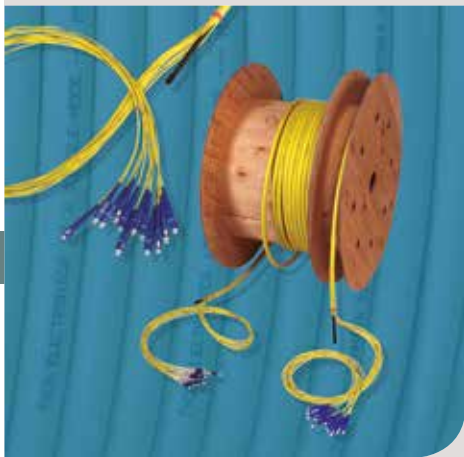
Intrafacility cable (IFC) consists out of one or more sub-units, which each contain twelve 900 $\mu$  fibers. IFC is typically used indoors between an optical distribution frame and the cable vault, or to connect optical distribution frames or to connect patching to splicing panels and shelves inside an optical distribution frame.

Breakout cable contains individual fibers (each with Aramid strength member and individual jacketing) together with a strength member which are bundled in an outer jacket. Breakout cable is typically used indoors to connect an optical distribution frame to an electronic equipment rack or to connect electronic equipment racks.

Single mode cable assemblies are designed for use in telecommunications, CATV, data communications and wide area network applications. Connectorized fiber cables are used in almost all TE connectivity fiber products for cable termination of the FIST system.

#### Features

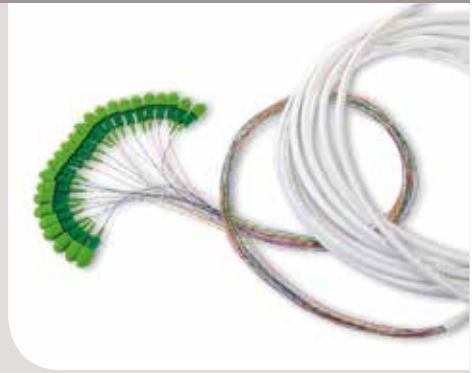
- Delivered on a drum to facilitate fast, safe and easy installation
- Eliminate need for fiber optic ducting system
- Connectorized at one or both ends
- Available with a wide variety of fiber counts and connector types





# Mini-Breakout cable

## Riser cabling solution



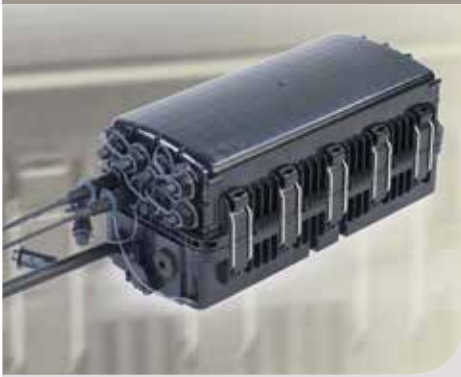
TE Connectivity Mini-Breakout cables are developed to be a very compact cabling solution for riser applications in MDUs. With the cable strength elements integrated in the individual fiber elements, Pico-Breakout, the cable becomes very small in diameter and very flexible to be pulled vertically through the riser. As the individual fibers, Pico-Breakouts, are reinforced they can be pulled back easily in a secure way to be connected to the horizontal fiber linking to the living unit of the MDU.

The Mini-Breakout cables can be preterminated with connectors for fast installation in building distributors. Also, the PICO-Breakouts can be terminated with a connector such it can be pulled from the premises to the riser to be connected to the riser fiber. In this case the Pico-Breakout is the horizontal drop cable.

### Features

- Very compact and flexible riser cable construction for fast installation and installation in existing building conduits
- Cable diameter of 8mm only
- G657A bend optimized fibers
- Individually reinforced fibers for secure extraction and pulling
- PICO fibers can be pulled through ducts without overtubing the fiber
- Designed for indoor use
- -30/+60°C temperature range
- Individually identifiable Pico-Breakout
- Connectors terminated to Pico-Breakout in a robust way

Connector types can be both SC and LC or (others on request). Connector specification according to IEC61755-1 Grade C.



# OTE

## Optical termination enclosure

The Optical Termination Enclosure (OTE) is a unique solution for splicing, termination, and pass-through cable requirements in fiber-to-the-premises (FTTP) architectures. Featuring pre-connectorized adapter ports, the OTE expedites the fiber deployment process for new subscriber activation and service. The OTE ensures seamless integration into existing infrastructure with limited or no conduit space. Sealed in a gasketed hardened plastic enclosure, the OTE provides reliable, uninterrupted performance in any outside plant environment.

Field-friendly with accessible design features, the OTE minimizes labor costs associated with service calls and speeds FTTP network deployments.

### Features

- Up to 16 available full-sized hardened adapter ports
- 2 input ports available on each side of unit: accommodates 2 branch cables or pass-through distribution cable
- Slack storage holds up to seven 1.5 m strands of pass through cable
- Accommodates 1x16, 1x4, or 1x8 splitters
- Holds up to 5 integrated splice trays
- Accepts fusion splice or mechanical splices
- Accepts a variety of cable in the range of 7 to 15/7 mm, including flat drop cables
- Available in DLX and OptiTap versions
- Installs on wall, pole, wire strand or handhole
- Compact design:  
357 H x 171 W x 191 D mm

# MST

## Multiport service terminal



TE Connectivity's Multiport Service Terminal (MST) incorporates hardened connector technology that is designed to withstand the rugged outside plant environment. These uniquely designed hardened connectors are factory-terminated and environmentally sealed for use in optical drop cable deployments.

### Features

- Available in 2-, 4-, 6-, 8-, and 12-port configurations
- Flexible mounting options including pole, pedestal, hand hole or strand to support both aerial and below grade applications
- Tested to meet GR-326, GR-771, GR-3152 and GR-3120 standards for robust environmental performance
- Connection interface utilise factory terminated high-performance SC/APC connectors
- Hardened adapters provide environmentally secure interface for fiber drops
- Easy and quick installation to the distribution cable through the 12-fiber HMFOC (hardened multifiber optical connector) interface
- Factory sealed enclosure provides resistance to environment
- Improved structural design withstands stress and impact
- Plug and play provisioning through the ports on the outside of the closure (no need to open the MST)
- Superior cable and fiber management ensures proper bend radius, prevents cable strain and minimises kinking
- Available with dielectric and armored input stub cables in standard lengths
- Compatible with OptiTap® connector system
- User-friendly packaging allows for easy un-spooling



## Mini-MST

### Mini multiport service terminal (MST with DLX)

The Mini-MST incorporates DLX hardened adapters resulting in a much smaller terminal package than available with previous generations of full-sized hardened connectors and adapters.

Featuring pre-connectorized adapter ports, the MST expedites the fiber deployment process for new subscriber activation and service.

Mini-MSTs are environmentally sealed terminals that withstand all the rigors of the outside plant environment. The terminals are factory terminated with individual connectors and provided with a stub cable for splicing in the field.

#### Features

- Mini-MSTs with DLX adapters are much smaller than previous multiport terminals, taking up less space on the pole and in the hand-hole: Dimensions (L x W X H, including mounting bracket): 298 mm x 130 mm x 89 mm
- Factory-terminated high-quality, high-performance SC/APC connectors.
- Flexible choice in number of ports: 4-, 8-or 12-port terminals
- The terminal connector ports are clearly marked with numbers for quick DLX drop cable connections
- Flexible choice in cable lengths: 10m - 1000m
- Each Mini MST ships standard with a universal mounting bracket to facilitate installation on pole, strand and handhole mounting with standard fasteners
- Sealed, hardened enclosure provides long-lasting environmental protection
- External strain relief boot provides additional strength for feeder cable connection
- Plug and play provisioning through the ports on the outside of the closure (no need to open the Mini-MST)

# Hardened drop cables



TE Connectivity's factory-terminated hardened drop cables are combined with Multiport service terminals (MST). Environmentally robust, they provide a simple and reliable interface for fiber drop cables in the outside plant environment from the access termination point to the Optical Network Terminal (ONT) at the customer premises. At the same time, the pre-terminated approach dramatically reduces splicing labor requirements. The hardened connector is based on standard SC connector technology. Cable assemblies are available with one or both ends terminated with a hardened connector or as a hybrid in which one end is terminated with a standard SC connector.

## Features

- Technician - friendly features: intuitive design for ease of use
- Decreased installation and incremental maintenance hours: significant savings
- Protection: self-contained unit features hardened connectors for superior durability and reliability in the drop segment of the network
- Robust environmental performance: withstands extremes in temperature and conditions
- Compatibility: interoperability with industry standard hardened connectors
- Wide range of applications: ducted, wall mounted, pole mounted, indoor/ outdoor
- System solution including cable mounting brackets, connector test kit, ...
- Connector can be pulled through 22mm ducts
- Pulling eye on connector cap is designed for 450N maximum pulling tension
- Drop cable fully tested to Telcordia GR-20 and designed to Telcordia GR-3120 standards
- Wide range of lengths



## Mini hardened drop cables (DLX)

TE Connectivity's factory-terminated hardened drop cables are combined with Multiport service terminals (MST). Environmentally robust, they provide a simple and reliable interface for fiber drop cables in the outside plant environment from the access termination point to the Outdoor Network Terminal (ONT) at the customer premises. At the same time, the pre-terminated approach dramatically reduces splicing labor requirements. The hardened DLX connector is based on standard SC connector technology and has a smaller footprint than the standard hardened connector technology. The miniature connectors and terminals allow more flexibility for installation on poles, hand holes and other environments where space is limited. Cable assemblies are available with one or both ends terminated with a hardened connector or as a hybrid in which one end is terminated with a standard SC connector.

### Features

- DLX connectors are 35% smaller than the standard hardened connector
- Technician - friendly features: intuitive design for ease of use
- Decreased installation and incremental maintenance hours: significant savings
- Protection: self-contained unit features hardened connectors for superior durability and reliability in the drop segment of the network
- Robust environmental performance: withstands extremes in temperature and conditions
- Compatibility: full compatibility with commonly used SC connectors and full backward compatibility with legacy full-sized hardened connectors
- Wide range of applications: ducted, wall mounted, pole mounted, indoor/outdoor
- System solution including cable mounting brackets
- Connector can be pulled through 16mm ducts
- Pulling eye on connector cap is designed for 450N maximum pulling tension
- Drop cable fully tested to Telcordia GR-20 and designed to GR-3120

# Xpres-drop

## FTTH connectorized drop cable solution

Xpres-drop is a range of factory terminated drop cables to connect customers to the FTTH access networks in a fast, plug and play methodology. Every connector comes with a sealed, protective cap to prevent damage during transportation, storage, pulling and installation. The cap has an integrated pulling eye to facilitate the installation. Due to the small size, these cable assemblies can be pulled through ducts with an inner diameter as small as 20 mm and a 90° bend with an inner radius of 100mm.

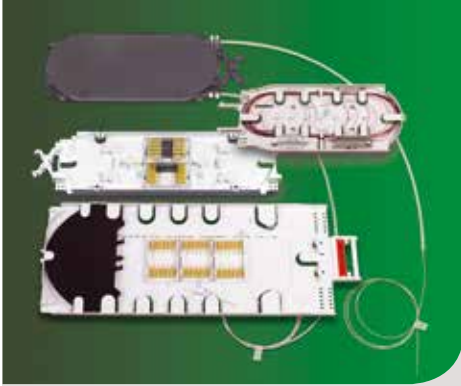
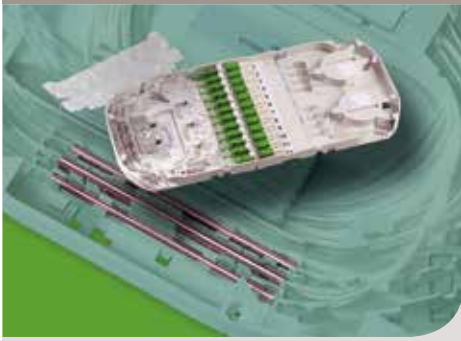
On installation, the protective cap is removed such the LC based termination can be installed in the EnLighten enclosures (OFDC) in a very dense stack. The cable for installation through ducts has a black LSZH outer sheet (UV resistant) such it can also be used for indoor wiring. The indoor version has a white LSZH sheet.

Cable assemblies can be ordered with bend insensitive fiber conforming G657A ITU recommendations.



### Features

- Technician - friendly features: intuitive design for ease of use
- Protection: self-contained unit features sealed connectors for superior durability and reliability in the drop segment of the network
- Robust environmental performance: withstands extremes in temperature and conditions
- Compatibility: available as SC or LC and as UPC or APC grade C (IEC 61755-1)
- Connector can be pulled through 20 mm ducts
- System solution including an integrated strain relief when combined with Enlighten network enclosures
- Pulling eye on connector cap is designed for 450N maximum pulling tension



## Integrated couplers/splitters

Couplers/splitters are designed for use in telecommunications, CATV, data communications and wide area network applications to split and combine light. They are integrated into the trays which can then easily be integrated into closures, wall-mounted boxes or optical distribution frames.

Several types of trays with integrated splitter(s) are available:

- The field-installable splitter for FIST systems (FIST-FSASA2).
- The splice/patch tray (FIST-OC-G) that fits into the FIST-GPS2 shelf and houses one or more connectorized splitters.
- LGX-compatible splitters (OCM1).
- Modular components (OCM5/6).

### Features

- Symmetric and asymmetric splitters
- Variety of input/output configurations
- Consistent performance
- Low optical loss
- Low polarization sensitivity
- Excellent mechanical and environmental characteristics
- Fast installation



# OCFPS

## Wideband couplers/splitters in front-patching shelf



Single mode wideband couplers/splitters are passive optical devices that split and combine light in fiber networks. The OCM modular packaging provides a robust and simple method for integrating these devices into the FIST-CAB5 splitter cabinets.

A wide selection of split ratios and connector types ensure long-lasting compatibility.

### Features

- Consistent performance
- Low optical loss
- Low polarization sensitivity
- Excellent mechanical and environmental characteristics
- Fast installation and commissioning
- Front or back mounting
- ID card
- Maximum 64 output ports

### Applications

- Repair slice capacity
- Combining and splitting light signals
- Central office/headend
- LAN
- Network monitoring



## OCM1(LGX)

**Modular wideband couplers/  
splitters for street cabinets**

Single mode wideband couplers/splitters are passive optical devices that split and combine light in fiber networks. The OCM modular packaging provides a robust and simple method for integrating these devices into the FIST-CAB5 splitter cabinets.

A wide selection of split ratios and connector types ensure long-lasting compatibility.

### Features

- Reliable performance
- Low loss
- Low polarization sensitivity
- Excellent mechanical protection
- Fast and simple installation
- Available in most connector types
- Different types of housing allow for high density
- LGX compatible footprint
- Housing sizes varies depending on split ratio providing optimal utilization of space

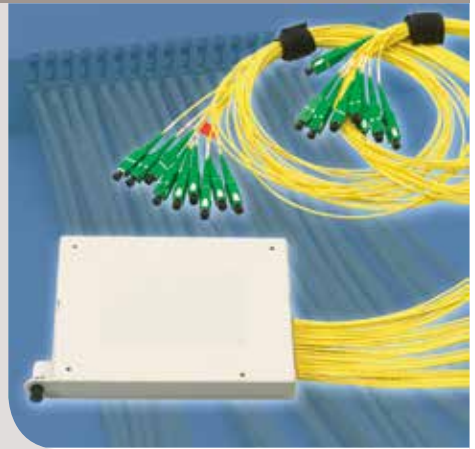
### Applications

- Telephony
- CATV
- Central office/headend
- LAN
- Network monitoring & testing

The splitter components are based on FBT (fused biconic tapered) technology for low split ratio's. For higher split ratio's, planar waveguide technology is used.

# OCM5

## Modular wideband couplers/ splitters for street cabinets



Single mode wideband couplers/splitters are passive optical devices that split and combine light in fiber networks. The OCM modular packaging provides a robust and simple method for integrating these devices into the FIST-CAB5 splitter cabinets.

A wide selection of split ratios and connector types ensure long-lasting compatibility.

### Features

- Reliable performance
- Low loss
- Low polarization sensitivity
- Excellent mechanical protection
- Fast and simple installation
- Clean connector storage for unused ports

The splitter components are based planar waveguide technology.



Single mode wideband couplers/splitters are passive optical devices that split and combine light in fiber networks. The OCM modular packaging provides a robust and simple method for integrating these devices into the MDU applications. The OCM6 can be installed in TE Connectivity's BUDI product family. They feature a symmetrical split ratio and use 1,8 mm LSZH semi-tight cable. A wide selection of split ratios and connector types ensure long-lasting compatibility.

## OCM6

**Modular wideband couplers/splitters for MDU applications**

### Features

- Reliable performance
- Low loss
- Low polarization sensitivity
- Excellent mechanical protection
- Fast and simple installation
- Clean connector storage for unused ports

The splitter components are based on planar waveguide technology.

# OCSH

## Shelf for OCM5 optical component modules



The OCSH is a mechanical shelf assembly that accommodates OCM5 type of modules in a rack or cabinet environment. The shelf is typically used in 19" active racks or data racks, but is also compatible with TE Connectivity FIST racks and cabinets.

### **OCSH-I features**

- Can be front or back mounted in the rack
- Occupies 3 height units (19" standard width)
- Allows storage of 6 modules
- Front access to modules
- Pigtailed enter and leave the shelf from left or right
- A cover including identification label is provided
- An optional repair facility for damaged pigtailed is available

### **OCSH-L features**

- Can be back mounted in the rack or cabinet
- Occupies 4 height units (19" standard width)
- Allows storage of up to 18 modules
- Front access to modules
- Pigtailed can enter the shelf at the left or right (when turned upside down)



# VAM

## Value-added module system

The value-added module (VAM) system adds flexibility and functionality to the optical transport system by enabling communications service providers to easily incorporate optical components into the network.

The VAM system consists of a variety of chassis and optical components that fit into all TE Connectivity's optical distribution frames and various other mounting environments.

### Features

- Available modules include:
  - Monitors
  - Splitters
  - Wavelength division multiplexers (WDMs)
  - Coarse wavelength division multiplexers (CWDMs)
- VAM chassis and modules available for all TE Connectivity fiber frames
- Monitor testing
- Enclosed plug-in modules
- Angled retainers
- Horizontal mounted plug-in modules
- Extensive product labeling
- Flexible platform
- Module labeling system

# OCC1C

## Compact CWDM

The coarse wavelength division multiplexing technique combines (or multiplexes) 4 or 8 signals at different wavelengths in one common fiber. The same components can also be used to separate the wavelengths (de-multiplexing) at the remote location.

OCC1C allows easy the integration of CWDM technology into fiber optic enclosures.

The compact CWDM (CCWDM) is based on free space optics technology.



### Features

- Consistent performance
- Low optical loss
- Low polarization sensitivity
- Excellent mechanical and environmental characteristics
- Fast installation in FOSC trays

### Applications

- CWDM upgrades in metro networks
- Increase the capacity between the central office, headend or HUB and the optical node in HFC networks
- CWDM overlay in PON architectures
- LAN



## FIST-FCASA2

**FIST field installable CWDM**

FIST is a Fiber Infrastructure System Technology. At the heart of the system lies TE Connectivity's unique sub-assembly concept. The FIST-FCASA2 allows integration of coarse wavelength division multiplexers in any FIST network element in an easy and cost-effective way.

The FIST-FCASA2 passive optical devices are factory mounted in a closed housing that is labeled to indicate the factory measured insertion loss per port. The tray can be clipped onto the baseplate of a standard single fiber FIST-SOSA2 array of splicing trays.

These are used into the various FIST network products, e.g. splicing shelves (FIST-GSS2), patching shelves (GMS2), closures (FIST-GCO2, FIST-GCOG2) and boxes (FIST-GB2).

Provision for fiber, device and cable element identification is integrated in the design either by labeling or by using colored fibers.

The coarse wavelength division multiplexers are based on TFF (Thin-Film-Filter) technology. For advanced low-loss applications, we offer the FIST-FCASA2 with the Compact CWDM module based on free-space optics technology.



# TracerLight

## Connector identification system



The TracerLight connector identification system offers a quick, accurate method of identifying the termination point of optical patch cords. Each end of a TracerLight patch cord features a flashing light source allowing technicians to visually trace individual patch cords from one end to the other without pulling or affecting the patch cord.

The TracerLight power source is inserted into the TracerLight component on one end of the patch cord. This causes the LED on each end to begin flashing rapidly. As a result, the distant end of the patch cord can be quickly and easily identified without interruption of service.

The compact power source is composed of a lightweight, plastic flashlight body featuring two AA batteries and a printed circuit board (PCB). It provides approximately 80 hours of continuous service and features 1-hour auto-off. The end of battery life is indicated by a slowing of the blink rate.

### Features

- Dramatically minimizes the risk of taking the wrong fiber out of service
- Improves system turn-up speed and accuracy
- TracerLight patch cords meet all optical performance criteria of standard patch cords
- Ideally suited for central offices, data centers, or any environment employing and cross-connect patching
- 72% reduction in jumper turn-up times and 13% reduction in accidental down-time. TracerLight pays for itself again and again
- Available in standard length or connector style
- Same functions, features and stringent environmental standards as TE Connectivity's standard patch cords
- Installed in the same manner as standard patch cords
- Easily pulled through FiberGuide fiber cable management system



# FiberGuide

## Optical raceway system

FiberGuide is a raceway system designed to protect and route fiber optic patch cords and multi-fiber cable assemblies to and from fiber splice enclosures, fiber distribution frames and fiber optic terminal devices. FiberGuide ensures a two-inch (50 mm) minimum bend radius is maintained throughout the system. The FiberGuide system is a complete set of products designed and manufactured to ensure total off-frame protection and ease of use. Basic components include horizontal and vertical straight sections, horizontal and vertical elbows, downspouts, junctions and numerous support hardware and flex-tube kits.

A wide variety of sizes are available and, through the use of adapter junctions, can be deployed within the same network.

- 2" x 2"
- 2" x 6"
- 4" x 4"
- 4" x 6"
- 4" x 12"
- 4" x 24"

### Features

- Speed of installation  
FiberGuide systems feature a variety of products that allow for quick and easy installation. Express Exit drops as well as tool-less products including Snap-Fit junctions, snap-on covers and new hinged cover options save valuable time for installers
- Speed of deployment  
The Express Exit system enables new drops to be added or removed quickly and easily. A drop can be added into a fully loaded raceway in seconds—without cutting
- Raceway flexibility  
FiberGuide features 38 support structures, over 75 fittings, multiple drop options and several other components to suit any application you create
- Fiber protection  
TE Connectivity's broadband expertise translates into maximum protection for your network. Two-inch (50 mm) minimum bend radius is maintained throughout the system regardless of the raceway size
- Strength and Durability  
100% raceway reliability

# RiserGuide

## On-demand cable management



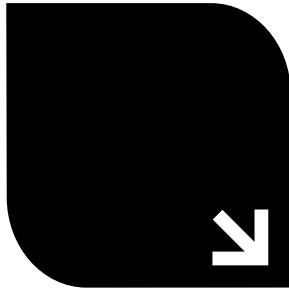
Because cable management requirements change with network requirements, TE Connectivity now offers the RiserGuide System, designed to provide cable management where it is needed, when it is needed.

The RiserGuide System is flexible, modular and easy to install and remove, allowing for on-the-spot cable management and full network optimization.

### Features

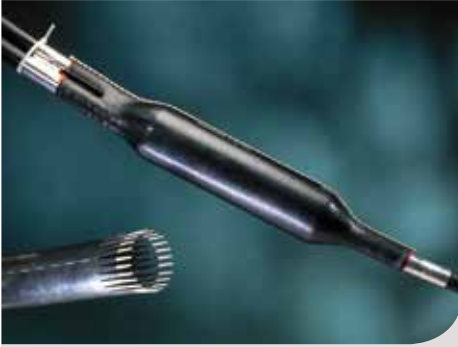
- RiserGuide provides flexible, “on demand” cable management
- Cable management components can be installed anywhere on the riser
- Simple, tool-free installation
- Designed to meet GR-63 standard
- Supported by TE Connectivity’s cable management expertise





Unpressurized  
copper closures  
and cable  
accessories





## XAGA-500/550/530

Joint closure system for unpressurized copper networks

XAGA-500 joint closures are heat-shrinkable closures available for the protection of cable joints in a copper network.

Based on the TE Connectivity technology of heat-shrinkable composite materials, XAGA-500 closures have an excellent split resistance and are very craft-friendly. The fiber composite structure of the RayFort wraparound sleeve offers excellent resistance to mechanical abuse both during and after installation. An integral metal layer which shrinks with the sleeve protects the joint from moisture vapour transmission.

XAGA-500 joint closures are available in an extended size range having a joint capacity up to 800 pairs. The kit includes a variable liner, which insulates, shapes and compacts the joint bundle, and the unique three-finger clip with hot melt adhesive, which allows up to three cables at each end.

The XAGA-550 range of joint closures uses the same composite heat-shrinkable sleeve as the XAGA-500 range and utilizes a metal canister having a joint capacity up to 3600 pairs.

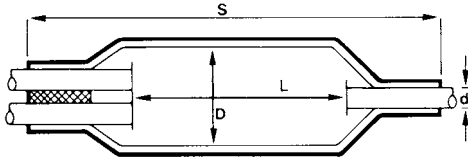
Both kits are suitable for unpressurized cables, aerial, buried or ducted, non-filled or jelly-filled, with metal or polyethylene sheaths.

The XAGA-530 closure was developed to perform under severe tropical conditions of high temperature and humidity. Dimensions and service are similar to those of the XAGA-500 series.

All kits are available with and without branch-off kit.



# XAGA-500/550/530



## Dimensions (in mm)

Description	Splice bundle dia. D max	Cable dia. d min.	Max. joint gap L	Branch-off clip
XAGA-530- 43/ 8-150	43	8	150	Small
XAGA-530- 43/ 8-300	43	8	300	Small
XAGA-530- 55/12-150	55	12	150	Small
XAGA-530- 55/12-300	55	12	300	Small
XAGA-530- 75/15-240	75	15	240	Small
XAGA-530- 75/15-300	75	15	300	Small
XAGA-530- 75/15-400	75	15	400	Small
XAGA-530- 75/15-450	75	15	450	Small
XAGA-530-100/25-250	100	25	250	Medium
XAGA-530-100/25-450	100	25	450	Medium
XAGA-530-100/25-600	100	25	600	Medium
XAGA-530-125/30-250	125	30	250	Medium
XAGA-530-125/30-450	125	30	450	Medium

*Each kit contains one branch-off kit.*

**Note:** for filled joints (optional)

For filled joints, special RSS filling kits are available.

Double jacketed cables require special or extra components due to their specific construction.



# CWST

## Heat-shrinkable wraparound repair sleeve



TE Connectivity CWST is a wraparound sleeve, closed by a slide-on metal channel. The sleeve with its hot melt adhesive ensures a permanent, reliable seal.

CWST repair sleeves are suitable for all types of unpressurized cables in direct buried, ducted or aerial applications. Wraparound repair sleeves are ideally

suitable for repairing any kind of sheath opening or sheath damage. Examples are: ring cuts, trouble openings, fire and steam damage, cable bend cracks and corrosion. CWST is installed using a standard joiner's torch. The sleeves are coated with heat-sensitive paint which changes color when sufficient heat is applied indicating that the adhesive has been activated.

Dimensions (in mm)			
Description	Max. cable dia.	Min. cable dia.	Lengths supplied
CWST-43/ 8	43	8	1500, 1000, 750, 500, 250
CWST-55/12	55	12	1500, 1000, 750, 500, 250
CWST-75/15	75	15	1500, 1000, 750, 500, 250
CWST-100/25	100	25	1500, 1000, 750, 500, 250
CWST-125/30	125	30	1500, 1000, 750, 500, 250
CWST-164/42	164	42	1500, 1000, 750, 500, 250
CWST-200/50	200	50	1500, 1000, 750, 500, 250

### Ordering example

CWST-75/15 - XXX/239

(XXX = selected standard length)

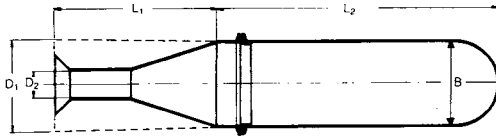


## RABC

### Ready access butt closure

RABC is a fully sealed closure combining a mechanical dome with reliable heat-shrinkable sealing for the cables. It is suitable for use as an aerial or underground joint closure in both new construction and maintenance applications in the distribution network, typically in the rehabilitation of expanding plugs, tape and 31A type resin joints.

RABC is of rugged design to withstand mechanical abuse and can be installed using a standard jointer's torch. The product is supplied fully kitted and can accommodate up to 4 cables.



#### Dimensions (in mm)

Description	Max. Joint dia. B	Max. dia. D1	Min. dia. D2	Sleeve length	
				L1	L2
RABC-100	53	70	25	140	380
RABC-200	100	125	43	190	480
RABC-300	135	155	60	220	580

*Each kit contains 1 branch-off clip.*

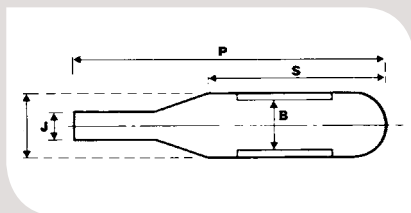
*For more than 2 cables, additional branch-off kits are available.*

# PEDCAP

## Butt closure

PEDCAP is a general purpose single-ended closure designed for a variety of applications in a distribution network. It is suitable for use as an aerial or underground joint closure in both new construction and maintenance applications, typically in the rehabilitation of tape and plug expanding joints. PEDCAP is of rugged design to withstand mechanical abuse and can easily be installed using only a standard joiner's torch.

PEDCAP is supplied fully kitted for use on cable sizes in the range 2 to 200 pairs. Cables may be added to the joint and the joint re-closed using another PEDCAP.



Joining information (dimensions in mm)			
Description	Joint length max. (S)	Joint bundle max. diam.(B)	Max. number of cables
PED-CAP-R-2-INT	200	50	3
PED-CAP-R-3-INT	120	57	4
PED-CAP-R-4S-INT	250	84	4
PED-CAP-R-4L-INT	350	84	6
Sizing information (dimensions in mm)			
Description	Max. cable bundle diam. without SCOP(A)	Min. cable bundle diam. without SCOP(J)	Max. looped cable diam.
PED-CAP-R-2-INT	30	16	2 x 18
PED-CAP-R-3-INT	40	11	2 x 23
PED-CAP-R-4S-INT	60	25	2 x 28
PED-CAP-R-4L-INT	60	25	2 x 28

Each kit contains 3 or 4 SCOPs (depending the size) to accommodate 2 main cables and 4 small drop cables.

**Ordering example:** PED-CAP-R-4S-INT



## TTRC

**Toolless torchless  
re-usable closure system**

The TTRC closure has been developed for the environmental protection of aerial telecommunication joints up to 600 pairs. The product consists of two sealing units and a central body, which mechanically protects the joint.

The sealing on both the closure body and multiple cables is performed by compressing TE Connectivity gel material between two plastic flanges. Compression is activated by a built-in tensioning mechanism. The TTRC closure system can be installed in a minimum of time without

any special tools. This revolutionary sealing system used in the outside plant network allows closure re-entry, cable additions and cable re-arrangements. Flexibility is built-in and additional parts are not required.

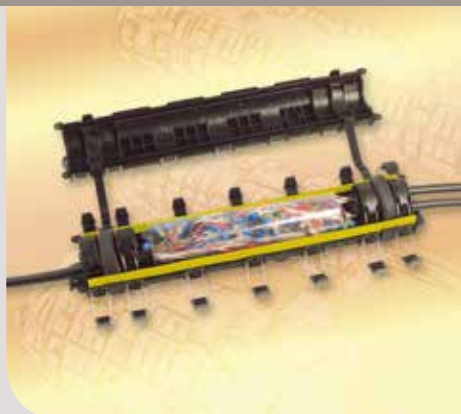
All components are fully wraparound, accommodating installations in new construction and network maintenance. Multiple cable branching is possible with up to 4 cables at each end.

### Dimensions (in mm)

Description	Max. splice capacity	Cable ports each side	Cable Ø min.	Cable Ø max.	Sheath opening	Splice Ø
TTRC-50	25 pairs	4	10	19	260	72
TTRC-100	100 pairs	4	10	19	380	72
TTRC-200	300 pairs	2	10	21	510	92
		2	10	28		
TTRC-250	300 pairs	1	26	42	510	92
		2	10	19		
TTRC-300	600 pairs	2	10	26	510	125
		2	26	42		

# MJC

## Mechanical joint closure



- Watertight splice closure for aerial, underground and direct buried splices in the unpressurized copper telecommunication network
- Robust construction with high mechanical strength
- Proven gel sealing system
  - Easy to handle at all temperatures
  - Easy to re-enter
- Innovative cable fixation system
- No special tools needed for installations or re-entry
- Closure uses over-centering 'ski boot' type latches
- Flexible branching plug system allowing installation of cables from 5 pairs to 100 pairs
- Integrated mounting brackets for aerial and wall installation
- Reduced inventory as fewer size closures needed to cover a wide range of applications up to 100 pairs
- Both dome-ended and in-line closures available
- Cable configuration changes possible with a minimum of extra accessories
- No shelf life

### Sizing/ordering information (Dimensions in mm)

Cable diameter range: from Ø 7 mm till Ø 28 mm

Description	Closure type	Max. branching plugs	Typical splice volume	Max. splice dia.	Total internal length
MJC-10/20PR-CE-INT01	Cap-end	1	10/20 pair	50	185
MJC-10/20PR-INL-INT01	Inline	1 in/1 out	10/20 pair	50	240
MJC-50/100PR-CE-INT01	Cap-end	4	50/100 pair	120	185
MJC-50/100PR-INL-INT01	Inline	2 in/2 out	50/100 pair	90x60	370

Each kit contains 3 or 4 SCOPs (depending the size) to accommodate 2 main cables and 4 small drop cables.

**Ordering example:** PED-CAP-R-4S-INT



## GELSNAP

**Cold applied splice protection system**

Three sizes of GELSNAP are available for the protection of paper/lead or plastic cable joints of up to 30 pairs.

The product is quick to install and easy to use. No special tools are required.

The use of non-flowing gel under permanent pressure prevents water ingress. It is robust and reliable under a wide variety of environmental conditions. Many connector types can be accommodated. Butt, in-line, and branch configurations are possible. Re-entry is easy and clean.

### Dimensions (in mm)

Description	Max. cable Ø	Min. cable Ø	Max. splice opening	Number connectors (max.)**	Splice type	Branching
GELSNAP-A-10/5-80	10	5	80	6	Butt	Max. 2 cables
GELSNAP-B-14/5-130	14	5	130	20	Butt/in-line at each end	Max. 2 cables
GELSNAP-C-18/5-180	18	5	180	60	Butt/in-line at each end	Max. 2 cables

*\*\*Figures given are for most commercially used connector types. Consult TE Connectivity for more detailed information. Capacity may vary depending on local splicing practice.*

# TRAC

## Toolless mechanical aerial closure



The TE Connectivity TRAC aerial closure system is designed for free-breathing aerial applications. No tools are required to perform the installation.

The unique convoluted design of the TRAC closure system provides both mechanical and environmental protection around the splice.

The end-pieces use TE Connectivity's innovative gel material, which provides effective protection against water entry, without tapes, mastic, clamps or special tools. The TRAC system performs both venting and draining functions without additional components.

TRAC is fast and easy to install, requiring only three parts for completion. After splice preparation and bonding, two closure end-pieces are placed over the cable. The central body is then fitted over the end-pieces and splice to provide a secure cover. The cover is locked in position by simple snaps or metal latches. The aerial closure is designed to handle straight and branch configurations. It is easily re-enterable and is recommended for use on polyethylene insulated cable jackets. The TRACE extension kit accommodates long-length applications by providing a single part for both maintenance and rehabilitation.

### Dimensions (in mm)

Description	Splice bundle max. Ø	Sheath opening	Max. cable configuration	Main cable Ø		Branch cable max. Ø	
				min.	max.	branch 1	branch 2
TRAC-AA-1	50	400	1 in, 1 out	7	29	-	-
TRAC-AA	50	250	2 in, 2 out	7	19	13	-
		400	2 in, 2 out	7	19	13	-
TRAC-A	75	300	2 in, 2 out	12	32	25	-
		450	2 in, 2 out	12	32	25	-
TRAC-B	125	500	2 in, 2 out	32	48	38	-
		650	2 in, 2 out	32	48	38	-
TRAC-B+	175	650	2 in, 2 out	32	65	65	-
		650	3 in, 3 out	32	48	30	30
TRAC-C	225	650	3 in, 3 out	36	83	50	38



The CERTI-SEAL buried service wire closures bond and protect butt and in-line splices from 2-through 12 pair buried service wires.

## CERTI-SEAL buried

**2 through 12-pair buried  
service wire closures**

### Features

- Reliable: integral bonding system applies constant pressure to service wire shield for long-term reliability; gel filled construction seals environmentally and will not leak
- Easy to install: one-piece, snap-together latching system; pre-installed gel sealant eliminates special handling
- Designed to meet Telcordia specification TR-NWT-000251

### Applications

- Splice protection
- Demarcation points

### Product overview

2-6 pair CERTI-SEAL buried

6-12 pair CERTI-SEAL buried

2-6 pair LG CERTI-SEAL buried

### Ordering description

0569579-1

1217159-1

1116449-1



# CERTI-SEAL

## 2 pair aerial

### Drop wire gel closure

The CERTI-SEAL 2-pair aerial drop wire gel closures and 2 or 6 pair provide aerial termination of telephone cable in non-tension drip loop and sheath repair applications. Two sizes are available: 1116542-1 (for 2-pair drop wires only) 1217204-1 (for 2- to 6-pair drop wires)



#### Features

- Reliable: high-compression, high-impact housing provides maximum durability
- Easy to install: one-piece, snap-together latching system; pre-installed gel sealant eliminates special handling
- Flexible: accommodates AMP Tel-Splice or other industry-standard wire splices
- Compliant: designed to meet Telcordia specification TR-NWT-000975.14-day immersion and Bell PUP 55004 section 5.42A,compression and impact

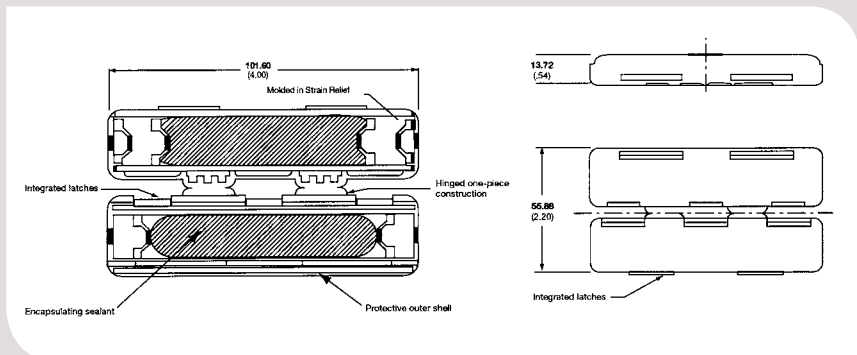
#### Applications

- Splice protection
- Aerial pole
- Pedestal
- Demarcation points

For splice protection and sheath repair\*of 2-pair drop wire telephone cable.

For sheath repair applications, please contact your TE Connectivity sales representative.

#### Dimensions (in inches and mm)





## RayBlock

**Small joint closure and water block for up to 5 pair cable**

TE Connectivity RayBlock is a fast, simple and reliable way of jointing and blocking up to 5 pair unfilled or partially filled cables. It is quickly installed and its low temperature shrinkage properties ensure lack of craft sensitivity in the most congested situations. RayBlock is the answer to those problem areas where older suspect cables cannot be jointed without danger of joint failure due to moisture transmission.

### Features

Suits all conductor sizes up to 0.9 mm. Low recovery temperature tubing and low viscosity adhesive for heat sensitive cables. Reliable blocking achieved in a few seconds using a standard jointer's torch or hot air gun.

### Sizing/ordering information

#### Dimensions (in mm)

Description	Max. supplied diameter	Min. recovered diameter	Supplied length*	Cable size range
Rayblock-100	20	6	250 or 1200	2 & 5 pair

\* Other lengths are available on request.

# MWTM

## Medium wall heat-shrinkable tubing

MWTM heat-shrinkable tubing is made from high performance, cross-linked polyolefin for general use in the telecommunications and energy industries.

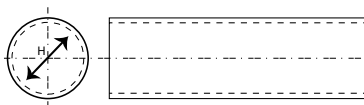
When heated with a standard gas torch or similar heat source, the tubing shrinks to follow the shape of the object to be protected.

MWTM tubing is particularly flexible in use and installation due to its high shrink ratio. Various diameters and lengths are available as standard products.



### Standard lengths

250	500	750	1000	1500
-----	-----	-----	------	------



### Dimensions (in mm)

Description	Application range		H	
	from mm	to mm	a min.	b
MWTM-10/3	3.5	9.0	10	3
MWTM-25/8	5.5	14.5	16	5
MWTM-25/8	9.0	22.5	25	8
MWTM-35/12	13.0	31.5	35	12
MWTM-50/16	18	45	50	16
MWTM-63/19	21	57	63	19
MWTM-75/22	24	68	75	22
MWTM-85/25	28	77	85	25
MWTM-95/29	32	86	95	29
MWTM-115/34	37	104	115	34
MWTM-140/42	46	126	140	42
MWTM-160/50	55	144	160	50
MWTM-180/60	66	162	180	60

### Notes

- Dimensions  
a = as supplied  
b = after unrestricted recovery
- Ordering example  
MWTM-115/34-xxx/S (Sxx)  
s = hot melt coating.  
XXX = selected standard length

(Sxx) = minimum pack quantity



# XCSM

## Thick wall heat-shrinkable tubing

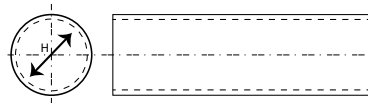
Rugged thick wall XCSM heat-shrinkable tubular sleeves are designed for use where maximum reliability, product performance and simplified installations are required. These heat-shrinkable sleeves are ideal for submersible, direct-buried installations or when maximum protection is needed.

XCSM's high expansion ratio allows it to accommodate different cable diameters. No special skills or equipment are necessary for installation. The product resists abuse during handling and backfilling.

Dimensions (in mm)		
Description	Ha	Hb
XCSM-23/ 6	23	6
XCSM-30/ 8	30	8
XCSM-44/12	44	12
XCSM-55/18	55	18
XCSM-85/22	85	22

### Standard lengths

250	500	750	1000	1500
-----	-----	-----	------	------



### Notes

- a = as supplied
- b = after unrestricted recovery

### Ordering example

XCSM-30/8-XXX/S (Sxx)

s = hot melt coating

u = uncoated

(XXX = selected standard length)

(Sxx) = minimum pack quantity

# L CAPS

## End seal caps for unpressurized cables

TE Connectivity's heat-shrinkable caps ensure that cable ends are waterproof and permit

long-term storage without the risk of moisture penetration.

102L is TE's standard end cap for sealing cable ends in unpressurized or low performance pressurized applications.

It is a medium-wall moulded cap internally coated with an adhesive (an integrated valve is optionally available).

Installing TE's caps is simple. The cap is centered over the ends of the cable and heat shrunk to form a reliable seal.



Dimensions (in mm)				
Description with $\varnothing$ printing	Description without $\varnothing$ printing*	Cable dia. max.	Cable dia. min.	Length min.
102L011/S(S100)	102L011-R05/S(S100)	8	4	38
102L022/S(S100)	102L022-R05/S(S100)	17	8	55
-	102L027-R05/S(S100)	25	13	93
102L033/S(S100)	102L033-R05/S(S100)	30	15	90
102L044/S(S50)	102L044-R05/S(S50)	50	25	143
102L048/S(S25)	102L048-R05/S(S25)	70	35	150
-	102L050-R05/S(S25)	88	38	142
102L055/S(S10)	102L055-R05/S(S10)	95	45	162
102L066/S(S10)	102L066-R05/S(S10)	105	70	145

### Ordering example

102L022/S(S100) (packed per minimum quantity of 100 pieces.) no diameter printing on the caps.

\* Diameter before and after free recovery



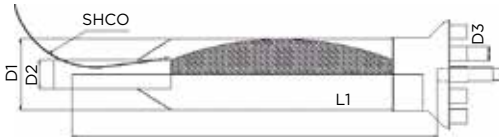
# VCKT

## Vault closure

### Characteristics

- Metal canister provides extremely high mechanical load bearing capacity.
- Hot melt adhesive reliably seals the splice against humidity.
- Vertical installation.
- No filling required.
- Only 4 sizes are needed for any type of cable; capacity up to 2400 pairs.
- Reopening of the splice area for testing and measuring is possible.
- No special tools required.

The VCKT closure system is used for distribution of telecommunication cables in telephone exchanges. A heat-shrinkable RayFort sleeve, used in conjunction with a metal canister and a multiple breakout part protects the splice.



### Ordering information (dimensions in mm)

VCKT size	Joint length max. L1	Outer dia. splice protection max. D1	Cable dia. min. D2	Sleeve length
90-3	510	85	25	800
125-9	740	120	30	950
160-12	740	158	42	950
200-24	740	196	50	950

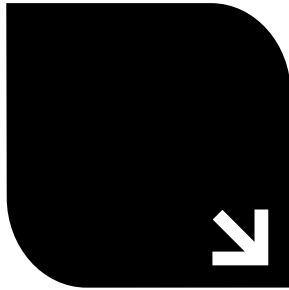
### Table for MDF Cables

VCKT size	MDF cable outlets number	Cable dia. D3	
		min.	max.
90-3	3	12	36
125-9	9	12	36
160-12	12	12	36
200-24	24	12	36

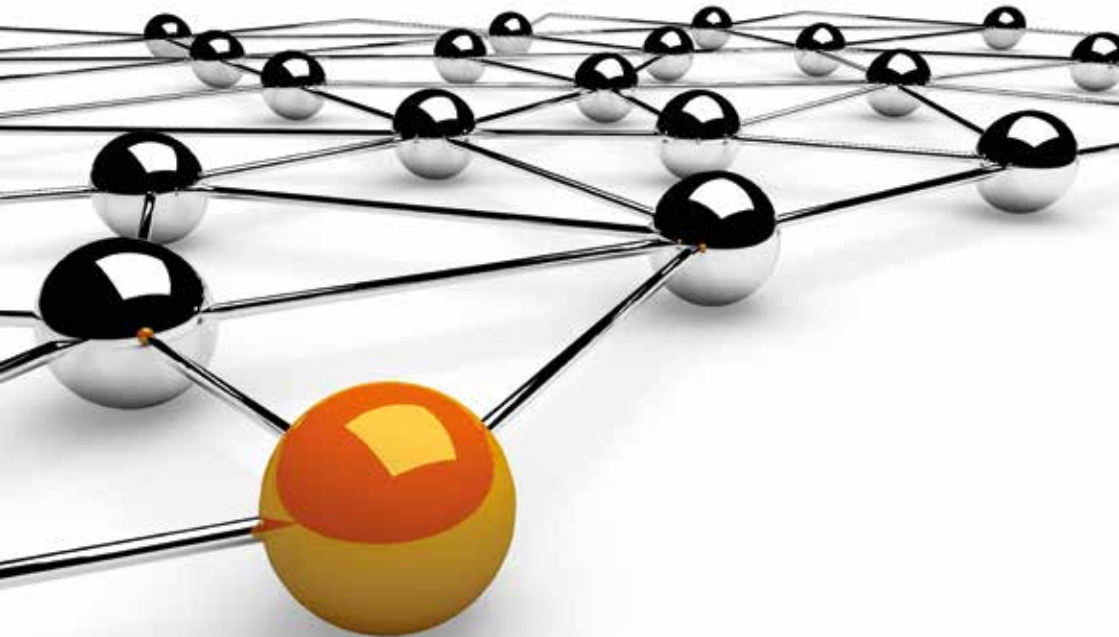








Pressurized  
copper closures  
and cable  
accessories





## XAGA-1000

**Joint closure system  
for pressurized copper networks**

- Glass fiber composite structure gives high split resistance
- Few components, fast and easy installation
- High “craft friendliness” enhanced by visual indicators for optimum installation
- Supports 4 cables in or out.
- Interchangeable air valve, air connector or low profile blanking screw
- Lead or polyethylene jacketed cables
- Can be used on single and double sheathed cables
- Range of closures to suit all cable sizes
- Hot-melt adhesive designed specifically for pressurized closure applications

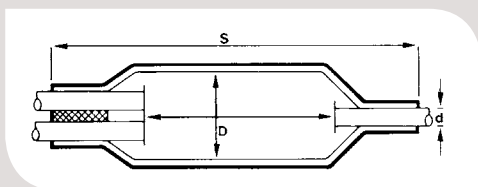
XAGA-1000 is a pressurized closure system based on a unique fiber reinforced heat-shrinkable composite material. This revolutionary material offers extraordinary mechanical and environmental protection. Its reinforced material structure has an excellent split resistance during installation and superior mechanical toughness. The closures have built-in visual indicators to ensure optimum installation under the most severe conditions.

The XAGA-1000 is quick and easy to install using only a standard gas torch. The closure is completely wraparound allowing it to be used for both new construction and maintenance on ducted or direct buried cables with polyethylene, lead and aluminium sheathing, up to 4800 pairs.

TE Connectivity's three-fingered clips allow branching of up to four cables at each end. The kit also contains a range of fully interchangeable air fittings which can be incorporated in the closure.

These include a reversible valve, an air connector and a low profile blanking plug to reduce accidental damage.

# XAGA-1000



Dimensions (in mm)								
Description	Splice bundle max. D	Single cable dia min. d	Sheath opening nom. L	Max. recommended sum of branch cable dia.			Overall length S	Branch-off kit
				2 out	3 out	4 out		
XAGA1000C-45/8-350	45	8	350	35			670	BOKT-1000-05
XAGA-1000C-62/15-250	62	15	250	52	40		600	BOKT-1000-6
XAGA-1000C-62/15-350	62	15	350	52	40		690	BOKT-1000-6
XAGA-1000C-62/15-500	62	15	500	52	40		850	BOKT-1000-6
XAGA-1000C-62/15-650	62	15	650	52	40		1000	BOKT-1000-6
XAGA-1000C-92/30-350	92	30	350	82	70	58	690	BOKT-1000-6
XAGA-1000C-92/30-500	92	30	500	82	70	58	850	BOKT-1000-6
XAGA-1000C-92/30-650	92	30	650	82	70	58	1000	BOKT-1000-6
XAGA-1000-122/38-300	122	38	300	112	100	88	690	BOKT-1000-6
XAGA-1000-122/38-500	122	38	500	112	100	88	870	BOKT-1000-6
XAGA-1000-122/38-650	122	38	650	112	100	88	1020	BOKT-1000-6
XAGA-1000-122/38-900	122	38	900	112	100	88	1280	BOKT-1000-6
XAGA-1000-160/55-500	160	55	500	142	130	118	970	BOKT-1000-7
XAGA-1000-160/55-650	160	55	650	142	130	118	1050	BOKT-1000-7
XAGA-1000-160/55-720	160	55	720	142	130	118	1150	BOKT-1000-7
XAGA-1000-160/55-900	160	55	900	142	130	118	1380	BOKT-1000-7
XAGA-1000-200/65-500	200	65	500	172	160	148	970	BOKT-1000-7
XAGA-1000-200/65-720	200	65	720	172	160	148	1150	BOKT-1000-7
XAGA-1000-200/65-900	200	65	900	172	160	148	1380	BOKT-1000-7

Branch-off kits BOKT-1000-05, BOKT-1000-6 and BOKT-1000-7 must be ordered separately.



## RWPS

### Heat-shrinkable wraparound sleeve for pressure feeding

The RWPS system is a unique wraparound product for the rapid installation of pressure feed and test points for all main cables. It incorporates fiber reinforced material, ensuring excellent product performance and simple installation. The reinforced area around the valve ensures reliability. Complete installation and testing takes only a few minutes using a standard propane torch. The RWPS system can be used with absolute confidence in cable chambers, adjacent to cabinets, and at intermediate points in main underground or overhead networks.

#### Features

Sleeve available with valve, connector or other options.

Three sizes cover all cables from 15 to 95 mm diameter. Installed and tested in less than 45 minutes, occupying less space than other systems.

#### Dimensions (in mm)

Description	Cable dia.		Sleeve length
	max.	min.	
RWPS-C-45/15-250	45	15	250
RWPS-C-65/20-250	65	20	250
RWPS-C-95/30-250	95	30	250

# ACBS

## Air and water blocking system



The ACBS product is a unique adhesive cable blocking system providing a water and pressure block for air-core cables up to 400 pairs. The system consists of heat-shrinkable thick-wall tubing (for new constructions) or wraparound sleeves (for maintenance) covered with thermo-indicating paint and pre-assembled bags containing a specific amount of specially developed adhesive granules. During the recovery of the heat-shrinkable sleeves, the heat makes the adhesive melt at low temperature and flow into the cable core.

A curing package incorporated in the adhesive system provides a firm and reliable block. The product can be used on polyethylene or PVC jacketed cables in either direct buried or ducted environments. The product is designed to be installed on cables with solid insulated conductors. Installation, both vertically and horizontally, takes a very short time using only a standard jointer's torch. Tubular and wraparound versions of the product are fully kitted with all components needed to make a perfect installation every time.

### Dimensions (in mm)

#### ACBS-T: selection chart for TUBULAR version

Description	Cable diameter*	
	maximum	minimum
ACBS-T-18/12	18	12
ACBS-T-24/18	24	18
ACBS-T-30/22	30	22
ACBS-T-40/30	40	30
ACBS-T-45/40	45	40

#### ACBS-W: selection chart for WRAPAROUND version

Description	Cable diameter*	
	maximum	minimum
ACBS-W-18/12	18	12
ACBS-W-24/18	24	18
ACBS-W-30/22	30	22
ACBS-W-40/30	40	30
ACBS-W-45/40	45	40

\*Note: for double jacketed cable the cable dimensions refer to the inner jacket dimensions.



## CBSM

### Blocking system for small cables

The CBSM system is a heat-shrinkable sleeve specifically designed to act as an air pressure or water block on low pair count cables.

It consists of a heat-shrinkable sleeve internally coated with an adhesive designed to flow between the cable pairs and form an air/water block.

The product may be used on polyethylene or PVC jacketed cables and accommodates 10 and 20 pair cables. The sleeve can be installed easily using only a standard joiner's torch.

The product is supplied fully kitted with aluminium foil, cleaning tissue and abrasive strip.

#### Dimensions (in mm)

Description	Cable dia. min.	Cable dia. max.	Approx. cable capacity	Jacket opening	Sleeve length
CBSM-110 kit	7	12	10 pair	30	135
CBSM-210 kit	10	18	20 pair	40	135

# K CAPS

## End seal caps for pressurized cables

TE Connectivity's 102K heat-shrinkable end cap has been specially developed for use on pressurized cables. It is a rigid heavy-wall polyolefin moulded part internally coated with an adhesive that bonds to polyethylene and metal cable jackets.

Available with or without a valve, this cap seals pressurized cables.

The cap is supplied in its expanded state and reduces to a predetermined size on application of heat in excess of 125°C. Additionally, the internal adhesive ensures complete protection, keeping pressure in and water out.



Specified by many telecommunications authorities, the 102K cap is well accepted by many similar organisations for its reliability in service and ease of installation.

### Dimensions (in mm)

Description	Cable dia. max.	Cable dia. min.	Length
102K011-37/123 (S50)	16	9	60
102K022-37/123 (S10)	26	16	85
102K033-37/123 (S10)	44	26	95
102K049-37/123 (S5)	71	44	125
102K050-37/123 (S5)	90	71	150

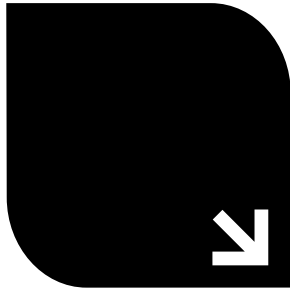
### Ordering examples

102K-033-37/123 (S10) (without valve)

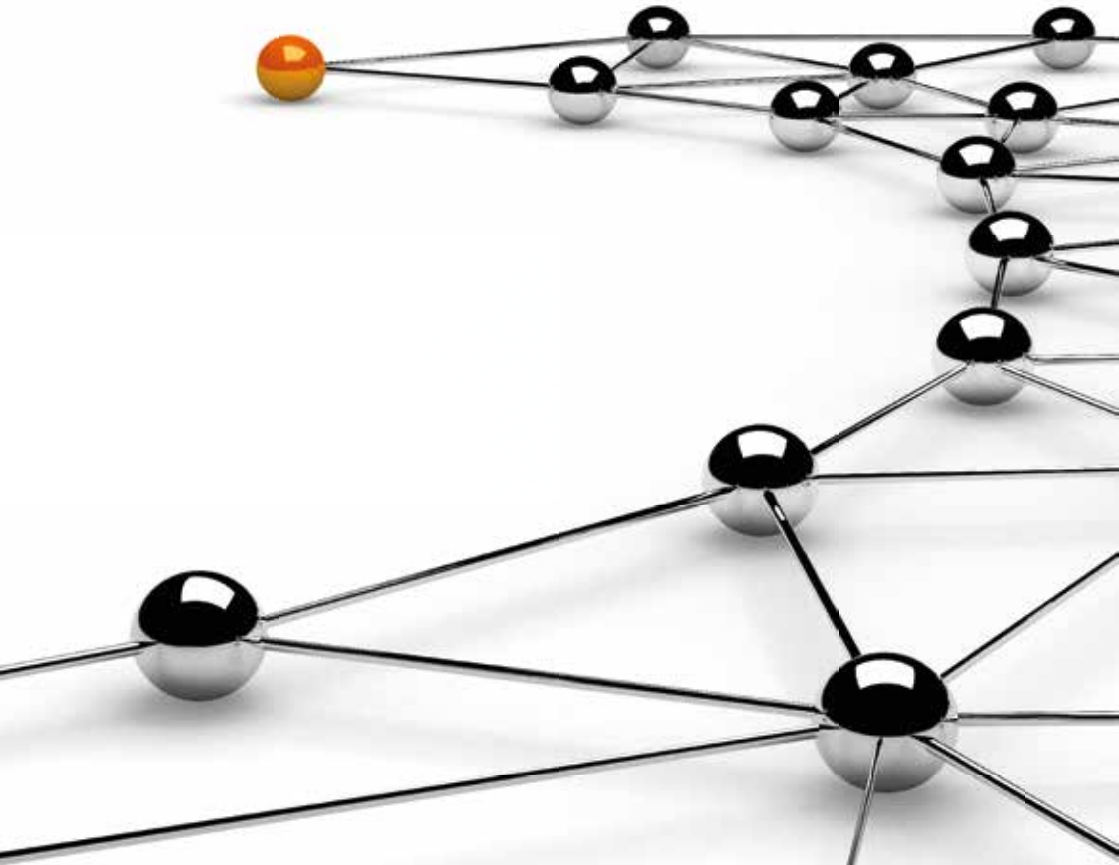
102K-033-37-01/123 (S10) (with valve)







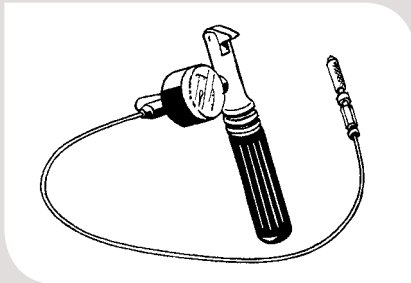
Duct seals/  
cable  
feedthrough





TDUX is a unique inflatable wraparound duct sealing system for permanently sealing telephone cable ducts in order to prevent the leakage of water from the duct into exchange vaults or manholes. It has been developed for use with plastic, concrete or steel ducting wall-feedthrough systems. It can be used with polyethylene or lead-jacketed cables.

### Installation tools



#### TDUX-IT-16

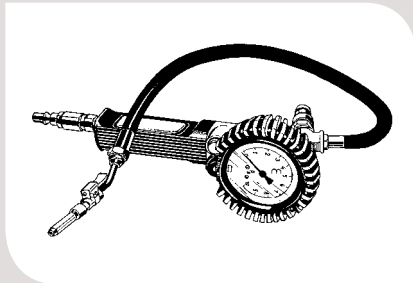
An inflation tool using CO<sup>2</sup> gas cylinders, containing 16 g of CO<sup>2</sup> sufficient to inflate a minimum of 3 TDUX-100 duct seals in vacant ducts. The tool has an ON/OFF switch and an automatic pressure monitoring system to guarantee the required inflation pressure of 3.0 ± 0.2 Bar.

# TDUX

## Inflatable sealing system for telephone cable ducts

### Features

- Fast and easy to install, even in congested enclosures
- Very flexible and reliable wraparound sealing system
- Can be installed even if cable or duct is oval
- Wide application cable range for each size
- Seals vacant ducts and ducts with one or two cables. A clip is available to seal multiple cables
- Can be installed while water is flowing out of the duct
- Water- and airtight up to 50 kPa.
- Environmentally friendly and non-toxic
- Resistant to chemicals and bacteria
- Easy and fast removal
- Various sizes available for sealing a wide range of ducts and cables

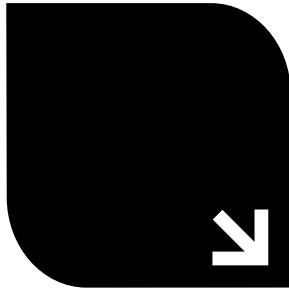


#### TDUX-IG-SR-AS

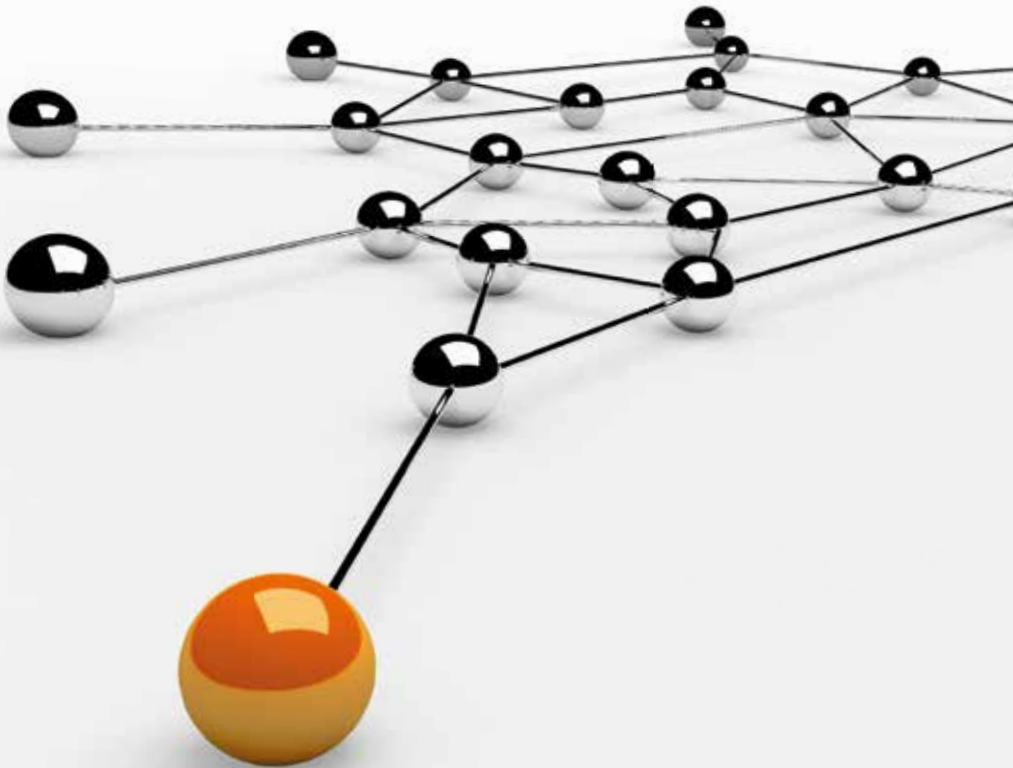
An inflation gun for connecting to a pressurized air bottle, pump or compressor, having an outlet pressure of 4 to 10 Bar to feed the inflation gun. A safety relief valve and audio signal device help in the installation.







Copper  
connectivity  
for central office  
and street cabinet  
applications





## FIST-CAB3

Street cabinet for  
broadband applications

The outdoor cabinet FIST-CAB3 houses active as well as passive equipment in a telecommunication network.

It is constructed of aluminum profile frames and double wall panels (AlMgSi05). All other elements exposed to external environmental conditions are stainless steel 304 and 316.

The cabinet can be constructed to dimensions according to the specific needs of the customer.

The cabinet concept is modular and allows replacing all different parts in case of damage, for example as caused by car accident. Also the cooling devices can be replaced or exchanged in accordance to the thermal needs inside the cabinet.

### Features

- Closing of all gaps
- Special handle and locking device
- Standard or electronic lock
- Extra reinforcements in cabinet profiles
- No mounting screws outside the enclosure
- Use of security screws or hidden screws
- Full length closed hinge
- Integrated EMC shielding
- Grounding bracket
- Copper and fiber cable termination kits
- Sensors (temperature, access, humidity, fire...)
- Lifting eyes
- Ventilated battery compartment
- Heater module managed by low temperature / humidity sensor
- Computer / laptop table
- Document holder
- Cabinet labeling and identification

# Unicab-Vario

## Outdoor active cabinet



The Unicab-Vario cabinet is a double-walled, weatherproof, protective outdoor cabinet that accommodates electronic equipment, guaranteeing reliable functionality.

The Unicab-Vario cabinet protects components against the effects of weather and extreme temperatures.

### Applications

- Telecommunications: collocation, xDSL, UMTS, cable television, DLC, RSLU
- Electronics: measurement and control
- Traffic control technology

### Features

- Maintenance-free surface made of environmentally resistant plastic
- Constructed of recyclable materials, the double-walled cabinet assures optimum interior climate control
- Light-weight in comparison with metal cabinets of the same size and functionality
- Can be delivered completely assembled or as a kit
- Passive or active cooling systems available
- Flexible mounting arrangements for components, meeting either ETSI or 19-inch standards
- Installs over existing housing and plinth providing economic alternative to new builds
- Replacement of external housing parts possible without interruption of service



# FlexDSX Cross-Connect product

**Solutions for E1 (2Mbps)  
copper DDFs in mobile  
and fixed networks**

The modular FlexDSX product family allows flexible, cost-effective network growth, by allowing providers to defer capital expenses until network and service growth requires additional equipment.

## Applications

- Central offices, remote switch, hub nodes, cabinets
- Placed between digital multiplexing, switching and transmission equipment
- Wireline, wireless, private networks and collocation applications
- 3G network extensions
- UMTS roll-outs
- LTE

## Features

- Increased density and modular design
- Higher number of terminations per rack contributes to typical floor space savings of up to 50 percent
- 4-pack modules can be installed in a chassis and loaded with individual jack cards as network and service growth require
- Pre-terminated high-density bays maximize termination density of the network
- Maintenance time savings
- Technicians save time by monitoring both sides of a circuit from a single test access point
- Includes flashing LEDs and designation strips for easy and quick troubleshooting
- Allows addition or removal of network elements without affecting service
- Long-term connection reliability
- FlexDSX solutions help prevent downtime and increase quality and service availability
- Uses patented bantam die-cast jacks



# LSA-PLUS

## IDC connectivity



LSA-PLUS stands for a technically and economically superior quick connection technique for all communications networks.

The LSA-PLUS connection technology ensures a high level of contact reliability over decades even under the most difficult of environmental and climate conditions.

The LSA-PLUS portfolio is continuously adjusted to the increasing requirements for telecommunications networks. In addition to the industry-standard Series 2 modules, the portfolio includes new extremely high-density modules that save valuable space in both indoor and outdoor applications.

### Features

- Reliable LSA-PLUS quick connection technique that has been tried and tested worldwide
- Reliable and economical networking
- Standardized mounting dimensions enable universal mounting
- Compact and space-saving
- Extremely easy to handle when mounting, minimising installation work
- Huge savings on time and costs
- Satisfied users
- Quality that has been proven over decades
- Universal suitability for internal and external use
- Low operating and maintenance costs
- Integrated cable management

### Modules

- Connection modules available in eight- and ten-pair configurations with parallel test access or overvoltage protection contact
- Eight- and ten-pair modules with disconnection points for opening the line, testing in both directions or insertion of graded protection elements
- Mount on back mount frames
- Mount on profile rods
- Suitable for use in all xDSL and ADSL2 + circuits

### Protection

- Three-point protection: pure overvoltage protection (high-voltage or secondary protection)
- Five-point protection: overvoltage protection combined with current protection
- Five-point protection: graded protection (high voltage and secondary protection with current protection)



## RZX-3 digital signal cross-connect

Solutions for DS3  
(444.736mpbs) copper DDFs

The RZX-3 cross-connect modular product is a total system solution with increased density and complete modularity using midsize jacks also known as mini-WECO/440 jacks/coaxial jacks. The 4-inch-high chassis contains up to 32 circuit frames in a 19-inch width, or 36-circuit frame in a 23-inch width, offering greater density than any other midsize jack interface in the industry. The RZX-3 family is fully modular throughout the chassis, circuit frames, and jacks for simplified and cost-effective restoral capabilities.

This high-density DSX includes superior cable management with a rear-adjustable jumper tray to control cable routing and a hinged door to prevent cables from spilling outside the framework.

Permanent equipment cable connections at the bottom of the chassis are recessed back inward and out of the way for quick, easy access to cross-connections. Optional rear LEDs for positive identification of circuit rearrangements is also available.

### Features

- Highest density
- Flexibility
- Durability
- Reliability
- Performance
- Cable management
- Make-before-break switching contacts
- Jack access option

# Flexcab

## Metal street cabinets



The Flexcab metal street cabinet, designed for FTTC applications, accommodates passive fiber and copper connectivity as well as electronic equipment.

The cabinet's basic design consists of:

- A small door with double locking option (to be equipped with a profile cylinder locks)
- One small compartment to accommodate electronic equipment on a pre-installed mounting plate
- A large compartment suitable for a 19-inch or ETSI rack for installation of typical telecommunication panel equipment; space for copper connectivity racks
- Battery panel below the base plate
- Access to battery compartment only through door

The interior racks as well as entry points for copper and fiber cables can be designed according to customer specifications.

Flexcab cabinets meet all the requirements for outdoor environments, such as weather-protection (heat, cold, moisture, water), protection against burglary, etc.

### Features

- Double wall construction for improved heat removal
- Outer walls made of double-walled aluminum
- Inner construction consists of powder-coated aluminum
- 19-inch/ ETSI stainless steel frame for equipment mounting
- Aperture angle of the doors up to 140°
- Hinges and all screws inaccessible from outside
- Burglar resistance (according to WK2 security standards)
- Removable cabinet body without interruption of service
- Removable (divisible) cabinet base (allows replacement in case of damage due to violence)



# Flexcab

## Polycarbonate street cabinets

TE Connectivity's Flexcab polycarbonate series of street cabinets is based on five standard sizes which have the same appearance but different heights and widths.

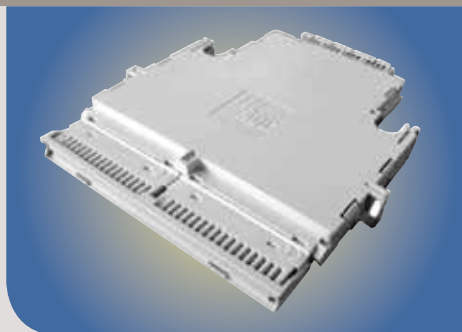
- Uniform design
- User-oriented cabinet dimensions
- Made of fiberglass reinforced polycarbonate, weather-proof and robust design
- No additional heat insulation required as material prevents the accumulation of condensation within the cabinet
- Suitable for an operation temperature of  $-20^{\circ}$  to  $+60^{\circ}$  and a relative humidity of 6 to 95%
- Protection class of IP44 or IP54

### Features

- An extensive product range of up to 30 different cabinet dimensions can be offered
- Multiple cabinets can be arranged sequentially (see image no 1)
- High customized configuration of interior
- Anti-graffiti paint
- Standard color RAL 7038
- Service life of at least 25 years
- Mechanical material stability and concealed construction of supporting elements give high protection against burglary
- Single and double locking is possible

# xDSL splitter

## 8-port module



The 8-port splitter module gives the opportunity to integrate the function of an xDSL-splitter into main distribution frames or cross-connection cabinets. Its basic design is for deployment in 95 mm space profile rod systems. (With additional use of accessories it is possible to mount it into other frames).

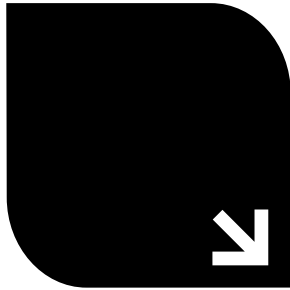
### Features

- Compact 8-port design applicable for all DSLAM port counts
- Thin layer plastic gives high density
- Short installation time; easy as easy to click on profile rod system
- 17-pole edge connectors are based on LSA-PLUS technology
- 8-port splitter available with all ITU standard splitter cards

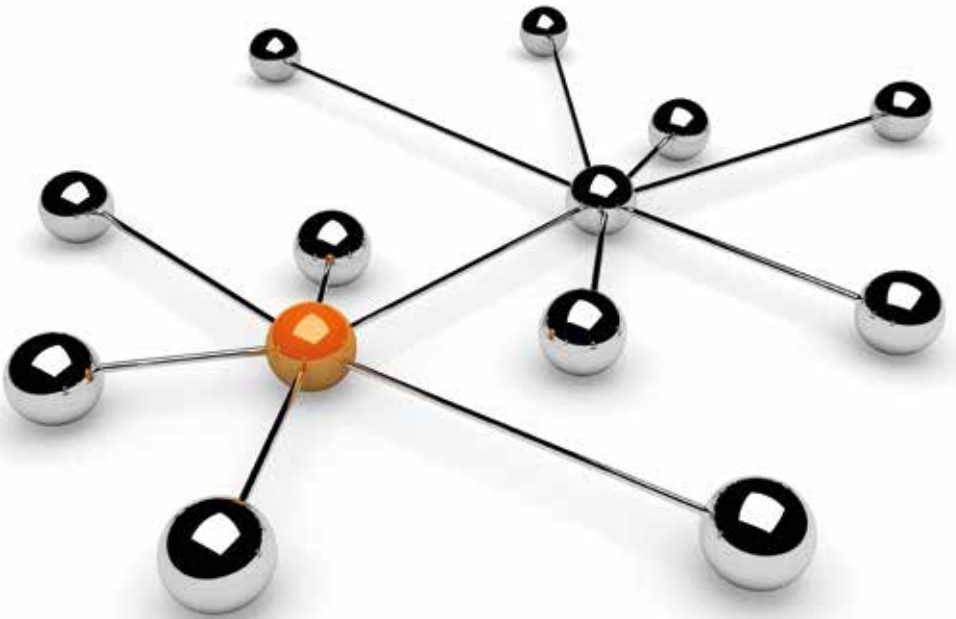
The ports on the back side of the splitter module must be connected to the DSLAM by 8-apir cables with or without shielding drain wire. The connectors on the front side offer ports for low frequency application (ISDN or POTS) on the left side; the right side is used to connect subscriber lines carrying the mixed signal.

All connectors can be terminated by using the standard LSA-PLUS insertion tool. Change of modules can easily be done by removing the edge connectors. While changing the modules, the wires remain terminated to all connectors.





## Copper splicing systems





Tel-Splice connectors provide an economical and reliable means of splicing telephone cable conductors.

## Tel-Splice

### Telephone cable splice connectors

#### Advantages

- Durable - highly resistant to moisture and chemical attack; flame retardant models available
- Economical - lower applied cost; IDC (installation displacement connectors), gas tight connections, no pre-stripping required
- Versatile - available in either 2-wire or 3-wire, half tap and clear and cap in loose piece or cartridge

#### Applications

- Load coils
- Stub cables
- Ready access terminals
- Trunk and tool cables

#### Technical specifications

- 108-6021 all 2-wire, 3-wire, and 1/2 tap versions, except flame retardant
- 108-6042 all flame retardant versions
- 108-6075 clear and cap
- MSDS for filled product 125-6332



# Tel-Splice

## Telephone cable splice connectors

Operating temperature for TUS Tel-Splice 2-wire, 3-wire, and 1/2 tap is -40°C to 90°C except for flame retardant (F/R) versions which have a range of -40°C to 100°C

Conductor range is 19 AWG - 26 AWG.  
Maximum insulation O.D. for TUS Tel-Splice is 0.080"/2.03mm



Economy (ET) tool, 2790162-1



Crimp handle gauge, 230495-1



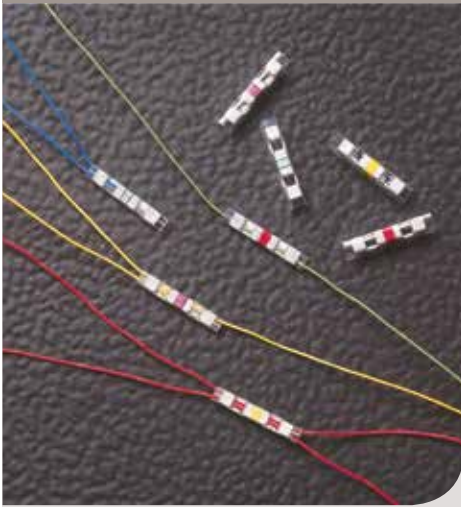
Welded Tel-Splice, 1490018-1



Pro-crimper, 58610-1



Tel-Splice connector applicator  
2-wire, 1/2 tap sticks: 1490017-1  
3-wire sticks: 1490018-1



# PICABOND

## Connectors

PICABOND connectors provide an economical and reliable method for splicing multi-conductor telephone cable.

PICABOND connectors are manufactured from tin-plated phosphor bronze and tin-plated brass with bonded polyester insulation. Color-coding of the insulation is provided to denote wire size and weather-resistant type. Any solid core wire, 28 to 19 AWG (0.32 -0.90 mm), with pulp, paper or plastic insulation can be spliced.

Lightweight and compact, PICABOND splices reduce the space required over other splicing techniques by up to 33%. In-line, butt, tap, and bridge splices can be made with these connectors.

### Advantages

- Saves time: no pre-stripping or cutting required, can tap without service interruptions, eliminates "turndowns "
- Versatile: color-coded to indicate size and type of wire; used for butt, in-line, bridge and half-tap applications
- Economical: lower applied cost, minimum training required, higher application rates

### Applications

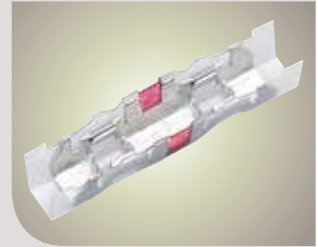
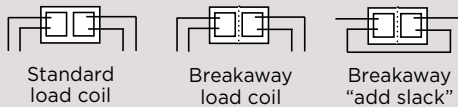
- Splicing
- Central office
- Manhole
- Aerial pole
- CEV
- Pedestal
- Demarcation points

# PICABOND

## Connectors

### Standard connectors

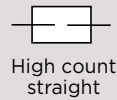
#### Typical splicing applications



Standard connector



Load coil connector



High count straight



Mini connector

#### PICABOND

#### tooling selection guide

##### For standard and load coil connectors

VS-BA  
VS-3  
MA-6U  
MA-6B  
MR-1  
MA-10  
MVS-3

##### For Mini Connectors

MA-10  
MVS-3

# PICABOND

## Connectors

### **PICABOND tools and accessories**

*VS-3 and VS-3A hand tool and tool holder (to be used with loose-piece standard and load coil connectors)*

### **MVS-3 and VS-3A hand tool**

*(to be used with loose-piece mini connectors)*

These tools feature ratchet control which provides positive crimping action.

The cycle must be completed before the handles are released.

**The VS-3 and VS-3A hand tools** will accept all loose-piece standard and load coil connectors. The MVS-3 tool will accept all loose-piece mini connectors.

**The tool holder** for use with VS-3, VS-3A, and MVS-3 hand tools is specifically designed to clamp directly onto the strand allowing the craftsman free use of both hands for tool operation. The holder is supplied with an adjustable locking device which provides total insulation between the strand and tool. In addition to aerial applications, it can be used for buried and underground installations.

### **MA-6 applicator kit**

*(to be used with loose-piece standard and load coil connectors)*

### **MA-6B applicator kit**

*(to be used with loose-piece standard and load coil connectors)*

**MA-6U applicator kit** *(to be used with strip or loose-piece standard and load coil connectors).*

These applicators are ideally suited for all large count (in-line or butt) bridging

and tapping operations using standard strip foam and load coil PICABOND connectors.

Half-tap splicing can also be done with no interruption of service. The tool can be mounted conveniently on all cable (aerial, buried, vault, or underground). These applications also feature ratchet control.

### **MR-1 (MR-1U) hand tool and holder**

*(to be used with loose-piece standard and load coil connectors).*

This tool is designed to crimp PICABOND connectors in through, tapping and bridging operations. The tool can be hand-held or it can be used in the tool holder. The tool features two wire supports, a set of dies (anvils and crimpers), a wire cutter and a handle assembly.

### **MA-10 applicator kit**

*(to be used with strip mini connectors).*

This applicator provides high-speed reliable straight splicing, one pair at a time. One complete revolution of the handle accomplishes all required operations: wire cutting, crimping, and indexing the next two connectors into position for the following pair. This tool can be used for all aerial, buried, vault, and underground applications.

### **PICABOND tooling accessory items**

Wire support, replacement kit, extension bar, crimp height gage, cleaning kit, cleaner-lubrication, shear pin kit, cutter blade kit, carry case, wire hold back

# AMP STACK III

## Modular connection system



AMP STACK MARK III 25-pair connectors are designed to mass terminate communication cables of solid copper or aluminum conductor wires ranging from 0.32 to 0.8 mm in diameter (28 to 20 AWG).

The connectors are equipped with insulation displacement tin plated contacts that provide a gas-tight termination and cover different insulation types like pulp, paper or plastic up to 1.65 mm. external diameter. The product line includes dry testing, and pre-sealed versions.

### Features

- Connectors for straight splicing and tapping of communication cables
- Pluggable/bridge module to connect/disconnect modules
- Dry testing versions available for simultaneous electrical testing during application
- Pre-sealed versions with sealing gel for environmentally protected connections
- Plastic adapter to correctly place the connector in the crimping tool is included in the packaging

### Materials

- Housing, cover and base: polycarbonate
- Contacts: phosphor bronze, tin plated
- Cut-of blade: stainless steel
- Application tooling plastic adapter: ABS

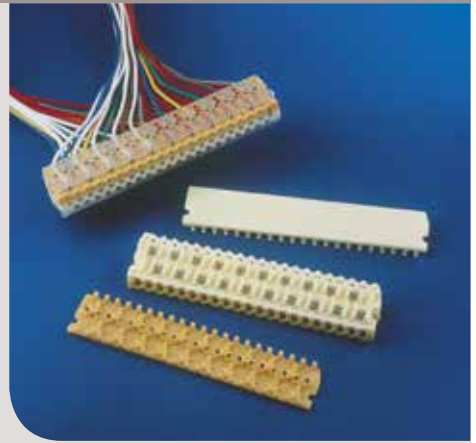
# AMP STACK III

## Modular connection system

	Module type	Kit components	Color
25-pair connectors Dry and retardant	Splicing	Base, body assembly and cover	Gold, gold-ivory an ivory Transparent, gold-ivory and transparent
	Pluggable/bridge	Protector/body assembly and cover	Red/light blue-ivory and ivory Red/light blue-ivory and transparent
	Half-tap	Base, Body assembly and cover	Green, green-ivory and ivory Green, green-ivory and transparent
25-pair pre-sealed connectors	Splicing	Base, body assembly and cover	Gold, gold-ivory and ivory Transparent, gold-ivory and transparent
	Pluggable/bridge	Protector/body assembly and cover	Red/light blue-ivory and ivory Red/light blue-ivory and transparent
	Half-tap	Base, body assembly and cover	Green, green-ivory and ivory Transparent, green-ivory and transparent

# AMP STACK IV

## Modular connection system



The AMP STACK MARK IV connector family is designed to mass terminate communication cables of solid copper or aluminum conductors ranging from 0.4 to 0.9 mm in diameter (26 to 19 AWG).

The connectors are equipped with insulation displacement tin plated contacts that provide a gas-tight termination and cover different insulation types like pulp, paper or plastic up to 1.95 mm. external diameter.

Mark IV products include dry, and pre-sealed versions in 10-pair modules.

### Features

- 10-pair modules for straight splicing and tapping of communication cables
- Built-in wire retainer to protect against axial pulling and to avoid wire pop outs during reparations
- Sealing gel protects from the environment

### Materials

- Body housing, cover and base: polycarbonate
- Contacts: phosphor bronze, tin plated
- Cut-off blade: stainless steel

	Module Type	Kit components	Color
10-pair connectors Dry	Splicing	Base, body assembly and cover	Gold, gold-ivory and ivory Transparent, gold-ivory and transparent
	Half-tap	Base, body assembly and cover	Green, green-ivory and ivory Transparent, green-ivory and transparent
10 Pair pre-sealed connectors	Splicing	Base, body assembly and cover	Gold, gold-ivory and ivory Transparent, gold-ivory and transparent
	Half-tap	Base, body assembly and cover	Green, green-ivory and ivory Transparent, green-ivory and transparent

# AMP STACK

## Assorted tooling kits

### AMP STACK Mark III tooling kit Terminates AMP Stack Mark III 25-pair connectors.

- Carrying case
- Hand tool
- Splicing head
- Single insert tool
- Check comb
- T-pedestal
- Double point tester connector
- Instruction sheet

There are several clamps for different needs. See the clamp section of this document for specifications and compatibility.



### AMP STACK Mark IV Terminates AMP Stack Mark IV 10-pair connectors. Standard tooling kit

- Carrying case
- Hand tool
- Splicing head with fixed T-pedestal
- Single insert tool
- Check comb
- 10-pairs separating tool
- Double point tester connector
- Insulation sheet



### AMP STACK Mark IV Terminates AMP Stack Mark IV 10-pair connectors. Universal tooling kit

- Carrying case
- Hand tool
- Splicing head without T-pedestal
- Single insert tool
- Check comb
- 10-pairs separating tool
- Double point tester connector
- Instruction sheet

To use jointly with the universal clamp bar Assembly 1-525421-2.





# AMP STACK

## Assorted tooling kits

### AMP STACK Mark IV

#### Universal tooling kit

Terminates AMP Stack Mark IV 10-pair connectors.

- Carrying case
- Hand tool
- Splicing head without T-Pedestal
- Single insert tool
- Check comb
- Double point tester connector
- Holder bar
- Instruction sheet

Holder bar recommended for small cables.  
All AMP STACK Mark IV universal tooling kits are compatible with the 10-pair piece-out fixture (see AMP STACK application tooling accessories).



### AMP STACK Mark IV

#### Economy tool



# AMP STACK

Assorted tooling kits  
and accessories



T-Pedestal



Single separation tool

# AMP STACK

## Assorted tooling kits and accessories

Clamps for AMP STACK application tooling

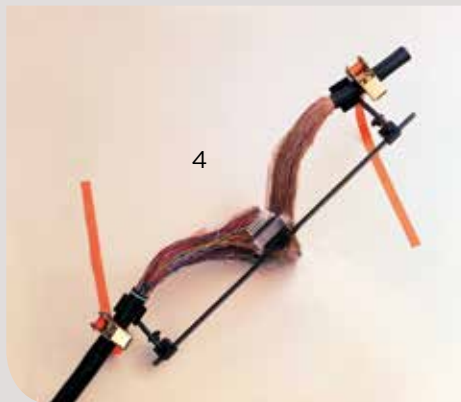
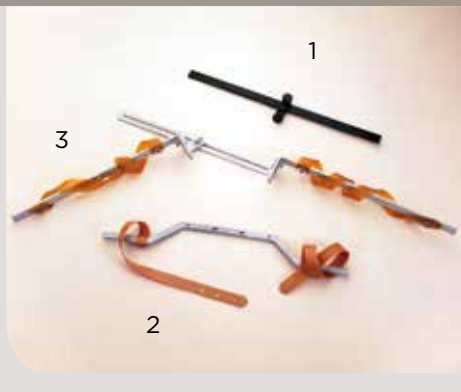


Fig.	Clamp	Mark III	Mark IV Standard	Mark IV Universal	Length (mm)	Remarks
1	Bar clamp	•	•	(1)	515	Low cost. Rubber strap not included
2	Holder bar	•		(2)	545	Low cost. Narrow working spaces
3	Holder bar adjustable	(2)		(3)	max.1.330	Adjustable to angled cables
4	Universal assembly	•	•	(1)	590-960	Adaptable to environment.
5*	Picabond clamp	•	•	(1)	457/762	Must use adapter (Part number 356152-1)

(1) Requires T-pedestal (P/N 790136-1)

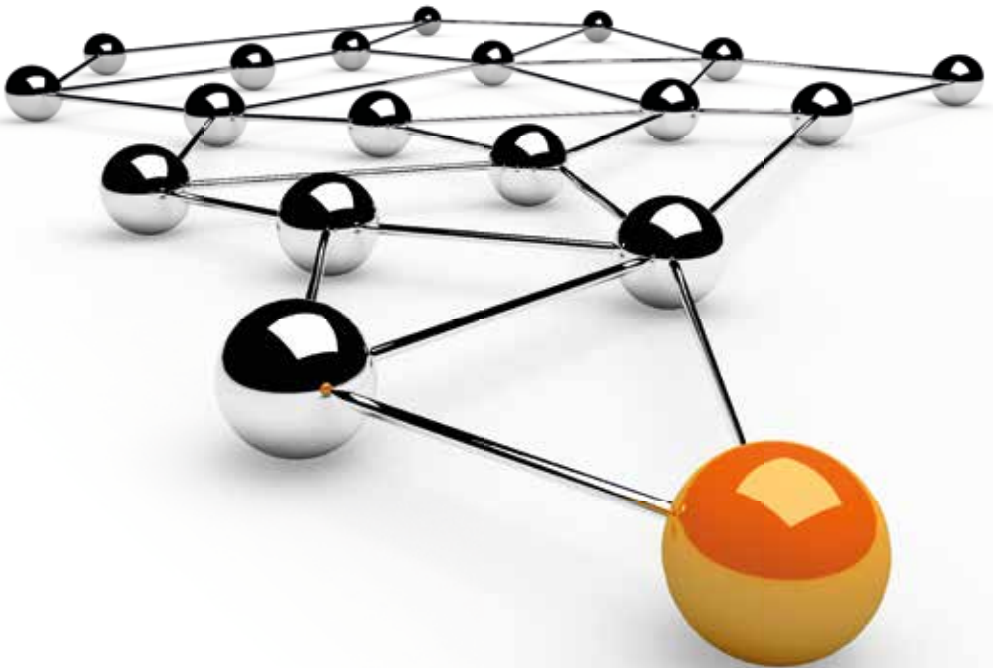
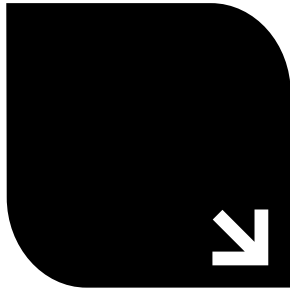
(2) Double splicing

(3) Four splicing heads Mark IV

\*Not pictured

· Clamp compatible with corresponding application tooling kit







The GSIC gel closure is a weatherproofing system sealing jumper-to-feeder and jumper-to- antenna connectors, exposed to the outside environment.

The housing contains an innovative gel material and provides an efficient moisture block.

## GSIC

### Gel seal for in-line and antenna connectors

The ease of installation and the long term protection makes it a reliable and cost effective solution.

- Sealing properties of the gel provide a reliable protection over a wide temperature range (-30°C/+ 60°C)
- Wraparound and no disconnection of the connector
- Quick and easy to install
- Easy removable and re-usable
- Gel material provides an effective barrier against ingress of water and other contaminant's - IP rating 68
- No tape, no mastics or tools required for installation and removal
- Available for several cable sizes

#### In-line transitions (dimensions in mm)

Product description	Cable range			Max. connector dimensions
	Jumper	Feeder	Length	Diameter
GSIC-1/2-7/8	13-17	27-29	147	43
GSIC-1/2-1 1/4	13-17	38-40	187	56
GSIC-1/2-1 5/8	13-17	49,5-52	208	68

#### Antenna transitions (dimensions in mm)

Product description	Cable range	Maximum connector dimensions			
		Jumper	Length	Diameter	Nut diameter (hex/circular)
GSIC-1/2-ANT-S	13-17	60	26,6	32	12,5-16
GSIC-1/2-ANT-L	13-17	117	26	32	16-23,5

# VST

## Gel closure for sealing F connectors



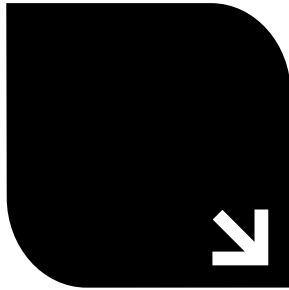
The VST gel closure system provides a corrosion-resistant sealing of an F-connector exposed to the outside environment. The housing contains TE Connectivity innovative gel material and provides an efficient moisture block. The ease of installation together with the long-term protection makes VST a cost effective solution.

### Features

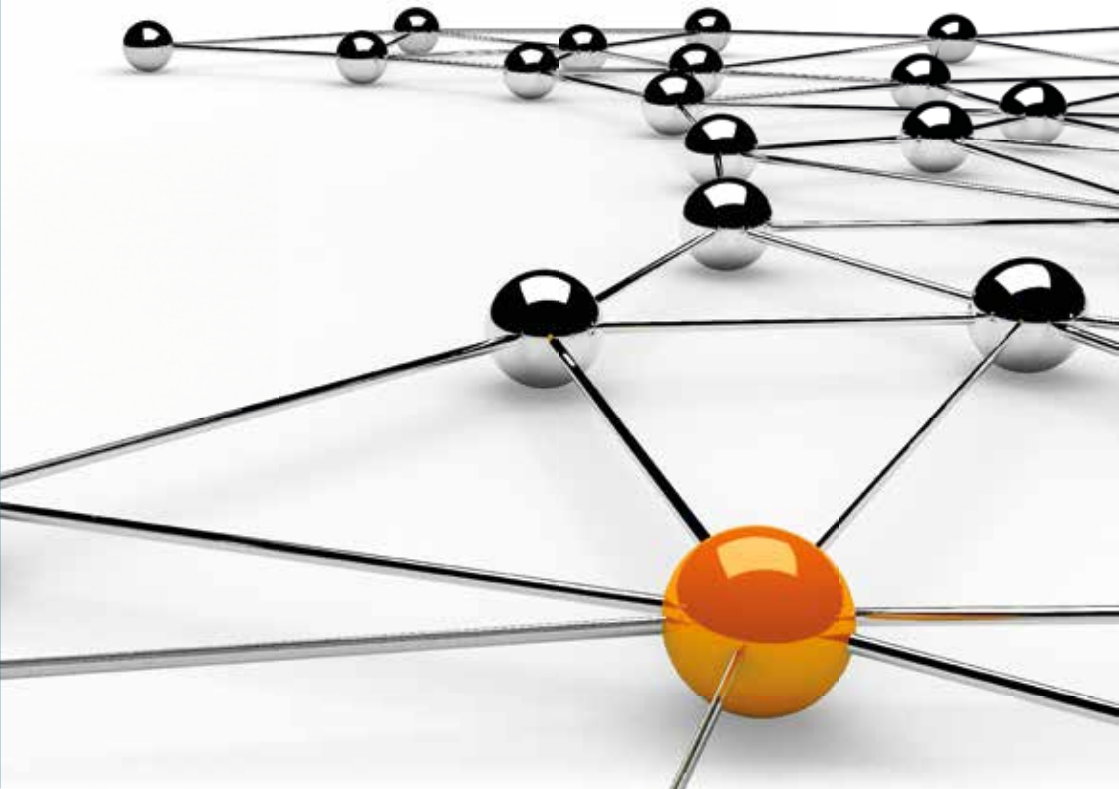
- Long-term environmental protection.
- Reduces unnecessary trouble calls
- One step, easy installation
- No mixing, tapes, mastic or tools are required
- One size fits cable diameters from 4 to 7 mm
- Re-usable up to 20 times







Miscellaneous  
products  
and information





## Heat-shrinkable tubing

TE Connectivity, the pioneer in the development of heat-shrinkable products, has been responsible for the creation of new types of improved polymeric and elastomeric materials which possess unique properties through the modification of the raw material by the application of radiation chemistry. Such polymers, subjected to high energy electron radiation possess characteristics which go far beyond the normal physical limits of untreated plastics.

### Typical advantages derived from this technology include

- Cold flow resistance
- High temperature stability
- High mechanical strength
- Chemical resistance
- High flexibility
- Flame resistance
- Abrasion resistance
- High dielectric strength

Supplied to a customer in the expanded form, ranging in diameter from 0.5 mm to 102 mm, these non-melting polymer materials shrink when heated, fitting tightly over uniform or irregularly shaped objects, ensuring electrical and mechanical protection.

Careful synthesis provides materials which can selectively perform for specific applications. The addition of adhesives, fiber and fabric materials means they can be used in the most difficult situations.

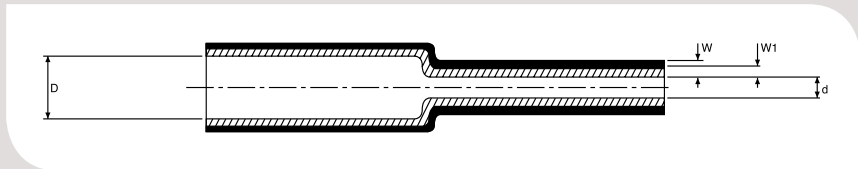
### Typical use of the range of tubings include

- Primary electrical insulation
- Cable jacketing and repair
- Strain relief
- Component encapsulation
- Waterproofing
- Identification by color coding
- Packaging
- Corrosion protection
- Environmental/mechanical protection

# ATUM

## Semi-flexible, dual wall, heat-shrinkable tubing

ATUM is a semi-flexible, heat-shrinkable tubing with an integrally bonded meltable adhesive inner lining designed to provide moisture-proof encapsulation to a wide variety of substrates, such as electrical wire splices, cable jackets, wire breakouts and electrical components.



Dimensions (in mm)									
Ordering size		Inside diameter				Recovered wall thickness			
		D Expanded as supplied		d (max.) Recovered after heating		W (nom.) Total wall		W1 (nom.) Meltable wall	
3:1	4:1	3:1	4:1	3:1	4:1	3:1	4:1	3:1	4:1
3/ 1	4/ 1	3	4	1	1	1.00	1.00	0.5	0.5
6/ 2	8/ 2	6	8	2	2	1.00	1.00	0.5	0.5
9/ 3	12/ 3	9	12	3	3	1.40	1.40	0.6	0.6
12/ 4	16/ 4	12	16	4	4	1.75	1.75	0.7	0.7
19/ 6	24/ 6	19	24	6	6	2.00	2.25	0.8	0.8
24/ 8	32/ 8	24	32	8	8	2.50	2.50	1.0	1.0
40/13	52/13	40	52	13	13	2.50	2.50	1.0	1.0

Typical ordering data:

*Black Atum 3:1 tubing with an expanded inside diameter of 24 mm: ATUM 24/8-0.*

The largest size which will recover snugly over the component to be covered should be ordered. The wall thickness of the tubing will be less than specified if recovery is restricted during shrinkage.

Standard length: 1.2 meters  
 Standard Color: Black-0  
 Other lengths and sizes are available.



## RNF-3000

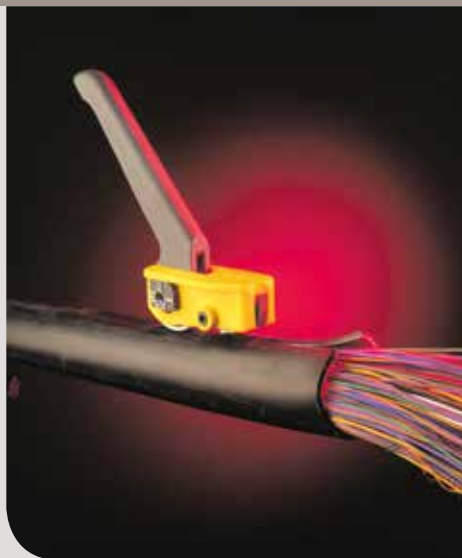
**General purpose, flexible,  
3:1 heat-shrinkable tubing**

Thermofit RNF-3000 is a thin-wall, highly flame retarded, general purpose tubing with a 3:1 shrink ratio. Its unique blend of electrical, physical and chemical properties makes it suitable for a wide range of applications including insulation, strain relief, identification of wires, cables, terminations, pipes and electrical and electronic components.

The largest size that will recover snugly over the component to be covered should be ordered. The wall thickness of the tubing will be less than specified if recovery is restricted during shrinkage.

# KMS-K

## Cable sheath cutter



The KMS-K sheath cutter is a simple, easy-to-use device that gives effortless slitting, with no sideslip, on any diameter of plastic cable at any point.

It comes in a handy plastic case with two attachments for small-diameter cable slitting and an Allen key to remove the cutter socket retention cap.

### Features

- One cutter for all plastic cable sheath diameters
- Cuts at any point in the cable
- Adjustable cutting depth control
- Small and handy
- Accident-proof
- Easy knife replacement
- Maintenance-free

### Kit content

- Cable sheath cutter
- Adapter for cables up to  $\varnothing$  25 mm (grey)
- Adapter for fiber optic cables (yellow)
- Operation instruction
- Allen key

### Spare parts

- Spare blades (min. order qty: 5 pcs)  
(to be ordered separately).

### Ordering information

KMS-K-INT	(synthetic version)
KMS-INT	(metal version)
KMS-Ersatzmesser	(spare blades)



The CV-1981-MK2 and the CV-1983 Thermoguns are robust, double insulated, heavy duty hot air tools.

A motor driven fan forces air through the heating element which is enclosed in a stainless steel barrel and safety guard. The thermoguns are fitted with a Triac Power Control which varies power to the element by means of a control knob

## CV-1981MK2/ CV1983

### Portable hot air heater

situated at the rear of the gun. Hence output temperature is adjusted in this way. Output wattage is therefore variable. An integral stand allows the CV-1981-MK2, and the CV-1983 to be used as a bench mounted tool. The thermogun is available in a variety of models, and is suited to a wide range of heat shrink applications. The various push on reflectors of the PR series are easily and quickly attached to the gun, allowing use with a wide range of heat shrink products.

These reflectors can be found on flier ref: TFAE0039. The CV-1983 has a bigger wattage element, and so a larger barrel. It therefore pushes through more air, as larger diameter results in greater airflow. The same temperatures are reached as the CV-1981-MK2. The CV-1983 would be used for larger tubing and moulded parts. To use the PR range of reflectors with the CV-1983 it is necessary to order a barrel adapter.

#### Technical specification

Electrical Supply-CV-1981-MK2/CV-1983	230V
Power Consumption-CV-1981-MK2	1600W
Total System Noise-CV-1981-MK2	65dB
Length-CV-1981-MK2	340mm
Weight-CV-1981-MK2	1.3 kg
Air Flow-CV-1981-MK2	Max 230 l/min

# CV-1981MK2/CV1983

## Portable hot air heater

### Product range

All dual wall, single wall and moulded parts products.

Various devices/products.

For other TE Connectivity products discuss with product management.

Ordering information		
	Description	TE Connectivity PCN
Equipment CV-1981-MK2	CV-1981-120V1600W-CANMK2	A42716-000
	CV-1981-120V1600W-UKMK2	E95798-000
	CV-1981-230V1600WWMK2	813914-000
	CV-1981-230V1600W-SEVMK2	F25836-000
	CV-1981-230V1600W-UKMK2	340970-000
CV-1983	CV-1983-110V-2260W-UK	441753-000
	CV-1983-220V-2260W	773898-000
	CV-1983-220V-2260W-UK	985426-000
	CV-1983-220V-3060W	538361-000
	CV-1983-220V-3060W-UK	231866-000
CV-1983 Barrel Adapter	AD-1962	989172-000

Reflector selection guide		
Product range/ordering information	Description	PCN
Tubing from 6 mm to 25 mm diameter	PR-12	991973-000
Tubing up to 6 mm diameter	PR-13	991963-000
Large Solder Sleeve terminations	PR-13C	991974-000
Long lengths of tubing up to 25 mm diameter	PR-21	991984-000
Small moulded parts and tubing from 25 to 35 mm $\varnothing$	PR-24	991964-000
Moulded parts and tubing from 35 mm to 60 mm $\varnothing$	PR-24A	001989-000
Solder Sleeve terminations up to 7 mm $\varnothing$	PR-25	991965-000
Large Solder Sleeve terminations from 7 mm to 13 mm	PR-25D	989523-000
Miniature Solder Sleeve terminations and small products	PR-26	991967-000
Solder Sleeve terminations from 20 mm to 27 mm $\varnothing$	PR-33	997768-000
Solder Sleeve terminations from 12 mm to 20 mm $\varnothing$	PR-34	989111-000
Special narrow reflector for moulded part transitions (21.5 x 3.5 mm nozzle)	PR-51	113069-000



The HL2010E hot air heater is designed to work with a standard line voltage (230V) on a wide variety of TE Connectivity heat-shrinkable products. This tool is suitable for occasional use and is not recommended for applications requiring high duty cycles.

The tool supplies forced hot air with an adjustable heat setting to meet the requirements of many different installation situations. A three-position switch controls the air flow (150/300/500 l/min).

## HL2010E

### Low cost hand held heater

The HL2010E tool is switched on and off at the three-stage switch and the temperature can be continuously adjusted over a range of 50°C - -630°C by the pushbuttons. The temperature can be increased or reduced by 10°C steps. An LCD display shows the actual temperature.

Furthermore it requires only two reflectors to cover most applications of heat-shrinkable tubing and solder sleeve terminations.

There is an adapter available that allows the use of PR type reflectors.

#### Technical specifications

Voltage	230V AC
Power	2000W
Air flow	150-500 l/min
Weight	920g
Length	280mm
Noise	<70dB

#### Ordering information

Product	Description	PCN
HL2010E-230V tool	HL2010E-230V-Euro	C99451-000
	HL2010E-230V-UK	A22932-000
	HL2010E-Kit-230V-Euro	A23120-000

#### Reflector selection guide

HL1802E-074616-solder sleeve terminations reflector	832011-000
HL1802E-070519, heat-shrinkable tubings reflector	022611-000
HL1802E-070618, 9mm adapter	930321-000
HL1802E-070717, 14mm reduction nozzle	868259-000
HL1802E-070816, 20mm reduction nozzle	613361-000
HL1802E-ADAPT-PR, adapter for PR series reflector	444817-000
HL1802E-bench-std	717083-000



# FH-1630-PIE

## Torches

### General

TE Connectivity torches have a common handle which can be equipped with two different burner heads. Each burner head has a different nozzle; the 38 mm nozzle produces a bigger flame than the 28 mm nozzle. To connect the torch to the gas bottle, a hose, equipped with fittings on both sides, is screwed on.

### References

Handle	FH-1630-PIE
Burner head (nozzle of 28 mm)	FH-1630-BN28
Burner head (nozzle of 38 mm)	FH-1630-BN38
Torch hose (5 m long with fittings)	FH-1630-SW5

### Characteristics of the torch

#### Handle

- Allows propane and/or butane.
- Progressive regulation, stable flow rate.
- Flexible connection of gas tube to the handle to allow easy manipulation.

#### Burner

- Air regulator to obtain the right flame blue/yellow.

### Flame setting

To obtain a perfect result it is recommended to set the air regulator on the burner head such that following type of flame is produced: total flame length 250-300 mm, blue section 2/3 of flame length with 1/3 yellow tip.

### Burner selection per product

Product	Size	Burner
XAGA-500	up to 75/15	FH-1630-BN28
XAGA-500	up to 125/30	FH-1630-BN38
XAGA-550	up to 92/30	FH-1630-0020
XAGA-550	up to 200/50	FH-1630-0030
XAGA-1000C	up to 92/30	FH-1630-0020
XAGA-1000	up to 200/65	FH-1630-0030
CWST	up to 75/15	FH-1630-0020
CWST	up to 200/50	FH-1630-0030
RWPS	all sizes	FH-1630-0020
RCRS	all sizes	FH-1630-0020
RDRK	all sizes	FH-1630-0020
RPBS	all sizes	FH-1630-0020
RLSS	all sizes	FH-1630-0020
K-CAP/L-CAP	all sizes	FH-1630-0020
MWTM	all sizes	FH-1630-0020
CBSM	all sizes	FH-1630-0020
PEDCAP	all sizes	FH-1630-0020



## FH-1630-PIE

### Torches

#### Other available accessories

#### FH-1630-PIE torch handle

Torch handle with Piezo automatic ignition.  
 Gas flow with pressed trigger only.  
 Nozzle connection: bayonet socking.  
 Hose connection thread R3/8", left.

#### Nozzles for FH-1630-PIE handle

Description	Nozzle Ø (mm)	Gas consumption max. (kg/h)
FH 1630-PIE-BN28	28	0,46
FH 1630-PIE-BN38	38	0,90
FH 1630-PIE-BN50	50	2,00

#### Other accessories

FH 1630-PIE-LGS	Safety regulator	
FH 1630-PIE-R1	Regulator 3/8"	
FH 1630-PIE-SW10	Hose 10 meter	
FH 1630-PIE-SW5	Hose 5 meter	
FH-T001-NOZZLE-PP 14	14	0,055

(recommended for shrinking on outlets: e.g. VCKT, fiber products).











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