

FTTx

The demand for more content, greater speed and new communication protocols is exploding across many global markets. Services such as High Speed – Internet Access , Voice over Internet, Video-on- Demand-, and High Resolution TV Broadcasting represent substantial new revenue opportunities for Telecommunications Operators and Network suppliers. More and more service providers are finding that Fibre to the Home (FTTH) offers the ideal solution to the challenges of delivering high bandwidth to subscribers, economically and dependably.





3M supports FTTH implementation with an unmatched history of innovation in Fibre interconnect and management technology, either to leverage existing infrastructure or to install a completely new network. 3M has decades of experience in the telecommunications access network, a full and growing product portfolio and industry leading research and development resources.

3M provides a full range of physical media layer capabilities for FTTH implementation in the central office, across outside plant and at customer premises.

FTTx – Central Office

3M Telecommunications offers a wide range of fibre optic distribution frames for both horizontal and vertical applications. All of these products are approved by the major European Telecommunications Companies and already implemented in their networks. The modularity of these products allows installation within both cross connect cabinets and kerbside cabinets.

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5.1 Frames

3M™ RFO

Modular Cable head Block

Description

The 3M™ modular RFO is the latest generation cable head for central office optical frames.

The modular conception facilitates the progressive installation and equipment of the frame on both application and network sides. The concept enables to equip each vertical with 12 fibre modules, according to the equipment or the connected cables. The pre-wiring of modules guarantees the quality of connexions.

This new conception also enables the re-distribution of functions with a better accessibility and an increase of 30% of each vertical capacity.



Highlights:

- 2 frame models (2 metres for 6 cable heads, or 576 connexions / 3,25 metres for 11 cable heads, or 1056 connexions)
- optimized handling
- compact size

Technical characteristics:

Frame

- Dimensions

Height:	2 m for 6 cable head blocks 3,25 m for 11 cable head blocks
Depth:	0,820 m
Length with block:	0,400 m
Length behind the frame:	0,500 m
Pitch between frames:	0,400 m
- Composition

Cable heads are delivered with accessories, except breakout cable.
- Installation

Each frame constitutes a complete package, including accessories mounted in factory, except horizontal guiding rings and guiding tubes to be mounted on-site.
Ground fixing of frames is ensured by vertical spacer.

Modular Cable Head

- Dimensions

Height:	250 mm
Depth:	455 mm
Length:	217 mm
- Composition

Delivered with frame, the 8 pivoting plates and 3 pre-wired modules.
Additional modules should be ordered separately.
- Installation

The cable head gets fixed to the RFO profile with screws.
Pivoting of plates facilitates the access to the cable wiring area.
Modules are simply fixed onto the plates.
A numeric identification system shows each plate, each module and each connector.

We are at your disposal to make a study of the architecture of your Fibre Optic frame on the basis of the RFO. Please consult us.

5.2 Racks

5.2.1 MODF

3M™ MODF 19" 3M™ 2K

Description

3M MODF 2K/19" – Modular technology for 19" subracks



With its modular optical fibre technology, 3M offers the user a complete system for central optical fibre distribution frames with high fibre counts.

Possible applications are centrally located FO main distribution frames for network providers or Fibre To The Desk cabling (FTTD) with single-level hierarchy.

Taking into account the specific characteristics of fibre optics, both applications require a compact and accessible solution for the termination of optical fibres. Furthermore, the system must guarantee trouble-free extension and no downtime maintenance.

3M's 2K modular technology provides the user with an extremely compact FO patching or splicing system which, as a patch distribution frame, offers a capacity of up to 144 fibres on three height units. If used as a splice distribution frame, the capacity increases to 288 fibres per 19" subrack.

The patch system's core is the 2K connector module, also available for various FO connector types. All connector modules are installed in 19" subracks and are easily accessible from the front. The 2K modular system is completed by an excess fibre tray to accommodate incoming bunched fibre reserves, a patch panel for lateral exit of patch cords and a cable management system for 19" cabinets.

Highlights:

- Complete system for optical fibre distribution frames
- extremely high capacity, per subrack:
 - 144 fibres when used as patch distribution frame, or
 - 288 fibres when used as splice distribution frame per subrack
- extremely easy to install and maintain
- expandable any time
- co-ordinated patch cord routing, observance of minimum bending radius
- orderly storage of excess bunched fibre
- 2K Connector modules for SC/APC, SC, FC and ST technology

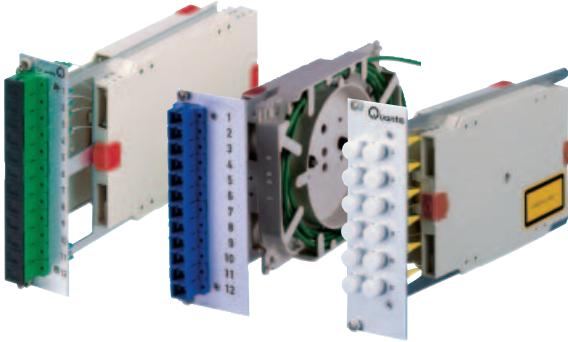
5.2 Racks

5.2.1 MODF

3M™ MODF 19" 3M™ 2K

Description

3M MODF Components



2K Connector module

2K connector modules (7 depth units) for 10 or 12 connectors each and FO pigtails, type E2000, SC, FC, and ST with printed port identification. The primary coat of the pigtails is offset, all pigtail ends are colour-coded.

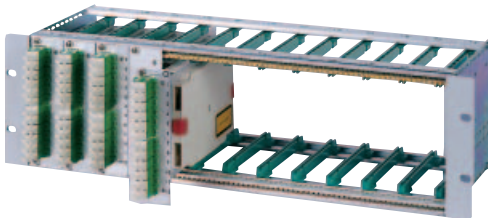
Each 19" subrack can house up to twelve 2K connector modules. Splicing reserves and excess lengths of pigtails are stored in two separate cassettes to simplify installation.



2K splice module

FO splicing module (7 DU) for the creation of high-capacity splice distribution frames.

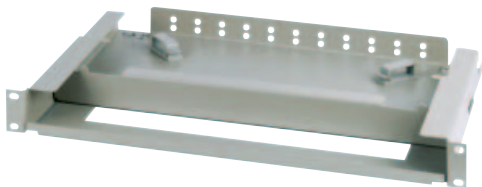
A 2K splicing module permits the inclusion of up to 24 splice connections in two FO splicing cassettes.



installation example

FO 19" subrack

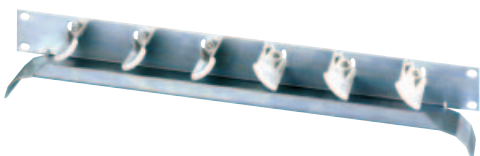
Subrack (84 DU, 3 HU) to accommodate up to twelve 2K connector or splice modules (7 DU) or dummy panels.



FO 19" excess fibre tray

Excess fibre tray (1 HU) for easy storage of bunched fibre reserves of incoming or outgoing FO cables.

The excess fibre tray is installed below the 19" subrack and can be pulled out towards the rear during installation work.



FO 19" patch panel

Patch panel for lateral exit of patch cords, observing the minimum bending radius

Rotary radius limiters enable a choice of exit direction.

The patch panel is installed in front of the excess tray.

5.2 Racks

5.2.1 MODF

3M™ MODF 19" 3M™ 2K

Type/Order text

Ref.-No.

3M MODF Components

Installation examples



2K Connector module

Single-mode 9/125µm with

SC-APC 8°, 12 fibres	40395-514 45
SC-PC, 12 fibres	40395-546 45
FC-PC, 12 fibres	40395-544 45

Multi-mode 50/125µm with

SC, 12 fibres	40395-514 55
ST, 12 fibres	40395-507 57
SC duplex, 12 fibres, horizontal	40395-523 57

Multi-mode 62.5/125µm with

SC / 12 fibres	40395-514 65
ST / 12 fibres	40395-507 67
SC duplex, 12 fibres	40395-523 67

FO connector type	Single-mode 9/125 µm	Multi-mode 50/125 µm	Multi-mode 62,5/125 µm
SC (APC 8°) simplex/12 fibres	•		
SC (PC) simplex/12 fibres	•	•	•
ST (PC) 12 fibres		•	•
FC (PC) 12 fibres	•		
SC (PC) duplex/12 fibres		•	•

Dimensions: 128 x 35 x 215 mm (HxWxD)

Weight: approx. 0,3 kg, Packaging: 1 unit

Delivery:

- Aluminium front panel (7 DU), installed with 12 connectors
- Port ID 1 through 12
- 1 FO splicing cassette and 1 FO excess fibre tray, mounted on cassette tray
- Secondary pigtail stripped and stored in splicing or excess fibre tray
- All pigtail ends are colour-coded
- Various cable straps
- Mounting materials for 19" subrack



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5.2 Racks

5.2.1 MODF

3M™ MODF 19" 3M™ 2K

Type/Order text

Ref.-No.

3M MODF Components



2K splice module, 7 depth units

for up to 24 splicing connections
Dimensions: 128 x 35 x 215 mm (HxWxD)
Weight: approx. 0,3 kg, Packaging: 1 unit
Delivery:

- 7 DU Aluminium front panel, with cassette tray
- 2 FO splicing cassettes with lid
- 2 splice protector holders for crimp splice protection
- Various cable straps
- Fastening materials for 19" subrack

40395-517 30

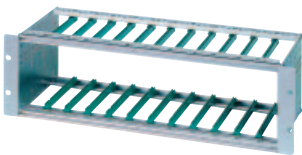


2K dummy front plate, 7 DU

to cover unused sockets in the 19" subrack
Dimensions: 128 x 35 x 1,5 mm (HxWxD),
Packaging: 1 unit
Delivery:

- Aluminium front panel (7 DU), no imprint
- Fastening materials for 19" subrack

40018-018 30

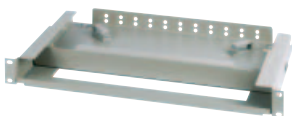


GF-19" subrack, 3 HU, 84 DU

to accommodate up to twelve 2K connector modules/2K splice modules
Dimensions: 135 x 483 x 190 mm (HxWxD)
Weight: approx. 1,2 kg, Packaging: 1 unit
Delivery:

- 19" subrack, aluminium
- 24 guide rails, installed
- Attachment materials for 19" racks/frames

40026-515 30



FO 19" excess fibre tray, 1 HU

for storage of excess bunched fibre, pull-out design
Pull-out length: 200 mm
Colour: RAL 7032 (pebble grey)
Dimensions: 44 x 483 x 280 mm (HxWxD)
Weight: approx. 3,3 kg, Packaging: 1 unit
Delivery:

- 1 Excess fibre tray
- 2 Cable guide rings to guide FO bunched fibre
- various cable straps
- Attachment materials for 19" racks

40040-502 30



FO 19" patch panel, 1 HU

for attachment and radius limiting for FO patch cords. Rotary radius limiters, providing a choice of left or right side FO patch cord exit.
Colour: RAL 7032 (pebble grey),
Weight: approx. 1,0 kg, Packaging: 1 piece
Dimensions: 73 x 485 x 100 mm (HxWxD),
Delivery:

- Patch panel, installed
- with 6 rotary radius limiters
- Attachment materials for 19" racks

40036-521 30

5.3 Subracks

3M™ BCCO II 19" Patch Panels



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Description

3M™ BCCO II - Slide mounted optical patch panel

3M™ BCCO II 19" Patch Panel



BCCO, the reference in slide-mounted 19" optical patch panel. Generation II is designed to offer further functionality with the same high quality approach

- New slides for perfect panel/rack body assembly
- TOP Cassette with fibre management zone to separate unjacketted fibres from the pigtails
- Compact: 24 connections on only 1U
- Shallow depth allowing back-to-back mounting in standard 600 x 600 frames
- Specific 19" models and ETSI adaptations
- Anti-rodent device on both cable entries as standard

Concept

Housing

- Slider drawer
- Left or right cable entry
- Cable entries for four 8 mm dia. cables or one 18 mm dia. cable on each side
- Anti-rodent device on each cable entry

Slides

- Anodized aluminum profiles, greased for perfect panel/rack body adjustment

Drawer

- Sliding shelf with fixed front panel
- Features:
 - 2 TOP cassettes with double, articulated fibre management (4 for the 36- and 48-fibre versions)
 - Cassette equipped to take 12 fusion-type splices with heat-shrink sleeve protection
 - Front panel with label and two handles for opening

Other Supplies and Accessories

- Click-in cover
- Mounting kit (screws, washers, captive nuts)
- Instruction sheet
- The drawer is delivered fully assembled, with the cassettes in place

Pre-wired versions

BCCO II Patch Panels are delivered in empty or pre-wired versions

5.3 Subracks

3M™ BCCO II 19" Patch Panels

Type/Order text

Ref.-No.

3M™ BCCO II 19" Accessories / Panels without Pre-wiring

BCCO II 19" Empty 1U and 2U Patch panels

Equipped with cassettes and integrated from plate (fixed)

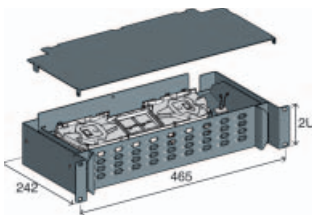
Dimensions: 1U x 19" x 240 mm (HxWxD)

2U x 19" x 240 mm

Colour: Ral 7016 (Anthracite), PU: 1 pc

Delivery: - BCCO II 19" patch panel

- Screws and cage nuts for 19" frames



BCCO II 1U patch panel 12 ST or FC

N461580A

BCCO II 1U patch panel 24 ST or FC

N461529A

BCCO II 2U patch panel 36 ST or FC

N461559A

BCCO II 2U patch panel 48 ST or FC

N461582A

BCCO II 1U patch panel 12 SC

N461592A

BCCO II 1U patch panel 24 SC

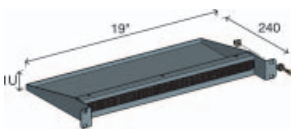
N461554A

BCCO II 2U patch panel 36 SC

N461593A

BCCO II 2U patch panel 48 SC

N461555A



BCCO II 19", 1U Extra length patchcord storage shelf

N461617A

Dimensions: 1U x 19" x 240 mm (HxWxD)

Colour: Ral 7016 (Anthracite), PU: 1 pc

Accessories: Adaptation for ETSI racks

Pack of 2 adapters

For Patch panel 1U

N711498B

For Patch panel 2U

N711499B

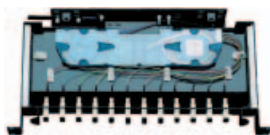
Accessories: Holder for 6 mechanical Splices 3M™ Fibrlok

N801016C

Set of 30 Holders

Capacities 1U: 24 Fibrlok can equip cassettes

2U: 48 Fibrlok can equip cassettes



BCCO II 19" 1U and 2U Patch panels equipped with Single mode 9/125 µm couplings and Pigtailed

Delivery: - BCCO II 19" patch panel 1U or 2U version

- Couplings and pigtailed mounted and coded

Pigtail ends stored in cassettes

- Cassettes equipped with holder for splice protectors

- Screws and cage nuts for 19" frames

BCCO II 1U pre-wired 06 SC/PC

T11206S02

BCCO II 1U pre-wired 12 SC/PC

T11212S02

BCCO II 1U pre-wired 24 SC/PC

T12424S02

BCCO II 2U pre-wired 36 SC/PC

T23636S02

BCCO II 2U pre-wired 48 SC/PC

T24848S02

5.3 Subracks

3M™ BCCO II 19" Patch Panels



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Type/Order text

Ref.-No.

3M™ BCCO II 19" Accessories / Panels without Pre-wiring

BCCO II 1U pre-wired 06 SC/UPC	T11206S03
BCCO II 1U pre-wired 12 SC/UPC	T11212S03
BCCO II 1U pre-wired 24 SC/UPC	T12424S03
BCCO II 2U pre-wired 36 SC/UPC	T23636S03
BCCO II 2U pre-wired 48 SC/UPC	T24848S03
<hr/>	
BCCO II 1U pre-wired 06 SC/APC	T11206S04
BCCO II 1U pre-wired 12 SC/APC	T11212S04
BCCO II 1U pre-wired 24 SC/APC	T12424S04
BCCO II 2U pre-wired 36 SC/APC	T23636S04
BCCO II 2U pre-wired 48 SC/APC	T24848S04
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BCCO II 1U pre-wired 06 FC/PC	T11206S05
BCCO II 1U pre-wired 12 FC/PC	T11212S05
BCCO II 1U pre-wired 24 FC/PC	T12424S05
BCCO II 2U pre-wired 36 FC/PC	T23636S05
BCCO II 2U pre-wired 48 FC/PC	T24848S05
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BCCO II 1U pre-wired 06 LC/PC	T11206S15
BCCO II 1U pre-wired 12 LC/PC	T11212S15
BCCO II 1U pre-wired 24 LC/PC	T12424S15
BCCO II 2U pre-wired 36 LC/PC	T23636S15
BCCO II 2U pre-wired 48 LC/PC	T24848S15
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BCCO II 1U pre-wired 06 LC/APC	T11206S16
BCCO II 1U pre-wired 12 LC/APC	T11212S16
BCCO II 1U pre-wired 24 LC/APC	T12424S16
BCCO II 2U pre-wired 36 LC/APC	T23636S16
BCCO II 2U pre-wired 48 LC/APC	T24848S16

5.3 Subracks

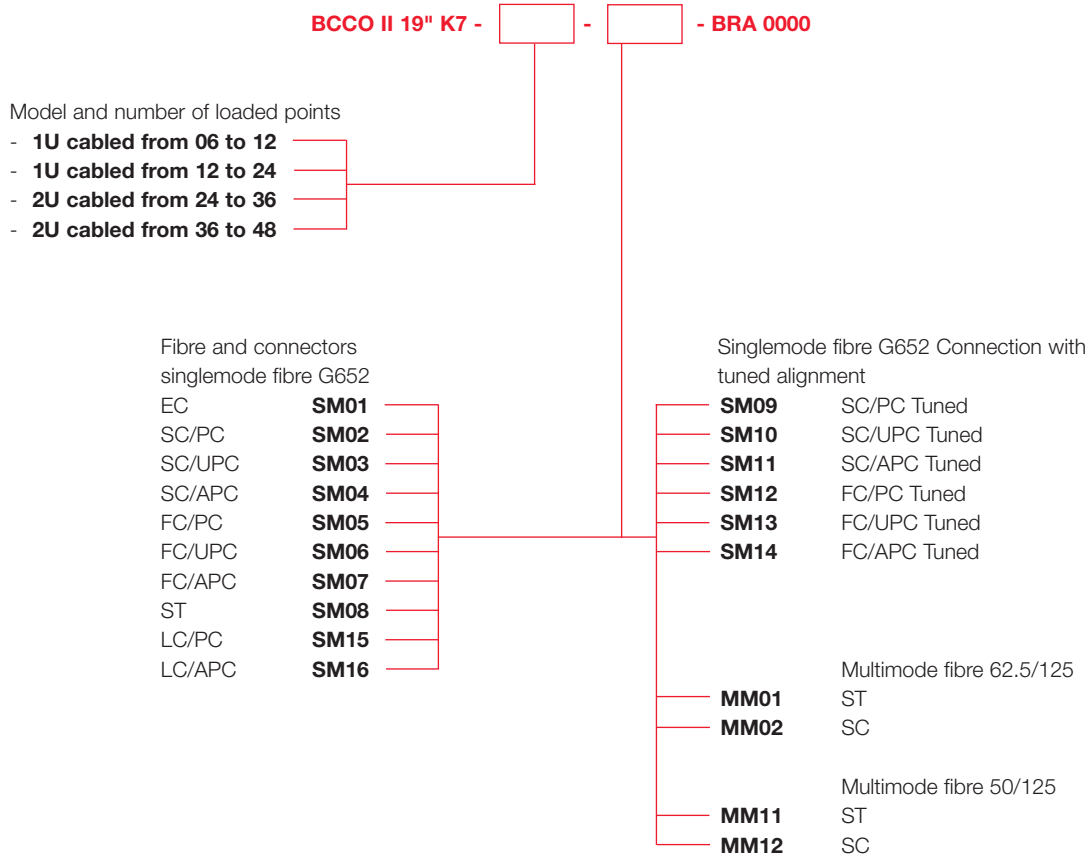
3M™ BCCO II 19" Patch Panels

Description

3M™ BCCO II 19" Range

Several other offers are possible and can be done in our warehouse.

Do not hesitate to consult us, using the following indications as a guiding tool



On request: singlemode fibre G655, multi-mode fibre 50/125, other connectors and special layouts.

Ordering Example:

BCCO II 19" K7 - 1U 06 - SM04 BRA 0000

Range:

BCCO II panel for 19" mounting with splicing cassettes.

Loaded: 1U panel designed for 12 fibres and half loaded (6 connections)

Connection and fibre: sleeveless SC/APC connector mounted on standard singlemode fibre (G652)

Packing:

1U Panel for 19":

Cardboard carton 550 x 250 x 60 mm. Weight 4 kg

2U Panel for 19":

Cardboard carton 550 x 250 x 100 mm. Weight 5 kg

5.3 Subracks

3M™ BCCO II ETSI



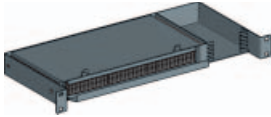
Type/Order text

Ref.-No.

3M BCCO II ETSI Accessories / Heads without Pre-wiring

Storage racks and shelf, Splicing racks,
Cable heads without pre-wiring

Storage Racks

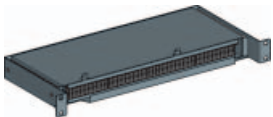


ETSI, 1U Standard storage rack

BCCO II

N461574A0000

To be fixed under the cable head
Sliding shelf for better accessibility
Front panel with rubber guide to support the jumpers. Dim. ETSI x 1U x 240 mm.
Anthracite gray (RAL 7016)



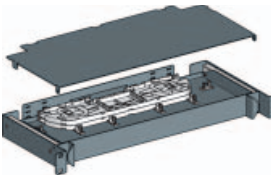
ETSI, 1U Rack with surplus length management

BCCO II

N461573A0000

To be fixed under the cable head
Sliding shelf for better accessibility
Side channel for surplus length enabling the head to be opened for further work without having to disconnect the jumpers from the front panel.
Front panel with rubber guide to support the jumpers
Dim. ETSI x 1U x 240 mm.
Anthracite gray (RAL 7016)

Splicing Racks



ETSI, 1U Rack for managing 24 splices

BCCO II

N461597A0000

The splicing rack is a cable head with a solid front panel. It is equipped with the same fittings as the head. In the 1U version, it takes 2 TOP cassettes
Dim. ETSI x 1U x 240 mm.
Anthracite gray (RAL 7016)

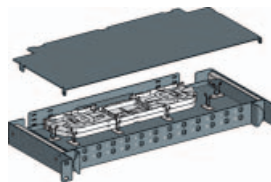
ETSI, 2U Rack for managing 48 splices

BCCO II

N461598A0000

2U Version: 4 TOP cassettes
Dim. ETSI x 2U x 240 mm.
Anthracite gray (RAL 7016)

ETSI Cable Heads with Cassettes and Slides without Pre-wiring



1U for 24 ST or FC

BCCO II

N461594A0000

1U for 24 SC, E2000 or EC

BCCO II

N461530A0000

2U for 48 ST or FC

BCCO II

N461595A0000

2U for 48 SC, E2000 or EC

BCCO II

N461570A0000

Packing :

1U head for ETSI :

Cardboard carton 560 x 250 x 60 mm. Weight 4,5 kg

2U head for ETSI:

Cardboard carton 560 x 250 x 110 mm. Weight 5,5 kg

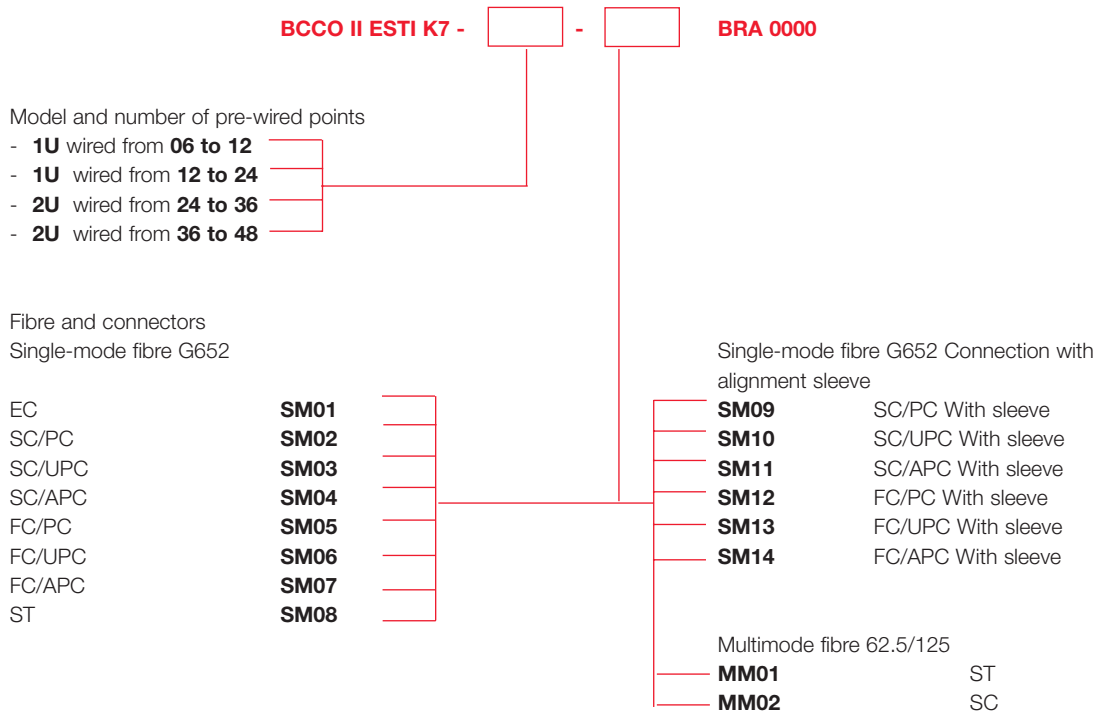
5.3 Subracks

3M™ BCCO II ETSI

Type/Order text

3M BCCO II ETSI Range

BCCO II ETSI Heads with pre-wired cassettes



On request : Single-mode fibre G655, multi-mode fibre 50/125, other connectors and special layouts.

Ordering Example :

BCCO II ETSI K7 - 1U 06 - SM04 BRA 0000

Range : BCCO II head for ETSI mounting with splicing cassettes.

Pre-wired :

1U head designed for 12 fibres and half pre-wired (6 connections)

Connection and fibre : Sleeveless SC/APC connector mounted on standard Single-mode fibre (G652)

Packing :

1U head for ETSI :

Cardboard carton 560 x 250 x 60 mm. Weight 4,5 kg

2U head for ETSI:

Cardboard carton 560 x 250 x 110 mm. Weight 5,5 kg

5.3 Subracks

3M™ FO-19" Patch Panels

3M™ SPP3-E



Description

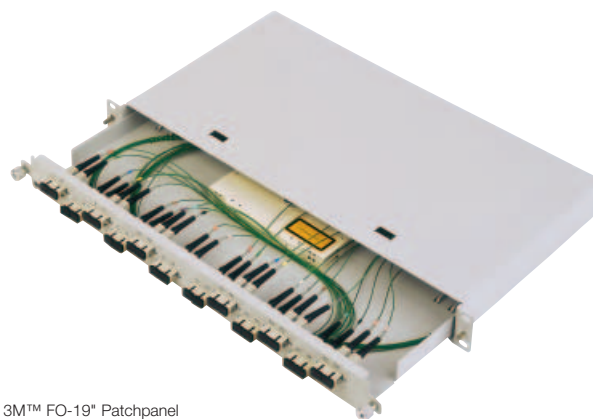
3M™ 19" Patch Panels SPP3-E, sliding, 1 HU

Housing: robust power coated steel, sliding drawer with fixed stop for safer and easier termination

Colour: RAL 7035 (light grey)

Features: cable entry with integrated tie fixing points for 2-4 fibre horizontal cable. 2 holes for backbone cable entry through PG glands. Point welded thread to fix and stack DIN splice cassettes

Front panel: fixed (non interchangeable) with screen printed port numbers for ST, SC and SC duplex couplings. Individual port labelling in preparation



3M™ FO-19" Patchpanel

Type/Order text

Ref.-No.



FO-19"-patch panel (1 HU), sliding

Empty patch panel with integrated front plate

Dimensions: 44 x 483 x 250 mm (HxWxD)

Colour : RAL 7035 (light grey), PU: 1 pc

Delivery: -FO-19" patch panel (1 HU), empty
-Screws and cage nuts for 19" frames

FO-patch panel 12 ST

SPP3-E-1T

FO-patch panel 24 ST

SPP3-E-2T

FO-patch panel 12 SC Simplex or 12 LC Duplex

SPP3-E-1CS

FO-patch panel 24 SC Simplex or 24 LC Duplex

SPP3-E-2CS

FO-patch panel 6 SC Duplex

SPP3-E-6CD

FO-patch panel 12 SC Duplex

SPP3-E-1CD

FO-patch panel 24 SC Duplex

SPP3-E-2CD



FO-19"-patch panel (1 HU), sliding, equipped with pre-mounted couplings

Dimensions: 44 x 483 x 250 mm (HxWxD)

Colour: RAL 7035 (light grey), PU: 1 pc

Delivery: -FO-19" patch panel (1 HU), including couplings
-Screws and cage nuts for 19" frames

Multimode

FO-patch panel 12 ST MM-Couplings

SPP3-E-1T-M

FO-patch panel 24 ST MM-Couplings

SPP3-E-2T-M

FO-patch panel 6 SC Duplex MM-Couplings

SPP3-E-6C-DM

FO-patch panel 12 SC Duplex MM-Couplings

SPP3-E-1C-DM

FO-patch panel 24 SC Duplex MM-Couplings

SPP3-E-2C-DM

Single-mode

FO-patch panel 12 SC Duplex SM-Couplings

SPP3-E-1C-SS

FO-patch panel 24 SC Duplex SM-Couplings

SPP3-E-2C-SS

FO-patch panel 12 LC Duplex MM-Couplings

SPP3-E-1L-DM

FO-patch panel 24 LC Duplex MM-Couplings

SPP3-E-2L-DM

FO-patch panel 12 LC Duplex SM-Couplings

SPP3-E-1L-SS

FO-patch panel 24 LC Duplex SM-Couplings

SPP3-E-2L-SS

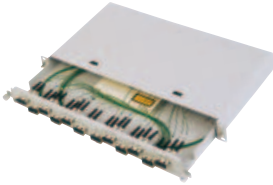
5.3 Subracks

3M™ FO-19" Patch Panels

Type/Order text

Ref.-No.

3M™ 19"-Patch Panel (1 HU), sliding



FO-19"-patch panel (1 HU), sliding, equipped with couplings and pigtails

Dimensions: 44 x 483 x 250 mm (HxWxD)

Colour: RAL 7035 (light grey), PU: 1 pc

Delivery: -FO-19" patch panel (1 HU) including couplings and pigtails, mounted and colour coded
 -1 to 4 FO-Splicing cassettes including lid
 -Holder for splice protectors and strain relief
 -Screws and cage nuts for 19" frames

Multimode, 50/125µm

FO-patch panel 12 ST

SPP3-E-1T-MP5

FO-patch panel 24 ST

SPP3-E-2T-MP5

FO-patch panel 6 SC Duplex

SPP3-E-6C-DMP5

FO-patch panel 12 SC Duplex

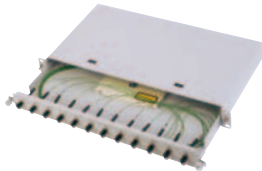
SPP3-E-1C-DMP5

FO-patch panel 12 LC Duplex

SPP3-E-1L-DMP5

FO-patch panel 24 LC Duplex

SPP3-E-2L-DMP5



Multimode, 62,5/125µm

FO-patch panel 12 ST

SPP3-E-1T-UP6

FO-patch panel 24 ST

SPP3-E-2T-UP6

FO-patch panel 6 SC Duplex

SPP3-E-6C-DMP6

FO-patch panel 12 SC Duplex

SPP3-E-1C-DMP6

FO-patch panel 12 LC Duplex

SPP3-E-1L-DMP6

FO-patch panel 24 LC Duplex

SPP3-E-2L-DMP6

Single-mode 9/125µm

FO-patch panel 12 SC Duplex

SPP3-E-1C-SP9

FO-patch panel 12 LC Duplex

SPP3-E-1L-DMP9