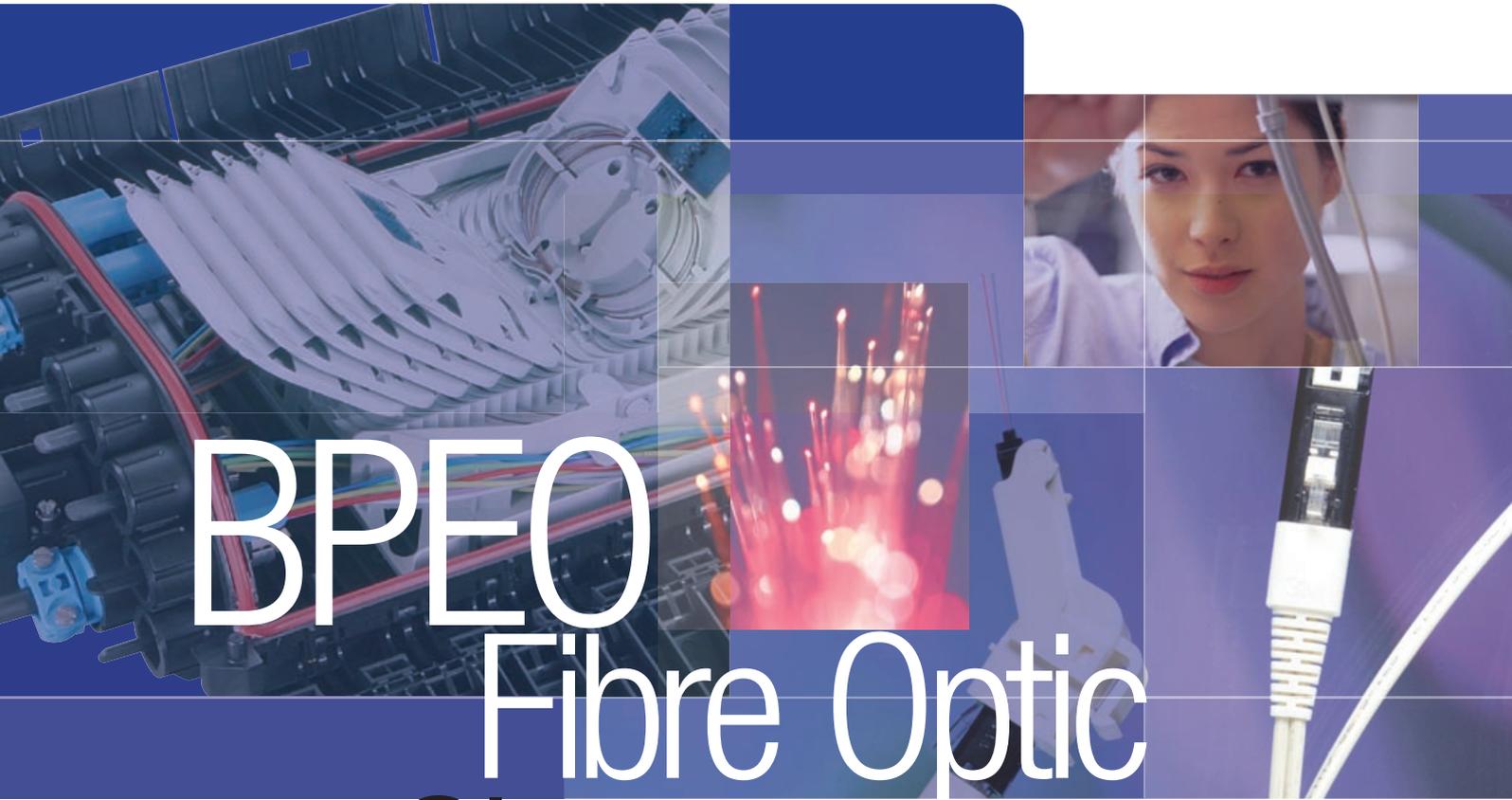
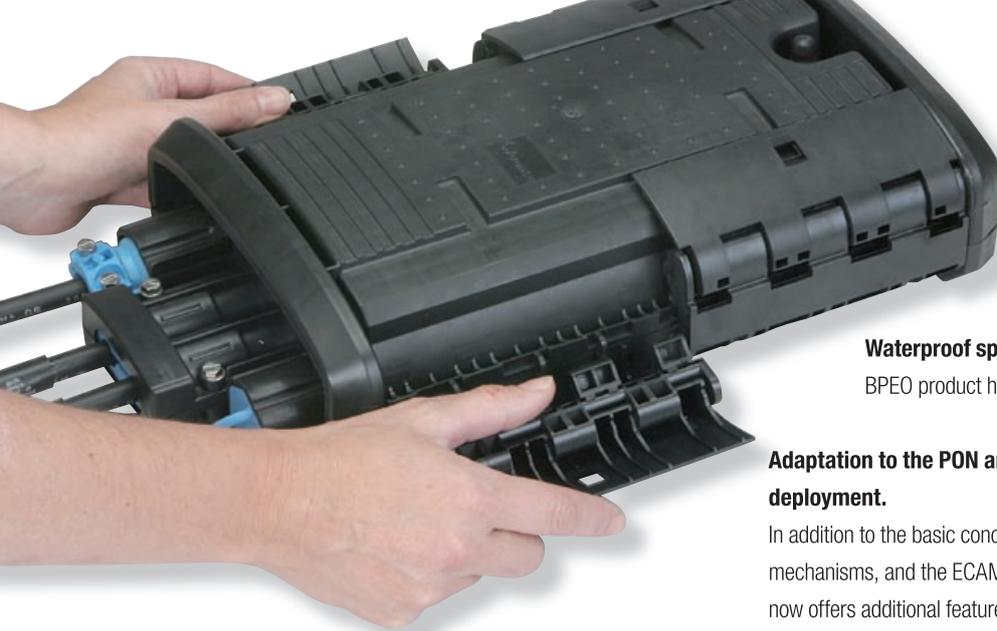


3M Telecommunications  
Solutions for Networks



# BPEO Fibre Optic Closures





### Waterproof splice protections

BPEO product has evolved in 2 main areas:

#### Adaptation to the PON and P to P network architectures for FTTH deployment.

In addition to the basic concept of 3 standard bodies with latch closing mechanisms, and the ECAM range of mechanical cable entries, the product now offers additional features:

- Single fibre management
- Splitter integration
- Mechanical fibre splices
- Compatible with Blown Fibre
- Micro cable management

#### Adaptation for use in high fibre density networks, and installation in the city centre.

In addition to the features already described, the product can now handle:

- Cable with 12 to 1152 fibres
- Full coverage of most applications with only 3 different closure sizes !

## The BPEO Evolution Concept

The concept of the BPEO Evolution product range is similar to the modular approach often used in copper connectivity modules and termination blocks.

The closures are delivered with a fibre organizer with a capacity of 12, 28, or 48 splice tray slots depending on the size.

The splice trays are a standard size taking up one or two slots (5 mm or 10 mm spacing). They can be mixed and matched at will, giving the product great flexibility.

Additional wall brackets are available for fixing the closure securely in place.

Finally, the unique mechanical cable sealing ECAM kits are available to enter the cables to the closure and seal it.

Additional splice trays and cable entry kits can be installed whenever new cables are added to the closure.



# 3M™ BPEO Evolution



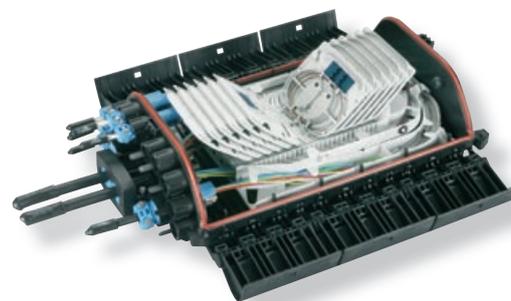


## The new organizers and splice trays.

The new organizers contain all the proven advantages of the early designs with additional features:

- A larger storage area for tubes, "microstructures" or for by-passing cables (un-cut fibres)
- The splice trays are structured in a tree style, allowing easy access to each splice tray.
- Large cable guide channels on each side of the organizer to allow routing from any tray to any tray.
- Each splice tray is protected by an individual cover.
- The marking of each splice tray is visible in the open or closed position.

The new BPEO also has a fibre guide for 250 micron fibres from the cable entry to the splice trays. This means that each fibre can be individually routed which is essential for FTTH installation or when using splitters.



## Splice Trays

The different models of splice trays allow 3 types of circuit management:

- Fusion splices in single or double stacking.
- Mechanical Fibriok™ splices 2540G in groups of 6 or 12.
- Splitter splice trays with a zone for the splitter and different type of splices.

Each splice tray can also be used for fibre storage in the shape of a figure 8, particularly useful with splitters. Different splice trays can be installed on the same organizer, and all splice trays are delivered with covers.





## Easy opening and closing

The mechanical latch closing mechanism is quick and easy to open and close.

No special tools or adjustments are required.

The seal is always watertight even after frequent use.

Even though the sealing gasket requires no maintenance, it can be changed if damaged.

## Fixing Supports (accessories)

The 3 BPEO sizes can accommodate different kinds of fixing supports depending to the environment where they will be installed.

Wall mount support: Two metal plates are fixed directly to the closure body. This new wall mount support with a thickness of 5 mm will allow gaining space inside the manholes or handholes.

Wall/Pole mount support: Two metal brackets will allow wall or pole mounting. For pole mounting a metal band is necessary in addition to the brackets.

Sewage support: For horizontal mounting of the closures. Total depth of the mounted closure will be (size 2 and 3 only) less than 150 mm.

## ECAM cable entry sealing system

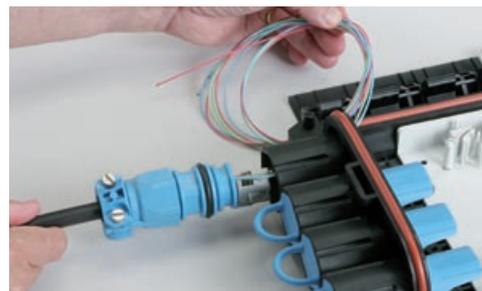
The ECAM system is a 100% mechanical system that only requires standard tools (i.e. no heating or electrical power needed).

The ECAM system is put in place before the cable is installed in the closure. This feature avoids working on the cable inside the closure close to fibres that are already in use. It is also particularly useful when attaching the cables with strength members.

The design prevents the cables being pulled out of the closure by attaching the ECAM system to the cable and strength member. A watertight cable entry can be obtained without any specific training.

The seal is made with an 'O' ring. The ECAM is held in place with a locking part (fork).

It is always possible to replace or change a cable at any time.



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# BPEO Size 1



The organizer can be used with up to 12 splice trays for standard micro structures or 8 splice trays if loose tubes are used.

Watertight splice closure for up to 72 mechanical Fibriok™ splices or 144 fusion splices.

### Contents of the standard product

Closure body and cover with pressure test valve and plugs in all of the entry ports included the double cable entry port. The organizer is fixed in the closure and is supplied without splice trays but with accessories for fixing the tubes and micro-structures, an installation tool and an inter splice tray fibre bridge guide.

The fibre bridge guide is used to route individual fibre from one splice tray to another, particularly useful when using a splitter with separation between active fibres and unused fibres.

100% of the closures are tested to 500 mbar flash test pressure.

### Parts need to be ordered separately

The splice trays, cable entry sealings and closure supports need to be ordered separately.



## Specifications of BPEO Size 1 closures

### General

Sealing:	80 mbar continuous and 500 mbar flash test; IP68		
Impact test:	20 joule; IK10		
Pull force:	100 DecaNewton		

### Dimensions (overall in mm)

	Closure body	With wall support	With Pole/wall support
Length	382	382	382
Width	204	310	230
Depth	92	97	122

### Entry configurations

	EOC	CDP	EDP	FDP
Midspan entry	no	yes	yes	yes
Storage (tube/microcable)	yes	yes	yes	yes

### Capacity

Capacity depends directly of the volume stored unused fibres/tubes.

	EOC	CDP	EDP	FDP
	# Tray	Fusion (10mm )	Fusion (5mm)	Fibriok™ 2540G (5mm 6 /10mm 12)
Micro structure	12	72	144	72
Loose Tubes	8	48	96	48



# Cable Entry Configurations

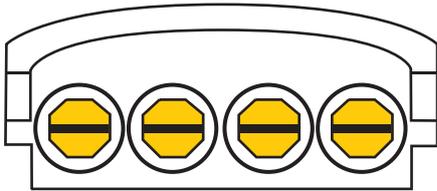
## BPEO Size 1

BPEO Evolution Size 1 is equipped with different types of cable entry depending on the model. The description of the cable entry kits indicated the diameter of the cables which can be used.

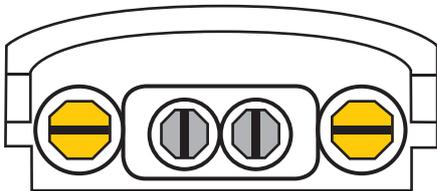
ECAM S5-18 entry for one cable, diameter 5-18 mm

ECAM D5-20 double entry for uncut cable 5-20 mm

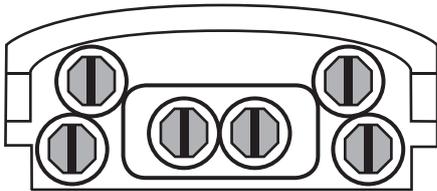
Double cable entry seals can be used for uncut cables or two each single cable entries



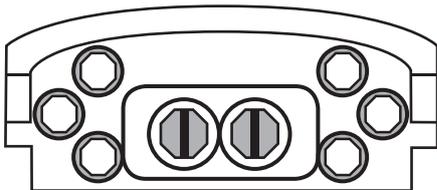
EOC Strait joint (End Of Cable)  
Four single entries ECAM S5-18



CDP (Cable Distribution Point)  
Two possible configurations  
One double port ECAM D5-20 and two single port ECAM S5-18.  
Or two single ECAM S5-18 and two single port ECAM S4-12



EDP (End Distribution Point)  
Two possible configurations;  
One double port ECAM D5-20 and four single port ECAM S4-12  
Or six single ports ECAM S4-12



FDP (Fibre Distribution Point)  
Two possible configurations  
One double port ECAM D5-20 and six single ECAM S4-8  
Or two two-ports ECAM S4-12 and six single ECAM S4-8



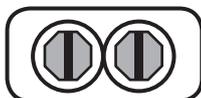
S18 single cable seal for diameters between 5-18 mm



S12 single cable seal for diameters between 4-12 mm



S08 single cable seal for diameters between 4-8 mm



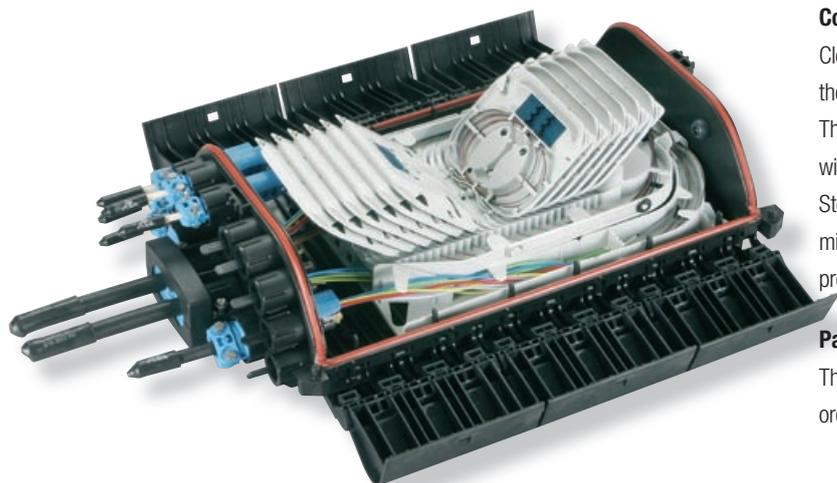
D20 double cable seal for diameters between 5-20 mm



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# BPEO Size 2 & 3



## Contents of the standard product

Closure body and cover with pressure test valve and dummy plugs in all of the entry ports including the double cable entry port.

The organizer is fixed in the closure and is supplied without splice trays but with accessories for fixing the tubes and micro-structures.

Storage zone at the bottom of the organizer for 250µm fibres and microcables. 100% of the closures are tested to 500mbar flash test pressure before delivery!

## Parts need to be ordered separately

The splice trays, cable entry sealings and closure supports need to be ordered separately.

Watertight splice closure for up to 168 mechanical Fibrlok™ splices or 336 fusion splices (BPEO size 2)

Watertight splice closure for up to 288 mechanical Fibrlok™ splices or 576 fusion splices (BPEO size 3)

The organizer of size 2 can be used with up to 28 splice trays, size 3 accommodates up to 48 trays.

Storage area for bare fibres, tubes or microcables is provided below the organizer.

## Specifications of the different possible configurations

### General

Sealing:	80 mbar continuous and 500 mbar flash test; IP68
Impact test:	20 joule; IK10
Pull force:	100 DecaNewton

### Dimensions (overall in mm)

	Length	Width	Depth Closure body	Depth With wall support	Depth With pole/wall support	Depth Sewage
Size 2	520	341	149	154	178	149
Size 3	661	341	149	154	178	149

### Entry configurations

	CDP	EDP	FDP
Midspace entry (uncut)	yes	yes	yes
Storage (tube/microcable)	yes	yes	yes

### Capacity

Capacity of the organizers of the BPEO range

Closure size	Capacity of the organizer (no. of splice trays)	Fusion splices K7-2slot-12fusion	Fusion splices K7-1slot-12fusion	Fibrlok™ 2540G splices K7-1slot-6 or 2slot 12 Fibrlok™
BPEO size 1	12	72	144	72
BPEO size 2	28	168	336	168
BPEO size 3	48	288	576	288

# Cable Entry Configurations

## BPEO Size 2 & 3

BPEO Evolution Size 2 and 3 are equipped with the same front faces with different cable entry configurations.

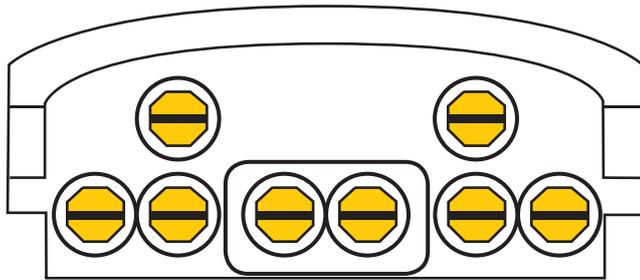
The description of the cable entry kits indicated the diameter of the cables which can be used.

ECAM S5-18 entry seal for one cable, diameter 5-18 mm

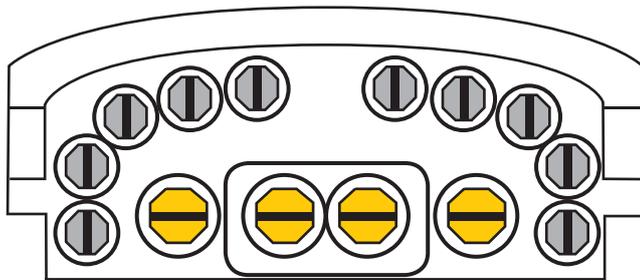
ECAM D5-20 double entry seal for uncut cable 5-20 mm

ECAM D5-27 double entry seal for uncut cable 5-27 mm

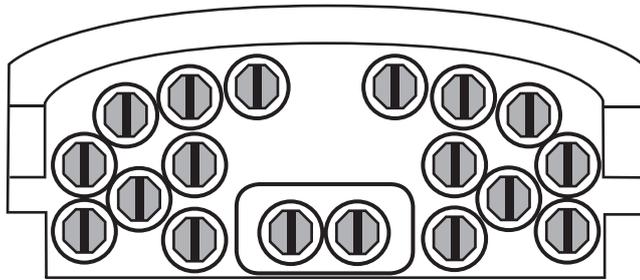
Double cable entries can be used for uncut cables or two each single cable entries



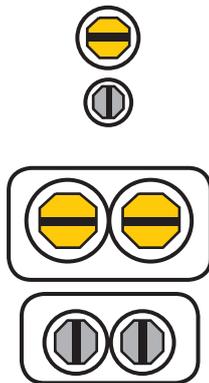
**CDP (Cable Distribution Point)** Two possible configurations  
 One double port ECAM D5-27 and 6 single ports ECAM S5-18.  
 Or 8 single ports ECAM S5-18



**EDP (End Distribution Point)** Two possible configurations  
 One double port ECAM D5-27, 2ports ECAM S5-18 and 10 ports  
 ECAM S4-12, or 4 ports ECAM S5-18 and 10 ports for ECAM S4-12



**BDP (Branch Distribution Point)** Two possible configurations  
 One double port ECAM D5-20 and 16 single ports ECAM S4-12,  
 or 18 single ports ECAM S4-12



S18 single cable seal for diameters between 5-18 mm

S12 single cable seal for diameters between 4-12 mm

D27 double cable seal for diameters between 5-27 mm

D20 double cable seal for diameters between 5-20 mm



# Selection Guide for Standard Models



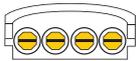
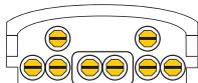
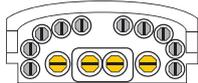
## The closure bodies

### Delivery content

All BPEO closures size 1,2 and 3 have the same content:

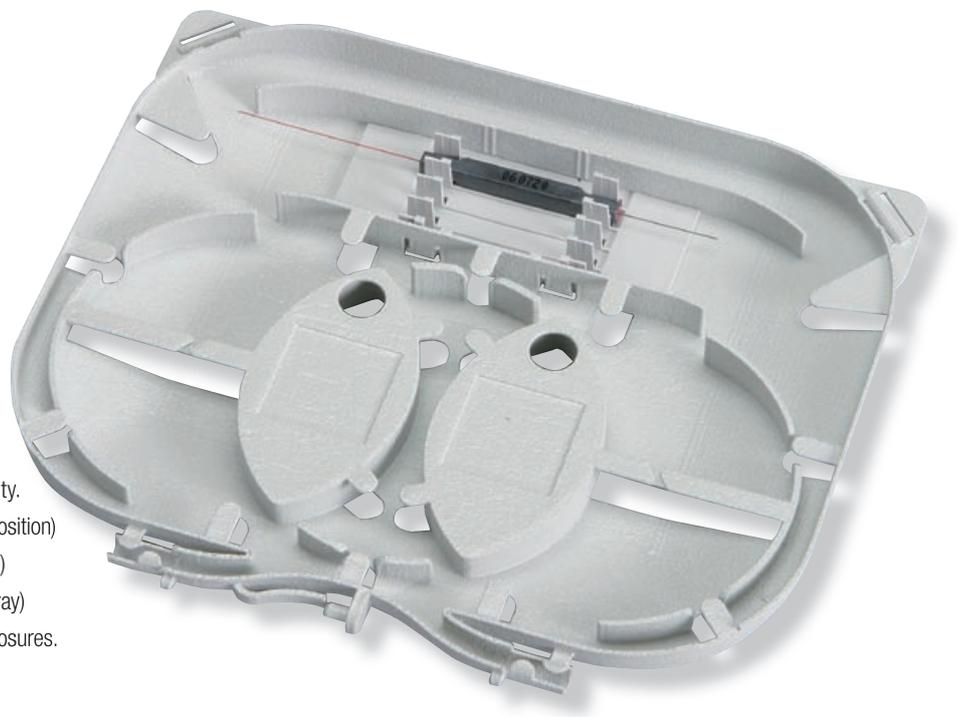
- Closure body, cover with valve (for watertightness test)
- Dummy plugs on all cable entry ports
- Installed organizer. Storage zone prepared to store micro-structures
- Instructions, fixing dimensions drawing

**Splice trays, fixing brackets and ECAM cable entry sealings are to be ordered separately!**

Type/Order text	Ref. No.
 <b>End of cable BPEO S1 EVOL EOC 12 Slots</b> Size 1, organizer for 12 splice trays (max.)	<b>N501487A 501487</b>
 <b>Cable Distribution Point BPEO S1 EVOL CDP 12 Slots</b> Size 1, organizer for 12 splice trays (max.)	<b>N501488A 501488</b>
 <b>End Distribution Point BPEO S1 EVOL EDP 12 Slots</b> Size 1, organiser for 12 splice trays (max.)	<b>N501489A 501489</b>
 <b>Fibre Distribution Point BPEO S1 EVOL FDP 12 Slots</b> Size 1, organizer for 12 splice trays (max.)	<b>N501490A 501490</b>
 <b>Cable Distribution Point BPEO S2 EVOL CDP 28 Slots</b> Size 2, organizer for 28 splice trays (max.)	<b>N501491A 501491</b>
<b>Cable Distribution Point BPEO S3 EVOL CDP 48 Slots</b> Size 3, organizer for 48 splice trays (max.)	<b>N501494A 501494</b>
 <b>End Distribution Point BPEO S2 EVOL EDP 28 Slots</b> Size 2, organizer for 28 splice trays (max.)	<b>N501492A 501492</b>
<b>End Distribution Point BPEO S3 EVOL EDP 48 Slots</b> Size 3, organizer for 48 splice trays (max.)	<b>N501495A 501495</b>
 <b>Branch Distribution Point BPEO S2 EVOL BDP 28 Slots</b> Size 2, organizer for 28 splice trays (max.)	<b>N501493A 501493</b>
<b>Branch Distribution Point BPEO S3 EVOL BDP 48 Slots</b> Size 3, Organiser for 48 splice trays (max.)	<b>N501496A 501496</b>

## Splice trays

The splice trays are to be selected according to the type of splice (fusion, mechanical, ie), if splitters are used or not and according to the density.  
 (Splice tray 12 fusion splices for only 1 mounting position)  
 - 1 Slot means 1 tray slot of 5mm (5 mm thick tray)  
 - 2 Slot means 2 tray slots of 5mm (10 mm thick tray)  
 In order to define the appropriate capacity in the closures.

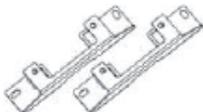


Type/Order text	Ref. No.
 <p><b>BPE0-K7-1Slot - 12 fusion</b>                      Compatible with fusion splice protector 45 or 60 mm                      Splice tray is supplied with a cover</p>	<p><b>N541106A</b>      <b>541106</b></p>
 <p><b>BPE0-K7-2Slot - 12 fusion and PLC splitter</b>                      10mm tickness. 12 fusion splices in 2 layers                      Compatible with fusion splice protector 45 or 60mm                      Can accommodate 70 x 10 x 6 mm PLC splitters                      Splice tray is supplied with a cover</p>	<p><b>N541104A</b>      <b>541104</b></p>
 <p><b>BPE0-K7-1Slot - 6 Fibriok™ 2540G</b>                      6 mechanical Fibriok™ splices in one layer in 5 mm tray                      Compatible to new 2540G Fibriok™                      Splice tray is supplied with a cover</p>	<p><b>N541103A</b>      <b>541103</b></p>
 <p><b>BPE0-K7-2Slot - 12 Fibriok™ 2540G</b>                      12 mechanical Fibriok™ splices in 2 layers in 10 mm tray                      Compatible to new 2540G Fibriok™                      Splice tray is supplied with a cover</p>	<p><b>N541108A</b>      <b>541108</b></p>
 <p><b>BPE0-K7-2Slot - 10 Fibriok™ 2540G and PLC splitter</b>                      Splitter tray with mechanical splices                      Space for 70 x 10 x 6 mm PLC splitters                      Support to accommodate 10 mechanical splices Fibriok™ 2540G</p>	<p><b>N541110A</b>      <b>541110</b></p>
 <p><b>BPE0-K7-2Slot - Universal for 12 splices</b>                      Accept mechanical and fusion splices                      Splice tray is supplied with a cover</p>	<p><b>N541121A</b>      <b>541121</b></p>
 <p><b>BPE0-K7-1Slot - 9 fusion and 1 splitter</b>                      Space for 70 x 10 x 6 mm PLC splitters                      Splice holder for 9 fusion splices                      Splice tray is supplied with a cover</p>	<p><b>N541113A</b>      <b>541113</b></p>





## Fixing supports

Type/Order text	Ref. No.
 Wall support for BPEO size 1 Wall support for BPEO size 2&3	N711540A 711540 N711541A 711541
 Pole/wall mount support for BPEO size 1 Pole/wall mount support for BPEO size 2&3	N711438A 711438 N711440A 711440
 Support for sewage for BPEO size 2&3	N711546A 711546

## Cable Entry Sealing Kits

Type/Order text	Ref. No.
-----------------	----------

Mechanical cable entry sealing kits for Single ports or Double ports (for uncut cable).

The kits are supplied complete with fixing wrench. Holders and anchors are on the closure.



Double cable entry sealing for uncut cables

**ECAM D5-20**

**N721077A**

**721077**

**Double entry cable sealing for cables from 5 – 20 mm diameter**

**ECAM D5-27**

**N721069A**

**721069**

**Double entry cable sealing for cables from 5 – 27 mm diameter**



Single cable entry sealing for straight splices or cable distribution

**ECAM S4-12**

**N721079A**

**721079**

**Single entry cable sealing for cables from 4 – 12 mm diameter**

**ECAM S5-18**

**N721059A**

**721059**

**Single entry cable sealing for cables from 5 – 18 mm diameter**



**3M Česko, spol. s r.o.**  
**Electro&Communications**

Vyskočilova 1  
140 00 Praha 4  
Tel.: 261 380 111  
Email: 3MCesko@3M.com  
Web: www.3M.cz



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