

# SEPARABLE STRAIGHT, ELBOW & TEE CONNECTORS (FMCS-400, FMCE-400 & FMCT-400)

## CHARACTERISTICS

For polymeric cable up to 36kV

Non-loadbreak operation

400 series for 400A (FMCT, clamping pin contact)

The Prysmian range of FORMFIT® Separable Connectors has a wide range of applications including connection to transformers, switchgear units, motors etc.

Suitable for indoor and outdoor installations, the connectors are entirely protected by a watertight conductive envelope connected to earth. The connectors are rated for continuous operation at 400 Amp rms, with 600 Amp rms overload (8 hours per 24 hours).

FORMFIT® 400 series of separable connectors are suitable for use with a wide range of polymeric medium voltage cables, including:

- Single core polymeric insulation (PE, XLPE, EPR etc)
- Copper or aluminium conductors (25-300mm<sup>2</sup>)
- Semi-conducting screen either extruded or taped
- Metallic screen, wire or polylam type
- Insulation voltage up to 36kV (Um)
- Adaptable to MIND paper insulation cables

## FEATURES & BENEFITS

- No need for special tools, heating, taping or filling
- Vertical, angled or inverted position
- No minimum distance between phases
- Energising may take place immediately after the connector is plugged to its individual bushing, dead end plug etc.
- Individual clamping by stainless steel brace
- Connectors packed separately



## DESCRIPTION

### 1a. Contact piece

Compressed ferrule with tinned copper contact pin, designed with locking ring. (FMCS)

### 1b. Contact pin assembly

Composed of a sized conductor fitting and a tinned copper contact pin with a stirrup. After checking proper orientation of the connector, the stirrup is clamped onto the conductor fitting with the hexagonal wrench supplied in the kit. (FMCE)

### 1c. Contact pin

Copper pin shaped at one end, threaded at the other for attachment of the insulating plug or mating accessory. The central portion is threaded for connection to the conductor contact. A uniform contact pressure is maintained for any combination. (FMCT)

### 2. Semi-conducting inner screen

Insert of moulded semi-conducting EPDM, enclosing the connecting components, so that ionisation of any air remaining trapped is prevented.

### 3. Semi-conducting outer envelope

Jacket made of semi-conducting EPDM. Its design provides relief of electrical stress as does a cable screen. Its connection to the cable screen ensures that the assembly is maintained at earth potential.

### 4. Insulating body

Moulded from insulating EPDM for integral reconstitution of insulation. It maintains a uniform contact pressure on the cable insulation and the bushing interface, producing an excellent moisture seal.

### 5. Test point

Electrically protected by a cap made of semi-conducting EPDM. A capacitive voltage divider provides a means of checking that the item is not live before disconnection.

### 6. Reducer

Composite EPDM moulding allowing connector adaptation to cables of different cross-sections and voltages.

### 7. Locking brace

Stainless steel brace fastening the connector onto its mating bushing or other accessory

### 8. Earthing Eye

Eye provided for connection of the outer envelope to the cable screen.

### 9. Earthing cover

Made of moulded EPDM, ensures watertight protection of the earthing device.

### 10. Conductor contact

The barrel side, sized for the conductor, is of a compression type. Connection to the contact pin is through the spade which is threaded to accept it

### 11. Insulating Plug

Epoxy component which has a threaded metal insert to accept the contact pin.

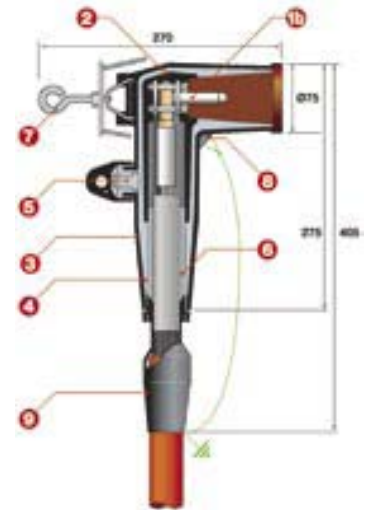
### 12. Cap

Moulded semi-conducting EPDM part, protects and earths the test point during normal use.

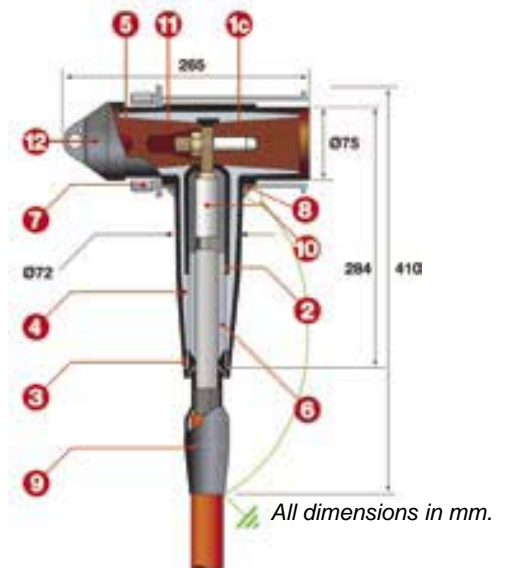
## FMCS-400 Separable Tee Connector



## FMCE-400 Separable Tee Connector



## FMCT-400 Separable Tee Connector



## SELECTION GUIDE

**TABLE A**

1. Select from **TABLE A** on the right the kit model corresponding to the diameter over the insulation table.

2. Specify insulation voltage  $U_m$  in kV:  
**12 - 17.5 - 24-36**

3. Select from the **TABLE B** (bottom right) the earthing device to suit the cable

4. Select the model of connection end-fitting<sup>(1)</sup> according to:

■ Conductor material **C: Copper**  
**A: Aluminium**

■ Conductor Size **In mm<sup>2</sup>**

<sup>(1)</sup> Can be crimped or indented by usual tools

Separable Tee Connector									
Diameter over insulation mm		Kit Reference Elbow	Kit Reference Tee	Kit Reference Straight	Conductor size mm <sup>2</sup> (for guidance only) Highest Voltage				
MIN	MAX				12kV	17.5kV	24kV	36kV	
18.5	20.5	FMCE-400-Z	FMCT-400-Z	FMCS-400-Z	70	50	35		
19.9	21.9	FMCE-400-A	FMCT-400-A	FMCS-400-Z	95	70	50		
21.4	2.5	FMCE-400-B	FMCT-400-B	FMCS-400-Z	120	95	70	25	
22.9	25.1	FMCE-400-C	FMCT-400-C	FMCS-400-Z	150	120	95	35	
24.4	26.6	FMCE-400-D	FMCT-400-D	FMCS-400-Z	185	150	120	50	
26.0	28.3	FMCE-400-E	FMCT-400-E	FMCS-400-Z	240	185	150	70	
27.8	30.4	FMCE-400-F	FMCT-400-F	FMCS-400-Z	300*	240	185	95	
29.8	32.7	FMCE-400-G	FMCT-400-G	FMCS-400-Z		300*	240	120/150	
31.8	35.3	FMCE-400-H	FMCT-400-H	FMCS-400-Z			300*	185	
34.1	38.3	FMCE-400-J	FMCT-400-J	FMCS-400-Z				240	

## EXAMPLE ORDERS

### Example of order for Elbow Connector

Cable 33kV, 95mm<sup>2</sup>, insulation diameter 29.5mm, aluminium conductor, copper wire screen: **FMCE-400-F-36-T3-A95**

### Example of order for Tee Connector

Cable 33kV, 95mm<sup>2</sup>, insulation diameter 23.2mm, aluminium conductor, copper wire screen: **FMCT-400-C-24-T2-A95**

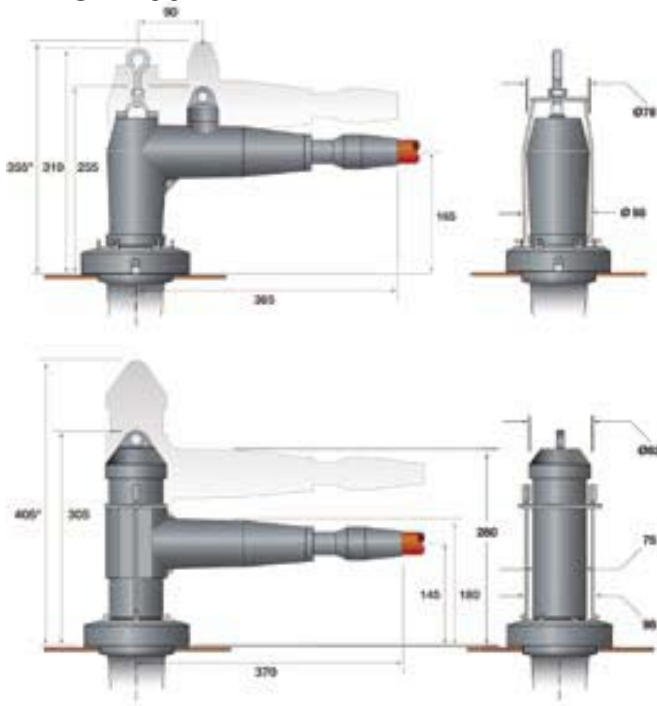
### Example of order for Elbow Connector

Cable 33kV, 95mm<sup>2</sup>, insulation diameter 28.2mm, aluminium conductor, copper wire screen: **FMCS-400-F-36-T3-A95**

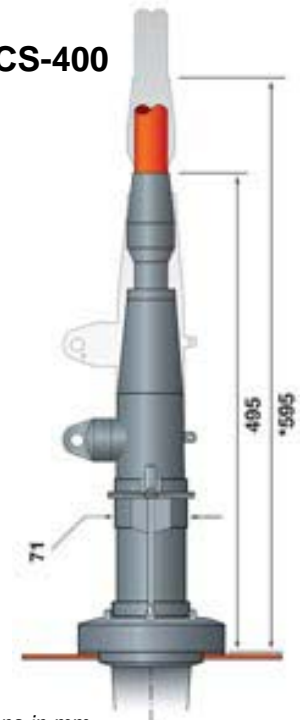
**TABLE B**

Earthing Device Reference	Type of Metallic Screen of Cable
T1	polylam
T2	copper tapes
T3	copper wires

## FMCE-400



## FMCS-400



All dimensions in mm.

\*Minimum dimensions necessary to disconnect.

## ACCESSORIES FOR 400A SEPARABLE CONNECTORS

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### FMR-400 Dead-End Receptacle



- EPM moulding with semi-conducting EPDM jacket, which provides a dead-end facility for insulating bushings.
- Operated when de-energised.
- Watertight, slipped on with silicone grease.
- Fastened to bushing by the locking brace of connector FMCE-400 (supplied separately on request)
- References: **12kV - FMR-400-12**  
**24kV - FMR-400-24**  
**36kV - FMR-400-36**
- Packing: Single Unit

### FMPCs-400 Straight Connecting Plug



- Epoxy resin moulding over a copper rod for connecting two separable tee connectors (FMCTs - 400), in combinations such as disconnectable cable joint and tee off, dual cable supply.
- Connection to rod by the clamping screws of the connectors. Screening of the connecting components. Integral reconstitution of insulation and protection continuity.
- References: **12kV - FMPCs-400-12**  
**24kV - FMPCs-400-24**  
**36kV - FMPCs-400-36**
- Packing: Single Unit

### FMPS-400 Dead-End Receptacle



- EPDM moulding designed to support and dead-end separable connectors when removed from the equipment. The stand-off plug is fitted with a metallic mounting. A part moulded-in, semi-conducting EDPM provides electrical continuity with the connector jacket.
- Operated when de-energised.
- References: **12kV - FMPS-400-12**  
**24kV - FMPS-400-24**  
**36kV - FMPS-400-36**
- Packing: Single Unit

### FMR-400 Dead-End Receptacle



- EPDM moulding designed to support and earth separable connectors when removed from the equipment.
- The earthing plug is equipped with a metallic mounting
- References: **FMPE-400**
- Packing: Single Unit

### STANDARDS

Master specification PRYSMIAN SP.5 Generally meet the requirements of IEC 540 - EDF HN 52-S-61 - ANSI/IEE 386 - NF C 33-051 - NFS 33- 001 - DIN 52 278.

### QUALITY ASSURANCE

Certified to ISO 9001

### OTHER PRODUCTS

We also supply other accessories from the 400 series  
Details available on request