SEPARABLE CONNECTORS

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 (25-300mm²)
- 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

Formerly Pirelli Cables
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.

All dimensions in mm.
SEPARABLE CONNECTORS COMPONENTS

SELECTION GUIDE

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\(^{(1)}\) according to:

   - Conductor material: C: Copper, A: Aluminium
   - Conductor Size: In mm\(^2\)

\(^{(1)}\)Can be crimped or indented by usual tools

<table>
<thead>
<tr>
<th>Diameter over insulation mm</th>
<th>Kit Reference Elbow</th>
<th>Kit Reference Tee</th>
<th>Kit Reference Straight</th>
<th>Conductor size mm(^2) (for guidance only) Highest Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.5</td>
<td>20.5</td>
<td>FMCE-400-Z</td>
<td>FMCT-400-Z</td>
<td>70 50 35</td>
</tr>
<tr>
<td>19.9</td>
<td>21.9</td>
<td>FMCE-400-A</td>
<td>FMCT-400-A</td>
<td>95 70 50</td>
</tr>
<tr>
<td>21.4</td>
<td>2.5</td>
<td>FMCE-400-B</td>
<td>FMCT-400-B</td>
<td>120 95 70 25</td>
</tr>
<tr>
<td>22.9</td>
<td>25.1</td>
<td>FMCE-400-C</td>
<td>FMCT-400-C</td>
<td>150 120 95 35</td>
</tr>
<tr>
<td>24.4</td>
<td>26.6</td>
<td>FMCE-400-D</td>
<td>FMCT-400-D</td>
<td>185 150 120 50</td>
</tr>
<tr>
<td>26.0</td>
<td>28.3</td>
<td>FMCE-400-E</td>
<td>FMCT-400-E</td>
<td>240 185 150 70</td>
</tr>
<tr>
<td>27.8</td>
<td>30.4</td>
<td>FMCE-400-F</td>
<td>FMCT-400-F</td>
<td>300* 240 185 95</td>
</tr>
<tr>
<td>29.8</td>
<td>32.7</td>
<td>FMCE-400-G</td>
<td>FMCT-400-G</td>
<td>300* 240</td>
</tr>
<tr>
<td>31.8</td>
<td>35.3</td>
<td>FMCE-400-H</td>
<td>FMCT-400-H</td>
<td>300* 185</td>
</tr>
<tr>
<td>34.1</td>
<td>38.3</td>
<td>FMCE-400-J</td>
<td>FMCT-400-J</td>
<td>240</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Earthing Device Reference</th>
<th>Type of Metallic Screen of Cable</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>polylam</td>
</tr>
<tr>
<td>T2</td>
<td>copper tapes</td>
</tr>
<tr>
<td>T3</td>
<td>copper wires</td>
</tr>
</tbody>
</table>

EXAMPLE ORDERS

Example of order for Elbow Connector
Cable 33kV, 95mm\(^2\), insulation diameter 29.5mm, aluminium conductor, copper wire screen: FMCE-400-F-36-T3-A95

Example of order for Tee Connector
Cable 33kV, 95mm\(^2\), insulation diameter 23.2mm, aluminium conductor, copper wire screen: FMCT-400-C-24-T2-A95

Example of order for Elbow Connector
Cable 33kV, 95mm\(^2\), insulation diameter 28.2mm, aluminium conductor, copper wire screen: FMCS-400-F-36-T3-A95

FMCE-400

FMCS-400

All dimensions in mm.

*Minimum dimensions necessary to disconnect.
**SEPARABLE CONNECTORS COMPONENTS**

**Components Commercial Enquiries**  
Tel: +44 (0) 151 430 3655  
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**Prysmian Cables & Systems Limited**  
Components Unit, P.O. Box 4, Hall Lane  
Prescot, Merseyside, L34 5UR, UK  
www.prysmian.co.uk

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**ACCESSORIES FOR 400A SEPARABLE CONNECTORS**

**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

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**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

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**OTHER PRODUCTS**

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

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