

# Euromold

a Nexans company



Medium voltage separable  
connectors and bushings  
- Interface C -

Catalogue 2009



### **EUROMOLD**

Euromold is the leading European specialised designer, manufacturer and distributor of prefabricated cable accessories for medium voltage energy distribution. Euromold provides a complete range of accessories for underground cables: pre-moulded EPDM or silicone rubber connectors, terminations and joints for cables and epoxy bushings for transformers and switchgear, as well as a large range of cold-shrinkable terminations and joints from 12 to 42 kV.

Euromold is also the manufacturer of electrical components for the high voltage accessories of the Nexans group.

### **ISO 9001 Certificate**

Since 1992, Euromold's commitment to quality is demonstrated by its ISO 9001 certification.

### **International standards**

All our products meet the International standards like CENELEC HD 629.1, CENELEC EN 50180, IEC 60137, IEEE 386 & 404... or country specifications. Official certificates, CESI, KEMA, ATEX... prove the conformity of our products. Long duration tests of existing or new products are continuously performed in our test fields.

### **Laboratory accreditation**

Since June 2000, Euromold's independent ELAB laboratory obtained the BELTEST accreditation no.192-T-ISO 17025 conform with the European standards for laboratories ISO 17025 for electrical testing of medium voltage cable accessories according to the International standards IEC 61442 and HD 629.

While every care is taken to ensure that the information contained in this publication is correct, no legal responsibility can be accepted for any inaccuracy. Nexans Network Solutions N.V. - Div. Euromold reserves the right to alter or modify the characteristics of its products described in this catalogue as standards and technology evolve.

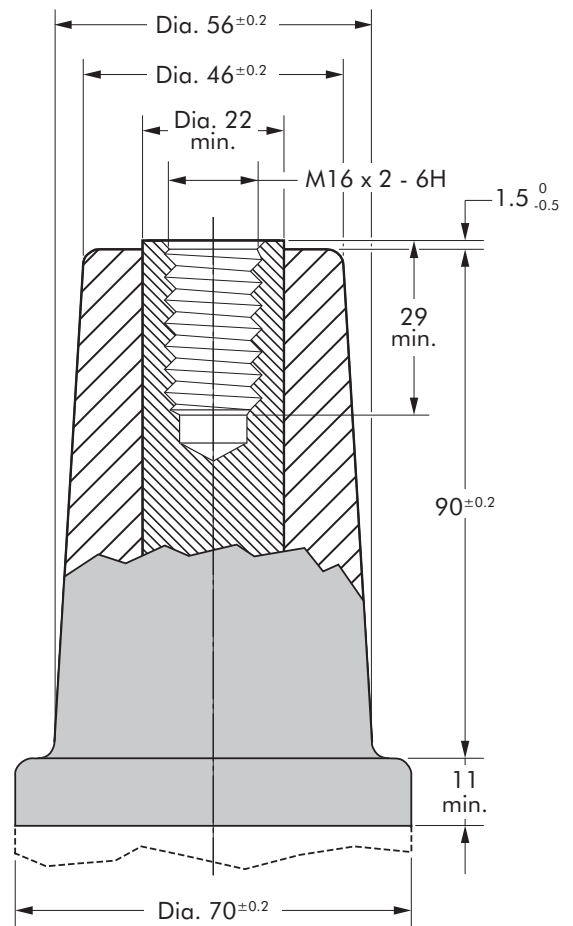
## SEPARABLE CONNECTORS AND BUSHINGS INTERFACE C

### Table of contents

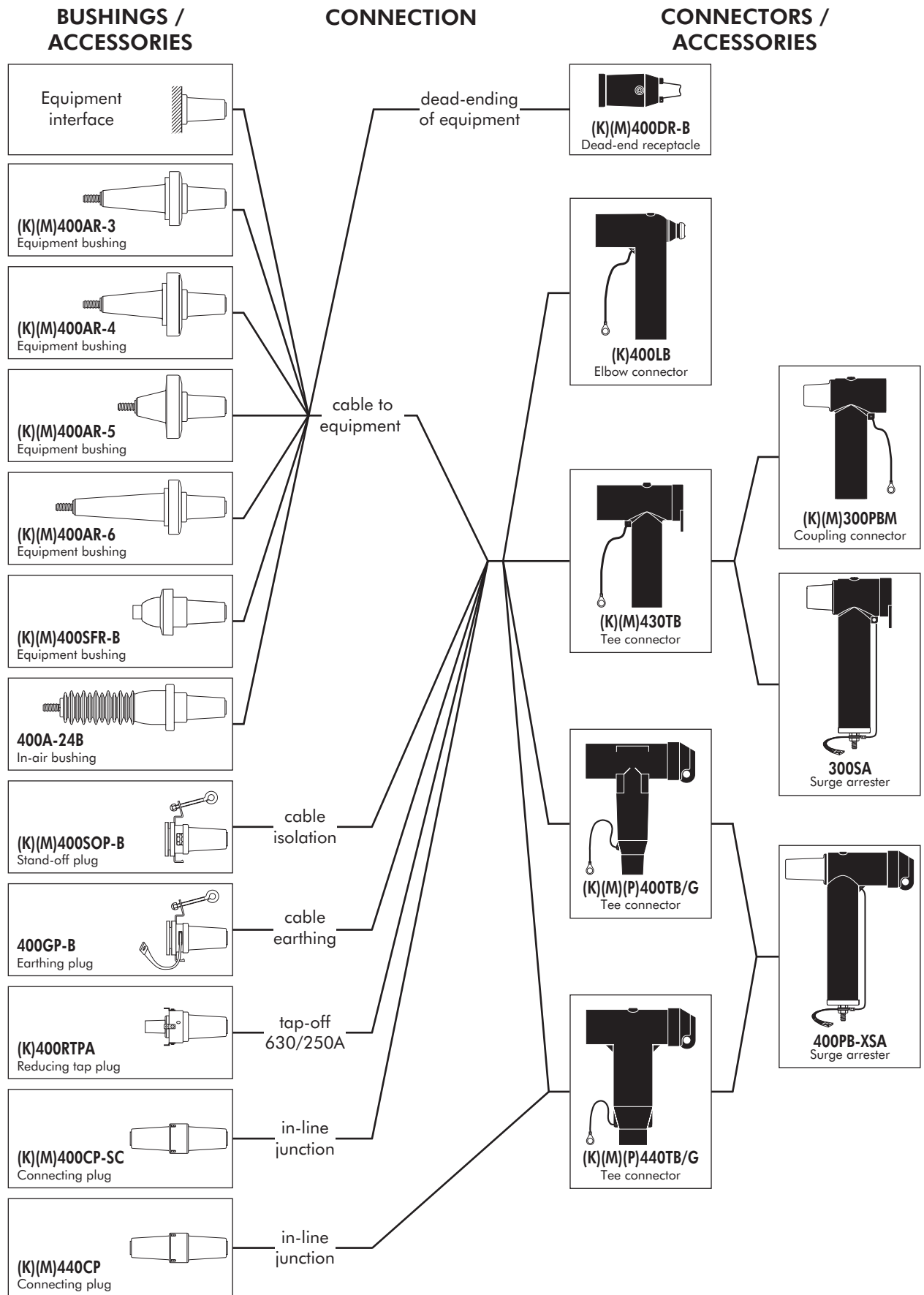
- 400LB - elbow connector
- 430TB - tee connector
- 400TB - tee connector
- 440TB - tee connector
- 430TBM-P2/P3 - dual/triple cable arrangement
- 400AR-3 - equipment bushing
- 400AR-4 - equipment bushing
- 400AR-5 - equipment bushing
- 400AR-6 - equipment bushing
- 400SFR-B - equipment bushing
- 400A-24B - in-air bushing
- Fixings for equipment bushings
- 400PB-XSA - surge arrester
- 300SA - surge arrester
- 400TR & 400TR-LB - test rod
- 400TK-400SW installation tools
- Accessories
- Possible arrangements

### Interface C

Dimensions according to European CENELEC EN 50180 and 50181 (in mm).



# Connecting possibilities



## 400LB INTERFACE C ELBOW CONNECTOR

Up to 24 kV - 630 A

### Application

Separable elbow connector designed to connect polymeric insulated cable to equipment (transformers, switchgear, motors...).

Also connects cable to cable, using the appropriate mating part.

### Technical characteristics

- The thick conductive EPDM jacket provides a total safe to touch screen which ensures safety for personnel.
- Each separable connector is tested for AC withstand and partial discharge prior to leaving the factory.

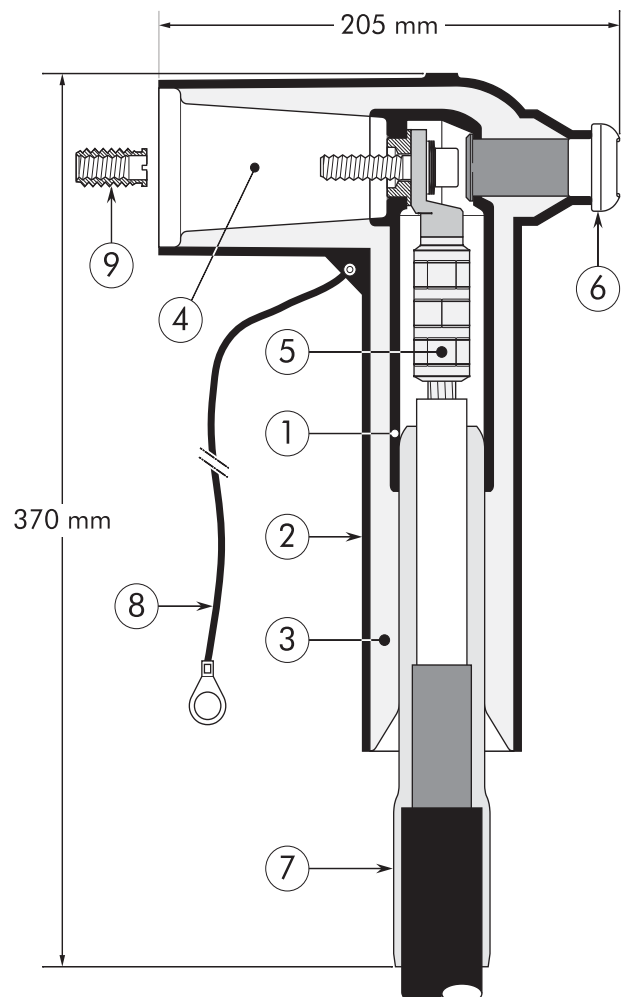
6/10 (12) kV  
6.35/11 (12) kV  
8.7/15 (17.5) kV  
12/20 (24) kV  
12.7/22 (24) kV

### Design

Separable connector comprising:

1. Conductive EPDM insert.
2. Conductive EPDM jacket.
3. Insulating EPDM layer moulded between the insert and the jacket.
4. Type C - 630 A interface as described by CENELEC EN 50180 and 50181.
5. Conductor connector (not included in the standard kit).
6. Insulating plug.
7. Cable reducer.
8. Earth lead.
9. Transition contact M10/M16.

The screen break design enables cable outer sheath testing without removing or dismantling the connector.



### Specifications and standards

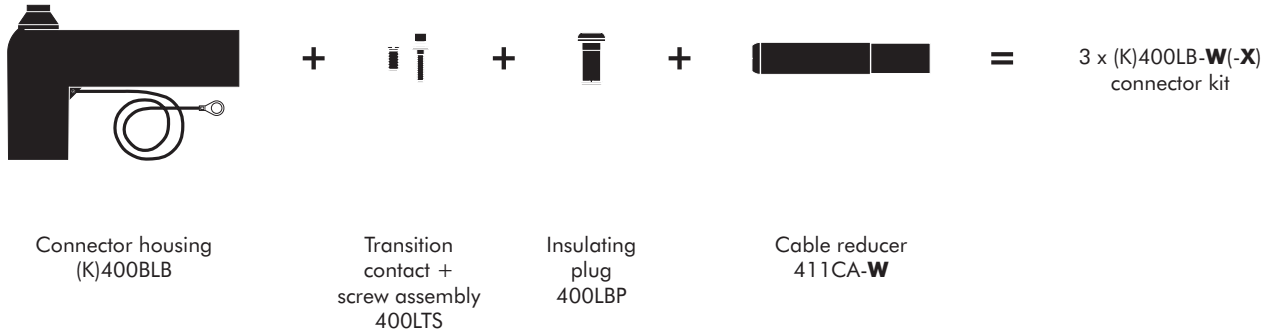
The separable connector 400LB meets the requirements of CENELEC HD 629.1.

Separable connector type	Voltage $U_m$ (kV)	Current $I_r$ (A)	Conductor sizes (mm <sup>2</sup> )	
			min	max
400LB	12	630	25	300
K400LB	24	630	25	300

## Kit contents

The complete (K)400LB elbow connector kit comprises 3 x the following components:

The kit also comprises lubricant, wipers, and installation instructions.



## Ordering instructions

Select the part number which gives the best centring to the cable core insulation diameter.

Add a 'K' for use up to 24 kV.

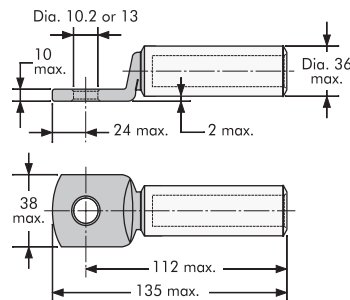
### Example:

The copper wire screened cables are 24 kV, 240 mm<sup>2</sup> stranded aluminium with a diameter over core insulation of 32.2 mm.

Order 3 x K400LB-27 elbow connector kit.

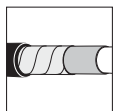
Table W

Ordering part number	Dia. over core insulation (mm)	
	min	max
3 x 400LB-11	12.0	17.5
3 x 400LB-15	16.0	22.0
3 x 400LB-19	20.0	26.5
3 x 400LB-22	23.5	31.0
3 x 400LB-25	26.5	32.5
3 x 400LB-27	28.5	37.5

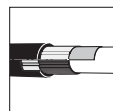


### Notes:

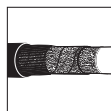
We do not supply the compression lugs in the standard kit. All types of cable lugs can be used. The lugs must be within the dimensions specified and the palm of the lug must be copper or any equivalent alloy.



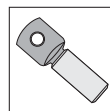
For use with copper tape screened cables.  
Order: Kit MT.



For use with Alupe or C 33-226 cables.  
Please contact our representative.



For use with fabric tape (graphite) screened cables.  
Order additional semi-conductive tape (type TSC).



Can be supplied with cable lugs.



For applications outdoors and in humid climate.  
Order: +MWS.



Components can be ordered individually.

## 430TB INTERFACE C TEE CONNECTOR

Up to 36 kV  
630 A (800 A)

### Application

Separable tee shape connector (bolted type) designed to connect polymeric insulated cable to equipment (transformers, switchgear, motors, ...).

Also connects cable to cable when using the appropriate mating parts.

### Technical characteristics

- A thick conductive EPDM jacket provides a total safe to touch screen.
- Each separable connector is tested for AC withstand and partial discharge prior to leaving the factory.

6/10	(12)	kV
6.35/11	(12)	kV
8.7/15	(17.5)	kV
12/20	(24)	kV
12.7/22	(24)	kV
18/30	(36)	kV
19/33	(36)	kV

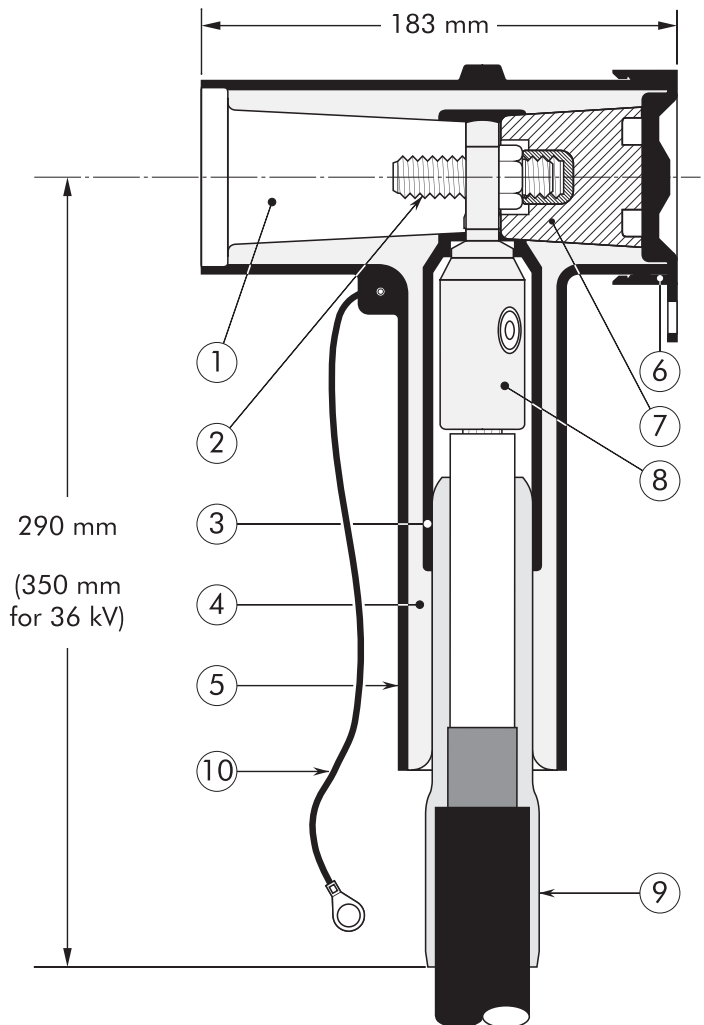
### Design

1. Type C - 630 A interface as described by CENELEC EN 50180 and 50181.
2. Clamping screw.
3. Conductive EPDM insert.
4. Insulating EPDM layer moulded between the insert and the jacket.
5. Conductive EPDM jacket.
6. Conductive rubber cap.
7. Basic insulating plug.
8. Conductor connector.
9. Cable reducer.
10. Earthing lead.

The screen break design enables cable outer sheath testing without removing or dismantling the connector.

### Specifications and standards

The separable connector 430TB meets the requirements of CENELEC HD 629.1.

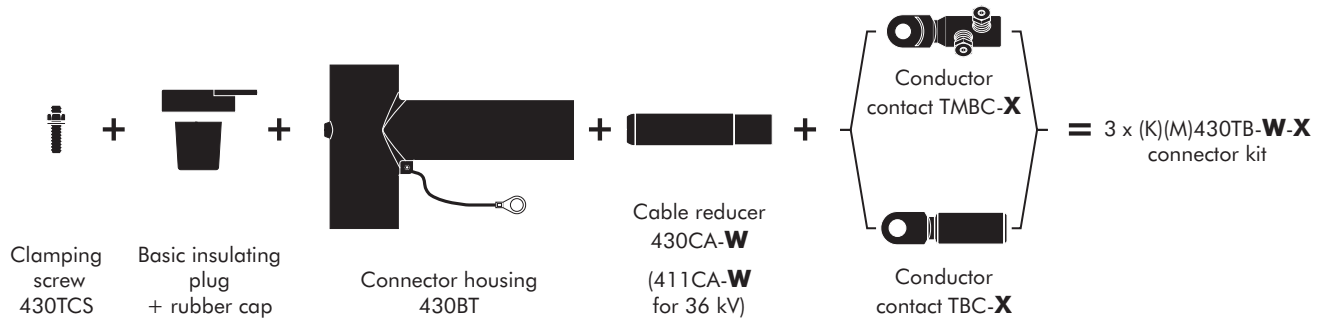


Separable connector type	Voltage $U_m$ (kV)	Current $I_r$ (A)	Current $I_r$ (A) When installed on an appropriate equipment bushing	Conductor sizes (mm <sup>2</sup> )	
				min	max
430TB	12	630	800	35	300
K430TB	24	630	800	35	300
M430TB	36	630	800	50	240

## Kit contents

The complete (K)(M)430TB tee connector kit comprises 3 x the following components:

The kit also comprises lubricant, wipers, water sealing mastic, installation rod, installation instructions and crimp chart.



## Ordering instructions

To order the tee connector, select the ordering part number which gives you the best centring of your core insulation diameter and substitute **X** using table X, according to your conductor size and type.

Table W

Ordering part number	Voltage (Um) (kV)	Dia. over core insulation (mm)	
		min	max
3 x 430TB-11-X	12	12.0	17.5
3 x 430TB-16-X	12	17.0	23.5
3 x 430TB-18-X	12	19.0	32.6
3 x K430TB-11-X	24	12.0	17.5
3 x K430TB-16-X	24	17.0	23.5
3 x K430TB-18-X	24	19.0	32.6
3 x M430TB-11-X	36	12.0	17.5
3 x M430TB-15-X	36	16.0	22.0
3 x M430TB-19-X	36	20.0	26.5
3 x M430TB-22-X	36	23.5	31.0
3 x M430TB-25-X	36	26.5	32.5
3 x M430TB-27-X	36	28.5	37.5

### Example:

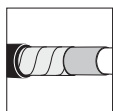
The cable is 24 kV, 150 mm<sup>2</sup> compact stranded copper with a diameter over core insulation of 27.5 mm.

Order

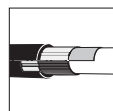
3 x K430TB-18-95.240-14-5 tee connector kit.

Table X

Conductor sizes (mm <sup>2</sup> )	Aluminium conductor			Copper conductor	
	DIN hexagonal	Deep indent	Bolted	DIN hexagonal	Bolted
35	35(K)M-10-2	35KM-10-1	16.95-14-5	35(K)M-11-2	16.95-14-5
50	50(K)M-10-2	50(K)M-10-1	50.150-14-5	50(K)M-11-2	50.150-14-5
70	70(K)M-10-2	70(K)M-10-1	95.240-14-5	70(K)M-11-2	95.240-14-5
95	95(K)M-10-2	95(K)M-10-1		95(K)M-11-2	
120	120(K)M-10-2	120(K)M-10-1		120(K)M-11-2	
150	150(K)M-10-2	150(K)M-10-1		150(K)M-11-2	
185	185(K)M-10-2	185(K)M-10-1		185(K)M-11-2	
240	240(K)M-10-2	240(K)M-10-1		240(K)M-11-2	
300	300(K)M-10-2	-	-	300(K)M-11-2	-



For use with copper tape screened cables.  
Order: Kit MT.



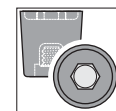
For use with Alupe or C 33-226 cables.  
Please contact our representative.



For use with other cable types.  
Please contact our representative.



For applications outdoors and in humid climate.  
Order: +MWS.



Basic insulating plug also available with a voltage detection point.  
Order: - /VD.



When installed on an appropriate equipment bushing:  
800 A continuously



## 400TB INTERFACE C TEE CONNECTOR

### Application

Separable tee shape connector (bolted type) designed to connect polymeric insulated cable to equipment (transformers, switchgear, motors, ...). Also connects cable to cable when using the appropriate mating parts.

### Technical characteristics

- The thick conductive EPDM jacket provides a total safe to touch screen which ensures safety for personnel.
- Each separable connector is tested for AC withstand and partial discharge prior to leaving the factory.

Up to 41.5 kV  
630 A (800 A)

6/10 (12) kV  
6.35/11 (12) kV  
8.7/15 (17.5) kV  
12/20 (24) kV  
12.7/22 (24) kV  
18/30 (36) kV  
19/33 (36) kV  
20.8/36 (41.5) kV

### Design

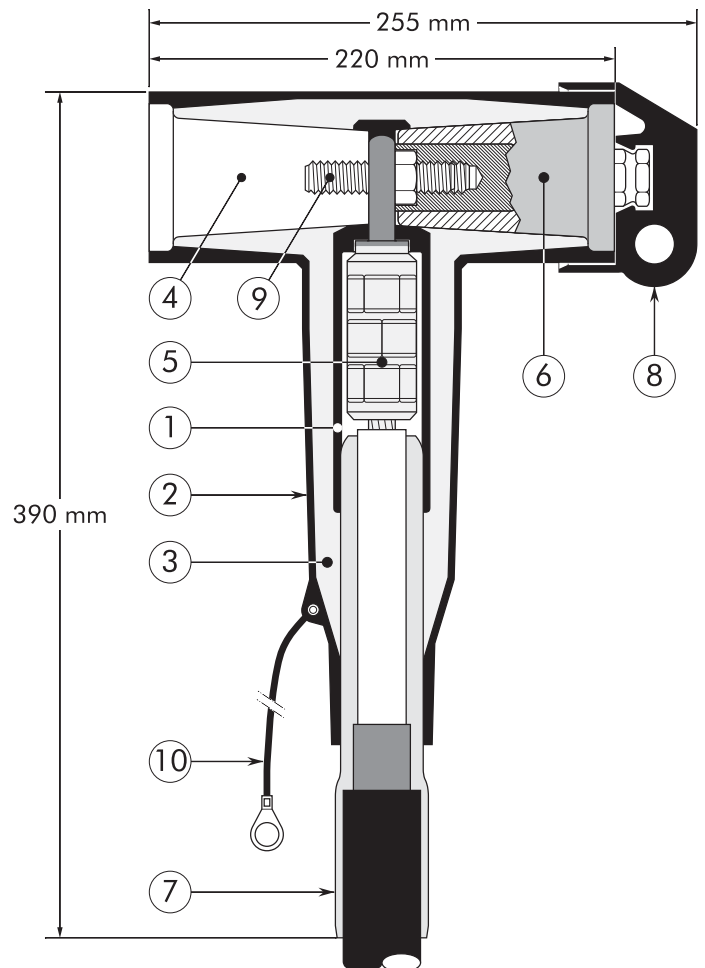
Separable connector comprising:

- Conductive EPDM insert.
- Conductive EPDM jacket.
- Insulating EPDM layer.
- Type C - 630 A interface as described by CENELEC EN 50180 and 50181.
- Conductor connector.
- Basic insulating plug (with VD point).
- Cable reducer.
- Conductive rubber cap.
- Clamping screw.
- Earthing lead.

The screen break design enables cable outer sheath testing without removing or dismantling the connector.

### Specifications and standards

The separable connector 400TB meets the requirements of CENELEC HD 629.1 S1.

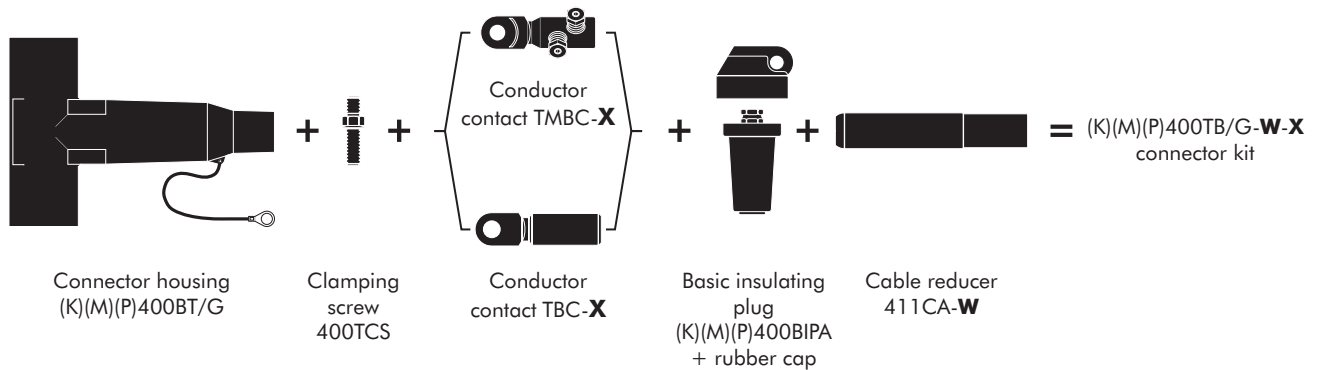


Separable connector type	Voltage $U_m$ (kV)	Current $I_r$ (A)	Current $I_r$ (A) When installed on an appropriate equipment bushing	Conductor sizes (mm <sup>2</sup> )	
				min	max
400TB/G	12	630	800	35	300
K400TB/G	24	630	800	35	300
M400TB/G	36	630	800	35	240
P400TB/G	41.5	630	800	35	240

## Kit contents

The complete (K)(M)(P)400TB/G tee connector kit comprises the following components:

The kit also comprises lubricant, wipers, installation instructions and crimp chart.



## Ordering instructions

To order the tee connector, select the ordering part number which gives you the best centring of your core insulation diameter and substitute **X** using table X, according to your conductor size and type. Add a 'K' for use up to 24 kV, add an 'M' for use up to 36 kV, add a 'P' for use up to 41.5 kV.

### Example:

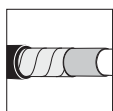
The copper wire screened cable is 36 kV, 150 mm<sup>2</sup> stranded copper with a diameter over core insulation of 32.5 mm. Order a M400TB/G-27-150(K)M-11-2 tee connector kit.

Table W

Ordering part number	Dia. over core insulation (mm)	
	min	max
400TB/G-11-X	12.0	17.5
400TB/G-15-X	16.0	22.0
400TB/G-19-X	20.0	26.5
400TB/G-22-X	23.5	31.0
400TB/G-25-X	26.5	32.5
400TB/G-27-X	28.5	37.5

Table X

Conductor sizes (mm <sup>2</sup> )	Aluminium conductor			Copper conductor	
	DIN hexagonal	Deep indent	Bolted	DIN hexagonal	Bolted
35	35(K)M-12-2	35KM-12-1	16.95-14-5	35(K)M-11-2	16.95-14-5
50	50(K)M-12-2	50(K)M-12-1		50(K)M-11-2	
70	70(K)M-12-2	70(K)M-12-1	50.150-14-5	70(K)M-11-2	50.150-14-5
95	95(K)M-12-2	95(K)M-12-1		95(K)M-11-2	
120	120(K)M-12-2	120(K)M-12-1	95.240-14-5	120(K)M-11-2	95.240-14-5
150	150(K)M-12-2	150(K)M-12-1		150(K)M-11-2	
185	185(K)M-12-2	185(K)M-12-1	-	185(K)M-11-2	-
240	240(K)M-12-2	240(K)M-12-1		240(K)M-11-2	
300	300(K)M-12-2	-	-	300(K)M-11-2	-



For use with copper tape screened cables. Order: Kit MT.



For use with other cable types. Please contact our representative.



For applications outdoors and in humid climate. Order: +MWS.



For use in potentially explosive atmospheres (for 12 kV max). Add -/ATEX to part number.



Components can be ordered individually.



When installed on an appropriate equipment bushing: 800 A continuously

## 440TB INTERFACE C TEE CONNECTOR

### Application

Separable tee shape connector (bolted type) designed to connect polymeric insulated cable to equipment (transformers, switchgear, motors, ...). Also connects cable to cable when using the appropriate mating parts.

### Technical characteristics

- The thick conductive EPDM jacket provides a total safe to touch screen which ensures safety for personnel.
- Each separable connector is tested for AC withstand and partial discharge prior to leaving the factory.

Up to 41.5 kV  
630 A (1250 A)

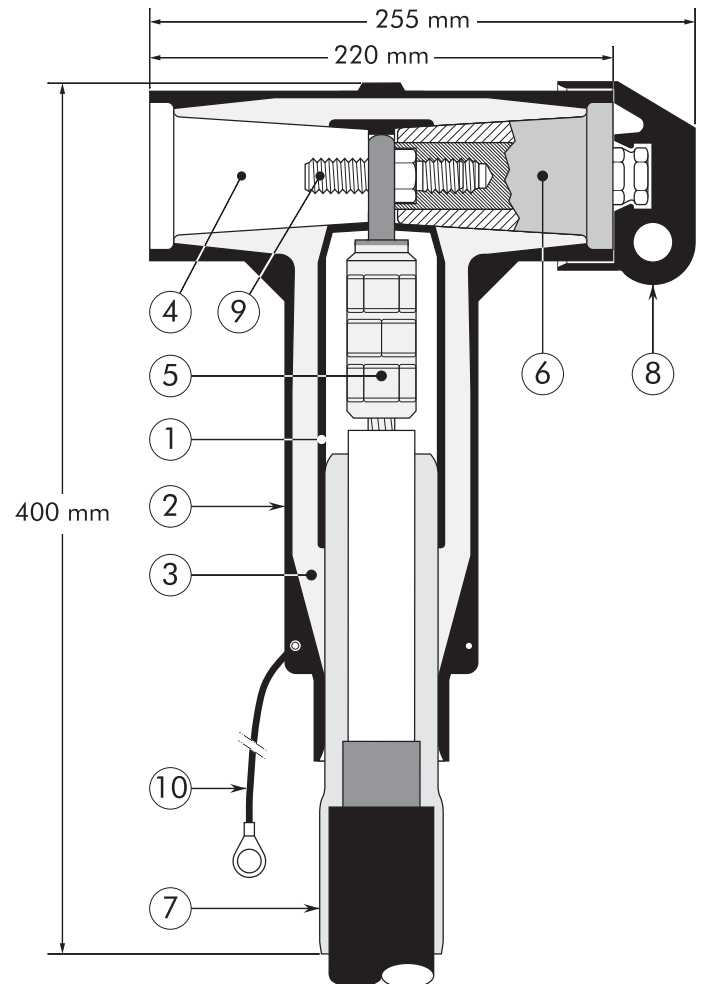
6/10	(12)	kV
6.35/11	(12)	kV
8.7/15	(17.5)	kV
12/20	(24)	kV
12.7/22	(24)	kV
18/30	(36)	kV
19/33	(36)	kV
20.8/36	(41.5)	kV

### Design

Separable connector comprising:

- Conductive EPDM insert.
- Conductive EPDM jacket.
- Insulating EPDM layer moulded between the insert and the jacket.
- Type C - 630 A interface as described by CENELEC EN 50180 and 50181.
- Conductor connector.
- Basic insulating plug (with VD point).
- Cable reducer.
- Conductive rubber cap.
- Clamping screw.
- Earthing lead.

The screen break design enables cable outer sheath testing without removing or dismantling the connector.



### Specifications and standards

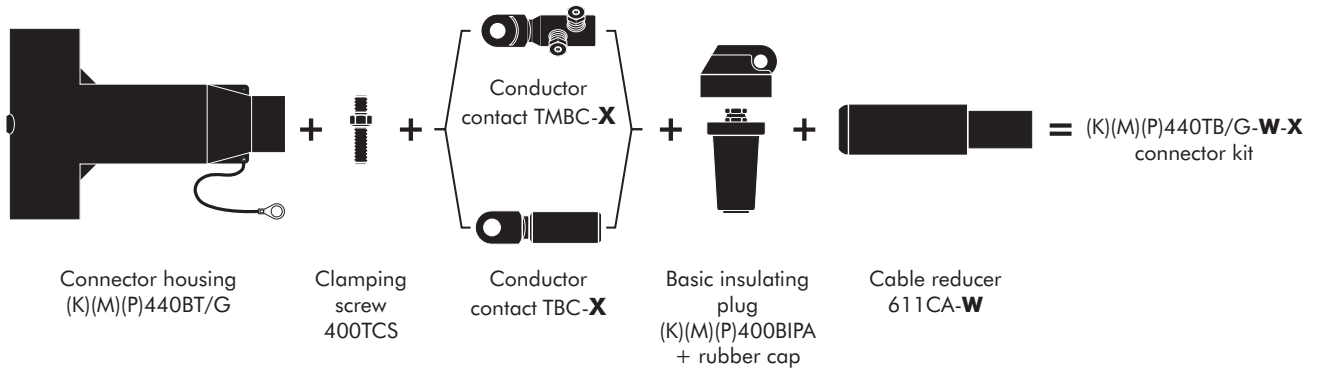
The separable connector 440TB meets the requirements of CENELEC HD 629.1.

Separable connector type	Voltage $U_m$ (kV)	Current $I_r$ (A)	Current $I_r$ (A) When installed on an appropriate equipment bushing	Conductor sizes (mm <sup>2</sup> )	
				min	max
440TB/G	12	630	1250	185	630
K440TB/G	24	630	1250	185	630
M440TB/G	36	630	1250	185	630
P440TB/G	41.5	630	1250	185	630

## Kit contents

The complete (K)(M)(P)440TB/G tee connector kit comprises the following components:

The kit also comprises lubricant, wipers, installation instructions and crimp chart.



## Ordering instructions

To order the tee connector, select the ordering part number which gives you the best centring of your core insulation diameter and substitute **X** using table X, according to your conductor size and type. Add a 'K' for use up to 24 kV, add an 'M' for use up to 36 kV, add a 'P' for use up to 41.5 kV.

### Example:

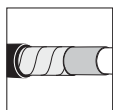
The copper wire screened cable is 36 kV, 240 mm<sup>2</sup> stranded aluminium with a diameter over core insulation of 37.0 mm. Order a M440TB/G-32-240(K)M-12-2 tee connector kit.

Table W

Ordering part number	Dia. over core insulation (mm)	
	min	max
440TB/G-22-X	23.5	31.0
440TB/G-27-X	28.5	37.5
440TB/G-32-X	34.0	42.5
440TB/G-37-X	39.0	48.5
440TB/G-43-X	45.5	56.0

Table X

Conductor sizes (mm <sup>2</sup> )	Aluminium conductor			Copper conductor	
	DIN hexagonal	Deep indent	Bolted	DIN hexagonal	Bolted
185	185(K)M-12-2	185KM-12-1	185.400-12-5	185(K)M-11-2	185.400-12-5
240	240(K)M-12-2	240KM-12-1		240(K)M-11-2	
300	300(K)M-12-2	300KM-12-1	400.630-14-5	300(K)M-11-2	400.630-14-5
400	400(K)M-12-2	400KM-12-1		400(K)M-11-2	
500	500(K)M-12-2	500KM-12-1		500(K)M-11-2	
630	-	630KM-12-1		630(K)M-11-2	



For use with copper tape screened cables. Order: Kit MT.



For use with other cable types. Please contact our representative.



For applications outdoors and in humid climate. Order: +MWS.



For use in potentially explosive atmospheres (for 12 kV max). Add -/ATEX to part number.



Components can be ordered individually.



When installed on an appropriate equipment bushing: 1250 A continuously

## 430TBM-P2/P3 DUAL/TRIPLE CABLE ARRANGEMENT FOR 430TB CONNECTOR

### Application

Separable connectors (bolted type) for dual (P2) and triple (P3) cable arrangements.

### Technical characteristics

- A thick conductive EPDM jacket provides a total safe to touch screen.
- Each separable connector is tested for AC withstand and partial discharge prior to leaving the factory.

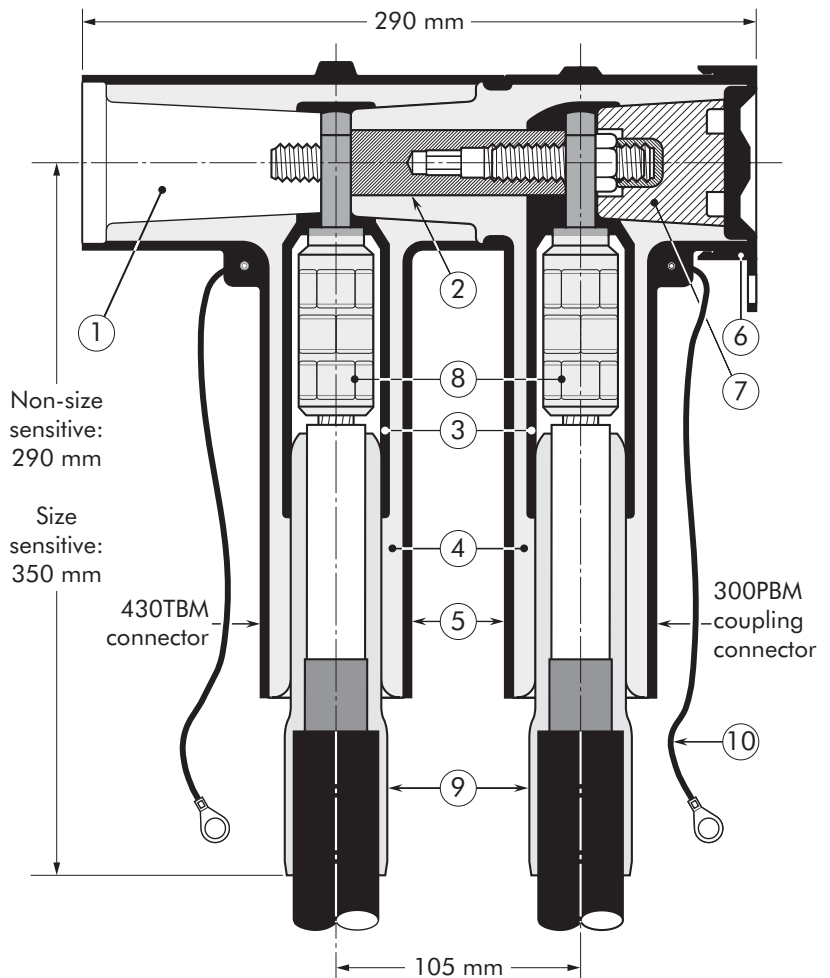
**Up to 36 kV  
630 A (1250 A)**

6/10 (12) kV  
6.35/11 (12) kV  
8.7/15 (17.5) kV  
12/20 (24) kV  
12.7/22 (24) kV  
18/30 (36) kV  
19/33 (36) kV

### Design

1. Type C - 630 A interface as described by CENELEC EN 50180 and 50181.
2. Bus for 300PB.
3. Conductive EPDM insert.
4. Insulating EPDM layer moulded between the insert and the jacket.
5. Conductive EPDM jacket.
6. Conductive EPDM cap.
7. Basic insulating plug.
8. Conductor connector.
9. Cable reducer.
10. Earth lead.

The screen break design enables cable outer sheath testing without removing or dismantling the connector.



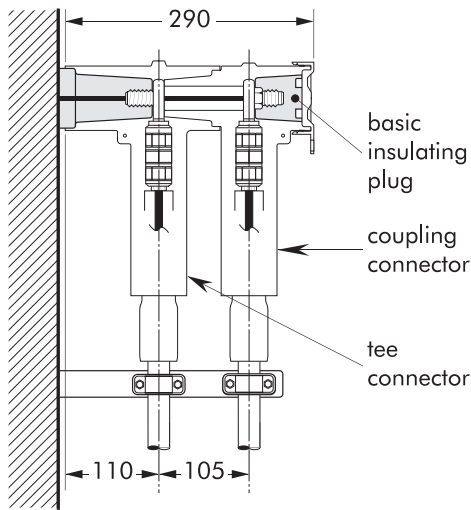
### Specifications and standards

The 430TBM-P2/P3 connectors meet the requirements of CENELEC HD 629.1.

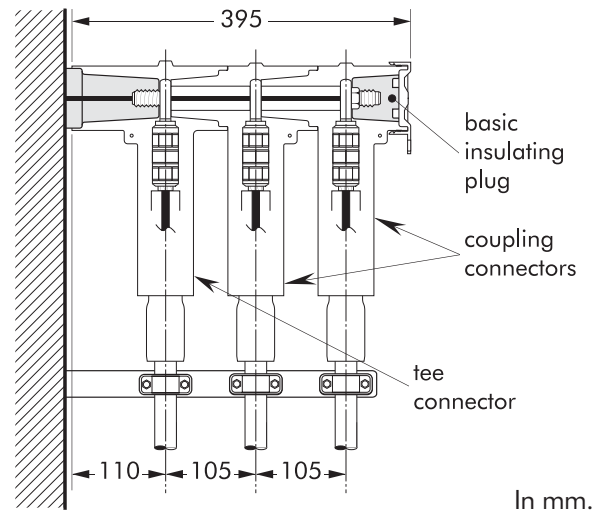
Separable connector type	Voltage $U_m$ (kV)	Current $I_r$ (A)	Current $I_r$ (A) When installed on an appropriate equipment bushing	Conductor sizes (mm <sup>2</sup> )	
				min	max
430TBM-P2/P3	12	630	1250	35	300
K430TBM-P2/P3	24	630	1250	35	300
M430TBM-P2/P3	36	630	1250	50	240

## Kit contents

The complete (K)(M)430TBM-P2 connector kit comprises 3 x the following components:



The complete (K)(M)430TBM-P3 connector kit comprises 3 x the following components:



In mm.

## Ordering instructions

To order the separable connectors for dual cable arrangement, use the tables beside to substitute for **W** and **X** in the formula:  
 3 x 430TBM-P2-**W-X**,  
 for use up to 12 kV.  
 Add a 'K' for use up to 24 kV:  
 3 x K430TBM-P2-**W-X**.  
 Add an 'M' for use up to 36 kV:  
 3 x M430TBM-P2-**W-X**.

For triple cable arrangement:  
 3 x 430TBM-P3-**W-X**,  
 for use up to 12 kV.  
 Add a 'K' for use up to 24 kV:  
 3 x K430TBM-P3-**W-X**.  
 Add an 'M' for use up to 36 kV:  
 3 x M430TBM-P3-**W-X**.

### Example:

The two cables are 24 kV, 150 mm<sup>2</sup> stranded aluminium with a diameter over core insulation of 27.5 mm.  
 Order 3 x K430TBM-P2-22-150(K)M-12-2.

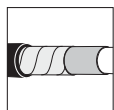
1. **From table W:** select the symbol which gives the best centring of your core insulation diameter.
2. **From table X:** according to your conductor size and type, select the designation which completes the part number.

Table W

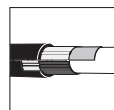
Dia. over core insulation (mm)		W
min	max	
12.0	17.5	11
16.0	22.0	15
20.0	26.5	19
23.5	31.0	22
26.5	32.5	25
28.5	37.5	27

Table X

Conductor sizes (mm <sup>2</sup> )	Aluminium conductor			Copper conductor	
	DIN hexagonal	Deep indent	Bolted	DIN hexagonal	Bolted
35	35(K)M-12-2	35KM-12-1	16.95-14-5	35(K)M-11-2	16.95-14-5
50	50(K)M-12-2	50(K)M-12-1		50(K)M-11-2	
70	70(K)M-12-2	70(K)M-12-1	50.150-14-5	70(K)M-11-2	50.150-14-5
95	95(K)M-12-2	95(K)M-12-1		95(K)M-11-2	
120	120(K)M-12-2	120(K)M-12-1		120(K)M-11-2	
150	150(K)M-12-2	150(K)M-12-1	95.240-14-5	150(K)M-11-2	95.240-14-5
185	185(K)M-12-2	185(K)M-12-1		185(K)M-11-2	
240	240(K)M-12-2	240(K)M-12-1		240(K)M-11-2	
300	300(K)M-12-2	-		300(K)M-11-2	



For use with copper tape screened cables.  
 Order: Kit MT.



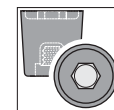
For use with Alupe or C 33-226 cables.  
 Please contact our representative.



For use with other cable types.  
 Please contact our representative.



For applications outdoors and in humid climate.  
 Order: +MWS.



Basic insulating plug also available with a voltage detection point.  
 Order: - /VD.



When installed on an appropriate equipment bushing:  
 1250 A continuously

## 400AR-3 INTERFACE C EQUIPMENT BUSHING

Up to 36 kV - 630 A

### Application

For use in equipment insulated with oil fluid, typically for transformers, switchgear, capacitors...

### Technical characteristics

Each bushing is tested for AC withstand and partial discharge prior to leaving the factory.

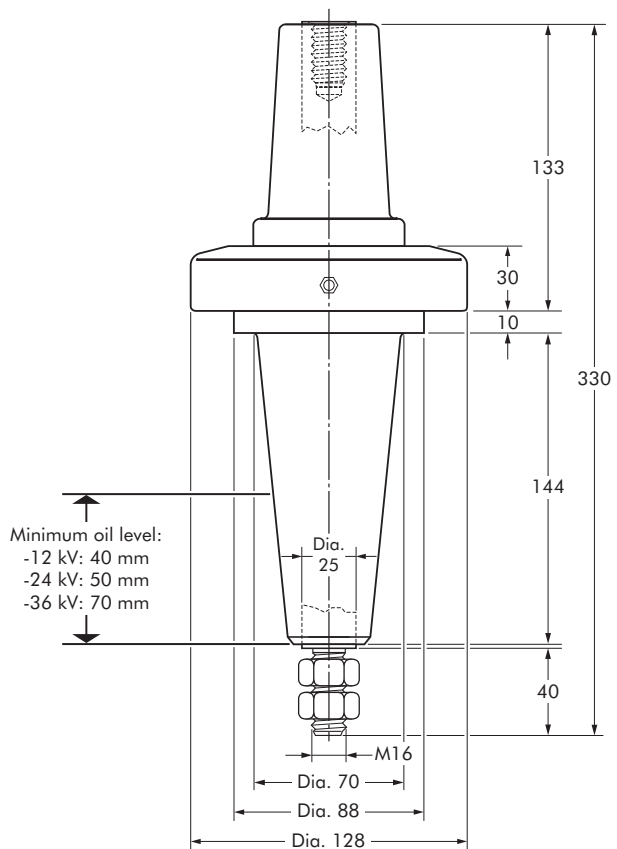
6/10 (12) kV  
6.35/11 (12) kV  
8.7/15 (17.5) kV  
12/20 (24) kV  
12.7/22 (24) kV  
18/30 (36) kV

### Specifications and standards

The bolted type equipment bushings 400AR-3 are moulded epoxy insulated parts and meet the requirements of CENELEC EN 50180 and IEC 60137.

### Ordering instructions

To order the equipment bushing, specify the type. The bushings can be supplied with an earth jumper (/J). E.g. M400AR-3/J. For use in potentially explosive atmospheres (for 12 kV max), order: 400AR-3/ATEX.

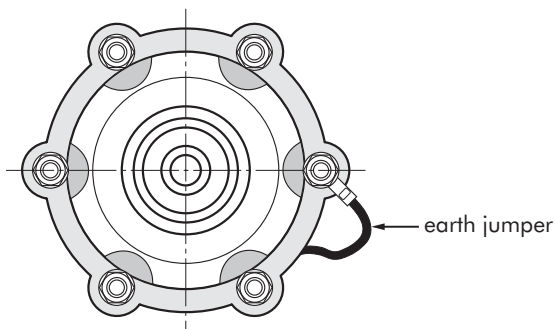
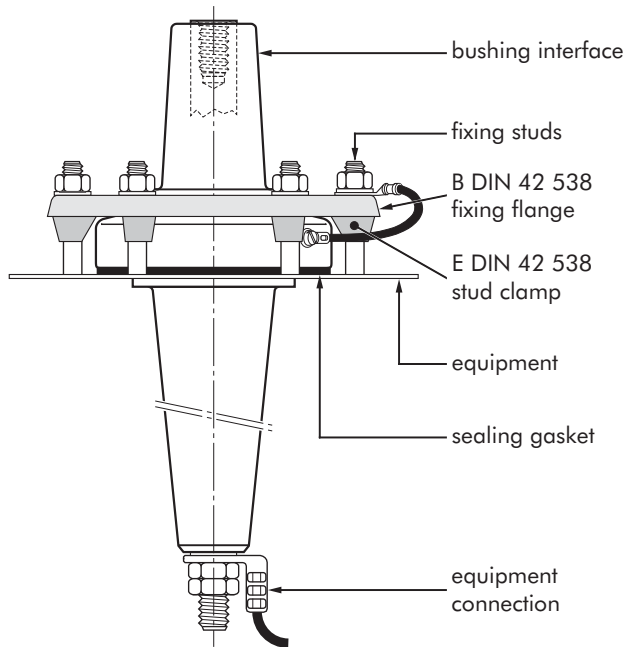


In mm.

Equipment bushing type	Voltage $U_r$ (kV)	Current $I_r$ (A)
400AR-3	12	630
K400AR-3	24	630
M400AR-3	36	630

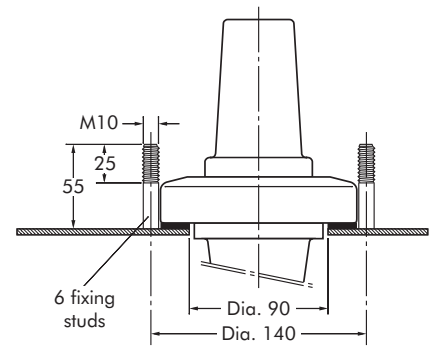
# FIXINGS FOR EQUIPMENT BUSHINGS

## 400AR-3/J Bushing



## Fixing dimensions standards DIN 42 538

German standards.



## Bushing clamping kit

To order the bushing clamping kit, according to DIN 42 538 standards, simply specify KBCD-400B.

Contents: - 1 x fixing flange B  
 - 6 x stud clamp E  
 - 1 x sealing gasket.

In mm.



## 400AR-4 INTERFACE C EQUIPMENT BUSHING

Up to 36 kV - 1250 A

### Application

For use in equipment insulated with oil fluid, typically for transformers, switchgear, capacitors...

### Technical characteristics

Each bushing is tested for AC withstand and partial discharge prior to leaving the factory.

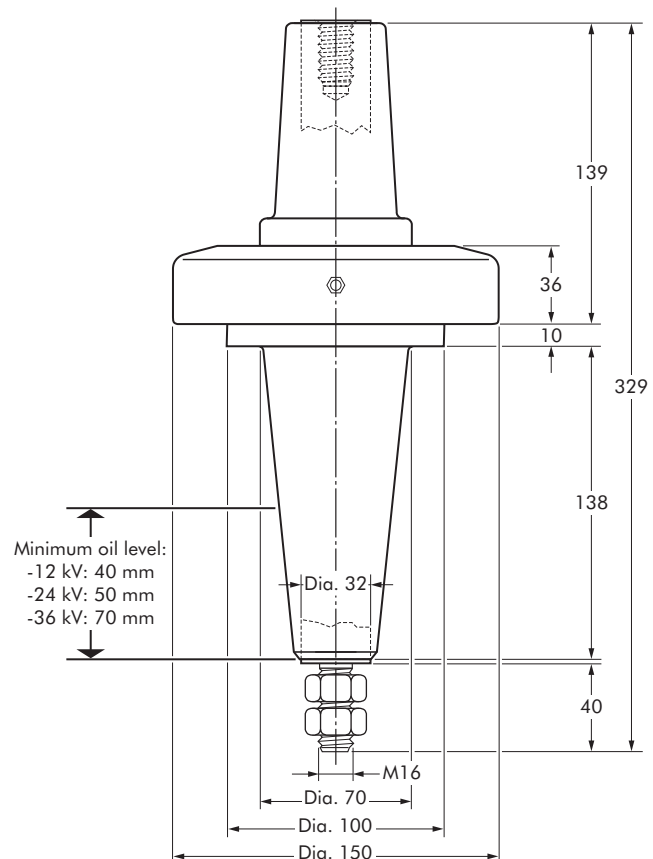
6/10 (12) kV  
6.35/11 (12) kV  
8.7/15 (17.5) kV  
12/20 (24) kV  
12.7/22 (24) kV  
18/30 (36) kV

### Specifications and standards

The bolted type equipment bushings 400AR-4 are moulded epoxy insulated parts and meet the requirements of CENELEC EN 50180 and IEC 60137.

### Ordering instructions

To order the equipment bushing, specify the type. The bushings can be supplied with an earth jumper (/J) or an earth plate (/GS). This earth connection must be specified when ordering.  
E.g. M400AR-4/GS.

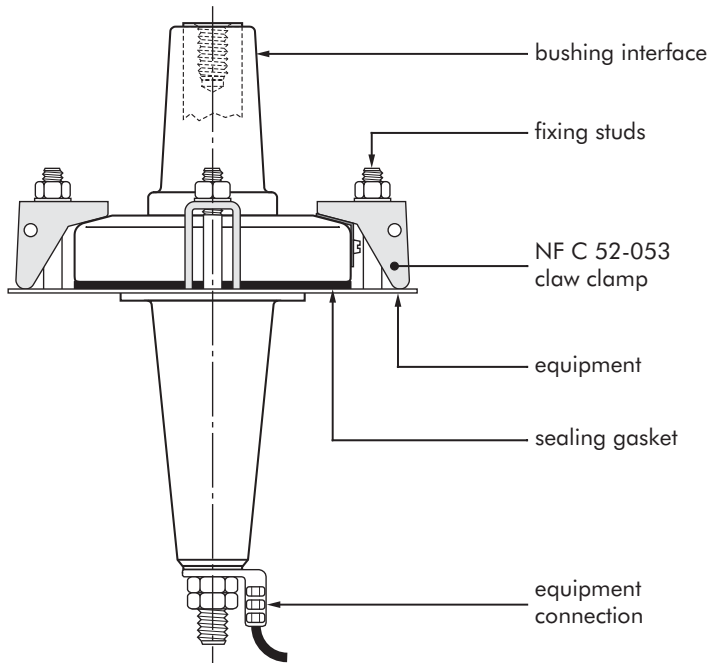


In mm.

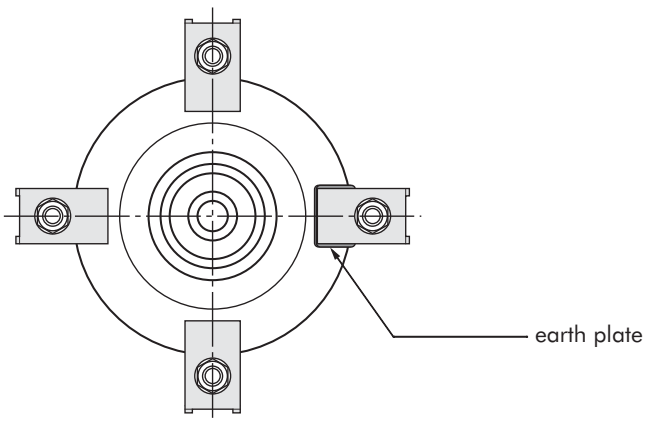
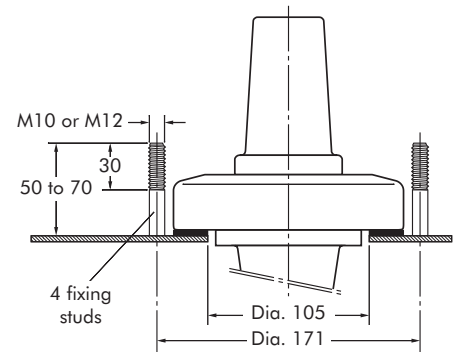
Equipment bushing type	Voltage $U_r$ (kV)	Current $I_r$ (A)
400AR-4	12	1250
K400AR-4	24	1250
M400AR-4	36	1250

# FIXINGS FOR EQUIPMENT BUSHINGS

## 400AR-4/GS Bushing



### Fixing dimensions standards NF C 52-053 French standards.



### Bushing clamping kit

To order the bushing clamping kit, according to NFC 52-053 standards, simply specify KBCNF-400.

Contents: - 4 x claw clamp NF  
- 1 x sealing gasket.

In mm.

## 400AR-5 INTERFACE C EQUIPMENT BUSHING

Up to 36 kV - 1250 A

### Application

For use in equipment insulated with oil fluid, typically for transformers, switchgear, capacitors...

### Technical characteristics

Each bushing is tested for AC withstand and partial discharge prior to leaving the factory.

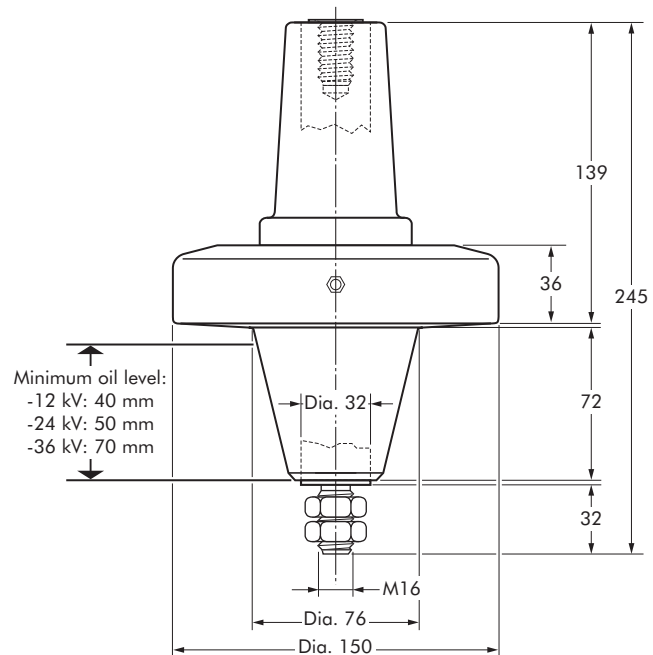
6/10 (12) kV  
6.35/11 (12) kV  
8.7/15 (17.5) kV  
12/20 (24) kV  
12.7/22 (24) kV  
18/30 (36) kV

### Specifications and standards

The bolted type equipment bushings 400AR-5 are moulded epoxy insulated parts and meet the requirements of CENELEC EN 50180 and IEC 60137.

### Ordering instructions

To order the equipment bushing, specify the type. The bushings can be supplied with an earth jumper (/J) or an earth plate (/GS). This earth connection must be specified when ordering.  
E.g. M400AR-5/GS.

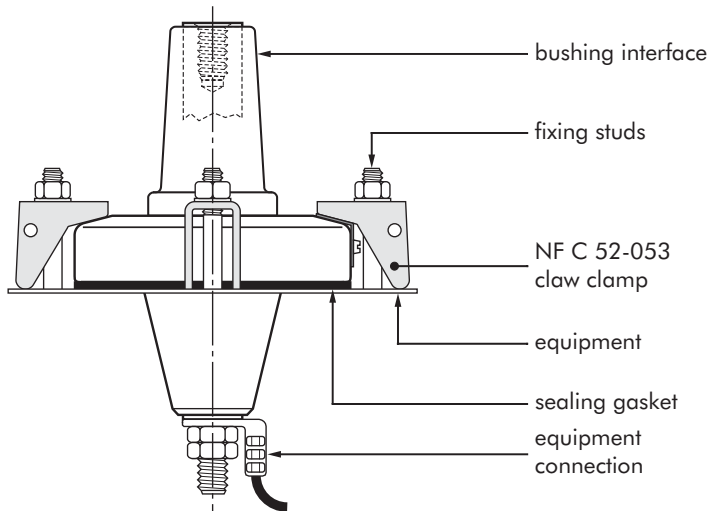


In mm.

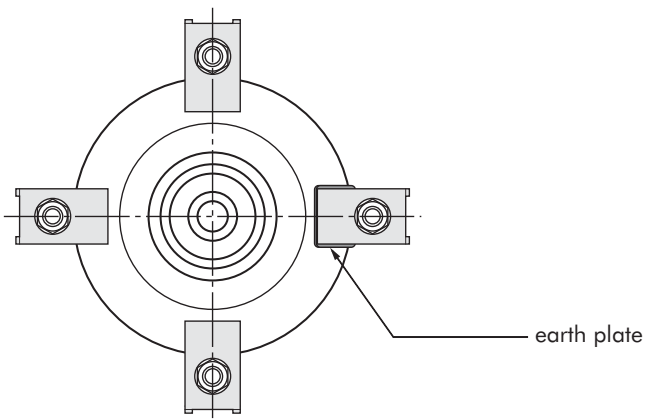
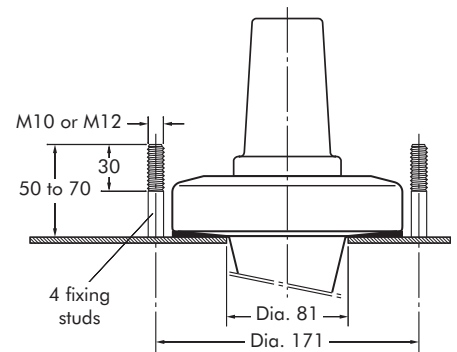
Equipment bushing type	Voltage Ur (kV)	Current Ir (A)
400AR-5	12	1250
K400AR-5	24	1250
M400AR-5	36	1250

# FIXINGS FOR EQUIPMENT BUSHINGS

## 400AR-5/GS Bushing



## Fixing dimensions standards NF C 52-053 French standards.



## Bushing clamping kit

To order the bushing clamping kit, according to NFC 52-053 standards, simply specify KBCNF-400.

Contents: - 4 x claw clamp NF  
- 1 x sealing gasket.

In mm.

## 400AR-6 INTERFACE C EQUIPMENT BUSHING

Up to 36 kV - 630 A

### Application

For use in equipment insulated with oil fluid, typically for transformers, switchgear, capacitors...

### Technical characteristics

Each bushing is tested for AC withstand and partial discharge prior to leaving the factory.

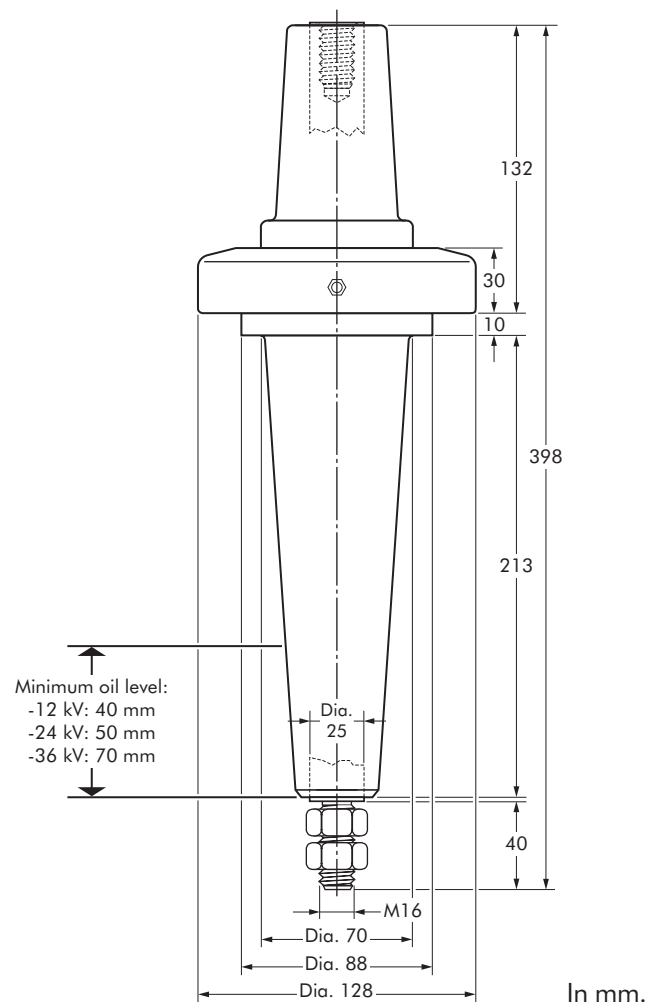
6/10 (12) kV  
6.35/11 (12) kV  
8.7/15 (17.5) kV  
12/20 (24) kV  
12.7/22 (24) kV  
18/30 (36) kV

### Specifications and standards

The bolted type equipment bushings 400AR-6 are moulded epoxy insulated parts and meet the requirements of CENELEC EN 50180 and IEC 60137.

### Ordering instructions

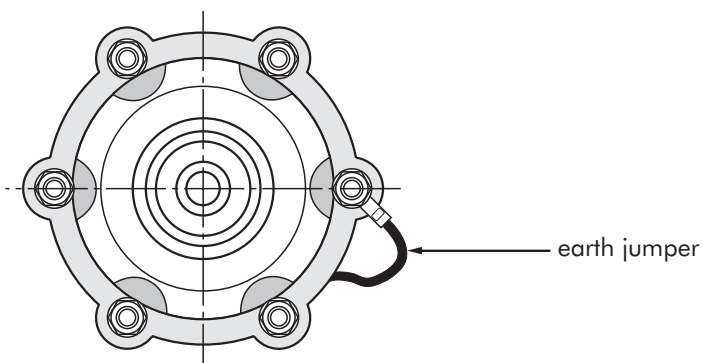
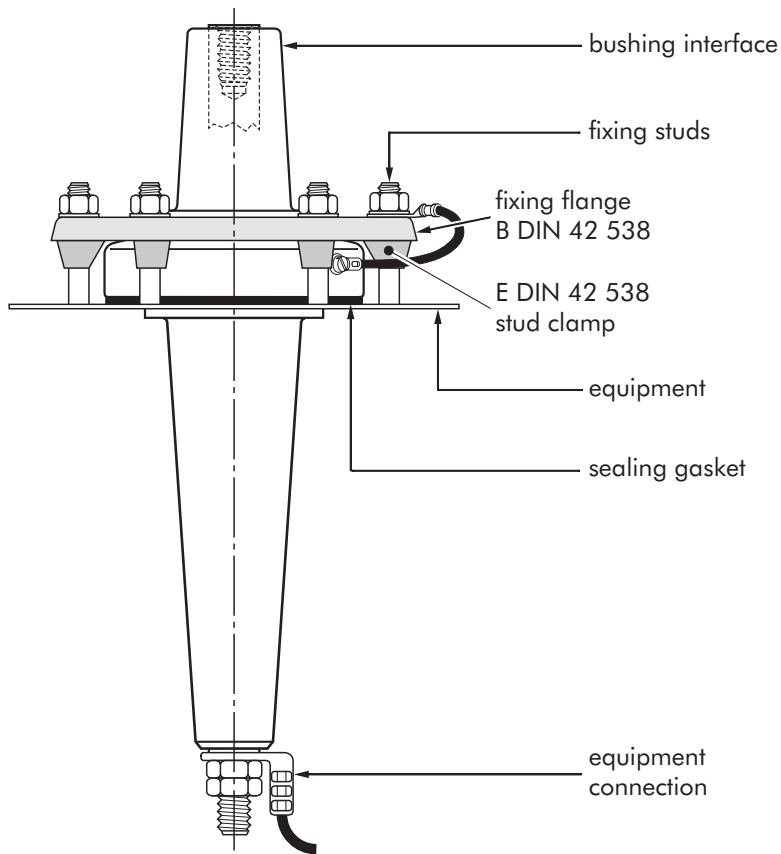
To order the equipment bushing, specify the type. The bushings can be supplied with an earth jumper (/J). This earth connection must be specified when ordering. E.g. M400AR-6/J.



Equipment bushing type	Voltage $U_r$ (kV)	Current $I_r$ (A)
400AR-6	12	630
K400AR-6	24	630
M400AR-6	36	630

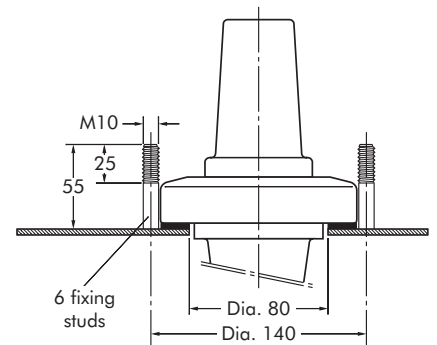
# FIXINGS FOR EQUIPMENT BUSHINGS

## 400AR-6/J Bushing



## Fixing dimensions standards DIN 42 538

German standards.



## Bushing clamping kit

To order the bushing clamping kit, according to DIN 42 538 standards, simply specify KBCD-400B.

- Contents:
- 1 x fixing flange B
  - 6 x stud clamp E
  - 1 x sealing gasket.

In mm.

## 400SFR-B INTERFACE C EQUIPMENT BUSHING

### Application

For use in equipment insulated with SF<sub>6</sub> gas.

### Technical characteristics

Each bushing is tested for AC withstand and partial discharge prior to leaving the factory.

**Up to 36 kV  
630 A & 1250 A**

6/10 (12) kV  
6.35/11 (12) kV  
8.7/15 (17.5) kV  
12/20 (24) kV  
12.7/22 (24) kV

### Design

The equipment bushing is a moulded epoxy insulated part with a connector interface in accordance with CENELEC EN 50180.

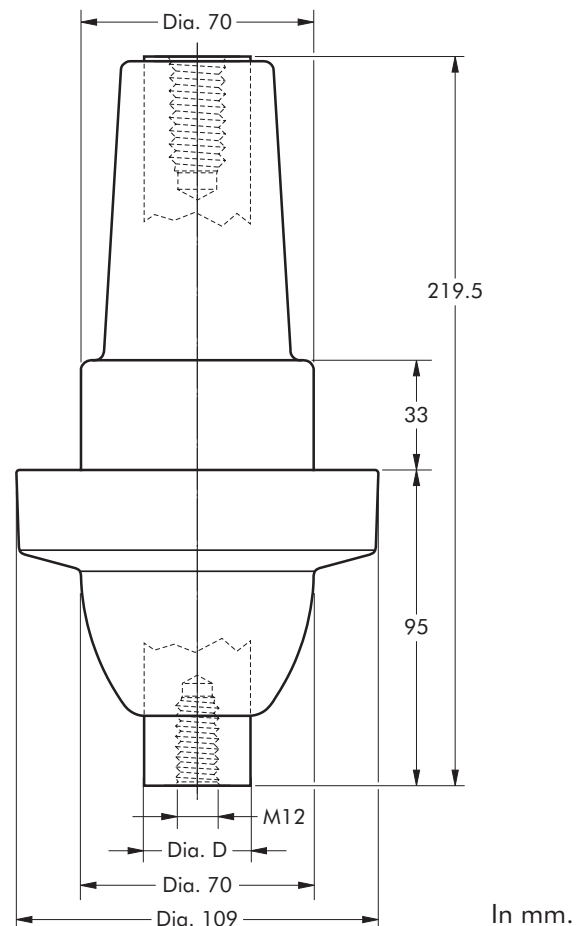
The 400SFR-B bushing has a shank outside this standard, adapted to use in SF<sub>6</sub> gas.

### Specifications and standards

The bolted type equipment bushing 400SFR-B meets the requirements of CENELEC EN 50180 and IEC 60137.

### Ordering instructions

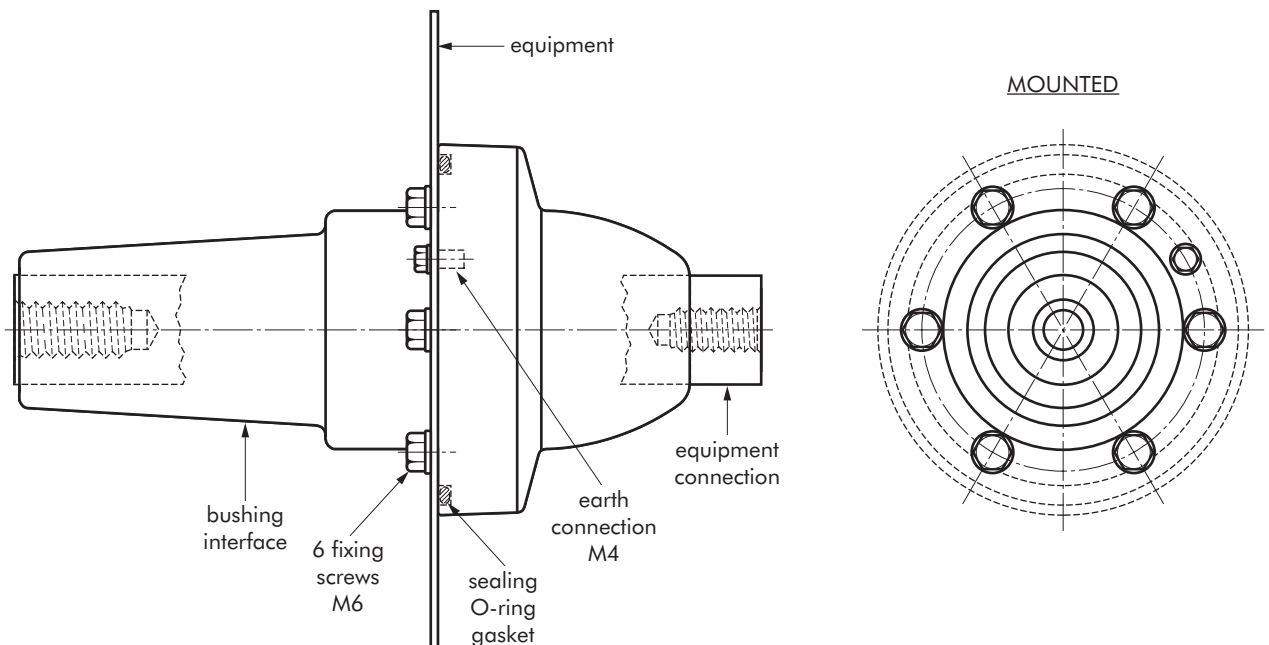
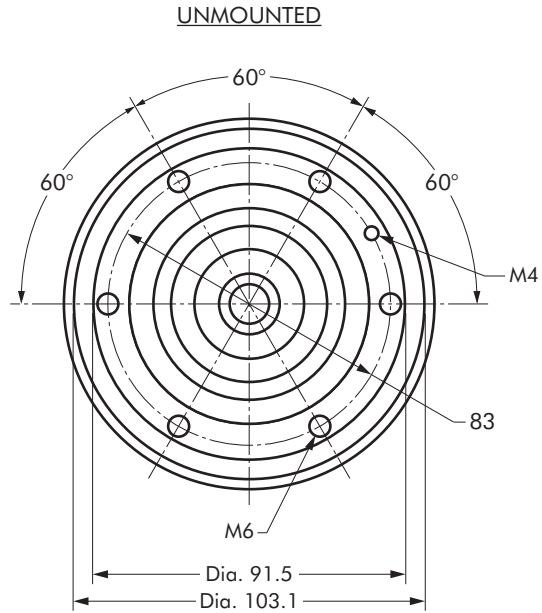
To order the equipment bushing, simply specify the type.



Equipment bushing type	Voltage U <sub>r</sub> (kV)	Current I <sub>r</sub> (A)	Dia. D (mm)
400SFR-B	12	630	25
K400SFR-B	24	630	25
M400SFR-B	36	630	25
400SFR-B 1250 A	12	1250	32
K400SFR-B 1250 A	24	1250	32
M400SFR-B 1250 A	36	1250	32

# FIXINGS FOR EQUIPMENT BUSHINGS

## I 400SFR-B Bushing for gas insulated switchgear



In mm.



## 400A-24B INTERFACE C IN-AIR BUSHING

Up to 24 kV - 630 A

### Application

For use in equipment insulated with air, typically for dry type transformers, motors, switchgear, capacitors...

### Technical characteristics

Each bushing is tested for AC withstand and partial discharge prior to leaving the factory.

6/10 (12) kV  
6.35/11 (12) kV  
8.7/15 (17.5) kV  
12/20 (24) kV  
12.7/22 (24) kV

### Specifications and standards

The bolted type equipment bushings 400A-24B are moulded epoxy insulated parts and meet the requirements of CENELEC EN 50180, IEC 60071 and IEC 60137.

### Ordering instructions

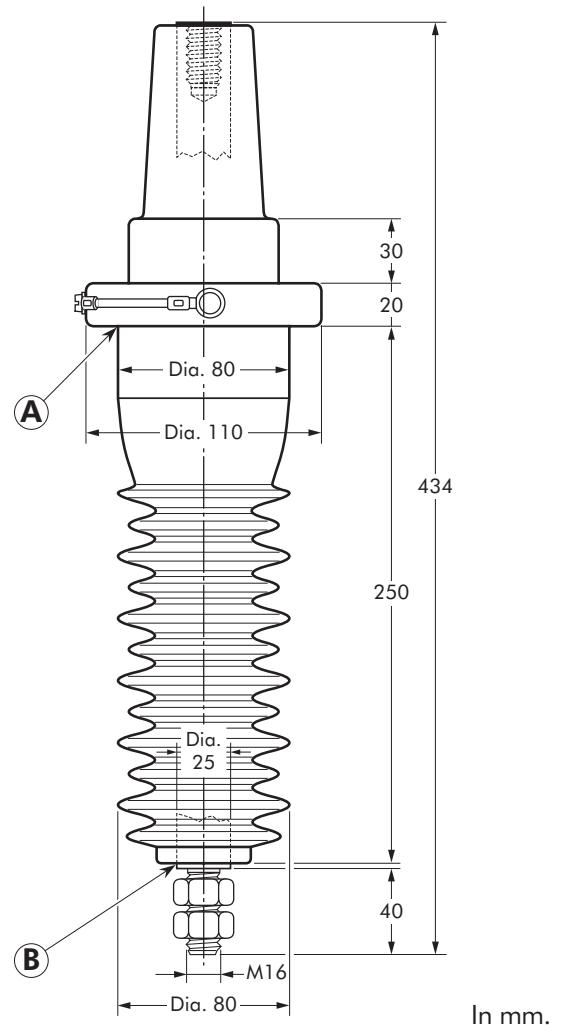
To order the equipment bushing, specify the type. The bushings are supplied with an earth jumper.

To include the ring clamp, add:

- /B, if per British standards
- /D, if per German standards
- /F, if per French standards.

E.g. 400A-24B/D.

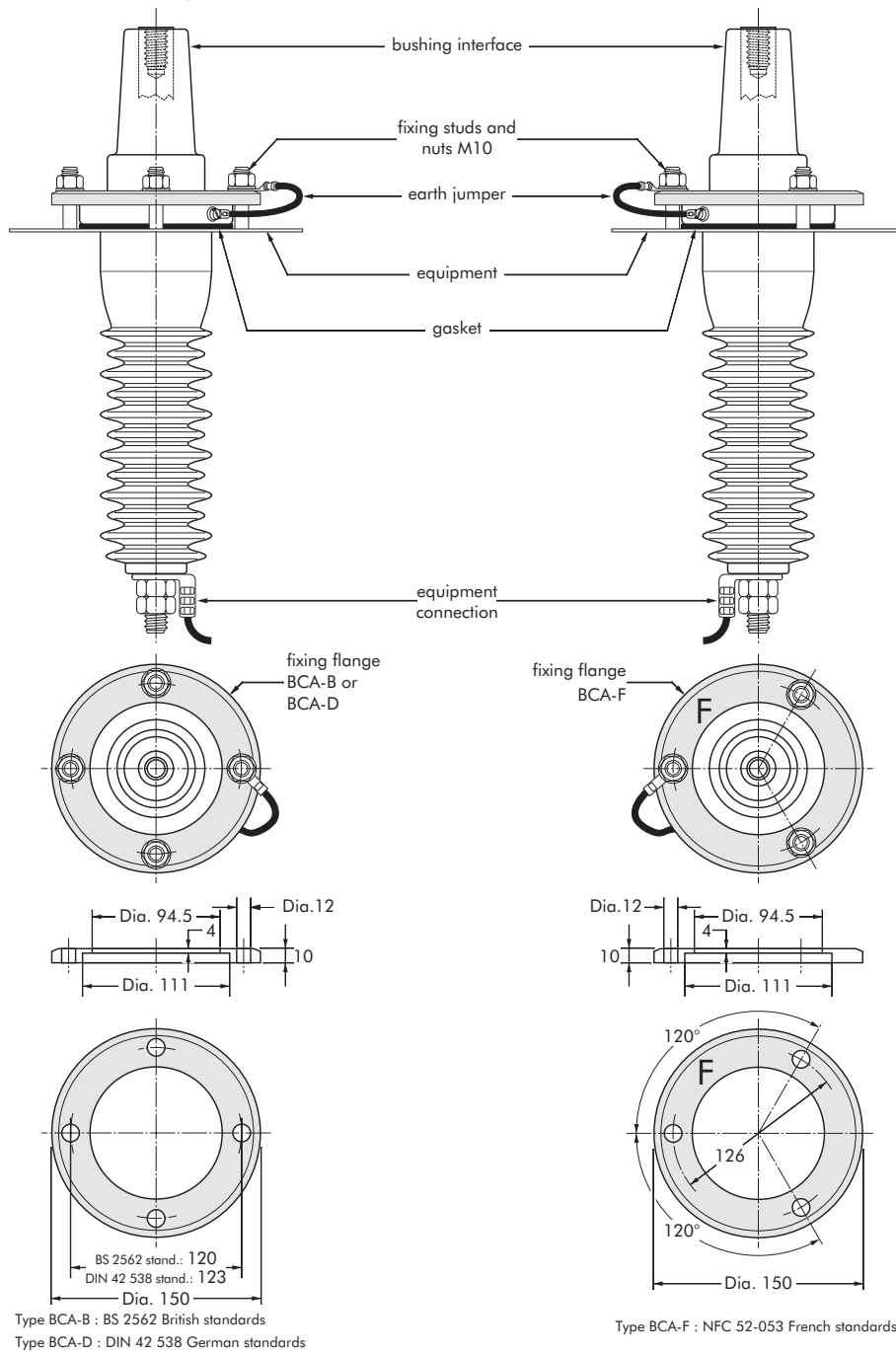
For use in potentially explosive atmospheres (for 12 kV max), order: -/ATEX.



Equipment bushing type	Voltage $U_r$ (kV)	Current $I_r$ (A)	Creepage distance A-B (mm)
400A-24B	12	630	520
400A-24B	24	630	520

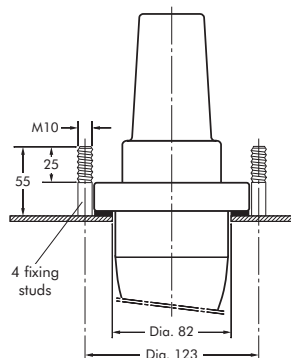
# FIXINGS FOR EQUIPMENT BUSHINGS

## 400A-24B In-air bushing



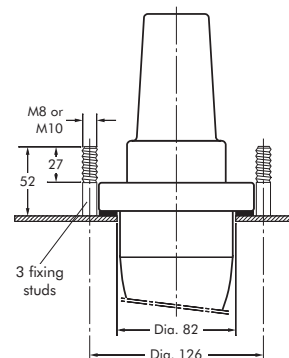
## Fixing dimensions standards DIN 42 538

German standards.



## Fixing dimensions standards NF C 52-053

French standards.



## 400PB-XSA INTERFACE C SURGE ARRESTER

Up to 36 kV

### Application

Surge arrester designed to protect medium voltage components, including transformers, equipment, cable and accessories from high voltage surges resulting from lightning or switching.

### Technical characteristics

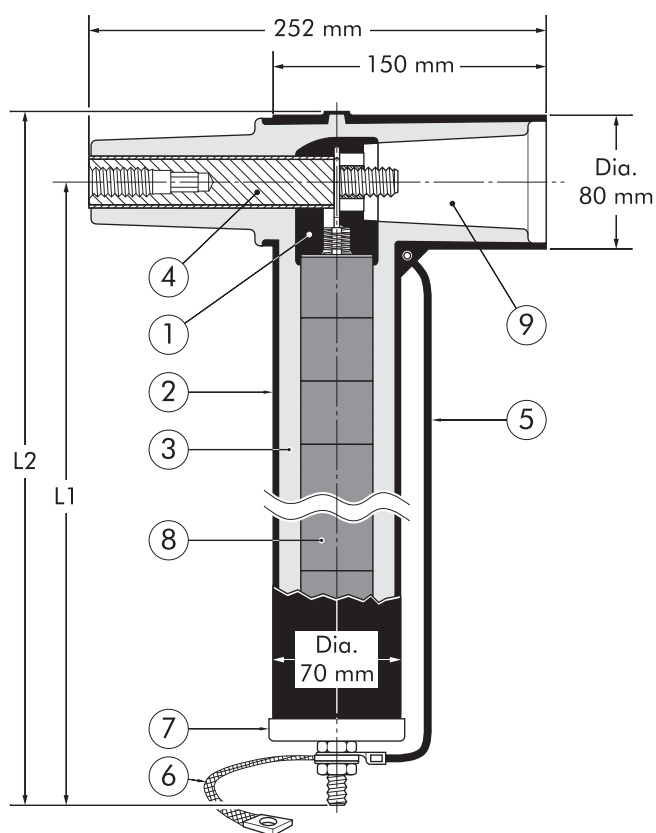
- This surge arrester is a metal oxide varistor surge arrester in an elbow configuration.
- Each arrester is tested for AC withstand and partial discharge prior to leaving the factory.

6/10 (12) kV  
6.35/11 (12) kV  
8.7/15 (17.5) kV  
12/20 (24) kV  
12.7/22 (24) kV  
18/30 (36) kV

### Design

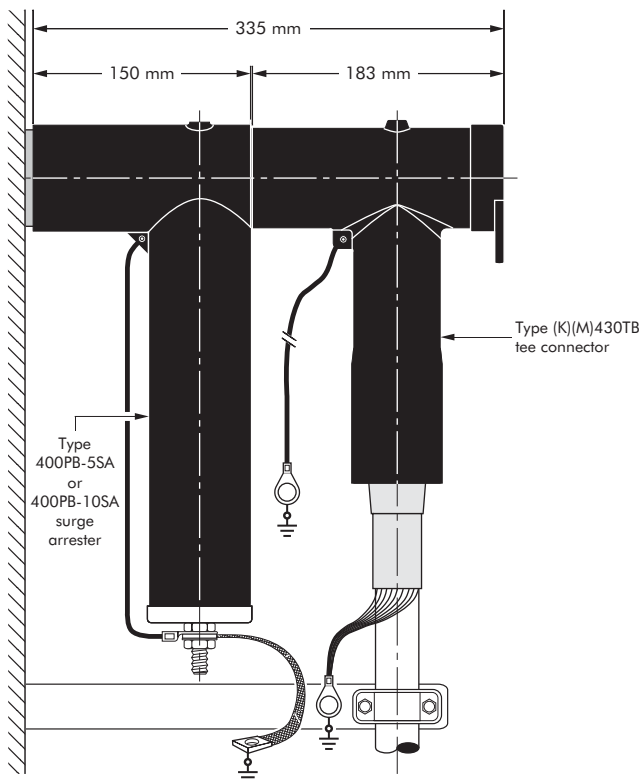
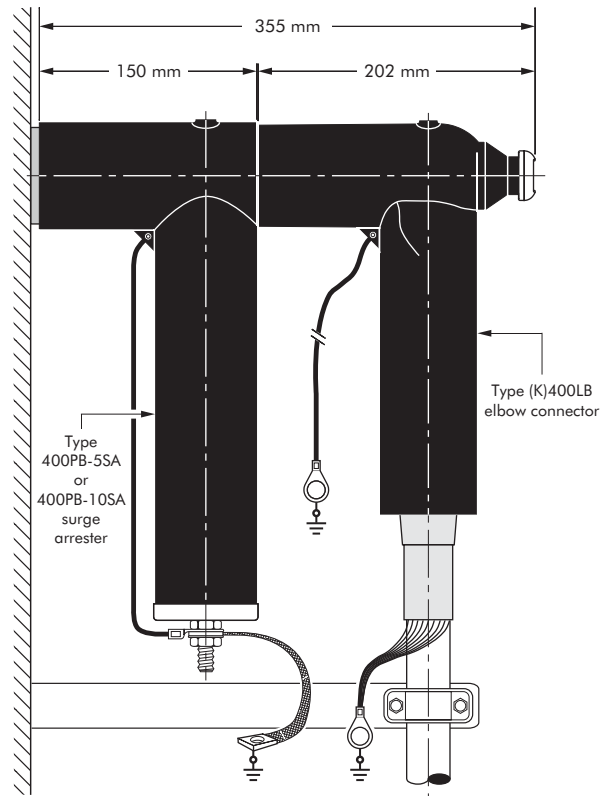
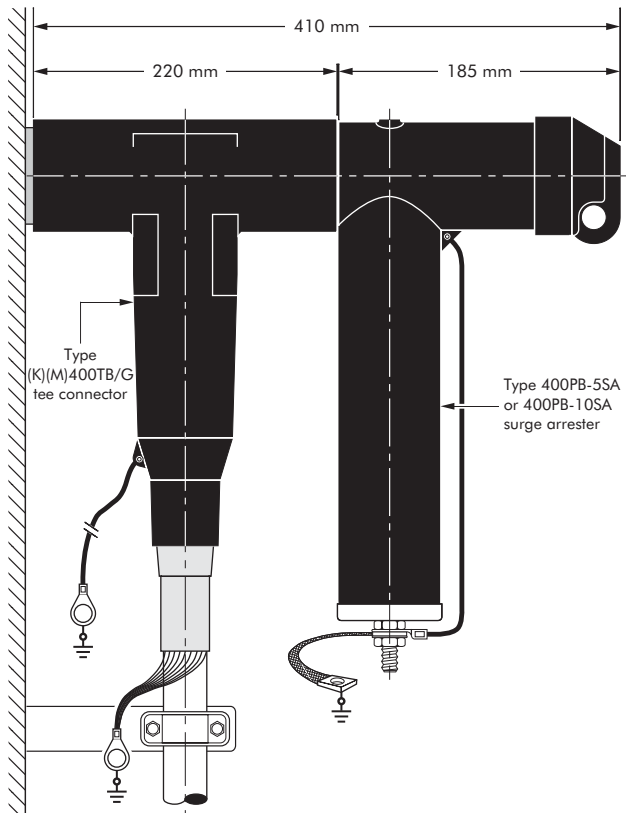
Surge arrester comprising:

1. Conductive EPDM insert.
2. Conductive EPDM jacket.
3. Insulating EPDM layer moulded between the insert and the jacket.
4. Contact rod.
5. Earth lead.
6. Earth connection.
7. Steel cap.
8. Metal oxide valve elements.
9. Type C - 630 A interface as described by CENELEC EN 50180 and 50181.



Surge arrester type	Nominal discharge current In (kA)	Rated voltage Ur (kV)	Max. continuous operating voltage Uc (kV)	Steep current residual voltage @ 5 kA [1/20 μs] (kV)	Lightning current residual voltage @ 5 kA [8/20 μs] (kV)	High current impulse withstand (kA)	Dimensions (mm)	
							L1	L2
400PB-5SA-15L	5	15	12.0	42.4	40.0	65	250	290
400PB-5SA-18L	5	18	14.4	52.7	48.0	65	250	290
400PB-5SA-22L	5	22	17.6	65.7	59.0	65	350	390
400PB-5SA-24L	5	24	19.2	70.0	64.0	65	350	390
400PB-5SA-30L	5	30	24.0	87.3	80.0	65	350	390
400PB-10SA-15N	10	15	12.0	46.2	40.2	100	250	290
400PB-10SA-18N	10	18	14.0	56.0	48.6	100	250	290
400PB-10SA-22N	10	22	17.6	68.9	59.8	100	350	390
400PB-10SA-24N	10	24	19.2	74.4	64.5	100	350	390
400PB-10SA-30N	10	30	24.0	92.7	80.4	100	350	390
400PB-10SA-36N	10	36	28.8	111.1	96.4	100	350	390
400PB-10SA-45N	10	45	36.0	138.2	120.0	100	450	490

## Typical applications and dimensions



## Ordering instructions

To order the surge arrester, specify the surge arrester type, as described on previous page.

### Example:

For a maximum continuous operating voltage (rms) of 24 kV and a nominal discharge current of 10 kA. Order a 400PB-10SA-24N surge arrester.

## 300SA SURGE ARRESTER FOR 430TB CONNECTOR

Up to 24 kV

### Application

Surge arrester designed to protect 12 and 24 kV class components, including transformers, equipment, cable and accessories from high voltage surges resulting from lightning or switching. It has been designed to be used with the separable tee connector 430TB.

### Technical characteristics

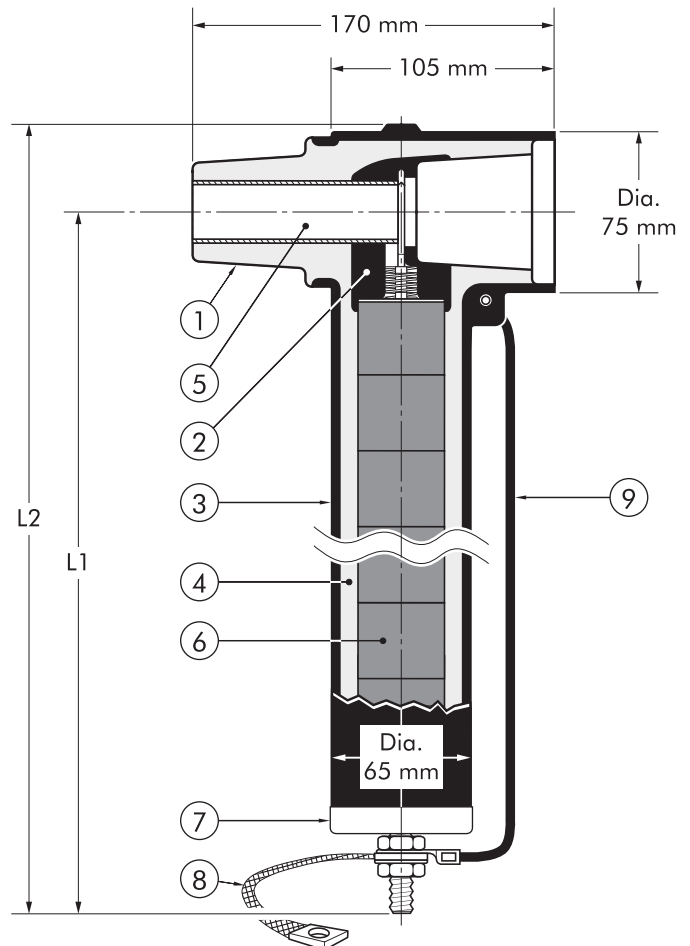
- This surge arrester is a metal oxide varistor surge arrester in an elbow configuration.
- Each arrester is tested for AC withstand, partial discharge and critical voltage prior to leaving the factory.

6/10 (12) kV  
6.35/11 (12) kV  
8.7/15 (17.5) kV  
12/20 (24) kV  
12.7/22 (24) kV

### Design

Surge arrester comprising:

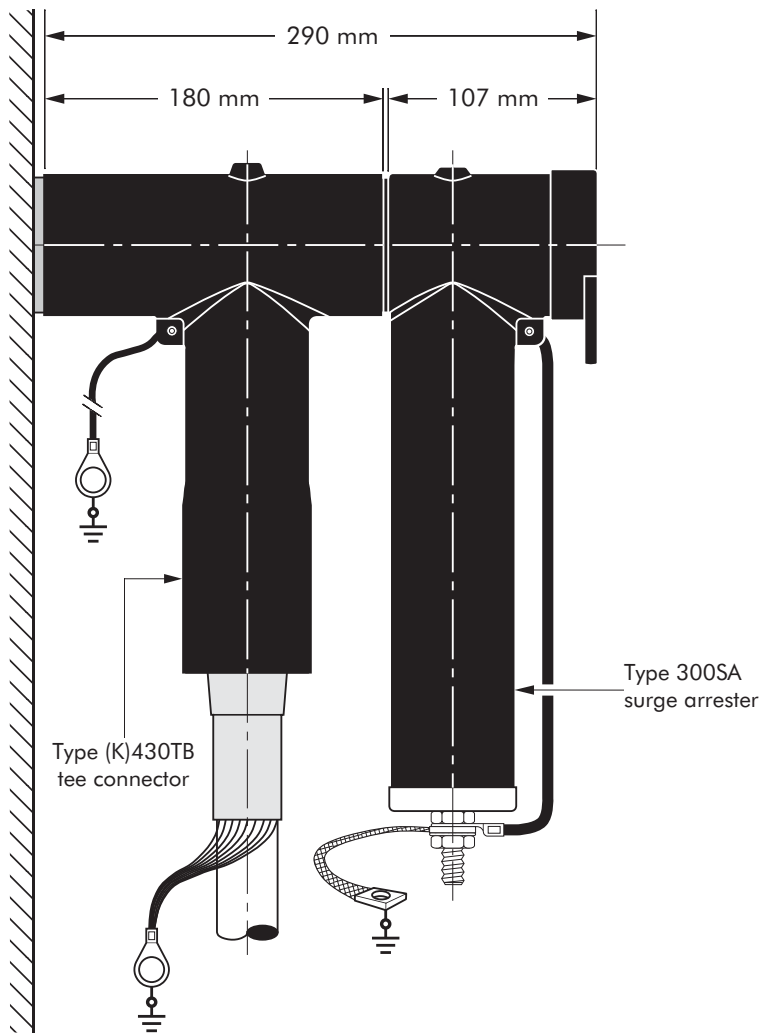
1. Interface designed to fit the tee connector 430TB.
2. Conductive EPDM insert.
3. Conductive EPDM jacket.
4. Insulating EPDM layer moulded between the insert and the jacket.
5. Receptacle for contact rod.
6. Metal oxide valve elements.
7. Steel cap.
8. Earth connection.
9. Earth lead.



Surge arrester type	Nominal discharge current $I_n$ (kA)	Rated voltage $U_r$ (kV)	Max. continuous operating voltage $U_c$ (kV)	Dimensions (mm)	
				L1	L2
300SA-10-15N	10	15	12.0	260	300
300SA-10-18N	10	18	14.4	260	300
300SA-10-22N	10	22	17.6	260	300
300SA-10-24N	10	24	19.2	350	390
300SA-10-30N	10	30	24.0	350	390

12/2009

## Typical application and dimensions



## Ordering instructions

To order the surge arrester, specify the surge arrester type, as described on previous page.

### Example:

For a maximum continuous operating voltage (rms) of 24 kV and a nominal discharge current of 10 kA.

Order a 300SA-10-30N surge arrester.

## Technical data

Surge arrester type	Steep current residual voltage @ 10 kA [1/20 $\mu$ s] (kV)	Lightning current residual voltage [8/20 $\mu$ s] (kV)			Switching impulse residual voltage [36/90 $\mu$ s] (kV)		High current impulse withstand (kA)
		@ 5 kA	@ 10 kA	@ 20 kA	@ 125 A	@ 500 A	
300SA-10-15N	49.6	40.8	44.5	49.8	32.4	34.2	100
300SA-10-18N	59.6	49.0	53.4	59.8	38.8	41.0	100
300SA-10-22N	69.5	57.1	62.3	69.7	45.3	47.9	100
300SA-10-24N	79.4	65.3	71.2	79.7	51.8	54.7	100
300SA-10-30N	99.3	81.6	89.0	99.6	64.7	68.4	100

## 400TR and 400TR-LB INTERFACE C TEST RODS

### Application

- The test rod can be used for:
  - cable fault location
  - cable testing
  - phasing checks, etc.
- Connections may be made with a cable lug, a 4 mm plug or spring clips.

### Technical characteristics

- The 400TR test rod can be used with 400TE, 430TB, 400TB and 440TB connectors.
- The 400TR-LB is for use with the 400LB connector.

### Design

1. Insulating shroud.
2. Threaded rod for test connection.
3. Two nuts M12.
4. Insulation.
5. Copper test rod stem.
6. Wing nut.

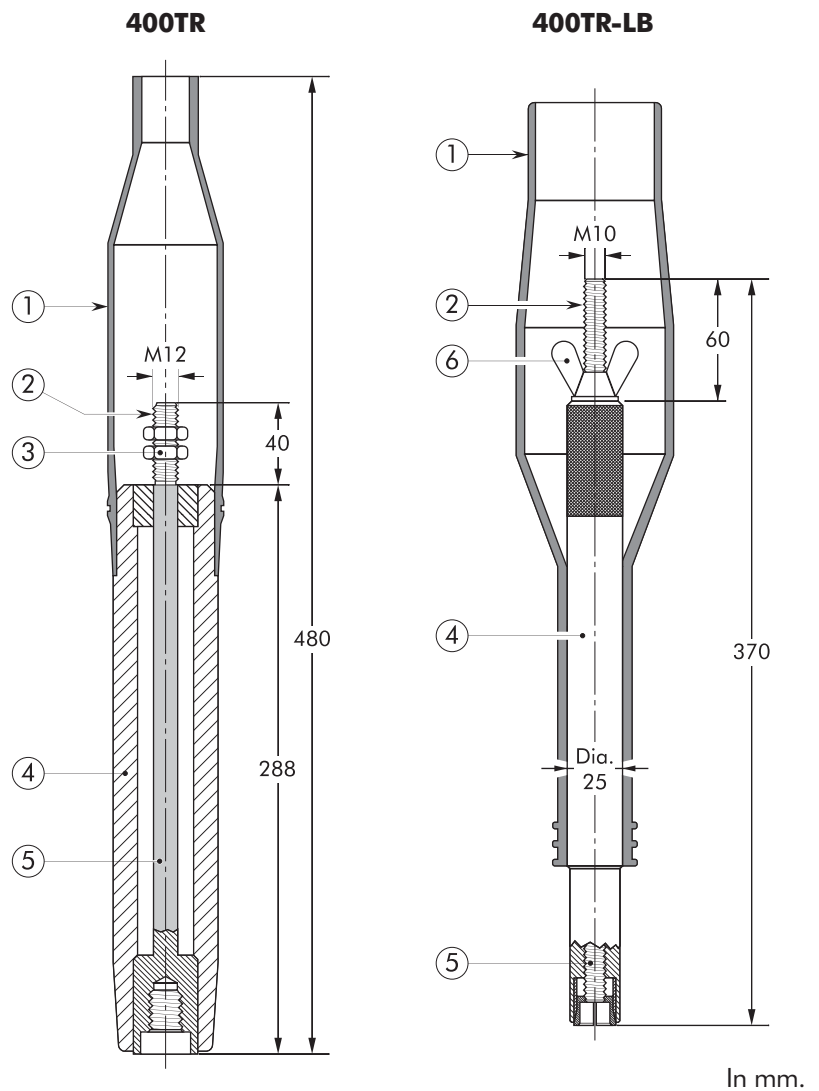
An insulating shroud is provided to allow the application of test voltages when bushings are closely spaced.

### Installation

The test rod is mounted on to the clamping screw in the type C interface tee and coupling connectors. The test cable is connected to the threaded stem and the insulating shroud moved to its final position over the end of the test rod.

### Ordering instructions

Simply specify:  
400TR or 400TR-LB test rod.

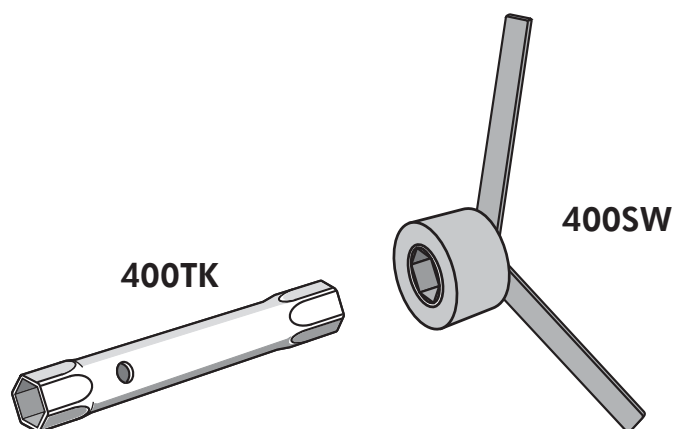


Test rod type	Maximum A.C. test voltage (50 Hz - 1 min)	Maximum D.C. test voltage (8 x U <sub>0</sub> - 30 min)	Impulse voltage (1.2 x 50 μs) min
400TR	36 kV	96 kV	95 kV
400TR-LB	36 kV	96 kV	95 kV

## 400TK & 400SW INSTALLATION TOOL

### | Application

- The box spanner and box spanner key are designed to facilitate assembly of 400TE, 400TB and 440TB connectors.
- The 400TK box spanner is used to install the 400TEF clamping pin contact or 400TCS clamping screw.
- The 400SW box spanner key fits on the hex nut of the 400BIPA basic insulating plug.



### | Ordering instructions

Simply specify:

- 400TK box spanner
- 400SW box spanner key



## ACCESSORIES INTERFACE C

### Application

For use with connectors and bushings with an interface C as described by CENELEC EN 50180 and 50181.

### Technical characteristics

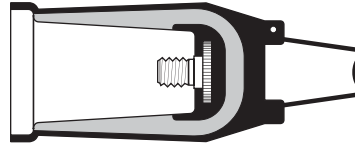
All these products, except the earthing plugs, are tested for AC withstand and partial discharge prior to leaving the factory.

Up to 36 kV

6/10	(12)	kV
6.35/11	(12)	kV
8.7/15	(17.5)	kV
12/20	(24)	kV
12.7/22	(24)	kV
18/30	(36)	kV

### 400DR-B Dead-end receptacle

Fits over a bushing with a type C interface to provide 'dead-end' facility.

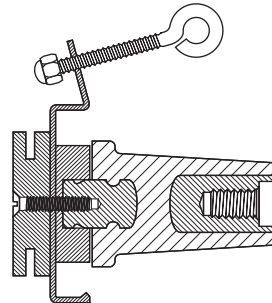


### Ordering instructions

Order 400DR-B for 12 kV, K400DR-B for 24 kV or M400DR-B for 36 kV applications. The dead-end receptacle can be supplied with an earth lead. Order: -/G. E.g. K400DR-B/G.

### 400SOP-B Stand-off plug

Is designed to support and 'dead-end' connectors with a type C interface when removed from equipment.

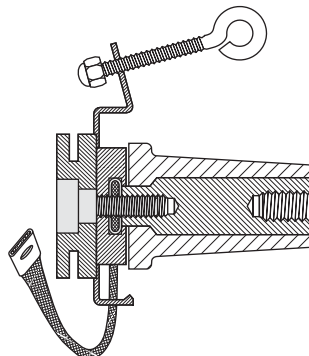


### Ordering instructions

Order 400SOP-B for 12 kV, K400SOP-B for 24 kV or M400SOP-B for 36 kV applications.

### 400GP-B Earthing plug

Is designed to support and earth connectors with a type C interface when removed from equipment.

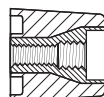


### Ordering instructions

Order 400GP-B for 12, 24 or 36 kV applications.

### 300GP-B Earthing plug

Is designed to earth the 430TB connectors when it is fixed-mounted to the equipment (maintenance earthing).

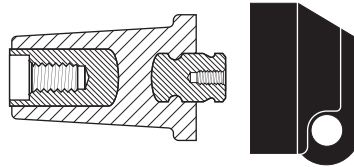


### Ordering instructions

Order 300GP-B for 12 or 24 kV applications.

## 400BIPA Basic insulating plug

Acts as a tightening nut for the 400TB and 440TB tee connector kits.  
The plug contains a voltage detection point.  
The conductive rubber protection cap is included.

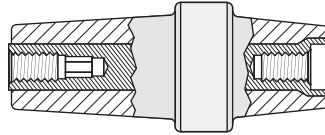


## Ordering instructions

Order  
400BIPA for 12 kV,  
K400BIPA for 24 kV or  
M400BIPA for 36 kV  
applications.

## 430CP Connecting plug

For connecting two or more 430TB connectors, thus creating a separable cable joint or a multiple cable connection to equipment.

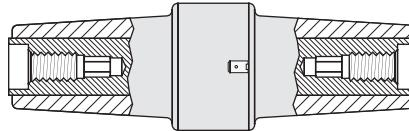


## Ordering instructions

Order  
430CP for 12 kV or  
K430CP for 24 kV applications.

## 400CP-SC Connecting plug

For connecting two or more connectors with a type C interface together, thus creating a separable cable joint or a multiple cable connection to equipment.

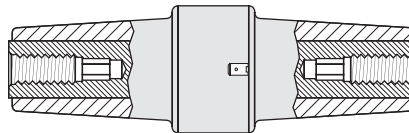


## Ordering instructions

Order  
400CP-SC for 12 kV,  
K400CP-SC for 24 kV or  
M400CP-SC for 36 kV  
applications.

## 440CP Connecting plug

For connecting two or more 440TB connectors, thus creating a separable cable joint or a multiple cable connection to equipment.  
For use up to 1250 A.  
Only for use with 440TB.

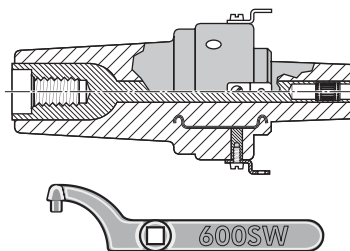


## Ordering instructions

Order  
440CP for 12 kV,  
K440CP for 24 kV or  
M440CP for 36 kV  
applications.  
Order: (K)(M)440CP + 676SA  
for connection to an existing  
440TB connector.

## 400RTPA Reducing tap plug

Provides a type A interface to connectors with a type C interface.  
A 'C' spanner, 600SW, is used to tighten the reducing tap plug on to its mating part.

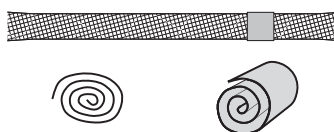


## Ordering instructions

Order  
400RTPA for 12 kV or  
K400RTPA for 24 kV  
applications.  
Order 600SW for the 'C'  
spanner.

## Kit MT Earthing kit for copper tape screened cables

Contains a tinned copper braid (25 mm<sup>2</sup> - L = 500 mm), a tinned copper wire for cleating and some water sealing mastic.



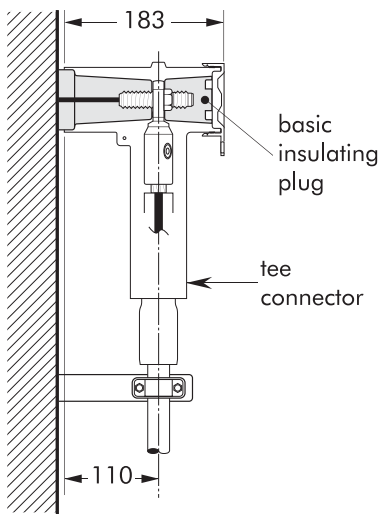
## Ordering instructions

Order  
Kit MT for 12 kV, 24 kV  
36 kV or 41.5 kV applications.

## POSSIBLE ARRANGEMENTS INTERFACE C

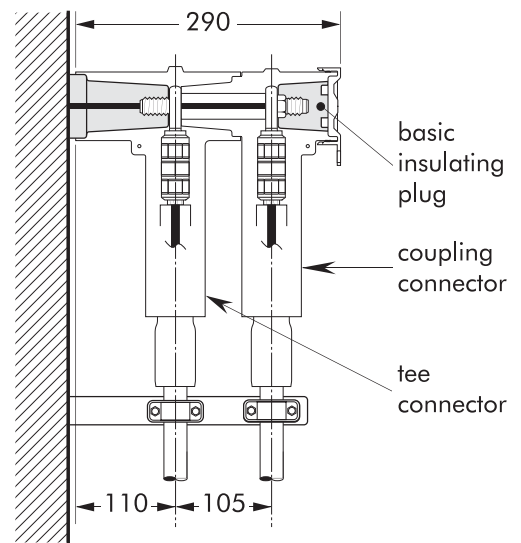
### 430TB

Single cable arrangement.  
Order 430TB for 12 kV,  
K430TB for 24 kV or M430TB  
for 36 kV applications.



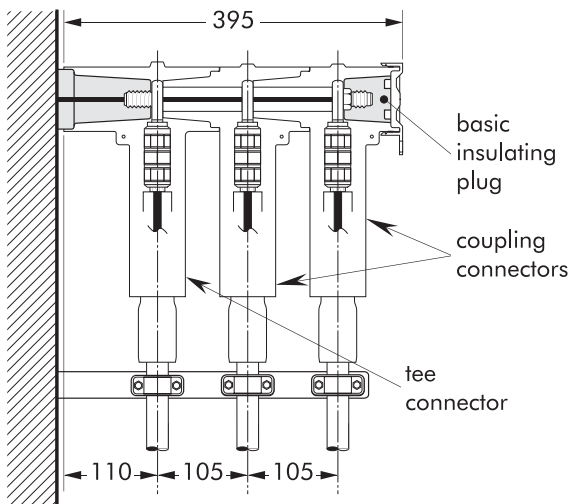
### 430TBM-P2

Dual cable arrangement.  
Order 430TBM-P2 for 12 kV,  
K430TBM-P2 for 24 kV or  
M430TBM-P2 for 36 kV  
applications.



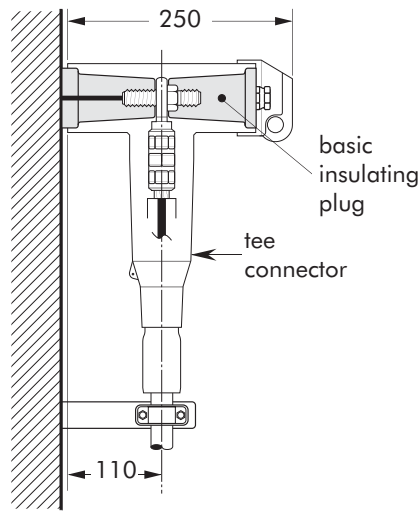
### 430TBM-P3

Dual cable arrangement.  
Order 430TBM-P3 for 12 kV,  
K430TBM-P3 for 24 kV or  
M430TBM-P3 for 36 kV  
applications.



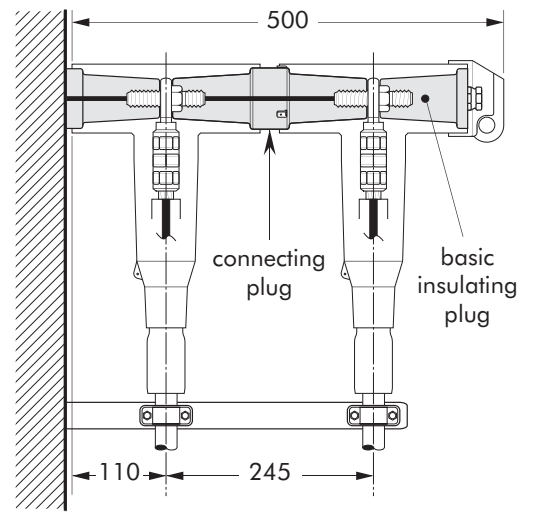
### 400TB/G

Single cable arrangement.  
Order 400TB/G for 12 kV,  
K400TB/G for 24 kV,  
M400TB/G for 36 kV or  
P400TB/G for 41.5 kV  
applications.



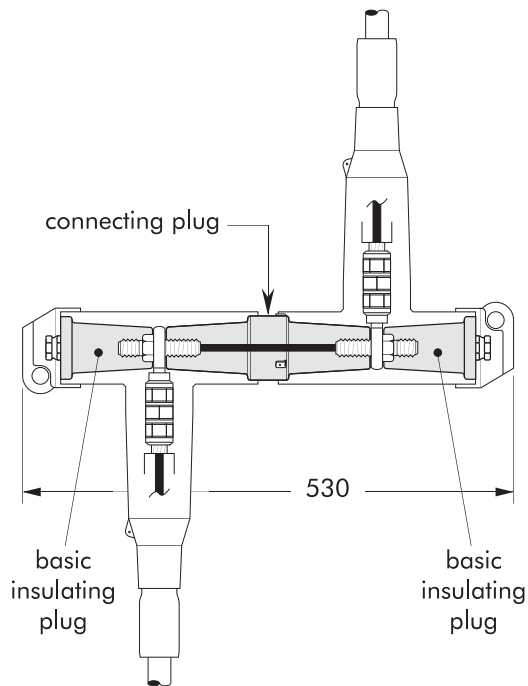
### 400TB/G-P2

Dual cable arrangement.  
Order 400TB/G-P2 for 12 kV,  
K400TB/G-P2 for 24 kV or  
M400TB/G-P2 for 36 kV  
applications.



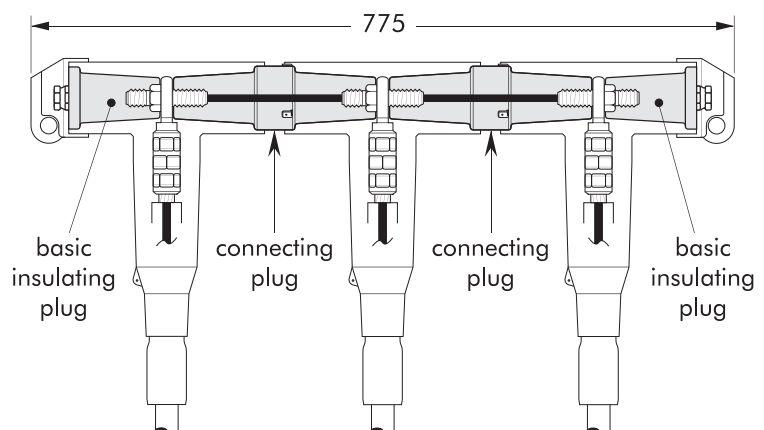
### 400TB/G-L2

2-way connection.  
Order 400TB/G-L2 for 12 kV,  
K400TB/G-L2 for 24 kV or  
M400TB/G-L2 for 36 kV  
applications.



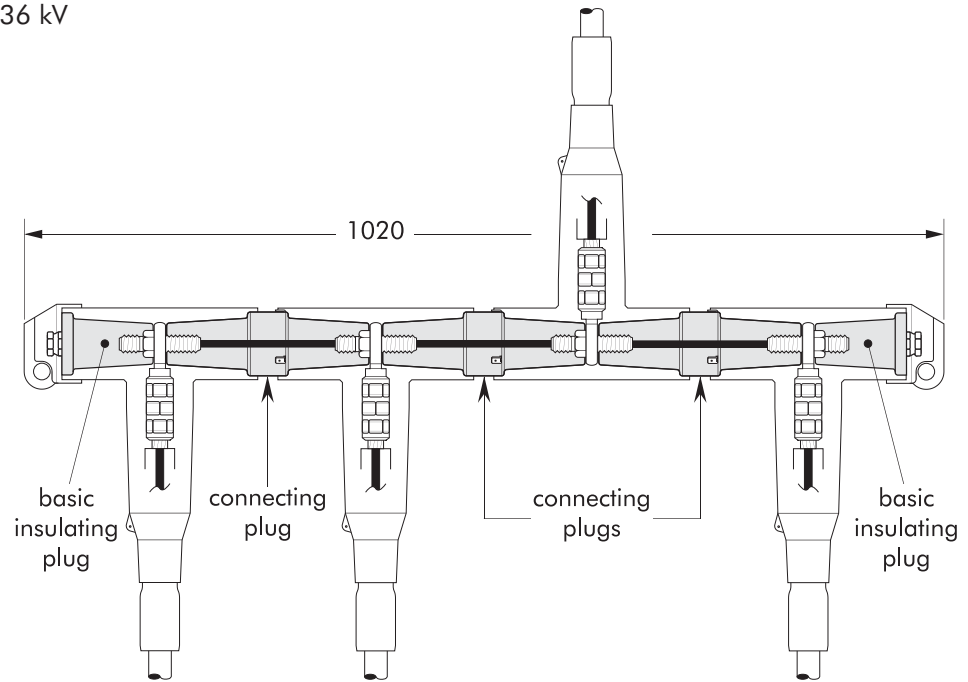
### 400TB/G-L3

3-way connection.  
Order 400TB/G-L3 for 12 kV,  
K400TB/G-L3 for 24 kV or  
M400TB/G-L3 for 36 kV  
applications.



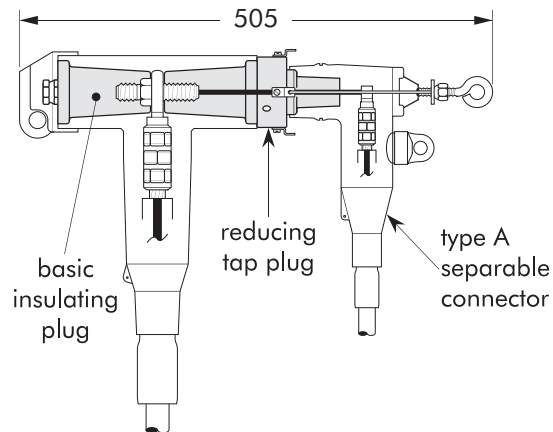
## 400TB/G-L4

Disconnectable tap-off.  
Order 400TB/G-L4 for 12 kV,  
K400TB/G-L4 for 24 kV or  
M400TB/G-L4 for 36 kV  
applications.



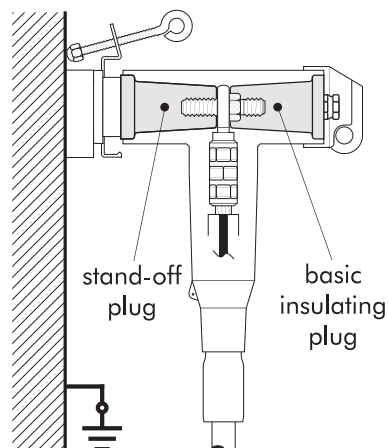
## 400TB/G-L5

2-way connection with tap-off.  
Order 400TB/G-L5 for 12 kV  
or K400TB/G-L5 for 24 kV  
applications.



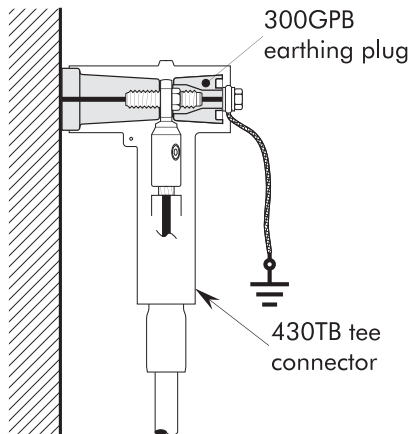
## Connector on stand-off plug

Order 400SOP-B for 12 kV,  
K400SOP-B for 24 kV or  
M400SOP-B for 36 kV  
applications.



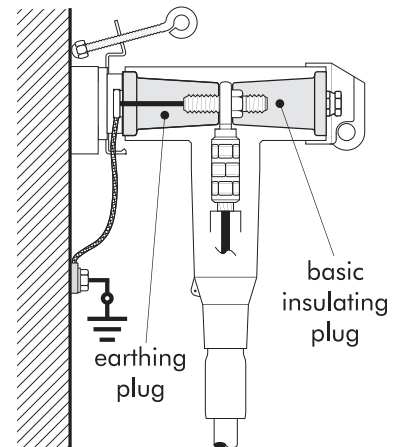
## Earthing plug on connector

Order 300GP-B for 12 kV and 24 kV applications.



## Connector on earthing plug

Order 400GP-B for 12 kV, 24 kV and 36 kV applications.



## Cable and equipment testing.

