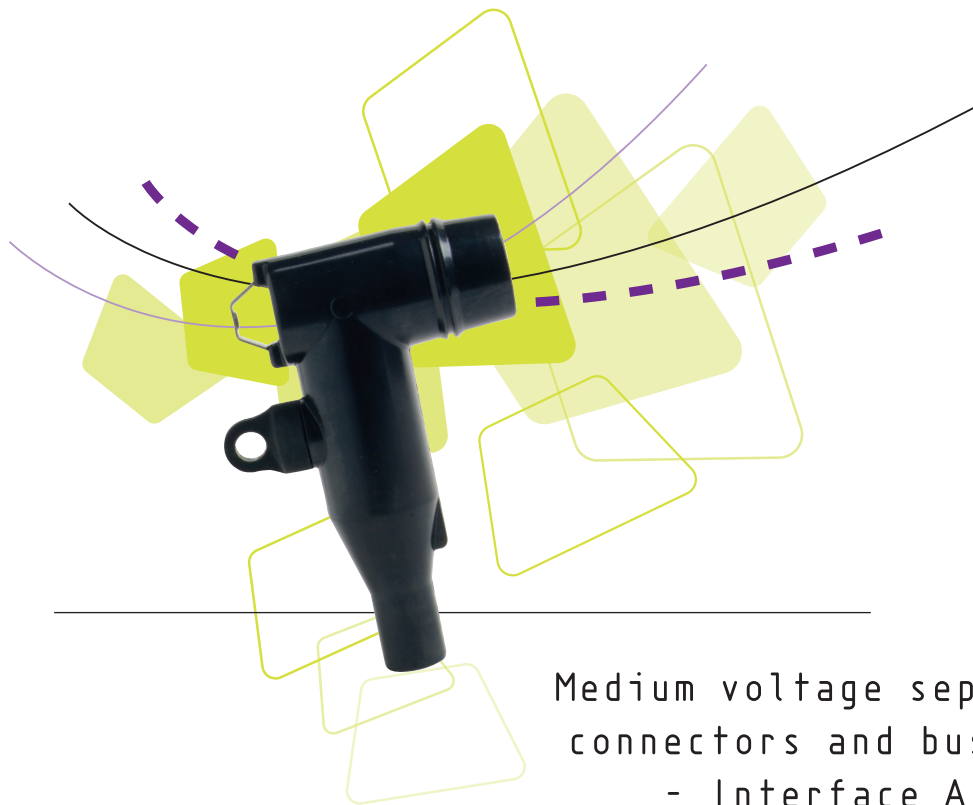


Euromold

a Nexans company



Medium voltage separable
connectors and bushings
- Interface A -

Catalogue 2007



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 switch gear, 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.

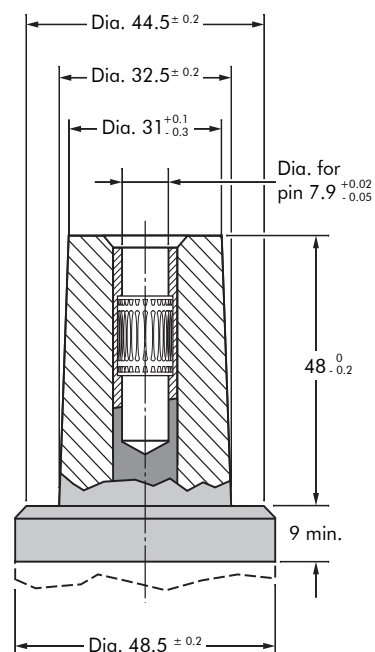
SEPARABLE CONNECTORS AND BUSHINGS INTERFACE A

Table of contents

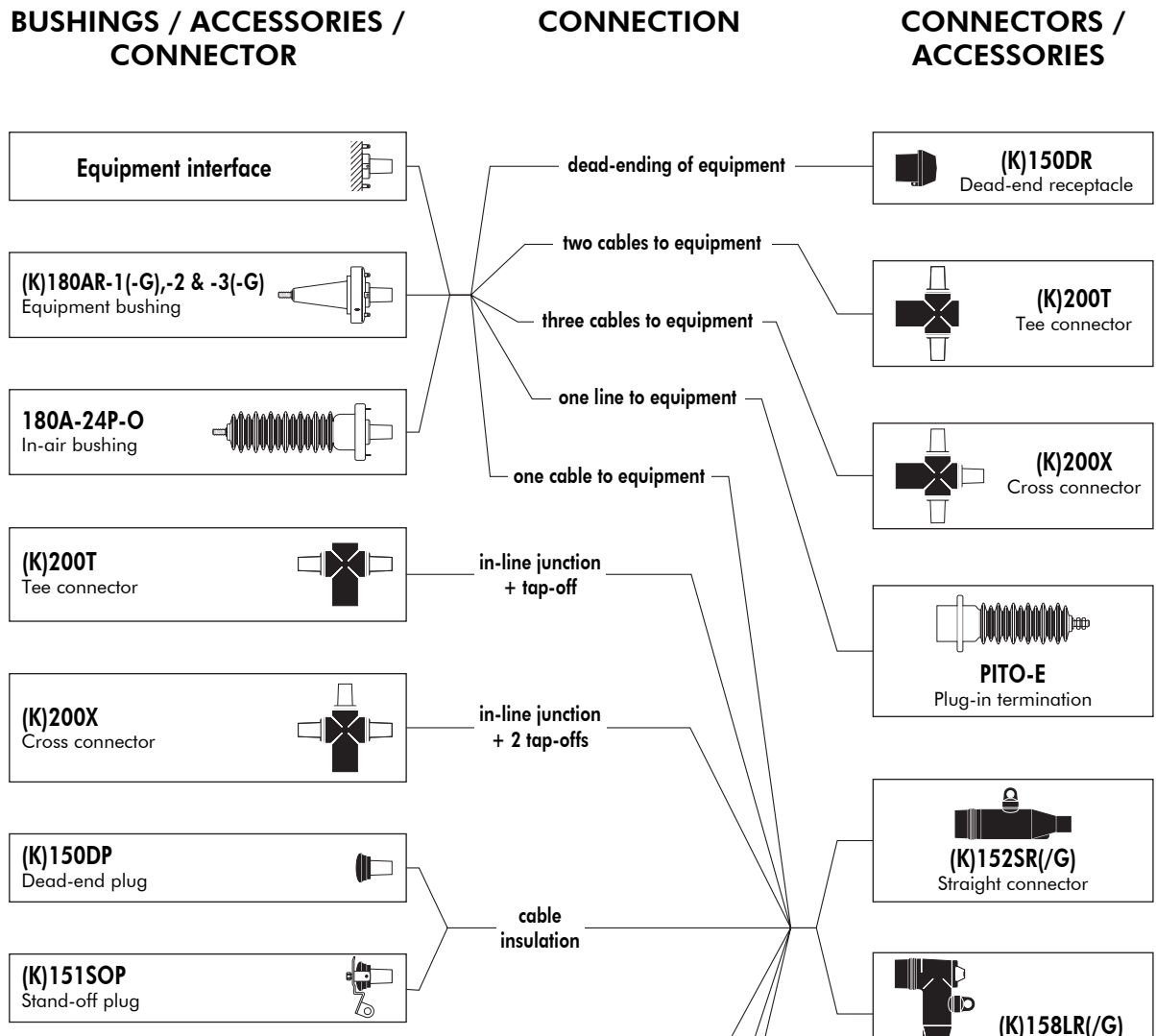
- 158LR - elbow connector
- 152SR - straight connector
- 156SA - surge arrester
- PITO-E - plug-in termination
- 180AR-1 /-2 /-3 - equipment bushing
- 180A-24P-O - in-air bushing
- Fixings for equipment bushings
- Accessories
- Bail restraints

Interface A

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



Connecting possibilities



158LR INTERFACE A ELBOW CONNECTOR

Up to 24 kV - 250 A

Application

Separable elbow connector designed to connect polymeric insulated cable to equipment (transformers, switch gear, 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

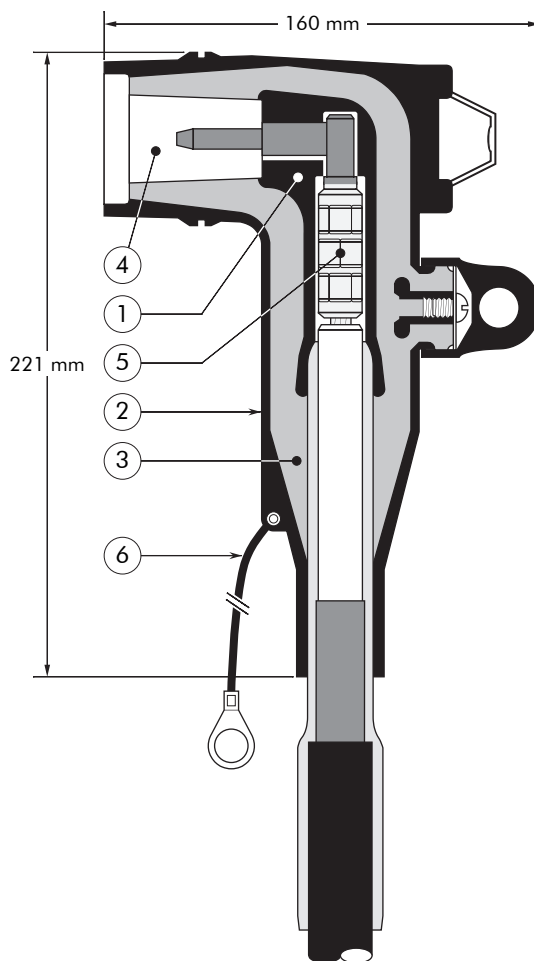
Design

Separable connector comprising:

1. Conductive EPDM insert.
2. Conductive EPDM jacket.
3. Insulating EPDM layer moulded between the insert and the jacket.
4. Type A - 250 A interface as described by CENELEC EN 50180 and 50181.
5. Conductor connector.
6. Earthing lead (-/G version only).

Specifications and standards

The separable connector 158LR meets the requirements of CENELEC HD 629.1.

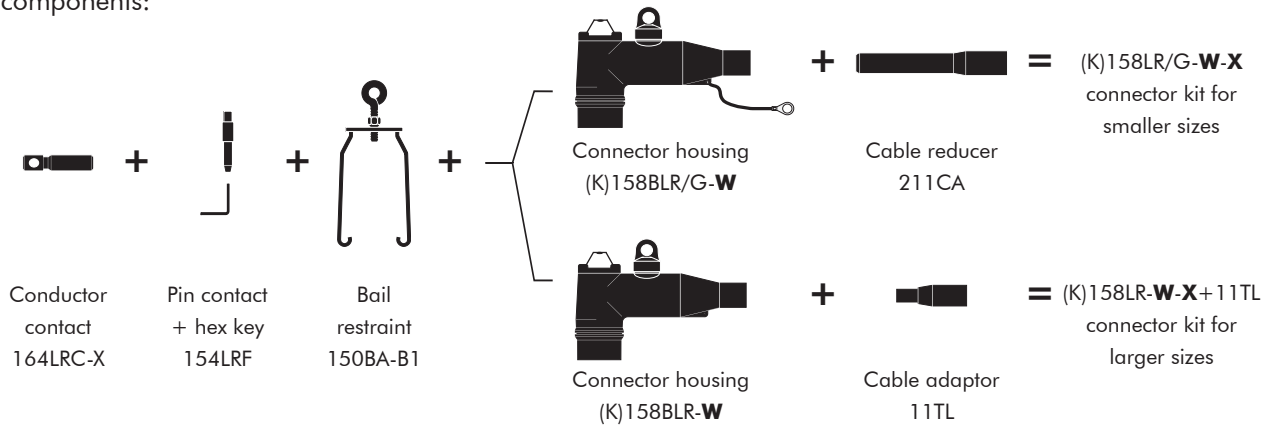


Separable connector type	Voltage Um (kV)	Current Ir (A)	Conductor sizes (mm ²) (for information only)	
			min.	max.
158LR/G	12	250	16	70
158LR	12	250	70	95
K158LR/G	24	250	16	25
K158LR	24	250	25	95

Kit contents

The complete (K)158LR or (K)158LR/G elbow connector kit comprises the following components:

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



Ordering instructions

Select the part number which gives the best centring to the cable core insulation diameter and substitute **X** using table X, according to the conductor size and type.
Add a 'K' for use up to 24 kV.

Table W

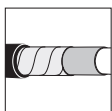
Ordering part number	Dia. over core insulation (mm)	
	min.	max.
158LR/G-11-X	12.6	16.1
158LR/G-13-X	14.6	18.7
158LR-FB-X+11TL	17.5	20.2
158LR-FG-X+11TL	18.4	21.2
158LR-GA-X+11TL	19.7	22.5
158LR-GAB-X+11TL	21.0	23.8
158LR-GH-X+11TL	23.2	26.4

Table X

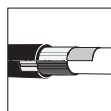
Conductor sizes (mm ²)	Aluminium		Copper
	DIN hexagonal	Deep indent	DIN hexagonal
16	-	-	16(K)M-11-2
25	25(K)M-12-2	25KM-12-1	25(K)M-11-2
35	35(K)M-12-2	35KM-12-1	35(K)M-11-2
50	50(K)M-12-2	50(K)M-12-1	50(K)M-11-2
70	70(K)M-12-2	70(K)M-12-1	70(K)M-11-2
95	95(K)M-12-2	95(K)M-12-1	95(K)M-11-2

Example:

The copper wire screened cable is 24 kV, 50 mm² stranded aluminium with a diameter over core insulation of 20.4 mm.
Order a K158LR-FG-50(K)M-12-2+11TL elbow connector kit.



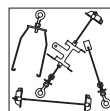
For use with copper tape screened cables.
Order: Kit MT.



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



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



For adapted bail restraints:
see 'Bail restraints and typical applications'.



For outdoor applications.
Order: +MWS.



Components can be ordered individually.

152SR INTERFACE A STRAIGHT CONNECTOR

Up to 24 kV - 250 A

Application

Separable straight connector designed to connect polymeric insulated cable to equipment (transformers, switch gear, motors...).

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

Technical characteristics

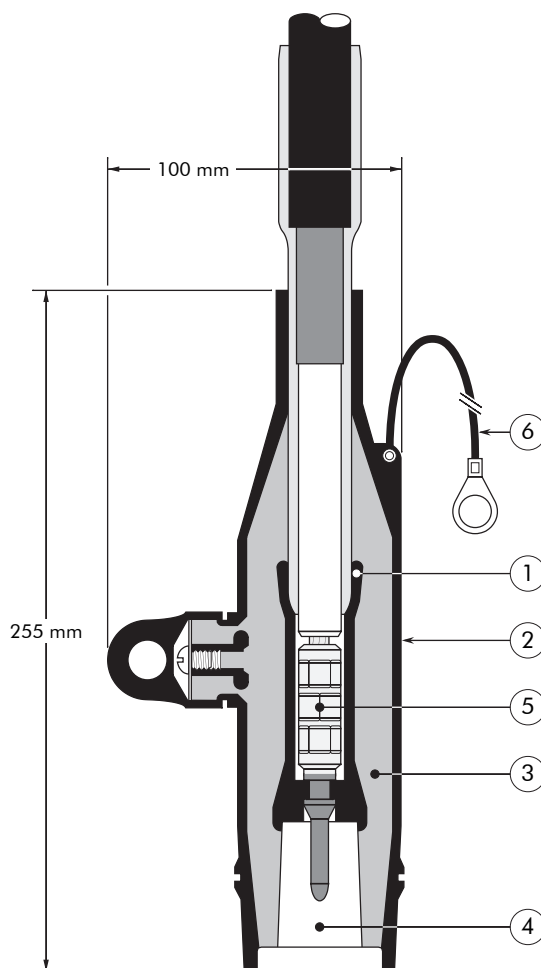
- The thick conductive EPDM jacket provides a total safe to touch screen which ensures safety for personnel.
- Each separable connector is tested for AC withstand and partial discharge prior to leaving the factory.

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 A - 250 A interface as described by CENELEC EN 50180 and 50181.
5. Conductor connector.
6. Earthing lead (-/G version only).



Specifications and standards

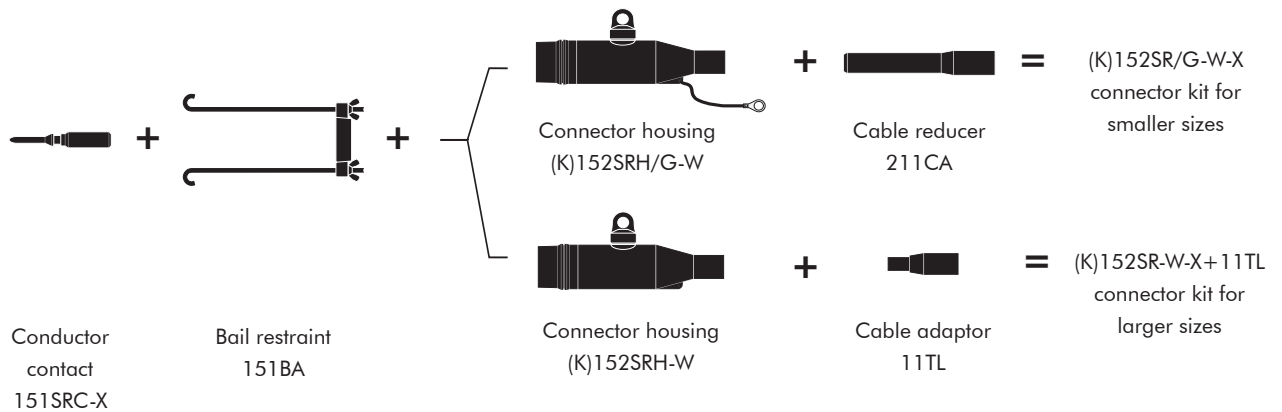
The separable connector 152SR meets the requirements of CENELEC HD 629.1.

Separable connector type	Voltage Um (kV)	Current Ir (A)	Conductor sizes (mm ²) (for information only)	
			min.	max.
152SR/G	12	250	16	70
152SR	12	250	70	95
K152SR/G	24	250	16	25
K152SR	24	250	25	95

Kit contents

The complete (K)152SR or (K)152SR/G straight connector kit comprises the following components:

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



Ordering instructions

Select the part number which gives the best centring to the cable core insulation diameter and substitute **X** using table X, according to the conductor size and type. Add a 'K' for use up to 24 kV.

Table W

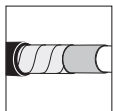
Ordering part number	Dia. over core insulation (mm)	
	min.	max.
152SR/G-11- X	12.6	16.1
152SR/G-13- X	14.6	18.7
152SR-FG- X +11TL	18.4	21.2
152SR-GA- X +11TL	19.7	22.5
152SR-GAB- X +11TL	21.0	23.8
152SR-GH- X +11TL	23.2	26.4

Table X

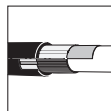
Conductor sizes (mm ²)	Aluminium		Copper
	DIN hexagonal	Deep indent	DIN hexagonal
16	-	-	16(K)M-11-2
25	25(K)M-12-2	25KM-12-1	25(K)M-11-2
35	35(K)M-12-2	35KM-12-1	35(K)M-11-2
50	50(K)M-12-2	50(K)M-12-1	50(K)M-11-2
70	70(K)M-12-2	70(K)M-12-1	70(K)M-11-2
95	95(K)M-12-2	95(K)M-12-1	95(K)M-11-2

Example:

The copper wire screened cable is 24 kV, 50 mm² stranded aluminium with a diameter over core insulation of 20.4 mm. Order a K152SR-FG-50(K)M-12-2+11TL straight connector kit.



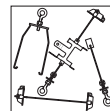
For use with copper tape screened cables. Order: Kit MT.



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



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



For adapted bail restraints: see 'Bail restraints and typical applications'.



For outdoor applications. Order: +MWS.



Components can be ordered individually.

156SA INTERFACE A SURGE ARRESTER

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.

Technical characteristics

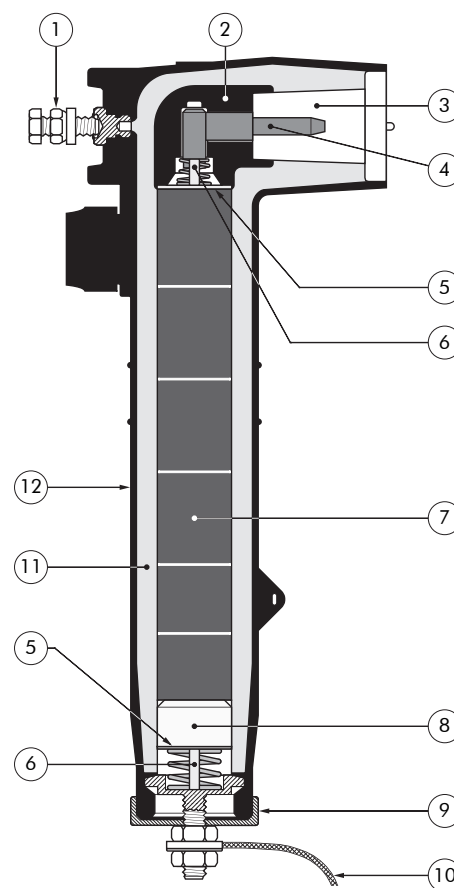
- This surge arrester is a metal oxide varistor surge arrester in an elbow configuration.
- Each arrester is tested for AC withstand and partial discharge prior to leaving the factory.

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

Design

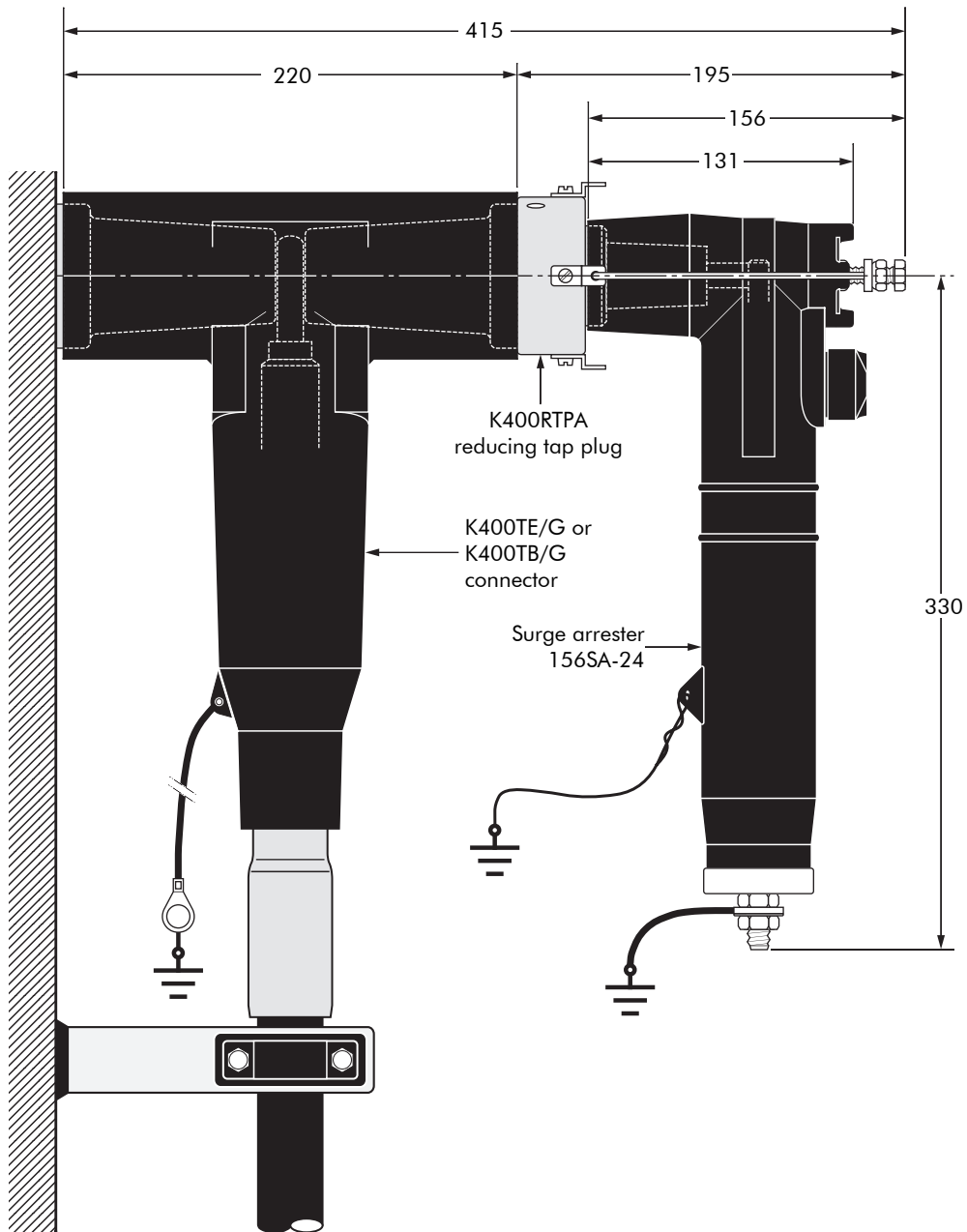
Surge arrester comprising:

1. Bail restraint.
2. Conductive EPDM insert.
3. Type A - 250 A interface as described by CENELEC EN 50180 and 50181.
4. Pin contact.
5. Contact disc.
6. Copper shunt.
7. Metal oxide valve elements.
8. Aluminium spacer.
9. Steel cap.
10. Earth connection.
11. Insulating EPDM layer moulded between the insert and the jacket.
12. Conductive EPDM jacket.



Surge arrester type	Nominal discharge current I_n (kA)	Rated voltage U_r (kV)	Max. continuous operating voltage U_c (kV)	Steep current residual voltage @ 5 kA [1/20 μ s] (kV)	Lightning current residual voltage @ 5 kA [8/20 μ s] (kV)	High current impulse withstand (kA)
156SA-12	5	15	12.5	62.5	54.5	40
156SA-15	5	19	15.5	77.0	69.0	40
156SA-18	5	22	18.0	87.0	79.0	40
156SA-21	5	26	21.0	101.5	93.5	40
156SA-24	5	30	24.5	116.5	108.5	40

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 21 kV. Order a 156SA-21 surge arrester.

PITO-E PLUG-IN TERMINATION

Up to 24 kV - 250 A

Application

- Separable termination designed to connect overhead lines or bus bars to equipment.
- Is suitable for indoor and outdoor use for medium polluted atmosphere.

Technical characteristics

Each plug-in termination is tested for AC withstand 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

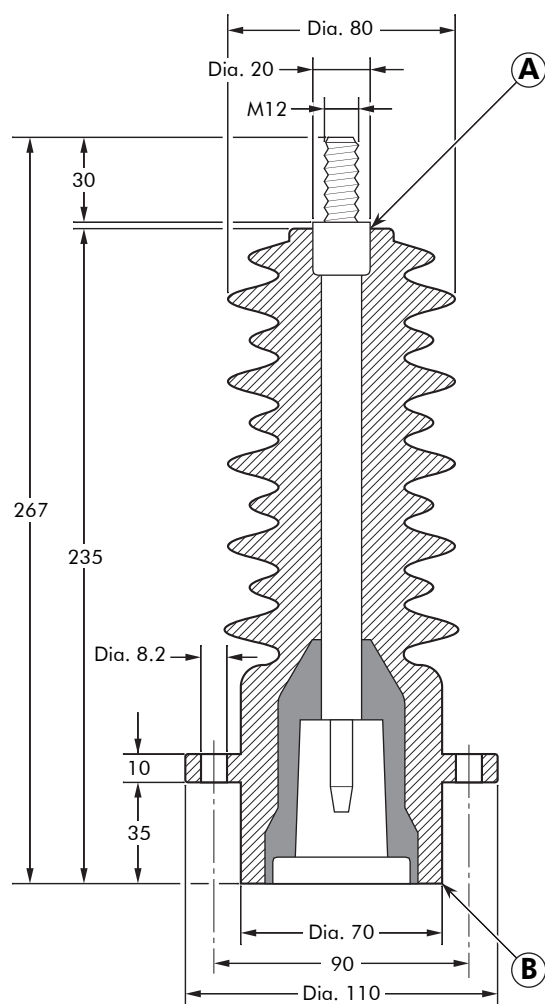
The plug-in termination is a moulded epoxy insulated part. It meets the type A - 250 A interface as described in CENELEC EN 50180 and 50181.

Specifications and standards

The separable termination PITO-E meets the requirements of IEC 60137.

Ordering instructions

To order the plug-in termination for 12 or 24 kV, specify PITO-E. The kit includes the bail restraint and 2 brass nuts.



In mm.

Plug-in termination type	Voltage U_r (kV)	Current I_r (A)	Creepage distance A-B (mm)
PITO-E	12	250	510
PITO-E	24	250	510

180AR-1 /-2 /-3 INTERFACE A EQUIPMENT BUSHING

Up to 24 kV - 250 A

Application

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

Specifications and standards

The plug-in type equipment bushings 180AR-X meet the requirements of CENELEC EN 50180 and IEC 60137.

Technical characteristics

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

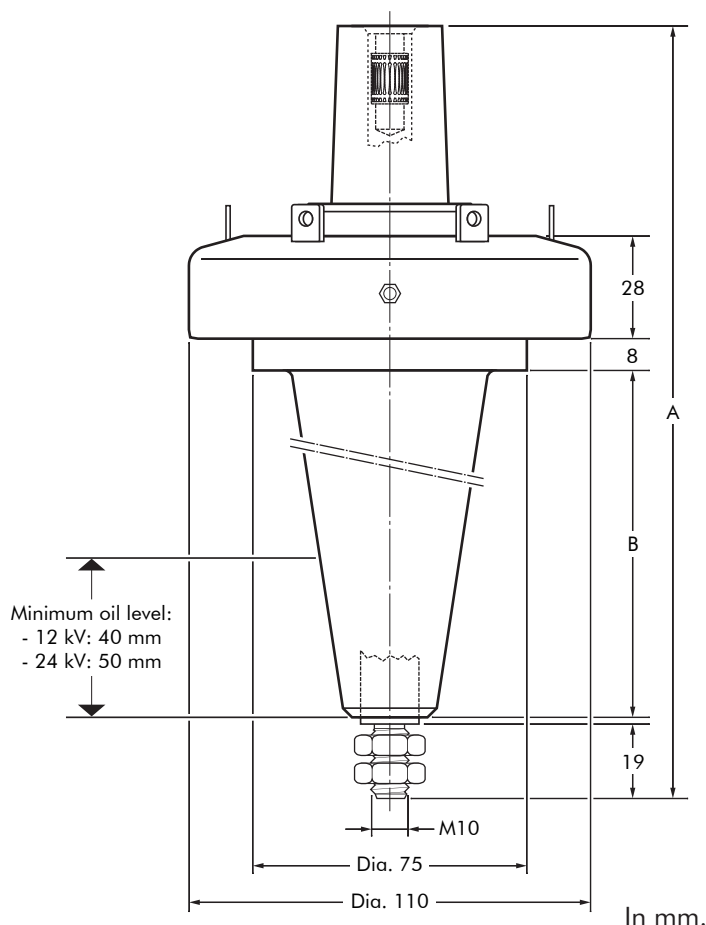
6/10 (12) kV
6.35/11 (12) kV
8.7/15 (17.5) kV
12/20 (24) kV
12.7/22 (24) kV

Design

- The equipment bushing is a moulded epoxy insulated part in accordance with CENELEC EN 50180.
The 180AR-2 bushing has a length B outside this standard.
- The standard bushings, (K)180AR-1 /-2 /-3, are equipped with 6 tabs for the bail restraint.
- The (K)180AR-1-G and (K)180AR-3-G are equipped with 4 tabs and 2 threaded inserts M6x1 (-G version).

Ordering instructions

To order the equipment bushing, specify the type. The bushings are supplied with an earth lead (/J) or an earth plate (/GS). This earth connection must be specified when ordering.



Equipment bushing type	Voltage U_r (kV)	Current I_r (A)	Dimensions (mm)	
			A	B
180AR-1	12	250	222	106
K180AR-1	24	250	222	106
180AR-2	12	250	284	168
K180AR-2	24	250	284	168
180AR-3	12	250	171	55
K180AR-3	24	250	171	55

180A-24P-O INTERFACE A IN-AIR BUSHING

Up to 24 kV - 250 A

Application

For use in equipment insulated with air, typically for transformers, motors, switch gear, 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

Design

The equipment bushing is a moulded epoxy insulated part in accordance with CENELEC EN 50181.

Specifications and standards

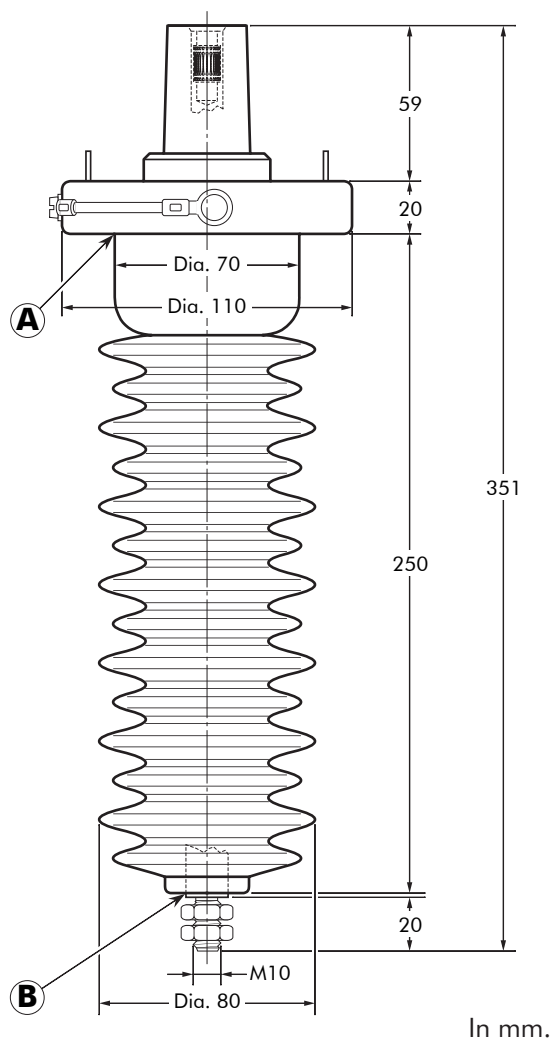
The plug-in type equipment bushings 180A-24P-O meet the requirements of CENELEC EN 50181 and IEC 60137.

Ordering instructions

To order the equipment bushing, specify the type. The bushings are supplied with an earth lead. To include the ring clamp, add:

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

E.g. 180A-24P-O/D.



Equipment bushing type	Voltage U_r (kV)	Current I_r (A)	Creepage distance A-B (mm)
180A-24P-O	12	250	630
180A-24P-O	24	250	630

FIXINGS FOR EQUIPMENT BUSHINGS INTERFACE A

**180AR-1/GS,
180AR-1-G/GS,
180AR-2/GS,
180AR-3/GS and
180AR-3-G/GS bushings**

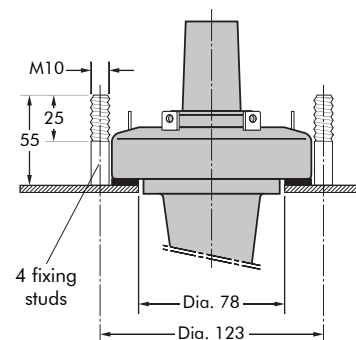
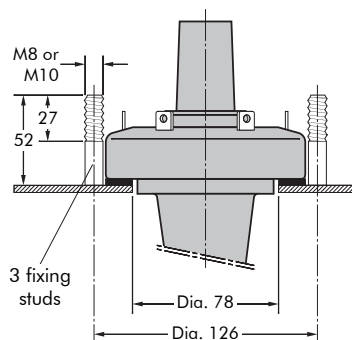
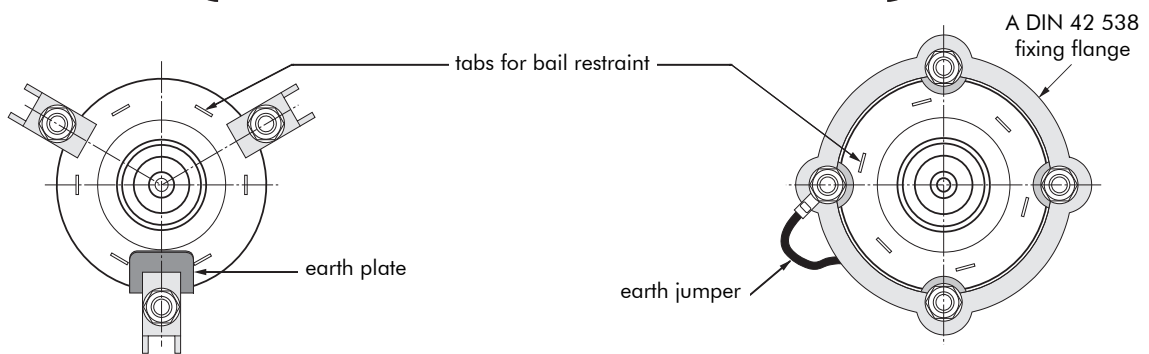
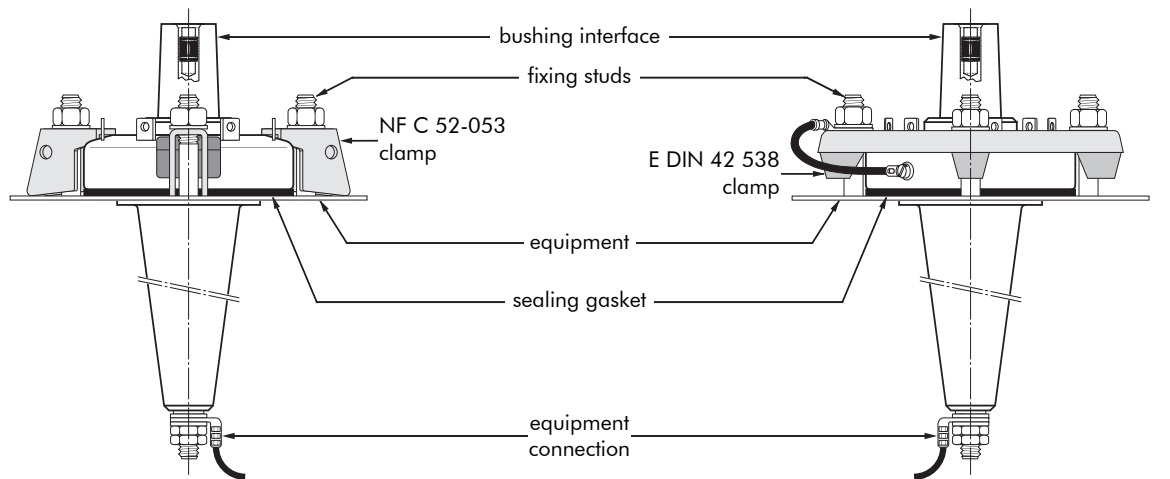
NFC 52-053

French standards.

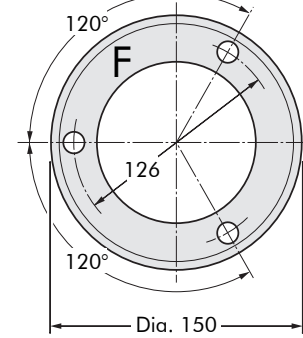
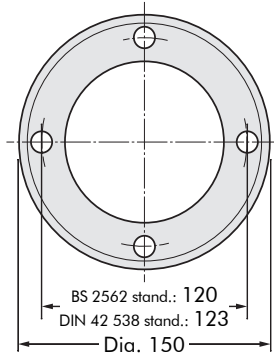
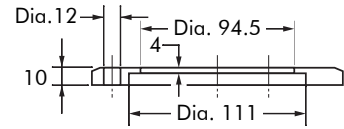
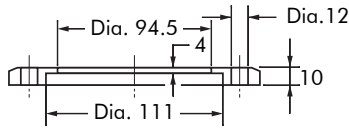
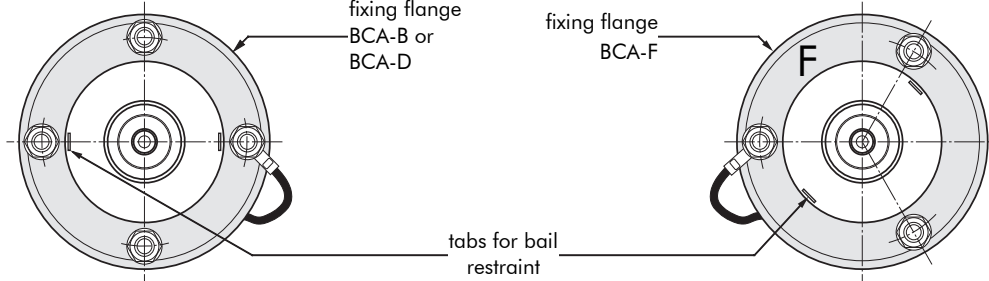
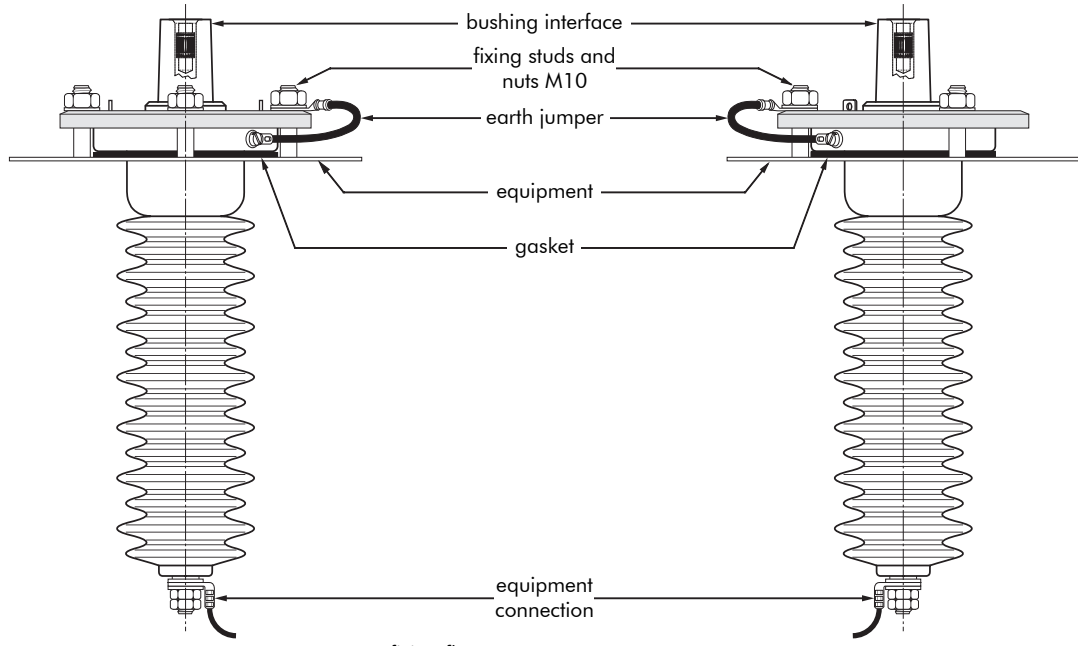
**180AR-1/J,
180AR-1-G/J,
180AR-2/J,
180AR-3/J and
180AR-3-G/J bushings**

DIN 42 538

German standards.

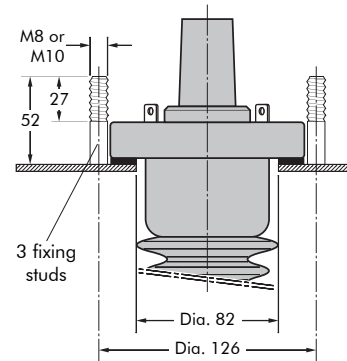
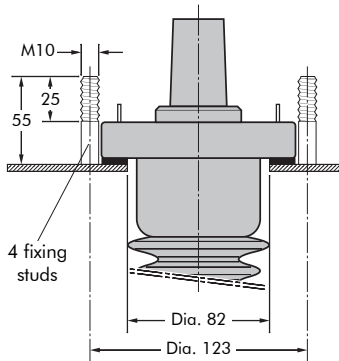


180A-24P-O In-air bushing



Type BCA-B : BS 2562 British standards
Type BCA-D : DIN 42 538 German standards

Type BCA-F : NFC 52-053 French standards



ACCESSORIES INTERFACE A

Application

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

Technical characteristics

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

Up to 24 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

150DR Dead-end receptacle

Fits over a bushing with a type A interface to provide 'dead-end' facility.
Renders the assembly watertight.



Ordering instructions

Order
150DR for 12 kV or
K150DR for 24 kV
applications.
The dead-end receptacle can
be supplied with an earth lead.
Order: -/G. E.g. K150DR/G.

150DP Dead-end plug

Plugs into connectors or receptacles to provide 'dead-end' facility.
Renders the assembly watertight

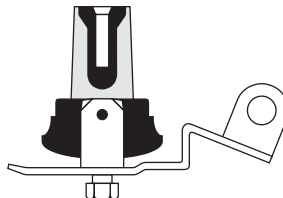


Ordering instructions

Order
150DP for 12 kV or
K150DP for 24 kV
applications.

151SOP Stand-off plug

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

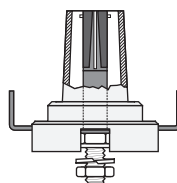


Ordering instructions

Order
151SOP for 12 kV or
K151SOP for 24 kV
applications.

250GP Earthing plug

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



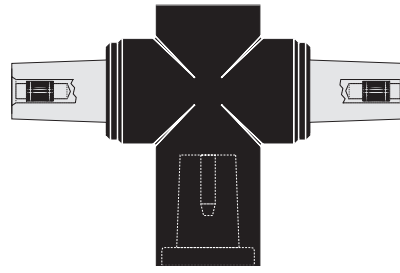
Ordering instructions

Order
250GP for 12 kV or 24 kV
applications.

200T Separable tee connector

Is designed to connect three cables of the same or varying sizes or two cables to equipment.

For an adapted bail, please refer to the catalogue or contact our representative.



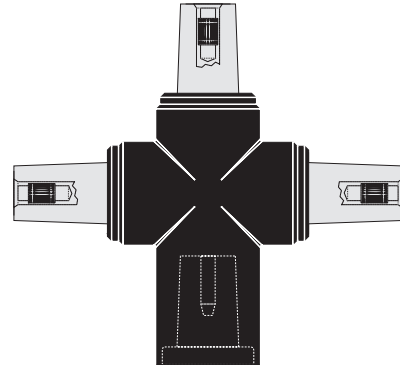
Ordering instructions

Order
200T for 12 kV or
K200T for 24 kV
applications.

200X Separable cross connector

Is designed to connect four cables of the same or varying sizes or three cables to equipment.

For an adapted bail, please refer to the catalogue or contact our representative.

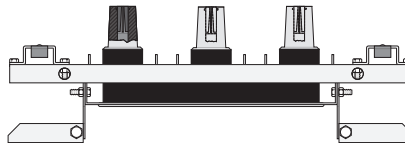


Ordering instructions

Order
200X for 12 kV or
K200X for 24 kV
applications.

1501J3-U-8 Three-way junction

Provides a flexible means of connecting two or three cables of the same or varying sizes. For an adapted bail, please refer to the catalogue or contact our representative.

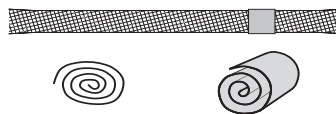


Ordering instructions

Order
1501J3-U-8 for 12 kV or
K1501J3-U-8 for 24 kV
applications.

Kit MT Earthing kit for copper tape screened cables

Contains a tinned copper braid (25 mm² - L=500 mm), a tinned copper wire for cleating and water sealing mastic.



Ordering instructions

Order
Kit MT for 12 kV or 24 kV
applications.

BAIL RESTRAINTS INTERFACE A

Application

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

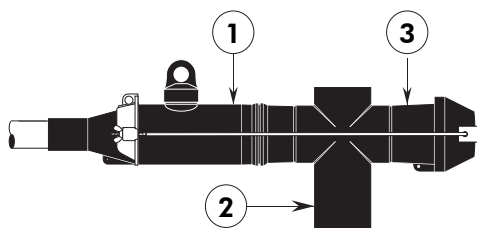
Ordering instructions

The type of bail restraint is defined by its intended use with different types of connector, receptacle and/or bushing. To order the bail restraint, specify the type needed.

147BA

For use with:

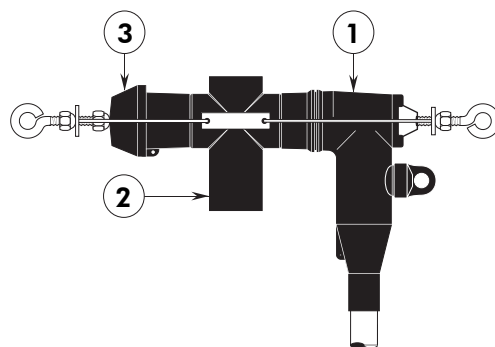
1. (K)152SR straight connector,
2. (K)200T tee connector and
3. (K)150DR dead-end receptacle.



149BA

For use with:

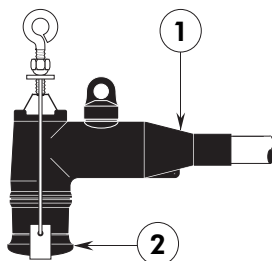
1. (K)158LR elbow connector,
2. (K)200T tee connector and
3. (K)150DR dead-end receptacle.



148BA

For use with:

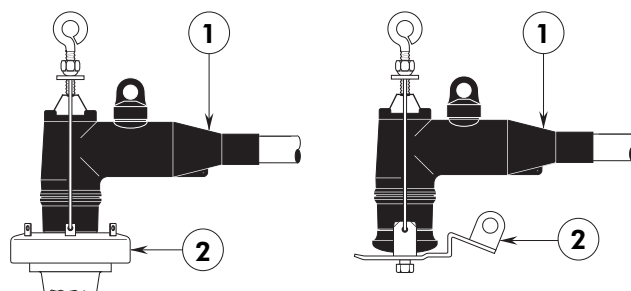
1. (K)158LR elbow connector and
2. (K)150DP dead-end plug.



150BA-B1

For use with:

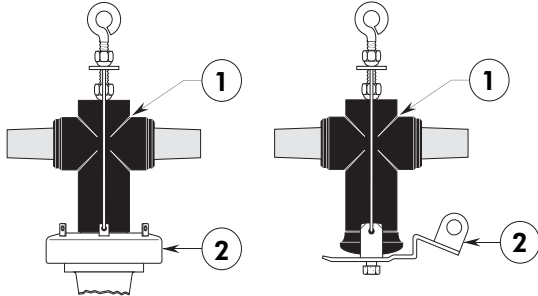
1. (K)158LR elbow connector and
2. an interface A equipment bushing (shown), 250GP earthing plug, (K)151SOP stand-off plug (shown) or (K)1501J3-U-8 three-way junction.



150TB-1

For use with:

1. (K)200T tee connector and
2. an interface A equipment bushing (shown), 250GP earthing plug, (K)151SOP stand-off plug (shown) or (K)1501J3-U-8 three way junction.



153BA

For use with:

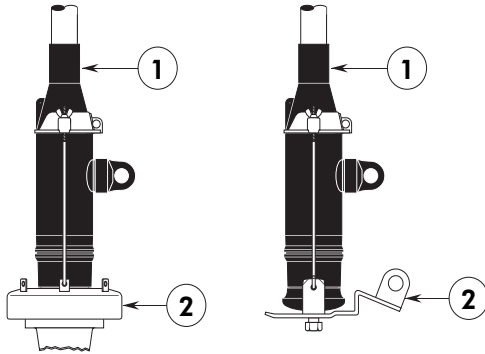
1. (K)152SR straight connector and
2. (K)150DP dead-end plug.



151BA

For use with:

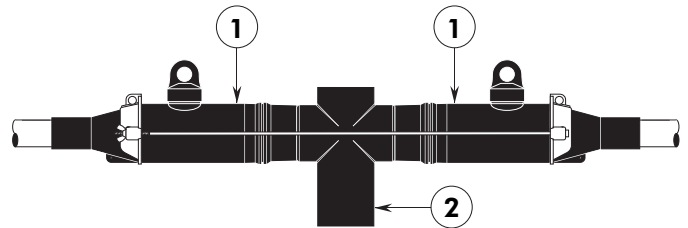
1. (K)152SR straight connector and
2. an interface A equipment bushing (shown), 250GP earthing plug, (K)151SOP stand-off plug (shown) or (K)1501J3-U-8 three-way junction.



155BA-1

For use with:

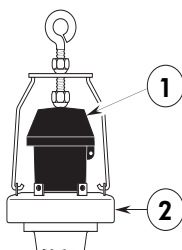
1. 2 x (K)152SR straight connector and
2. (K)200T tee connector.



152BA

For use with:

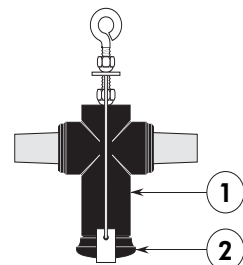
1. (K)150DR dead-end receptacle and
2. an interface A equipment bushing (shown) or (K)1501J3-U-8 three-way junction.



156BA-1

For use with:

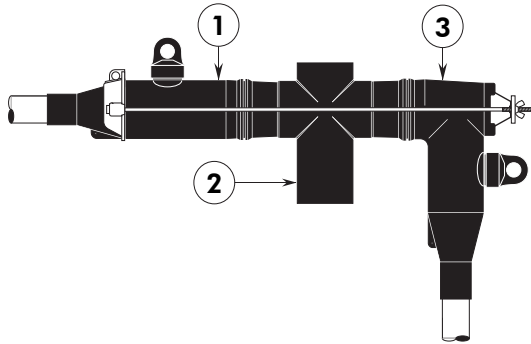
1. (K)200T tee connector and
2. (K)150DP dead-end plug.



158BA

For use with:

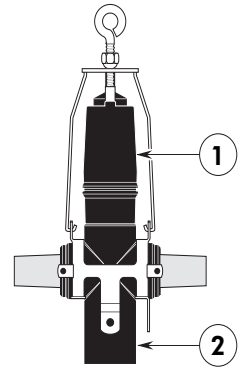
1. (K)152SR straight connector,
2. (K)200T tee connector and
3. (K)158LR elbow connector.



201BA

For use with:

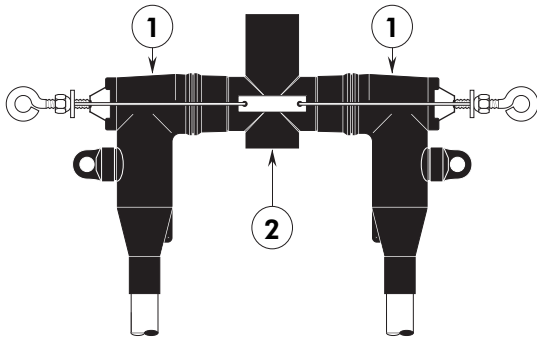
1. (K)158LR elbow connector
2. (K)200X cross connector.



159BA

For use with:

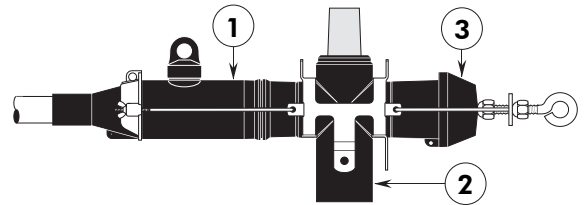
1. 2 x (K)158LR elbow connector and
2. (K)200T tee connector



202BA

For use with:

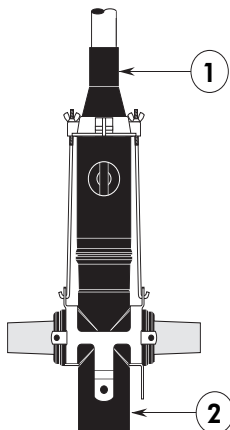
1. (K)152SR straight connector,
2. (K)200X cross connector and
3. (K)150DR dead-end receptacle.



200BA

For use with:

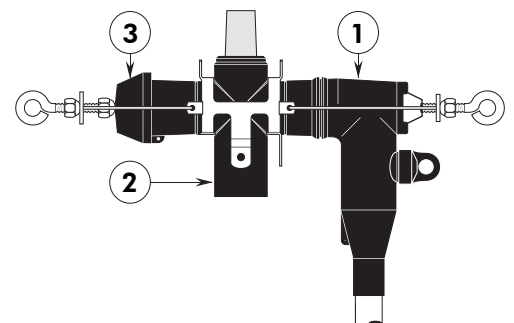
1. (K)152SR straight connector and
2. (K)200X cross connector.



203BA

For use with:

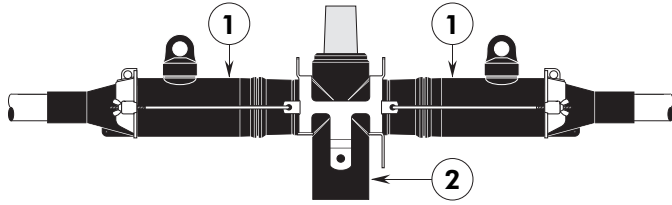
1. (K)158LR elbow connector,
2. (K)200X cross connector and
3. (K)150DR dead-end receptacle.



205BA

For use with:

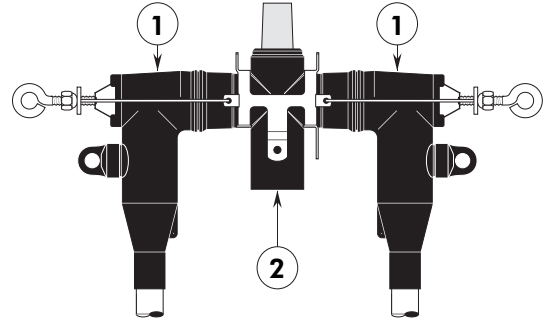
1. (K)200X cross connector and
2. 2 x (K)152SR straight connector.



207BA

For use with:

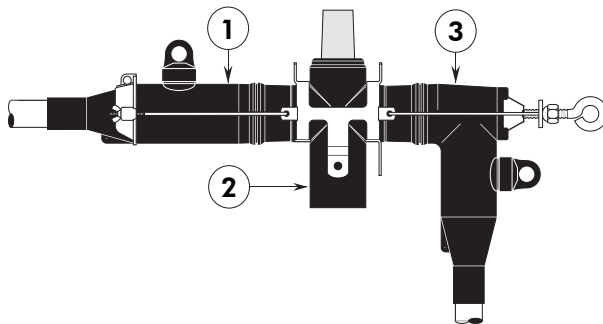
1. 2 x (K)158LR elbow connector and
2. (K)200X cross connector.



206BA

For use with:

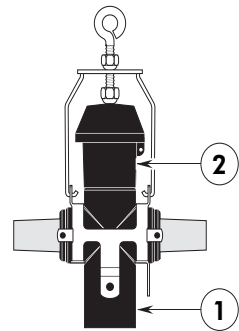
1. (K)152SR straight connector,
2. (K)200X cross connector and
3. (K)158LR elbow connector.



208BA

For use with:

1. (K)200X cross connector and
2. (K)150DR dead-end receptacle.



Additional catalogue information on power cable accessories
is available by contacting us at the address below:

┌ Distributed by:

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