

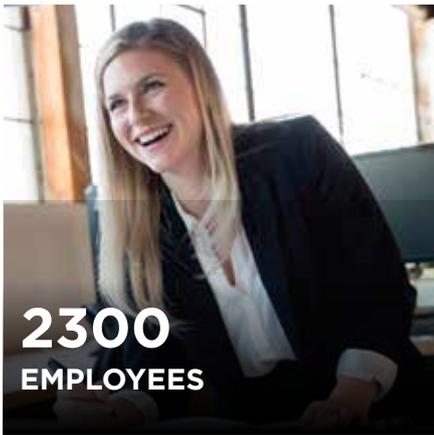
RAYCHEM CABLE ACCESSORIES

ENERGY QUICK REFERENCE GUIDE

Who is TE?

We are a reliable provider of energy solutions for any environment. With a focus on employee expertise and durable products, we deliver the solutions and support our customers can count on under any circumstance.

We support the generation, transmission and distribution of electricity in a wide array of industries, applications and environments around the world. Through our well-known product families Raychem, Simel, AMP and Bowthorpe EMP, we work collaboratively with you, our customers to tackle your toughest challenges by providing engineering support, qualified products and extraordinary customer experiences.



2300
EMPLOYEES



8K
CUSTOMERS



11
MANUFACTURING
LOCATIONS

1K+
Patents
granted or pending

\$703M
Sales Worldwide
in FY18

49
Countries

40K
Products

Product Portfolio

CABLE ACCESSORIES

Our comprehensive range of cable accessories maintains service reliability in environmental extremes and can be used in both overhead and underground installations. TE and TE's Raychem power cable accessories have been trusted for over 60 years in industries and utilities such as underground, substations, offshore, nuclear and renewable.

CONNECTORS & FITTINGS

Our well-known product families include AMP, Simel, and Utilux supply connectors and fittings for low, medium, and high voltage overhead and underground networks. These products have been trusted for decades in complex markets such as substations, overhead lines, underground networks, grounding, original equipment manufacturers, and industrial applications.

INSULATION & PROTECTION

We provide vital insulation and protection services for power utility, power OEM, railway, and wind applications from 280 V up to 1200 kV that ensure a safe and reliable power supply. TE's Raychem Cable Accessories, Bowthorpe EMP Surge Arresters, and Axicom High Voltage Insulators – and TE's material expertise have earned worldwide recognition for long-term performance in harsh environments.

Low Voltage



Medium Voltage



High Voltage



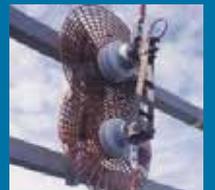
Underground



Insulators/Surge Arresters



Wildlife & Asset Protection



High Voltage



Nuclear



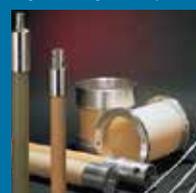
Low / Medium Voltage



Grounding



High Voltage Components



Hollow Core Insulators



Our Mission

Provide an integrated offering to deliver the best end-to-end cost advantage with the highest material science competence and drive flawless execution across all functions to gain strong customer intimacy.

A Legacy of Trusted Product Lines

ALR | AMP | Axicom | Bowthorpe EMP | Crompton Instruments | Raychem | Simel | Utilux

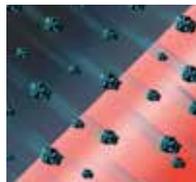


Our Culture of Innovation

We know your industry never stands still; and neither does TE. Our world-class materials science expertise helps us focus on what you need right now – and continue to create the next generation of technology to better serve you.

Material Innovations

Better, longer lasting products start with better materials. Our core materials science focus keeps us ahead of the changing needs of the electrical power industry.



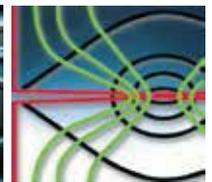
Non tracking and UV stable materials



UHV composite materials



Moisture blocking



Reduced contact resistance



Surge suppression systems



Resin technology



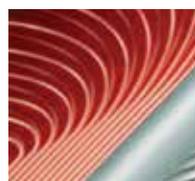
PowerGel insulating materials



Shear bolt technologies



High performance heat-shrinkable multi-layer materials



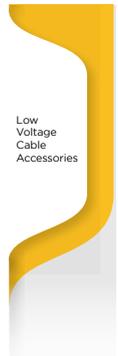
Electrical stress control

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Low Voltage Cable Accessories

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Medium Voltage Cable Accessories

III. Medium Voltage Surge Arrester



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Medium Voltage Surge Arrester



Chapter I

Low Voltage Cable Accessories

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RDSS Duct Sealing System

FEATURES

- Consists of an inflatable, sealed bladder of flexible, metallic laminate material, which has pre-installed, high-temperature sealant strips on both sides.
- The bladder is first inflated to 45 psi (three-bar) internal pressure, and then presses the sealant against the duct wall and onto the substrate.
- The bag uses a self-sealing gel material to seal the filling hole when the filling tube is removed



APPLICATIONS

- Designed for use in conjunction with plastic, concrete, or steel ducts to provide a watertight duct seal.
- Seals cable ducts and helps to prevent flooding in cable vaults, access manholes, substation basements, and customer feeds. It can be installed while the water is flowing—see photograph.

BENEFITS

- For applications with three or more cables, an RDSS-CLIP is inserted between the cables.
- The RDSS-CLIP is a high-temperature mastic mounted on an installation stick. It seals the area between the cables when used in conjunction with the RDSS inflatable bladder.
- Acceptable to use on medium voltage cables including unjacketed concentric neutral.

Duct Inner Diameter	Number of Cables in Duct/ Max Cable Bundle Diameter					
	0, 1, or 2 Cables		3 or 4 Cables		5, 6, 7 Cables	
1.25 (32)	RDSS-45	0.5 (13)	RDSS-45, 1 RDSS-CLIP-45	0.3 (8)	RDSS-45, 2 RDSS-CLIP-45	0.1 (3)
1.50 (38)	RDSS-45	1.0 (25)	RDSS-45, 1 RDSS-CLIP-45	0.8 (20)	RDSS-45, 2 RDSS-CLIP-45	0.6 (15)
1.75 (45)	RDSS-45	1.3 (32)	RDSS-45, 1 RDSS-CLIP-45	1.05 (27)	RDSS-45, 2 RDSS-CLIP-45	0.9 (22)
2.00 (50)	RDSS-60	1.2 (30)	RDSS-60, 1 RDSS-CLIP-75	1.0 (25)	RDSS-60, 2 RDSS-CLIP-75	0.8 (20)
2.25 (57)	RDSS-60	1.6 (41)	RDSS-75, 1 RDSS-CLIP-75	1.4 (36)	RDSS-75, 2 RDSS-CLIP-75	1.2 (31)
2.50 (64)	RDSS-75	1.5 (38)	RDSS-75, 1 RDSS-CLIP-75	1.3 (33)	RDSS-75, 2 RDSS-CLIP-75	1.1 (28)
2.75 (70)	RDSS-75	1.8 (46)	RDSS-75, 1 RDSS-CLIP-75	1.6 (41)	RDSS-75, 2 RDSS-CLIP-75	1.4 (36)
3.00 (75)	RDSS-75	2.2 (56)	RDSS-75, 1 RDSS-CLIP-75	2.0 (50)	RDSS-75, 2 RDSS-CLIP-75	1.8 (46)
3.25 (83)	RDSS-100	2.2 (56)	RDSS-100, 1 RDSS-CLIP-100	2.0 (50)	RDSS-100, 2 RDSS-CLIP-100	1.8 (46)
3.50 (89)	RDSS-100	2.6 (66)	RDSS-100, 1 RDSS-CLIP-100	2.4 (61)	RDSS-100, 2 RDSS-CLIP-100	2.2 (56)
3.75 (95)	RDSS-100	2.9 (74)	RDSS-100, 1 RDSS-CLIP-100	2.7 (69)	RDSS-100, 2 RDSS-CLIP-100	2.5 (64)
4.00 (100)	RDSS-100	3.2 (80)	RDSS-100, 1 RDSS-CLIP-100	3.0 (75)	RDSS-100, 2 RDSS-CLIP-100	2.8 (70)
4.25 (108)	RDSS-100	3.5 (89)	RDSS-100, 1 RDSS-CLIP-100	3.3 (85)	RDSS-100, 2 RDSS-CLIP-100	3.1 (79)
4.50 (114)	RDSS-100	3.5 (89)	RDSS-100, 1 RDSS-CLIP-100	3.3 (85)	RDSS-100, 2 RDSS-CLIP-100	3.1 (79)
4.75 (121)	RDSS-125	3.8 (97)	RDSS-125, 1 RDSS-CLIP-125	3.6 (92)	RDSS-125, 2 RDSS-CLIP-125	3.4 (87)
5.00 (125)	RDSS-125	4.1 (104)	RDSS-125, 1 RDSS-CLIP-125	3.9 (98)	RDSS-125, 2 RDSS-CLIP-125	3.7 (93)
5.25 (133)	RDSS-150†	4.3 (109)	RDSS-150†, 1 RDSS-CLIP-150	4.1 (104)	RDSS-150†, 2 RDSS-CLIP-150	3.9 (98)
5.50 (140)	RDSS-150†	4.7 (120)	RDSS-150†, 1 RDSS-CLIP-150	4.5 (114)	RDSS-150†, 2 RDSS-CLIP-150	4.3 (109)
5.75 (146)	RDSS-150†	4.9 (124)	RDSS-150†, 1 RDSS-CLIP-150	4.7 (119)	RDSS-150†, 2 RDSS-CLIP-150	4.5 (114)
6.00 (150)	RDSS-150†	5.1 (129)	RDSS-150†, 1 RDSS-CLIP-150	4.9 (124)	RDSS-150†, 2 RDSS-CLIP-150	4.7 (120)
6.25 (159)	RDSS-150†	5.4 (138)	RDSS-150†, 1 RDSS-CLIP-150	5.2 (133)	RDSS-150†, 2 RDSS-CLIP-150	5.0 (125)

6.50-8.00 (165-210) Ducts in this range require the use of RDSS-AD-210 adapter. Contact your TE representative for application information. See Ordering information.

ADDITIONAL PRODUCT INFORMATION

- In ducts where the cable/cable bundle is less than 2.4" (60mm) in diameter, an RDSS-AT/AP-150 device must be used in conjunction with the RDSS-150.
- Standard package: RDSS = 10 kits/box or 3 kits/box
RDSS-CLIP = 5 clips/box

- RDSS-TOOLS = 1 each/box, CO2 cartridges = 10 each/box, RDSS-AT/AP-150 = 1 each/box
- Related test report: EDR-5253
- S-1278 sealant, used in RDSS-CLIPS, is available separately.

- For proper inflation do not exceed the maximum cable bundle diameter (MCBD). To determine MCBD, use a diameter tape or contact your TE representative for assistance.

RDSS sealing clip

RDSS duct sealing clips are to be used if the duct is occupied by more than two cables. The maximum number of cables sealed with one RDSS-CLIP is four. If more cables are to be sealed, one extra clip is needed for every three additional cables. Check with your TE Connectivity representative for applications with more than seven cables.

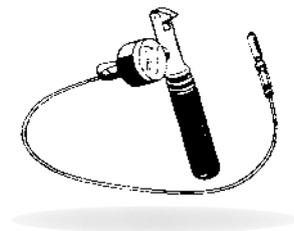
Catalog Number	Kit Used With
RDSS-CLIP-45	RDSS-45
RDSS-CLIP-75	RDSS-75 and RDSS-60
RDSS-CLIP-100	RDSS-100
RDSS-CLIP-125	RDSS-125
RDSS-CLIP-150	RDSS-150

RDSS installation tools

RDSS duct seals can be installed with a variety of inflation tools having the capability of inflating RDSS to 4533 psi (3 bar) of pressure. The tools TE offers are summarized in the table below. The tool will only accept 16-gr CO2 gas cylinders (listed below).

Catalog Number	Description	Description
RDSS-IT-16	Inflation tool designed with an ON/OFF switch and an automatic pressure-monitoring system. The required CO2 gas cylinders (E7512-0160) must be ordered separately.	1 tool/box
E7512-0160	16-gr CO2 gas cylinders for the RDSS-IT-16 tool. Each gas cylinder inflates approximately four RDSS-100 duct seals.	10 cylinders/box
E7512-0220	Tube snap assembly. Spare part for RDSS-IT-16 inflation tool.	1 each/box
E7512-0240	Spare pressure gauge assembly for RDSS-IT-16 inflation tool.	1 each/box
E7512-0260	Spare delivery pipe for RDSS-IT-16 inflation tool.	1 each box
S-1278-3 x 61 x 7620	RDSS sealant roll (for smaller diameter wires)	1 25-ft roll/box
RDSS-AT/AP-150	For use with the RDSS-150 in duct 5.25» or larger 1 each/box with cable/cable bundles less than 2.4» (60 mm) in diameter.	1 each/box
RDSS-AD-210	Adapter for ducts 6.5 - 8.0» (165 - 210 mm) diameter.	4 each/box
E4540-1250	RDSS-LUBE for installation of RDSS.	25 each/box

RDSS-IT-16



Rayvolve RVS "Roll-on" Splices for 1/C Power Cable (1000 V)

FEATURES

- Qualified to ANSI C119.1. CSA certified to C22.2 No. 198.2. UL listed per 96J4 (file E91151). RUS accepted for use as a secondary tap or splice cover.
- TE's Raychem RVS splice cover sleeves feature a dual-wall design with an entrapped lubricant, making installation fast and simple. The elastomeric sleeve rolls onto the cable with minimal effort, even at temperatures below -15°F (-25°C).

APPLICATIONS

- For use on standard poly- or elastomeric-insulated cables. Use to insulate and seal in-line compression connectors or to seal terminal lugs.
- Specially formulated EPDM elastomer combines with the high-performance sealant to form a water-resistant, insulating sleeve that is UL listed and CSA certified for direct burial application over in-line compression connectors.

BENEFITS

- Easy "roll-on" installation to effectively insulate and seal cable connections up to 1000 V.
- Ideal for use where gas or electric heating devices are not approved.



Product selection information: dimensions in inches (MM)

Catalog Number	Conductor Size (AWG/kcmil)	Cable OD (min - max)	Sleeve Length	Max Connector Length
RVS-11	#8-2/0	.22-.68 (6-17)	8.0 (205)	5.00 (127)
RVS-12	1/0-250	.50-.90 (13-23)	9.5 (241)	4.50 (114)
RVS-13	250-600	.70-1.20 (18-30)	12.0 (305)	7.00 (178)
RVS-14	600-1000	.95-1.50 (24-38)	14.0 (356)	9.00 (229)

ADDITIONAL PRODUCT INFORMATION

- Select the appropriate catalog number. Selections are based on typical dimensions of low-voltage insulated cable. Confirm selection with dimensions to assure proper sizing.
- Kits do not contain connectors. The RVS splice cover selection information mentioned above covers copper and aluminum in-line compression connections.
- Each kit contains one Rayvolve RVS splice cover sleeve and sealant strips
- Standard package: 5 kits/box or 50 kits/box.



EPKT

Raychem Low Voltage Heat-shrink Terminations up to 1 kV

- | | |
|--------------------|--|
| APPLICATION | - For sealing and protection of indoor or outdoor cable ends on armoured or unarmoured cables. |
| | - For 2, 3 and 4 core cables |
| FEATURES | - Hot-melt adhesive-coated cable breakout and sealing sleeves |
| CONFORMS TO | - Tested in accordance to CENELEC HD 623 S1.1996 and EN 50393 |

1 kV 1, 3 and 4-core indoor and outdoor terminations for unarmoured cables

Product name	No of cores	Conductor size (mm ²)	Part number
EPKT 0030 (S10)	3	25 – 50	804937-011
EPKT 0046 (S10)	3	70 – 150	963807-000
EPKT 0062 (S10)	3	185 – 300	208159-011
EPKT 0015 (S20)	4	4 – 16	288775-000
EPKT 0031 (S10)	4	25 – 50	005023-000
EPKT 0047 (S10)	4	70 – 150	597107-000
EPKT 0063 (S10)	4	185 – 300	063097-000

1 kV 1, 2 and 4-core indoor and outdoor terminations for armoured cables

Product name	No of cores	Conductor size (mm ²)	Part number
EPKT 0017 (S5)	2	25 – 50	024865-000
EPKT 0003 (S10)	4	4 – 16	121775-000
EPKT 0019 (S5)	4	25 – 50	868777-000
EPKT 0035 (S5)	4	70 – 150	223409-000
EPKT 0051 (S5)	4	185 – 300	803719-000

EPKT

Raychem Low Voltage Heat-shrink Terminations 3.6 kV

Product name	No of cores	Conductor size (mm ²)	Part number
650mm core tail length			
EPKT 2042	3	25 – 50	796188-011
EPKT 2052	3	70 – 120	796194-000
EPKT 2062	3	150 – 240	796200-011
850mm core tail length			
EPKT 2043	3	25 – 50	796189-011
EPKT 2053	3	70 – 120	796195-011
EPKT 2063	3	150 – 240	796201-000
1200mm core tail length			
EPKT 2044	3	25 – 50	796190-000
EPKT 2054	3	70 – 120	796196-000
EPKT 2064	3	150 – 240	796202-000

EPKJ and AR

Raychem Inline Joints for Plastic and Rubber Insulated Cables up to 1 kV, with or without Armour

FEATURES

- Heat-shrink adhesive coated tubes.
- Wide application range
- Suitable for wide range of connectors

APPLICATIONS

- Designed for 2, 3 and 4 core cables up to 300 mm² with XLPE, PVC or EPR, with or without armour, PVC or PE sheath

CONFORMS TO

- EN 50393

1 kV 4 core joint for armoured cable



Product name	No of cores	Conductor size (mm ²)	Part number
AR101 (SMOE-81283)	4	1.5 – 4	731401-000
AR102 (SMOE-81284)	4	6 – 16	086387-000
AR3 (EPKJ-0130-(S5))	4	25 – 50	630855-000
AR4 (EPKJ-0137-(S5))	4	70 – 150	378703-000
AR5 (EPKJ-0144-(S1))	4	185 – 300	602241-000

1 kV 4 core joint for unarmoured cable



Product name	No of cores	Conductor size (mm ²)	Part number
EPKJ 0228-(S10)	4	1.5 – 6	676955-000
EPKJ 0235-(S10)	4	6 – 16	793331-000
EPKJ 0242(S10)	4	16 – 35	211661-000
EPKJ 0249(S5)	4	35 – 70	637809-000
EPKJ 0256(S5)	4	70 – 150	482979-000
EPKJ 0263(S5)	4	150 – 300	609695-000

TSJ and TBJ

Raychem Low Voltage Resin Filled Joints for Armoured Cables up to 1 kV

FEATURES

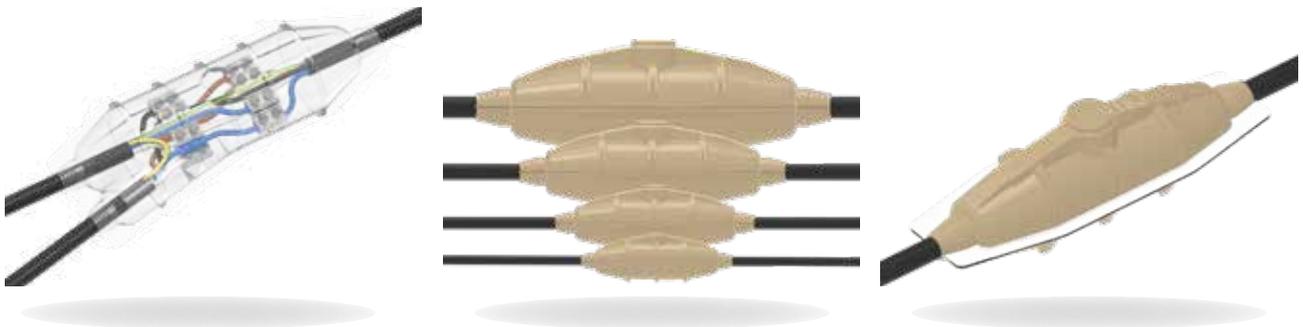
- Rigid clear high-impact shells
- Armour continuity components included
- Suitable for a broad range of connectors

APPLICATIONS

- Designed for 2, 3 and 4 core cables up to 300 mm² with XLPE, PVC or EPR, with or without armour, PC or PE sheath

CONFORMS TO

- BS 7888
- CENELEC HD623
- EN 50393



TBS, TBJ

Product name	Conductor size (mm ²)	Product number
BAH-038080672	TSJ-6	D44929-000
BAH-038080673	TSJ-16	C13884-000
BAH-038080674	TSJ-35	A80251-000
BAH-038080675	TSJ-70	A55202-000
BAH-038080676	TSJ-120	E96081-000
BAH-038080677	TSJ-185	E90897-000
BAH-038080678	TSJ-300	E92066-000
BAH-038080679	TBJ-6	A66977-000
BAH-038080680	TBJ-16	A71740-000
BAH-038080681	TBJ-35	C86482-000
BAH-038080682	TBJ-70	A52841-000
BAH-038080683	TBJ-120	E97389-000
BAH-038080684	TBJ-185	F04415-000
BAH-038080685	TBJ-300	C54263-000

GelWrap Water Resistant Wraparound Splice Closures (1000 V)

FEATURES

- PowerGel silicone sealant in TE's Raychem GelWrap closure encapsulates the connection.
- Corrugated design enables greater range taking ability.
- Qualified to ANSI C119.1

APPLICATIONS

- Insulate and seal buried electrical connections rated up to 1000 volts.
- Jacket repair
- Engineered to handle the harsh environments of direct burial and manhole applications.

BENEFITS

- PowerGel conforms to substrate providing reliable seal against moisture ingress.
- Quick installation, snap closure
- No special tools required
- Excellent insulating properties
- Easy, clean re-entry into electrical connection
- Unlimited shelf life



Testing	Test Conditions
ANSI C119.1	600 V insulated underground
Chemical Resistance	Fluid immersion, 168 hours @ 23°C, 75% elongation retention minimum <ul style="list-style-type: none"> • 10W-40 motor oil • 10% hydrochloric acid • 15% sodium chloride • 20% sodium hydroxide • ETX 60280 antifreeze (1000 hours)
Accelerated Aging	1000 hours @ 135°C <ul style="list-style-type: none"> • 93% retention tensile strength • 82% retention elongation at break

PRODUCT SELECTION INFORMATION: DIMENSIONS IN INCHES (MM)

Catalog Number	Sleeve Length	Conductor Size	Max Connector Opening	Max General Use Diameter Range	Std. Pack
GelWrap-18/4-100	4.0 (100)	#12-4/0 (4-95)	1.0 (25)	0.15-0.70 (4-18)	6
GelWrap-18/4-150	6.0 (150)	#12-4/0 (4-95)	3.0 (75)	0.15-0.70 (4-18)	6
GelWrap-18/4-200	8.0 (200)	#12-4/0 (4-95)	5.0 (125)	0.15-0.70 (4-18)	6
GelWrap-18/4-250	10.0 (250)	#12-4/0 (4-95)	7.0 (175)	0.15-0.70 (4-18)	6
GelWrap-18/4-300	12.0 (300)	#12-4/0 (4-95)	9.0 (225)	0.15-0.70 (4-18)	6
GelWrap-33/10-150	6.0 (150)	#2-500 (35-240)	2.0 (50)	0.40-1.30 (10-33)	6
GelWrap-33/10-200	8.0 (200)	#2-500 (35-240)	4.0 (100)	0.40-1.30 (10-33)	6
GelWrap-33/10-250	10.0 (250)	#2-500 (35-240)	6.0 (150)	0.40-1.30 (10-33)	6
GelWrap-33/10-300	12.0 (300)	#2-500 (35-240)	8.0 (200)	0.40-1.30 (10-33)	12
GelWrap-33/10-350	14.0 (350)	#2-500 (35-240)	10.0 (250)	0.40-1.30 (10-33)	10
GelWrap-50/20-200	8.0 (200)	250-750	2.0 (50)	0.80-1.50 (20-38)	12
GelWrap-50/20-250	10.0 (250)	250-750	4.0 (100)	0.80-1.50 (20-38)	12
GelWrap-50/20-300	12.0 (300)	250-750	6.0 (150)	0.80-1.50 (20-38)	12
GelWrap-50/20-350	14.0 (350)	250-750	8.0 (200)	0.80-1.50 (20-38)	12
GelWrap-50/20-400	16.0 (400)	250-750	10.0 (250)	0.80-1.50 (20-38)	12
GelWrap-UF-200	8.0 (200)	14/2-8/3 w/ground	N/A	N/A	10

GILS Gel In-Line Water Resistant Splice Kit for Power Cable (1000 V)

FEATURES

- Connector accommodates copper and/or aluminum cables
- Qualified to ANSI C119 for underground splicing
- UV resistant
- Qualified for temperatures from -40°C to 90°C
- Connector included
- RUS accepted connector blocks and splices for secondary.
- Water-tight for use in all locations

APPLICATIONS

- TE's Raychem GILS gel in-line splice kits, offer a state-of-the-art sealed splice for underground, buried, and overhead applications. GILS closures offer a fast and simple method for splicing, insulating, and environmentally sealing low-voltage cable splices.

CONFORMS TO

- TE's Raychem PowerGel conforms to substrate providing reliable seal against moisture ingress.
- Quick installation, snap closure
- No special tools required
- Excellent insulating properties
- Easy, clean re-entry into electrical connection
- Unlimited shelf life



PRODUCT SELECTION INFORMATION: DIMENSIONS IN INCHES (MM)

Catalog Number	Conductor Size (AWG/kcmil)	Std. Pack
GILS-4/0	#2-4/0	18 or 72 each
GILS-350	1/0-350	18

ADDITIONAL PRODUCT INFORMATION

- Based on typical dimensions for low-voltage insulated cables.
- Related test reports: EDR-5298, EDR-5394.

GTAP Water Resistant Splice (1000 V)

FEATURES

- Molded cover of UV stable, impact-resistant polypropylene provides rugged protection for underground or overhead applications.
- TE's Raychem gel conforms to substrate to effectively seal out moisture and contaminants
- Four port (2-in, 2-out design), range-taking mechanical connectors splice a wide range of copper and aluminum cables

APPLICATIONS

- Connect, insulate, and seal low-voltage splices (1000V)
- Commonly used in street lighting applications.

BENEFITS

- PowerGel conforms to substrate providing reliable seal against moisture ingress.
- Quick installation, snap closure
- No special tools required
- Excellent insulating properties
- Easy, clean re-entry into electrical connection
- Unlimited shelf life when stored in normal conditions



SELECTION INFORMATION: DIMENSIONS IN INCHES (MM)

Catalog Number	Conductor Size (All Outlets) AWG (mm ²)	Length	Width	Height	Standard Pack
GTAP-1	#14-#2 (2-35)	2.75 (70)	1.625 (41)	1.0625 (27)	18 or 72
GTAP-2	#14-2/0 (2-70)	4.25 (108)	2 (51)	1.1875 (30)	18 or 72

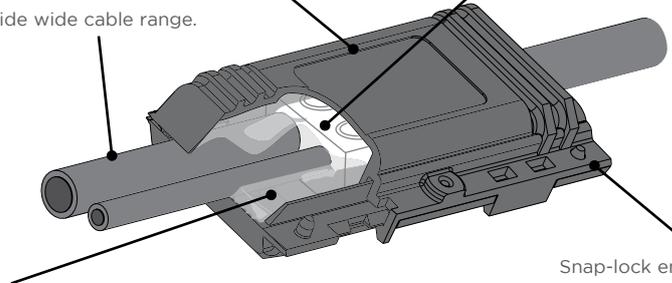
ADDITIONAL PRODUCT INFORMATION

- Selection based on typical dimensions of low-voltage insulated cables.

Molded cover of UV stable, impact resistant polypropylene provides rugged protection for underground or overhead applications.

Range-taking mechanical connector made of aluminum. Accepts both copper and aluminum conductors.

Frangible fingers provide wide cable range.



Snap-lock ensures that cover remains closed.

Silicone gel is high dielectric insulation and provides constant pressure on cable and connector to provide waterseal. PowerGel sealant is specifically formulated for high temperature environments.

GHFC Water Resistant H-Frame Closure for Power Cable (1000 V)

FEATURES

- Molded cover of UV stable, impact-resistant polypropylene provides rugged protection for underground or overhead applications.
- Gel conforms to substrate to effectively seal out moisture and contaminants
- Qualified to ANSI C119.1
- Qualified for temperatures from -40°C to 90°C.

APPLICATIONS

- Fast, simple method for insulating and environmentally sealing low-voltage cable-taps and splices made with H-frame compression connectors. Common applications are street light connections and overhead transformer leads.

BENEFITS

- TE's Raychem PowerGel conforms to substrate providing reliable seal against moisture ingress.
- Quick installation, snap closure
- No special tools required
- Excellent insulating properties
- Easy, clean re-entry into electrical connection
- Unlimited shelf life when stored in normal conditions



ADDITIONAL PRODUCT INFORMATION

- Select the appropriate catalog number. Selections are based on typical dimensions for low-voltage, insulated cables and connectors.
- Approved connectors (supplied by others) include, but are not limited to:

Product	Approved Connectors
GHFC-1-90	Homac UB214; T&B 63105; Blackburn WR9; Burndy YPC2A8U
GHFC-2-90	Homac OB22, OB44, OB102, OB103; Burndy YHO-1, YHO-2, YHO100, YHO125, YHO150; Blackburn WR139, WR159, WR179, WR199; ILSCO AH1; T&B 63110; UTILCO HT1, HT2

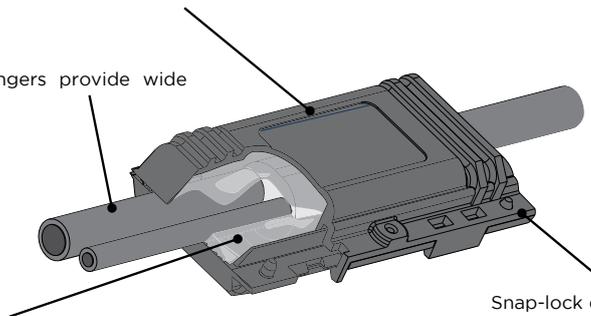
- Standard packs of 100 ea. are also available. Substitute a (B100) in place of the (B10) in the catalog number.
- Related test report: GHFC-1-90 and GHFC-2-90,EDR-5264, GHFC-3-90,

PRODUCT SELECTION INFORMATION: DIMENSIONS IN INCHES (MM)

Catalog Number	Conductor Size		Die	Box Dimensions			Std Pack
	Main	Std. Tap		Length	Width	Height	
GHFC-1-90	#6-#2	#14-#8	BG	2.75 (70)	1.625 (41)	1.0625 (27)	10 or 100
GHFC-2-90	#2-2/0	#14-#6	O	4.25 (108)	2.0 (51)	1.1875 (30)	10 or 100
GHFC-2.5-90	1/0-4/0	#6-3/0	D	7.032 (179)	2.75 (70)	1.560 (40)	30 each
GHFC-3-90	350	4/0	D	6.25 (159)	3.250 (83)	1.90 (49)	6 or 18

Molded cover of UV stable, impact resistant polypropylene provides rugged protection for underground or overhead applications.

Frangible fingers provide wide cable range.



Snap-lock ensures that cover remains closed.

Silicone gel is high dielectric insulation and provides constant pressure on cable and connector to provide waterseal. PowerGel sealant is specifically formulated for high temperature environments.

Gelport Submersible Connectors for URD Distribution (1000 V)

FEATURES

- TE's Raychem GelPort is qualified to ANSI C119.1
- Gel-filled cable entry ports provide a reliable cable seal
- PowerGel sealing gel seals out harsh environments
- Rugged, impact-resistant housing stands up to rough installations
- Clear view back allows for easy positive visual indication of wire position in connector

APPLICATIONS

- Multi-port secondary connectors for low voltage submersible (hand hole / man hole) applications

BENEFITS

- TE's Raychem PowerGel conforms to substrate providing reliable seal against moisture ingress.
- Quick and easy installation
- Clean re-entry into electrical connection
- Unlimited shelf life when stored in normal conditions
- No loose parts due to one piece housing



Testing	Approved Connectors
Complete unit	ANSI C119.1, Report: EDR-5379, EDR-5409, EDR-5427, EDR 5463
Connector	ANSI C119.4, Report: 502-47264, 502-47302, 502-47308
Chemical Resistance	ASTM D543 to the following liquids: Sulfuric Acid, Sodium Sulfate, Sodium Chloride, Sodium Hydroxide, Ethylene Glycol
UV Resistance	ASTM G-53-95, ASTM-D-638-95

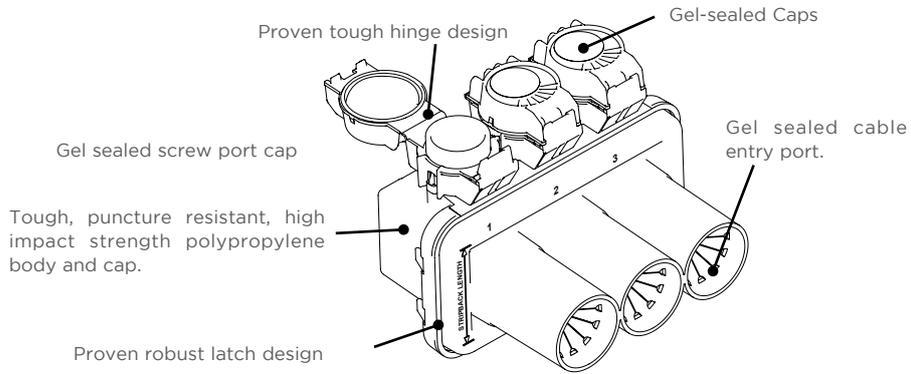
Catalog Number*	Number of Wire Ports	Conductor Use Range (mm ²)	Length	Width	Height	Std. Pack
GelPort 350/500						
GPRT-350-3P(B6)	3	14-350 (2-150)	4.60 (117)	3.825 (97)	3.50 (89)	6
GPRT-350-4P(B6)	4	14-350 (2-150)	5.85 (149)	3.825 (97)	3.50 (89)	6
GPRT-350-5P(B6)	5	14-350 (2-150)	7.10 (180)	3.825 (97)	3.50 (89)	6
GPRT-350-6P(B6)	6	14-350 (2-150)	8.35 (212)	3.825 (97)	3.50 (89)	6
GPRT-350-8P(B6)	8	14-350 (2-150)	10.85 (276)	3.825 (97)	3.50 (89)	6
GPRT-350/4P-500/1P (B6)	5 Hybrid	-	7.10 (180)	3.825 (97)	3.50 (89)	6
	4	14-350 (2-150)	-	-	-	-
	1	6-500 (16-250)	-	-	-	-
GPRT-350/6P-500/2P (B6)	8 Hybrid	-	10.85 (276)	3.825 (97)	3.50 (89)	6
	6	14-350 (2-150)	-	-	-	-
	2	6-500 (16-250)	-	-	-	-

Catalog Number*	Clear View	Number of Wire Ports	Max Cable OD	Max Number	Length	Width	Height
GelPort 500							
GPRT-500-3P(B6)	C	3	0.96	1 (#6-500 kcmil)	4.6 (117)	3.825 (97)	3.50 (89)
GPRT-500-4P(B6)	C	4	0.96	2 (#6-500 kcmil)	5.85 (149)	3.825 (97)	3.50 (89)
GPRT-500-5P(B6)	C	5	0.96	3 (#6-500 kcmil)	7.1 (180)	3.825 (97)	3.50 (89)
GPRT-500-6P(B6)	C	6	0.96	4 (#6-500 kcmil)	8.35 (212)	3.825 (97)	3.50 (89)
GPRT-500-8P(B6)	C	8	0.96	6 (#6-500 kcmil)	10.85 (276)	3.825 (97)	3.50 (89)

* For Clear view back housing, add "-C" to end of catalog number. Standard housing is black.

ADDITIONAL PRODUCT INFORMATION

- Selection based on typical dimensions of low voltage cables.
- Standard package is 6/box.





Chapter II Medium Voltage Cable Accessories

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APKT

Heat-shrinkable termination for cables up to 36 kV

FEATURES

- Universal termination family for 7.2-36 kV based on Raychem SCTM stress control technology
- Red non-tracking Raychem HVOT tubing provides excellent environmental protection

APPLICATIONS

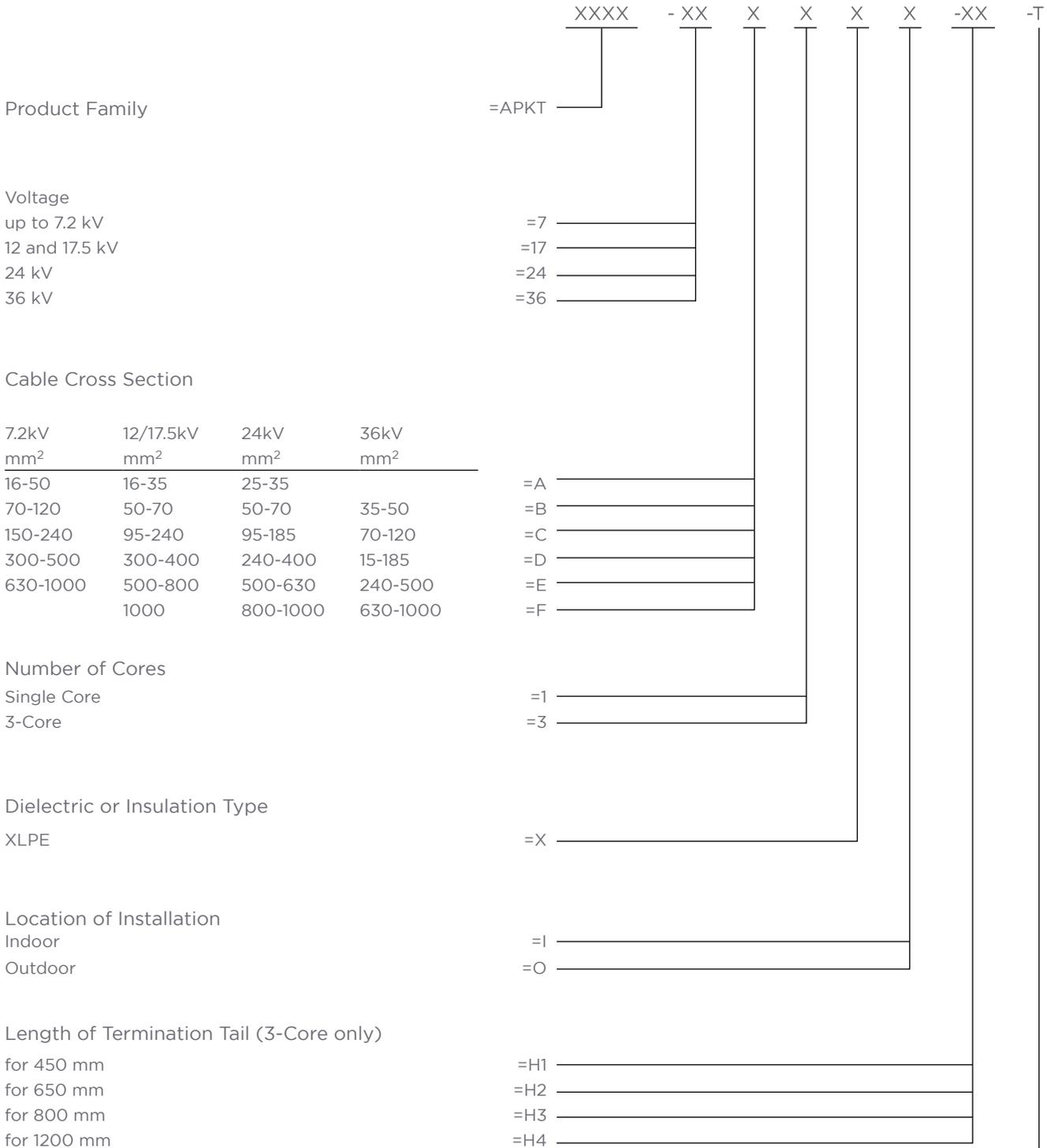
- All applications for polymeric 1-core, 3-core, armoured and unarmoured cables
- Can be used in combination with Raychem RICS / RCAB / RSRB switchgear connection systems

BENEFITS

- ♦ Tested in accordance to CENELEC
- ♦ HD.629.1.S2:2006, IEC 60502-4 and IEEE 48



SELECTION INFORMATION: DIMENSIONS SHOWN IN MILLIMETERS



ACCESSORIES

Not include termination accessories such as cable lug, armour kit, ground connector, bolt & nut, earth braid.

Ordering Example: APKT-17C 3X O-H3-T
 Outdoor termination for 12/17.5 kV, 120 mm² 3-core XLPE cable, tail length 800 mm.

Raychem termination kit for XLPE cable
Type Single core

Voltage (kV)	Cable Size (mm ²)	Indoor		Outdoor	
		Product name	Part number	Product name	Part number
7.2	16-50	APKT 7A1XI-T	742659-000	APKT 7A1XO-T	627443-000
	70-120	APKT 7B1XI-T	703991-000	APKT 7B1XO-T	681111-000
	150-240	APKT 7C1XI-T	608935-000	APKT 7C1XO-T	771153-000
	300-500	APKT 7D1XI-T	790247-000	APKT 7D1XO-T	273079-000
	630-1000	APKT 7E1XI-T	476235-000	APKT 7E1XO-T	319015-000
12-17.5	15-35	APKT 17A1XI-T	444241-000	APKT 17A1XO-TH	690301-000
	50-70	APKT 17B1XI-T	141277-000	APKT 17B1XO-T	763405-000
	95-240	APKT 17C1XI-T	907849-000	APKT 17C1XO-T	942477-000
	300-400	APKT 17D1XI-T	760043-000	APKT 17D1XO-T	797421-000
	500-800	APKT 17E1XI-T	608209-000	APKT 17E1XO-T	623249-000
	1000	APKT 17F1XI-T	000549-000	APKT 17F1XO-T	*
24	50-70	APKT 24B1XI-T	963343-000	APKT 24B1XO-T	049641-000
	95-185	APKT 24C1XI-T	293957-000	APKT 24C1XO-T	911627-000
	240-400	APKT 24D1XI-T	664649-000	APKT 24D1XO-T	329563-000
	500-630	APKT 24E1XI-T	751365-000	APKT 24E1XO-T	690321-000
	800-1000	APKT 24F1XI-T	108753-000	APKT 24F1XO-T	080267-000
36	35-50	APKT 36B1XI-T	254059-000	APKT 36B1XO-T	517409-000
	70-120	APKT 36C1XI-T	694257-000	APKT 36C1XO-T	852637-000
	150-185	APKT 36D1XI-TH	248483-000	APKT 36D1XO-TH	932477-000
	240-500	APKT 36E1XI-T	590499-000	APKT 36E1XO-TH	997805-000
	630-1000	APKT 36F1XI-T	-	APKT 36F1XO-TH	051365-000

* On request

Type 3-core

Voltage (kV)	Cable Size (mm ²)	Indoor		Outdoor	
		Product name	Part number	Product name	Part number
7.2	16-50	APKT 7A3XI-H2-T	428429-000	APKT 7A3XO-H2-T	801777-000
	70-120	APKT 7B3XI-H2-T	019457-000	APKT 7B3XO-H2-T	632293-000
	150-240	APKT 7C3XI-H2-T	450849-000	APKT 7C3XO-H2-T	893103-000
	300-500	APKT 7D3XI-H2-T	117211-000	APKT 7D3XO-H2-T	*
12-17.5	15-35	APKT 17A3XI-H2-T	423765-000	APKT 17A3XO-H2-T	540891-000
	50-70	APKT 17B3XI-H2-T	854917-000	APKT 17B3XO-H2-T	281841-000
	95-240	APKT 17C3XI-H2-T	208295-000	APKT 17C3XO-H2-T	848657-000
	300-400	APKT 17D3XI-H2-T	062753-000	APKT 17D3XO-H2-T	737569-000
24	50-70	APKT 24B3XI-H2-T	429433-000	APKT 24B3XO-H3-T APKT-24B3XOH4-VN02	328329-000 CR7126-000
	95-185	APKT 24C3XI-H2-T	419625-000	APKT 24C3XO-H3-T APKT-24C3XOH4-VN02	496109-000 CR7125-000
	240-400	APKT-24D3XI-H2-T	323193-000	APKT-24D3XO-H3-T APKT-24D3XOH4-VN02	947309-000 CR7123-000
36	35-50	APKT 36B3XI-H2-T	049197-000	APKT 36B3XO-H3-T	805973-000
	70-120	APKT 36C3XI-H2-T	497561-000	APKT 36C3XO-H3-T	984505-000
	150-185	APKT 36D3XI-H2-T	337281-000	APKT 36D3XO-H3-T	193271-000
	240-500	APKT 36E3XI-H2-T	532477-000	APKT 36E3XO-H3-T	228993-000

* On request

NOTE

For armoured cable & special application request, please contact your local sales representative



Length of termination tail (3-core only)

for 450 mm = H1
 for 650 mm = H2
 for 800 mm = H3
 for 1200 mm = H4

Single core terminations for polymeric cables

Voltage (kV)	Cable Size (mm ²)	Indoor		Outdoor	
		Product name	Part number	Product name	Part number
7.2	16-50	EPKT-7A1XI-G55	803451-000	-	-
	70-120	EPKT-7B1XI-G56	410991-011	EPKT-7B1XO-G56	CZ3195-000
	150-240	EPKT-7C1XI-G57	371285-000	EPKT-7C1XO-G57	900347-000
	300-500	EPKT-7D1XI-G58	612927-000	EPKT-7D1XO-G58	817089-000
	630-1000	EPKT-7E1XI-G58	932559-000	EPKT-7E1XO-G58	F09713-000
24	25-50	EPKT-24B1XI-G56	909295-000	EPKT-24B1XO-G57	EJ2469-000
	70-185	EPKT-24C1XI-G57	280751-000	EPKT-24C1XO-G57	314209-000
	240-300	EPKT-24D1XI-G58	772455-000	EPKT-24D1XO-G58	477695-011
	400-630	EPKT-24E1XI-G59	626376-000	EPKT-24E1XO-G58	571663-000
	800-1000	EPKT-24F1XI-G59	871669-000	EPKT-24F1XO	844961-011
36	50-95	EPKT-36C1XI-G57	009021-000	EPKT-36C1XO-G57	478556-000
	120-185	EPKT-36D1XI-G58	579543-000	EPKT-36D1XO-G58	656039-000
	240-500	EPKT-36E1XI-G59	106326-000	EPKT-36E1XO-G59	375548-000
	630-1000	EPKT-36F1XI-G59	900727-000	EPKT-36F1XO-G59	139630-000

3-core terminations for polymeric cables

Voltage (kV)	Cable Size (mm ²)	Indoor		Outdoor	
		Product name	Part number	Product name	Part number
7.2	150-240	EPKT-7C3XIH2-G57	336049-000	EPKT-7C3XOH2	964985-011
	300-500	EPKT-7D3XIH4-G58	EK3863-000	EPKT-7D3XOH2	819619-000
24	25-50	EPKT-24B3XIH2-G56	CS6786-000	EPKT-24B3XOH3-G56	576579-000
	70-185	EPKT-24C3XIH2-G58	CX5584-000	EPKT-24C3XOH3-G56	CR6333-000
	240-300	EPKT-24D3XIH2-G58	563933-000	EPKT-24D3XOH3	896693-011
	400	EPKT-24E3XIH2	D67028-011	EPKT-24E3XOH3	D92818-011
36	50-95	EPKT-36C3XIH2-G57	192233-000	EPKT-36C3XOH3	568953-011
	120-185	EPKT-36D3XIH2-G58	730098-000	EPKT-36D3XOH3	231605-011
	240-500	EPKT-36E3XIH2-G58	270827-000	EPKT-36E3XOH3	012110-011

EPKT

Raychem Medium Voltage Heat-shrink Terminations up to 36 kV

FEATURES

- Universal termination family for 12-36 kV based on Raychem SCTM stress control technology
- Red non-tracking Raychem HVOT tubing provides excellent environmental protection

APPLICATION

- All applications for polymeric 1-core, 3-core, armoured and unarmoured cables
- Can be used in combination with Raychem RICS / RCAB / RSRB switchgear connection systems

CONFORMS TO

- Tested in accordance to CENELEC HD.629.1.S2:2006, IEC 60502-4 and IEEE 48



IXSU/OXSU

Raychem Medium Voltage Heat-shrink Zinc Oxide Stress Control Terminations up to 12 kV

FEATURES

- Universal termination family for 12 kV based on unique Raychem zinc oxide stress control technology
- Red co-extruded non-tracking Raychem zinc oxide HVOT tubing provides excellent environmental protection
- Compact design
- Conductive break-out and CNTM core extension tubes allow crossing of cores

APPLICATION

- All applications for polymeric 1-core, 3-core, armoured and unarmoured cables
- Can be used in combination with Raychem RICS / RCAB / RSRB switchgear connection systems

CONFORMS TO

- Tested in accordance to CENELEC HD.629.1.S2:2006, IEC 60502-4 and IEEE 48

Raychem Medium Voltage Heat-shrink Zinc Oxide Stress Control Terminations up to 12 kV

Product name	Conductor size (mm ²)	Part number
12 kV 1-core indoor terminations for polymeric cables		
IXSU-F 3111	10 - 35	508493-011
IXSU-F 3121	25 - 95	489269-011
IXSU-F 3131	95 - 240	097105-011
IXSU-F 3141	240 - 500	422037-011
IXSU-F 3151	500 - 800	565915-011
IXSU-F 3161	1000 - 1200	F11994-011
12 kV 1-core outdoor terminations for polymeric cables		
OXSU-F 3111	10 - 35	921513-011
OXSU-F 3121	25 - 95	674179-011
OXSU-F 3131	95 - 240	170347-011
OXSU-F 3141	240 - 500	572329-011
OXSU-F 3151	500 - 800	057101-011
OXSU-F 3161	1000 - 1200	A25232-011
12 kV 3-core indoor terminations for polymeric cables		
IXSU-F 3301	10 - 16	042899-011
IXSU-F 3311	16 - 35	609815-011
IXSU-F 3314	16 - 35	492379-000
IXSU-F 3321	25 - 70	975845-011
IXSU-F 3324	25 - 70	186727-011
IXSU-F 3331	95 - 240	931779-011
IXSU-F 3334	95 - 240	843829-011
IXSU-F 3341	240 - 500	681745-011
IXSU-F 3344	240 - 500	278157-011
12 kV 3-core outdoor terminations for polymeric cables		
OXSU-F 3311	16 - 35	648313-000
OXSU-F 3314	16 - 35	652785-000
OXSU-F 3321	25 - 70	924109-000
OXSU-F 3324	25 - 70	462641-011
OXSU-F 3331	95 - 240	114825-011
OXSU-F 3334	95 - 240	447699-000
OXSU-F 3341	240 - 500	619691-000



IXSU/OXSU

Raychem Medium Voltage Heat-shrink Zinc Oxide Stress Control Terminations up to 24 kV

FEATURES

- Universal termination family for 24 kV based on unique Raychem zinc oxide stress control technology
- Red co-extruded non-tracking Raychem zinc oxide HVOT tubing provides excellent environmental protection
- Compact design
- Conductive break-out and CNTM core extension tubes allow crossing of cores

APPLICATION

- All applications for polymeric 1-core, 3-core, armoured and unarmoured cables
- Can be used in combination with Raychem RICS / RCAB / RSRB switchgear connection systems

CONFORMS TO

- Tested in accordance to CENELEC HD.629.1.S2:2006, IEC 60502-4 and IEEE 48

Raychem Medium Voltage Heat-shrink Zinc Oxide Stress Control Terminations up to 24 kV

Product name	Conductor size (mm ²)	Part number
24 kV 1-core indoor terminations for polymeric cables		
IXSU-F 5121	25 - 70	552897-011
IXSU-F 5131	70 - 240	086833-011
IXSU-F 5141	185 - 400	675377-011
IXSU-F 5151	400 - 800	000877-011
IXSU-F 5161	1000 - 1200	F01490-011
24 kV 1-core outdoor terminations for polymeric cables		
OXSU-F 5121	25 - 70	294997-011
OXSU-F 5131	70 - 240	403451-011
OXSU-F 5141	185 - 400	529965-011
OXSU-F 5151	400 - 800	074061-011
OXSU-F 5161	1000 - 1200	C26806-011
24 kV 3-core indoor terminations for polymeric cables		
IXSU-F 5311	10 - 25	421400-011
IXSU-F 5321	25 - 50	971921-011
IXSU-F 5324	25 - 50	197315-011
IXSU-F 5331	70 - 185	454059-011
IXSU-F 5334	70 - 185	613651-011
IXSU-F 5341	185 - 400	486669-011
IXSU-F 5344	185 - 400	604505-011
24 kV 3-core outdoor terminations for polymeric cables		
OXSU-F 5311	10 - 25	407304-011
OXSU-F 5314	10 - 25	401520-011
OXSU-F 5321	25 - 50	911909-000
OXSU-F 5324	25 - 50	893465-000
OXSU-F 5331	70 - 185	381949-011
OXSU-F 5334	70 - 185	442835-000
OXSU-F 5341	185 - 400	047705-011
OXSU-F 5344	185 - 400	535683-000

EPKJ

Joint selection chart - choose one figure from the left hand column of each table

Typical part number: EPKJ					
	17	C	3XU	3SB	-W
Voltage class					
17	11 - 17.5 kV				
24	22 kV				
36	33 kV				
Size in mm²					
	11 kV	17.5 kV	22 kV	33 kV*	
A	35 - 70	25 - 50	25	50 - 70	
B	95 - 185	70 - 150	35 - 70	95 - 150	
C	240 - 400	185 - 300	95 - 240	185 - 400	
D	500 - 630	400 - 500	300 - 400	500 - 630	
Cable 1 No. of cores					
1	for single-core cables				
3	for 3-core cables				
Insulation type					
XU	for polymeric (EPR or XLPE)				
HL	for paper cables with lead sheath on each core				
SB	for 3-core paper cables (screened or belted) with overall metal sheath				
Cable 2 No. of cores					
1	for single-core cables				
3	for 3-core cables				
Insulation type					
XU	for polymeric (EPR or XLPE)				
HL	for paper cables with lead sheath on each core				
SB	for 3-core paper cables (screened or belted) with overall metal sheath				
Armour**					
W	only to be used with 3c - 3c SWA cables				

- Voltage
- Cable size
- Insulation - Cable 1
- Insulation - Cable 2
- Armour

* For 6.6 kV or 33 kV joint selection, contact your TE specialist distributor or your local TE office.

** For single-core aluminium wire armoured cables, armour kit SMOE 61293 is required in addition to the joint kit.

EPKJ

Raychem Medium Voltage Heat Shrink Cable Joints up to 17.5 kV

FEATURES

- Pre-engineered range taking heat-shrinkable tubings incorporating precisely engineered impedance stress control. EPKJ universal joints are suitable for a wide range of connectors and cable sizes with no limitations on shelf life

APPLICATION

- Suitable for polymeric, rubber and paper insulated MIND cables single and three core, armoured and non-armoured

CONFORMS TO

- CENELEC and IEC standards

Raychem medium voltage heat shrink cable joints up to 17.5 kV



Product name	Conductor size (mm ²)	Part number
XLPE TO XLPE		
Single core to three core		
EPKJ-17A/1XU-3XU	35 - 70	611905-011
EPKJ-17B/1XU-3XU	95 - 185	591811-011
EPKJ-17C/1XU-3XU	240 - 400	961580-011
Three core to three core		
EPKJ-17A/3XU-3XU	35 - 70	345116-011
EPKJ-17B/3XU-3XU	95 - 185	765410-011
EPKJ-17C/3XU-3XU	240 - 400	251291-011
Three core to three core armoured		
EPKJ-17A/3XU- 3XU-W	35 - 70*	863732-011
EPKJ-17B/3XU- 3XU-W	95 - 185*	467470-011
EPKJ-17C/3XU- 3XU-W	240 - 400*	678746-011
XLPE to paper insulated lead covered single core		
EPKJ-17A/1XU-1HL	35 - 70	042316-011
EPKJ-17B/1XU-1HL	95 - 185	361308-011
EPKJ-17C/1XU-1HL	240 - 400	634912-011
EPKJ-17D/1XU-1HL	500 - 630	813649-011
Paper insulated lead covered single core		
EPKJ-17C/1HL-1HL	240 - 400	885779-011
EPKJ-17D/1HL-1HL	500 - 630	292748-011
XLPE to paper insulated lead covered 3-core unarmoured		
EPKJ-17A/3XU-3SB	35 - 70	179240-000
EPKJ-17B/3XU-3SB	95 - 185	226574-011
EPKJ-17C/3XU-3SB	240 - 400	545967-011
XLPE to paper insulated lead sheathed 3-core armoured		
EPKJ-17A/3XU- 3SB-W	25 - 50	116472-011
EPKJ-17B/3XU- 3SB-W	70 - 150	351372-011
EPKJ-17C/3XU- 3SB-W	185 - 300	984248-011
Paper insulated lead sheathed 3-core armoured		
EPKJ-17A/3SB- 3SB-W	25 - 50	144086-011
EPKJ-17B/3SB- 3SB-W	70 - 150	098379-011
EPKJ-17C/3SB- 3SB-W	185 - 300	114577-011
XLPE single core to paper insulated lead sheathed 3-core		
EPKJ-17B/1XU-3HL	95 - 185	635241-011
XLPE single core to paper insulated lead sheathed 3-core		
EPKJ-17A/1XU-3SB	35 - 70	652371-011
EPKJ-17B/1XU-3SB	95 - 185	650316-011
EPKJ-17C/1XU-3SB	240 - 400	747518-011
EPKJ-17D/1XU-3SB	500 - 630	098464-000

NOTE SB for 3-core paper cables (screened or belted) with overall metal sheath. HL for paper cables with lead sheath on each core. Where possible use MXSU and MXSW product.

EPKJ

Raychem Medium Voltage Heat Shrink Cable Joints up to 24 kV

FEATURES

- Pre-engineered range taking heat-shrinkable tubings incorporating precisely engineered impedance stress control. EPKJ universal joints are suitable for a wide range of connectors and cable sizes with no limitations on shelf life

APPLICATION

- Suitable for polymeric, rubber and paper insulated MIND cables
- Single and three core, armoured and non-armoured

CONFORMS TO

- CENELEC and IEC standards

Raychem medium voltage heat shrink cable joints up to 24 kV



Product name	Conductor size (mm ²)	Part number
XLPE TO XLPE		
EPKJ-24D/1XU-3XU	300 - 400	858656-011
EPKJ-24D/3XU-3XU	300 - 400	209513-011
EPKJ-24B/3XU- 3XU-W	35 - 70	961281-011
EPKJ-24C/3XU- 3XU-W	95 - 240	741682-011
EPKJ-24D/3XU- 3XU-W	300 - 400	425444-011
XLPE to paper insulated lead covered single core		
EPKJ-24B/1XU-1HL	35 - 70	533966-000
EPKJ-24C/1XU-1HL	95 - 240	110743-011
EPKJ-24D/1XU-1HL	300 - 400	818203-011
Paper insulated lead covered single core		
EPKJ-24B/1HL-1HL	35 - 70	712089-000
EPKJ-24C/1HL-1HL	95 - 240	122185-011
EPKJ-24D/1HL-1HL	300 - 400	861101-000
XLPE to paper insulated lead sheathed 3-core unarmoured		
EPKJ-24C/3XU-3SB	95 - 240	013208-011
XLPE to paper insulated lead sheathed 3-core armoured		
EPKJ-24C/3XU- 3SB-W	95 - 240	600096-011
XLPE to paper insulated lead covered 3-core unarmoured.		
EPKJ-24C/3XU-3HL	95 - 240	634461-011
EPKJ-24D/3XU-3HL	300 - 400	736647-011
XLPE single core to paper insulated lead sheathed 3-core		
EPKJ-24A/1XU-3SB	25	655611-000
EPKJ-24B/1XU-3SB	35 - 70	866971-011
EPKJ-24C/1XU-3SB	95 - 240	972354-011
EPKJ-24D/1XU-3SB	300 - 400	025566-011
XLPE single core to paper insulated lead sheathed 3-core		
EPKJ-24B/1XU-3HL	35 - 70	026840-000
EPKJ-24C/1XU-3HL	95 - 240	861100-011
EPKJ-24D/1XU-3HL	300 - 400	338149-000

NOTE SB for 3-core paper cables (screened or belted) with overall metal sheath. HL for paper cables with lead sheath on each core. Where possible use MXSU and MXSW product.

EPKJ

Raychem Medium Voltage Heat Shrink Cable Joints up to 36 kV

FEATURES

- Pre-engineered range taking heat-shrinkable tubings incorporating precisely engineered impedance stress control. EPKJ universal joints are suitable for a wide range of connectors and cable sizes with no limitations on shelf life

APPLICATION

- Suitable for polymeric, rubber and paper insulated MIND cables single and three core, armoured and non-armoured

CONFORMS TO

- CENELEC and IEC standards

Raychem medium voltage heat shrink cable joints up to 36 kV



Product name	Conductor size (mm ²)	Part number
XLPE TO XLPE		
EPKJ-36A/1XU-1XU	50 - 70	116908-011
EPKJ-36B/1XU-1XU	95 - 150	407944-011
EPKJ-36C/1XU-1XU	185 - 400	682466-011
EPKJ-36D/1XU-1XU	500 - 630	698309-011
EPKJ-36A/3XU- 3XU-W	50 - 70	653639-011
EPKJ-36B/3XU- 3XU-W	95 - 150	245043-011
EPKJ-36C/3XU- 3XU-W	185 - 400	868075-011
XLPE to paper insulated lead covered single core		
EPKJ-36A/1XU-1HL	50 - 70	933038-011
EPKJ-36B/1XU-1HL	95 - 150	093715-011
EPKJ-36C/1XU-1HL	185 - 400	697197-011
EPKJ-36D/1XU-1HL	500 - 630	291626-011
SMOE-64222	500 poly to 1000 ² mm	CS9849-011
Paper insulated lead covered single core		
EPKJ-36B/1HL-1HL	95 - 150	093715-011
EPKJ-36C/1HL-1HL	185 - 400	105526-011
EPKJ-36D/1HL-1HL	500 - 630	928072-011
XLPE to paper insulated lead sheathed 3-core armoured		
EPKJ-36C/3XU- 3SB-W-GB01	185 - 240	CU8132-011
EPKJ-36B/3SB- 3SB-W	95 - 150	267335-000
EPKJ-36C/3SB- 3SB-W	185 - 400	012579-011
XLPE single core to paper insulated lead sheathed 3-core		
EPKJ-36A/1XU-3HL	50 - 70	756137-000
EPKJ-36B/1XU-3HL	95 - 150	018099-011
EPKJ-36C/1XU-3HL	185 - 400	021838-011
XLPE single core to paper insulated lead sheathed 3-core		
EPKJ-36A/1XU-3SB	50 - 70	348453-000
EPKJ-36B/1XU-3SB	95 - 185	016746-011
EPKJ-36C/1XU-3SB	185 - 400	815876-011

MXSU/MXST/MXSW/MXAW

joint up to 36 kV with mechanical connectors

FEATURES

- Pre-engineered range taking heat-shrinkable tubings incorporating precisely engineered impedance stress control; MXSU/MXST/MXSW/MXAW joints are supplied complete with mechanical phase and screen connectors suitable for a wide range of conductor sizes with no limitations on shelf life

APPLICATIONS

- Suitable for polymeric 1-core, 3-core, armoured and unarmoured cables

BENEFITS

- ♦ Tested in accordance to CENELEC and IEC standards.



SELECTION INFORMATION: DIMENSIONS SHOWN IN MILLIMETERS

Inline joint for 3 core polymeric cables with cooper wire/ copper tape and steel wire armour, include mechanical connector

Voltage (kV)	Cable Size (mm ²)	Product name	Part number
12	95-240	MXSW-3331	CM4856-011
	150-300	MXSW-3332	CM4855-011
24	95-240	MXSW-5331	CM4852-011
	150-300	MXSW-5332	CM4853-000

Inline joint for 3 core polymeric cables with cooper wire/ copper tape and steel tape armour, include mechanical connector

Voltage (kV)	Cable Size (mm ²)	Product name	Part number
12	95-240	MXST-3331	E18902-000
	150-300	MXST-3332	CM5327-011
24	25-95	MXST-5311	CY6748-011
	95-240	MXST-5331	CM5324-011
	150-300	MXST-5332	CM5323-011

Inline joint for 3 core polymeric cables with cooper wire/ copper tape and without armour, include mechanical connector

Voltage (kV)	Cable Size (mm ²)	Product name	Part number
12	25-95	MXSU-3311	016333-011
	70-150	MXSU-3321	CA6986-011
	95-240	MXSU-3331	857741-011
	150-300	MXSU-3332	427492-011
24	25-95	MXSU-5311	613835-011
	50-150	MXSU-5321	CA7003-000
	95-240	MXSU-5331-ID01	CM8572-000
	150-300	MXSU-5332	861632-011

Inline joint for 1 core polymeric cables with cooper wire/ copper tape and aluminum wirre armour, include mechanical connector

Voltage (kV)	Cable Size (mm ²)	Product name	Part number
24	95-185	MXAW-5131	CN6571-011
	150-300	MXAW-5132	CN6573-011
	240-400	MXAW-5141	CB2695-011
	500	MXAW-5151	CN6574-011
	630	MXAW-5161	CN6572-011
36	70-150	MXAW-6121	EN8554-011
	150-300	MXAW-6131	CV2754-011
	400	MXAW-6141	EJ3417-000
	500	MXAW-6151	EP2662-000
	630	MXAW-6161	CX8701-000
	800	MXAW-6171	CX7764-011

Inline joint for 1 core polymeric cables with cooper wire and without armour, include mechanical connector

Voltage (kV)	Cable Size (mm ²)	Product name	Part number
12	25-95	MXSU-3111	407853-011
	70-150	MXSU-3121	233200-011
	95-240	MXSU-3131	691269-011
	150-300	MXSU-3132	CA7108-011
	240-400	MXSU-3141	463998-011
	500	MXSU-3151	CA7354-011
	630	MXSU-3161	CB9319-011
	800	MXSU-3171	CR6798-011
	1000	MXSU-3181	CR8588-011
24	25-95	MXSU-5111	191081-011
	50-150	MXSU-5121	C44894-011
	95-240	MXSU-5131	743209-011
	150-300	MXSU-5132	CA7110-011
	240-400	MXSU-5141	140138-011
	500	MXSU-5151	CA7352-011
	630	MXSU-5161	CB9318-011
	800	MXSU-5171	CR6797-011
1000	MXSU-5181	CS0450-011	
36	35-95	MXSU-6111	495780-011
	70-150	MXSU-6121	A29218-011
	150-300	MXSU-6131	124108-011
	240-400	MXSU-6141	390610-011
	500	MXSU-6151	D16648-011
	630	MXSU-6161	CB9317-011
	800	MXSU-6171	CS0650-011
1000	MXSU-6181	CS0455-011	

SXSU/SXST/SXSW/SXAW

Joints for polymeric insulated cables from 12 kV up to 36 kV

FEATURES

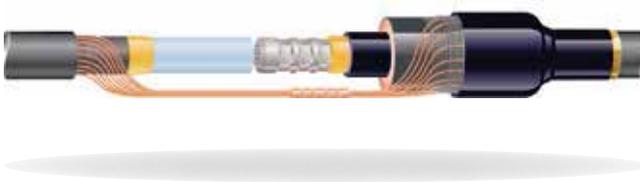
- Pre-engineered range taking heat-shrinkable tubings incorporating precisely engineered impedance stress control;
- SXSU/SXST/SXSW/SXAW joints are suitable for a wide range of conductor sizes with no limitations on shelf life

APPLICATION

- Suitable for polymeric 1-core, 3-core, armoured and unarmoured cables

BENEFITS

- ♦ Tested in accordance to CENELEC and IEC standards.



SELECTION INFORMATION: DIMENSIONS SHOWN IN MILLIMETERS

Inline joint for 1-core polymeric cables with copper wire shield, without armour

Voltage (kV)	Cable Size (mm ²)	Product name	Part number
12-17.5	35-70	SXSU-3111	495201-011
	95-185	SXSU-3121	974693-011
	185-300	SXSU-3131	744973-011
	300-500	SXSU-3141	801119-011
	50-70	SXSU-4111	421541-011
	95-185	SXSU-4121	164183-011
	185-300	SXSU-4131	679883-011
	400-630	SXSU-4141	177049-011
24	800-1200	SXSU-4151	E24076-011
	25-95	SXSU-5121	435964-011
	95-240	SXSU-5131	041653-011
	240-500	SXSU-5141	406887-011
	630-800	SXSU-5151	525605-011
	1000-1200	SXSU-5161	C38614-011
36	-	-	-
	35-95	SXSU-6121	604589-011
	95-150	SXSU-6131	141093-011
	185-400	SXSU-6141	816571-011
	500-800	SXSU-6151	873902-011
	800-1200	SXSU-6161	D63970-011
	35-150	SXSU-6122	310527-011
	150-300	SXSU-6132	632893-011
400-630	SXSU-6142	584493-011	

Inline joint for 3-core polymeric cables with copper wire shield, without armour

Voltage (kV)	Cable Size (mm ²)	Product name	Part number
12-17.5	35-70	SXSU-3311	033017-011
	95-185	SXSU-3321	864279-011
	185-300	SXSU-3331	446207-011
	50-70	SXSU-4312	642227-000
	95-185	SXSU-4322	245795-011
	185-300	SXSU-4332	041793-000
24	25-95	SXSU-5322	348713-011
	95-240	SXSU-5332	003391-011
	240-500	SXSU-5342	989380-011

Inline joint for 3-core polymeric cables with copper wire shield and steel tape armour

Voltage (kV)	Cable Size (mm ²)	Product name	Part number
12	16-35	SXST-4303	685801-011
	50-70	SXST-4313	712234-000
	95-185	SXST-4323	774247-011
	185-300	SXST-4333	249015-011

Inline joint for 3-core polymeric cables with copper wire shield and steel wire armour

Voltage (kV)	Cable Size (mm ²)	Product name	Part number
12	16-35	SXSW-4304	768369-011
	50-70	SXSW-4314	954607-011
	95-185	SXSW-4324	457975-011
	185-300	SXSW-4334	021398-011

Inline joint for 1-core polymeric cables with aluminium wire armour

Voltage (kV)	Cable Size (mm ²)	Product name	Part number
12	95-185	SXAW-3121	233081-011
	185-300	SXAW-3131	174325-011
	400-500	SXAW-3141	755643-011
	630-800	SXAW-3151	707034-011
24	50-95	SXAW-5121	CA5973-011
	120-185	SXAW-5131	304733-011
	240-400	SXAW-5141	020745-011
	500-630	SXAW-5151	564361-011
36	50-95	SXAW-6122	CA5972-011
	120-240	SXAW-6132	151361-011
	300-630	SXAW-6142	814905-011

CSJT

Cold-shrink joint with resin injection for XLPE cables up to 36 kV

FEATURES

- The tape and resin outer sealing and protection system provides a reliable moisture seal, corrosion prevention and effective impact resistance;
- Pre-expanded, single piece silicone rubber joint body with high mechanical expansion capability allows a wide application range;
- Electrical stress control of the screen cut area by integrated conductive geometrical stress cones;
- Electrical stress control of the connector area by an integrated screened connection area (Farada cage)

APPLICATION

- Suitable for polymeric armoured and unarmoured cables;
- Hard-elastic polyurethane-type re-jacketing with excellent insulation properties, hydrolytic stability and hydrophobic characteristics for underground applications

BENEFITS

- Tested in accordance to CENELEC and IEC standards.



Voltage (kV)	Cable Size (mm ²)	Single Core		Cable Size (mm ²)	Three Core	
		Product name	Part number		Product name	Part number
12	50-70	CSJT-12-5070-T-SC			CSJT-12-5070-T	
	95-185	CSJT-12-9518-T-SC			CSJT-12-9518-T	
12-17.5	240-300	CSJT-12-2430-T-SC	2259424-1		CSJT-12-2430-T	
	400	CSJT-12-400-T-SC			-	
	500	CSJT-12-500-T-SC				
24	35-95	CSJT-24-3595-T-SC		50-95	CSJT-24-5095-T-VN01	2291882-1
	120-300	CSJT-24-1230-T-SC		120-240	CSJT-24-1224-T-VN01	2291882-2
	400	CSJT-24-400-T-SC		300-400	CSJT-24-3040-T-VN01	2291882-3
	500	CSJT-24-500-T-SC				
36	120-300	CSJT-36-1230-T-VN01	2291883-1			
	240-400	CSJT-36-2440-T-VN01-SC	2341181-1			

The application range given in the table is based on polymeric insulated cable according to IEC 60502 standard with stranded circular conductors. Due to different conductor sharp or dimensions and cable constructions the minimum and maximum application range may be extendable. Please contact your local sales representative.

CSJR

Cold shrinkable inline joints with Rayvolve EPDM sleeve as outer protection up to 36 kV

FEATURES

- Pre-expanded, single piece silicone rubber joint body with high mechanical expansion capability allows a wide application range
- Electrical stress control of the screen cut area by integrated conductive-geometrical stress cones
- Electrical stress control of the connector area by an integrated screened connection area (Faraday)
- Pre-expansion on a well-known and easy-to-install holdout system

APPLICATION

- Polymeric insulated cables.

CONFORMS TO

- CENELEC and IEC standards



Outer sealing and protection

- CSJR joints include a dual-wall Rayvolve sleeve with entrapped lubricant. The elastomeric sleeve rolls onto the cable and over the joint area. The gripping force of the specially formulated EPDM elastomer combined with a high performance sealant forms a reliable moisture seal and corrosion protection for the joint system. Rayvolve sleeves have more than 20 years' service experience in cable re-jacketing systems worldwide.



Pre-expanded silicone joint body

- The silicone rubber joint body is delivered in a pre-expanded condition on a spiral holdout system. Silicone materials with excellent mechanical properties allow high expansion forces and therefore guarantee a wide application range. Integrated stress control mechanism and conductive outer layer provide exceptional electrical performance. The joint body can be easily removed from the spiral holdout with low release forces, particularly designed for joint applications.



CSJR joint without connector

Voltage (kV)	Cable Size (mm ²)	Product name	Part number
12 kV	95-240	CSJR-12B/1XU-1XU	CJ8748-000
	185-300	CSJR-12C/1XU-1XU	CJ8745-000
	240-400	CSJR-12D/1XU-1XU	CJ8765-000
	500-800	CSJR-12E/1XU-1XU	CJ8880-000
24 kV	35-185	CSJR-24B/1XU-1XU	E37110-047
	95-300	CSJR-24C/1XU-1XU	C53052-000
	185-400	CSJR-24D/1XU-1XU	CJ9571-011
	400-630	CSJR-24E/1XU-1XU	CJ8874-011
36 kV	70-240	CSJR-36D/1XU-1XU	CJ8756-011
	240-630	CSJR-36E/1XU-1XU	CJ8868-011

CSJR joint with mechanical connector

Voltage (kV)	Cable Size (mm ²)	Product name	Part number
12 kV	95-240	CSJR-12B/1XU-1XU-M	C88127-000
	185-300	CSJR-12C/1XU-1XU-M	E30472-011
	240-400	CSJR-12D/1XU-1XU-M	CJ9088-000
	500	CSJR-12E/1XU-1XU-M1	CJ9106-000
24 kV	35-150	CSJR-24B/1XU-1XU-M	C21742-000
	95-240	CSJR-24C/1XU-1XU-M1	F92448-000
	120-300	CSJR-24C/1XU-1XU-M2	CJ9111-000
	185-400	CSJR-24D/1XU-1XU-M	CJ9090-000
	500	CSJR-24E/1XU-1XU-M1	CJ9103-000
	630	CSJR-24E/1XU-1XU-M2	CJ9104-011
36 kV	95-240	CSJR-36D/1XU-1XU-M	CJ9091-011
	240-400	CSJR-36E/1XU-1XU-M1	CJ9519-011
	500	CSJR-36E/1XU-1XU-M2	CJ9527-011
	630	CSJR-36E/1XU-1XU-M3	CJ9528-003

The application range given in the table is based on polymeric insulated cables according to IEC 60502 with stranded circular conductors. Due to different conductor dimensions and/or cable constructions the minimum and maximum application range may be extendable. Please contact your local sales representative.

**The diameter over conductor is needed only for kits including Tyco Electronics BSM connectors. The values given in the selection table refer to aluminum circular conductors and may change for other materials and shapes.

CSJH

Cold shrinkable inline joints with WCSM heat shrinkable sleeve as outer protection

FEATURES

- Pre-expanded, single piece silicone rubber joint body with high mechanical expansion capability allows a wide application range
- Electrical stress control of the screen cut area by integrated conductive geometrical stress cones
- Electrical stress control of the connector area by an integrated screened connection area (Faraday
- Pre-expansion on a well-known and easy-to-install -holdout system

APPLICATION

- Polymeric insulated cables.

CONFORMS TO

- CENELEC and IEC standards



Raychem MV Cold Shrinkable Inline Joints CSJH for 3-core Polymeric Insulated Cables

- Raychem CSJH can be supplied for 3-core polymeric insulated cables. For 3-core applications pre-expanded single piece silicone joint bodies are used allowing easy installation and short installation time. Raychem CSJH 3-core joints can be used with compression connectors or TE Connectivity mechanical BSM connectors. Based on the application Raychem CSJH 3-core joints can be modified for armoured and/or wire shielded cables. Please contact your local sales representative for support.
- Raychem joints CSJH include outer sealing and protection provided by a thick-wall, heat-shrinkable tubing. Effective moisture seal and corrosion protection for the joint is ensured by the co-extruded hot melt adhesive. When installed, the heat-shrinkable tubing provides a similar level of protection as the PE oversheath of modern cables.



Raychem 1-core joint CSJH without connector

Voltage (kV)	Cable Size (mm ²)	Product name	Part number
12 kV	95-240	CSJH-12B/1XU-1XU	CJ8747-000
	185-300	CSJH-12C/1XU-1XU	CJ8746-000
	240-400	CSJH-12D/1XU-1XU	CJ8764-000
	500-800	CSJH-12E/1XU-1XU	CJ8875-000
24 kV	35-185	CSJH-24B/1XU-1XU	E12488-000
	95-300	CSJH-24C/1XU-1XU	703648-000
	185-400	CSJH-24D/1XU-1XU	CJ8760-000
	400-630	CSJH-24E/1XU-1XU	CJ9513-000
36 kV	70-240	CSJH-36D/1XU-1XU	CJ8757-011
	240-630	CSJH-36E/1XU-1XU	CJ9512-011
	500-800	CSJR-36F/1XU-1XU	CV5029-000

Raychem 1-core joint CSJH with mechanical connector

Voltage (kV)	Cable Size (mm ²)	Product name	Part number
12 kV	95-240	CSJH-12B/1XU-1XU-M	A64661-000
	185-300	CSJH-12C/1XU-1XU-M	A28754-000
	240-400	CSJH-12D/1XU-1XU-M	CJ8763-000
	500	CSJH-12E/1XU-1XU-M1	CJ8876-000
24 kV	35-150	CSJH-24B/1XU-1XU-M	E22685-000
	95-240	CSJH-24C/1XU-1XU-M1	A03453-000
	120-300	CSJH-24C/1XU-1XU-M2	CJ8744-000
	185-400	CSJH-24D/1XU-1XU-M	CJ8762-000
	500	CSJH-24E/1XU-1XU-M1	CJ8872-000
	630	CSJH-24E/1XU-1XU-M2	CJ8873-000
36 kV	95-240	CSJH-36D/1XU-1XU-M	CS9023-000
	240-400	CSJH-36E/1XU-1XU-M1	CJ8871-000
	500	CSJH-36E/1XU-1XU-M2	CJ8869-011
	630	CSJH-36E/1XU-1XU-M3	CJ8870-000

Raychem 3-core joint CSJH without connector

Voltage (kV)	Cable Size (mm ²)	Product name	Part number
24 kV	95 - 240	CSJH-24B/3XU-3XU	CL5395-000
	185 - 300	CSJH-24C/3XU-3XU	CL5394-011

Due to different conductor dimensions and/or cable constructions the minimum and maximum application range may be extendable. Please contact your local sales representative.

** The diameter over conductor is needed only for kits including TE Connectivity BSM connectors. The values given in the selection table refer to aluminium circular conductors and may change for other materials and shapes.

CSTI/CSTO

Cold-shrink termination with integrated stress control for XLPE cables up to 24 kV

FEATURES

- Pre-expanded termination body with integrated stress control;
- The extra-long silicone stress cone is integrated with the termination and reduces positioning switchgear connection systems;
- Accommodates mechanical lug and compression lug.

APPLICATION

- Suitable for indoor and outdoor use; 25 - 630 mm² conductor size

BENEFITS

- Tested in accordance to CENELEC
- HD.629.1.S2:2006, IEC 60502-4 and IEEE 48



Technical data

VOLTAGE CLASS	(kV)	6.35/11(12)	8.7/15(17.5)	12.7/22(24)	19/33(36)	20.8/36(42)
Cable Insulation Diameter	(mm)	13.7 - 40.0	15.7 - 50.0	17.9 - 52.0	24.5 - 58.8	24.5 - 60.8
Cross Section Range	(mm ²)	25 - 630	25 - 630	25 - 630	50 - 1000	50 - 1000
Max System Voltage U _m	(kV)	12	17.5	24	36	42
Basic Impulse Level	(kV)	95	95	125	195	200
Partial Discharge at 2 U ₀	(pC)	<2	<2	<2	<2	<2
AC Voltage Withstand, 5 min	(kV)	28.5	39	57	86	94
DC Voltage Withstand, 15 min	(kV)	38	52	76	114	114

SELECTION INFORMATION: DIMENSIONS IN INCHES/FEET (MILLIMETERS/METERS)
Three core terminations for polymeric cables

Voltage (kV)	Cable Size (mm ²)	Indoor		Outdoor	
		Product name	Part number	Product name	Part number
12	25-50	CSTI-12-2550-T	2259521-1	CSTO-12-2550-T	2259522-1
	70-150	CSTI-12-7015-T	2259521-2	CSTO-12-7015-T	2259522-2
	150-185	CSTI-12-1518-T	2259159-3	CSTO-12-1518-T	2259160-3
	240-400	CSTI-12-2440-T	2259159-4	CSTO-12-2440-T	2259160-4
24	500	CSTI-12-500-T	2259159-5	CSTO-12-500-T	2259160-5
	35-95	CSTI-24-3595-T	2259163-1	CSTO-24-3595-T	2259164-1
	120-185	CSTI-24-1218-T	2259163-2	CSTO-24-1218-T	2259164-2
	240-300	CSTI-24-2430-T	2259163-3	CSTO-24-2430-T	2259164-3
36	400	CSTI-24-400C-TT	2324668-9	CSTO-24-400C-TT	2324667-9
	50-95	CSTI-35-5095-CN	2308136-1	CSTO-35-5095-CN	2308138-1
	95-300	CSTI-35-9530-CN	2308136-2	CSTO-35-9530-CN	2308138-2
	400	CSTI-35-400-CN	2308136-3	CSTO-35-400-CN	2308138-3

Single core terminations for polymeric cables

Voltage (kV)	Cable Size (mm ²)	Indoor		Outdoor	
		Product name	Part number	Product name	Part number
12	70-185	CSTI-12-7018-SC-T	2259523-2	CSTO-12-7018-SC-T	2259524-2
	240-400	CSTI-12-2440-SC-T	2259523-3	CSTO-12-2440-SC-T	2259524-3
	500-630	CSTI-12-5063-SC-T	2259523-4	CSTO-12-5063-SC-T	2259524-4
24	35-95	CSTI-24-3595-SC-T	2259525-1	CSTO-24-3595-SC-T	2259526-1
	120-185	CSTI-24-1218-SC-T	2259525-2	CSTO-24-1218-SC-T	2259526-2
	240-300	CSTI-24-2430-SC-TT	2317494-3	CSTO-24-2430-SC-TT	2317493-3
	400-630	CSTI-24-4063-SC-T	2259525-3	CSTO-24-4063-SC-T	2259526-3
35	50-70	CSTI-35-5070-SC-CN	2308137-1	CSTO-35-5070-SC-CN	2308139-1
	95-300	CSTI-35-9530-SC-CN	2308137-2	CSTO-35-9530-SC-CN	2308139-2
	400-800	CSTI-35-4080-SC-CN	2308137-3	CSTO-35-4080-SC-CN	2308139-3

The application range given in the table is based on polymeric insulated cable according to IEC 60502 standard with stranded circular conductors. Due to different conductor shape or dimensions and cable constructions the minimum and maximum application range may be extendable. Please contact your local sales representative.

ELBC

8/10 screened separable connector up to 12 kV, 800 A

FEATURES

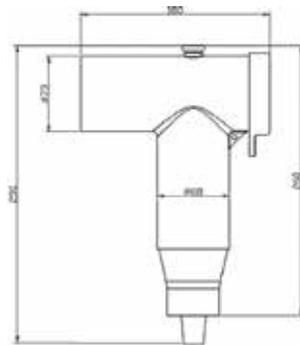
- ELBC screened separable connectors are made of high modified EPDM rubber which ensures the high dielectric strength and elongation at break;
- A thick conductive EPDM jacket protects the connection system against unintentional contact;
- Unique design makes it fully shielded and submersible when matched with the right bushing or plug;
- Easily accessible back plug with capacitive test point.

APPLICATION

- ELBC is designed to fit 630/1250 A type "C" bushings, as specified by EN50180 and EN50181; A wide application range covers cable cross-sections from 25 sq. mm to 500 sq. mm;
- Compatible for use with mechanical or compression type lugs.

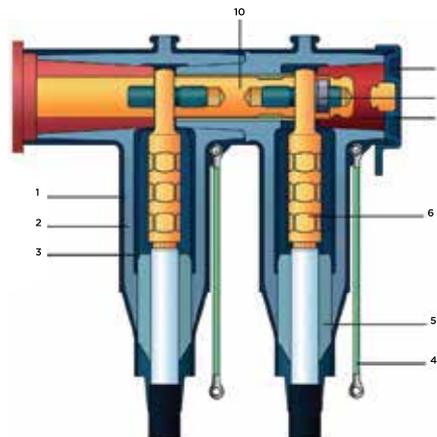
BENEFITS

- The screened separable connector exceeds CENELEC HD 629.1 S2 requirements, which includes BS, VDE and other international specifications.



DESIGN & CONSTRUCTION

1. Outer conductive layer
2. Insulated layer
3. Farady cage
4. Earthing eye and grounding kit
5. Stress cone
6. Compression and mechanical lug
7. Back plug
8. Threaded pin kit
9. End cap
10. Threaded bolt



TECHNICAL DATA

Cable insulation range	15.5 - 37 mm
Cable cross-section range	35 - 400 mm ²
Max. Rated voltage	17.5 kV
Rated current	800 A
2U _o PD	< 5 pC
AC withstand, 5 min	54 kV
Thermal short, 1 s	54 kA
Dynamic short, 1 s	85 kA

Meet the international CENELEC HD 629.1 S2 specification and GB 12706.4:2008

Inline joint for 1-core polymeric cables with aluminium wire armour

Voltage (kV)	Cable Size (mm ²)	Front Connector	Part number	Rear Connector	Part number
6/10 (12) kV single-core, with mechanical lug	25-50	ELBC-810-2550-SC	2084459-1	ELBC-CC-810-2550-SC	2084460-1
	70-95	ELBC-810-7095-SC	2084459-2	ELBC-CC-810-7095-SC	2084460-2
	120-185	ELBC-810-1218-SC	2084459-3	ELBC-CC-810-1218-SC	2084460-3
	240-300	ELBC-810-2430-SC	2084459-4	ELBC-CC-810-2430-SC	2084460-4
	400	ELBC-810-400-SC	2084459-5	ELBC-CC-810-400-SC	2084460-5
6/10 (12) kV three-core, with mechanical lug and heat shrinkable trifurcation kits	25-50	ELBC-810-2550	2084461-1	ELBC-CC-810-2550	2084462-1
	70-95	ELBC-810-7095	2084461-2	ELBC-CC-810-7095	2084462-2
	120-185	ELBC-810-1218	2084461-3	ELBC-CC-810-1218	2084462-3
	240-300	ELBC-810-2430	2084461-4	ELBC-CC-810-2430	2084462-4
	400	ELBC-810-400	2084461-5	ELBC-CC-810-400	2084462-5

SELECTION INFORMATION: DIMENSIONS SHOWN IN MILLIMETERS
Inline joint for 1-core polymeric cables with aluminium wire armour

Voltage (kV)	Cable Size (mm ²)	Front Connector	Part number	Rear Connector	Part number
6/10 (12) kV three-core, with mechanical lug and cold shrinkable trifurcation kits	25-50	ELBC-810-2550-CTR	2084461-6	ELBC-CC-810-2550-CTR	2084462-6
	70-95	ELBC-810-7095-CTR	2084461-7	ELBC-CC-810-7095-CTR	2084462-7
	120-185	ELBC-810-1218-CTR	2084461-8	ELBC-CC-810-1218-CTR	2084462-8
	240-300	ELBC-810-2430-CTR	2084461-9	ELBC-CC-810-2430-CTR	2084462-9
	400	ELBC-810-400-CTR	1-2084461-0	ELBC-CC-810-400-CTR	1-2084462-0
6/10 (12) kV single-core, with -compression lug	25	ELBC-810-25C-SC	2084457-1	ELBC-CC-810-25C-SC	2084458-1
	35	ELBC-810-35C-SC	2084457-2	ELBC-CC-810-35C-SC	2084458-2
	50	ELBC-810-50C-SC	2084457-3	ELBC-CC-810-50C-SC	2084458-3
	70	ELBC-810-70C-SC	2084457-4	ELBC-CC-810-70C-SC	2084458-4
	95	ELBC-810-95C-SC	2084457-5	ELBC-CC-810-95C-SC	2084458-5
	120	ELBC-810-120C-SC	2084457-6	ELBC-CC-810-120C-SC	2084458-6
	150	ELBC-810-150C-SC	2084457-7	ELBC-CC-810-150C-SC	2084458-7
	185	ELBC-810-185C-SC	2084457-8	ELBC-CC-810-185C-SC	2084458-8
	240	ELBC-810-240C-SC	2084457-9	ELBC-CC-810-240C-SC	2084458-9
	300	ELBC-810-300C-SC	1-2084457-0	ELBC-CC-810-300C-SC	1-2084458-0
	400	ELBC-810-400C-SC	1-2084457-1	ELBC-CC-810-400C-SC	1-2084458-1
	500	ELBC-810-500C-SC	1-2084457-2	ELBC-CC-810-500C-SC	1-2084458-2

ELBC

824 screened separable connector up to 24 kV, 800 A

FEATURES

- ELBC screened separable connectors are made of high modified EPDM rubber which ensures the high dielectric strength and elongation at break;
- A thick conductive EPDM jacket protects the connection system against unintentional contact;
- Unique design makes it fully shielded and submersible when matched with the right bushing or plug;
- Easily accessible back plug with capacitive test point.

APPLICATION

- ELBC is designed to fit 630/1250 A type "C" bushings, as specified by EN50180 and EN50181;
- A wide application range covers cable cross-sections from 35 sq. mm to 400 sq. mm;
- Compatible for use with mechanical or compression type lugs.

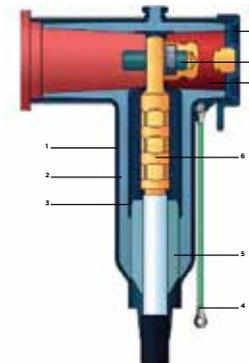


BENEFITS

- The screened separable connector exceeds CENELEC HD 629.1 S2 requirements, which includes BS, VDE and other international specifications.

DESIGN & CONSTRUCTION

1. Outer conductive layer
2. Insulated layer
3. Farady cage
4. Earthing eye and grounding kit
5. Stress cone
6. Compression and mechanical lug
7. Back plug
8. Threaded pin kit
9. End cap
10. Threaded bolt



TECHNICAL DATA

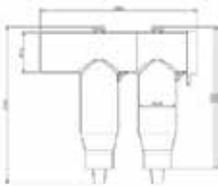
Cable insulation range	15.5 - 37 mm
Cable cross-section range	35 - 400 mm ²
Max. Rated voltage	24 kV
Rated current	800 A
Basic impulse level	125 kV
2U _o PD	< 5 pC
AC withstand, 5 min	54 kV
Thermal short, 1 s	54 kA
Dynamic short, 1 s	85 kA

Meet the international CENELEC HD 629.1 S2 specification and GB 12706.4:2008

Inline joint for 1-core polymeric cables with aluminium wire armour

Voltage (kV)	Cable Size (mm ²)	Front Connector	Part number	Rear Connector	Part number	
12/20 (24) kV Single-core, copper conductor with compression copper lug	35	ELBC-824-35C-SC	2084896-2	ELBC-CC-824-35C-SC	2084929-1	
	50	ELBC-824-50C-SC	2084896-3	ELBC-CC-824-50C-SC	2084929-2	
	70	ELBC-824-70C-SC	2084896-1	ELBC-CC-824-70C-SC	2084929-3	
	95	ELBC-824-95C-SC	2084896-4	ELBC-CC-824-95C-SC	2084929-4	
	120	ELBC-824-120C-SC	2084896-5	ELBC-CC-824-120C-SC	2084929-5	
	150	ELBC-824-150C-SC	2084896-6	ELBC-CC-824-150C-SC	2084929-6	
	185	ELBC-824-185C-SC	2084896-7	ELBC-CC-824-185C-SC	2084929-7	
	240	ELBC-824-240C-SC	2084896-8	ELBC-CC-824-240C-SC	2084929-8	
	300	ELBC-824-300C-SC	2084896-9	ELBC-CC-824-300C-SC	2084929-9	
	400	ELBC-824-400C-SC	1-2084896-0	ELBC-CC-824-400C-SC	1-2084929-0	
12/20 (24) kV Single-core with mechanical lug	35-70	ELBC-824-3570-SC	2084930-1	ELBC-CC-824-3570-SC	2084931-1	
	95-120	ELBC-824-9512-SC	2084930-2	ELBC-CC-824-9512-SC	2084931-2	
	150-240	ELBC-824-1524-SC	2084930-3	ELBC-CC-824-1524-SC	2084931-3	
	300-400	ELBC-824-3040-SC	2084930-4	ELBC-CC-824-3040-SC	2084931-4	
	Trifurcation kits for 3-core cables					
	25-95	TRFC-HI-2595	2084463-1	Heat Shrinkable trifurcation kits	3*1M tubing and 1pc breakout and 1m earth braid	
	120-240	TRFC-HI-1224	2084463-2			
	300-400	TRFC-HI-3040	2084463-3			
	25-50	TRFC-CI-2550	2084463-4	Cold Shrinkable trifurcation kits	3*500mm tubing and 1pc breakout and 1.4m earth braid	
	70-120	TRFC-CI-7012	2084463-5	Cold Shrinkable trifurcation kits	3*500mm tubing and 1pc breakout and 1.4m earth braid	
	15-240	TRFC-CI-1524	2084463-6	Cold Shrinkable trifurcation kits	3*500mm tubing and 1pc breakout and 1.4m earth braid	
	300-400	TRFC-CI-3040	2084463-7	Cold Shrinkable trifurcation kits	3*500mm tubing and 1pc breakout and 1.4m earth braid	
		TRFC-C2		Cold Shrinkable trifurcation kits	6*500mm tubing and 1pc breakout and 1.4m earth braid	

Accessories



Test Rod	
RSTI-68TR	310 mm
RSTI-68TRL	460 mm
RSTI-68TRA	Kit including 2 short and 1 long rods

Terminal Plug	
RSTI-68TP	

Earthing Adapter	
RSTI-68EA20	BallΦ 20 mm
RSTI-68EA25	BallΦ 25 mm

Single Connection	
Material for three phases	1* ELBC-824-xxxx (kit)

Live end Seal	
Material for three phases	1* ELBC-824-xxxx (kit)
	1* RSTI 68TP

TE Raychem ELBC-SA Screened, Separable Surge Arrester up to 24kV

The screened gapless surge arrester is a “T”-shaped product. It is designed for direct connection onto outer cone bushings in accordance to EN50180 or EN50181 with interface type “C” or for parallel connection mating to the rear entry of the base screened connector system ELBC-8xx designed for system voltage up to 24 kV.

The insulation of the screened surge arrester is made of a highly modified EPDM. A thin walled screen is permanently bonded onto the insulation and protects the connection system against unintentional contact.

Complete kit including screened surge arrester, threaded pin and ground lead for three phases facilitates installation and storage.

Technical Data

Voltage Class (kV)	12.0	24.0
Rated voltage U_R	17kV	26kV
Continuous operating voltage U_c	13.6kV	20.8kV
Partial discharge at $1.05 \cdot U_c$	< 11pC	< 20pC
DC Reference voltage at 1mA	≥ 24 kV	≥ 37 kV
Rated discharge current (Peak)	5kA	5kA
Switching current impulse (Peak)	-	0.5kA
Power-frequency reference current (Peak)	-	1mA
Power-frequency reference voltage	≥ 17 kV	≥ 26 kV
Residual voltage (peak) at rated discharge current	≤ 45 kV	≤ 66 kV
Residual voltage (peak) at switching current impulse	≤ 38.3 kV	≤ 56 kV
Residual voltage (peak) at steep lightning current impulse	≤ 51.8 kV	≤ 74 kV
Long-duration current impulse (2ms, 18 times)	150A	150A
Withstand voltage at high current impulse (4/10 μ s)	65kV	65kV
Lightning impulse withstand voltage on housing insulation (1.2/50 μ s)	95kV	125kV
AC withstand voltage on housing insulation	34kV	40kV
Leakage current at 0.75 DC reference voltage	< 50 μ A	< 50 μ A

Ordering Information

Voltage Class (kV)	Reference Number Single connection	Reference Number Parallel connection
12.0	ELBC-810-SA1745	ELBC-CC-810-SA1745
24.0	ELBC-824-SA2666	ELBC-CC-824-SA2666



RSTI

Raychem Switchgear Connection System for CENELEC C1 (630 A) and C2 (1250 A) for 12-36 kV

FEATURES

- Angled prefabricated shielded adapter made of silicone rubber, which does not require heat during installation
- Integrated stress control. Separate termination not required
- 3-core kits include materials for core screening. Up to 2000 mm tail length
- Test point for capacitive voltage measurement
- Mechanical lugs included. Compression lugs on request
- The kits include materials for 3 phases

APPLICATION

- For round polymeric insulated single and 3-core cables
- For connection to insulator bushing type C1 (630 A) and C2 (1250A) in accordance with EN 50181
- Disconnection of the body is only permitted when power has been turned off

CONFORMS TO

- Tested in accordance to CENELEC HD 629.1 S2

RSTI Single connection single core



Voltage (kV)	Cable Size (mm ²)	Front Connector	Part number
12	35-95	RSTI-5851-01	2364406-1
	95-240	RSTI-5853-01	2364408-1
	150-240	RSTI-5854-01	2364410-1
	185-300	RSTI-5855-01	2364409-1
	240-400	RSTI-5856-01	EH2516-000
24	35-70	RSTI-5851-01	2364406-1
	95-185	RSTI-5853-01	2364408-1
	95-240	RSTI-5854-01	2364410-1
	185-300	RSTI-5855-01	2364409-1
	240-400	RSTI-5856-01	EH2516-000
	400	RSTI-5951-01	BM7593-000
	500	RSTI-5952-01	CS5694-011
	630	RSTI-5953-01	BM7989-000
	800	RSTI-5954	CR6080-011
42	35-95	RSTI-6851-01	CS0961-000
	95-150	RSTI-6852-01	BM9568-000
	120-240	RSTI-6853-01	CS8326-011
	185-300	RSTI-6855-01	CS6471-011
	400	RSTI-6951-01	BM8715-000
	500-630	RSTI-6952-01	CU5170-000
	800	RSTI-6953	CR6087-011
	1000	RSTI-6954	EK6276-011

NOTE Other size or special request, please contact local sales representative

RSTI-CC

Raychem Switchgear Connection System for CENELEC C1 (630 A) and C2 (1250 A) for 12-36 kV

FEATURES

- Angled prefabricated shielded parallel adapter made of silicone rubber, which does not require heat during installation
- Integrated stress control. Separate termination not required
- 3-core kits include materials for core screening. Up to 2000 mm tail length
- Test point for capacitive voltage measurement
- Mechanical lugs included. Compression lugs on request
- The kits include materials for 3 phases

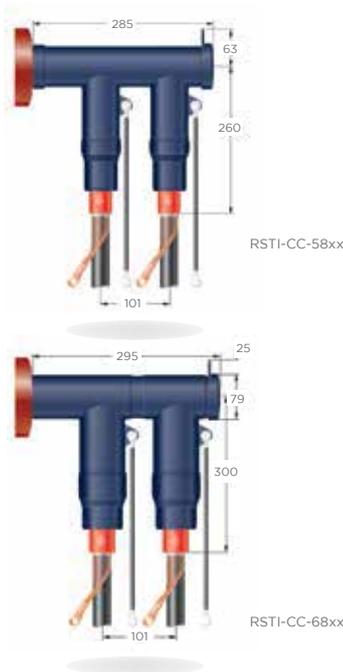
APPLICATION

- For parallel connection to adapter type RSTI-58xx
- For round polymeric insulated single and 3-core cables
- Disconnection of the body is only permitted when power has been turned off

CONFORMS TO

- Tested in accordance to CENELEC HD 629.1 S2

RSTI Parallel connection single core



Voltage (kV)	Cable Size (mm ²)	Front Connector	Part number
12	35-95	RSTI-CC-5851-01	CN7924-011
	95-240	RSTI-CC-5853-01	CR2121-011
	150-240	RSTI-CC-5854-01	CS9701-011
	185-300	RSTI-CC-5855-01	EN1794-011
	240-400	RSTI-CC-5856-01	EN8576-011
24	35-70	RSTI-CC-5851-01	CN7924-011
	95-185	RSTI-CC-5853-01	CR2121-011
	95-240	RSTI-CC-5854-01	CS9701-011
	185-300	RSTI-CC-5855-01	EN1794-011
	240-400	RSTI-CC-5856-01	EN8576-011
	400	RSTI-CC-5951-01	EN1795-011
	500	RSTI-CC-5952	CS8879-011
	630	RSTI-CC-5953-01	BM7988-000
	800	RSTI-CC-5954	CS8882-011
	1000		
42	35-95	RSTI-CC-6851-01	BM7447-000
	95-150	RSTI-CC-6852-01	EN6343-011
	120-240	RSTI-CC-6853-01	BM2148-000
	185-300	RSTI-CC-6855-01	CZ5340-000
	400	RSTI-CC-6951-01	EN3743-011
	500-630	RSTI-CC-6952-01	EJ2744-000
	800	RSTI-CC-6953	CS8876-011
	1000	RSTI-CC-6954	EN2070-011

RSTI accessories



Product name	Accessory type	Part number
RSTI-68TR; Length: 310 mm	Test rod	CN9357-011
RSTI-68TRL; Length: 460 mm	Test rod	CN9356-011
RSTI-68TRA; Kit includes 2 short and 1 long testrod	Test rod	CN9358-011
RSTI-68TP	Terminating plug	CS9958-000
RSTI-68EA20; Ball diameter: 20 mm	Earthing adapter	CS8406-011
RSTI-68EA25; Ball diameter: 25 mm	Earthing adapter	CS8405-011
RSTI-SA-PIN	Coupling Pin	CU2787-011



Test rod



Terminating plug



Earthing adapter

RSTI-SA

Raychem Screened Surge Arrester System for 12-36 kV

FEATURES

- Angled screened surge arrester
- The conductive layer on the arrester and the insulating body protect against accidental contact
- Test point for capacitive voltage measurement
- The kits include materials for 3 phases

APPLICATION

- The single adapter is used to connect to type C bushings in accordance with EN 50181 in compact switchgear
- The parallel adapter is connected to RSTI-58xx type connectors

CONFORMS TO

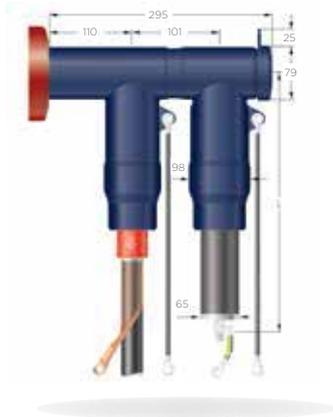
- Tested in accordance with IEC 60099-4 (May 2004)

RSTI-SA



Product name	Rated voltage kV	Part number
Single connection		
RSTI-68SA1210	12	CS8930-000
RSTI-68SA1810	18	CS8928-000
RSTI-68SA2410	24	CS8925-000
RSTI-68SA3610	36	CS8920-000
Parallel connection		
RSTI-CC-68SA1210	12	CS3113-000
RSTI-CC-68SA1810	18	CS3113-000
RSTI-CC-68SA2410	24	CS3111-000
RSTI-CC-68SA3610	36	CS3036-000

Technical data for single and parallel connection



Discharge current I_n	10 kA
Current impulse 4/10 s	100 kA
Short circuit current I_S	20 kA
Long-duration current impulse (1ms)	212 A

Residual voltages (kV)			
Voltage class UC	12	24	36
Rated voltage UR	15	30	45
Current impulse 8/20 μs			
5 kA	39.1	78.2	117.3
10 kA	41.5	83.0	124.5
20 kA	45.7	91.4	137.1
Current impulse 1/20 μs			
10 kA	43.9	87.8	131.7
Current impulse 1/20 μs			
125 kA	31.5	63.1	94.7
500 kA	32.4	64.9	97.4

RSES 64xx

Raychem Screened Adapter System for CENELEC B Bushing 400 A for 24 and 36 kV

FEATURES

- Mechanical lugs suitable for copper and aluminium conductors
- Capacitive test point
- Complete kit including lugs facilitates installation and storage

APPLICATION

- Design fits 400 A bushings (interface "B") as specified by EN 50180 and EN 50181
- Cable cross-sections from 50 to 300mm²

CONFORMS TO

- The screened cable connector exceeds CENELEC HD 629.1 S2 requirements, which includes BS, VDE and other international specifications

RSES 6400 for single and three core cables including mechanical lugs



Product name	Rated voltage kV	Cross-section (mm ²)	Insul. diam (mm)	Part number
RSES-6451	24	70 - 95	22.4 - 35.5	CX5399-011
RSES-6452	24	95 - 240	22.4 - 35.5	CX5398-011
RSES-6454	24	185 - 300	22.4 - 35.5	CX5404-011
RSES-6451	36	50 - 95	22.4 - 35.5	CX5399-011
RSES-6452	36	95 - 150	22.4 - 35.5	CX5398-011
RSES-6453	36	120 - 240	28.9 - 42.0	CX5401-011
RSES-6455	36	185 - 300	28.9 - 42.0	CX5402-011

RSES and RSSS-52XX

TE's Raychem Screened Adapter System for CENELEC A Bushing 250 A up to 24 kV

FEATURES

- Range taking mechanical shear bolt cable lugs
- Hybrid material design for outstanding mechanical and electrical performance
- Reliable operation even under harsh environmental conditions
- Screened connector body for improved safety
- Molded cable adapter with integrated sealing for easier installation
- Optional Voltage Detection (VD) point
- Optional Metal Housing (MH)

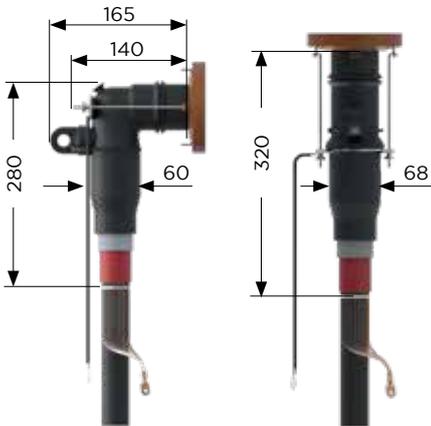
APPLICATION

- TE's Raychem Screened Elbow and Straight Separable connectors RSES/RSSS are designed to connect single-core polymeric cables to medium voltage gas insulated switchgears and other equipments using bushings type "A" (according to EN 50180/EN 50181) specified for 250A continuous current.

CONFORMS TO

- The RSES and RSSS connectors are compliant with CENELEC HD 629.1 S2 02/2006+A1:2008. and tested for a system voltage up to 24 kV.

Design & Dimensions



RSES-VD: Elbow connector with voltage detection point

RSSS-VD: Straight connector with voltage detection point



RSES-MH: Metal Housing for elbow connector without voltage detection point

TECHNICAL DATA	
Conductor Cross section Range	16 - 150 mm ²
Diameter over conductor (round, stranded)	4.6 - 15.0 mm
Diameter over conductor (round, solid)	3.5 - 13.8 mm
Cable Insulation Diameter Range	12.7 - 28.5 mm
Maximum System Voltage	24 kV
Continuous Current Rating	250 A
Basic Impulse Level	125 kV
Partial Discharge at 2 U ₀	< 3 pc
AC Voltage Withstand, 5 min	57 kV
DC Voltage Withstand, 15 min	76 kV

TE's RSES and RSSS separable connectors pass a 100% routine test procedure including: AC Voltage Withstand and Partial Discharge Test.

Connector type	12kV	17.5kV	24kV	Product Name	Part number
Elbow	16-70	16-50	16	RSES-VD-525A-01	EN3841-011
Elbow	95	50-95	25-95	RSES-VD-525B-01	EN3840-011
Elbow	95-150	70-120	70-95	RSES-VD-525C-01	EN3839-011
Elbow	-	120-150	70-150	RSES-VD-525D-01	EN3838-011
Connector type	12kV	17.5kV	24kV		
Straight	16-70	16-50	16	RSSS-VD-525A-01	EN3850-011
Straight	95	50-95	25-95	RSSS-VD-525B-01	EN3851-011
Straight	95-150	70-120	70-95	RSSS-VD-525C-01	EN3852-011
Straight	-	120-150	70-150	RSSS-VD-525D-01	EN3853-011

Default kits come without voltage detection point and metal housing, are designed for cables with wire shield and don't include accessories for earthing.

To add accessories to the kit's contents, please use the following kit modification codes:

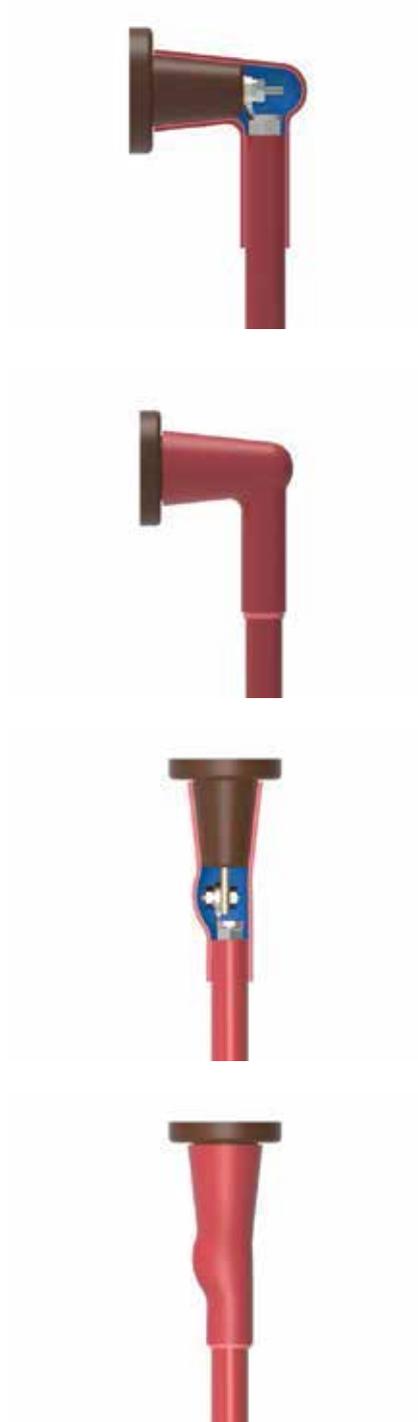
- Add "-E" to the end of the kit designation for a kit that includes wire shield earthing accessories (e.g. RSES-525A-E)
- Add "-01" to the end of the kit designation for a kit that includes Cu tape shield earthing accessories (e.g. RSES-525A-01)
- Add "-02" to the end of the kit designation for a kit that includes Al foil shield earthing accessories (e.g. RSES-525A-02)
- Add "-VD" to the type designation (RSES/RSSS) for a kit with voltage detection point (e.g. RSES-VD-525A)
- Add "-MH" to the type designation (RSES) for a kit with metal housing (e.g. RSES-MH-525A) [only compatible with elbows without voltage detection point.]

*Application range for conductors acc. to IEC 60228 class 2 Cu compacted. Application range for other combinations of conductor type and material on request.

RSRB

Raychem Heat-shrink Bushing Boots up to 11 kV

Boots



Product name	Application range	Mod code	Part number
Straight boots			
RSRB 4022	10 - 35 mm ²	B05	203793-011
RSRB 4024	50 - 95 mm ²	B06	890945-011
RSRB 4026	120 - 300 mm ²	B07	174821-011
Right angle boots - long			
RSRB 4042	10 - 35 mm ²	B08	363551-011
RSRB 4044	50 - 95 mm ²	B09	257141-011
RSRB 4046	120 - 300 mm ²	B10	718495-011
Right angle boots - short			
RSRB 4062	10 - 35 mm ²	B15	166197-011
RSRB 4064	50 - 95 mm ²	B16	317789-011
RSRB 4066	120 - 300 mm ²	B17	975801-011

RPIT

Raychem Plug In Termination System up to 42 kV for Gas-insulated Switchgear up to 1250 A

FEATURES

- Shielded inline connection for gas insulated switchgears up to 42 kV
- The plug in termination system is metal-enclosed, hermetically insulated and suitable for submersion or outdoor use
- Special designs for wind power stations and offshore applications with bronze protection covers

APPLICATION

- Single core cables
- 50 - 630 mm² conductor size
- Inline bushings for connection type size 2 (800 A) and size 3 (1250 A) as per EN 50181

CONFORMS TO

- ♦ Tested in accordance with CENELEC HD629.1 S2

RPIT



Type	Size	Nominal current (A)	System voltage (kV)	Cross-section (mm ²)	Diameter over conductor (mm)	"Diameter over insulation (mm)
RPIT- 321x	2	800	12	95-300	11.0-21.6	19.3-30.4
RPIT- 521x	2	800	24	50-300	7.7-21.6	20.2-34.6
RPIT- 621x	2	630	36/42	50-185	7.7-16.8	25.2-35.1
RPIT- 331x	3	1250	12	240-630	17.8-32.5	26.4-39.6
RPIT- 531x	3	1250	24	150-630	13.9-32.5	36.5-45.6
RPIT- 631x	3	1250	36/42	95-630	11.0-32.5	28.5-49.2

BBIT / BPTM Busbar Insulating Tubing

FEATURES

- TE's Raychem BBIT/BPTM tubes are extremely flexible which allows for easy positioning
- Have a high expansion ratio, so each size of tubing fits a range of busbar sizes
- Quick installation with the use of a gas torch or oven

APPLICATIONS

- Ideal for protection against accidental bridging caused by birds and other animals
- Can be used on straight or bent bars where clearance reduction or insulation are required
- Ideal for original equipment assembly, and for retrofit applications where access to one end is available

BENEFITS

- ◆ Easy installation
- ◆ Flexible
- ◆ Fits a range of busbar sizes
- ◆ Versatile tubing covering a range from 5-35 kV for electrical insulation



PRODUCT SELECTION INFORMATION: DIMENSIONS IN INCHES (MM)

Catalog Number	Rectangular Bar (bus width)	Square Bar (each side)	Round Bar (diameter min-max)	Diameter as Supplied and Fully Recovered
BBIT-25/10-A/U	0.5 (12)	-	0.50-0.70 (12-18)	0.98-0.39 (25-10)
BBIT-40/16-A/U	1.0 (25)	-	0.70-1.10 (18-28)	1.57-0.63 (40-16)
BBIT-65/25-A/U	2.0 (50)	1.0 (25)	1.10-1.55 (28-40)	2.56-0.98 (65-25)
BBIT-100/40-A/U	3.0 (75)	2.0 (50)	1.75-2.45 (44-62)	3.94-1.57 (100-40)
BBIT-150/60-A/U	4.0 (100)	3.0 (75)	2.60-3.60 (66-91)	5.91-2.36 (150-60)
BBIT-175/80-A/U	5.0-6.0 (125-150)	4.0 (100)	3.45-4.75 (88-121)	6.89-3.15 (175-80)
RSRB 4066	120 - 300 mm ²	B17	975801-011	

Catalog Number*	Rectangular Bar		Square Bar		Round Bar		Diameter as Supplied and Fully Recovered
	5 - 15 kV	25 kV	5 - 15 kV	25 kV	5 - 15 kV	25 kV	
BPTM-15/6-A/U	N/A	N/A	N/A	N/A	0.26-0.52 (7-13)	0.26-0.52 (7-8)	0.59-0.24 (15-6)
BPTM-30/12-A/U(B50)	0.25-0.5 (12)		0.5 (12)	0.5 (12)	0.53-0.90 (14-23)	0.53-0.65 (14-16)	1.18-0.47 (30-12)
BPTM-50/20-A/U(B50)	1.0 (25)	1.0 (25)	1.0 (25)	N/A	0.90-1.35 (23-33)	0.90-1.10 (23-28)	1.97-0.79 (50-20)
BPTM-75/30-A/U(B50)	2.0 (50)	2.0 (50)	1.5 (38)	1.0 (25)	1.30-2.00 (33-51)	1.30-1.65 (33-42)	2.95-1.18 (75-30)
BPTM-100/40-A/U(B50)	3.0 (75)	3.0 (75)	2.0 (50)	1.5 (38)	1.75-2.75 (44-70)	1.75-2.30 (44-58)	3.94-1.57 (100-40)
BPTM-120/50-A/U(B50)	4.0-5.0 (100-127)	4.0 (100)	3.0 (75)	2.0 (50)	2.15-4.00 (55-102)	2.15-3.20 (55-81)	4.72-1.97 (120-50)
BPTM-175/70-A/U(B50)	6.0-7.0 (150-178)	5.0-6.0 (127-150)	4.0 (100)	3.0 (75)	3.20-5.50 (81-140)	3.20-4.40 (81-112)	6.88-2.75 (175-70)
BPTM-205/110-A/U(B50)	8.0 (200)	8.0 (200)	5.0 (127)	4.0 (100)	4.75-7.00 (120-178)	4.75-6.80 (120-174)	8.07-4.33 (205-110)
BPTM-235/130-A/U-C(40)	12 (300)	10 (250)	6.0 (150)	6.0 (150)	5.70-8.45 (145-215)	5.70-8.07 (145-205)	9.25-5.12 (235-130)

* (Bxx) denotes roll of uncoated tubing per box in feet. BPTM-235/130 comes in a box of 132 feet

ADDITIONAL PRODUCT INFORMATION

- Select the appropriate catalog number. Confirm selection with bus dimensions.
- Rectangular bus thickness range is 1/4 to 5/8 inch.
- Bolted connections require two layers of tubing or a fiber bolt pad. (BP-46).
- To environmentally seal the bus at each end of the BBIT tubing, order S1251-50-300-1 or S1251-25-300-4 sealant strip separately.

- Standard package:
 BBIT-25/10-A/U: 65 feet/box BBIT-150/60-A/U: 50 feet/box
 BBIT-40/16-A/U: 60 feet/box BBIT-175/80-A/U: 50 feet/box
 BBIT-65/25-A/U: 50 feet/box BBIT-100/40-A/U: 50 feet/box
 BPTM-235/130-A/U: 132 feet/box All other BPTM sizes: 50 feet/box
 BBIT and BPTM are also available in bulk spooled quantities.
- Related test reports:
 BBIT-UVR-8136, UVR-8137, BPTM-UVR-8019
- Minimum continuous length is 15 feet (4.5 meters).

WCSM

Raychem heat-shrink tubing, thick wall, weathering and UV-resistant with adhesive

FEATURES

- Made of modified polyolefin with very high electrical, mechanical, weathering and corrosion properties
- For a tight connection or stress relief, the tubing is available with an internal adhesive coating that melts and seals when shrinkage occurs with heat
- Continuous operating temperature -40°C to +120°C
- Halogen-free, UV and weather resistant

APPLICATION

- For electrical insulation where good insulation and mechanical protection is required.

Length 1000 mm, adhesive-coated



Product name	Application range (mm)	Inner diameter (mm ¹)		Wall thickness (mm ¹)		Length (mm)	Pack pc	Part Number
		A	B	A	B			
WCSM-12/3-1500/ S(S20)	3.5 - 10.0	12	3	0.8	2.0	1500	20	CU9253- 000
WCSM-16/4-1500/ S(S20)	4.5 - 14.0	16	4	0.9	2.4	1500	20	CU9272- 000
WCSM-24/6-1500/ S(S10)	6.5 - 22.0	24	6	1.0	2.7	1500	10	CU9434- 000
WCSM-34/8-1500/ S(S10)	9.0 - 31.0	34	8	1.3	4.0	1500	10	CU7134- 000
WCSM-48/12-1500/ S(S10)	13.0 - 44.0	48	12	1.5	4.5	1500	10	CU8545- 000
WCSM-56/16-1500/ S(S10)	17.5 - 50.0	56	16	1.5	4.4	1500	10	CU7529- 000
WCSM-70/20-1500/S(S5)	22.0 - 63.0	70	20	1.4	4.4	1500	5	CU4493-000
WCSM-90/25-1500/S(S5)	27.0 - 81.0	90	25	1.3	4.3	1500	5	CU4610-000
WCSM-110/30-1500/S(S5)	33.0 - 100.0	110	30	1.2	4.3	1500	5	CU6594-000
WCSM-130/35-1500/S(S5)	38.0 - 118.0	130	35	1.2	4.3	1500	5	CU4649-000
WCSM-160/50-1500/S(S5)	55.0 - 144.0	160	50	1.0	4.3	1500	5	846444-000
WCSM-180/50-1500/S(S5)	55.0 - 162.0	180	50	1.0	4.3	1500	5	169440-000

1

A = As supplied, and B = after free recovery.
Longitudinal change +5 to -15% up to 48/12 and +5 to -10% from 56/16

CRSM

Raychem heat-shrinkable halogen-free wraparound system for plastic or metal sheathed cable repair

FEATURES

- Fast and permanent wraparounds cable repair and sealing system
- Excellent bonding and sealing characteristics to all materials

APPLICATION

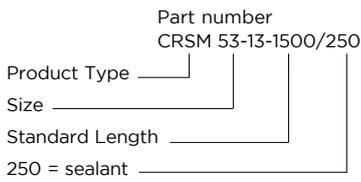
- For sheets repair

CRSM



Product name		H		R		W		Part Number
		A min	B max	A min	B max	A min	B max	
CRSM-34/10- 1500/250(S1)	11 - 21	35	9	110	35	0.3	2.4	EN3756-000
CRSM-53/13- 1500/250(S1)	17 - 32	54	15	170	49	0.3	2.0	EN3764-000
CRSM-84/20- 1500/250(S1)	24 - 50	86	21	270	69	0.3	2.0	EN3773-000
CRSM-107/29-1500/250(S1)	31 - 65	108	27	340	90	0.3	2.0	EN3783-000
CRSM-143/36-1500/250(S1)	33 - 86	144	28	455	119	0.3	1.8	EN3792-000
CRSM-198/55-1500/250(S1)	56 - 120	203	50	640	172	0.3	2.1	EN3800-000

ORDERING EXAMPLE



ShearBolt terminal lugs and connectors

FEATURES

- TE Connectivity's ShearBolt connectors are range-taking mechanical terminal connectors. Just six connectors will accommodate a wide range of aluminum and copper conductors from 25 mm² stranded and solid to 500 mm² circular stranded class 2.
- Just six connectors will accommodate a wide range of aluminum and copper conductors from 25 mm² stranded and solid to 500 mm² circular stranded class 2.

APPLICATIONS

- Used for low and medium voltage application up to 42 kV.
- ShearBolt connectors are ideally suited for aluminum to aluminum, aluminum to copper and copper to copper applications making them the universal connector solution.
- The only tool required to install the connector is a standard ratchet wrench with the appropriate sized hexagonal sockets. The connector design incorporates shear head bolts, which ensures that the correct torque is applied
- The removable inserts in the connector body centralize smaller conductor sizes. For larger sizes, inserts are not required and are easily removed with a standard screwdriver. ShearBolt connectors meet the electrical and mechanical requirements IEC 61238-1.
- A holding tool is recommended to avoid core bending of conductors and can be ordered from TE Connectivity

BENEFITS

- ♦ Bodies and bolts made of special aluminium alloy provide good contact properties
- ♦ Compact design requires little installation space, particularly for large sizes
- ♦ No elongation during installation, make it easier to design relevant accessories
- ♦ Chamfered edges are suitable for up to 42 kv voltage and adaptable to existing termination designs
- ♦ Shear bolts with predetermined shear torque ensures that the correct torque is applied to each bolt and consequently to the end of each conductor
- ♦ The connector design incorporates shear head bolts, which ensures that the correct torque is applied to each bolt and consequently the optimal contact force is generated to minimize connection resistance
- ♦ The removable inserts in the connector body centralize smaller conductor sizes



SELECTION INFORMATION: DIMENSIONS SHOWN IN MILLIMETERS

Lugs Dimensions

Product Reference	Cross-sectional Range (mm ²)	Palm hole Diameter mm LB	Dimensions mm				Contact Bolts Quantity	Head Size AF (mm)
			L1	L2	L3	L4		
BLMT-25/95-13	25-95	13	60	30	24	12.8	1	13
BLMT-25/95-17	25-95	17	60	30	24	12.8	1	13
BLMT-35/150-13	35-150	13	86	35	28	15.8	1	17
BLMT-35/150-17	35-150	17	86	35	28	15.8	1	17
BLMT-95/240-13	95-240	13	112	60	33	20	2	19
BLMT-95/240-17	95-240	17	112	60	33	20	2	19
BLMT-120/300-13	120-300	13	115	65	37	24	2	22
BLMT-120/300-17	120-300	17	115	65	37	24	2	22
BLMT-185/400-13	185-400	13	137	80	42	25.5	3	22
BLMT-185/400-17	185-400	17	137	80	42	25.5	3	22
BLMT-185/400-21	185-400	21	137	80	42	25.5	3	22
BLMT-500/630-13	500-630	13	150	95	50	33	3	27
BLMT-500/630-17	500-630	17	150	95	50	33	3	27
BLMT-500/630-21	500-630	21	150	95	50	33	3	27

Application Information: Dimensions in metrics

Product Reference		Application Range Conductor Type						
		Al Circular Stranded	Al Circular Solid	Al Sector Stranded	Al Sector Solid	Cu Circular Stranded	Cu Circular Solid	Cu Sector Stranded
BLMT-25/95-XX	Cross-sectional range (mm ²)	25 - 95	25 - 95	25 - 70	-	16 - 95	10 - 50	25 - 70
	Cross-sectional range (mm ²)	-	-	95**	-	-	-	95**
	Conductor diameter (mm)	5.7 - 12.5	5.5 - 11	-	-	4.8 - 12.5	3.6 - 8	-
BLMT-35/150-XX	Cross-sectional range (mm ²)	35 - 150	35 - 150	50 - 95	50 - 120	35 - 150	35 - 50	50 - 95
	Cross-sectional range (mm ²)	-	-	120* - 150**	-	-	-	120* - 150**
	Conductor diameter (mm)	6.8 - 15	6.5 - 14	-	-	6.6 - 15	6.5 - 8	-
BLMT-95/240-XX	Cross-sectional range (mm ²)	95 - 240	95 - 240	95 - 150	95 - 150	95 - 240	-	95 - 150
	Cross-sectional range (mm ²)	-	-	185* - 240**	185(90°)	-	-	185* - 240**
	Conductor diameter (mm)	11 - 19.2	10.5 - 18	-	-	11 - 19.2	-	-
BLMT-120/300-XX	Cross-sectional range (mm ²)	120 - 300	150 - 300	120 - 185	120 - 240	120 - 300	-	120 - 185
	Cross-sectional range (mm ²)	-	-	240* - 300**	-	-	-	240* - 300**
	Conductor diameter (mm)	12.7 - 23.1	12.9 - 19.8	-	-	12.7 - 22.6	-	-
BLMT-185/400-XX	Cross-sectional range (mm ²)	185 - 400	185 - 400	185 - 240	185 - 240	185 - 400	-	185 - 240
	Cross-sectional range (mm ²)	-	-	300* - 400**	300(90°)	-	-	300* - 400**
	Conductor diameter (mm)	15.5 - 24.6	14.8 - 24.6	-	-	15.5 - 24.6	-	-
BLMT-500/630-XX	Cross-sectional range (mm ²)	500 - 630	500 - 630	-	-	500 - 630	-	-
	Cross-sectional range (mm ²)	-	-	-	-	-	-	-
	Conductor diameter (mm)	25.3 - 32.5	24.0 - 28.6	-	-	25.3 - 32.5	-	-

*	Slightly rounded with pliers
**	Pressed round
XX	Palm hole

Product Reference	Cross-sectional Range (mm ²)	Blocked	Dimensions mm				Contact Bolts Quantity	Head Size AF mm	
			L1	L2	L3	L4			
BSMB-10/35	10-35	yes	45	20	19	8.5	2	10	25 - 70
BSM-25/95	25-95	yes	65	30	24	12.8	2	13	95**
BSM-25/95-U	25-95	no	65	30	24	12.8	2	13	-
BSMB-35/150	35-150	yes	80	35	28	15.8	2	17	50 - 95
BSMU-35/150	35-150	no	80	35	28	15.8	2	17	120* - 150**
BSM-95/240	95-240	yes	125	60	33	20	4	19	-
BSM-95/240-U	95-240	no	125	60	33	20	4	19	95 - 150
BSMB-95/240-34	95-240	yes	125	60	34	22	4	19	185* - 240**
BSMB-120/300	120-300	yes	140	65	37	24	4	22	-
BSMU-120/300	120-300	no	140	65	37	24	4	22	120 - 185
BSM-185/400	185-400	yes	170	80	42	25.5	6	22	240* - 300**
BSM-185/400-U	185-400	no	170	80	42	25.5	6	22	-
BSMB-500	500	yes	190	90	46	30	6	27	185 - 240
BSMU-500	500	no	190	90	46	30	6	27	300* - 400**
BSMB-630	630	yes	200	95	50	33	6	27	-

Product Reference		Application Range Conductor Type						
		Al Circular Stranded	Al Circular Solid	Al Sector Stranded	Al Sector Solid	Cu Circular Stranded	Cu Circular Solid	Cu Sector Stranded
BSMB-10/35	Cross-sectional range (mm ²)	10 - 35	10 - 50	10 - 25	10 - 35	10 - 35	10 - 35	10 - 25
	Cross-sectional range (mm ²)	-	-	35**	-	-	-	35**
	Conductor diameter (mm)	3.7 - 7.5	3.4 - 7.8	-	-	3.7 - 7.5	3.4 - 6.7	-
BSM-25/95 BSM-25/95-U	Cross-sectional range (mm ²)	25 - 95	25 - 95	25 - 70	-	16 - 95	10 - 50	25 - 70
	Cross-sectional range (mm ²)	-	-	95**	-	-	-	95**
	Conductor diameter (mm)	5.7 - 12.5	5.5 - 11	-	-	4.8 - 12.5	3.6 - 8	-
BSMB-35/150 BSMU-35/150	Cross-sectional range (mm ²)	35 - 150	35 - 150	50 - 95	50 - 120	35 - 150	35 - 50	50 - 95
	Cross-sectional range (mm ²)	-	-	120* - 150**	-	-	-	120* - 150**
	Conductor diameter (mm)	6.8 - 15	6.5 - 14	-	-	6.6 - 15	6.5 - 8	-
BSM-95/240 BSM-95/240-U	Cross-sectional range (mm ²)	95 - 240	95 - 240	95 - 150	95 - 150	95 - 240	-	95 - 150
	Cross-sectional range (mm ²)	-	-	185* - 240**	185(90°)	-	-	185* - 240**
	Conductor diameter (mm)	11 - 19.2	10.5 - 18	-	-	11 - 19.2	-	-
BSMB-95/240-34	Cross-sectional range (mm ²)	95 - 240	95 - 240	95 - 150	95 - 185	95 - 240	-	95 - 150
	Cross-sectional range (mm ²)	-	-	185 - 240*	-	-	-	185 - 240*
	Conductor diameter (mm)	11 - 20.8	10.5 - 18	-	-	11 - 19.2	-	-
BSMB-120/300 BSMU-120/300	Cross-sectional range (mm ²)	120 - 300	150 - 300	120 - 185	120 - 240	120 - 300	-	120 - 185
	Cross-sectional range (mm ²)	-	-	240* - 300**	-	-	-	240* - 300**
	Conductor diameter (mm)	12.7 - 23.1	12.9 - 19.8	-	-	12.7 - 22.6	-	-
BSM-185/400 BSM-185/400-U	Cross-sectional range (mm ²)	185 - 400	185 - 400	185 - 240	185 - 240	185 - 400	-	185 - 240
	Cross-sectional range (mm ²)	-	-	300* - 400**	300(90°)	-	-	300* - 400**
	Conductor diameter (mm)	15.5 - 24.6	14.8 - 24.6	-	-	15.5 - 24.6	-	-
BSMB-500 BSMU-500	Cross-sectional range (mm ²)	500	500	-	-	500	-	-
	Cross-sectional range (mm ²)	-	-	-	-	-	-	-
	Conductor diameter (mm)	25.3 - 28.9	24 - 25.1	-	-	25.3 - 28.6	-	-
BSMB-630	Cross-sectional range (mm ²)	630	630	-	-	630	-	-
	Cross-sectional range (mm ²)	-	-	-	-	-	-	-
	Conductor diameter (mm)	28.7 - 32.5	27.3 - 28.4	-	-	28.7 - 32.5	-	-

*	Slightly rounded with pliers
**	Pressed round

MEDIUM VOLTAGE JUNCTION BOX MVJB

WITH TE's Raychem SCREENED T-CONNECTORS RSTI UP TO 36 kV

TE Connectivity's (TE) Medium Voltage Junction Box MVJB with set of TE's Raychem Screened Separable T-connectors RSTI facilitates safe, easy and quick connection and disconnection of medium voltage cables up to 36 kV. It is suitable for usage in grid connection and wind turbines in onshore and offshore environments. Supporting a wide application range, it represents a branching point for any cross-section from 25 mm² to 800 mm². The overall dimensions are compact and designed to take up the minimum space. Full metal encapsulation gives reliable and insured service.

Our MVJB provides the ability to connect TE's Raychem Screened separable T-connectors RSTI, Coupling Connectors RSTI-CC and Surge Arresters RSTI-SA. This gives easy accessibility to the capacitive test points for determining whether the circuit is energized and opportunity to protect equipment from over voltages. The possibility to monitor and detect the voltage gives reliability and safeness in its function within electrical systems.

The MVJB is tested according to the cable accessories standard CENELEC HD 629.1 S2, which includes BS, VDE and other international specifications.

With fulfilment of IP 65 test degree of protection with integrated bottom plate, our MVJB is secured against water and dust ingress.

FEATURES

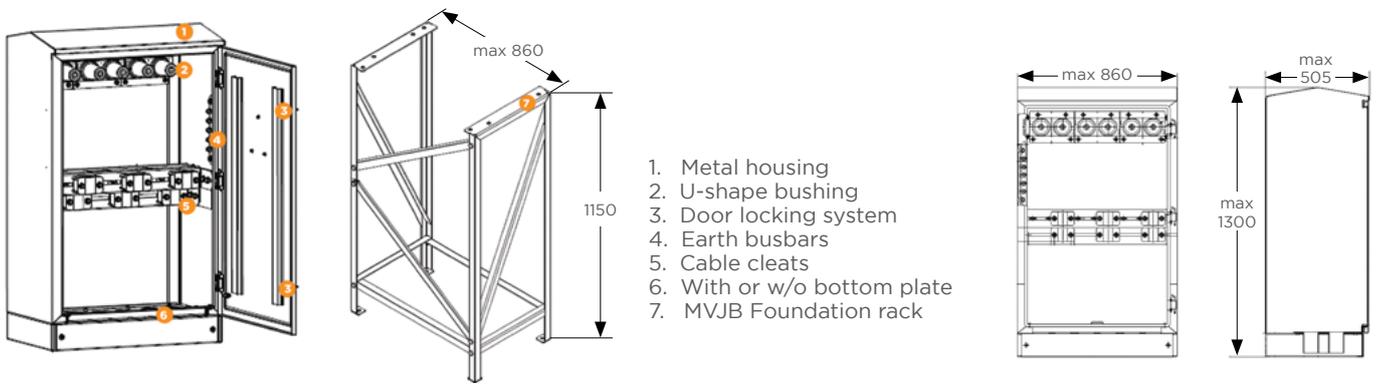
- Application in grid connection and wind turbines in onshore and offshore environments
- Branching point for crosssection combinations from 25 mm² to 800 mm²
- Full metal encapsulation
- Easy access to the capacitive test points
- Monitoring and detection of voltage

CONFORM TO

- Tested according to CENELEC HD.629.1S2:2006 +A1:2008



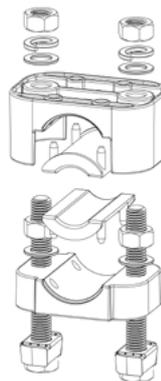
TECHNICAL DATA		
Description	MVJB-6x2x-01	MVJB-6x2x-03
Protection class	No class	IP 65
Maximum system voltage (kV)	36	36
Maximum continuous current rating (A)	1250	1250
Impulse withstand voltage (kV)	170	170
AC withstand voltage (kV)	93.5	93.5
DC withstand voltage (kV)	125	125
Short circuit current (kA/1s)	22	22
Application	Non buried	Non buried
Box size (LxHxW) (mm)	max 860x1300x505	max 860x1300x505
Material	Available in mild or stainless steel	Available in mild or stainless steel
Max number of connectable cable system	4	4



ORDERING INFORMATION

MVJB Foundation Rack (MVJB-FOUNDATION-RACK-04) and cable cleats are to be ordered separately.

CABLE DIAMETER (mm)	CABLE CLEATS Description
15 - 26	CC15-26-SN-M12
26 - 38	CC26-38-SN-M12
38 - 50	CC38-50-SN-M12
50 - 60	CC50-60-SN-M12
60 - 70	CC60-70-SN-M12





Chapter III

TE'S DOV MEDIUM VOLTAGE SURGE ARRESTER

3-36 kV RATED VOLTAGE
DH CLASSIFICATION

TE Connectivity (TE) pioneered under the brand Bowthorpe EMP the development of polymeric composite housed surge arresters in the early 1980's and since then has proven service experience across the globe, operating in the world's toughest environments. The Distribution Over Voltage (DOV) surge arrester provides active over voltage protection that contributes directly to improved system reliability, reducing lost minutes and protecting expensive assets on the electrical network.

DOV Medium Voltage Surge Arrester

The 10 kA DH class distribution arrester has a voltage range from 3 to 36 kV (U_R). It has been type tested in a European high voltage laboratory and independently approved by accredited laboratory to meet the requirements of IEC Standard 60099-4, Ed. 3.0. The DOV surge arrester is the latest gapless, zinc oxide arrester family of TE's Bowthorpe EMP arrester product range. The cage design development was based on over 40 years of internal experience in arrester design. The DOV core arresters are manufactured using excellent ZnO varistors, which display excellent thermal and current handling characteristics due to the guaranteed homogeneity of the varistor volume. The DOV surge arresters are manufactured according to high-quality standards, providing exceptional operating performance and long service life.

Product Features

- The crimped structural construction ensures light weight product with optimal mechanical strength.
- The manufacturing process ensures void free construction and optimum interface sealing. This is achieved by bonding the silicone housing directly to the ZnO discs and aluminum fittings using a bonding solution.
- The silicone housing was developed using the knowledge accumulated over 40 years of internal materials science expertise and experience, resulting in an optimum shed profile and a material with excellent tracking and erosion resistance.
- Alternating sheds for superior pollution flash over resistance
- Exceptional Tracking and Erosion Resistance Test (TERT) performance
- Type Tests are independently verified in accordance with IEC60099-4, Ed 3.0



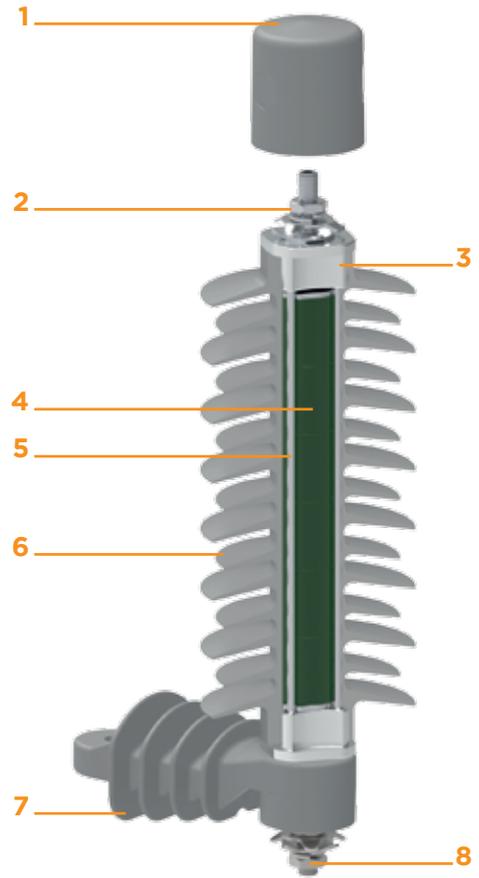
DOV Medium Voltage Surge Arrester Design

At the core of the DOV design is our improved ZnO varistor disk, which has exceptional thermal and electrical characteristics and stability. The new varistor and DOV design combination has resulted in excellent energy handling and TOV performance. The construction of the DOV design comprises of:

- Zinc Oxide (ZnO) varistors
- TE's Bowthorpe EMP silicone housing
- Flame retardant FRP structure
- Corrosion resistant aluminium fittings

Design Features and Benefits

- Active overvoltage protection for distribution network
- Improves system reliability by reducing downtime caused by overvoltage incidents
- Strong protection for most expensive assets on electrical network
- Based on proven technology and more than 40 years of experience in arrester design
- Manufactured to the excellent quality providing exceptional operating performance and long service life



- 1. Birdcap
- 2. Line Accessories
- 3. End fitting
- 4. ZnO Varistors
- 5. FRP Rods
- 6. Silicon housing
- 7. Insulating Bracket and Disconnector
- 8. Earth Accessories

Description	Product name	Part number
“Birdcap, Insulating bracket, disconnector. No NEMA bracket, 18kV”	DOV-19B-E0D0BO-I	EP1807-000
“Insulating Bracket, disconnector. No Birdcap, no NEMA bracket., 18kV”	DOV-19B-M0D0BO-I	EP1808-000
“Insulating Bracket, disconnector. No Birdcap, no NEMA bracket., 24kV”	DOV-24C-M0D0BO-I-AB	EP1809-000
“Birdcap, Insulating bracket, disconnector. No NEMA bracket, 24kV”	DOV-24C-M0D0BO-I-AB	EP1344-000



Exceptional TERT performance



Excellent hydrophobicity



DOV surge arrester Application

Designed and optimized to protect distribution assets including transformers and cable-end terminations from lightning and switching surge related over-voltages in areas with relatively high iso-keraunic levels. Suitable for both outdoor and indoor applications.

PRODUCT APPLICATION	
Technical Data	Range
Product line name	DOV
DOV Series - Rated Voltage range (U _r)	3-36 kV
Creepage	405 - 1128 mm
Rated discharge current (8/20μs)	10 kA
Energy Classification according to IEC 60099-4 (Ed. 3.0)	DH
Repetitive Charge transfer rating (Q _{rs})	0.4 C
Thermal Charge transfer rating (Q _{th})	1.1 C
High current short circuit: (pre-failing method)	20 kA
Safe Short-term Load (SSL)	225 Nm
Safe Long-term Load (SLL)	175 Nm

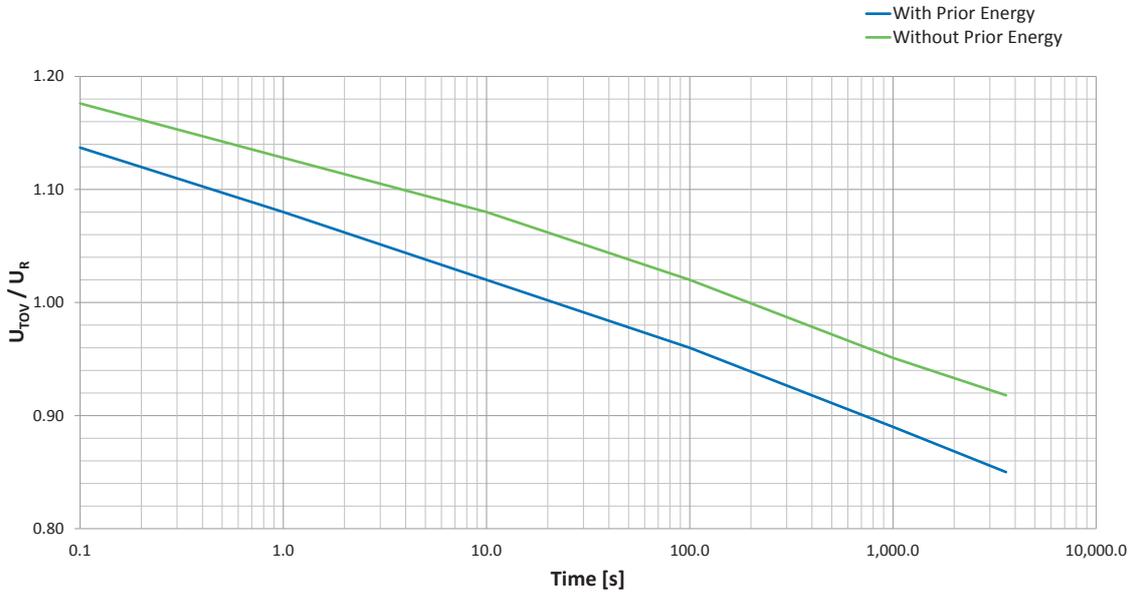
DOV STANDARD HOUSING PARAMETERS & RATED VOLTAGE COMPATIBILITY

Maximum Rating (U _r - kV)	No. of Sheds	Flashover Distance (mm)	Creepage Length (mm)	Arrester (body) Height (mm)	Larger Shed Ø (mm)	Smaller Shed Ø (mm)	Lightning Impulse 1.2/50ms (kV)	Power Frequency Withstand Voltage (wet) (kV)
Housing 'A' ≤ 12 kV	6	162	405	160	105	93	174	46
Housing 'B' ≤ 22 kV	11	234	697	229	105	93	185	72
Housing 'C' ≤ 24 kV	13	266	817	258	105	93	203	87
Housing 'D' ≤ 30 kV	15	304	945	298	105	93	230	98
Housing 'E' ≤ 36 kV	15	318	1128	298	120	103	243	103

DOV STANDARD ELECTRICAL DATA

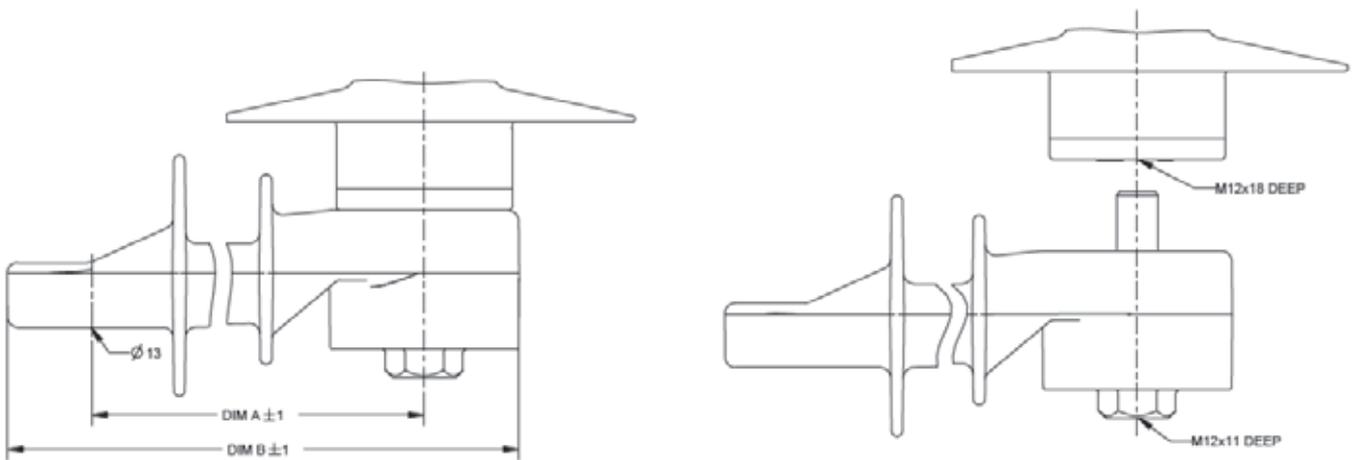
Product Description	Rated Voltage (U _r) kV	Continuous Operating Voltage (U _c) kV	Residual Voltage - kV				
			Lightning [8/20μs]		Switching [30/60μs]	Steep Front [1/2μs]	Extended Housing
			5kA	10kA	500A	10kA	
DOV-03A	3.5	2.8	12.6	13.7	10.4	15.1	B, C, D or E
DOV-04A	4.5	3.6	12.6	13.7	10.4	15.1	B, C, D or E
DOV-05A	5.0	4.0	16.8	18.3	13.9	20.1	B, C, D or E
DOV-06A	6.0	4.8	16.8	18.3	13.9	20.1	B, C, D or E
DOV-09A	9.0	7.2	25.2	27.4	20.8	30.1	B, C, D or E
DOV-10A	10.5	8.4	29.4	32.0	24.3	35.2	B, C, D or E
DOV-12A	12	9.6	33.7	36.6	27.8	40.3	B, C, D or E
DOV-13B	13.5	10.8	37.3	40.5	30.8	44.6	C, D or E
DOV-15B	15	12.0	41.4	45.0	34.2	49.5	C, D or E
DOV-16B	16.5	13.2	45.5	49.5	37.6	54.5	C, D or E
DOV-18B	18	14.4	49.7	54.0	41.0	59.4	C, D or E
DOV-19B	19.5	15.6	53.8	58.5	44.5	64.4	C, D or E
DOV-21B	21	16.8	58.0	63.0	47.9	69.3	C, D or E
DOV-22B	22.5	18.0	62.1	67.5	51.3	74.3	C, D or E
DOV-24C	24	19.2	66.2	72.0	54.7	79.2	D or E
DOV-27D	27	21.6	74.5	81.0	61.6	89.1	D or E
DOV-28D	28.5	22.8	78.7	85.5	65.0	94.1	D or E
DOV-30D	30	24.0	82.8	90.0	68.4	99.0	D or E
DOV-31E	31.5	25.2	86.9	94.5	71.8	104.0	-
DOV-33E	33	26.4	91.1	99.0	75.2	108.9	-
DOV-36E	36	28.8	99.4	108.0	82.1	118.8	-

DOV Medium Voltage Surge Arrester Temporary Overvoltage (TOV) curve with and without prior energy as per IEC60099-4, Ed. 3.0 surge arrester standard.



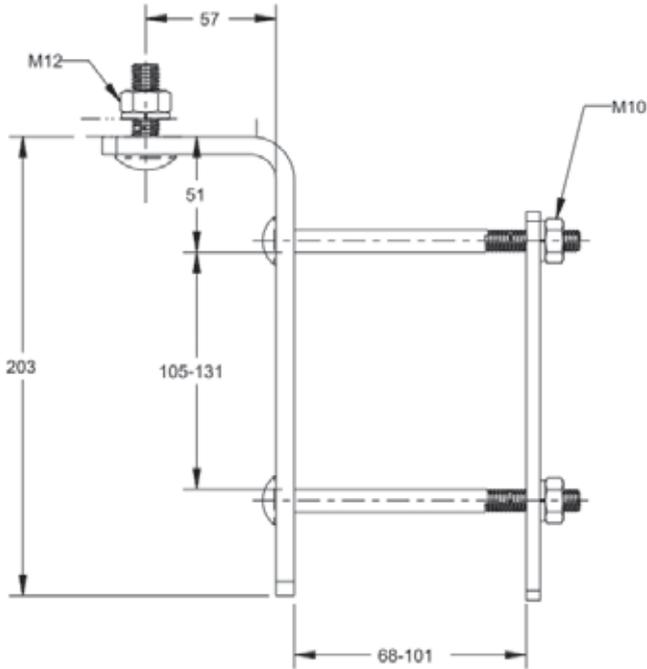
U_{TOV} = TOV withstand voltage; U_R = Surge arrester Rated voltage

Insulating Bracket & Disconnecter (2, 4 & 6 shed Bracket)

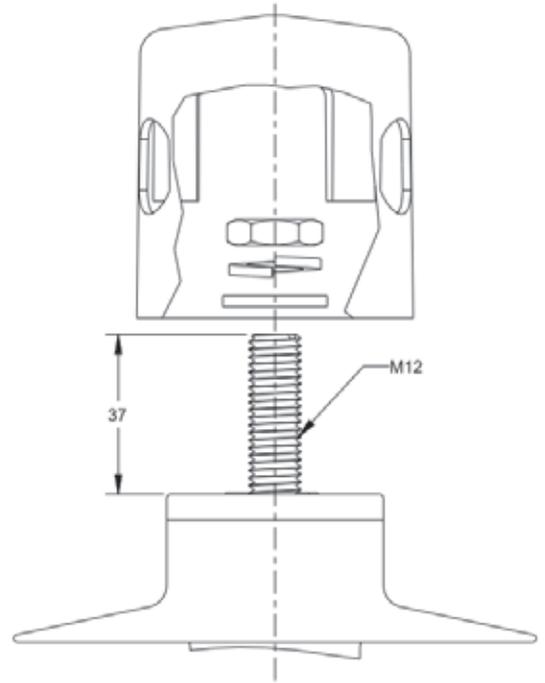


DESCRIPTION				
	DIM A (mm)	DIM B (mm)	WEIGHT (kg)	Ur (kV)
DOV-BKT-DIS-2	100	151	0.44	≤15
DOV-BKT-DIS-4	130	181	0.53	>15≤27
DOV-BKT-DIS-6	160	211	0.59	>27

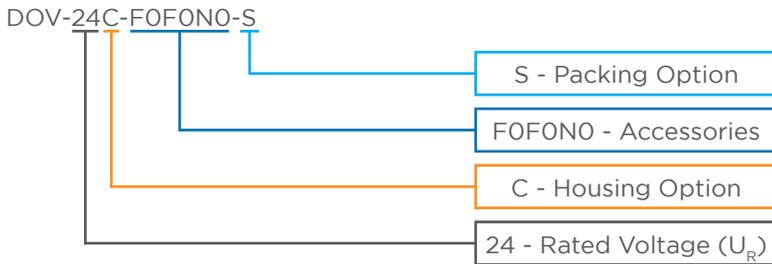
NEMA CrossArm Bracket



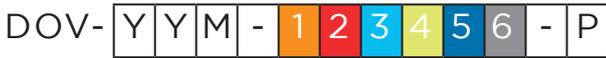
Bird Protection Cover



Typical product description



Product naming convention



Naming convention cross reference:

DOV = Series type: DOV. YY = see table on page 4 various rating (U_r) options

M = see table on page 4 various housing options

P = See next page for packaging options

1 Line lead accessories



B xxxxx

Birdcap with F accessory



E xxxxx

Birdcap with M accessory



F xxxxx

Exposed stud for lug connection



H xxxxx

M12 Cap screw & spring washer



M xxxxx

Clamp for conductors up to 12 mm Ø.



O xxxxx

No stud. No accessories



Q xxxxx

Clamp for conductors 8 mm to 16 mm Ø.



W xxxxx

Clamp for conductors up to 6.8 mm Ø.

2 Line lead options

x	0	xxxx	No Line Lead Wire
x	1	xxxx	0.5 m 16 mm ² Copper Line Lead & one M12 lug
x	2	xxxx	1 m 16 mm ² Copper Line Lead & one M12 lug
x	3	xxxx	1 m 16 mm ² Copper Line Lead & two M12 lugs

x	4	xxxx	0.5 m 35 mm ² Copper Line Lead & one M12 lug
x	5	xxxx	1 m 35 mm ² Copper Line Lead & one M12 lug
x	6	xxxx	1 m 50 mm ² Copper Line Lead & no lug

3 Earth lead accessories:



xx D xxx

Clamp for conductors up to 12 mm Ø.



xx E xxx

Disconnector + F accessory



xx F xxx

Exposed stud for lug connection



xx H xxx

M12 Cap screw & spring washer



xx K xxx

Clamp for conductors up to 6.8 mm Ø.



xx M xxx

Clamp for conductors up to 12 mm Ø.



xx O xxx

No stud. No accessories



xx W xxx

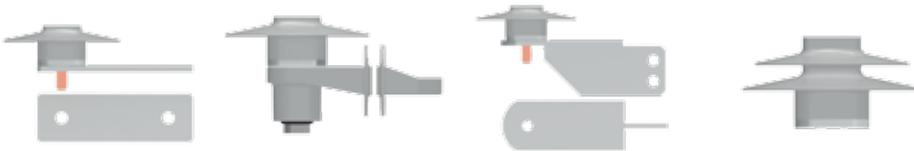
Clamp for conductors up to 6.8 mm Ø.

4 Earth lead options

xxx	0	xx	No Earth Lead Wire
xxx	1	xx	0.5 m 16 mm ² Copper Earth Lead & one M12 lug
xxx	2	xx	1 m 16 mm ² Copper Earth Lead & one M12 lug
xxx	3	xx	1 m 16 mm ² Copper Line Lead & two M12 lugs

xxx	4	xx	0.5 m 35 mm ² Copper Earth Lead & one M12 lug
xxx	5	xx	1 m 35 mm ² Copper Earth Lead & one M12 lug
xxx	6	xx	1 m 50 mm ² Copper Earth Lead & no lug

5 Mounting brackets



- xxxx **A** x
Straight 2 hole mounting bracket*
- xxxx **B** x
Insulating bracket*
- xxxx **C** x
DIN metal bracket. (stainless)*
- xxxx **N** x
No mounting accessories

*only available in -I and -D packaging options

6 Mounting bracket options



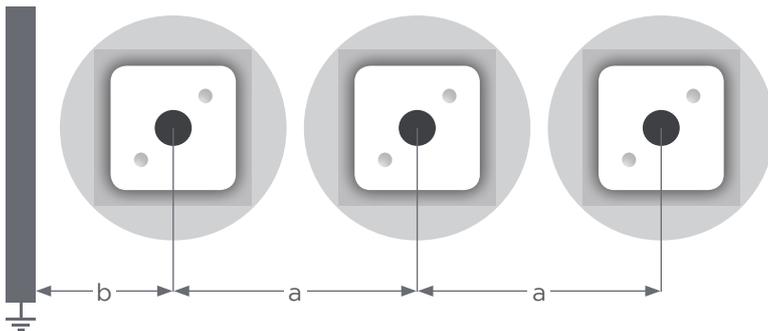
- xxxxx **0**
No option
- xxxxx **1**
NEMA Cross arm bracket

P Packaging

I	Individual Packaging	(1 arrester per box)
D	Dual Packaging	(2 arresters per box)
S	Standard Packaging	(3 arresters per box)

All Line and Earth terminations fasteners are M12 unless stated otherwise

Minimum clearances following IEC 60071-2 for altitudes up to 1000 m



Sample of DOV product marking



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TE-Energy - Innovative

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TE Connectivity Ltd. is a \$14 billion global technology and manufacturing leader creating a safer, sustainable, productive, and connected future. For more than 75 years, our connectivity and sensor solutions, proven in the harshest environments, have enabled advancements in transportation, industrial applications, medical technology, energy, data communications, and the home. With 80,000 employees, including more than 8,000 engineers, working alongside customers in approximately 140 countries, TE ensures that EVERY CONNECTION COUNTS. Learn more at www.te.com and on [LinkedIn](#), [Facebook](#), [WeChat](#) and [Twitter](#).

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