

Section 4: Medium Voltage Terminations - up to 42kV

COLD APPLIED

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Silicone Push On Termination with Integrated Stress Control for Single Core Polymeric Cables up to 36/42kV

MVTI / MVTO

Features

- Integrated geometrical stress cone
- Suitable for hexagonal/deep indent crimp and mechanical lugs according to IEC 61238
- Compact design
- Long creepage distance
- Easy to install
- Reduced waste for disposal
- Tested in accordance to CENELEC HD.629.1.S2:2006 and IEC 60502-4
- Manufactured according to ISO 9001 and ISO 14001

including good tracking resistance and high dielectric strength

- Hydrophobic (water repelling)
- Non-Flammable
- Self Extinguishing
- Retains performance over wide temperature range -55 to +180°C
- Highly elastic material with good resistance to permanent set
- No shelf-life issues
- All components have full traceability of raw materials



Benefits

- Outstanding weathering, UV and ozone Resistance
- Chemically resistant
- Resistant to fungi
- Excellent electrical properties

Application range

The product line is designed for polymer cables from 25 to 300 mm² for 12 kV and 24 kV, 35 to 400 mm² for 36 kV and 50 to 400mm² for 42 kV.



Technical Data

Technical Data	11kV	22kV	33/44kV
Cable insulation diameter (mm)	13.7 – 30.4	17.0 – 34.6	24.0 – 45.0
Cross section range (mm ²)	25 – 300	25 – 300	35/50 – 400
Max system voltage U _m (kV)	12	24	36/42
Basic impulse level (kV)	95	125	194/200*
Partial discharge at 2 U ₀ (pC)	<1	<1	<1
AC Voltage withstand, 5 min (kV)	28.5	57	81/94
DC Voltage withstand, 15min (kV)	38	76	108/120

The terminations meet the CENELEC HD 629.1.S2:2006 specification
 *170 kV BIL for 35 – 150 mm² Indoor termination MVTI-6121, 81 kV AC, 108 kV DC

11kV Single Core Push On Termination with Mechanical Connectors

Catalogue Reference Indoor	Catalogue Reference Outdoor	Voltage	Cross Section	Diameter over Insulation
		kV	(mm ²)	(mm)
MVTI-3121-ML-1-13	MVTO-3121-ML-1-13	11	25 - 95	13.7 - 20.8
MVTI-3121-ML-1-17	MVTO-3121-ML-1-17	11	25 - 95	13.7 - 20.8
MVTI-3131-ML-2-13	MVTO-3131-ML-2-13	11	95 - 150	18.6 - 30.4
MVTI-3131-ML-2-17	MVTO-3131-ML-2-17	11	95 - 150	18.6 - 30.4
MVTI-3132-ML-5-13	MVTO-3141-ML-5-13	11	150 - 300	23.5 - 34.6
MVTI-3132-ML-5-17	MVTO-3141-ML-5-17	11	150 - 300	23.5 - 34.6

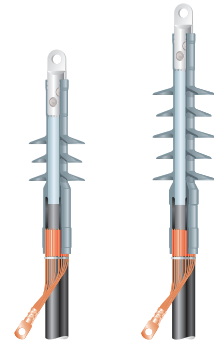
* the kits suits 300mm² solid Al conductor

**22kV Single Core Push On Termination with Mechanical Connectors**

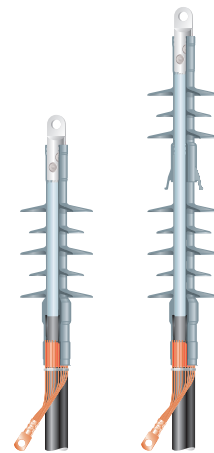
Catalogue Reference Indoor	Catalogue Reference Outdoor	Voltage	Cross Section	Diameter over Insulation
		kV	(mm ²)	(mm)
MVTI-5121-ML-1-13	MVTO-5121-ML-1-13	22	25 - 95	17.9 - 25.0
MVTI-5121-ML-1-17	MVTO-5121-ML-1-17	22	25 - 95	17.9 - 25.0
MVTI-5131-ML-2-13	MVTO-5131-ML-2-13	22	95 - 150	23.5 - 34.6
MVTI-5131-ML-2-17	MVTO-5131-ML-2-17	22	95 - 150	23.5 - 34.6
MVTI-5131-ML-5-13	MVTO-5131-ML-5-13	22	150 - 300	24.3 - 34.6
MVTI-5131-ML-5-17	MVTO-5131-ML-5-17	22	150 - 300	24.3 - 34.6

* the kits suits 300mm² solid Al conductor

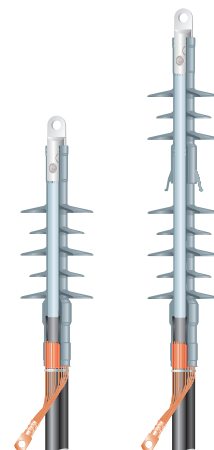
** the kit suit 300mm² round stranded conductor

**33kV Single Core Push On Termination with Mechanical Connectors**

Catalogue Reference Indoor	Catalogue Reference Outdoor	Voltage	Cross Section	Diameter over Insulation
		kV	(mm ²)	(mm)
MVTI-6121-ML-1-13	-	33	35 - 95	24 - 33.5
MVTI-6121-ML-1-17	-	33	35 - 95	24 - 33.5
MVTI-6131-ML-2-13	MVTO-6131-ML-2-13	33	95 - 150	27.8 - 33.5
MVTI-6131-ML-2-17	MVTO-6131-ML-2-17	33	95 - 150	27.8 - 33.5
MVTI-6141-ML-5-13	MVTO-6141-ML-5-13	33	150 - 300	29.3 - 39.6
MVTI-6141-ML-5-17	MVTO-6141-ML-5-17	33	150 - 300	29.3 - 39.6
MVTI-6141-ML-6-13	MVTO-6141-ML-6-13	33	185 - 400	32.4 - 42.8
MVTI-6141-ML-6-17	MVTO-6141-ML-6-17	33	185 - 400	32.4 - 42.8

**44kV Single Core Push On Termination with Mechanical Connectors**

Catalogue Reference Indoor	Catalogue Reference Outdoor	Voltage	Cross Section	Diameter over Insulation
		kV	(mm ²)	(mm)
MVTI-7131-ML-2-13	MVTO-7131-ML-2-13	42	50 - 150	27 - 36.5
MVTI-7131-ML-2-17	MVTO-7131-ML-2-17	42	50 - 150	27 - 36.5
MVTI-7131-ML-4-13	MVTO-7131-ML-4-13	42	95 - 240	29.9 - 41.0
MVTI-7131-ML-4-17	MVTO-7131-ML-4-17	42	95 - 240	29.9 - 41.0
MVTI-7141-ML-5-13	MVTO-7141-ML-5-13	42	120 - 300	30.6 - 43.4
MVTI-7141-ML-5-17	MVTO-7141-ML-5-17	42	120 - 300	30.6 - 43.4
MVTI-7141-ML-6-13	MVTO-7141-ML-6-13	42	185 - 400	33.8 - 45
MVTI-7141-ML-6-17	MVTO-7141-ML-6-17	42	185 - 400	33.8 - 45



11kV Dimensions as Delivered

Catalogue Reference	Voltage	Height Housing	Creepage Distance	Flashover Distance	Diameter over Sheds	Installed Length L_1 *
	kV	(mm)	(mm)	(mm)	(mm)	(mm)
MVTI-3121	11	232	253	235	39	225
MVTI-3131	11	232	253	235	43	245
MVTI-3132	11	276	412	284	80	290
MVTO-3121	11	276	379	281	61	270
MVTO- 3131	11	276	412	284	76	290

22kV Dimensions as Delivered

Catalogue Reference	Voltage	Height Housing	Creepage Distance	Flashover Distance	Diameter over Sheds	Installed Length L_1 *
	kV	(mm)	(mm)	(mm)	(mm)	(mm)
MVTI-5121	22	276	412	284	76	270
MVTI-5131	22	276	412	284	80	290
MVTO-5121	22	355	675	368	97	350
MVTO-5131	22	355	676	369	101	370

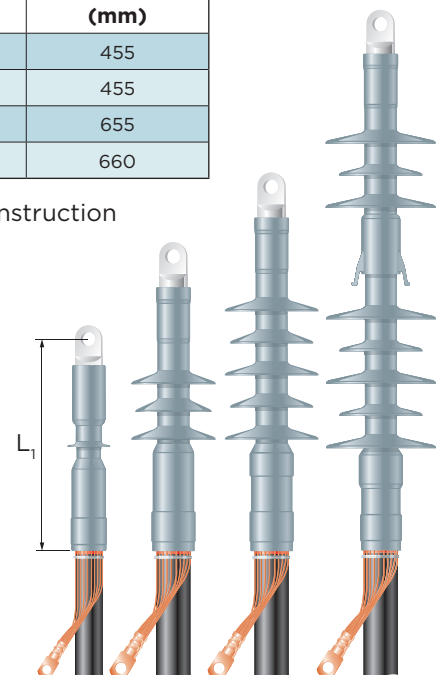
33kV Dimensions as Delivered

Catalogue Reference	Voltage	Height Housing	Creepage Distance	Flashover Distance	Diameter over Sheds	Installed Length L_1 *
	kV	(mm)	(mm)	(mm)	(mm)	(mm)
MVTI-6121	33	355	676	369	101	370
MVTI-6131	33	420	878	482	140	455
MVTI-6141	33	420	878	482	140	455
MVTO-6131	33	645	1360	730	140	655
MVTO-6141	33	645	1360	730	140	660

44kV Dimensions as Delivered

Catalogue Reference	Voltage	Height Housing	Creepage Distance	Flashover Distance	Diameter over Sheds	Installed Length L_1 *
	kV	(mm)	(mm)	(mm)	(mm)	(mm)
MVTI-7131	42	420	878	482	140	455
MVTI-7141	42	420	878	482	140	455
MVTO-7131	42	645	1360	730	140	655
MVTO-7141	42	645	1360	730	140	660

* Terminations with mechanical lug type BLMT, and depending on cable construction



Cold Applied Trifurcation System for 3 Core Polymeric MV Cable and TFTI(O) up to 36kV

TRFK

Features

- Suitable for three core armoured and unarmoured cables with copper tape or copper shield wires
- Adjustable tail length
- Tested in accordance to IEC 60502-4
- Easy to install

Benefits

- Excellent UV and Ozone Resistance
- Hydrophobic
- Non-Flammable
- Self Extinguishing

Trifurcation system

The breakout and the core protection sleeves are made of high quality silicone rubber that has excellent mechanical, hydrophobic, properties.

The system is designed for indoor and outdoor use in all climate conditions. Electrodes that are picking up the leakage current protect the trifurcation system from electrical activity on its surface.

The components combined to provide the important functions required for all medium voltage products:

- Protection against sharp edges over the armour and earthing leads
- Sealing function
- Installability

Insulation material

The material used has undergone thoroughly testing in the development stage, yielding a silicone rubber with exceptional weathering properties. The formulation is based on proven silicon compounds, exhibiting excellent stability and long-term performance, under severe environmental conditions. It delivers outstanding, mechanical strength, elasticity weatherability properties.

Application range

The components will suit three core armoured (DSTA, AWA, SWA) and unarmoured cables from 25 to 400 mm². This coverage is achieved with only two sizes of breakouts and core protection tubes for the voltage classes 7.2kV up to 36kV.

Installation

Each kit contains an easy-to-follow installation instruction with excellent visuals of the installation steps. Installation is both fast and simple.

Test reports

The products are tested at IEH, in Karlsruhe, Germany in accordance with IEC 60502-4.

Quality

All components have full traceability of raw materials and manufacture according to ISO 9001 and ISO 14001.



Dimensions as Delivered

Catalogue Reference	Diameter over Cable Jacket		Diameter over Copper Tape / Core Screen	
	min	max	min	max
	(mm)	(mm)	(mm)	(mm)
TRFK-S-H1	22	50 - 150	32 - 89	280
TRFK-L-H3	22	185 - 300	70 - 114	280

Core Protection Sleeve

Catalogue Reference	Tube Length Fully Recovered	Dia. over Copper Tape / Core Screen	
		min	max
	(mm)	(mm)	(mm)
CNTT-38/11-200-2	200	15	32
CNTT-38/11-400-2	400	15	32
CNTT-45/25-200-2	200	30	39
CNTT-45/25-400-2	400	30	39

Application Range

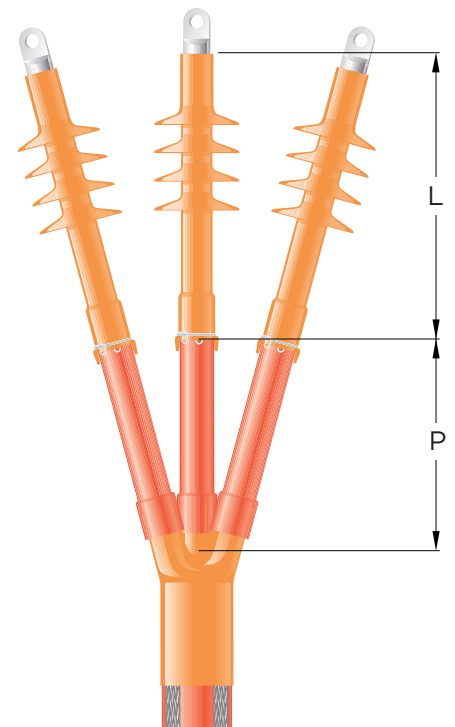
Catalogue Reference	Range Cable Entry		Finger		Tail Length	Voltage Class		
	min	max	min	max		11kV	22kV	33kV
	(mm)	(mm)	(mm)	(mm)		(mm ²)	(mm ²)	(mm ²)
TRFK-S-H1	32	89	15	32	400	25 - 185	50 - 150	50
TRFK-S-H2	32	89	15	32	600	25 - 185	50 - 150	50
TRFK-S-H3	32	89	15	32	800	25 - 185	50 - 150	50
TRFK-L-H1	70	114	30	39	400	150 - 400	185 - 300	70 - 120
TRFK-L-H2	70	114	30	39	600	150 - 400	185 - 300	70 - 120
TRFK-L-H3	70	114	30	39	800	150 - 400	185 - 300	70 - 120

11kV Trifurcation Kit

Catalogue Reference	Voltage Class	Tail Length	Indoor	Outdoor	Cable Cross Section
		P	L	L	
		(mm)	(mm)	(mm)	
TRFK-S-H1	11	400	~ 270	~ 280	25 - 185
TRFK-S-H2	11	600	~ 270	~ 280	25 - 185
TRFK-S-H3	11	800	~ 270	~ 280	25 - 185
TRFK-L-H1	11	400	~ 270	~ 280	150 - 400
TRFK-L-H2	11	600	~ 270	~ 280	150 - 400
TRFK-L-H3	11	800	~ 270	~ 280	150 - 400

22kV Trifurcation Kit

Catalogue Reference	Voltage Class	Tail Length	Indoor	Outdoor	Cable Cross Section
		P	L	L	
		(mm)	(mm)	(mm)	
TRFK-S-H1	22	400	~ 280	~ 390	50 - 150
TRFK-S-H2	22	600	~ 280	~ 390	50 - 150
TRFK-S-H3	22	800	~ 280	~ 390	50 - 150
TRFK-L-H1	22	400	~ 280	~ 390	185 - 300
TRFK-L-H2	22	600	~ 280	~ 390	185 - 300
TRFK-L-H3	22	800	~ 280	~ 390	185 - 300

**33kV Trifurcation Kit**

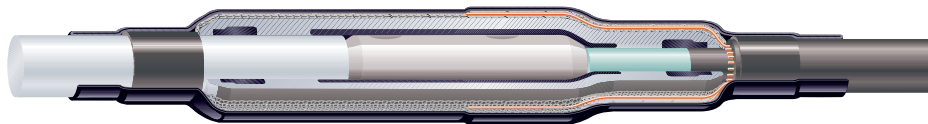
Catalogue Reference	Voltage Class	Tail Length	Indoor	Outdoor	Cable Cross Section
		P	L	L	
		(mm)	(mm)	(mm)	
TRFK-S-H1	33	400	~ 390	~ 640	50
TRFK-S-H2	33	600	~ 390	~ 640	50
TRFK-S-H3	33	800	~ 390	~ 640	50
TRFK-L-H1	33	400	~ 390	~ 640	70 - 120
TRFK-L-H2	33	600	~ 390	~ 640	70 - 120
TRFK-L-H3	33	800	~ 390	~ 640	70 - 120

MV Cold Shrinkable End Seal for Polymeric Insulated Cables up to 42 kV

CSER

Features

- Pre-expanded, single piece silicone rubber joint body with high mechanical expansion properties 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 cage)
- Pre-expansion on a well-known and easily to install holdout system
- Easy-to-install end seal with short installation time
- Dual-wall Rayvolve sleeve with specially formulated EPDM elastomer
- High performance sealant provides a reliable moisture seal and corrosion protection
- Polypropylene rod with high stiffness and breaking strength
- Exceeds CENELEC HD 629.1, requirements which include IEC, BS, VDE and other international specifications



CSER cold shrinkable end seal with mechanical connector

Catalogue Reference	Voltage	Application range*	Diameter over core insulation	Diameter over outer sheath	Diameter over conductor**
	kV	(mm ²)	(mm)	(mm)	(mm)
CSER-12B/1XU	12	95 - 240	18.6 - 28.4	26.0 - 39.0	11.0 - 19.2
CSER-12C/1XU	12	185 - 300	23.2 - 32.6	30.0 - 44.0	15.5 - 23.1
CSER-24B/1XU	24	35 - 150	18.9 - 28.5	26.0 - 39.0	6.8 - 15.0
CSER-24C/1XU-M1	24	95 - 240	23.5 - 32.6	30.0 - 44.0	11.0 - 19.2
CSER-24C/1XU-M2	24	120 - 300	24.3 - 34.6	32.0 - 46.0	12.7 - 23.1
CSER-36D/1XU	36 (42)	95 - 240	27.8 - 37.6	35.0 - 48.0	11.0 - 19.2

* 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 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 BSM connectors. The values given in the selection table refer to aluminium stranded circular conductors and may change for other materials and shapes.

Cold Pour Insulating Compound for Medium Voltage Applications

GUROFLEX MV

GUROFLEX MV is a two-component cold-pour insulating compound. After mixing and pouring it cures to a soft rubbery solid that will not melt or flow. It has excellent electrical characteristics and is suitable for a wide range of bulk insulation applications in medium voltage electrical power equipment.

Because GUROFLEX MV is a cold pour material there are none of the serious hazards associated with the heating and pouring of conventional bitumen or oil-based insulating compounds.

One of the outstanding advantages of its chemical make-up is that GUROFLEX MV is non-hazardous and does not contribute to environmental problems. The liquid components and mixed compound are not subject to any safety classification and no special measures are required for transportation, handling or disposal of waste.

The principal application for GUROFLEX MV is as a filling compound for cable termination boxes and bus bar enclosures associated with transformers, switchgear and motors. It is the ideal solution for non-air-clearance cable boxes where the phase metalwork cannot be satisfactorily insulated with heat shrink GUROFLEX MV Cold Pour Insulating Compound for Medium Voltage Applications components, tapes or other applied insulation. GUROFLEX MV will also solve problems with air clearance enclosures caused by hostile environmental conditions (persistent humidity, chemical pollution etc.).

GUROFLEX MV has been thoroughly tested to the requirements of CENELEC cable accessory performance standard HD 629.1 (including the requirements of IEC

60502-4) for rated voltages up to 12 kV. Additional testing has included impulse voltage withstand at 125 kV. Performance qualification for applications at rated voltage 36 kV is in progress.

GUROFLEX MV is compatible with all commonly used terminations for MV polymeric and paper cables. It is also unaffected by the presence of oil based residues of traditional hot-pour filling compounds. The curing reaction is not affected by the presence of water and the cured compound has very low moisture absorption.

GUROFLEX MV is supplied as a kit comprising secure cans, a mixing spatula and a mixing/pouring instruction. Recommended shelf-life of the components is 2 years. Mixing takes about 3 minutes and can be aided by the use of a power driven stirrer. No heat is involved, and the curing compound does not generate heat. No 'topping-up' is needed and the equipment can be energised immediately after filling. Once the compound has cured to a cross-linked solid there is no possibility of leakage from gaskets or cable glands.

The curing reaction of GUROFLEX MV is relatively insensitive to temperature, making it feasible to mix and pour the compound in very cold or hot ambient conditions. The compound will cease to flow about one hour after mixing.

The cured compound can be cut out of the enclosure if connections have to be changed at a later date. No heat is required.



Further information

Please ask your local TE representative or distributor for:

- Performance testing reports
- Technical data sheet
- Installation Instruction
- Questions and Answers
- Safety data sheets

Product Details

Catalogue Reference	Pack Type
GUROFLEX-MV-C100	1L Tin
GUROFLEX-MV-C430B	4.3L box
GUROFLEX-MV-C530	5.3L Tin
GUROFLEX-MV-C1000	10L Tin

Raychem Plug In Termination System up to 42kV for Gas Insulated Switchgear

RPIT

Features

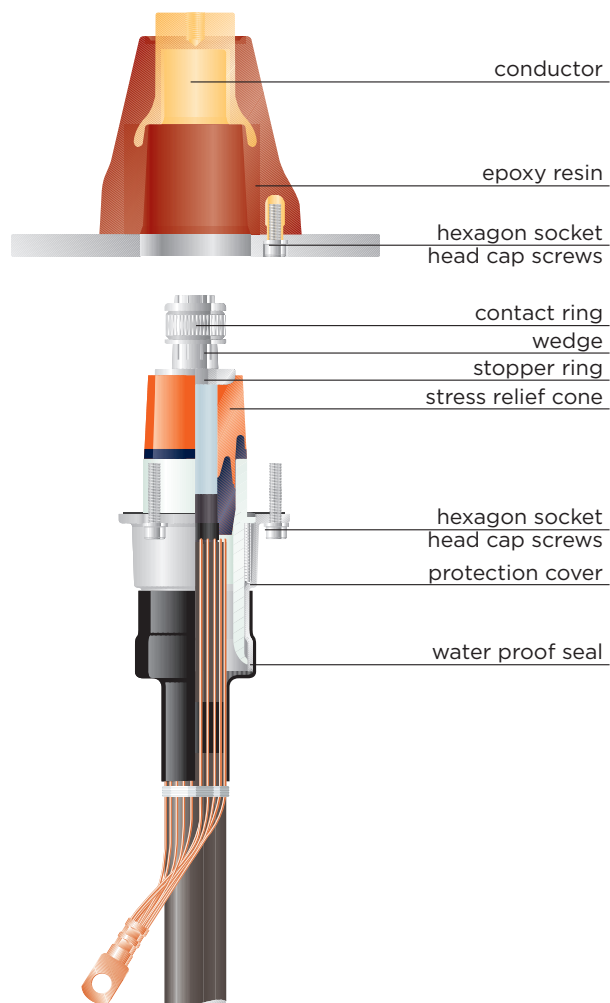
- Separable inline connection for high current, gas insulated switchgears up to 42 kV
- Termination mates interfaces in accordance to EN50180 and EN50181 for inner cone connections
- The contact parts are designed for stranded circular aluminium or copper conductors in accordance to IEC-60228

Technical Information

The increasing popularity of gas insulated switchgear called for the development of appropriate connection systems to standardised bushings in accordance to EN50181. TE Connectivity has developed two systems, one is related to the outer cone and the other one to the inner cone system. Later is used in power switch gear and power transformers.

TE Connectivity has several decades of experience in the field of hermetically insulated termination systems for medium voltage applications. Thus the bushings designed for gas insulated switchgear meet the standard EN50181 for connection type size 2 (800 A) and size 3 (1250 A) at operating voltage 12 kV up to 36 (42) kV.

The basic construction of the mating termination follows well known design principles and incorporates a lamellate contact system which ensures reliable current transmission via a cone clamp to the conductor. The interface between silicone body of the termination and the bushing is kept permanently sealed via the pressure of a spring between the insulator and the flange of the termination cover. The termination cover is sealed at the flange area with well known sealing methods and at the cable side with heat shrinkable tubing against ingress of moisture.



Cable Terminations

Catalogue Reference	Voltage	Nominal Current	Size	Cross Section	Diameter Over Conductor	Diameter Over Insulation
	kV	(A)		(mm)	(mm)	(mm)
RPIT-321x	12	800	2	95 - 300	11.0 - 21.6	19.3 - 30.4
RPIT-521x	24	800	2	50 - 300	7.7 - 21.6	20.2 - 34.6
RPIT-621x	36	630	2	50 - 185	7.7 - 16.8	25.2 - 35.1
RPIT-331x	12	1250	3	240 - 630	17.8 - 32.5	26.4 - 29.6
RPIT-531x	24	1250	3	150 - 630	13.9 - 32.5	26.5 - 45.6
RPIT-631x	36 / 42	1250	3	95 - 630	11.0 - 32.5	28.5 - 49.2

Note: Product is available with and without test point

Bushing Parts

Catalogue Reference	Size	Modification
RPIS-2-IS	Size 2 (800A)	without test point
RPIS-2-IS-VD	Size 2 (800A)	with test point
RPIS-3-IS	Size 3 (1250A)	without test point
RPIS-3-IS-VD	Size 3 (1250A)	with test point



Insulating Cap

Catalogue Reference	Size
RPIC-2	Size 2
RPIC-3	Size 3



Heat Shrinkable Medium Voltage Terminations for Indoor and Outdoor Applications for Polymeric Cables up to 42kV

IXSU / OXSU

Raychem heat shrinkable medium voltage terminations IXSU-F/OXSU-F are widely acknowledged in the industry and feature a unique integrated ZnO-based stress control system, flexibility of usage for crimp or mechanical lugs, unlimited shelf life and range-taking kits.

Designed for both indoor and outdoor applications

The components combine to provide the important functions required for all medium voltage products: electrical performance, stress control and moisture sealing. The proprietary materials used in our cable accessories are designed for optimised manufacturing, and to provide exceptional product performance in the harshest of service environments. Variations and differences can exist amongst base polymer grades and additives. Compounds consist of polymers, additives and fillers that highly influence the properties of the base material. The formulation, the compounding procedures, material processing, product design and assembly all contribute to the overall product performance.

Polymeric insulation

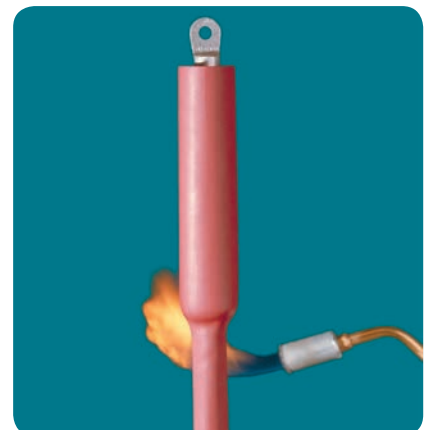
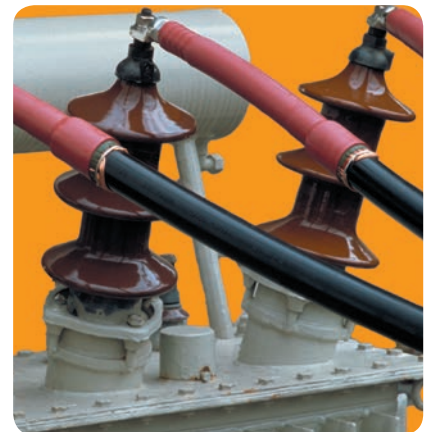
The materials used in the Raychem termination generation of products have undergone many years of development, yielding a polymeric material with outstanding electrical and weathering properties. The formulation is based on polymer compounds, and has proven to be stable and functional over several decades under severe environmental conditions. The formulation offers exceptional tracking and erosion resistance, mechanical strength, weatherability and dielectric properties.

One piece termination

The Raychem stress control material IXSU-F/OXSU-F is a recently formulated electrical stress control compound, that is based on extensive experience with Raychem ceramic semiconductor technology (ZnO). The ZnO-based stress control system is integrated in heat shrinkable insulating tubing. This stress control system fills any irregularities, bonds to the insulation and provides superb electrical performance.

Product range

The product line is designed for polymer cables from 10 to 1200 mm² and up to 42 kV. This coverage is achieved with a minimum number of design variants. The products are fully tested in accordance with IEEE-48, IEC 60502-4 and the CENELEC HD629.1S1 specification. For cable box applications, the Raychem termination IXSU-F can be combined with either Raychem elastomeric bushing boot (RCAB) or Raychem insulated connection system (RICS) to fit most types of switchgear bushing currently available. For pole top applications, we can supply Raychem termination OXSU-F along with polymeric support insulators (EPBI), Polygarde metal oxide surge arresters (HDA), and most fittings required for installation. All raw materials of Raychem IXSU-F/OXSU-F are fully traceable.



11kV Termination for Crimp Lug**Screened Single Core Plastic and Rubber Cable**

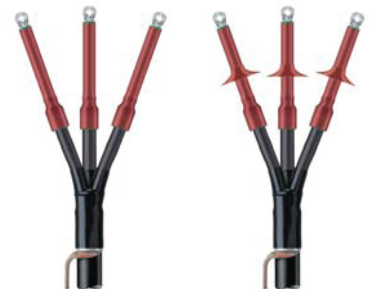
Catalogue Reference Indoor	Catalogue Reference Outdoor	Cross Section	Diameter over Insulation
		(mm ²)	(mm)
IXSU-F3111	OXSU-F3111	10 – 35	16.3
IXSU-F3121	OXSU-F3121	25 – 95	13.7 – 20.8
IXSU-F3131	OXSU-F3131	95 – 240	18.6 – 28.4
IXSU-F3141	OXSU-F3141	240 – 500	25.7 – 36.2
IXSU-F3151	OXSU-F3151	500 – 800	34.0 – 42.2
IXSU-F3161	OXSU-F3161	800 – 1200	39.5 – 50.0

**11kV Termination with Mechanical Lug****Screened Single Core Plastic and Rubber Cable**

Catalogue Reference Indoor	Catalogue Reference Outdoor	Cross Section	Diameter over Insulation
		(mm ²)	(mm)
IXSU-F3111-ML-1-13	OXSU-F3111-ML-1-13	25 – 35	13.7 – 16.3
IXSU-F3111-ML-1-17	OXSU-F3111-ML-1-17	25 – 35	13.7 – 16.3
IXSU-F3121-ML-1-13	OXSU-F3121-ML-1-13	25 – 95	13.7 – 20.8
IXSU-F3121-ML-1-17	OXSU-F3121-ML-1-17	25 – 95	13.7 – 20.8
IXSU-F3131-ML-4-13	OXSU-F3131-ML-4-13	95 – 240	18.6 – 28.4
IXSU-F3131-ML-4-17	OXSU-F3131-ML-4-17	95 – 240	18.6 – 28.4
IXSU-F3131-ML-5-13	OXSU-F3131-ML-5-13	120 – 300	20.1 – 30.4
IXSU-F3131-ML-5-17	OXSU-F3131-ML-5-17	120 – 300	20.1 – 30.4
IXSU-F3141-ML-6-13	OXSU-F3141-ML-6-13	185 – 400	23.2 – 33.6
IXSU-F3141-ML-6-17	OXSU-F3141-ML-6-17	185 – 400	23.2 – 33.6
IXSU-F3151-ML-7-17	OXSU-F3151-ML-7-17	500 – 630	34.4 – 40.0
IXSU-F3151-ML-7-21	OXSU-F3151-ML-7-21	500 – 630	34.4 – 40.0

11kV Termination for Crimp Lug**Screened 3 Core Plastic and Rubber Cable without Armour**

Catalogue Reference Indoor	Catalogue Reference Outdoor	Cross Section	Tail Length
		(mm ²)	(mm)
IXSU-F3301	OXSU-F3301	10 – 16	450
IXSU-F3304	OXSU-F3304	10 – 16	1200
IXSU-F3311	OXSU-F3311	16 – 35	450
IXSU-F3314	OXSU-F3314	16 – 35	1200
IXSU-F3321	OXSU-F3321	25 – 70	450
IXSU-F3324	OXSU-F3324	25 – 70	1200
IXSU-F3331	OXSU-F3331	95 – 240	450
IXSU-F3334	OXSU-F3334	95 – 240	1200
IXSU-F3341	OXSU-F3341	240 – 500	450
IXSU-F3344	OXSU-F3344	240 – 500	1200

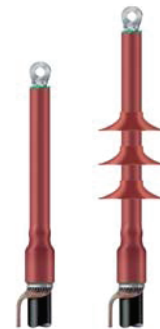


11kV Termination with Mechanical Lug**Screened 3 Core Plastic and Rubber Cable without Armour**

Catalogue Reference Indoor	Catalogue Reference Outdoor	Cross Section	Tail Length
		(mm ²)	(mm)
IXSU-F3311-ML-1-13	OXSU-F3311-ML-1-13	12 - 35	450
IXSU-F3311-ML-1-17	OXSU-F3311-ML-1-17	12 - 35	450
IXSU-F3314-ML-1-13	OXSU-F3314-ML-1-13	12 - 35	1200
IXSU-F3314-ML-1-17	OXSU-F3314-ML-1-17	12 - 35	1200
IXSU-F3321-ML-1-13	OXSU-F3321-ML-1-13	25 - 70	450
IXSU-F3321-ML-1-17	OXSU-F3321-ML-1-17	25 - 70	450
IXSU-F3324-ML-1-13	OXSU-F3324-ML-1-13	25 - 70	1200
IXSU-F3324-ML-1-17	OXSU-F3324-ML-1-17	25 - 70	1200
IXSU-F3331-ML-4-13	OXSU-F3331-ML-4-13	95 - 240	450
IXSU-F3331-ML-4-17	OXSU-F3331-ML-4-17	95 - 240	450
IXSU-F3334-ML-4-13	OXSU-F3334-ML-4-13	95 - 240	1200
IXSU-F3334-ML-4-17	OXSU-F3334-ML-4-17	95 - 240	1200
IXSU-F3341-ML-6-13	OXSU-F3341-ML-6-13	300 - 400	450
IXSU-F3341-ML-6-17	OXSU-F3341-ML-6-17	300 - 400	450
IXSU-F3341-ML-6-21	OXSU-F3341-ML-6-21	300 - 400	450
IXSU-F3344-ML-6-13	OXSU-F3344-ML-6-13	300 - 400	1200
IXSU-F3344-ML-6-17	OXSU-F3344-ML-6-17	300 - 400	1200
IXSU-F3344-ML-6-21	OXSU-F3344-ML-6-21	300 - 400	1200

22kV Termination for Crimp Lug**Screened Single Core Plastic and Rubber Cable**

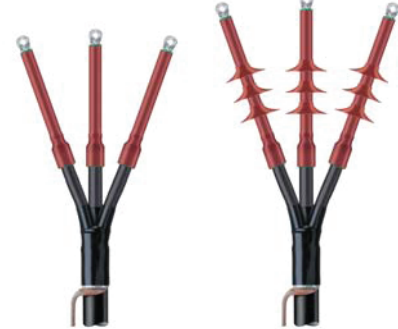
Catalogue Reference Indoor	Catalogue Reference Outdoor	Cross Section	Diameter over Insulation
		(mm ²)	(mm)
IXSU-F5121	OXSU-F5121	25 - 70	17.9 - 23.4
IXSU-F5131	OXSU-F5131	70 - 240	21.9 - 32.6
IXSU-F5141	OXSU-F5141	185 - 400	27.4 - 37.8
IXSU-F5151	OXSU-F5151	400 - 800	35.1 - 46.9
IXSU-F5161	OXSU-F5161	1000 - 1200	49.4 - 56.0

**22kV Termination with Mechanical Lug****Screened Single Core Plastic and Rubber Cable**

Catalogue Reference Indoor	Catalogue Reference Outdoor	Cross Section	Diameter over Insulation
		(mm ²)	(mm)
IXSU-F5121-ML-1-13	OXSU-F5121-ML-1-13	25 - 95	17.9 - 25.0
IXSU-F5121-ML-1-17	OXSU-F5121-ML-1-17	25 - 95	17.9 - 25.0
IXSU-F5131-ML-4-13	OXSU-F5131-ML-4-13	95 - 240	23.0 - 32.6
IXSU-F5131-ML-4-17	OXSU-F5131-ML-4-17	95 - 240	23.0 - 32.6
IXSU-F5131-ML-5-13	OXSU-F5131-ML-5-13	120 - 300	24.3 - 34.6
IXSU-F5131-ML-5-17	OXSU-F5131-ML-5-17	120 - 300	24.3 - 34.6
IXSU-F5141-ML-6-13	OXSU-F5141-ML-6-13	120 - 300	24.3 - 34.6
IXSU-F5141-ML-6-17	OXSU-F5141-ML-6-17	185 - 400	27.4 - 37.8
IXSU-F5141-ML-6-21	OXSU-F5141-ML-6-21	185 - 400	27.4 - 37.8
IXSU-F5151-ML-7-17	OXSU-F5151-ML-7-17	500 - 630	37.9 - 44.0
IXSU-F5151-ML-7-21	OXSU-F5151-ML-7-21	500 - 630	37.9 - 44.0

22kV Termination for Crimp Lug**Screened 3 Core Plastic and Rubber Cable without Armour**

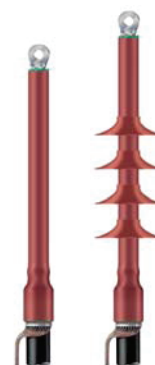
Catalogue Reference Indoor	Catalogue Reference Outdoor	Cross Section	Tail Length
		(mm ²)	(mm)
IXSU-F5311	OXSU-F5311	10 - 25	450
IXSU-F5314	OXSU-F5314	10 - 25	1200
IXSU-F5321	OXSU-F5321	25 - 50	450
IXSU-F5324	OXSU-F5324	25 - 50	1200
IXSU-F5331	OXSU-F5331	70 - 185	450
IXSU-F5334	OXSU-F5334	70 - 185	1200
IXSU-F5341	OXSU-F5341	185 - 400	450
IXSU-F5344	OXSU-F5344	185 - 400	1200

**22kV Termination with Mechanical Lug****Screened 3 Core Plastic and Rubber Cable without Armour**

Catalogue Reference Indoor	Catalogue Reference Outdoor	Cross Section	Tail Length
		(mm ²)	(mm)
IXSU-F5321-ML-1-13	OXSU-F5321-ML-1-13	25 - 50	450
IXSU-F5321-ML-1-17	OXSU-F5321-ML-1-17	25 - 50	450
IXSU-F5324-ML-1-13	OXSU-F5324-ML-1-13	25 - 50	1200
IXSU-F5324-ML-1-17	OXSU-F5324-ML-1-17	25 - 50	1200
IXSU-F5331-ML-4-13	OXSU-F5331-ML-4-13	95 - 185	450
IXSU-F5331-ML-4-17	OXSU-F5331-ML-4-17	95 - 185	450
IXSU-F5334-ML-4-13	OXSU-F5334-ML-4-13	95 - 185	1200
IXSU-F5334-ML-4-17	OXSU-F5334-ML-4-17	95 - 185	1200
IXSU-F5341-ML-6-13	OXSU-F5341-ML-6-13	185 - 400	450
IXSU-F5341-ML-6-17	OXSU-F5341-ML-6-17	185 - 400	450
IXSU-F5341-ML-6-21	OXSU-F5341-ML-6-21	185 - 400	450
IXSU-F5344-ML-6-13	OXSU-F5344-ML-6-13	185 - 400	1200
IXSU-F5344-ML-6-17	OXSU-F5344-ML-6-17	185 - 400	1200
IXSU-F5344-ML-6-21	OXSU-F5344-ML-6-21	185 - 400	1200

33kV Termination for Crimp Lug**Screened Single Core Plastic and Rubber Cable**

Catalogue Reference Indoor	Catalogue Reference Outdoor	Cross Section	Diameter over Insulation
		(mm ²)	(mm)
IXSU-F6131	OXSU-F6131	50 - 120	24.5 - 32.0
IXSU-F6141	OXSU-F6141	150 - 400	30.8 - 42.8
IXSU-F6151	OXSU-F6151	500 - 800	42.6 - 53.4

**33kV Termination with Mechanical Lug****Screened Single Core Plastic and Rubber Cable**

Catalogue Reference Indoor	Catalogue Reference Outdoor	Cross Section	Diameter over Insulation
		(mm ²)	(mm)
IXSU-F6131-ML-2-13	OXSU-F6131-ML-2-13	35 - 120	24.0 - 32.0
IXSU-F6141-ML-5-13	OXSU-F6141-ML-5-13	150 - 300	30.8 - 39.6
IXSU-F6141-ML-5-17	OXSU-F6141-ML-5-17	150 - 300	30.8 - 39.6
IXSU-F6141-ML-6-13	OXSU-F6141-ML-6-13	185 - 400	32.4 - 42.8
IXSU-F6141-ML-6-17	OXSU-F6141-ML-6-17	185 - 400	32.4 - 42.8
IXSU-F6141-ML-6-21	OXSU-F6141-ML-6-21	185 - 400	32.4 - 42.8
IXSU-F6151-ML-7-17	OXSU-F6151-ML-7-17	500 - 630	42.6 - 49.2
IXSU-F6151-ML-7-21	OXSU-F6151-ML-7-21	500 - 630	42.6 - 49.2

33kV Termination for Crimp Lug**Screened 3 Core Plastic and Rubber Cable without Armour**

Catalogue Reference Indoor	Catalogue Reference Outdoor	Cross Section	Tail Length
		(mm ²)	(mm)
IXSU-F6332	OXSU-F6332	50 - 120	650
IXSU-F6334	OXSU-F6334	50 - 120	1200
IXSU-F6342	OXSU-F6342	150 - 300	650
IXSU-F6344	OXSU-F6344	150 - 300	1200
IXSU-F6352	OXSU-F6352	400 - 500	650
IXSU-F6354	OXSU-F6354	400 - 500	1200
IXSU-F5341	OXSU-F5341	185 - 400	450
IXSU-F5344	OXSU-F5344	185 - 400	1200

**33kV Termination with Mechanical Lug****Screened 3 Core Plastic and Rubber Cable without Armour**

Catalogue Reference Indoor	Catalogue Reference Outdoor	Cross Section	Tail Length
		(mm ²)	(mm)
IXSU-F6332-ML-2-13	OXSU-F6332-ML-2-13	50 - 120	650
IXSU-F6334-ML-2-13	OXSU-F6334-ML-2-13	50 - 120	1200
IXSU-F6342-ML-5-13	OXSU-F6342-ML-5-13	150 - 300	650
IXSU-F6342-ML-5-17	OXSU-F6342-ML-5-17	150 - 300	650
IXSU-F6344-ML-5-13	OXSU-F6344-ML-5-13	150 - 300	1200
IXSU-F6344-ML-5-17	OXSU-F6344-ML-5-17	150 - 300	1200
IXSU-F6352-ML-6-13	OXSU-F6352-ML-6-13	400	650
IXSU-F6352-ML-6-17	OXSU-F6352-ML-6-17	400	650
IXSU-F6352-ML-6-21	OXSU-F6352-ML-6-21	400	650
IXSU-F6354-ML-6-13	OXSU-F6354-ML-6-13	400	1200
IXSU-F6354-ML-6-17	OXSU-F6354-ML-6-17	400	1200
IXSU-F6354-ML-6-21	OXSU-F6354-ML-6-21	400	1200

Heat Shrinkable Termination System for Cables up to 36kV

EPKT

Universal Selection Procedure

- Simplified selection table allows quick selection based on conductor cross section and voltage class for either polymeric or MIND paper insulated cables (For MI draining oil cables, contact your local representative)
- Simple modification codes permit easy specification of optional accessory kits
- Enhanced range-taking ability means that one kit fits more conductor sizes, reducing stocking requirements
- Unlimited shelf life allows stocking of economic quantities without product spoilage

Simplified Cable Preparation

- Improved treatment of screen cut back is compatible with all state of the art screen removal techniques
- No tapering of insulation required
- No polishing of polymeric insulation surface
- No special preparation of sectored, or eccentric conductors, or of cable that is curved after unreeling from the cable drum
- Cable preparation steps are similar to those for Raychem joints

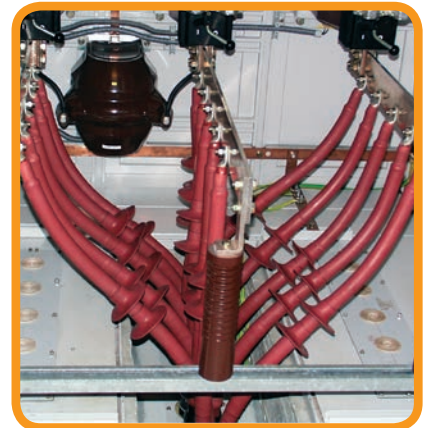
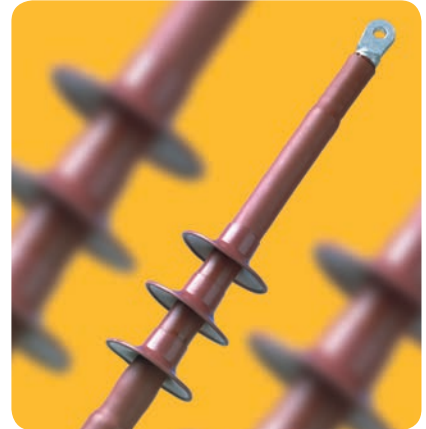
Simplified Installation

- Components are lightweight and non-shattering
- Clear instruction sheets
- Common installation procedure for polymeric and MIND paper cables
- Factory engineered kit permits rapid on-site installation

- No mechanical stress at insulation screen cutback
- Termination accommodates same bending radius as cable
- Visual confirmation of correct assembly sequence possible after installation
- Rain skirts can be installed to allow either top or bottom feed
- No soldering of earthing accessories required

Outstanding Long-Term Reliability

- Fully sealed against water ingress from the environment or from within the conductor strands
- Polymeric materials load cycle with the cable without mechanically stressing termination components and sealants
- Unsurpassed performance in polluted environments, proven over three decades.



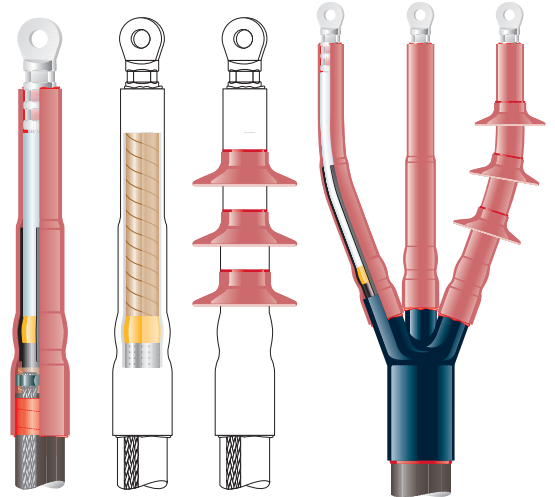
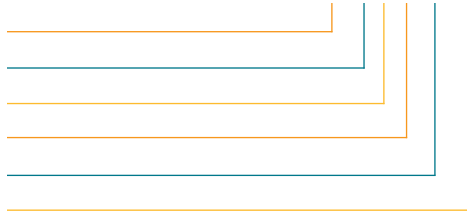
Terminations System Designer

This worksheet enables you to arrive at a part number for an EPKT termination.
Choose one figure from the left-hand column of each table.

Typical part number:

EPKT- 17C3MOH3

Voltage (U_{max})
Cable size
Number of cores
Dielectric
Location
Length (3-core-cables)



Voltage in kV	
7	for 7.2 kV
17	for 12 kV & 17.5 kV
24	for 24 kV
36	for 36 kV

Size in mm ²	7.2 kV	12 kV & 17.5 kV	24 kV	36 kV
A	16 - 35	16 - 25	-	-
B	50 - 95	35 - 70	25 - 50	-
C	120 - 185	95 - 185	70 - 185	50 - 95
D	240 - 400	240 - 400	240 - 300	120 - 185
E	500 - 1000	500 - 800	400 - 630	240 - 500
F	-	1000	800 - 1000	630 - 1000

Number of Cores	
1	for single core
3	for three core

Dielectric	of insulation type
X	for plastic eg. XLPE, EPDM, EPR, etc
M	for MIND non-draining paper (not applicable for draining paper cables)

Location	of the termination
I	for INDOOR
O	for OUTDOOR

Length (only 3 Core)	of the terminated portion (tail)
H1	for 450mm long
H2	for 650mm long (min for 17kV outdoor and 36kV indoor)
H3	for 800mm long (min for 24kV outdoor and 36kV outdoor)
H4	for 1200mm long

Live End Seal

MXSE

- Range extension kits up to 1000mm²
- Possible voltage class extension up to 36kV
- Installation procedure and design very close to MXSU
- Application can be extended to 3 core and paper cable applications



Catalogue Reference	Voltage	Cross Section
	(kV)	(mm ²)
MXSE-3131	11	70 - 240
MXSE-3141	11	240 - 400
MXSE-3151	11	500
MXSE-3161	11	630
MXSE-3171	11	800
MXSE-3181	11	1000
MXSE-5131	22	70 - 240
MXSE-5141	22	240 - 400
MXSE-5151	22	500
MXSE-5161	22	630
MXSE-5171	22	800
MXSE-5181	22	1000
MXSE-6131	33	70 - 240
MXSE-6141	33	240 - 400
MXSE-6151	33	500
MXSE-6161	33	630
MXSE-6171	33	800
MXSE-6181	33	1000

