Energy Division

Raychem silicone push-on termination with integrated stress control MVTI/MVTO for single core polymeric cables up to 36/42kV

Tyco Electronics

Our commitment. Your advantage.

Raychem silicone push-on termination with integrated stress control MVTI/MVTO for single core polymeric cables up to 36/42kV

Features:
- One piece termination
- 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

Benefits:
- Outstanding weathering, UV and Ozone Resistance
- Chemically resistant
- Resistant to fungi
- Excellent electrical properties including good tracking resistance and high dielectric strength
- Hydrophobic (water hating/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

The material makes the difference
Our cable accessories have been used by utilities and industrial companies around the world for more than 35 years. This ongoing field experience has made Tyco Electronics Energy Division a leader in materials science and technology for high-voltage applications. The Energy Division's materials technology is at the core of the development of our new range of cold applied terminations.
The materials used in Tyco Electronics Raychem cable accessories have been extensively optimised with respect to product design and function, manufacturing and expected service environments.

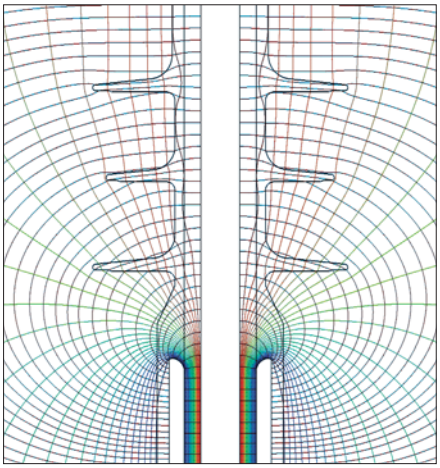
Termination with Integrated stress control cone
The termination body is made out of high quality silicone rubber that has excellent mechanical, hydrophobic, non tracking and insulating properties. The stress control cone is integrated in the termination.

The terminations are designed for indoor and outdoor use in all climate conditions, the Raychem MVTI/MVTO range covers applications for polymeric cables up to 42 kV. The components combine to provide the important functions required for all medium voltage products:
- electrical performance
- stress control
- moisture sealing
- resistance to weathering

The terminations suits triple extruded and easy strippable polymeric cables. The cable conductor can be terminated either with mechanical or crimp lugs.

Insulation material
The material used in the Raychem MVTI/MVTO generation have undergone many years of development to yield a high performance, next generation liquid silicone rubber, with exceptional electrical and weathering properties. The formulation is based on proven silicone compounds, exhibiting excellent thermal stability and long-term performance, under severe environmental conditions. It delivers outstanding tracking and erosion resistance, very high dielectric strength combined with good mechanical strength and high elasticity.

Integrated stress control cone
It has an optimal geometrical shape and is made of a similar high performance liquid silicone rubber which has been tailored to be conductive. The excellent bonding to the insulation material has been carefully designed to achieve the necessary high electrical performance. The cone is located at the end of the cable's outer conductive layer, during installation, to relieve any electrical stresses in this area.



Application range
The product line is designed for polymer cables from 25 to 300 mm^2 and up to 42 kV. This coverage is achieved with only two sizes of termination bodies on each voltage class.

Test reports
The products are fully tested in accordance with CENELEC HD629.1.S2:2006 and IEC 60502-4 specifications.

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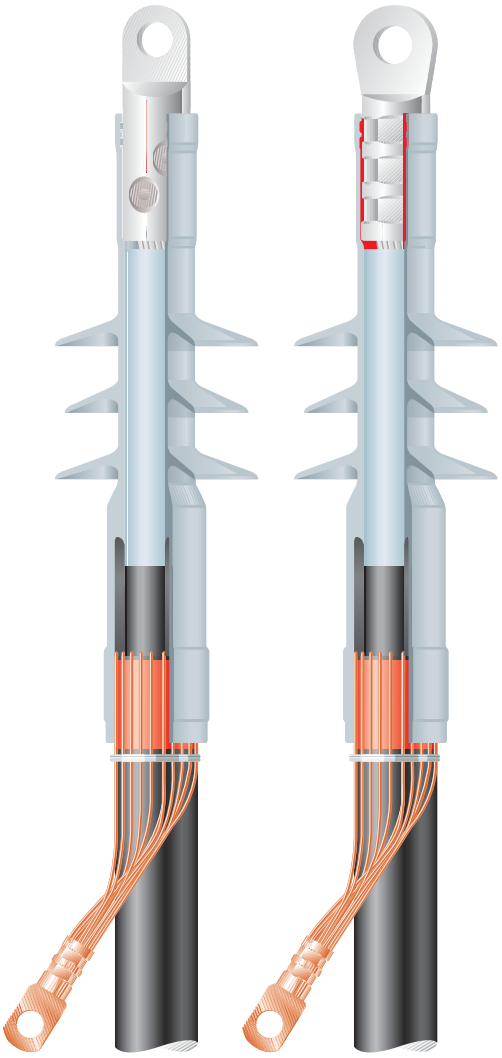
Kit content
Each Raychem MVTI/MVTO kit consists of the termination body, sealant tapes, installation aid PE bag, silicone lubricant and installation instruction. Optionally mechanical lugs and compression lugs are available.
The brochure EPP-1233 exhibits more details on mechanical connections.
For special applications contact your local sales representative.



Technical data		12kV	24kV	36/42kV
Cable insulation diameter	[mm]	13.7 – 30.4	17.0 – 34.6	24.0 – 39.6
Cross section range	[mm²]	25 – 300	25 – 300	35 – 300
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]	<5	<5	<5
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
*170kV BIL for 35 – 150mm² Indoor termination MVTI-6121, 81kV AC, 108kV DC

Cordless impact wrench
For the installation of mechanical connectors a cordless impact wrench is available. For more details see brochure EPP 1297.

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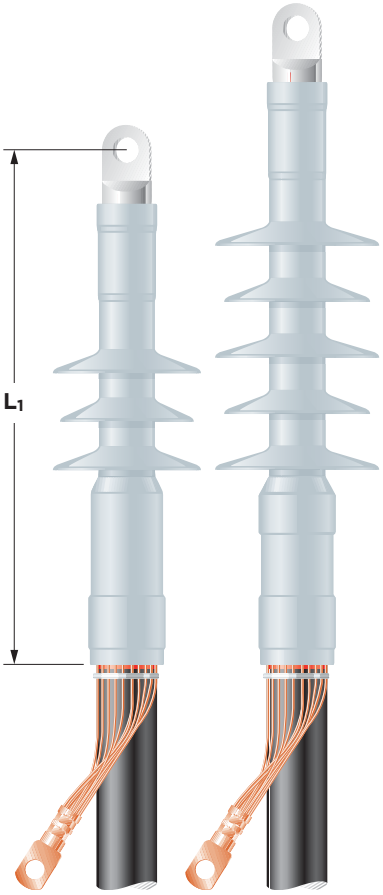

Dimensions as delivered

Termination	Height housing [mm]	Creepage distance [mm]	Flashover distance [mm]	Diameter over sheds [mm]	Installed length L_1* [mm]
12kV					
MVTO-3131	276	412	284	76.3	265
24kV					
MVTI-5121	276	412	284	76.3	265
MVTI-5131	276	412	284	80.1	285
MVTO-5121	355	675	368	97.3	345
MVTO-5131	355	676	369	101.1	365
36/42kV					
MVTI-6121	355	676	369	101.1	365

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

Application ranges for Indoor and Outdoor

	Cable cross section [mm²]	Diameter over insulation [mm]	Application range termination body [mm]
12kV			
MVTO-3131	95 - 300	18.6 – 30.4	17 - 30
24kV			
MVTI-5121/MVTO-5121	25 – 95	17.9 – 25.0	17 - 30
MVTI-5131/MVTO-5131	95 - 300	23.5 – 34.6	21 - 37
36/42kV			
MVTI-6121	35 – 150	24.0 – 33.5	21 - 37

The application range given in the table is based on polymeric insulated cables according to HD 620 A2: (2004) 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.

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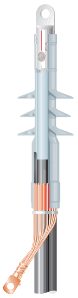
12 kV



Raychem Push-on Termination MVTO with mechanical lug BLMT

Cross Section [mm²]	Kit Number Outdoor	Diameter over insulation [mm]
95 – 150	MVTO-3131-ML-2-13	18.6 – 30.4
95 – 150	MVTO-3131-ML-2-17	18.6 – 30.4
95 – 240(300)*	MVTO-3131-ML-4-13	18.6 – 30.4
95 – 240(300)*	MVTO-3131-ML-4-17	18.6 – 30.4

Raychem Push-on Termination MVTO for crimp lug

Cross Section [mm²]	Kit Number Outdoor	Diameter over insulation [mm]
95 – 240	MVTO-3131	18.6 – 30.4
300	MVTO-3141	28.0 – 30.4

24 kV

Raychem Push-on Termination MVTI with mechanical lug BLMT

Cross Section [mm²]	Kit Number Indoor	Diameter over insulation [mm]
25 – 95	MVTI-5121-ML-1-13	17.9 – 25.0
25 – 95	MVTI-5121-ML-1-17	17.9 – 25.0
95 – 240(300)*	MVTI-5131-ML-4-13	23.5 – 34.6
95 – 240(300)*	MVTI-5131-ML-4-17	23.5 – 34.6
120 – 300**	MVTI-5131-ML-5-13	24.3 – 34.6
120 – 300**	MVTI-5131-ML-5-17	24.3 – 34.6

Raychem Push-on Termination MVTO with mechanical lug BLMT

Cross Section [mm²]	Kit Number Outdoor	Diameter over insulation [mm]
25 – 95	MVTO-5121-ML-1-13	17.9 – 25.0
25 – 95	MVTO-5121-ML-1-17	17.9 – 25.0
95 – 240(300)*	MVTO-5131-ML-4-13	23.5 – 34.6
95 – 240(300)*	MVTO-5131-ML-4-17	23.5 – 34.6
120 – 300**	MVTO-5131-ML-5-13	24.3 – 34.6
120 – 300**	MVTO-5131-ML-5-17	24.3 – 34.6

* the kits suits 300mm² solid Al conductor
** the kit suit 300mm² round stranded conductor
-13 = hole for M12
-17 = hole for M16

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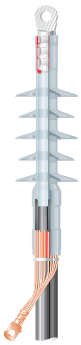
24 kV

Raychem Push-on Termination MVTI for crimp lug

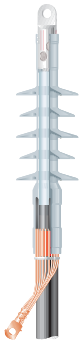
Cross Section [mm²]	Kit Number Indoor	Diameter over insulation [mm]
25 – 95	MVTI-5121	17.9 – 25.0
95 – 300	MVTI-5131	23.5 – 34.6



Raychem Push-on Termination MVTO for crimp lug

Cross Section [mm²]	Kit Number Outdoor	Diameter over insulation [mm]
25 – 95	MVTO-5121	17.9 – 25.0
95 – 300	MVTO-5131	23.5 – 34.6

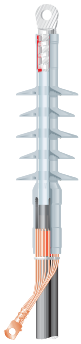
36 kV



Raychem Push-on Termination MVTI with mechanical lug BLMT

Cross Section [mm²]	Kit Number Indoor	Diameter over insulation [mm]
35 – 150	MVTI-6121-ML-2-13	21 – 37.0
35 – 150	MVTI-6121-ML-2-17	21 – 37.0

-13 = hole for M12
-17 = hole for M16



Raychem Push-on Termination MVTI for crimp lug

Cross Section [mm²]	Kit Number Indoor	Diameter over insulation [mm]
35 – 150	MVTI-6121	21 – 37.0

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Energy Division – innovative and economical solutions for the electrical power industry: cable accessories, connectors & fittings, insulators & insulation, surge arresters, switching equipment, lighting controls, power measurement and control.

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