

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

Raychem
from TE Connectivity

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



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

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 40 years. This ongoing field experience has made TE Energy a leader in materials science and technology for high-voltage applications. The TE Energy materials technology is at the core of the development of our new range of cold applied terminations. The materials used in our 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

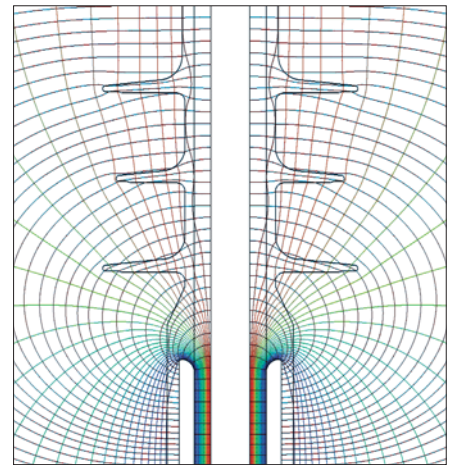
The terminations suits triple extruded and easy strippable polymeric cables. The cable conductor can be terminated either with mechanical or crimp lugs.

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 mm² for 12 kV and 24 kV, 35 to 400 mm² for 36 kV and 50 to 400 for 42 kV.

Test reports

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

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

Kit content

Each Raychem MVTI/MVTO kit consists of the termination bodies, sealant tapes, installation aid PE bags, 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.



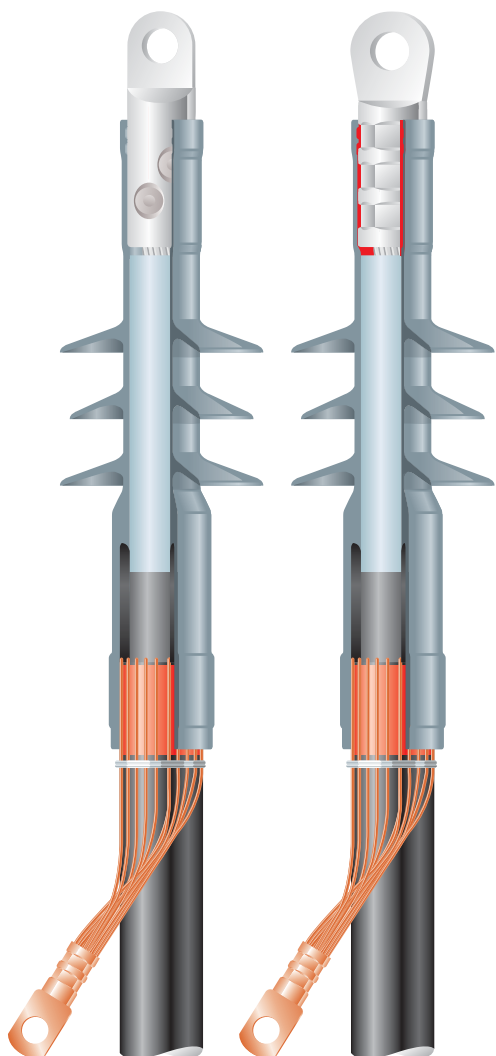
Technical data

		12 kV	24 kV	36/42 kV
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]	<2	<2	<2
AC Voltage withstand, 5 min	[kV]	28.5	57	81/94
DC Voltage withstand, 15min	[kV]	38	76	108/120

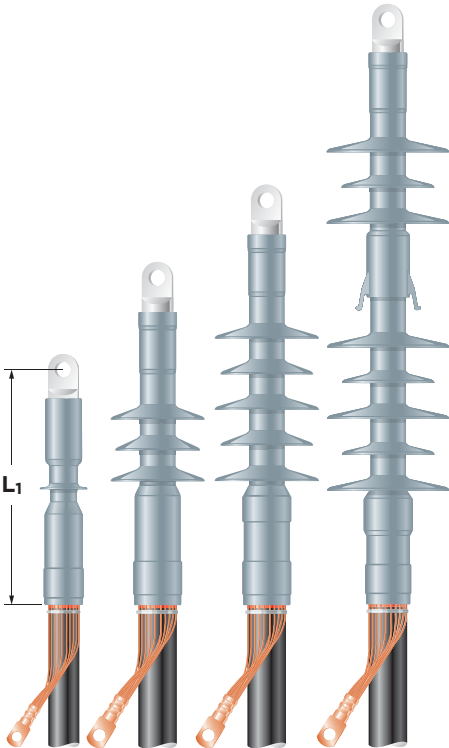
The terminations meet the CENELEC HD 629.1.S2:2006 specification
 *170 kV BIL for 35 - 150 mm² Indoor termination MVTI-6121, 81 kV AC, 108 kV DC

Cordless impact wrench

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



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



Dimensions as delivered

Termination	Height housing [mm]	Creepage distance [mm]	Flashover distance [mm]	Diameter over sheds [mm]	Installed length L ₁ * [mm]
12 kV					
MVTI-3121	232	253	235	39	225
MVTI-3131	232	253	235	43	245
MVTO-3121	276	379	281	61	270
MVTO- 3131	276	412	284	76	290
24 kV					
MVTI-5121	276	412	284	76	270
MVTI-5131	276	412	284	80	290
MVTO-5121	355	675	368	97	350
MVTO-5131	355	676	369	101	370
36 kV					
MVTI-6121	355	676	369	101	370
MVTI-6131	420	878	482	140	455
MVTI-6141	420	878	482	140	455
MVTO-6131	645	1360	730	140	655
MVTO-6141	645	1360	730	140	660
42 kV					
MVTI-7131	420	878	482	140	455
MVTI-7141	420	878	482	140	455
MVTO-7131	645	1360	730	140	655
MVTO-7141	645	1360	730	140	660

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

Application ranges for Indoor and Outdoor

	Cable cross section [mm ²]	Diameter over insulation [mm]	Application range termination body [mm]
12 kV			
MVTI / MVTO	25 - 95	13.7 - 20.8	12.5 - 22
MVTI / MVTO	95 - 300	18.6 - 30.4	17 - 30
24 kV			
MVTI / MVTO	25 - 95	17.9 - 25.0	17 - 30
MVTI / MVTO	95 - 300	23.5 - 34.6	21 - 37
36 kV			
MVTI	35 - 150	24.0 - 33.5	21 - 37
MVTI / MVTO	95 - 150	27.8 - 33.5	27 - 45
MVTI / MVTO	95 - 240	27.8 - 37.6	27 - 45
MVTI / MVTO	120 - 300	29.3 - 39.6	27 - 45
MVTI / MVTO	185 - 400	32.4 - 42.8	27 - 45
MVTI / MVTO	95 - 400	27.8 - 42.8	27 - 45
42 kV			
MVTI / MVTO	50 - 150	27.0 - 36.5	27 - 45
MVTI / MVTO	95 - 240	29.9 - 41.0	27 - 45
MVTI / MVTO	120 - 300	30.6 - 43.4	27 - 45
MVTI / MVTO	185 - 400	33.8 - 45.0	27 - 45
MVTI / MVTO	50 - 400	27.0 - 45.0	27 - 45

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.

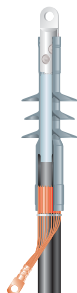
Raychem silicone push-on termination with integrated stress control MVTI/MVTO for single core polymeric cables up to 42 kV

12 kV



Raychem Push-on Termination MVTI with mechanical lug BLMT

Cross Section [mm ²]	Kit Number Indoor	Diameter over insulation [mm]
25 - 95	MVTI-3121-ML-1-13	13.7 - 20.8
25 - 95	MVTI-3121-ML-1-17	13.7 - 20.8
95 - 240(300)*	MVTI-3131-ML-4-13	18.6 - 30.4
95 - 240(300)*	MVTI-3131-ML-4-17	18.6 - 30.4



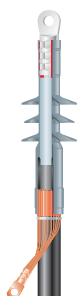
Raychem Push-on Termination MVTO with mechanical lug BLMT

Cross Section [mm ²]	Kit Number Outdoor	Diameter over insulation [mm]
25 - 95	MVTO-3121-ML-1-13	13.7 - 20.8
25 - 95	MVTO-3121-ML-1-17	13.7 - 20.8
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 MVTI for crimp lug

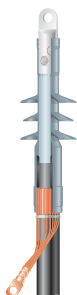
Cross Section [mm ²]	Kit Number Indoor	Diameter over insulation [mm]
25 - 95	MVTI-3121	13.7 - 20.8
95 - 240	MVTI-3131	18.6 - 30.4



Raychem Push-on Termination MVTO for crimp lug

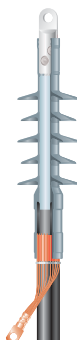
Cross Section [mm ²]	Kit Number Outdoor	Diameter over insulation [mm]
25 - 95	MVTO-3121	13.7 - 20.8
95 - 240	MVTO-3131	18.6 - 30.4

24 kV



Raychem Push-on Termination MVTI with mechanical lug BLMT

Cross Section [mm ²]	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 [mm ²]	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 300 mm² solid Al conductor

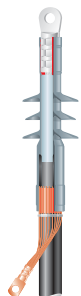
** the kit suit 300 mm² round stranded conductor

-13 = hole for M12

-17 = hole for M16

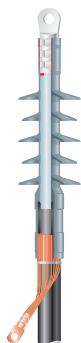
Raychem silicone push-on termination with integrated stress control MVTI/MVTO for single core polymeric cables up to 42 kV

24 kV



Raychem Push-on Termination MVTI for crimp lug

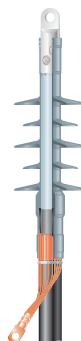
Cross Section [mm ²]	Kit Number Indoor	Diameter over insulation [mm]
25 - 95	MVTI-5121	17.9 - 25.0
95 - 300	MVTI-5131	23.5 - 34.6



Raychem Push-on Termination MVTO for crimp lug

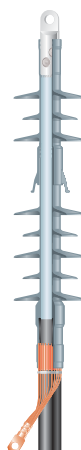
Cross Section [mm ²]	Kit Number Outdoor	Diameter over insulation [mm]
25 - 95	MVTO-5121	17.9 - 25.0
95 - 300	MVTO-5131	23.5 - 34.6

36 kV



Raychem Push-on Termination MVTI with mechanical lug BLMT

Cross Section [mm ²]	Kit Number Indoor	Diameter over insulation [mm]
35 - 150	MVTI-6121-ML-2-13	24.0 - 33.5
35 - 150	MVTI-6121-ML-2-17	24.0 - 33.5
95 - 150	MVTI-6131-ML-2-13	27.8 - 33.5
95 - 150	MVTI-6131-ML-2-17	27.8 - 33.5
95 - 240	MVTI-6131-ML-4-13	27.8 - 37.6
95 - 240	MVTI-6131-ML-4-17	27.8 - 37.6
120 - 300	MVTI-6141-ML-5-13	29.3 - 39.6
120 - 300	MVTI-6141-ML-5-17	29.3 - 39.6
185 - 400	MVTI-6141-ML-6-13	32.4 - 42.8
185 - 400	MVTI-6141-ML-6-17	32.4 - 42.8



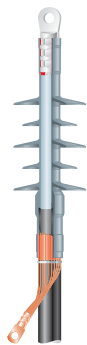
Raychem Push-on Termination MVTO with mechanical lug BLMT

Cross Section [mm ²]	Kit Number Outdoor	Diameter over insulation [mm]
95 - 150	MVTO-6131-ML-2-13	27.8 - 33.5
95 - 150	MVTO-6131-ML-2-17	27.8 - 33.5
95 - 240	MVTO-6131-ML-4-13	27.8 - 37.6
95 - 240	MVTO-6131-ML-4-17	27.8 - 37.6
120 - 300	MVTO-6141-ML-5-13	29.3 - 39.6
120 - 300	MVTO-6141-ML-5-17	29.3 - 39.6
185 - 400	MVTO-6141-ML-6-13	32.4 - 42.8
185 - 400	MVTO-6141-ML-6-17	32.4 - 42.8

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

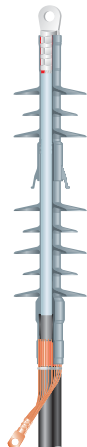
Raychem silicone push-on termination with integrated stress control MVTI/MVTO for single core polymeric cables up to 42 kV

36 kV



Raychem Push-on Termination MVTI for crimp lug

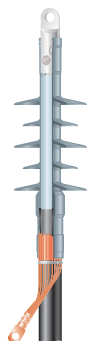
Cross Section [mm ²]	Kit Number Indoor	Diameter over insulation [mm]
35 - 150	MVTI-6121	24.0 - 33.5
95 - 400	MVTI-6141	27.8 - 42.8



Raychem Push-on Termination MVTO for crimp lug

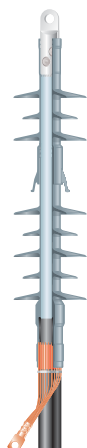
Cross Section [mm ²]	Kit Number Outdoor	Diameter over insulation [mm]
95 - 400	MVTO-6141	27.8 - 42.8

42 kV



Raychem Push-on Termination MVTI with mechanical lug BLMT

Cross Section [mm ²]	Kit Number Indoor	Diameter over insulation [mm]
50 - 150	MVTI-7131-ML-2-13	27.0 - 36.5
50 - 150	MVTI-7131-ML-2-17	27.0 - 36.5
95 - 240	MVTI-7131-ML-4-13	30.0 - 41.0
95 - 240	MVTI-7131-ML-4-17	30.0 - 41.0
120 - 300	MVTI-7141-ML-5-13	30.6 - 43.4
120 - 300	MVTI-7141-ML-5-17	30.6 - 43.4
185 - 400	MVTI-7141-ML-6-13	33.8 - 45.0
185 - 400	MVTI-7141-ML-6-17	33.8 - 45.0



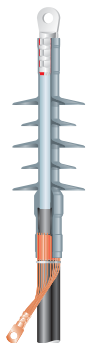
Raychem Push-on Termination MVTO with mechanical lug BLMT

Cross Section [mm ²]	Kit Number Outdoor	Diameter over insulation [mm]
50 - 150	MVTO-7131-ML-2-13	27.0 - 36.5
50 - 150	MVTO-7131-ML-2-17	27.0 - 36.5
95 - 240	MVTO-7131-ML-4-13	30.0 - 41.0
95 - 240	MVTO-7131-ML-4-17	30.0 - 41.0
120 - 300	MVTO-7141-ML-5-13	30.6 - 43.4
120 - 300	MVTO-7141-ML-5-17	30.6 - 43.4
185 - 400	MVTO-7141-ML-6-13	33.8 - 45.0
185 - 400	MVTO-7141-ML-6-17	33.8 - 45.0

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

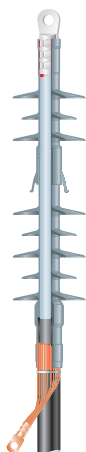
Raychem silicone push-on termination with integrated stress control MVTI/MVTO for single core polymeric cables up to 42 kV

42 kV



Raychem Push-on Termination MVTI for crimp lug

Cross Section [mm ²]	Kit Number Indoor	Diameter over insulation [mm]
50 - 400	MVTI-7141	27.0 - 45.0



Raychem Push-on Termination MVTO for crimp lug

Cross Section [mm ²]	Kit Number Outdoor	Diameter over insulation [mm]
50 - 400	MVTO-7141	27.0 - 45.0

While TE Connectivity (TE) has made every reasonable effort to ensure the accuracy of the information in this catalog, TE does not guarantee that it is error-free, nor does TE make any other representation, warranty or guarantee that the information is accurate, correct, reliable or current. TE reserves the right to make any adjustments to the information contained herein at any time without notice. TE expressly disclaims all implied warranties regarding the information contained herein, including, but not limited to, any implied warranties of merchantability or fitness for a particular purpose. The dimensions in this catalog are for reference purposes only and are subject to change without notice. Specifications are subject to change without notice. Consult TE for the latest dimensions and design specifications. Raychem, Raychem (logo), TE Connectivity and TE Connectivity (logo) are trademarks.

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

Tyco Electronics Raychem GmbH
 a TE Connectivity Ltd. Company
 TE Energy
 Finsinger Feld 1
 85521 Ottobrunn/Munich, Germany

Phone: +49-89-6089-0
 Fax: +49-89-6096345

energy.te.com

