

Raychem Elastomeric Medium Voltage
Push-on and Cold-shrink Applicable
Terminations TFTI/TFTO



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Raychem
from TE Connectivity

Elastomeric MV Terminations TFTI/TFTO for Indoor and Outdoor Applications for Polymeric Cables up to 42 kV Push-on and Cold-shrink Terminations

General

Our Raychem cold applied medium voltage terminations TFTI/TFTO are widely acknowledged in the industrial and the utility markets. They contain the recent unique stress control system and can be used for crimp and mechanical lugs.

The material makes the difference

Key to the performance of Raychem products is material science and technology going into their development. Ongoing field experience has made TE Energy a leader in materials science and technology for medium-voltage applications. Our technology is at the core range of cold applied terminations. The compounds used in Raychem cable accessories have been extensively optimised with respect to product design, function, manufacturing and expected service environments which contribute to the overall product performance. TE Connectivity Raychem cable accessories have been used by utilities and industrial companies around the world for more than 40 years.

Product range

Designed for both indoor and outdoor, the Raychem terminations TFTI/TFTO cover applications for polymeric cables from 12 kV up to 42 kV. The components combined providing the important functions required for all medium voltage products: electrical performance, stress control and moisture sealing. The product line covers polymeric cables from 25 mm² up to 630 mm² and larger cross sections on request. Sealing sleeves (expanded on a holdout tube) accommodate the combination with mechanical lugs. The termination bodies can be delivered as push-on version (not expanded on a holdout) or as cold-shrink (expanded on a holdout tube). For cable box applications, the Raychem termination TFTI can be combined either with Raychem's elastomeric bushing boot (RCAB) or Raychem's insulated connection system (RICS) to fit most types of switchgear bushing currently available.

The products are fully tested in accordance with IEEE-48, IEC 60502-4 and the CENELEC HD629.1S1, specification.

Elastomeric insulation

The compound used in the Raychem termination TFTI/TFTO have undergone many years of development, yielding a result with exceptional electrical and weathering properties. The formulation is based on elastomeric compounds, exhibiting proven stability and functionality under severe environmental conditions. It delivers outstanding tracking and erosion resistance, weatherability and dielectric properties.

Stress control patch

The Raychem TFT stress control patch is a recently formulated electrical stress control compound, which is based on long experience with Raychem ceramic semi-conductor technology (ZnO). The ZnO-based stress control patch is not integrated in the TFT termination, it is being installed separately. It fills any irregularities, bonds to the cable insulation and provides excellent electrical performance. All Raychem TFT components have full traceability of raw materials.

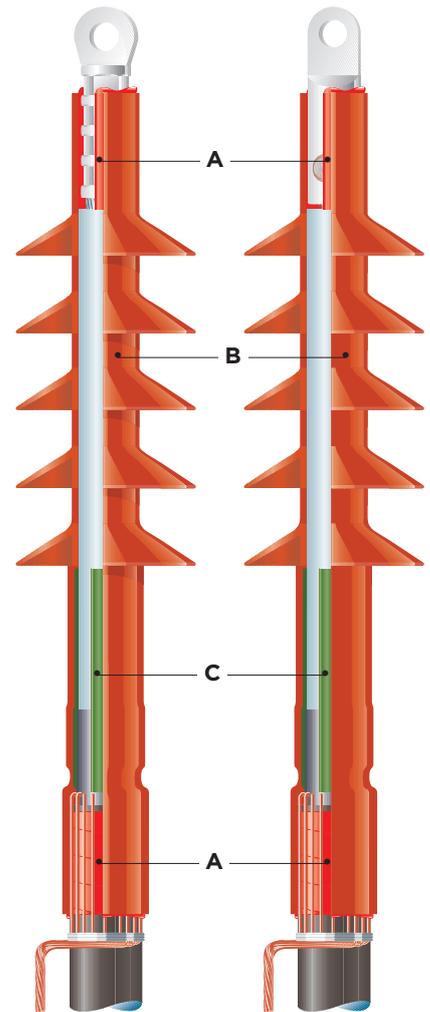
Features

- High-performance silicone termination
- Unique zinc oxide-based stress control system
- Separate self amalgamating sealant mastic
- Compact design
- Few components
- Range taking
- Designed for crimp and mechanical lugs

Benefits

- Space saving
- Simple and fast to install
- Superior application range

Raychem termination TFT



- A** Self amalgamating sealant tape
- B** Termination body
- C** Stress control patch

Kit content

Each kit a set of three consists of the insulating termination bodies, stress control patches, self amalgamating sealant tapes, sealing sleeves for mechanical lugs and installation instructions.

For 3-core cables please see separate brochure for the Raychem TRFK kits which including cold shrink breakout and tubing for custom core length. For special applications please contact your local sales representative.

Installation

Each kit contains easy-to-follow installation instructions with visuals of the installation steps.



1



2

- 1 Raychem terminations TFTI with Raychem elastomeric bushing boot RCAB connecting 12 kV and 17.5 kV plastic cables to a switchgear substation
- 2 Raychem terminations TFTI with Raychem insulated connection system RICS connecting 24 kV plastic cables to a switchgear substation



3



4

- 3 Raychem 42 kV terminations TFTO outdoor on a pole
- 4 Raychem 42 kV terminations TFTO outdoor on a transformer

Raychem termination TFTI/TFTO kit contents



TFTI/TFTO-5141
24 kV push-on version includes can be delivered with crimp lug



TFTO-4131
17.5 kV push-on version includes can be delivered with crimp lug



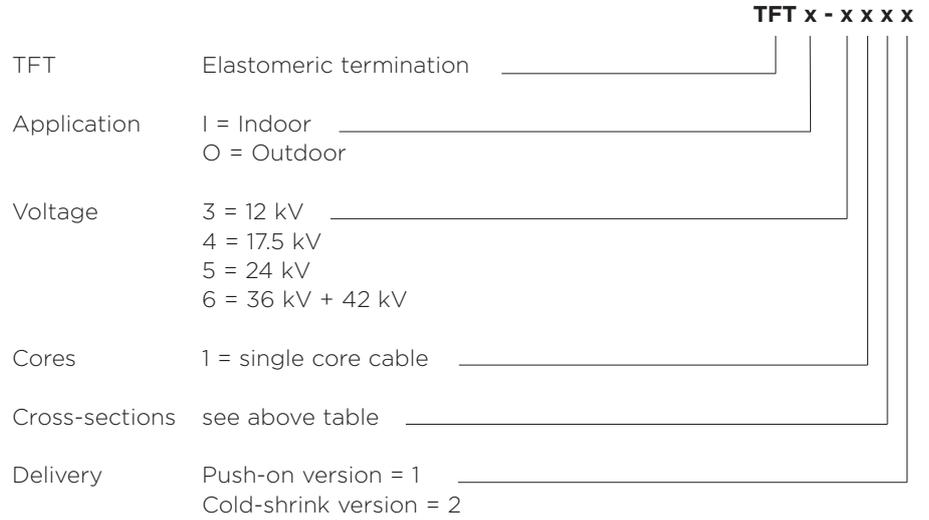
TFTI-3152E
12 kV cold-shrink version includes mechanical lug (BLMT-500/630) with sealing sleeve



TFTI-5132
24 kV cold-shrink version includes mechanical lug (BLMT-95/240) and sealing sleeve as option

TFTI/TFTO Selection Table

Application		Voltage in kV	[U _m]
I	Indoor	3	12
O	Outdoor	4	17.5
Cores		5	24
1	Single core polymeric cable	6	36 + 42

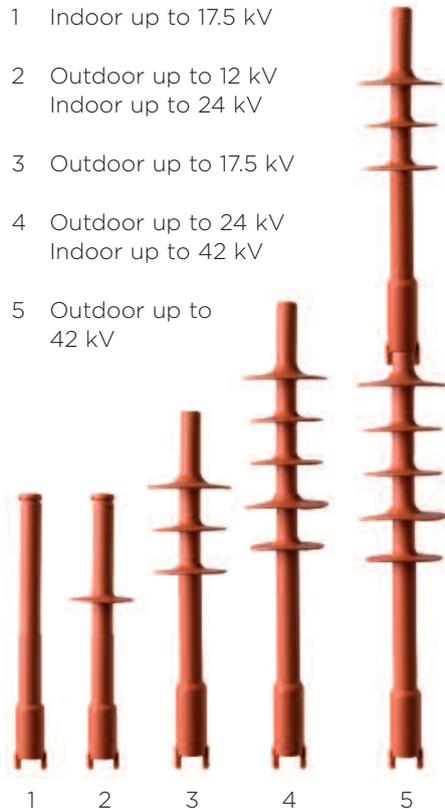


For example:

TFTI-5131
Indoor termination for single core polymeric cable 24 kV, 70 - 240 mm² (Push-on version)

TFTI-5132
Indoor termination for single core polymeric cable 24 kV, 95 - 240 mm² (Cold-shrink version)

Raychem termination family TFTI/TFTO



Push-on version

Voltage class Um	Cross section (mm ²)	Kit number crimp lug	Diameter over insulation CENELEC HD 620 A2 (mm)	Creepage distance* (mm)	Height* (mm)	Diameter shed* (mm)
Indoor						
12	25 - 70	TFTI-3111	13.7 - 19.2	270	270	—
	50 - 185	TFTI-3121	16.0 - 25.9	270	270	—
	150 - 400	TFTI-3131	21.6 - 33.6	270	270	—
Outdoor						
12	25 - 70	TFTO-3111	13.7 - 19.2	319	279	61
	50 - 185	TFTO-3121	16.0 - 25.9	319	279	64
	150 - 400	TFTO-3131	21.6 - 33.6	319	279	68
Indoor						
17.5	25 - 95	TFTI-4121	15.7 - 22.8	270	270	—
	95 - 300	TFTI-4131	20.7 - 32.4	270	270	—
	240 - 400	TFTI-4141	27.7 - 35.6	270	270	—
Outdoor						
17.5	25 - 95	TFTO-4121	15.7 - 22.8	445	309	73
	95 - 300	TFTO-4131	20.7 - 32.4	445	309	77
	240 - 400	TFTO-4141	27.7 - 35.6	445	309	81
Indoor						
24	25 - 95	TFTI-5121	17.9 - 25.0	319	279	64
	70 - 240	TFTI-5131	21.9 - 32.6	319	279	68
	240 - 400	TFTI-5141	32.6 - 37.8	319	279	72
Outdoor						
24	25 - 95	TFTO-5121	17.9 - 25.0	605	389	73
	70 - 240	TFTO-5131	21.9 - 32.6	605	389	77
	240 - 400	TFTO-5141	32.6 - 37.8	605	389	81
Indoor						
36/42	35 - 120	TFTI-6131	24.0 - 32.0	605	389	77
	95 - 300	TFTI-6141	27.8 - 39.6	605	389	81
	240 - 400	TFTI-6151	32.4 - 42.8	597	389	89
Outdoor						
36/42	35 - 120	TFTO-6131	24.0 - 32.0	990	309/389	73
	95 - 300	TFTO-6141	27.8 - 39.6	990	309/389	77
	240 - 400	TFTO-6151	32.4 - 42.8	990	309/389	81

* as moulded

Cold-shrink version

Voltage class Um	Cross section (mm ²)	Kit number crimp lug	Diameter over insulation CENELEC HD 620 A2 (mm)	Creepage distance* (mm)	Height* (mm)	Diameter shed* (mm)
Indoor						
12	25 - 70	TFTI-3112	13.7 - 19.2	270	270	—
	70 - 185	TFTI-3122	17.7 - 25.9	270	270	—
	150 - 400	TFTI-3132	22.3 - 33.6	270	270	—
	500	TFTI-3142	34.5 - 36.2	270	270	—
Outdoor						
12	25 - 70	TFTO-3112	13.7 - 19.2	319	279	61
	70 - 185	TFTO-3122	17.7 - 25.9	319	279	64
	150 - 400	TFTO-3132	22.3 - 33.6	319	279	68
	500	TFTO-3142	34.5 - 36.2	319	279	72
Indoor						
17.5	25 - 50	TFTI-4112	15.7 - 19.5	270	270	—
	50 - 150	TFTI-4122	18.0 - 26.3	270	270	—
	120 - 300	TFTI-4132	22.1 - 32.4	270	270	—
	300 - 400	TFTI-4142	29.9 - 35.6	270	270	—
Outdoor						
17.5	50 - 150	TFTO-4122	18.0 - 26.3	445	309	73
	120 - 300	TFTO-4132	22.1 - 32.4	445	309	77
	300 - 400	TFTO-4142	29.9 - 35.6	445	309	81
Indoor						
24	25 - 95	TFTI-5122	17.9 - 25.0	319	279	64
	95 - 300	TFTI-5132	23.0 - 34.6	319	279	68
	240 - 400	TFTI-5142	29.9 - 37.8	319	279	72
Outdoor						
24	25 - 95	TFTO-5122	17.9 - 25.0	605	389	73
	95 - 300	TFTO-5132	23.0 - 34.6	605	389	77
	240 - 400	TFTO-5142	29.9 - 37.8	605	389	81

* as moulded

Voltage class Um	Cross section (mm ²)	Kit number crimp and mechanical lug Sealing sleeve optional	Diameter over insulation CENELEC HD 620 A2 (mm)	Creepage distance* (mm)	Height* (mm)	Diameter shed* (mm)
Indoor						
12	95 - 240	TFTI-3122E	18.6 - 28.4	350	350	—
	185 - 300	TFTI-3132E	23.2 - 30.4	350	350	—
	300 - 400	TFTI-3142E	28.0 - 33.6	350	350	—
	500 - 630	TFTI-3152E	34.0 - 40.0	506	389	85
Outdoor						
12	95 - 240	TFTO-3122E	18.6 - 28.4	506	389	71
	185 - 300	TFTO-3132E	23.2 - 30.4	506	389	77
	300 - 400	TFTO-3142E	28.0 - 33.6	506	389	77
	500 - 630	TFTO-3152E	34.0 - 40.0	506	389	85
Indoor						
24	25 - 95	TFTI-5122E	17.9 - 25.0	319	279	64
	95 - 300	TFTI-5132E	23.0 - 34.6	350	350	—
	185 - 400	TFTI-5142E	27.4 - 37.8	506	389	77
	500 - 630	TFTI-5152E	37.9 - 44.0	506	389	85
Outdoor						
24	25 - 95	TFTO-5122E	17.9 - 25.0	319	279	68
	95 - 300	TFTO-5132E	23.0 - 34.6	719	500	77
	185 - 400	TFTO-5142E	27.4 - 37.8	719	500	77
	500 - 630	TFTO-5152E	37.9 - 44.0	798	500	105
Indoor						
36/42	35 - 150	TFTI-6132	24.5 - 33.5	605	389	77
	95 - 240	TFTI-6132E	27.8 - 37.6	719	500	77
	300 - 400	TFTI-6142E	36.9 - 42.8	798	500	105
	500 - 630	TFTI-6152E	42.6 - 49.2	798	500	105
Outdoor						
36/42	35 - 150	TFTO-6132	24.5 - 33.5	990	309/389	77
	95 - 240	TFTO-6132E	27.8 - 37.6	1165	500/500	77
	300 - 400	TFTO-6142E	36.9 - 42.8	1243	500/500	105
	500 - 630	TFTO-6152E	42.6 - 49.2	1243	500/500	105

* as moulded

Cordless impact wrench

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



About TE Connectivity

TE Connectivity is a global, \$14 billion company that designs and manufactures approximately 500,000 products that connect and protect the flow of power and data inside the products that touch every aspect of our lives. Our nearly 100,000 employees partner with customers in virtually every industry – from consumer electronics, energy and healthcare, to automotive, aerospace and communication networks – enabling smarter, faster, better technologies to connect products to possibilities.

More information on TE Connectivity can be found at: www.te.com

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TE Energy - 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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