



TE's Raychem **COLD SHRINK TERMINATIONS CSTI/CSTO**

For Polymeric Insulated Cables up to 42 kV

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TE's Raychem Cold Shrink Terminations CSTI/O are made from a high performance, liquid silicone material which is specially formulated for excellent tracking and split resistance. The extra-long silicone stress cone is integrated within the termination which ensures correct positioning. Moisture sealing at the lug is integrated into the termination body, eliminating the need for additional sealing tapes.

They offer a reliable, fast and easy-to-install system to ensure trouble free service and maintain high network reliability. Our key components are pre-expanded on one holdout system, allowing neat installation in compact environment on the prepared cable.

TE's Raychem Cold Shrink Terminations CSTI/O are designed to cover a wide range of applications and to accommodate the variety of cable and conductor types used in the networks. Range-taking mechanical lugs ensuring reliable installation and service can be supplied with the kit.

Product Features

- Easy to install spiral holdout
- Integrated sealing mastic
- Outstanding weathering, UV and Ozone Resistance
- Chemically resistant
- Resistant to fungi
- Excellent electrical properties, including good tracking resistance and high dielectric strength
- Electrical stress control of the screen cut area using integrated conductive geometrical stress cones
- Hydrophobic (water-repellent)
- Non-flammable
- Self-extinguishing
- Retains performance over wide temperature range ± 45 to $+150^{\circ}\text{C}$
- Excellent resistance to splitting and permanent set
- Mechanical lug and compression lug to IEC 61238-1 can be supplied
- CENELEC HD 629.1.S2, requirements which include IEC, BS, VDE and other international specifications, IEEE-48
- Manufacturing site ISO 9001 & ISO 14001 qualified

Benefits

- Pre-expanded termination body with integrated stress control deflector and sealing mastic
- Single piece silicone termination body with optimal mechanical expansion ratio allows a wide application range
- The extra-long silicone stress cone is integrated with the termination and reduces positioning
- Moisture sealing at the lug is integrated
- Well-known and easy-to-install holdout system, rip cord pulling direction towards the lug not the bottom of the termination
- Easy to install in tight switchgear compartments
- Accommodates mechanical lug and compression lug

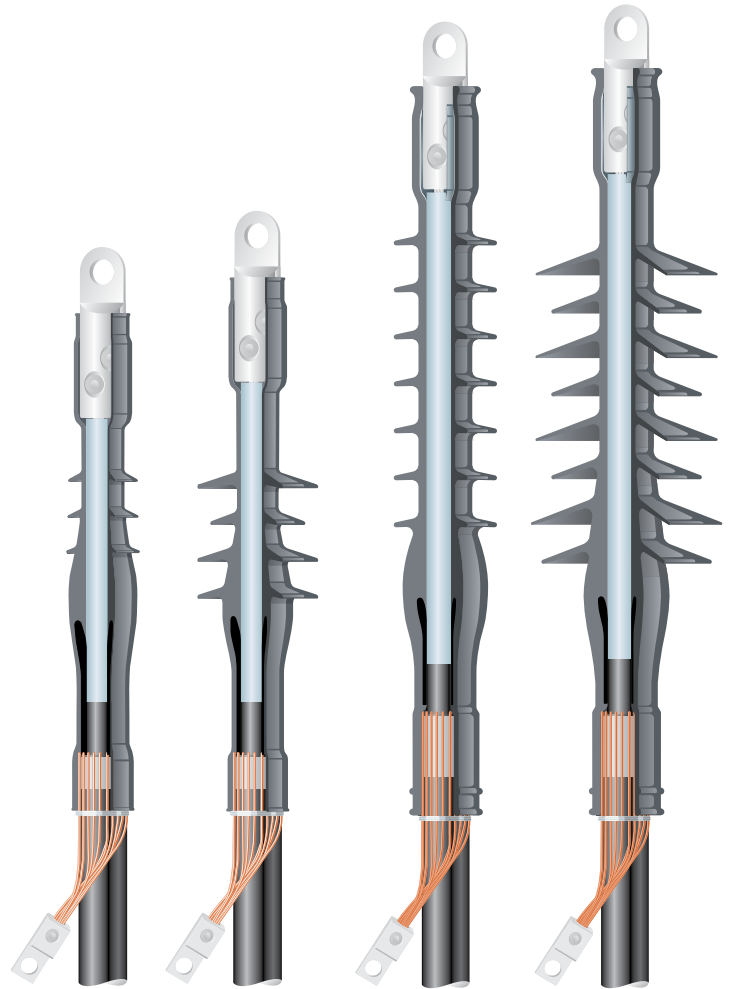
Mechanical Lugs

TE's Raychem Cold Shrink Terminations CSTI/O can be provided with TE's BLMT mechanical lugs to ensure a reliable connection for different conductor materials of shapes and types used in today's network. The preset shear torque of the bolts ensures that the correct contact pressure is always achieved. The specially designed contact surface on the inside of the lug breaks up any oxide layer and ensures reliable service over the entire service life of the termination. Different sizes of mechanical lugs with wide application ranges are available. They have been tested in accordance with IEC-61238-1 Class A.

The installation shear bolt heads can be ruptured manually by usage of ring spanner and or facilitated by the usage of a cordless impact wrench supplied (IT-1000-023).

Pre-expanded silicone termination body

The silicone termination 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 deflector and sealing mastic on the top end of the termination provide exceptional electrical performance. The termination body can be easily removed from the spiral holdout with low release forces, particularly designed for termination applications.



Electrical stress control

Electrical stress control deflector is fully integrated within the silicone termination body. Conductive cone with an exactly defined geometrical design over the screen cut area provide excellent electrical stress control.

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 |

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| ORDERING INFORMATION | | | | | |
|---------------------------------|--------------------|---|---|---|-------------------------------------|
| Voltage class 6.35/11(12) kV | Kit Description | Application Range (mm ²) | Diameter Over Insulation MIN (mm) | Diameter Over Insulation MAX (mm) | Diameter Over SHEATH MAX (mm) |
| Indoor | CSTI-3122-ML-1-13 | 25 - 95 | 13.7 | 20.8 | 22 |
| | CSTI-3132-ML-4-13 | 95 - 240 | 20.8 | 28.4 | 34 |
| | CSTI-3142-ML-6-17 | 300 - 400 | 28.4 | 33.6 | 50 |
| | CSTI-3152-ML-7-17 | 500 - 630 | 34.0 | 40.0 | 58 |
| Outdoor | CSTO-3122-ML-1-13 | 25 - 95 | 13.7 | 20.8 | 22 |
| | CSTO-3132-ML-4-13 | 95 - 240 | 20.8 | 28.4 | 34 |
| | CSTO-3142-ML-6-17 | 300 - 400 | 28.4 | 33.6 | 50 |
| | CSTO-3152-ML-7-17 | 500 - 630 | 34.0 | 40.0 | 58 |
| 8.7/15(17.5) kV | | (mm²) | (mm) | (mm) | (mm) |
| Indoor | CSTI-4122 | 25 - 95 | 15.7 | 22.8 | 22 |
| | CSTI-4132 | 95 - 240 | 20.7 | 30.4 | 34 |
| | CSTI-4142 | 300 - 400 | 29.9 | 35.6 | 50 |
| | CSTI-4152 | 500 - 630 | 35.9 | 41.9 | 58 |
| Outdoor | CSTO-4122 | 25 - 95 | 15.7 | 22.8 | 22 |
| | CSTO-4132 | 95 - 240 | 20.7 | 30.4 | 34 |
| | CSTO-4142 | 300 - 400 | 29.9 | 35.6 | 50 |
| | CSTO-4152 | 500 - 630 | 35.9 | 41.9 | 58 |
| 12.7/22(24) kV | | (mm²) | (mm) | (mm) | (mm) |
| Indoor | CSTI-5122-ML-1-13 | 25 - 95 | 17.9 | 25.0 | 34 |
| | CSTI-5132-ML-4-13 | 95 - 240 | 25.0 | 32.0 | 50 |
| | CSTI-5142-ML-6-17 | 300 - 400 | 32.6 | 37.8 | 58 |
| | CSTI-5152-ML-7-17 | 500 - 630 | 42.6 | 49.2 | 58 |
| Outdoor | CSTO-5122-ML-1-13 | 25 - 95 | 17.9 | 25.0 | 34 |
| | CSTO-5132-ML-4-13 | 95 - 240 | 25.0 | 32.0 | 50 |
| | CSTO-5142-ML-6-17 | 300 - 400 | 32.6 | 37.8 | 58 |
| | CSTO-5152-ML-7-17 | 500 - 630 | 42.6 | 49.2 | 58 |
| 19/33(36) kV | | (mm²) | (mm) | (mm) | (mm) |
| Indoor | CSTI-6122-ML-1-13 | 50 - 70 | 24.5 | 28.4 | 42 |
| | CSTI-6132-ML-4-13 | 95 - 150 | 27.8 | 33.5 | 46 |
| | CSTI-6142-ML-6-17 | 185 - 400 | 32.4 | 42.8 | 56 |
| | CSTI-6152-ML-7-17 | 500 - 630 | 42.6 | 49.2 | 63 |
| | CSTI-6162-ML-8-21 | 800 - 1000 | 49.2 | 58.8 | 75 |
| Outdoor | CSTO-6122-ML-1-13 | 50 - 70 | 24.5 | 28.4 | 42 |
| | CSTO-6132-ML-4-13 | 95 - 150 | 27.8 | 33.5 | 46 |
| | CSTO-6142-ML-6-17 | 185 - 400 | 32.4 | 42.8 | 56 |
| | CSTO-6152-ML-7-17 | 500 - 630 | 42.6 | 49.2 | 63 |
| | CSTO-6162-ML-8-21 | 800 - 1000 | 49.2 | 58.8 | 75 |
| 20.8/36(42) kV | | (mm²) | (mm) | (mm) | (mm) |
| Indoor | CSTI-7122-ML-1-13 | 50 - 70 | 27.4 | 31.4 | 42 |
| | CSTI-7132-ML-4-13 | 95 - 150 | 29.9 | 36.5 | 48 |
| | CSTI-7142-ML-6-17 | 185 - 400 | 34.5 | 46.6 | 59 |
| | CSTI-7152-ML-7-17 | 500 - 630 | 44.8 | 51.2 | 65 |
| | CSTI-7162-ML-8-21 | 800 - 1000 | 50.6 | 60.8 | 73 |
| Outdoor | CSTO-7122-ML-1-13 | 50 - 70 | 27.4 | 31.4 | 42 |
| | CSTO-7132-ML-4-13 | 95 - 150 | 29.9 | 36.5 | 48 |
| | CSTO-7142-ML-6-17 | 185 - 400 | 34.5 | 46.6 | 59 |
| | CSTO-7152-ML-7-17 | 500 - 630 | 44.8 | 51.2 | 65 |
| | CSTO-7162-ML-8-21 | 800 - 1000 | 50.6 | 60.8 | 73 |

The application range given in the table is based on polymeric insulated cable according to CENELEC HD 620 A2 (2004) standard with stranded circular conductors. Trifurcation system available. Please contact your sales representative

Test reports

The products are type tested in accordance with CENELEC HD629.1.S2:2009 and CENELEC HD629.1.S3.draft:2015 specifications.

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