

# 3M™ Cold Shrink QT-III Silicone Rubber Indoor Tubular Termination Kits 7640-T and 7650-T Series

## 5, 8, 15, 25/28 and 35 kV

Data Sheet

September 2016

**Description** 3M Cold Shrink QT-III Silicone Rubber Indoor Tubular Termination Kits, 7640-T and 7650-T Series, contain one-piece, non-skirted, silicone rubber terminations, qualified as IEEE Standard 48 Class 1 for indoor and weather-protected applications. The termination assemblies consist of a tubular insulator, high-dielectric constant (High-K) stress control tube, conformable High-K stress controlling compound and built-in environmental top sealing compound. The insulator is made of a dark gray silicone rubber with excellent tracking resistance and hydrophobic properties.

The complete assembly is pre-stretched and loaded onto a removable core. The disposable core can be recycled. The kits are designed for terminating solid dielectric Jacketed Concentric Neutral (JCN) and Concentric Neutral (CN) power cables rated 5 through 35 kV.

**Kit Contents** Each kit contains sufficient quantities of the following materials to make one single-phase termination (lugs are not included in kit).

- 1 High-K , Tracking Resistant, Silicone Rubber Indoor Tubular Termination
- 2 Strips Scotch® Mastic Strip 2230 (black with white release liners, bagged)
- 1 Instruction Sheet

**Features**

- Conforms to IEEE Standard 48 Class 1 requirements for 5, 8, 15, 25/28 and 35 kV terminations
- One-piece versatile design, allowing quick installation and accommodating a wide range of cable sizes
- Cold shrink delivery system allows easy installation: Simply place termination over prepared cable and unwind core to shrink into place (no force fit required)
- High-K stress control: Specially formulated high-dielectric constant material minimizes surface stress by more uniformly distributing the electrical field over the entire surface of the insulator
- Compact design provides for easier installation in restricted spaces
- Silicone rubber insulators, EPDM stress control tubes, stress controlling compound and environmental sealing compound are compatible with common solid dielectric insulations, such as polyethylene (PE), cross-linked polyethylene (XLPE) and ethylene propylene rubber (EPR)

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### Environmental Classification

Indoor terminations, such as the 3M Cold Shrink QT-III Silicone Rubber Indoor Tubular Termination Kits, 7640-T and 7650-T Series, can be specified for most outdoor, pad-mounted switchgear and transformer applications, since these enclosure interiors are protected from direct exposure to the elements.

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### Typical Properties

Not for specifications. Values are typical, not to be considered minimum or maximum. Properties measured at room temperature 73°F (23°C) unless otherwise stated.

3M Cold Shrink QT-III Silicone Rubber Indoor Tubular Termination Kits, 7640-T and 7650-T Series terminations, can be used on cables with a rated maximum operating temperature of 221°F (105°C) and emergency overload rating of 284°F (140°C).

Terminations constructed from these kits meet the requirements of IEEE 48, “IEEE Standard Test Procedures and Requirements for High Voltage Alternating-Current Cable Terminations” and are designated Class 1 for indoor or weather-protected locations. The current rating of these terminations meets or exceeds the current rating of the cables on which they are installed.

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Kit Number	Cable Insulation O.D. Range in. (mm)	Conductor Range (AWG and kcmil)				
		5 kV 100% and 133%	8 kV 100% and 133%	15 kV 100% and 133%	25/28 kV 100% and 133%	35 kV 100% and 133%
7642-T-110	0.64 - 1.08" (16,3 - 27,4 mm)	4/0 – 400	3/0 – 300	2 - 2/0 (35 - 70 mm <sup>2</sup> )	-	-
7642-T-110(L)	0.69 - 1.22" (17,5 - 31,0 mm)	-	-	1/0 - 4/0 (60 - 120 mm <sup>2</sup> )	-	-
7643-T-110	0.72 - 1.29" (18,3 - 32,8 mm)	300 – 500	250 – 500	2/0 - 300 (70 - 150 mm <sup>2</sup> )	-	-
7644-T-110	0.83 - 1.53" (21,1 – 38,9 mm)	500 – 750	350 – 700	4/0 – 500 (120 – 240 mm <sup>2</sup> )	-	-
7645-T-110	1.05 – 1.80" (26,7 – 45,7 mm)	700 – 1500	600 – 1250	500 – 1000 (240 – 500 mm <sup>2</sup> )	-	-
7645-T-110(L)	1.15 – 1.98" (29,2 – 50,3 mm)	-	-	750 – 1000 (400 - 500 mm <sup>2</sup> )	-	-
7646-T-110	1.53 – 2.32" (38,9 – 58,9 mm)	1750 – 2000	1500 – 2000	1250 – 2000 (625 - 1000 mm <sup>2</sup> )	-	-
7653-T-150	0.72 – 1.29" (18,3 – 32,8 mm)	300 -500	250 – 500	2/0 – 300 (70 – 150 mm <sup>2</sup> )	2 – 4/0 (35 – 120 mm <sup>2</sup> )	2 – 2/0 (35 - 70 mm <sup>2</sup> )
7655-T-150	1.05 – 1.80" (26,7 – 45,7 mm)	700 – 1500	600 – 1250	500 – 1000 (240 – 500 mm <sup>2</sup> )	250 – 800 (150 – 400 mm <sup>2</sup> )	3/0 – 600 (95 – 325 mm <sup>2</sup> )
7655-T-150(L)	1.15 – 1.90" (29,2 – 48,3 mm)	-	-	750 – 1000 (400 - 500 mm <sup>2</sup> )	500 – 750 (240 - 325 mm <sup>2</sup> )	-
7656-T-150	1.53 – 2.32" (38,9 – 58,9 mm)	1750 – 2000	1500 – 2000	1250 – 2000 (625 – 1000 mm <sup>2</sup> )	900 – 1750 (500 – 800 mm <sup>2</sup> )	700 – 1500 (400 – 725 mm <sup>2</sup> )