

3M™ Sensored Termination QX-Series  
for monitoring underground distribution systems



# Visibility in Real Time

**A simpler, more economical way to access  
data from your underground cable**

New 3M™ Sensored Termination QX-Series provides an easily deployed solution for acquiring accurate, real-time data from your underground medium-voltage distribution system. Use these “smart” cable accessories with your existing infrastructure – and gain the power to integrate renewables and balance resources more easily and efficiently.



### A new, more efficient way to monitor underground MV grids

3M™ Sensored Termination QX-Series is designed specifically for MV underground distribution system monitoring. These advanced terminations are based on trusted cold shrink technology – invented by 3M – and feature integrated voltage and current sensors.

Power equipment can be easily retrofitted with 3M Sensored Termination QX-Series, giving you the flexibility to monitor key locations

at significantly less cost than alternative technologies – and with minimal service disruption during installation.

Equally important, these innovative devices provide data with an accuracy of  $\pm <0.5\%$ \*. This provides a more complete picture of what's happening in your MV grid, allowing you to respond faster to changes in demand and potential trouble spots.

\* Refer to the appended voltage and current accuracy tables for detailed accuracy information.

### Engineered for high accuracy and reliability

3M Sensored Termination QX-Series is the next evolution of 3M's innovative cable accessories. Cold shrink technology has been used by the power industry since 3M introduced it over 40 years ago, providing an easily installed, safe and reliable sealing solution for low-, medium- and high-voltage installations.

3M Sensored Termination QX-Series employs passive voltage and current sensors that are installed directly into the MV power lines using proven 3M Cold Shrink Splices.

Once installed, the cold shrink component creates a dynamic, compressive environmental seal and electrical interface, allowing the sensors to deliver consistent, accurate data – even in challenging environments.

The installation process requires no special tools, sealants, torches or other heat sources – helping reduce both installation time and chance for craft error.



# Inside the Technology

**High accuracy:** Provides a pathway to the conductor within the shielded cable, giving you accurate voltage and current waveforms in real time.

**Economical:** Upgrade your current infrastructure with 3M Sensored Termination QX-Series to add measurement functionality at significantly less cost than replacing your existing power equipment.

**Quick and easy installation:** Compact, one-piece mechanical and electrical connection requires minimal downtime to install.

**Factory calibration:** Pre-calibrated and factory tested to ensure maximum reliability. No field calibration is required to maintain accuracy levels.

**Product life:** The 3M cold shrink system is engineered for post-installation reliability. Sensors consist of passive components, which require no external power source – helping reduce maintenance.

### Smart grid applications for 3M™ Sensored Termination QX-Series

Monitoring voltage and current data is a key requirement for deploying distribution automation technologies. 3M Sensored Termination QX-Series provides the high measurement accuracy needed to adjust real-time supply and demand. By enhancing grid visualization, they enable precise analysis and response – helping ensure that power is provided where and when it is needed. This not only helps maintain grid stability, but also improves system-wide efficiency.

Potential applications for 3M Sensored Termination QX-Series range from fault location to power quality enhancement, and much more:

**Volt/VAR optimization (VVO):**

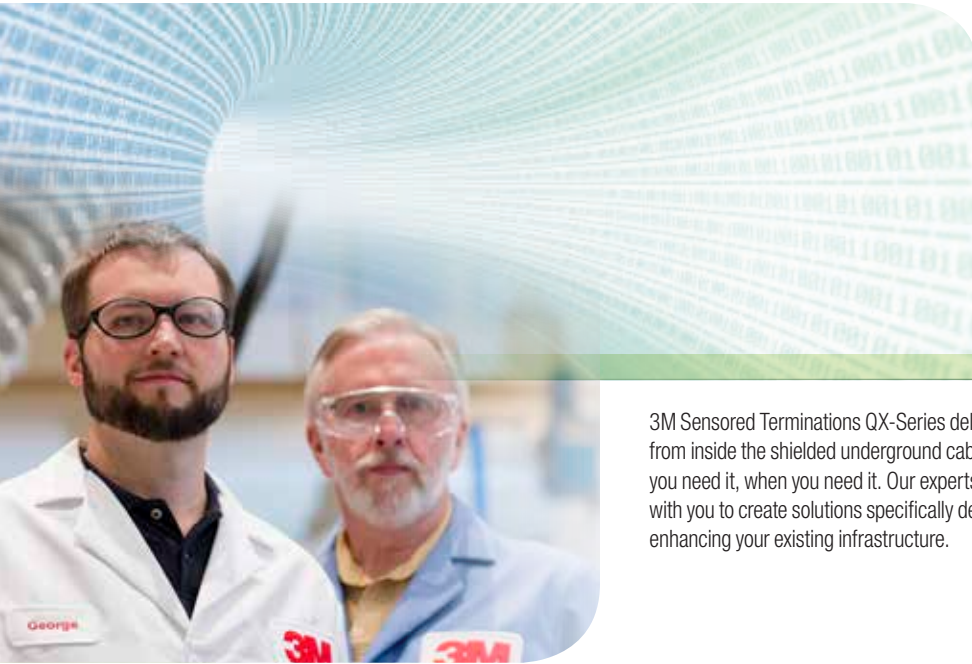
Calculate and compensate for inductive and capacitive loads with concurrent measurement of voltage and current

**Conservation voltage reduction (CVR):**

Improve energy efficiency by regulating voltage along distribution feeder lines according to real-time measurements

**Fault detection, isolation and restoration**

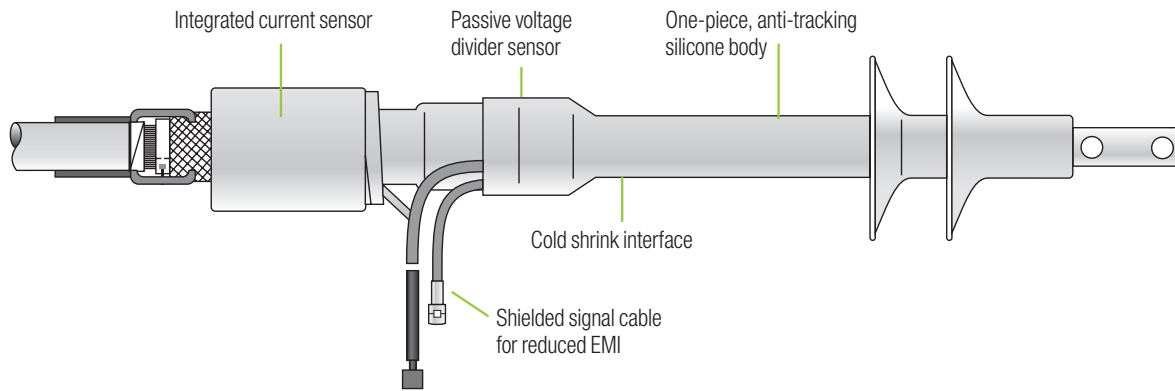
**(FDIR):** Quickly and efficiently localize faults from a remote location, even in complex systems with many branches and interconnections



3M Sensored Terminations QX-Series deliver data from inside the shielded underground cable – where you need it, when you need it. Our experts will work with you to create solutions specifically designed for enhancing your existing infrastructure.

# We're with you in the trenches

# 3M™ Sensored Termination QX-Series



## Properties and Specifications

Part No.	QX-T15I-vi1-E
Rated Primary Voltage	Up to 15 kV phase to phase
Accepted Conductor Range	AL Conductor: 1/0 AWG to 350 KCMil Cu Conductor: 1/0 AWG to 250 KCMil
UPC Number	051128-60504
Standard	IEEE 48 - 2009
Number of units per box	3

## Voltage Measurement Accuracy

Temperature	Voltage Accuracy (per phase)
-5°C to 0°C	± 1%
0°C to 35°C	± 0.5%
35°C to 40°C	± 1%

## Current Measurement Accuracy

Temperature	Current	Current Accuracy
-5° to 40°C	3 Arms	± 5%
	15 Arms	± 1%
	300 Arms	± 1%
	6000 Arms	± 5%

Learn how 3M™ Sensored Cable Termination QX-Series could help you manage your MV underground system more effectively – and for less cost.

Call today for more information:  
**800-517-0482**

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