

3M™ Mechanical Shearbolt Connectors, QCI Series

Data Sheet

August 2014

Description 3M™ Mechanical Shearbolt Connectors, QCI Series are designed to cover a wide range of conductor sizes from 2 AWG to 1250 kcmil. This shearbolt connector design provides excellent performance and features not found in many other shearbolt connectors. No dies are needed for installation: following cable preparation, simply slide the connector over the conductor and tighten the bolts until they shear. The QCI connectors are designed to connect either aluminum and/or copper conductors. The connectors are tin plated to resist corrosion. Individual sizes cover ranges from 2 AWG–250 kcmil, 1/0 AWG– 350 kcmil, 4/0 AWG–600 kcmil, 350–750 kcmil, 500–1000 kcmil and 1000-1250 kcmil.

Connector Contents Each connector includes the following materials:

- Connector with centering rings, if needed (no centering rings included with 1000-1250 kcmil connector)
- Foil tape pad
- Instruction sheet

Features

- Greater contact force versus standard shearbolt connectors
- Contact disk (friction plate) on the bolt end prevents damage to the conductor, providing increased contact force and will not damage fine strand conductors
- Bolts are continuous shearing, thus no filing is needed; bolts shear below the connector surface
- No specialty tools needed
- Meets, or exceeds, the requirements of ANSI C119.4, Class 2 (40% Mechanical Pullout Strength)
- Sized for American wire gauge conductors
- Tapered ends allow for smooth splice body transition from the connector to the cable
- Centering rings are provided for smaller conductors (not included with 1000-1250 kcmil connector)
- Designed to fit 3M™ Cold Shrink Splices QS-III and 3M™ Cold Shrink QS4 Integrated Splices

Applications

- To connect aluminum and/or copper conductors from 2 AWG through 1250 kcmil (MCM)
- For low and medium voltage up to 46 kV (Contact 3M for 69 kV and higher voltage applications. We offer splice kits that utilize shearbolt connectors specifically designed for these voltage classes.)

3M™ Mechanical Shearbolt Connectors, QCI Series

QCI Connector Selection Table

QCI*	Conductor Size Range AWG/kcmil	Connector O.D. Inches (mm)	Connector Length, with centering rings Inches (mm)	Connector I.D. Inches (mm)
QCI 2-250	2-250	1.10 (27,9)	4.41 (112,0)	0.64 (16,3)
QCI 1/0-350	1/0-350	1.30 (33,0)	5.12 (130,0)	0.78 (19,8)
QCI 4/0-600	4/0-600	1.50 (38,1)	5.75 (146,1)	0.94 (23,9)
QCI 350-750	350-750	1.65 (41,9)	6.93 (176,0)	1.02 (25,9)
QCI 500-1000	500-1000	2.05 (52,1)	7.83 (198,8)	1.22 (31,0)
QCI 1000-1250	1000-1250	2.10 (53,3)	8.25 (209,5)	1.34 (34,0)

***NOTE:** These connectors are designed to be used with 3M™ Cold Shrink Splice QS-III Kits and 3M™ Cold Shrink QS4 Integrated Splices. Refer to the splice instruction sheet for specific information regarding QCI usage for each kit. For non-3M splices, contact the splice manufacturer before installing the connector to determine proper sizing.

**Tool
Installation
Information**

The installer can use a ratchet (long handle, if available) with the correct hex socket (5, 6, or 8 mm) or an electric impact wrench, 18 volts, or greater, to tighten and shear the bolts. Depending on the battery condition and the torque available (160ft-lbs (217 Nm) or greater), some electric wrenches may not be able to complete bolt shear. In these cases, a ratchet should be used to complete bolt shearing.

**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.

The 3M™ Mechanical Shearbolt Connectors, QCI Series aluminum /copper connectors can be used on cables with an operating temperature of 221°F (105°C) and an emergency overload rating of 284°F (140°C). The QCI connectors pass the requirements of ANSI C119.4. The current rating of these connectors meets or exceeds the current rating of the conductor size for which it is intended.

Electrical Property Test Method - ANSI C119.4	Requirement	Results
Current Cycle Test - Class A @ 284°F (140°C) Conductor	Thermal Stability Resistance Stability	Pass Pass
Mechanical Pullout Test - Class 2 Partial Tension	40% pullout force	Pass

3M™ Mechanical Shearbolt Connectors, QCI Series

Storage	Components of the 3M™ Mechanical Shearbolt Connectors, QCI Series connectors are not impaired by freezing or overheating due to ambient temperatures found in typical storage or shipping. Normal stock rotation procedures are recommended.
Availability	Please contact your local distributor; available from 3M.com/electrical [Where to Buy] or call 1.800.245.3573.

Important Notice	All statements, technical information, and recommendations related to 3M's products are based on information believed to be reliable, but the accuracy or completeness is not guaranteed. Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use. Any statements related to the product, which are not contained in 3M's current publications, or any contrary statements contained on your purchase order, shall have no force or effect unless expressly agreed upon, in writing, by an authorized officer of 3M.
Warranty; Limited Remedy; Limited Liability	This product will be free from defects in material and manufacture at the time of purchase. 3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. If this product is defective within the warranty period stated above, your exclusive remedy shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the 3M product. Except where prohibited by law, 3M will not be liable for any indirect, special, incidental or consequential loss or damage arising from this 3M product, regardless of the legal theory asserted.

3M is a trademark of 3M Company.
UniShield is a registered trademark of General Cable Technologies Corporation.



Electrical Markets Division

6801 River Place Blvd.
Austin, TX 78726-9000
800.245.3573
FAX: 800.245.0329
www.3M.com/electrical

Please recycle
© 3M 2014 All rights reserved
78-8127-9895-3 Rev C