



3M Technical Information

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Cold Shrink Single Core Straight Joints for Copper Wire Screened Armoured & Non-Armoured Cables up to 36 kV U_{max} Voltage Class

3M™ Cold Shrink QS2000E Single Core Straight Joint Kits



Product Application

3M Cold Shrink QS2000E Single Core Straight Joint Kits are designed for inline jointing up to 36 kV U_{max} voltage class, single core polymeric power cable systems with copper wire screen, according to HD 620 (IEC 60502).

Kits 92-AS 630-1-AU, 93-AS 630-1-AU, 94-AS 630-1-AU, 92-AS 630-1-AR-AU, 93-AS 630-1-AR-AU, and 94-AS 630-1-AR-AU are released for centric mechanical connectors with shear bolts and deep indent crimp connectors only. For other connector types please contact your 3M sales office.

Kit Contents

3M Cold Shrink QS2000E Straight Joint Kits include Cold Shrink QS2000E Silicone joint bodies with integrated stress control layer, silicone elastomeric insulation and outer semi-conductive layer. Kits also contain Scotch™ Electrical Semi-Conducting Tape 13 to form the inner conductive electrode, copper screen sleeve, screen wire connectors and thick walled EPDM rubber cold shrink outer protection tubes to re-build the cable outer jacket.

Kits contain components for one single core cable.

Product Features

- The versatile design of the prefabricated one-piece cold shrink joint body allows installation on a wide range of cable sizes and types, and fast and easy installation at temperatures ranging from -20°C to $+50^{\circ}\text{C}$
- No heat or flame is needed during joint body installation
- Wide application range covering several cable cross sectional areas
- Earth connections by means of mechanical screen wire connectors
- Thick walled, EPDM rubber cold shrink outer re-jacketing tubes provide physical protection and moisture sealing of the completed joint
- No special tools needed during joint installation

Installation

3M Cold Shrink technology ensures quick, easy and safe installation of the QS2000E Joint Body and outer protection tubes by pulling and unwinding the plastic support core in counter clockwise direction. The use of special tools is not necessary.

Detailed instructions for installing the 3M Cold Shrink QS2000E Series Straight Joints are included in each kit.

3M™ Cold Shrink QS2000E Straight Joint Kits Selection Table

Single Core Non-Armoured Copper Wire Screened Cables

| Kit Number | BIL kV | Jacket Diameter Max. mm | Cable Insulation Range mm | Cable Size mm ² | | | | Connector Dimensions | |
|-------------------|-----------|----------------------------------|------------------------------------|----------------------------|-----------|-----------|-----------|-------------------------|-------------------|
| | | | | 6.6 kV | 11 kV | 22 kV | 33 kV | Diameter Max. mm | Length Max. mm |
| 92-AS 610-1-AU** | 95 | 36 | 14.6 - 25.2 | 70 - 185 | 25* - 150 | - | - | 28 | 135 |
| 92-AS 620-1-AU** | 95 | 46 | 19.1 - 36.8 | 240 - 400 | 185 - 400 | - | - | 38 | 230 |
| 92-AS 630-1-AU** | 95 | 74 | 33.4 - 67.6 | - | 500 - 800 | - | - | 60 | 300 |
| 93-AS 620-1-AU*** | 125 | 46 | 19.1 - 36.8 | - | - | 35 - 300 | - | 38 | 170 |
| 93-AS 630-1-AU*** | 125 | 74 | 33.4 - 67.6 | - | - | 400 - 630 | - | 60 | 270 |
| 94-AS 620-1-AU | 194 | 46 | 20.6 - 36.8 | - | - | - | 50 - 240 | 38 | 150 |
| 94-AS 630-1-AU | 194 | 74 | 35.9 - 67.6 | - | - | - | 300 - 630 | 60 | 250 |

Single Core Armoured Copper Wire Screened Cables

| Kit Number | BIL kV | Jacket Diameter Max. mm | Cable Insulation Range mm | Cable Size mm ² | | | | Connector Dimensions | |
|----------------------|-----------|----------------------------------|------------------------------------|----------------------------|-----------|-----------|-----------|----------------------|-------------------|
| | | | | 6.6 kV | 11 kV | 22 kV | 33 kV | Diameter Max. mm | Length Max. mm |
| 92-AS 610-1-AR-AU** | 95 | 36 | 14.6 - 25.2 | 70 - 185 | 25* - 150 | - | - | 28 | 135 |
| 92-AS 620-1-AR-AU** | 95 | 46 | 19.1 - 36.8 | 240 - 400 | 185 - 400 | - | - | 38 | 230 |
| 92-AS 630-1-AR-AU** | 95 | 74 | 33.4 - 67.6 | - | 500 - 800 | - | - | 60 | 300 |
| 93-AS 620-1-AR-AU*** | 125 | 46 | 19.1 - 36.8 | - | - | 35 - 300 | - | 38 | 170 |
| 93-AS 630-1-AR-AU*** | 125 | 74 | 33.4 - 67.6 | - | - | 400 - 630 | - | 60 | 270 |
| 94-AS 620-1-AR-AU | 194 | 46 | 20.6 - 36.8 | - | - | - | 50 - 240 | 38 | 150 |
| 94-AS 630-1-AR-AU | 194 | 74 | 35.9 - 67.6 | - | - | - | 300 - 630 | 60 | 250 |

*With adaptor kit 92-PG 610-1-AU/92-PG 610-3-AU

**Note: These joints are also suitable for 3.3 kV cables. Please select the right kit based on the jacket and insulation diameter ranges.

***Note: These joints are also suitable for 15 kV cables. Please select the right kit based on the jacket and insulation diameter ranges.

Final determining factors are cable size and cable insulation diameter

Performance Tests

The 3M QS2000E Single Core Straight Joint Series meets and exceeds the requirements of the European standard CENELEC HD 629.1. See Independent Test Reports TR003319 & 2007-104.

Storage

The shelf life of 3M Cold Shrink QS2000E Series Straight Joints is specified as 3 years.

Temperature: -40°C to +50°C.

Product Stewardship

3M has a fundamental concern for all who make, distribute and use its products, and for the environment in which we live. This concern is the basis of our philosophy and policies by which we assess the health and environmental information on our products and then take the appropriate steps to protect employee, the public health and the environment.

Customer Notice

3M encourages its customers and potential users of 3M products to review their applications for such products from the standpoint of human health and environmental quality to help ensure that 3M products are not used in ways for which they were not intended or tested. 3M personnel are available to assist customers in dealing with ecological and product safety considerations. Your 3M sales representative can arrange for the proper contacts.

Regulatory Status

3M QS2000E Series Straight Joints are not subject to the European WEEE and RoHS Directives but meet their requirements.

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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.** If this product is defective within any stated warranty period, 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.**

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