

# Cold Shrink Single Core Inline Joint with Cold Shrink Re-jacketing 94-AP63x-1/C Series with Mechanical Connectors

# **Application**

3M<sup>™</sup> QS2000 Cold Shrink Series Kits are designed for inline splicing up to 36kV Umax voltage class, Single core polymeric power cable systems with copper wire screen according to HD 620 (IEC 60502).

#### Kit Content

3M<sup>™</sup> 94-AP63x-1/C Inline Joint Series includes the Cold Shrink QS2000 silicone splice body with integrated stress control device, conductive electrode, silicone elastomeric insulation and outer semi-conductive layer. Also included are Copper Screen sleeve, Constant Force springs for metallic screen, mechanical connector, and thick walled EPDM rubber Cold Shrink outer tubes to re-build the cable outer jacket.



#### **Product Features**

- The versatile design of the prefabricated one-piece cold shrink splice body allows installation on a wide range of cable sizes and types and a fast and easy installation at temperatures ranging from 20°C to + 50°C.
- No heat or flame is needed during splice body installation.
- Mechanical connector provides quick and easy connection, with no special tooling.
- Solderless earth connection by means of Copper Stocking and Constant Force springs.
- Thick walled, EPDM rubber Cold Shrink outer re-jacketing tubes provide mechanical protection and moisture sealing of the completed Inline joints.
- No special tools are needed during splice installation.

#### Installation

3M<sup>™</sup> Cold Shrink technology ensures quick, easy and safe installation of the QS2000 Splice Body and outer protection tubes by pulling and unwinding the plastic support core in counter clockwise direction. Use of special tools is not necessary.

Detailed instructions for installing the 3M QS2000 Series Inline Joints are included in each kit.

#### **Product Identification**

3M<sup>™</sup> QS2000 Series Inline Joint kits are marked with supplier name, cable cross section ranges, voltage class and cable type, storage conditions and manufacturing codes for product traceability.

Page 1 of 2 Issue 1

### **Product Selection**

Kit Reference	Diameter over Cable jacket max.(mm)	Diameter over Primary Insulation (mm)	Cross Section (mm²) 18/30(36)kV & 19/33(36)kV
94-AP630-1/C	56	28.4 – 42.0	120 – 240
94-AP631-1/C	56	28.4 – 42.0	185 – 400

# Storage

The shelf life of 3M<sup>™</sup> QS2000 Series Inline Joints is specified as 3 years.

Temperature: - 40°C to +50°C.

#### **Performance Tests**

3M™ QS2000 Inline Joint Series meets and exceeds the requirements of the European standard CENELEC HD 629.1 and IEC 60502-4. See Independent Test Report No. I0480-0E

# **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.

# **Regulatory Status**

3M™ QS2000 Series Inline Joints are not subject of the European WEEE and RoHS Directives but meet their requirements

3M and Scotchcast are trademarks of 3M Company

#### **Important Notice**

All statements, technical information and recommendations related to the Seller's products are based on information believed to be reliable, but the accuracy or completeness thereof is not guaranteed. Before utilizing the product, the user should determine the suitability of the product for its intended use. The user assumes all risks and liability whatsoever in connection with such use.

Any statements or recommendations of the Seller which are not contained in the Seller's current publications shall have no force or effect unless contained in an agreement signed by an authorized office of the Seller.

The statements contained herein are made in lieu of all warranties, expressed or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose which warranties are hereby expressly disclaimed. SELLER SHALL NOT BE LIABLE TO THE USER OR ANY OTHER PERSON UNDER ANY LEGAL THEORY; INCLUDING BUT NOT LIMITED TO NEGLIGENCE OR STRICT LIABILITY; FOR ANY INJURY OR FOR ANY DIRECT; INDIRECT; INCIDENTAL OR CONSEQUENTIAL DAMAGES SUSTAINED OR INCURRED BY REASON OF THE USE OF ANY OF THE SELLER'S PRODUCTS.

Electrical Markets Division 3M United Kingdom PLC Sales Office PO Box 393

Telephone: 0870 609 4639 Fax: 01234 229 433

Bedford MK41 0YE

3M Ireland Ltd Sales Office

The Iveagh Building, The Park, Carrickmines, Dublin 18, Ireland Telephone: (01) 800 812 732

Fax: 353 1 280 3509

3M United Kingdom PLC Head Office

3M Centre, Cain Road Bracknell, Berkshire RG12 8HT Telephone: 01344 858 000

Fax: 01344 858 758

Page 2 of 2 Issue 1



# Cold Shrink Three Core Inline Joint with Heat Shrink Re-jacketing 94-AP23x-3/C Series with Mechanical Connectors

# **Application**

3M<sup>™</sup> QS2000 94-AP23x-3/C Cold Shrink Series Kits are designed for inline splicing up to 36kV Umax voltage class, Three core polymeric power cable systems with copper tape screen & armour according to HD 620 (IEC 60502).

#### Kit Content

3M<sup>™</sup> 94-AP23x-3/C Inline Joint Series includes the Cold Shrink QS2000 silicone splice body with integrated stress control device, conductive electrode, silicone elastomeric insulation and outer semi-conductive layer. Also included are Copper Screen sleeve, Constant Force springs for metallic screen & armour connection, mechanical connector, and adhesive lined heavy duty Heat Shrink outer tubes to re-build the cable outer jacket.



### **Product Features**

- The versatile design of the prefabricated one-piece cold shrink splice body allows installation on a wide range of cable sizes and types and a fast and easy installation at temperatures ranging from 20°C to + 50°C.
- No heat or flame is needed during splice body installation.
- Mechanical connector provides quick and easy connection, with no special tooling.
- Solderless earth connection by means of Copper Stocking and Constant Force springs.
- Heavy Duty, Adhesive lined Heat Shrink outer re-jacketing tubes provide mechanical protection and moisture sealing of the completed Inline joints.
- No special tools are needed during splice installation.

#### Installation

3M<sup>™</sup> Cold Shrink technology ensures quick, easy and safe installation of the QS2000 Splice Body and outer protection tubes by pulling and unwinding the plastic support core in counter clockwise direction. Use of special tools is not necessary.

Detailed instructions for installing the 3M QS2000 Series Inline Joints are included in each kit.

Page 1 of 2 Issue 1

#### **Product Identification**

3M<sup>™</sup> QS2000 Series Inline Joint kits are marked with supplier name, cable cross section ranges, voltage class and cable type, storage conditions and manufacturing codes for product traceability.

#### **Product Selection**

Kit Reference	Diameter over Primary Insulation (mm)	Cross Section (mm²) 18/30(36)kV & 19/33(36)kV
94-AP230-3/C	28.4 – 40.3	120 – 240
94-AP231-3/C	28.4 – 40.3	185 – 300

# **Storage**

The shelf life of 3M<sup>™</sup> QS2000 Series Inline Joints is specified as 3 years.

Temperature: - 40°C to +50°C.

#### **Performance Tests**

3M<sup>™</sup> QS2000 Inline Joint Series meets and exceeds the requirements of the European standard CENELEC HD 629.1 and IEC 60502-4. See Independent Test Report No. TR003239-1

# **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.

# **Regulatory Status**

3M™ QS2000 Series Inline Joints are not subject of the European WEEE and RoHS Directives but meet their requirements

3M and Scotchcast are trademarks of 3M Company

#### **Important Notice**

All statements, technical information and recommendations related to the Seller's products are based on information believed to be reliable, but the accuracy or completeness thereof is not guaranteed. Before utilizing the product, the user should determine the suitability of the product for its intended use. The user assumes all risks and liability whatsoever in connection with such use.

Any statements or recommendations of the Seller which are not contained in the Seller's current publications shall have no force or effect unless contained in an agreement signed by an authorized office of the Seller.

The statements contained herein are made in lieu of all warranties, expressed or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose which warranties are hereby expressly disclaimed. SELLER SHALL NOT BE LIABLE TO THE USER OR ANY OTHER PERSON UNDER ANY LEGAL THEORY; INCLUDING BUT NOT LIMITED TO NEGLIGENCE OR STRICT LIABILITY; FOR ANY INJURY OR FOR ANY DIRECT; INDIRECT; INCIDENTAL OR CONSEQUENTIAL DAMAGES SUSTAINED OR INCURRED BY REASON OF THE USE OF ANY OF THE SELLER'S PRODUCTS.

Electrical Markets Division 3M United Kingdom PLC Sales Office

PO Box 393 Bedford MK41 0YE Telephone: 0870 609 4639

Fax: 01234 229 433

3M Ireland Ltd Sales Office

The Iveagh Building, The Park, Carrickmines, Dublin 18, Ireland Telephone: (01) 800 812 732

Fax: 353 1 280 3509

3M United Kingdom PLC Head Office

3M Centre, Cain Road Bracknell, Berkshire RG12 8HT Telephone: 01344 858 000

Fax: 01344 858 758

Page 2 of 2 Issue 1



# **Cold Shrink Transition / Trifurcating Joint**

# 94-FP43x-3/C Series with Mechanical Connectors

# **Application**

3M<sup>TM</sup> QS2000 94-FP43x-3/C Series Cold Shrink Joints are designed for transition trifurcating splicing up to 36kV Umax voltage class, three core PILC (H and HSL Type) cables jointing to Single core XLPE cables, according to HD 620 (IEC 60502).

#### **Kit Content**

3M<sup>™</sup> 94-FP43x-3/C Series Cold Shrink Joints include the Cold Shrink QS2000 silicone splice body with integrated stress control device, conductive electrode, silicone elastomeric insulation and outer semi-conductive layer. Also included are Copper Screen sleeves, Constant Force springs for metallic screen, mechanical connectors, and Mould Shell.

Resin packs are available separately; please refer to selection tables for further details.



#### **Product Features**

- The versatile design of the prefabricated one-piece cold shrink splice body allows installation on a wide range of cable sizes and types and a fast and easy installation at temperatures ranging from 20°C to + 50°C.
- No heat or flame is needed during splice body installation.
- Mechanical connector provides guick and easy connection, with no special tooling.
- No special tools are needed during splice installation.
- Scotchcast resin packs provide options to install in zones 1 & 2 hazardous areas as well as standard buried applications.

#### Installation

3M<sup>™</sup> Cold Shrink technology ensures quick, easy and safe installation of the QS2000 Splice Body and outer protection tubes by pulling and unwinding the plastic support core in counter clockwise direction. Use of special tools is not necessary.

Detailed instructions for installing the 3M QS2000 Series Inline Joints are included in each kit.

#### **Product Identification**

3M<sup>™</sup> QS2000 Series Inline Joint kits are marked with supplier name, cable cross section ranges, voltage class and cable type, storage conditions and manufacturing codes for product traceability.

# **Performance Tests**

3M™ QS2000 Inline Joint Series meets and exceeds the requirements of the European standard CENELEC HD 629.1 and IEC 60502-4. See Test Report No. TR000040-2

Page 1 of 2 Issue 2

**Product Selection; Joint Kit** 

Kit Reference	Application Range Guide (mm²)	Diameter over Primary Insulation (mm)
94-FP435-3/C	120 – 240	28.4 – 42.0
94-FP436-3/C	185 - 400	28.4 – 42.0
94-FV635-5-HSL Supplementary Kit for HSL Type		les

#### **Product Selection; Resin Packs**

Kit Reference	Resin Packs for Standard Applications	Resin Packs for Hazardous Area Applications
94-FP435-3/C	Type <b>470W</b>	Type <b>1402FR</b>
94-FP436-3/C	Qty 9 - 2.2 Litre packs	Qty 3 – 7.18 Litre packs

# **Storage**

The shelf life of 3M™ QS2000 Series Inline Joints is specified as 3 years.

Temperature: - 40°C to +50°C at relative humidity <75%.

# **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.

#### **Regulatory Status**

3M™ QS2000 Series Inline Joints are not subject of the European WEEE and RoHS Directives but meet their requirements

3M and Scotchcast are trademarks of 3M Company

#### **Important Notice**

All statements, technical information and recommendations related to the Seller's products are based on information believed to be reliable, but the accuracy or completeness thereof is not guaranteed. Before utilizing the product, the user should determine the suitability of the product for its intended use. The user assumes all risks and liability whatsoever in connection with such use.

Any statements or recommendations of the Seller which are not contained in the Seller's current publications shall have no force or effect unless contained in an agreement signed by an authorized office of the Seller.

The statements contained herein are made in lieu of all warranties, expressed or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose which warranties are hereby expressly disclaimed. SELLER SHALL NOT BE LIABLE TO THE USER OR ANY OTHER PERSON UNDER ANY LEGAL THEORY; INCLUDING BUT NOT LIMITED TO NEGLIGENCE OR STRICT LIABILITY; FOR ANY INJURY OR FOR ANY DIRECT; INDIRECT; INCIDENTAL OR CONSEQUENTIAL DAMAGES SUSTAINED OR INCURRED BY REASON OF THE USE OF ANY OF THE SELLER'S PRODUCTS.

Electrical Markets Division 3M United Kingdom PLC Sales Office PO Box 393

Bedford MK41 0YE Telephone: 0870 609 4639

Fax: 01234 229 433

3M Ireland Ltd Sales Office

The Iveagh Building, The Park, Carrickmines, Dublin 18, Ireland Telephone: (01) 800 812 732

Fax: 353 1 280 3509

3M United Kingdom PLC Head Office

3M Centre, Cain Road Bracknell, Berkshire RG12 8HT Telephone: 01344 858 000

Fax: 01344 858 758

Page 2 of 2 Issue 2