



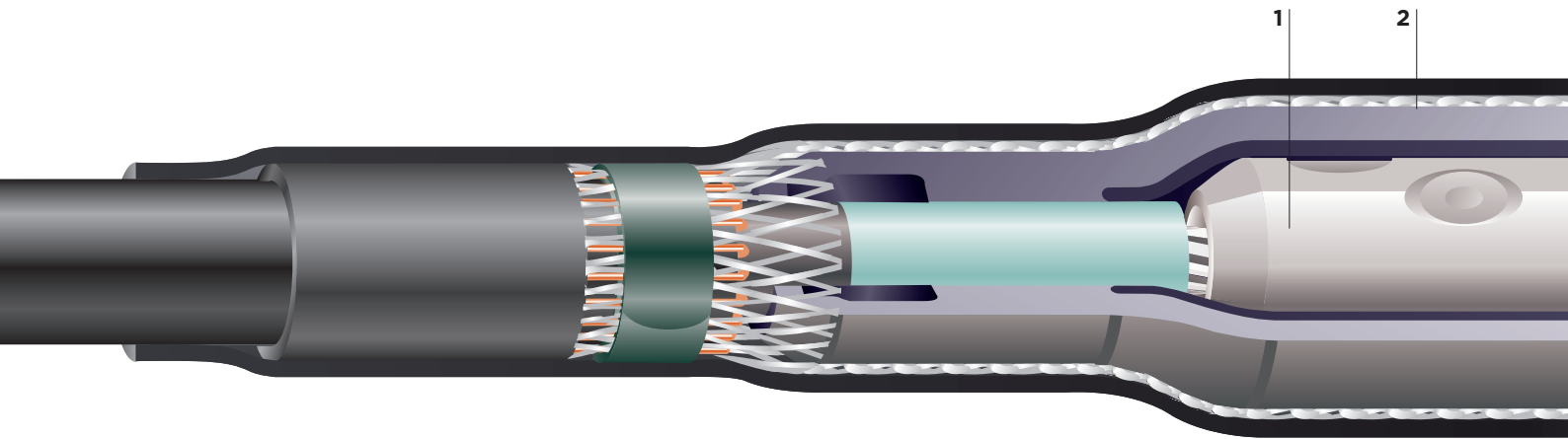
Raychem Cold Shrinkable "All-In-One"  
Straight Joint CSJA for Polymeric Insulated  
Cables up to 42kV

**Raychem**  
from TE Connectivity

# Raychem Cold Shrinkable "All-In-One" Straight Joint CSJA for Polymeric Insulated Cables up to 42kV

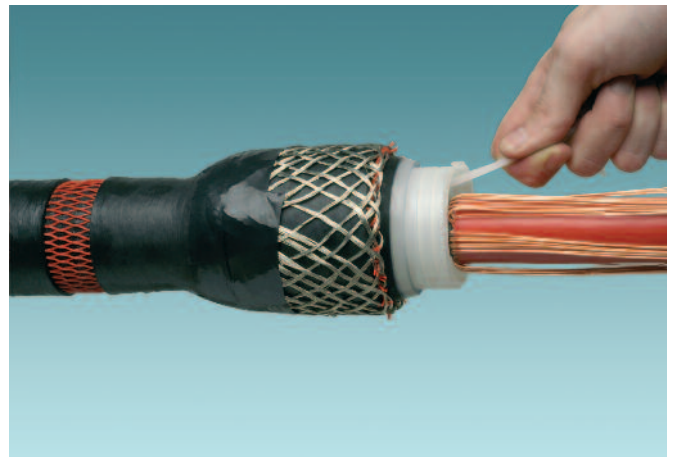
## Features

- Joint body, earthing system and re-jacketing pre-expanded on one holdout system
- Single piece silicone rubber joint body with high mechanical expansion capability allows a wide application range
- Electrical stress control of the screen cut area by integrated conductive geometrical stress cones
- Electrical stress control of the connector area by an integrated screened connection area (Faraday cage)
- Well-known and easy-to-install holdout system
- Short parking distance required
- Easy-to-install joint system with short installation time
- Exceeds CENELEC HD 629.1, requirements which include IEC, BS, VDE and other international specifications
- Mechanical shear bolt connector to IEC 61238-1 is supplied with the kit
- Proven shield continuity concept



### 1 Mechanical shear bolt connectors

Raychem joints CSJA are provided with Tyco Electronics BSM mechanical connectors fitted with shear head bolts to ensure a reliable connection for different conductor materials, shapes and types used in today's network. The pre-set shear torque of the bolts ensures that the correct contact pressure is always achieved. The specially designed contact surface on the inside of the connector breaks up any oxide layer and ensures reliable service over the entire life of the joint. Different sizes of mechanical connectors with wide application ranges are available. The connectors have been tested in accordance with IEC-61238-1 class A. For the installation of mechanical connectors using shear-head bolts a cordless impact wrench can be supplied (IT-1000-023).



### 2 Pre-expanded silicone joint body

The silicone rubber joint body is delivered in a pre-expanded condition on a spiral holdout system. Silicone materials with excellent mechanical properties allow high expansion forces and therefore guarantee a wide application range. Integrated stress control mechanism and conductive outer layer provide exceptional electrical performance. The joint body can be easily removed from the spiral holdout with low release forces, particularly designed for joint applications.

### 3 Electrical stress control

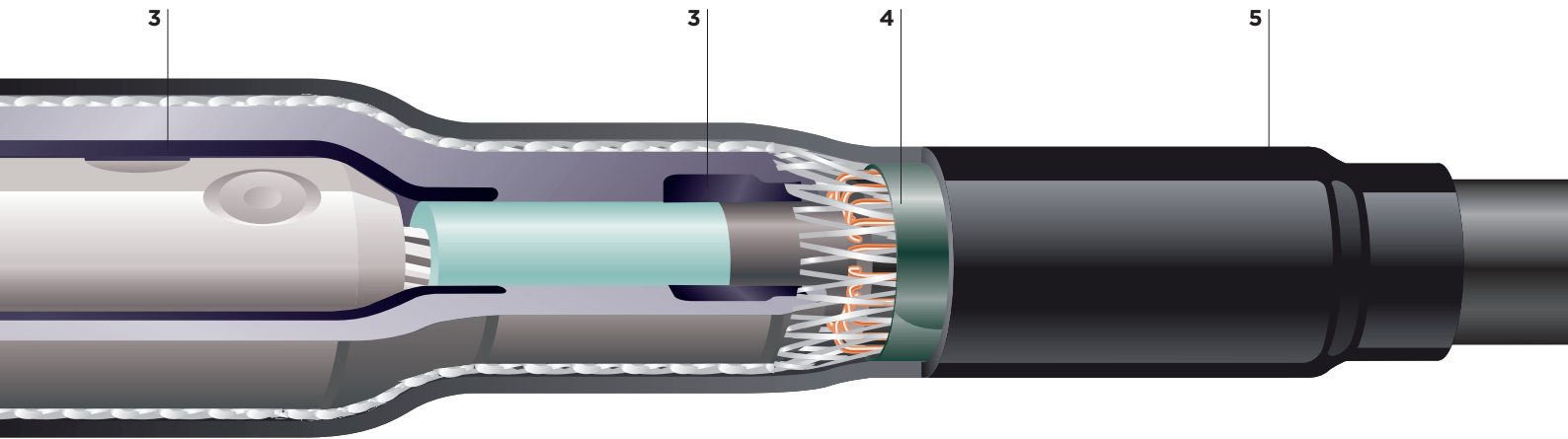
Electrical stress control is fully integrated in the silicone joint body by well defined conductive areas. Conductive cones with an exactly defined geometrical design over the screen cut area provide excellent electrical stress control. The electrical stress control of the connector area is made with an integrated conductive screen performing as a Faraday cage. The coverage of voids and edges at the connection area with void fillers is not necessary.



**General**

Raychem joints CSJA offer a reliable, fast and easy-to-install jointing system to assure and maintain high network reliability. All key components are pre-expanded on one holdout system, allowing a very short parking length during cable preparation. A silicone rubber joint body with integrated geometrical stress cones and Faraday cage provides excellent electrical stress control.

Raychem joints CSJA are designed to cover a wide range of applications and to accommodate the variety of cable and conductor types in the networks. Range-taking mechanical connectors ensuring reliable installation and service are supplied with the kit.



**4 Shield continuity**

The integrated pre-expanded copper mesh is connected to the cable screens by constant force roll springs. This connection method reliably operates during load-cycling and thermal short circuits of the conductors on all cable types regardless of whether the oversheath is PVC or PE. It provides a smooth profile which is resistant to mechanical impacts. The solderless earth connection has more than 25 years service experience in Tyco Electronics Raychem joint systems used worldwide.



**5 Outer sealing and protection**

Raychem joint CSJA has an integrated outer protection system which is already expanded onto the joint body and requires no additional parking distance. Our EPDM sleeve combined with a high performance sealant forms a reliable moisture seal and corrosion protection. It is easy to install by just rolling out the flipped back re-jacketing.

**Raychem joint CSJA without mechanical connector**

|           | Application range* | Kit description  | Diameter over core insulation [mm] | Diameter over outer sheath [mm] | Admissible connector dimensions** |               |
|-----------|--------------------|------------------|------------------------------------|---------------------------------|-----------------------------------|---------------|
|           | [mm <sup>2</sup> ] |                  |                                    |                                 | Max. length [mm]                  | Diameter [mm] |
| 12 kV     | 95 - 240           | CSJA-12B/1XU-1XU | 18.6 - 28.4                        | 26.0 - 39.0                     | 145.0                             | 19.0 - 33.0   |
|           | 185 - 300          | CSJA-12C/1XU-1XU | 23.2 - 32.6                        | 30.0 - 44.0                     | 145.0                             | 23.0 - 37.0   |
|           | 240 - 400          | CSJA-12D/1XU-1XU | 25.7 - 33.6                        | 33.0 - 45.0                     | 170.0                             | 26.0 - 42.0   |
|           | 500 - 800          | CSJA-12E/1XU-1XU | 34.4 - 42.2                        | 43.0 - 58.0                     | 200.0                             | 34.0 - 45.0   |
| 24 kV     | 35 - 185           | CSJA-24B/1XU-1XU | 18.9 - 30.1                        | 26.0 - 41.0                     | 145.0                             | 19.0 - 33.0   |
|           | 95 - 300           | CSJA-24C/1XU-1XU | 23.5 - 34.6                        | 30.0 - 46.0                     | 145.0                             | 23.0 - 37.0   |
|           | 185 - 400          | CSJA-24D/1XU-1XU | 27.4 - 37.8                        | 35.0 - 49.0                     | 170.0                             | 26.0 - 42.0   |
|           | 400 - 630          | CSJA-24E/1XU-1XU | 35.1 - 44.0                        | 43.0 - 57.0                     | 200.0                             | 34.0 - 45.0   |
|           | 800 - 1000         | CSJA-24F/1XU-1XU | 43.9 - 53.2                        | 58.5 - 67.0                     | 200.0                             | 41.0 - 50.0   |
| 36(42) kV | 70 - 240           | CSJA-36D/1XU-1XU | 26.2 - 37.6                        | 34.0 - 48.0                     | 140.0                             | 26.0 - 38.0   |
|           | 240 - 630          | CSJA-36E/1XU-1XU | 34.9 - 49.2                        | 42.0 - 61.0                     | 200.0                             | 34.0 - 50.0   |
|           | 500 - 800          | CSJA-36F/1XU-1XU | 42.6 - 53.4                        | 51.0 - 66.0                     | 200.0                             | 41.0 - 50.0   |

**Raychem joint CSJA with mechanical connector**

|           | Application range* | Kit description     | Diameter over core insulation [mm] | Diameter over outer sheath [mm] | Diameter over conductor*** |
|-----------|--------------------|---------------------|------------------------------------|---------------------------------|----------------------------|
|           | [mm <sup>2</sup> ] |                     |                                    |                                 | [mm]                       |
| 12 kV     | 95 - 240           | CSJA-12B/1XU-1XU-M  | 18.6 - 28.4                        | 26.0 - 39.0                     | 11.0 - 19.2                |
|           | 185 - 300          | CSJA-12C/1XU-1XU-M  | 23.2 - 32.6                        | 30.0 - 44.0                     | 15.5 - 23.1                |
|           | 240 - 400          | CSJA-12D/1XU-1XU-M  | 25.7 - 33.6                        | 33.0 - 45.0                     | 17.8 - 24.6                |
|           | 500                | CSJA-12E/1XU-1XU-M1 | 34.4 - 36.2                        | 43.0 - 48.0                     | 25.7 - 27.6                |
|           | 630                | CSJA-12E/1XU-1XU-M2 | 38.0 - 40.0                        | 47.0 - 52.0                     | 29.3 - 32.5                |
| 24 kV     | 35 - 150           | CSJA-24B/1XU-1XU-M  | 18.9 - 28.5                        | 26.0 - 39.0                     | 6.8 - 15.0                 |
|           | 95 - 240           | CSJA-24C/1XU-1XU-M1 | 23.5 - 32.6                        | 30.0 - 44.0                     | 11.0 - 19.2                |
|           | 120 - 300          | CSJA-24C/1XU-1XU-M2 | 24.3 - 34.6                        | 32.0 - 46.0                     | 12.5 - 23.1                |
|           | 185 - 400          | CSJA-24D/1XU-1XU-M  | 27.4 - 37.8                        | 35.0 - 49.0                     | 15.5 - 24.6                |
|           | 500                | CSJA-24E/1XU-1XU-M1 | 37.9 - 40.6                        | 46.0 - 52.0                     | 25.7 - 27.6                |
|           | 630                | CSJA-24E/1XU-1XU-M2 | 41.0 - 44.0                        | 56.0 - 57.0                     | 29.3 - 32.5                |
| 36(42) kV | 95 - 240           | CSJA-36D/1XU-1XU-M  | 27.8 - 37.6                        | 35.0 - 48.0                     | 11.0 - 19.2                |
|           | 240 - 400          | CSJA-36E/1XU-1XU-M1 | 34.9 - 42.8                        | 42.0 - 54.0                     | 17.8 - 24.6                |
|           | 500                | CSJA-36E/1XU-1XU-M2 | 42.6 - 45.6                        | 51.0 - 57.0                     | 25.7 - 27.6                |
|           | 630                | CSJA-36E/1XU-1XU-M3 | 45.8 - 49.2                        | 56.0 - 61.0                     | 29.3 - 32.5                |

\* The application range given in the table is based on polymeric insulated cables according to IEC 60502 with stranded circular conductors.  
Due to different conductor dimensions and/or cable constructions the minimum and maximum application range may be extendable. Please contact your local sales representative.

\*\* Max. block thickness of connector 10 mm

\*\*\* The diameter over conductor is needed only for kits including Tyco Electronics BSM connectors. The values given in the selection table refer to aluminium circular conductors and may change for other materials and shapes.

While TE Connectivity (TE) has made every reasonable effort to ensure the accuracy of the information in this catalog, TE does not guarantee that it is error-free, nor does TE make any other representation, warranty or guarantee that the information is accurate, correct, reliable or current. TE reserves the right to make any adjustments to the information contained herein at any time without notice. TE expressly disclaims all implied warranties regarding the information contained herein, including, but not limited to, any implied warranties of merchantability or fitness for a particular purpose. The dimensions in this catalog are for reference purposes only and are subject to change without notice. Specifications are subject to change without notice. Consult TE for the latest dimensions and design specifications. Raychem, TE Connectivity and TE Connectivity (logo) are trademarks. Other logos, product and company names mentioned herein may be trademarks of their respective owners.

**TE Energy - innovative and economical solutions for the electrical power industry: cable accessories, connectors & fittings, insulators & insulation, surge arresters, switching equipment, street lighting, power measurement and control.**

Tyco Electronics Raychem GmbH  
a TE Connectivity Ltd. Company  
TE Energy  
Finsinger Feld 1  
85521 Ottobrunn/Munich, Germany

Phone: +49-89-6089-0  
Fax: +49-89-6096345

energy.te.com

