



Raychem MXSB Heat-shrinkable Branch Joints  
for Single Core Polymeric Cables up to 24 kV

**Raychem**  
from TE Connectivity

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Today's networks must achieve higher levels of reliability and flexibility to meet the demands of their operators who are under increasing pressure to decrease the networks' costs. The result is that engineers are looking at new ways to optimize the configuration of their networks.

In response to these demands we have developed a range of easy to install, medium voltage branch joints for single core polymeric cables.

Raychem joints MXSB use shear bolt connectors to simplify the interconnection of conductors. Heat-shrinkable insulating components supply pre-engineered thicknesses of insulation and stress control material. This is a major step forward in comparison with traditional taping solutions.

## Network applications

The long-term reliability of polymeric cables in combination with modern fault finding techniques has opened up many economically attractive opportunities for solid branch joint connections.

The branch joints are sealed in robust heat-shrinkable jackets and are suitable for direct burial which saves valuable space in comparison with traditional link boxes or switchgear.

Raychem branch joints MXSB can also be used to reduce the amount of cables required for making connections to transformers remote from the distribution ring. The most popular application today is the use in wind farms to connect turbines into a single distribution ring or to connect to solar power grids.

## Raychem's flexible solution

Given the difficulties of both connecting the conductor and providing the insulation for the more complex geometry of a branch joint, Raychem's solution provides a complete kit including both connector and insulation. Many of the joint's basic components are already used in Raychem's heat-shrinkable elastomeric joints proven in millions of installations all over the world. The heart of the insulation is a thick-wall elastomeric Rayfit sleeve designed to conform tightly with the stress control system and the connector.



## Special features

The design of the connector, specially engineered to fit the insulation components, also enables the user to connect different conductor sizes. This provides great flexibility in the range of cables which can be connected in this branch joint.

The connector uses bolts designed to shear off at a preset level of torque and is installed with a standard socket set.

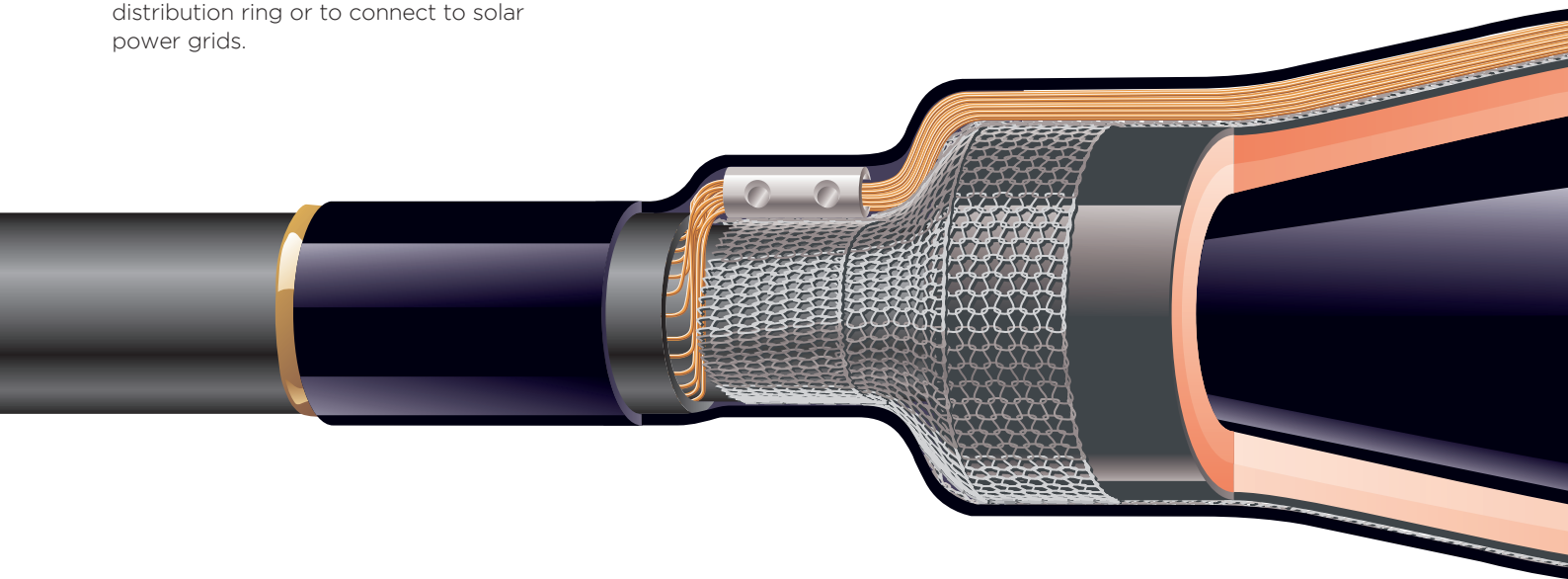
This technique ensures that the connector performs consistently for a wide range of conductor diameters. As the installation of the complete joint is similar to the installation of a heat-shrinkable inline joint, time requirements are low and no additional installer skills are needed.

The complete kit has been tested to meet Raychem's performance standards according to CENELEC HD 629.1S2.

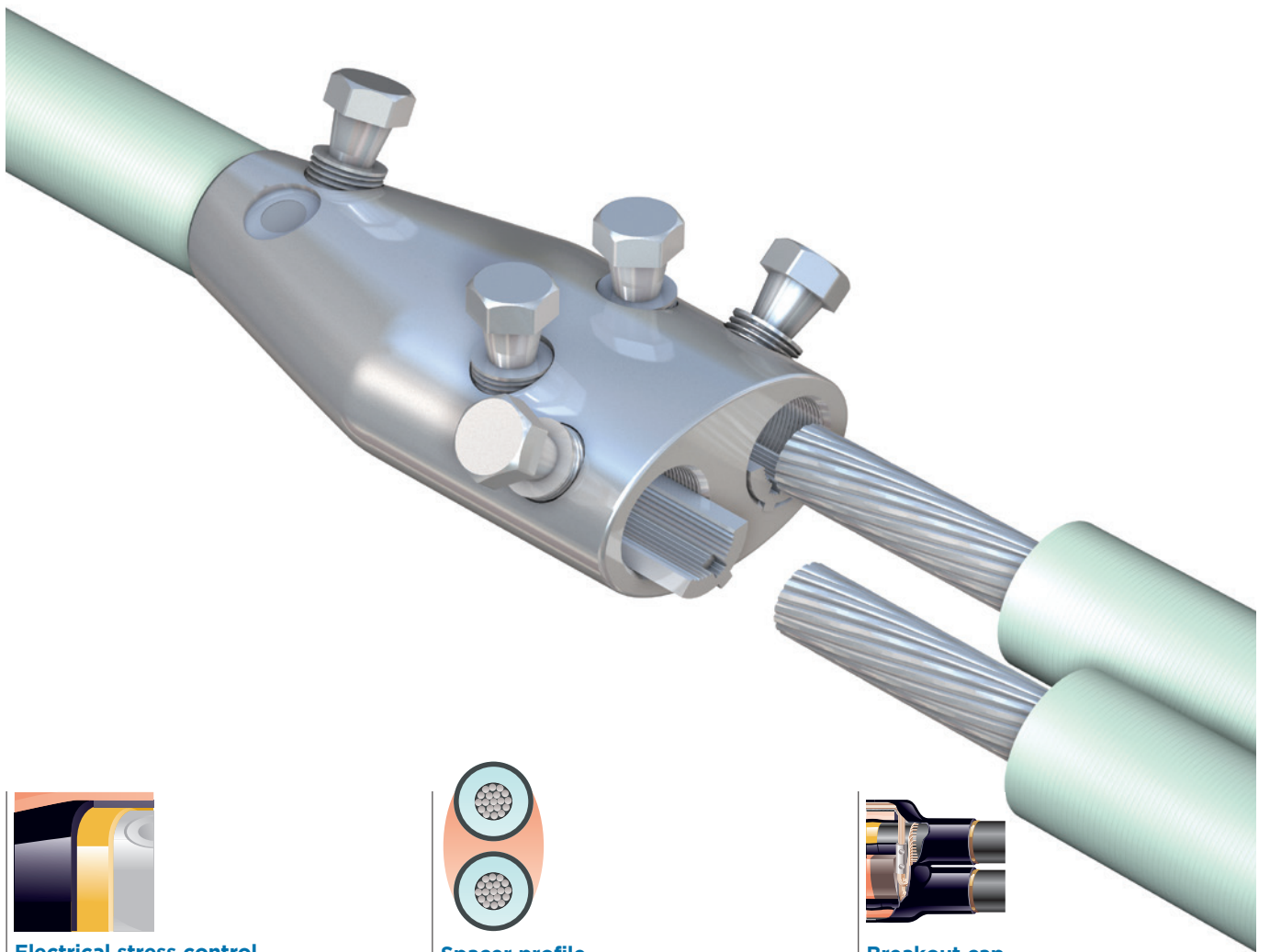
For performance specifications and available sizes please see last page.

## Benefits

- All inclusive kit content
- Space saving design at low total cost
- Immediate service after installation
- No need for extra tooling

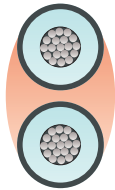






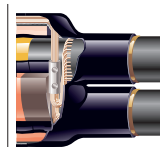
**Electrical stress control**

The mechanical connector is covered with yellow void filler tape and Raychem JSCR stress control tubing. These are the same materials used in Raychem's inline medium voltage joints.



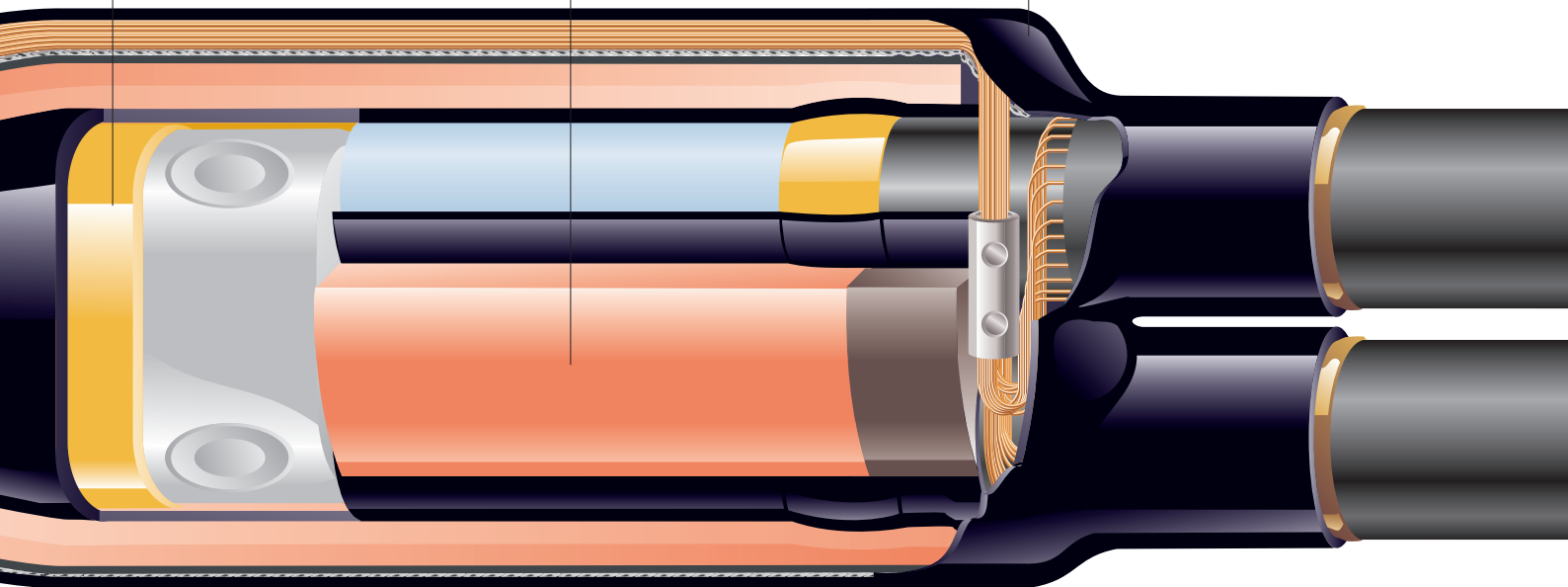
**Spacer profile**

This specially extruded profile is made from a red high-performance insulating elastomer. The material properties guarantee a void-free crutch filling and tight electrical interfaces between the two branch cables.



**Breakout cap**

The adhesive coated two finger breakout provides water sealing for the branch side in the same way as the jacket does for the single side. This also gives the flexibility needed to ensure good sealing under temperature changes due to load cycling.



**Wind farm application**



**Solar power grid application**



**Selection Table**

Voltage [kV]	Cross-section [mm <sup>2</sup> ]	Conductor Ø [mm]	Insulation Ø [mm]	Over sheath Ø [mm]	Description
12kV	35 - 95	6.1 - 12.9	14.4 - 21.8	23 - 34	MXSB-12A/1XU-2XU
	70 - 185	8.7 - 16.8	17.6 - 25.9	25 - 39	MXSB-12B/1XU-2XU
	150 - 300	13.9 - 23.1	22.3 - 30.4	28 - 43	MXSB-12C/1XU-2XU
24kV	35 - 95	6.1 - 12.9	18.0 - 25.0	27 - 38	MXSB-24A/1XU-2XU
	70 - 185	8.7 - 16.8	21.9 - 30.1	30 - 39	MXSB-24B/1XU-2XU
	120 - 300	12.7 - 23.1	25.0 - 34.6	32 - 48	MXSB-24C/1XU-2XU

For other combinations of cable sizes or information for 36 kV cables, please contact your local sales representative.

**Test report PPR-2848**

The MXSB branch joint was tested according to Cenelec HD 629.1 S2.

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**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.**

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