



Energy Division

Approved cable accessories  
and components for marine  
and offshore applications

 **Tyco Electronics**  
Our commitment. Your advantage.



Under the established product brand name Raychem, Tyco Electronics offers a comprehensive range of cable accessories for almost all cable types. The most innovative utilities and industries around the world – including, mining, marine, and offshore – use our power cable accessories. Designed to withstand environmental extremes and high pollution levels over long operating lifetimes, they help maintain service reliability in both overhead and underground installations. We have developed specially formulated insulation materials that resist tracking and degradation caused by erosion, UV light and other environmental stresses.

#### Customer requirements

Intensive R&D in the field of advanced materials and constant improvement programmes help us to increase our responsiveness to customer requirements and to meet the demands of modern cable networks:

- Fewer components
- Simplified cable preparation
- Fast installation
- Safe for installer and environment
- Consistent approach for all cable types and voltage classes
- High reliability
- Qualification to international specifications, such as IEC, CENELEC, IEEE and GOST

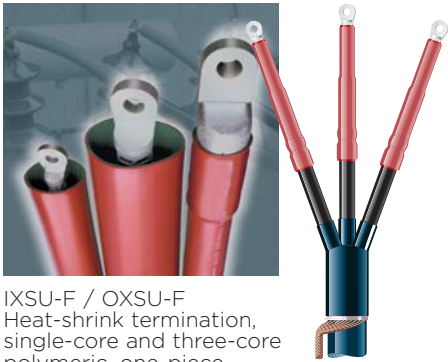
#### Product features

Product design and materials have been systematically improved over more than three decades. This has been achieved through intensive research in close co-operation with our customers to produce new materials for the electrical power industry. The result is a wide range of products with a unique combination of properties:

- Increased resistance to thermal ageing
- Insulation-thickness memory
- Shape memory
- Excellent resistance to surface electrical activity
- Improved UV performance
- Electrical stress control
- Void-free interfacial bonding
- Impermeability to cable oils
- Moisture blocking
- Improved flame resistance
- Elastomer technology
- Mechanical connecting systems



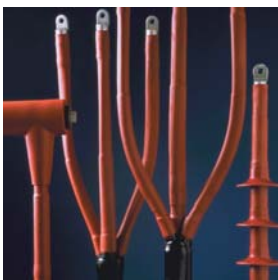
**Terminations**



IXSU-F / OXSU-F  
Heat-shrink termination,  
single-core and three-core  
polymeric, one-piece

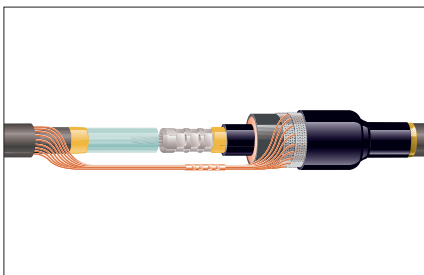


TFTI / TFTO  
Cold-shrink/push-on  
termination, single-core  
polymeric



EPKT & HVT-G / SG  
Heat-shrink termination,  
single-core and three-core  
polymeric

**Joints**



SXSU  
Heat-shrink inline joint, single-core  
polymeric



EPKE  
Heat-shrink live end seal

**Tubing**



MWTM  
Heat-shrink insulating and  
sealing medium-wall tubing



WCSM  
Heat-shrink insulating and  
sealing heavy-wall tubing



FCSM  
Heat-shrink flame retarded  
heavy-wall flexible insulating  
tubing

**Wraparounds**



MRSM  
Heat-shrink flexible cable jacket  
repair sleeve



CRSM  
Heat-shrink cable jacket repair sleeve



ZCSM  
Heat-shrink halogen-free  
and flame-retarded  
insulating tubing for low  
hazard areas



ATUM  
Heat-shrink thin-wall  
general-purpose insulating  
and sealing tubing



XCSM  
Heat-shrink medium-wall  
general-purpose insulating  
and sealing tubing

**Moulded parts**



102L  
Heat-shrink cable caps



302K, 402W, 502K  
Heat-shrink cable breakouts





**Approved products for marine and offshore applications**

| Product                                    | PPR number | Classification company              | Certificate number | Issued      | Expiration date |
|--|------------|-------------------------------------|--------------------|-------------|-----------------|
| MWTM & WCSM                                | 1675       | Det Norske Veritas                  | E-8039             | 04. Aug 06  | 31. Dec 10      |
| FCSM                                       | 1672       | Det Norske Veritas                  | E-8036             | 04. Aug 06  | 31. Dec 10      |
| MRSM                                       | 1673       | Det Norske Veritas                  | E-8037             | 04. Aug 06  | 31. Dec 10      |
| ZCSM                                       | 1674       | Det Norske Veritas                  | E-8038             | 04. Aug 06  | 31. Dec 10      |
| EPKT-7 / EPKT-17                           | 1676       | Det Norske Veritas                  | E-8040             | 04. Aug 06  | 31. Dec 10      |
| HVT-G/SG                                   | 1678       | Det Norske Veritas                  | E-8042             | 04. Aug 06  | 31. Dec 10      |
| TFTI / TFTO                                | 1677       | Det Norske Veritas                  | E-8041             | 04. Aug 06  | 31. Dec 10      |
| I(O)XSU-F                                  | 1679       | Det Norske Veritas                  | E-8043             | 04. Aug 06  | 31. Dec 10      |
| SXSU                                       | 1487       | Det Norske Veritas                  | E-7898             | 03. Mar 06  | 31. Dec 08      |
| ATUM, MWTM, WCSM                           | 1464       | Germanischer Lloyd                  | 65 673-73 HH       | 11. Oct 04  | 10. Oct 09      |
| IXSU-F                                     | 1769       | Germanischer Lloyd                  | 20 437-04 HH       | 22. Apr 04  | 22. Apr 09      |
| XCSM, CRSM, EPKE, & 102L, 302K, 402W, 502K | 1507       | Germanischer Lloyd                  | 17 314-00 HH       | 10. Nov 06  | 10. Nov 11      |
| TFTI / TFTO                                | 2189       | Registro Italiano Navale            | No ELE204306CS/02  | 19. May 06  | 19. May 11      |
| IXSU-F                                     | 2190       | Registro Italiano Navale            | No ELE204306CS/01  | 19. May 06  | 19. May 11      |
| IXSU-F                                     | 1641       | Lloyds Register of Shipping         | 02/20047(E1)       | 31. Oct 07  | 04. Sep 12      |
| IXSU-F                                     | 2142       | Russian Marine Register of Shipping | 05.03378.011       | 30. Sept 05 | 30. Sep 10      |
| IXSU-F                                     | 2402       | Bureau Veritas                      | 19969/A0 BV        | 08. Nov 07  | 08. Nov 12      |

All of the above information, including drawings, illustrations and graphic designs, reflects our present understanding and is to the best of our knowledge and belief correct and reliable. Users, however, should independently evaluate the suitability of each product for the desired application. Under no circumstances does this constitute an assurance of any particular quality or performance. Such an assurance is only provided in the context of our product specifications or explicit contractual arrangements. Our liability for these products is set forth in our standard terms and conditions of sale. Raychem, TE Logo and Tyco Electronics are trademarks.

**Energy Division - innovative and economical solutions for the electrical power industry: cable accessories, connectors & fittings, insulators & insulation, surge arresters, switching equipment, lighting controls, Power Measurement and Control.**

Tyco Electronics Raychem GmbH  
Energy Division  
Finsinger Feld 1  
85521 Ottobrunn/Munich, Germany

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

<http://energy.tycoelectronics.com>

