

Raychem Heat-shrinkable Joint Sleeve Rayfit for Medium Voltage Joints up to 36 kV

## **Raychem Rayfit joint sleeve**

The outer conductive layer and insulating middle layer provide the heat-shrinkable hold-out for the inner elastomeric layer of the joint sleeve. During the heat-shrink installation process, the stored recovery force of the elastomer is released and combines with the recovery force of the heat- shrinkable layers. As a result, the electrical interfaces are reduced to the minimum and the joint sleeve provides a tight electrical

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interface.

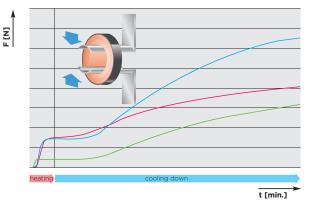
The elastomeric characteristic of the materials, combined with the rigid outer heat-shrinkable (screen) layers enable the joint to follow the thermally induced dimensional changes of the cable insulation.

#### Joint sleeve recovery forces during installation

- New triple layer elastomeric ERIT
- Dual layer elastomeric ECIT
- Co-extruded heat-shrinkable sleeve CICM (non elastomeric)



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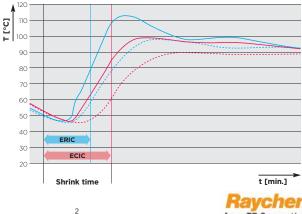


#### Joint sleeve temperature distribution during installation

- New triple layer elastomeric ERIC
- interface stress control to ioint sleeve
- interface stress control to cable dielectric

Existing dual layer elastomeric ECIC interface stress control to

joint sleeve interface stress control to cable dielectric



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# Raychem

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SKY COMMERCIAL CO.,LTD. Contacts : Khun Sirijun (Nuy) Mobile : 086-325-7116 Email : sirijun.boss@gmail.com , Email : sirijun.k@skycommercial.co.th Armouring

specification

As some cable designs use a steel

mechanical strength, joint designers

reinforced wraparound are being used

to fulfill the impact test requirements

Robust outer sealing and protection

Modern cable laying techniques require

conventional cable laying as well as

mechanical impact occurring during

the entire cable life. The thick-wall

heat-shrinkable tubing is internally

corrosion protection for the joint.

coated with a hot-melt adhesive to

When installed, the joints provide a

A space saving alternative using a fibre re-enforced wraparound sleeve

coated with hot melt adhesive can be

selected for installations in manholes and restricted joint bays.

level of protection and thickness equal to modern cables with PE oversheath.

ensure an effective moisture seal and

a robust oversheath replacement

capable of withstanding high

mechanical stresses during

as requested e.g. in the CENELEC

wire armour to provide a certain

performance. A steel wire armour

have to provide the same

wrap in combination with a

heat-shrinkable sleeve or fibre

#### **TE Connectivity**

#### Other jointing elements

#### Mechanical shear-bolt connectors

Joint kits can be selected to include a TE Connectivity BSM type mechanical shear-bolt connector to ensure a reliable pre-engineered electrical connection for different conductor types and materials.

conductor cross-sections for aluminium and copper conductors pre-set shear torque provides safe

- and reliable installation • removable half shell insert provide
- core centering • tin-plated and greased contact
- surface for corrosion protection • no need for compression tools or
- maintenance shorter length compared to
- compression connectors • tested in accordance with IEC 61238 • excellent tensile performance due to special bolt tip design









Cordless impact wrench for simple and easy installation of mechanical connectors.

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#### **Electrical stress control**

The stress control sleeves in combination with stress grading mastic at the screen cut provide a precisely defined impedance characteristic which smoothes the electrical field. For ease of installation, mechanical shear-bolt connectors are •range-taking sizes cover 25-400 mm<sup>2</sup> applied in combination with a stress control patch while joints with compression connectors use mastic tape for void filling and stress



#### Shield continuity

With mechanical shear-bolt connectors as standard, typical shield wire cross sections up to 35mm<sup>2</sup> can easily be connected with the connector supplied in the kit. Positioned at the oversheath cut back, the connection provides a smooth profile and resists mechanical damage. There is no need for a crimping tool and its maintenance. Shear bolts provide the required contact force in order to ensure safe installation and reliable performance during load cycling in service as well as during short circuit conditions. An additional layer of copper mesh is applied around the joint to provide effective shielding and protection



Joint kits for other connector tech nologies including deep indent and hexagonal compression are available.

3

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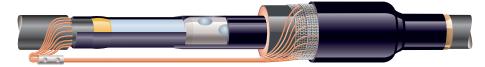
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#### Product families for polymeric insulated cables

#### Raychem medium voltage joints SXSU up to 36 kV using compression connectors



#### Raychem medium voltage joints MXSU up to 36 kV including mechanical connectors



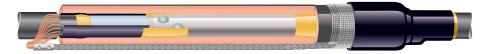
Raychem medium voltage branch joints MXSB up to 24 kV including mechanical connectors



#### Raychem single core live end seals (stop end) MXSE up to 36 kV



#### Raychem medium voltage repair joints MXSU-L up to 24 kV including mechanical connectors





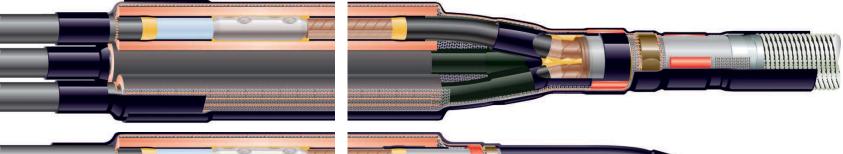
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**TE Connectivity** 

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Raychem transition joints MXSU up to 24 kV including TE Connectivity BSM type mechanical shear bolt connectors





Raychem universal jointing system EPKJ-R to connect all common cable types using compression connectors

#### System technology

Few heat-shrinkable components like oil barrier sleeves, conductive breakouts etc. transfer paper cables into quasi polymeric type allowing the use of the same jointing sleeves.

#### 3-core screened or belted cables





3-core single lead cables

Ravchem

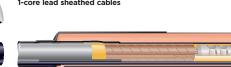
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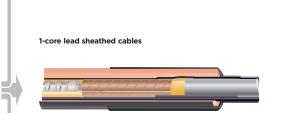
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1-core lead sheathed cables







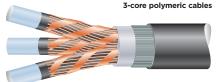


3-core screened or belted cables



1-core polymeric cables





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5

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6



# JOINTING SYSTEM (MXSU) - 36 kV 1-CORE JOINTING SYSTEM WITH MECHANICAL CONNECTORS

### **KEY FEATURES**

- All inclusive kit
- Short and slim design
- Requires no crimping tool
- Meets HD 629

TE Connectivity's (TE) Raychem MXSU jointing system is based on a design using mechanical connectors for conductor and wire shields, which are also supplied with the kit.

MXSU kits are widely range taking, and cover most conductor constructions including their tolerances. No crimping tools or tool maintenance required

The short and space saving design for installation of the MXSU improves installation reliability. It also has an unlimited shelf life, simplified material logistics and reduced cost. TE's Raychem MXSU jointing system also avoids bulky waste and costly waste disposal.

Customers can count on consistent, high quality products, driven by TE's proven innovation and backed by our extraordinary customer support.

ENERGY /// JOINTING SYSTEM MXSU - 36 kV



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Meets international performance standards including CENELEC HD 629 or IEC 60502-4 for joints.

PRODUCT SELE	CTION INFORM	ATION: DIM	IENSIONS II	N mm			
Description		Cross Section Range [mm <sup>2</sup> ]				Diameter Over Core Insulation	Diameter Cable Over Sheath
	12 kV	17,5 kV	24 kV	36 kV			
MXSU-3111	25 - 95	-	-	-	5,2 - 12,0	13,2 - 21,8	23 - 32
MXSU-3121	70 - 150	-	-	-	8,7 - 15,0	17,6 - 24,3	25 - 38
MXSU-3131	95 - 240	-	-	-	10,3 - 19,2	17,6 - 29,4	26 - 40
MXSU-3132	150 - 300	-	-	-	12,9 - 21,6	21,6 - 30,4	29 - 43
MXSU-3141	240 - 400	-	-	-	17,8 - 24,6	25,7 - 32,6	33 - 47
MXSU-3151	500	-	-	-	25,5 - 27,6	33,8 - 37,2	44 - 50
MXSU-3161	630	-	-	-	29,0 - 32,5	37,5 - 40,0	47 - 54
MXSU-3171	800	-	-	-	32,0 - 33,8	39,5 - 42,6	52 - 57
MXSU-3181	1000	-	-	-	38,5 - 39,2	45,0 - 47,6	59 - 64
MXSU-4111	-	50 - 95	-	-	7,2 - 12,0	17,6 - 24,0	24 - 38
MXSU-4121	-	70 - 150	-	-	8,7 - 15,0	19,9 - 27,5	28 - 39
MXSU-4131	-	120 - 240	-	-	11,0 - 19,2	22,0 - 31,6	28 - 44
MXSU-4132	-	150 - 300	-	-	12,9 - 21,6	23,5 - 32,6	31 - 45
MXSU-4141	-	240 - 400	-	-	17,8 - 24,6	28,4 - 36,8	35 - 50
MXSU-4151	-	500	-	-	25,5 - 27,6	36,2 - 39,6	48 - 56
MXSU-5101	-	-	10 - 35	-	3,7 - 7,5	15,0 - 22,0	17 - 33
MXSU-5111	-	-	25 - 95	-	5,2 - 12,0	17,9 - 26,0	25 - 38
MXSU-5121	-	-	50 - 150	-	7,2 - 15,0	20,2 - 29,5	28 - 41
MXSU-5131	-	-	95 - 240	-	10,3 - 19,2	23,0 - 33,6	30 - 43
MXSU-5132	-	-	150 - 300	-	12,9 - 21,6	25,0 - 35,5	33 - 48
MXSU-5141	-	-	240 - 400	-	17,8 - 24,6	29,9 - 38,8	35 - 49
MXSU-5151	-	-	500	-	25,5 - 27,6	37,2 - 41,6	48 - 54
MXSU-5161	-	630	630	-	29,0 - 32,5	39,2 - 44,7	50 - 58
MXSU-5171	-	-	800	-	32,0 - 33,8	44,8 - 46,9	58 - 61
MXSU-5181	-	-	1000	-	38,5 - 39,2	49,4 - 53,2	64 - 67
MXSU-6111	-	-	-	35 - 95	6,0 - 12,0	24,0 - 30,0	32 - 43
MXSU-6121	-	-	-	70 - 150	8,7 - 15,0	26,2 - 34,5	34 - 44
MXSU-6131	-	-	-	150 - 300	13,9 - 21,6	31,1 - 39,6	38 - 53
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MXSU-6161	-	-	-	630	29,0 - 32,5	45,8 - 50,5	55 - 68
MXSU-6171	-	-	-	800	32,0 - 33,8	50,1 - 53,4	62 - 66
MXSU-6181	-	-	-	1000	38,5 - 39,2	55,7 - 58,8	69 - 73

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