

RELIANCE CORPORATION



SPECIALIST IN ELECTRICAL PRODUCTS

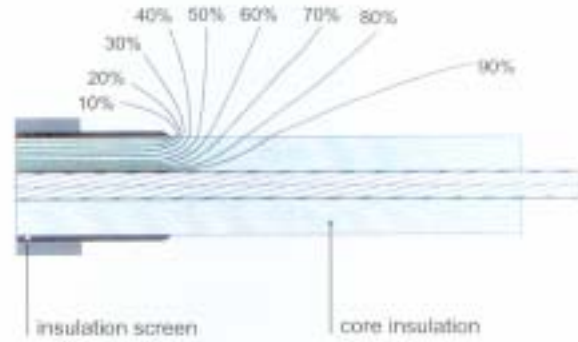
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Electrical stress control in cable accessories

Uncontrolled electrical field at the end of a cable

The remove of the insulation screen at the end of medium voltage cables bring on a high electric stresses. This stress is high enough to ionize the air at the cable surface causing discharges, even the smallest notch will cause a breakdown. And over a period of time, the ionization and the temperature will degrade the insulation surface.

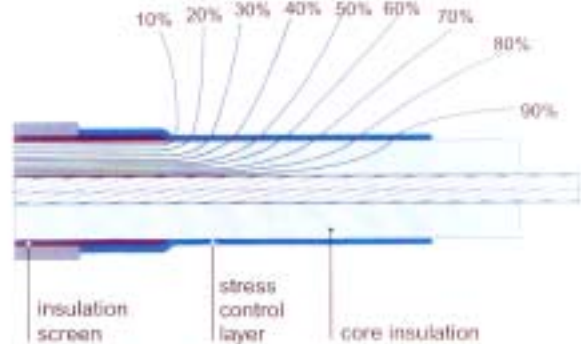
Without stress control



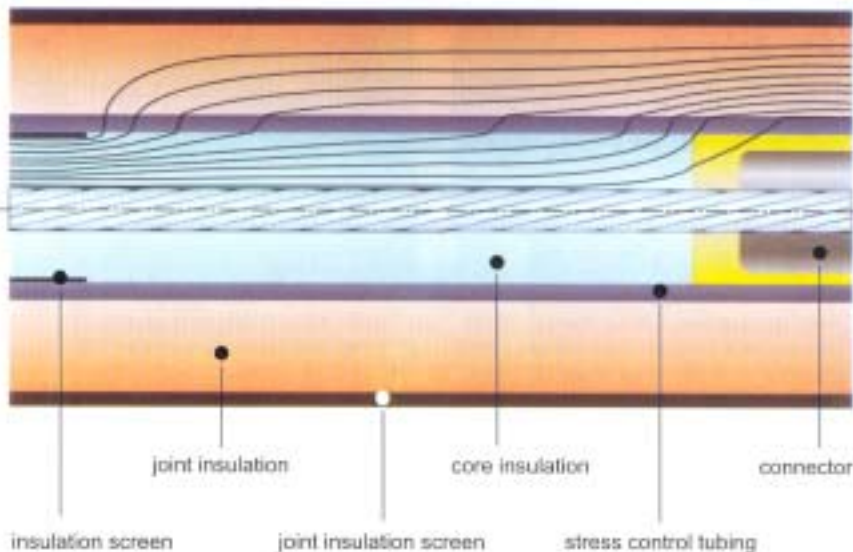
Electrical field with a stress control system (tubing or coating)

Reliance Corp. stress control tubing smooth out the high stress areas, reduce the high electrical field strength at the end of the screens to a level well below the upper limit for long term operation. The stress control tubing can be used a variety of cable types, including paper cables.

With stress control



Stress distribution inside a joint. The stress control tubing, together with the high permittivity yellow void filler, separates the equipotentials, reducing the electrical stresses at the end of the connector.



POWER CABLE ACCESSORIES

The most notable features of Reliance Corp. heat shrinkable power cable accessories are good insulating and sealing characteristics, high Mechanical toughness and resistance to weathering and chemicals, such as UV radiation and alkaline soils . Reliance Corp. cable accessories are designed and fully tested to meet major national and international standards, e.g.:



The product line includes indoor and outdoor terminations, straight and transition, joints as well as universal insulation, sealing and repair systems for use in the cable network-All medium voltage accessories include a stress control system as separate stress control tubing in an insulating tubing. In terminations, the insulating tubing ensures a non-tracking and erosion resistant surface and provides an environmental seal to the Cable lug and the over sheath. The connection area of joints is covered by an dual-wall tubing which provides an interface free Insulation and an outer screening.

Enduring environment properties

Salt fog GB5598.5

Order	Test Item	Property Values		Conclusion
		10KV	35KV	
1	AC Voltage Withstand(wet)1min	45KV	105KV	No breakdown or flashover
2	DC Voltage (30min)	72KV	144KV	Pass

Main characteristics of materials

DL-413.91, ESI09-13

Main Property	Inner insulation tubing	Insulation control tubing	Stress control tubing	Semi conductive tubing	Protective tubing	skirt	test
Density	≥ 90.0	≥ 90.0	≥ 85.0	≥ 95.0	≥ 95.0	≥ 90.0	GB2411-1980
Tensile strength (Mpa)	≥ 10.0	≥ 12.0	≥ 10.0	≥ 12.0	≥ 14.0	≥ 8.0	GB/T1040-1992
Ultimate elongation	≥ 350	≥ 400	≥ 350	≥ 400	≥ 400	≥ 300	GB/E1040-1992
Thermal Aging 120°C/168h,k1,k2	≥ 0.8	≥ 0.95	≥ 0.85	≥ 0.85	≥ 0.85	≥ 0.7	GB7141-1992
Oxygen Index(%)	≥ 28						GB/T2406-1993
Water Absorption(%)		< 0.1			< 0.1	< 0.1	GB/T1034-1998
Volume resistivity ($\Omega \cdot \text{cm}$)	≥ 10^{14}	≥ 10^{16}	≥ 10^{12}	≥ 10^2	≥ 10^{14}	≥ 10^{14}	GB1410-1989
Breakdown strength(kV/mm)	≥ 25	≥ 20			≥ 20	≥ 20	GB1408,1-1999
Tracking resistance voltage(kV)	3.5					4.5	GB6553
Permittivity			10-25				GB1409-1988

Order Information

W S Y-20/ 3 X 1

Cable range

 00:4-6mm² 0:10-16 mm² 1:25-50 mm²
 2:70-120 mm² 3:150-240 mm² 4:300-400 mm²

 Number of cores : 1-single core 2-two core 3-three core
 4-four core 5-five core

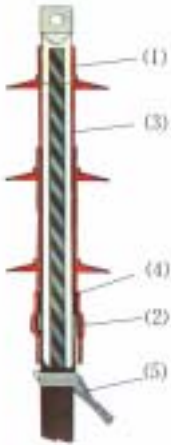
Cable rating voltage : 1-1KV 15-15KV 20-20KV 35-35KV

Cable type : Y-XLPE Z-PLIC

Heat shrinkable

 Accessory type : **W**-outdoor **N**-indoor **K**-joint **T**-outdoor or indoor

Reliance Corp. Medium Voltage Termination System



Reliance Corp. accessories provide indoor and outdoor terminations for paper or plastic insulated cables, for single or three core cables, for cables with round or sector shaped conductors and most types of screening or armouring. Our heat shrinkable materials not only possess resistance to prolonged electrical stress weathering, but also can shrink down quickly to fit and seal a cable. The following describes the typical modules of a medium voltage termination.

1. Moisture sealing

Durable sealing is achieved by special Reliance Corp. sealants on the inside of non-tracking, weather resistant components. When the installer heats the tubings, the shrinking action causes the sealant to melt and flow into interspace. In case of three core cables, a sealant-lined heat-shrinkable breakout installed over the cores and cable crutch provides a sealed and weather-resistant surface from the connecting lugs to the oversheath.

2. Valid stress control

Stress control tubing can smooth out the high stress areas. The details of electrical stress control in Reliance Corp. terminations can be found later.

3. Anti-tracking insulation tubing

Reliance Corp. anti-tracking insulation tubing have superior non-tracking characteristics and long term erosion resistance. We supplied over a million units installed in every area in Our country, Reliance Corp. termination do not track even in severe service conditions and verifying their exceptional erosion resistance and reliability.

4. Red mastic filler

Red mastic filler is easily applied in form of a short adhesive tape. It ensures that, independent of the type of semi-conductive screen or removal method, no air voids can cause discharges in the high stress area of the screen end.

5. Earthing

Earthing braids are imbedded in the scaling mastic to prevent any corrosion by moisture ingress. For cables with tape screen or metal sheaths with armour solderless earthing systems are either provided within the termination kit or can be ordered separately.

Reliance Corp. Medium Voltage Jointing System

The following describes the typical modules of a medium voltage single and three core jointing for polymeric insulated cable. For transition joints, special oil resistance tubings are used to transform draining oil (MI) as well as non draining oil (MIND) paper insulated cable into a quasi polymeric insulated cable with a radial field.

1. Electrical stress control

The stress control tubing and the yellow void filler provide a impedance characteristic which smoothes the electrical field over the connector and cable screen ends.

2. Insulation and screen

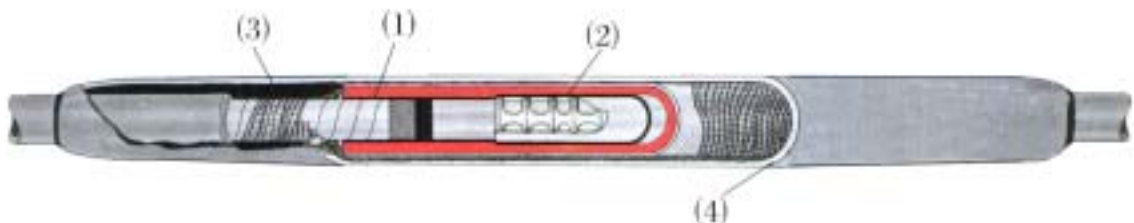
The outer wall of the insulation/conductive tubing is the insulation screen (red), the inner wall is the conductive polymer (black). This structure ensures a flawless bond between joint insulation and screen.

3. Metallic shielding

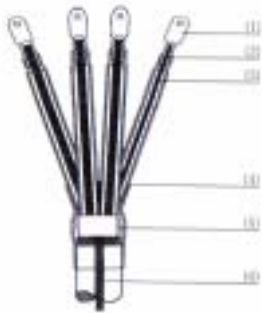
Copper mesh and roll springs ensure the correct screen connection across the joint area and make electrical contact with the outer screen of the Joint.

4. Outer sealing and protection

When heat the outer protection tubing, the pre-coated adhesive melt and flow, resulting in a lasting moisture and corrosion barrier on the cable oversheath. The outer protection tubing provides mechanical impact and chemical resistance as expected from cable oversheaths. For Armoured cables, Reliance Corp. joints provide a galvanized steel joint case.



Terminations for Polymeric Insulated Cables 1KV



COMPONENTS

1. Lug
2. Core
3. Insulation Tubing
4. Breakout
5. Red mastic filler
6. Earthing-Braid

Cables

The terminations are designed for 1-, 2-, 3-, 4- and 5-core polymeric insulated cables.

For Example : VV, VLV42, YJLV32, NAYA, NYY, NAYCWY, NA2TXY

PRODUCT SPECIFICATION

Ordering Description	Type	Name	Cross Section (mm ²)
414010101110	TSY – 1 / 1x00	1KV 1-core PVC cable termination	4-6
4140101010210	TSY – 1 / 1x0		10-16
4140101010310	TSY – 1 / 1x1		25-50
4140101010410	TSY – 1 / 1x2		70-120
4140101010510	TSY – 1 / 1x3		150-240
4140101010610	TSY – 1 / 1x4		300-400
4140101030110	TSY – 1 / 2x00	1KV 2-core PVC cable termination	4-6
4140101030210	TSY – 1 / 2x0		10-16
4140101030310	TSY – 1 / 2x1		25-50
4140101030410	TSY – 1 / 2x2		70-120
4140101030510	TSY – 1 / 2x3		150-240
4140101030610	TSY – 1 / 2x4		300-400
4140101050110	TSY – 1 / 3x00	1KV 3-core PVC cable termination	4-6
4140101050210	TSY – 1 / 3x0		10-16
4140101050310	TSY – 1 / 3x1		25-50
4140101050410	TSY – 1 / 3x2		70-120
4140101050510	TSY – 1 / 3x3		150-240
4140101050610	TSY – 1 / 3x4		300-400
4140101070110	TSY – 1 / 4x00	1KV 4-core PVC cable termination	4-6
4140101070210	TSY – 1 / 4x0		10-16
4140101070310	TSY – 1 / 4x1		25-50
4140101070410	TSY – 1 / 4x2		70-120
4140101070510	TSY – 1 / 4x3		150-240
4140101070610	TSY – 1 / 4x4		300-400
4140101090110	TSY – 1 / 4x00	1KV 4-core (3+1) PVC cable termination	4-6
4140101090210	TSY – 1 / 4x0		10-16
4140101090310	TSY – 1 / 4x1		25-50
4140101090410	TSY – 1 / 4x2		70-120
4140101090510	TSY – 1 / 4x3		150-240
4140101090610	TSY – 1 / 4x4		300-400
4140101010110	TSY – 1 / 5x00	1KV 5-core PVC cable termination	4-6
4140101110110	TSY – 1 / 5x0		10-16
4140101110210	TSY – 1 / 5x1		25-50
4140101110310	TSY – 1 / 5x2		70-120
4140101110410	TSY – 1 / 5x3		150-240
4140101110510	TSY – 1 / 5x4		300-400

Ordering Description	Type	Name	Cross Section (mm ²)
4140101130110	TSY – 1 / 5x00	1KV 5-core (4+1) PVC cable termination	4-6
4140101130210	TSY – 1 / 5x0		10-16
4140101130310	TSY – 1 / 5x1		25-50
4140101130410	TSY – 1 / 5x2		70-120
4140101130510	TSY – 1 / 5x3		150-240
4140101130610	TSY – 1 / 5x4		300-400
4140101150110	TSY – 1 / 5x00	1KV 52-core (3+2) PVC cable termination	4-6
4140101150210	TSY – 1 / 5x0		10-16
4140101150310	TSY – 1 / 5x1		25-50
4140101150410	TSY – 1 / 5x2		70-120
4140101150510	TSY – 1 / 5x3		150-240
4140101150610	TSY – 1 / 5x4		300-400

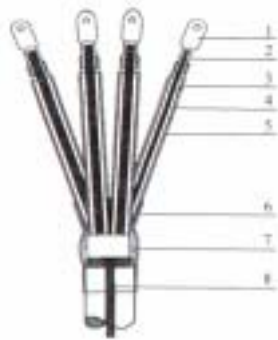
The normal terminations for polymeric insulated cables 1KV supplies without lugs. The normal length of the insulation tubing is 600mm. If the installation requires different length of the insulation tubing, we can supply.

Terminations and components for other cable types are available on request.

Heat-shrinkable Power Cable Accessories Testing for 1KV XLPE Cable

Item NO	property	Test	Requirements	Results	Outdoor termination	Indoor termination
1	AC withstand for 15min (dry withstand)	IEC60060	No breakdown and flashover shall occur at 4kv	No breakdown and flashover occurred on the combi.sample at 4kv		OK
2	AC withstand for 15min (in water bath)	IEC60060	No breakdown and flashover shall occur at 4kv	No breakdown and flashover occurred on the combi.sample at 4kv	OK	
3	Impulse voltage withstand	IEC60060, IEC60230	10 positive and 10 negative impulses at 8kv	No breakdown of the combi.sample occurred at 19kv	OK	OK
4	Thermal short-circuit test	VDE0278	No transfigure and welding shall occur on all parts at 17.7KA,1s	No transfigure and welding occurred on all part at 17.7KA,1.03s;17.8KA,1.03s	OK	OK
5	DC negative polarity voltage withstand for 5min	IEC60060	No breakdown and flashover shall occur at 15kv	No breakdown and flashover occurred on the combi.sample at 15kv	OK	OK
6	Insulation resistance	VDE0278	$\geq 1000\Omega$	Insulation resistance on the combi.sample is $\geq 400M\Omega$	OK	OK
7	A.C Voltage withstand for 4h	GB11033 GB5589	2.4KV/4h	2.4KV/4h	OK	OK

Terminations for Polymeric Insulated Cables 1KV



COMPONENTS

1. Lug
2. Core
3. Paper Insulation Layer
4. Oil-resistant Tubing
5. Insulation Tubing
6. Breakout
7. Oil-resistant filler
8. Earthing Braid

Cables

The terminations are designed for 3-and 4-core paper insulated cables.
For Example : ZQD, ZQ, ZQD22, NAYY, NAYBY, NAKBA

PRODUCT SPECIFICATION

Ordering Description	Type	Name	Cross Section (mm)
4140101170110	TSZ - 1 / 3x0	1KV 3-core PILC cable termination	10-16
4140101170210	TSZ - 1 / 3x1		25-50
4140101170310	TSZ - 1 / 3x2		70-120
4140101170410	TSZ - 1 / 3x3		150-240
4140101170510	TSZ - 1 / 3x4		300-400
4140101190110	TSZ - 1 / 4x0	1KV 4-core PILC cable termination	10-16
4140101190210	TSZ - 1 / 4x1		25-50
4140101190310	TSZ - 1 / 4x2		70-120
4140101190410	TSZ - 1 / 4x3		150-240
4140101190510	TSZ - 1 / 4x4		300-400
4140101120110	TSZ - 1 / 4x0	1KV 4-core (3+1) PILC cable termination	10-16
4140101120210	TSZ - 1 / 4x1		25-50
4140101120310	TSZ - 1 / 4x2		70-120
4140101120410	TSZ - 1 / 4x3		150-240
4140101120510	TSZ - 1 / 4x4		300-400

The normal terminations for paper insulated cables 1KV supply without lugs. The normal length of the insulation tubing is 600mm. If the local installation requires different length of the insulation tubing, we can supply. Terminations and components for other cable types are available on request.

Heat-shrinkable Power Cable Accessories Testing for 1KV PILC Cable

Item NO	property	Test	Requirements	Results	Outdoor termination	Indoor termination
1	AC withstand for 15min (dry withstand)	IEC60060	No breakdown and flashover shall occur at 4kv	No breakdown and flashover occurred on the combi.sample at 4kv		OK
2	AC withstand for 15min (in water bath)	IEC60060	No breakdown and flashover shall occur at 4kv	No breakdown and flashover occurred on the combi.sample at 4kv	OK	
3	Impulse voltage withstand	IEC60060 I, IEC60230	10 positive and 10 negative impulses at 8kv	No breakdown of the combi.sample occurred at 1p	OK	OK
4	Thermal short-circuit test	VDE0278	No transfigure and welding shall occur on all parts at 17.7KA,1s	No transfigure and welding occurred on all parts at 17.7KA,1.03s;17.8KA,1.03s	OK	OK
5	DC negative polarity voltage withstand for 5min	IEC60060	No breakdown and flashover shall occur at 15kv	No breakdown and flashover occurred on the combi.sample at 15kv	OK	OK
6	AC Voltage withstand for 4h	GB11033 GB5589	2.4KV/4h	2.4KV/4h	OK	OK

Terminations for Polymeric or Rubber Insulated Cables 6KV and 10KV (indoor or outdoor)



COMPONENTS

- | | |
|------------------------------|------------------------|
| 1. Red mastic Filler | 9. Copper Binding Wire |
| 2. Lug | 10. Tri-core Skirt |
| 3. Core | 11. Breakout |
| 4. Sealing Insulation Tubing | 12. Yellow Void Filler |
| 5. Anti-tracking Tubing | 13. Worm Driver Clamp |
| 6. Stress Control Tubing | 14. Earthing Braid |
| 7. Single-core Skirt | 15. Roll Spring |
| 8. Protective Tubing | |

Cables

The terminations are designed for 1-and 3-core polymeric or rubber insulated cables.
For Example : YJV, YJLV32, NTSC, N2XSEY, NA2XSEY, N2XSY, NA2XSY

PRODUCT SPECIFICATION

Ordering Description	Type	Name	Cross Section (mm ²)
4140102010110	NSY – 10 / 1x1	10KV 1-core XLPE cable indoor termination	25-50
4140102010210	NSY – 10 / 1x2		70-120
4140102010310	NSY – 10 / 1x3		150-240
4140102010410	NSY – 10 / 1x4		300-400
4140102020110	WSY – 10 / 1x1	10KV 1-core XLPE cable outdoor termination	25-50
4140102020210	WSY – 10 / 1x2		70-120
4140102020310	WSY – 10 / 1x3		150-240
4140102020410	WSY – 10 / 1x4		300-400
4140102040110	NSY – 10 / 3x1	10KV 3-core XLPE cable indoor termination	25-50
4140102040210	NSY – 10 / 3x2		70-120
4140102040310	NSY – 10 / 3x3		150-240
4140102040410	NSY – 10 / 3x4		300-400
4140102050110	WSY – 10 / 3x1	10KV 3-core XLPE cable outdoor termination	25-50
4140102050210	WSY – 10 / 3x2		70-120
4140102050310	WSY – 10 / 3x3		150-240
4140102050410	WSY – 10 / 3x4		300-400

The normal terminations for screen polymeric or rubber insulated cables 6KV and 10KV supply without lugs. The normal length of the anti-tracking tubing is 650mm. If the local installation requires different length of the anti-tracking tubing, we can supply.

Heat-shrinkable Power Cable Accessories Testing for 10KV XLPE Cable

Item NO	property	Test	Requirements	Results	Outdoor termination	Indoor termination
1	AC withstand for 1min (dry withstand)	JB8144	No breakdown and flashover shall occur at 45kv	No breakdown and flashover occurred on the combi.sample at 45kv, 1min		OK
2	AC withstand for 1min (wet withstand)	JB8144	No breakdown and flashover shall occur at 45kv	No breakdown and flashover occurred on the combi.sample at 45kv, 1min	OK	
3	Partial discharge	JB/T8138.3	3pC max. at 9KV	a,b,c < 3pc	OK	OK
4	Partial discharge	JB/T8138.3	20pC max. at 13KV	a,b,c < 3pc	OK	OK
5	Load cycle	JB/T8138.3	Heating for 5h, cooling for 3h. Conductor's temperature is 90-95°C 3Cycles	Conductor's temperature is 95°C. Results refer to the following Test	As left	As left
6	Partial discharge	JB/T8138.3	3pC max. at 9KV	a,b,c < 3pc	OK	OK
7	Partial discharge	JB/T8138.3	20pC max. at 13KV	a,b,c < 3pc	OK	OK
8	Impulse Voltage withstand 1.2/50us ± 10times	JB/T8138.1 GB/T16927	10 positive and 10 negative impulses at 105KV, No breakdown	No breakdown of the combi.sample occurred at 105KV	OK	OK
9	DC Voltage withstand negative 15min	JB/T8138.1	No breakdown and flashover shall occur at 52KV	No breakdown of the combi.sample occurred on the combi.sample at 52KV, 15min	OK	OK
10	AC Voltage withstand, 4h	JB/T8144.1	No breakdown shall occur at 35KV, 4h	No breakdown occurred on the combi.sample at 35KV, 4h	OK	OK
11	Sealing test	DL413	Heating for 5h, cooling for 3h, conductor's temperature us 90-95°C in water bath, 9cycles	Heating for 5h, cooling for 3h. Conductor's temperature is 90-95°C in water bath, 9 cycles, Result refer to the following Test	As left	As left
12	AC Voltage withstand, 15min	JB/T8144.1	No breakdown and flashover shall occur at 25KV	No breakdown and flashover occurred on the combi.sample at 25KV, 15min	OK	OK

Terminations for Betted Screen Paper Insulated Cables 6KV and 10KV (indoor or outdoor)



COMPONENTS

1. Oil-resistant Filler
2. Sealing insulation Tubing
3. Oil-resistant Tubing
4. Anti-tracking Tubing
5. Stress Control Tubing
6. Oil-resistant Filler
7. Conductive Protective Tubing

Cables

The terminations are designed for 1-and 3-core betted screen paper insulated cables. For Example : ZQD, ZLQ, ZQD22, NAKBA, NABA, NKBY

PRODUCT SPECIFICATION

Ordering Description	Type	Name	Cross Section (mm ²)
4140102070110	NSZ – 10 / 1x1	10KV 1-core PLIC cable indoor termination	25-50
4140102070210	NSZ – 10 / 1x2		70-120
4140102070310	NSZ – 10 / 1x3		150-240
4140102070410	NSZ – 10 / 1x4		300-400
4140102080110	WSZ – 10 / 1x1	10KV 1-core PLIC cable outdoor termination	25-50
4140102080210	WSZ – 10 / 1x2		70-120
4140102080310	WSZ – 10 / 1x3		150-240
4140102080410	WSZ – 10 / 1x4		300-400
4140102100110	NSZ – 10 / 3x1	10KV 3-core PLIC cable indoor termination	25-50
4140102100210	NSZ – 10 / 3x2		70-120
4140102100310	NSZ – 10 / 3x3		150-240
4140102100410	NSZ – 10 / 3x4		300-400
4140102110110	WSZ – 10 / 3x1	10KV 3-core PLIC cable outdoor termination	25-50
4140102110210	WSZ – 10 / 3x2		70-120
4140102110310	WSZ – 10 / 3x3		150-240
4140102110410	WSZ – 10 / 3x4		300-400

The normal terminations for betted screen paper insulated cables 6KV and 10KV supply without lugs. The normal length of the anti-tracking tubing and oil-resistant tubing is 650mm. If the local installation requires different length of the anti-tracking tubing, and oil-resistant tubing we can supply.

Heat-shrinkable Power Cable Accessories Testing for 10KV PILC Cable

Item NO	property	Test	Requirements	Results	Outdoor termination	Indoor termination
1	AC withstand for 1min (dry withstand)	GB1103 3	No breakdown and flashover shall occur at 45kv, 1min	No breakdown and flashover occurred on the combi.sample at 45kv, 1min		OK
2	AC withstand for 1min (wet withstand)	GB1103 3	No breakdown and flashover shall occur at 45kv, 1min	No breakdown and flashover occurred on the combi.sample at 45kv, 1min	OK	OK
3	Load cycle	GB1103 3	Heating for 5h, cooling for 3h, Conductor's temperature is 65°C , 3Cycles	Conductor's temperature is 65°C .Results refer to the following Test	As left	As left
4	Impulse Voltage withstand 1.2/50us ± 10times	GB1103 3	10positive and 10 negative impulses at 105KV, Flashover 1time is allowed but not including total testing times	No breakdown of the combi.sample at 45kv	OK	OK
5	DC Voltage Withstand negative 15min	GB1103 3	No breakdown and flashover shall occur at 52kv	No breakdown and flashover occurred on the combi.sample at 52kv, 15min	OK	OK
6	AC Voltage withstand, 4h	GB1103 3	No breakdown and flashover shall occur at 35kv, 4h	No breakdown and flashover occurred on the combi.sample at 35kv, 4min	OK	OK
7	Oil-seal up test	DL413	Heating for 24h, cooling for 24h, Conductor's temperature is 65°C , Oil pressure : 100MPa	Heating for 24h, cooling for 24h, Conductor's temperature is 65°C , Oil pressure : 100MPa, No leaking, No seeping	OK	OK

Terminations for Screen Polymeric Insulated Cables 20KV and 35KV (indoor or outdoor)



COMPONENTS

- | | |
|------------------------------|------------------------|
| 1. Red mastic Filler | 9. Copper Binding Wire |
| 2. Lug | 10. Tri-core Skirt |
| 3. Core | 11. Breakout |
| 4. Sealing Insulation Tubing | 12. Yellow Void Filler |
| 5. Anti-tracking Tubing | 13. Worm Driver Clamp |
| 6. Stress Control Tubing | 14. Earthing Braid |
| 7. Single-core Skirt | 15. Roll Spring |
| 8. Protective Tubing | |

Cables

The terminations are designed for 1-and 3-core screen polymeric insulated cables.
For Example : YJV, YJLV32, NTSC, N2XSEY, NA2XSEY, N2XSY, NA2XSY

PRODUCT SPECIFICATION

Ordering Description	Type	Name	Cross Section (mm ²)
4140103010110	NSY – 35 / 1x1	35KV 1-core XLPE cable indoor termination	25-50
4140103010210	NSY – 35 / 1x2		70-120
4140103010310	NSY – 35 / 1x3		150-240
4140103010410	NSY – 35 / 1x4		300-400
4140103020110	WSY – 35 / 1x1	35KV 1-core XLPE cable outdoor termination	25-50
4140103020210	WSY – 35 / 1x2		70-120
4140103020310	WSY – 35 / 1x3		150-240
4140103020410	WSY – 35 / 1x4		300-400
4140103040110	NSY – 35 / 3x1	35KV 3-core XLPE cable indoor termination	25-50
4140103040210	NSY – 35 / 3x2		70-120
4140103040310	NSY – 35 / 3x3		150-240
4140103040410	NSY – 35 / 3x4		300-400
4140103050110	WSY – 35 / 3x1	35KV 3-core XLPE cable outdoor termination	25-50
4140103050210	WSY – 35 / 3x2		70-120
4140103050310	WSY – 35 / 3x3		150-240
4140103050410	WSY – 35 / 3x4		300-400

The normal terminations for screen Polymeric insulated cables 20KV and 35KV supply without lugs. The normal length of the anti-tracking tubing is 800mm. If the local installation requires different length of the anti-tracking tubing and oil-resistant, we can supply.

Heat-shrinkable Power Cable Accessories Testing for 35KV XLPE Cable

Item NO	property	Test	Requirements	Results	Outdoor termination	Indoor termination
1	AC withstand for 1min (dry withstand)	GB11033	No breakdown and flashover shall occur at 105kv	No breakdown and flashover occurred on the combi.sample at 105kv, 1min		OK
2	AC withstand for 1min (wet withstand)	GB11033	No breakdown and flashover shall occur at 105kv	No breakdown and flashover occurred on the combi.sample at 105kv, 1min	OK	OK
3	Partial discharge	GB11033	10pC max, at 39KV	39KV ≤ 10pC	As left	As left
4	Load cycle	GB11033	Heating for 5h, cooling for 3h, Conductor's temperature is 95°C, 3cycles	Conductor's temperature is 95°C. Results refer to the following Test	OK	OK
5	Partial discharge	GB11033	10pC max, at 39KV	39KV ≤ 10pC	OK	OK
6	Impulse Voltage withstand 1.2/50us ± 10times		10positive and 10 negative impulses at 250KV, Flashover 1time is allowed but not including total testing times	10 positive and 10 negative impulses at 250KV, No breakdown of the combi.sample occurred at 250KV	OK	OK
7	DC Voltage withstand, negative 15min	GB11033	No breakdown and flashover shall occur at 156kv	No breakdown and flashover occurred on the combi.sample at 156kv, 15min	OK	OK
8	AC Voltage withstand, 4h	GB11033	No breakdown and flashover shall occur at 104kv	No breakdown and flashover occurred on the combi.sample at 104kv, 4min	OK	OK

Terminations for Screen Paper Insulated Cables with one metal Sheath per Phase 20KV and 35KV



Cables

The terminations are designed for 1-and 3-core screen paper insulated cables with one metal sheath per phase.

For Example : ZQFD41, ZQFD20, NAEKEBA, NEKENA, NEKEBY.

COMPONENTS

1. Core
2. Lug
3. Red Mastic Filler
4. Sealing Insulation Tubing
5. Oil Barrier Sleeve
6. Anti-tracking Tubing
7. Stress Control Tubing
8. Glass Cushion Tape
9. Belting Oil Barrier Sleeve
10. Worm Driver Clamp
11. Earthing Plumb
12. Earthing Braid
13. Adhesive Lined Gland Sleeve
14. Protection Umbrella
15. Single-core Skirt
16. Perorated Metal Foil Screen
17. Breakout

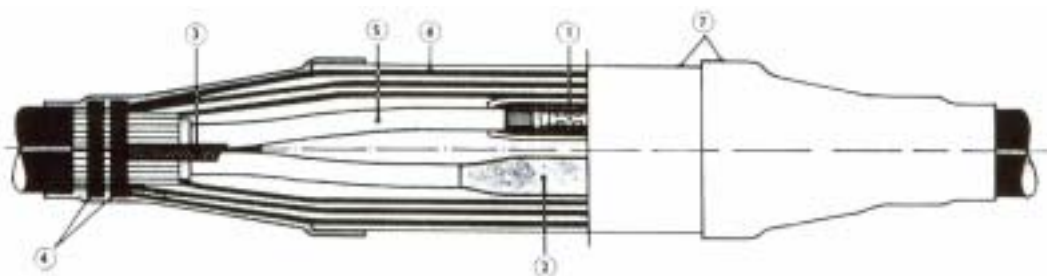
PRODUCT SPECIFICATION

Ordering Description	Type	Name	Cross Section (mm ²)
4140103070110	NSZ – 35 / 1x1	35KV 1-core PILC cable indoor termination	25-50
4140103070210	NSZ – 35 / 1x2		70-120
4140103070310	NSZ – 35 / 1x3		150-240
4140103070410	NSZ – 35 / 1x4		300-400
4140103080110	WSZ – 35 / 1x1	35KV 1-core PILC cable outdoor termination	25-50
4140103080210	WSZ – 35 / 1x2		70-120
4140103080310	WSZ – 35 / 1x3		150-240
4140103080410	WSZ – 35 / 1x4		300-400
4140103100110	NSZ – 35 / 3x1	35KV 3-core PILC cable indoor termination	25-50
4140103100210	NSZ – 35 / 3x2		70-120
4140103100310	NSZ – 35 / 3x3		150-240
4140103100410	NSZ – 35 / 3x4		300-400
4140103110110	WSZ – 35 / 3x1	35KV 3-core PILC cable outdoor termination	25-50
4140103110210	WSZ – 35 / 3x2		70-120
4140103110310	WSZ – 35 / 3x3		150-240
4140103110410	WSZ – 35 / 3x4		300-400

Heat-shrinkable Power Cable Accessories Testing for 35KV XLPE Cable

Item NO	property	Test	Requirements	Results	Outdoor termination	Indoor termination
1	AC withstand for 1min (dry withstand)	GB11033	No breakdown and flashover shall occur at 105kv	No breakdown and flashover occurred on the combi.sample at 105kv, 1min		OK
2	AC withstand for 1min (wet withstand)	GB11033	No breakdown and flashover shall occur at 105kv	No breakdown and flashover occurred on the combi.sample at 105kv, 1min	OK	OK
3	Load cycle	GB11033	Heating for 5h, cooling for 3h, Conductor's temperature is 65°C, 3cycles	Conductor's temperature is 65°C.Results refer to the following Test	As Left	As Left
4	Impulse Voltage withstand 1.2/50us±10times	GB11033	10positive and 10 negative impulses at 250KV, Flashover 1time is allowed but not including total testing times	10 positive and 10 negative impulses at 250KV, No breakdown of the combi.sample occurred at 250KV	OK	OK
5	DC Voltage withstand, negative 15min		No breakdown and flashover shall occur at 156kv	No breakdown and flashover occurred on the combi.sample at 156kv, 15min	OK	OK
6	AC Voltage withstand, 4h	GB11033	No breakdown and flashover shall occur at 104kv	No breakdown and flashover occurred on the combi.sample at 104kv, 4min	OK	OK
7	Oil-seal up test	DL413	Heating for 24h, cooling for 24h, Conductor's temperature is 65°C, oil pressure : 100MPa	Heating for 24h, cooling for 24h, Conductor's temperature is 65°C, oil pressure : 100MPa, No leaking, No seeping	OK	OK

Joints for Polymeric Insulated Cables 1KV



COMPONENTS

- | | |
|----------------------|----------------------|
| 1. Connector | 5. Cable Insulation |
| 2. Insulation Tubing | 6. Metal Case |
| 3. Earthing Braid | 7. Protective Tubing |
| 4. Worm Driver Clamp | |

Cables

The joints are designed for 1-, 2-, 3-, 4- and 5-core polymeric insulated cables.
For Example : VV, VLV42, YJLV32, NAYA, NYY, NAYCWY, NA2TXY

PRODUCT SPECIFICATION

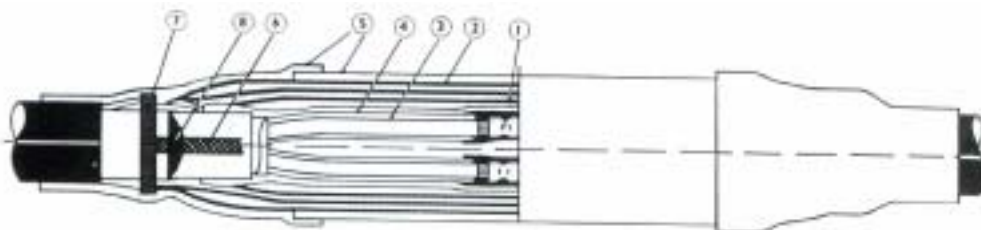
Ordering Description	Type	Name	Cross Section (mm ²)
4140101020110	JSY - 1 / 1x00	1KV 1-core PVC cable joint	4-6
4140101020210	JSY - 1 / 1x0		10-16
4140101020310	JSY - 1 / 1x1		25-50
4140101020410	JSY - 1 / 1x2		70-120
4140101020510	JSY - 1 / 1x3		150-240
4140101020610	JSY - 1 / 1x4	300-400	
4140101040110	JSY - 1 / 2x00	1KV 2-core PVC cable joint	4-6
4140101040210	JSY - 1 / 2x0		10-16
4140101040310	JSY - 1 / 2x1		25-50
4140101040410	JSY - 1 / 2x2		70-120
4140101040510	JSY - 1 / 2x3		150-240
4140101040610	JSY - 1 / 2x4	300-400	
4140101060110	JSY - 1 / 3x00	1KV 3-core PVC cable joint	4-6
4140101060210	JSY - 1 / 3x0		10-16
4140101060310	JSY - 1 / 3x1		25-50
4140101060410	JSY - 1 / 3x2		70-120
4140101060510	JSY - 1 / 3x3		150-240
4140101060610	JSY - 1 / 3x4	300-400	
4140101080110	JSY - 1 / 4x00	1KV 4-core PVC cable joint	4-6
4140101080210	JSY - 1 / 4x0		10-16
4140101080310	JSY - 1 / 4x1		25-50
4140101080410	JSY - 1 / 4x2		70-120
4140101080510	JSY - 1 / 4x3		150-240
4140101080610	JSY - 1 / 4x4	300-400	
4140101100110	JSY - 1 / 4x00	1KV 4-core (3+1) PVC cable joint	4-6
4140101100210	JSY - 1 / 4x0		10-16
4140101100310	JSY - 1 / 4x1		25-50
4140101100410	JSY - 1 / 4x2		70-120
4140101100510	JSY - 1 / 4x3		150-240
4140101100610	JSY - 1 / 4x4	300-400	
4140101120110	JSY - 1 / 5x00	1KV 5-core PVC cable joint	4-6
4140101120210	JSY - 1 / 5x0		10-16
4140101120310	JSY - 1 / 5x1		25-50
4140101120410	JSY - 1 / 5x2		70-120
4140101120510	JSY - 1 / 5x3		150-240
4140101120610	JSY - 1 / 5x4	300-400	

Ordering Description	Type	Name	Cross Section (mm ²)
4140101140110	JSY – 1 / 5x00	1KV 5-core (4+1) PVC cable joint	4-6
4140101140210	JSY – 1 / 5x0		10-16
4140101140310	JSY – 1 / 5x1		25-50
4140101140410	JSY – 1 / 5x2		70-120
4140101140510	JSY – 1 / 5x3		150-240
4140101140610	JSY – 1 / 5x4		300-400
4140101160110	JSY – 1 / 5x00	1KV 5-core (3+2) PVC cable joint	4-6
4140101160210	JSY – 1 / 5x0		10-16
4140101160310	JSY – 1 / 5x1		25-50
4140101160410	JSY – 1 / 5x2		70-120
4140101160510	JSY – 1 / 5x3		150-240
4140101160610	JSY – 1 / 5x4		300-400

Heat-shrinkable Power Cable Accessories Testing for 1KV XLPE Cable

Item NO	property	Test	Requirements	Results	Joints
1	AC withstand for 15min	IE60060	No breakdown and flashover shall occur at 4kv	No breakdown and flashover occurred on the combi.sample at 4kv	OK
2	Impulse Voltage withstand	IE60060, IEC60230	10 positive and 10 negative impulses at 8KV	No breakdown of the combi.sample occurred at 19kv	OK
3	Thermal short-circuit test	VDE0278	No Transfigure and welding shall occur on all parts at 17.7KA. 1s	No Transfigure and welding occurred on all parts at 17.7KA, 1.03s; 17.8KA, 1.03s	OK
4	DC negative polarity Voltage withstand for 5min	IEC60060	No breakdown and flashover shall occur at 15kv	No breakdown and flashover occurred on the combi.sample at 15kv	OK
5	Impact		No visible damage	No visible damage	OK
6	Insulation resistance	VDE0278	$\geq 1000M\Omega$	Insulation resistance on the combi.sample is $\geq 4000M\Omega$	OK
7	Load cycle 3 cycles	GB11033	197A, Heating for 5h, cooling for 3h	Pass	OK
8	AC Voltage withstand for 4h	GB11033 GB5589	2.4KV/4h	2.4KV/4h	OK

Joins for Paper Insulated Cables 1KV



COMPONENTS

- | | |
|-----------------------------|---------------------------------|
| 1. Insulation Sleeve | 5. Out Jacketing Sleeve |
| 2. Metallic Protection Cage | 6. Armour Continuity Connection |
| 3. Oil Barrier Sleeve | 7. Worm Drive Clamp |
| 4. Inner Protection Sleeve | 8. Earthing Plumb |

Cables

The joints are designed for 3-and 4-core paper insulated cables.

For Example : ZQD, ZQ, ZQD22, NAYA, NAYBA, NAKBA

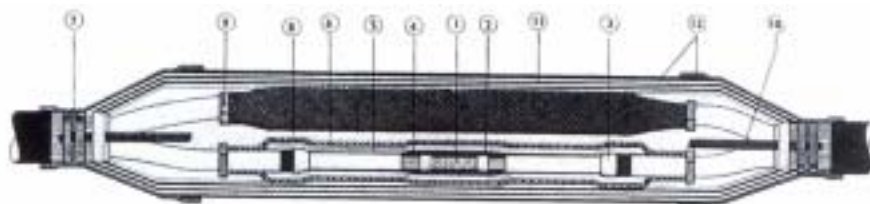
PRODUCT SPECIFICATION

Ordering Description	Type	Name	Cross Section (mm ²)
4140101180110	JSZ - 1 / 3x0	1KV 3-core PILC cable joint	10-16
4140101180210	JSZ - 1 / 3x1		25-50
4140101180310	JSZ - 1 / 3x2		70-120
4140101180410	JSZ - 1 / 3x3		150-240
4140101180510	JSZ - 1 / 3x4		300-400
4140101200110	JSZ - 1 / 4x0	1KV 4-core PILC cable joint	10-16
4140101200210	JSZ - 1 / 4x1		25-50
4140101200310	JSZ - 1 / 4x2		70-120
4140101200410	JSZ - 1 / 4x3		150-240
4140101200510	JSZ - 1 / 4x4		300-400
4140101122110	JSZ - 1 / 4x0	1KV 4-core (3+1) PILC cable joint	10-16
4140101122210	JSZ - 1 / 4x1		25-50
4140101122310	JSZ - 1 / 4x2		70-120
4140101122410	JSZ - 1 / 4x3		150-240
4140101122510	JSZ - 1 / 4x4		300-400

Heat-shrinkable Power Cable Accessories Testing for 1KV PILC Cable

Item NO	property	Test	Requirements	Results	Joints
1	AC withstand for 15min	IEC60060	No breakdown and flashover shall occur at 4kv	No breakdown and flashover occurred on the combi.sample at 4kv	
2	Impulse Voltage withstand	IEC60060 IEC60230	10positive and 10 negative impulses at 8KV	No breakdown and flashover occurred on the combi.sample at 19kv	OK
3	Thermal short-circuit test	VDE0278	No transfigure and welding shall occur on all parts at 17.7KA, 1s	No transfigure and welding occurred on all parts at 17.7KA,1.03s;17.8KA,1.03s	OK
4	DC negative polarity voltage withstand for 5min	IEC60060	No breakdown and flashover shall occur at 15kv	No breakdown and flashover occurred on the combi.sample at 15kv	OK
5	AC Voltage withstand, 4h	GB11033 GB5589	2.4KV/4h	2.4KV/4h	OK
6	Oil-seal up test	DL413	Heating for 24h, cooling for 24h, Conductor's temperature is 65°C, oil pressure : 100MPa	Heating for 24h, cooling for 24h, Conductor's temperature is 65°C, oil pressure : 100MPa, No leaking, No seeping	OK

Joints for Polymeric or Rubber Insulated Cables 64KV and 10KV



COMPONENTS

1. Connector
2. Yellow Void Filler
3. Stress Control Tubing
4. Insulation/conductive Tubing
5. Worm Drive Clamp
6. Copper Mesh
7. Roll Spring
8. Armour Continuity Connection
9. Metallic Protection Cage
10. Outer protection Tubing

Cables

The joints are designed for 1-and 3-core polymeric or rubber insulated cables.

For Example : YJV, YJLV32, NTSC, NXSEY, NAXSEY, NXSX, NAXY

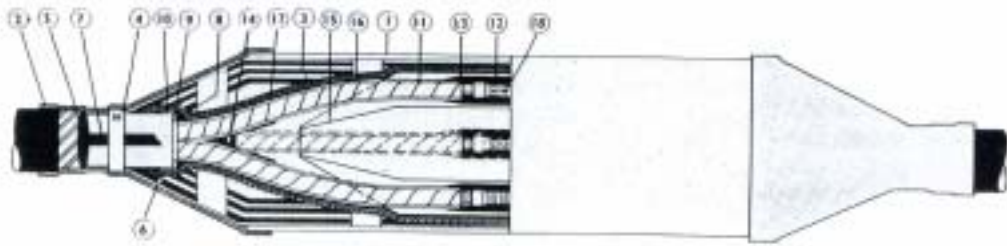
PRODUCT SPECIFICATION

Ordering Description	Type	Name	Cross Section (mm ²)
4140102030110	JSY – 10 / 1x1	10KV 1-core XLPE cable joint	25-50
4140102030210	JSY – 10 / 1x2		70-120
4140102030310	JSY – 10 / 1x3		150-240
4140102030410	JSY – 10 / 1x4		300-400
4140102060110	JSY – 10 / 3x1	10KV 3-core XLPE cable joint	25-50
4140102060210	JSY – 10 / 3x2		70-120
4140102060310	JSY – 10 / 3x3		150-240
4140102060410	JSY – 10 / 3x4		300-400

Heat-shrinkable Power Cable Accessories Testing for 10KV XLPE Cable

Item NO	property	Test	Requirements	Results	Joints
1	AC withstand for 1min	JB8144	No breakdown and flashover shall occur at 45kv	No breakdown and flashover occurred on the combi.sample at 45kv, 1min	OK
2	Partial discharge	JB/T8138.3	3pC max. at 9KV	a,b,C < 3pc	OK
3	Partial discharge	JB/T8138.3	20pC max. at 13KV	a,b,C < 3pc	OK
4	Load cycle	JB/T8138.3	Heating for 5h, cooling for 3h, conductor's temperature is 90-95°C, 3 cycles	Conductor's temperature is 95°C. Results refer to the following Test	As left
5	Partial discharge	JB/T8138.3	3pC max. at 9KV	a,b,C < 3pc	OK
6	Partial discharge	JB/T8138.3	20pC max. at 13KV	a,b,C < 3pc	OK
7	Impulse Voltage withstand 1.2/50us ± 10times	JB/T8138.1 GB/T16927	10 positive and 10 negative impulses at 105KV, No breakdown	No breakdown of the occurred on the combi.sample at 105kv	OK
8	DC Voltage withstand negative 15min	JB/T8138.1	No breakdown and flashover shall occur at 52KV	No breakdown and flashover occurred on the combi.sample at 52kv, 15min	OK
9	AC Voltage withstand, 4h	JB/T8144.1	No breakdown shall occur at 35KV, 4h	No breakdown occurred on the combi.sample at 35kv, 4h	OK
10	Sealing test	DL413	Heating for 5h, cooling for 3h, Conductor's temperature is 90-95°C In water bath, 9 cycles	Heating for 5h, cooling for 3h, Conductor's temperature is 90-95°C in water bath, 9 cycles, Results refer to the following test	As left
11	AC Voltage withstand, 15min	JB/T8144.1	No breakdown and flashover shall occur at 25KV	No breakdown and flashover occurred on the combi.sample at 25kv, 15min	OK

Joints for Screen Paper Rubber Insulated Cables 6KV and 10KV



COMPONENTS

- | | | | |
|--------------------------|-----------------------|-------------------------------|-----------------------------|
| 1. Out Protective Tubing | 5. Earthing Plumb | 9. Belting Oil Barrier Sleeve | 13. Inner Insulation Tubing |
| 2. Side Sleeve | 6. Copper Mesh | 10. Stress Control Tubing | 14. High Parmitivity Wedge |
| 3. Metal case | 7. Earthing Braid | 11. Oil-resistant Tubing | 15. Conductive Wedge |
| 4. Worm Drive Clamp | 8. Glass Cushion Tape | 12. Red Mastic Filler | 16. Yellow Void Filler |

Cables

The joints are designed for 1-and 3-core polymeric or rubber insulated cables.
 For Example : YJV, YJLV32, NTSC, NXSEY, NAXSEY, NXXSY, NAXY

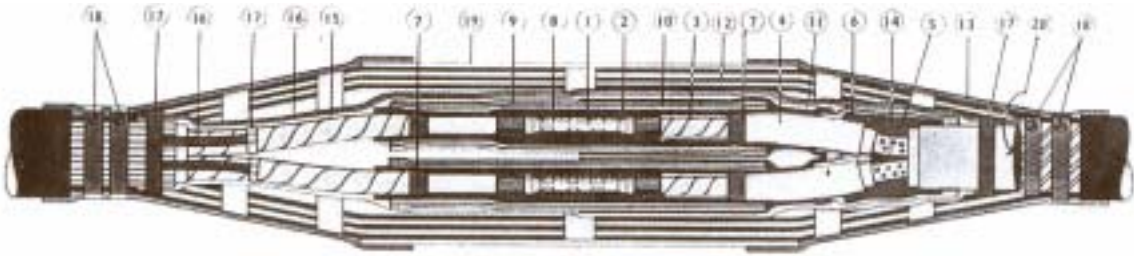
PRODUCT SPECIFICATION

Ordering Description	Type	Name	Cross Section (mm ²)
4140102090110	JSZ – 10 / 1x1	10KV 1-core PILC cable joint	25-50
4140102090210	JSZ – 10 / 1x2		70-120
4140102090310	JSZ – 10 / 1x3		150-240
4140102090410	JSZ – 10 / 1x4		300-400
4140102120110	JSZ – 10 / 3x1	10KV 3-core PILC cable joint	25-50
4140102120210	JSZ – 10 / 3x2		70-120
4140102120310	JSZ – 10 / 3x3		150-240
4140102120410	JSZ – 10 / 3x4		300-400

Heat-shrinkable Power Cable Accessories Testing for 10KV PILC Cable

Item NO	property	Test	Requirements	Results	Joints
1	AC withstand for 1min	GB11033	No breakdown and flashover shall occur at 45kv, 1min	No breakdown and flashover occurred on the combi.sample at 45kv, 1min	OK
2	Load cycle	GB11033	Heating for 5h, cooling for 3h, conductor's temperature is 65°C, 3 cycles	Conductor's temperature is 65°C. Results refer to the following test	As left
3	Impulse Voltage withstand 1.2/50us ± 10times	GB11033	10 positive and 10 negative impulses at 105KV, Flashover 1time is allowed but not including total testing times	No breakdown of the combi.sample occurred at 105kv	OK
4	DC voltage withstand negative 15min	GB11033	No breakdown and flashover shall occur at 52kv	No breakdown and flashover occurred on the combi.sample at 52kv, 15min	OK
5	AC voltage withstand, 4h	GB11033	No breakdown and flashover shall occur at 35kv, 4h	No breakdown and flashover occurred on the combi.sample at 35kv, 4h	OK
6	Oil-seal up test	DL413	Heating for 24h, cooling for 24h, conductor's temperature is 65°C, Oil pressure : 100MPa	Heating for 24h, cooling for 24h, conductor's temperature is 65°C, Oil pressure : 100MPa, No leaking, No seeping	OK

Transition Joints for Screened Polymeric Insulated Cables to Screened Paper Insulated 6KV and 10KV



COMPONENTS

- | | | |
|---------------------------|----------------------------------|-----------------------------|
| 1. Connector | 7. Grey Mastic | 13. Side Protective Tubing |
| 2. Yellow Void Filler | 8. Stress Control Tubing | 14. Stress Control Wedge |
| 3. Oil-resistant Tubing | 9. Protective Tubing | 15. Copper Mesh |
| 4. Semi-conductive Tubing | 10. Insulation/Conductive Tubing | 16. Earthing Braid |
| 5. Oil-resistant Filler | 11. Inner Insulation Tubing | 17. Roll Spring |
| 6. Conductive Breakout | 12. Metal Case | 18. Worm Driver Clamp |
| | | 19. Outer Protective Tubing |

Cables

The joints are designed for 1-and 3-core paper Insulated cables to screened 1-or-3-core polymeric insulated 64KV and 10KV.

For Example : YJV, YJLV32, NTSC, N2XSEY, NA2XSEY, N2XSY, NA2XSY, ZQD, ZLQ, ZQD22, NAKBA, NABA, NKBY

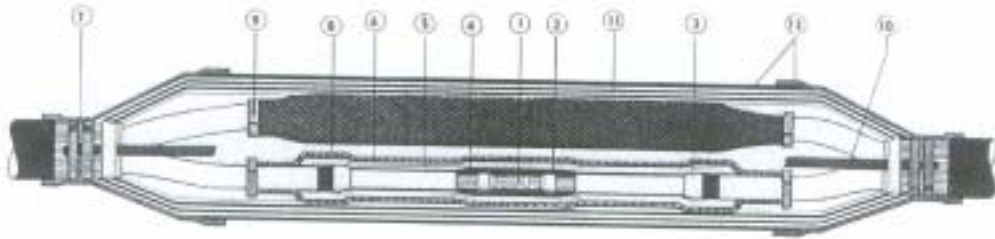
PRODUCT SPECIFICATION

Ordering Description	Type	Name	Cross Section (mm ²)
4140102130110	JSYZ – 10 / 1x1	10KV 1-core XLPE-PILC cable joint	25-50
4140102130210	JSYZ – 10 / 1x2		70-120
4140102130310	JSYZ – 10 / 1x3		150-240
4140102130410	JSYZ – 10 / 1x4		300-400
4140102140110	JSYZ – 10 / 3x1	10KV 3-core XLPE-PILC cable joint	25-50
4140102140210	JSYZ – 10 / 3x2		70-120
4140102140310	JSYZ – 10 / 3x3		150-240
4140102140410	JSYZ – 10 / 3x4		300-400

Heat-shrinkable Power Cable Accessories Testing for 10KV XLPE-PILC Cable

Item NO	property	Test	Requirements	Results	Joints
1	AC withstand for 1min	GB11033	No breakdown and flashover shall occur at 45kv, 1min	No breakdown and flashover occurred on the combi.sample at 45kv, 1min	OK
2	Load cycle	GB11033	Heating for 5h, cooling for 3h, conductor's temperature is 65°C, 3 cycles	Conductor's temperature is 65°C. Results refer to the following test	As left
3	Impulse Voltage withstand 1.2/50us ± 10times	GB11033	10 positive and 10 negative impulses at 105KV, Flashover 1time is allowed but not including total testing times	No breakdown of the combi.sample occurred at 105kv	OK
4	DC voltage withstand negative 15min	GB11033	No breakdown and flashover shall occur at 52kv	No breakdown and flashover occurred on the combi.sample at 52kv, 15min	OK
5	AC voltage withstand, 4h	GB11033	No breakdown and flashover shall occur at 35kv, 4h	No breakdown and flashover occurred on the combi.sample at 35kv, 4h	OK
6	Oil-seal up test	DL413	Heating for 24h, cooling for 24h, conductor's temperature is 65°C, Oil pressure : 100MPa	Heating for 24h, cooling for 24h, conductor's temperature is 65°C, Oil pressure : 100MPa, No leaking, No seeping	OK

Joints for Screen Polymeric or Rubber Insulated Cables 20KV and 35KV



COMPONENTS

- | | | |
|--------------------------|---------------------------------|-----------------------------|
| 1. Connector | 5. Inner Insulation | 9. Roll Spring |
| 2. Yellow Void Filler | 6. Insulation/Conductive Tubing | 10. Earthing Braid |
| 3. Stress Control Paint | 7. Worm Driver Clamp | 11. Metal Case |
| 4. Stress Control Tubing | 8. Copper Mesh | 12. Outer Protective Tubing |

Cables

The joints are designed for 1-and 3-core screen polymeric Insulated cables.
For Example : YJV, YJLV32, NTSC, N2XSEY, NA2XSEY, N2XSY, NA2XSY

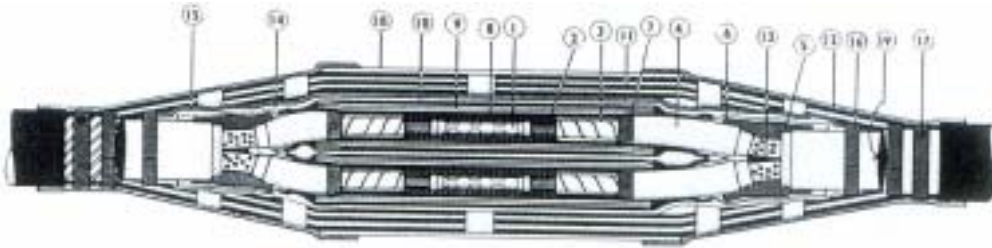
PRODUCT SPECIFICATION

Ordering Description	Type	Name	Cross Section (mm ²)
4140103030110	JSY – 35 / 1x01	35KV 1-core XLPE cable joint	50-95
4140103030210	JSY – 35 / 1x02		120-185
4140103030310	JSY – 35 / 1x03		240-400
4140103060110	JSY – 35 / 3x01	35KV 3-core XLPE cable joint	50-95
4140103060210	JSY – 35 / 3x02		120-185
4140103060310	JSY – 35 / 3x03		240-400

Heat-shrinkable Power Cable Accessories Testing for 35KV XLPE Cable

Item NO	property	Test	Requirements	Results	Joints
1	AC withstand for 1min	GB11033	No breakdown and flashover shall occur at 105kv	No breakdown and flashover occurred on the combi.sample at 105kv, 1min	OK
2	Partial discharge	GB11033	10pC max, at 39KV	39KV, ≤ 10pC	OK
3	Load cycle	GB11033	Heating for 5h, cooling for 3h, conductor's temperature is 95°C, 3 cycles	Conductor's temperature is 95°C. Results refer to the following test	As left
4	Partial discharge	GB11033	10pC max, at 39KV	39KV, ≤ 10pC	OK
5	Impulse Voltage withstand 1.2/50us ± 10times	GB11033	10 positive and 10 negative impulses at 250KV, Flashover 1time is allowed but not including total testing times	10 Positive and 10 negative impulses at 250KV, No breakdown of the combi.sample occurred at 250KV	OK
6	DC voltage withstand negative 15min	GB11033	No breakdown and flashover shall occur at 156kv	No breakdown and flashover occurred on the combi.sample at 156kv, 15min	OK
7	AC voltage withstand, 4h	GB11033	No breakdown and flashover shall occur at 104kv	No breakdown and flashover occurred on the combi.sample at 104kv, 4h	OK

Joins for Screen paper Insulated Cables with one Sheath for Phase 20KV and 35KV



COMPONENTS

- | | | |
|---------------------------|----------------------------------|-----------------------------|
| 1. Connector | 7. Grey Mastic | 13. Stress Control Wedge |
| 2. Yellow Void Filler | 8. Stress Control Tubing | 14. Copper Mesh |
| 3. Oil-resistant Tubing | 9. Inner Insulation Tubing | 15. Earthing Braid |
| 4. Semi-conductive Tubing | 10. Insulation/Conductive Tubing | 16. Roll Spring |
| 5. Oil-resistant Filler | 11. Metal Case | 17. Worm Driver Clamp |
| 6. Conductive Breakout | 12. Side Sleeve | 18. Outer Protective Tubing |
| | | 19. Earthing Plumb |

Cables

The joints are designed for 1-and 3-core screen paper Insulated cables with one sheath for phase
For Example : ZQFD41, ZQFD20, NAEKEBA, NEKENA, NEKEBY.

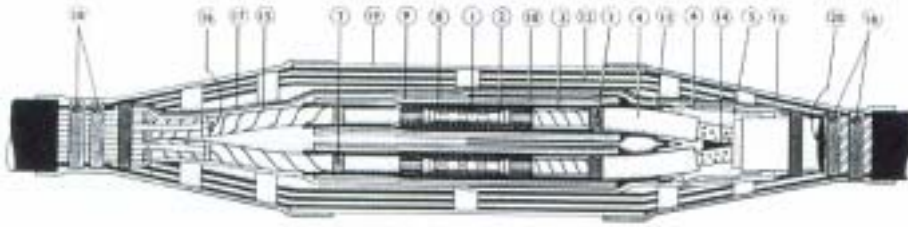
PRODUCT SPECIFICATION

Ordering Description	Type	Name	Cross Section (mm ²)
4140103090110	JSZ – 35 / 1x01	35KV 1-core PILC cable joint	50-95
4140103090210	JSZ – 35 / 1x02		120-185
4140103090310	JSZ – 35 / 1x03		240-400
4140103120110	JSZ – 35 / 3x01	35KV 3-core PILC cable joint	50-95
4140103120210	JSZ – 35 / 3x02		120-185
4140103120310	JSZ – 35 / 3x03		240-400

Heat-shrinkable Power Cable Accessories Testing for 35KV PILC Cable

Item NO	property	Test	Requirements	Results	Joints
1	AC withstand for 1min	GB11033	No breakdown and flashover shall occur at 105kv	No breakdown and flashover occurred on the combi.sample at 105kv, 1min	OK
2	Load cycle	GB11033	Heating for 5h, cooling for 3h, conductor's temperature is 65°C, 3 cycles	Conductor's temperature is 65°C. Results refer to the following test	As left
3	Impulse Voltage withstand 1.2/50us ± 10times	GB11033	10 positive and 10 negative impulses at 250KV, Flashover 1time is allowed but not including total testing times	10 Positive and 10 negative impulses at 250KV, No breakdown of the combi.sample occurred at 250kv	OK
4	DC voltage withstand negative 15min	GB11033	No breakdown and flashover shall occur at 156kv	No breakdown and flashover occurred on the combi.sample at 156kv, 15min	OK
5	AC voltage withstand, 4h	GB11033	No breakdown and flashover shall occur at 104kv	No breakdown and flashover occurred on the combi.sample at 104kv, 4h	OK
6	Oil-seal up test	DL413	Heating for 24h, cooling for 24h, conductor's temperature is 65°C, oil pressure : 100MPa	Heating for 24h, cooling for 24h, conductor's temperature is 65°C, oil pressure : 100MPa, No Leaking, No seeping	OK

Transition Joints for Screen polymeric Insulated Cables to screen paper Insulated 20KV and 35KV



COMPONENTS

- | | | |
|---------------------------|--|-----------------------------|
| 1. Connector | 7. Grey Mastic | 13. Side Sleeve |
| 2. Yellow Void Filler | 8. Stress Control Tubing | 14. Stress Control Wedge |
| 3. Oil-resistant Tubing | 9. Inner Insulation Tubing | 15. Copper Mesh |
| 4. Semi-conductive Tubing | 10. Insulation/Conductive Tubing | 16. Roll Spring |
| 5. Oil-resistant Filler | 11. Inner Protective Tubing (compression sleeve) | 17. Earthing Braid |
| 6. Conductive Breakout | 12. Metal Case | 18. Worm Driver Clamp |
| | | 19. Outer Protective Tubing |

Cables

The joints are designed for 1-and 3-core screened paper with one metal sheath for phase to screened 1-or-3-core polymeric insulated cables 35KV

For Example : YJV, YJLV32, NTSC, N2XSEY, NA2XSEY, N2XSY, NA2XSYm ZQFD41, ZQFD20, NAEKEBA, NEKENA, NEKEBY

PRODUCT SPECIFICATION

Ordering Description	Type	Name	Cross Section (mm ²)
4140103130110	JSYZ – 35 / 1x01	35KV 1-core XLPE-PILC cable joint	50-95
4140103130210	JSYZ – 35 / 1x02		120-185
4140103130310	JSYZ – 35 / 1x03		240-400
4140103140110	JSYZ – 35 / 3x01	35KV 3-core XLPE-PILC cable joint	50-95
4140103140210	JSYZ – 35 / 3x02		120-185
4140103140310	JSYZ – 35 / 3x03		240-400

Heat-shrinkable Power Cable Accessories Testing for 35KV XLPE-PILC Cable

Item NO	property	Test	Requirements	Results	Joints
1	AC withstand for 1min	GB11033	No breakdown and flashover shall occur at 105kv	No breakdown and flashover occurred on the combi.sample at 105kv, 1min	OK
2	Load cycle	GB11033	Heating for 5h, cooling for 3h, conductor's temperature is 65°C, 3 cycles	Conductor's temperature is 65°C. Results refer to the following test	As left
3	Impulse Voltage withstand 1.2/50us ± 10times	GB11033	10 positive and 10 negative impulses at 250KV, Flashover 1time is allowed but not including total testing times	10 Positive and 10 negative impulses at 250KV, No breakdown of the combi.sample occurred at 250kv	OK
4	DC voltage withstand negative 15min	GB11033	No breakdown and flashover shall occur at 156kv	No breakdown and flashover occurred on the combi.sample at 156kv, 15min	OK
5	AC voltage withstand, 4h	GB11033	No breakdown and flashover shall occur at 104kv	No breakdown and flashover occurred on the combi.sample at 104kv, 4h	OK
6	Oil-seal up test	DL413	Heating for 24h, cooling for 24h, conductor's temperature is 65°C, oil pressure : 100MPa	Heating for 24h, cooling for 24h, conductor's temperature is 65°C, oil pressure : 100MPa, No Leaking, No seeping	OK

Used for repairing and installation



Breakout

Reliance Corp. heat-shrinkable flame retardant breakout are made of a thermally stabilized, modified polyolefin and are supplied with a factory applied thermoplastic adhesive sealant. These breakout replace tapes, epoxies, and encapsulations, no special skills are required for installation. The system provides excellent water sealing, abrasion and mechanical protection, weathering resistance, and electrical insulation for cable breakouts, transitions, and terminations. A seal may be effected when used on all standard plastic jacketing, lead, steel, Aluminum copper, and elastomeric insulating materials.



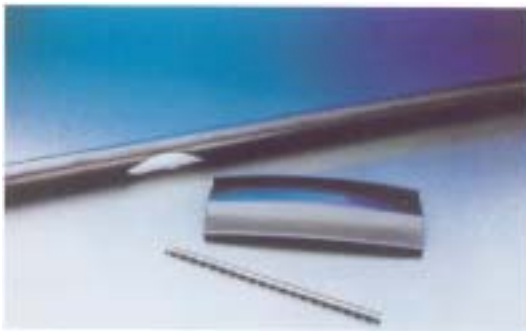
Bushings inside boots

Reliance Corp. heat shrinkable bushing insulating boots are designed to insulate and seal the connection of medium voltage terminations to bushings inside non air spaced cable boxes. The boots are manufactured from anti-tracking, erosion resistant insulating material and are supplied to suit either inline or right-angle bushing connection configurations. The bushing boot kits cover a range of conductor sizes and are available for both paper and plastic insulated cable terminations. The completed installation results in the insulation of all live metal and a completely sealed termination system delivering performance levels consistent with air spaced enclosures.

End-caps

Reliance Corp. heat-shrinkable end caps are designed for the sealing and protection of both plastic and metal sheathed cables. Each cap is coated with a heat activated sealant ensuring a permanent moisture seal irrespective of the construction of the cable. The caps also provide high quality electrical insulation, and are highly resistant to abrasion, weathering and adverse chemicals. Each cap covers a range of cable sizes, minimizing inventory and ensuring an effective moisture sealing system for all commonly used power distribution and control cables.





Repair Sleeve

Reliance Corp. Repair Sleeves provide a fast and efficient method of repairing insulation on flexible cables up to 2KV and jacket damage medium voltage cables. Repair Sleeves is a wraparound heat shrinkable Sleeve that quickly positioned over the cable using a rail and Channel closure. The sleeve is supplied with a precoated adhesive which melts during the shrinking process to both fill the damaged area and provide a superior moisture seal. The outer surface of the sleeve is coated with a heat sensitive paint that changes. On cooling, the stainless steel channel may be cut from resistant, ensures a positive seal against moisture ingress, provides excellent resistance to abrasion, and will withstand severe cable abuse including flexing, bending and straining.

Sealant Insulating Tubing

Sealant Insulating Tubing is a heavy wall sealant lined heat shrinkable tubing used for protection, cable sealing, for corrosion protection, cable sealing, and insulating purposes where a maximum recovered wall thickness is required. Typical applications include jointing of single core cables and the insulating and jacketing of multi core cable joints. Sealant Insulating Tubing has an operating temperature range of -40°C to $+105^{\circ}\text{C}$ and is suitable for both exposed above ground and direct buried applications. It is highly resistant to UV, abrasion and backfill damage. Sealant Insulating Tubing offers a 2.5:1 shrink ratio and is available in expanded sizes from 9mm to 200mm.



Toolings and connector



1. Electric performance:

Mechanical Performance to specification of BS4579 part 1.3-1976

2. Materials:

Copper to specification material BS4104:1970
Aluminium Material specification BS2627:1970

3. Copper crimp lug and link is suitable for BS6360:1973 the connection of strand conductor. aluminium lug and link is suitable for BS6791:1973 the connection of strand conductor. Sector aluminium lug is suitable for BS3988:1970 the connection of 3-core, 4-core sector solid conductor.

4. Copper lug to specification BS 91- 1973, tinned surface.

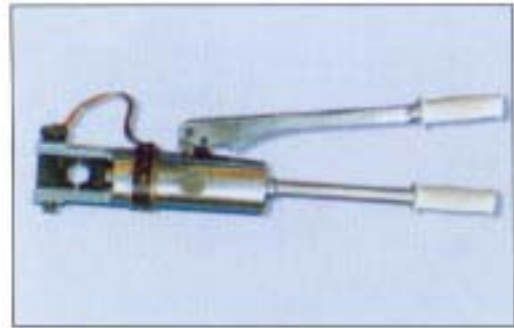
Application

For the connection of the aluminium conductor of power cable or electric wire, with normal cross section area from 6 to 1000mm², to the copper busbar of electrical equipment.

Features :

Material: high purity aluminium, with $\geq 99.6\%$ high purity aluminium, 99.9% high purity copper. For the transition part by using low temperature friction welding. The strength of the weld is at least equal to the strength of the base aluminium material. The surface of aluminium is given a special chemical treatment to reduce contact resistance and inhibit corrosion, the inner surface of lug barrel has conductive paste in it to prevent corrosion and oxide layers forming. A plastic end cap is provided for sealing and protecting.





Application :

The hydraulic crimping pliers is a special and manual tool for the cold-pressure of wire and cable. It is suitable for installation of cable end and intermediate joints and not limited by the flameproof requirement

Feature :

This series of crimping pliers is hydraulically driven. It has the advantages of light and large force. QYS-12-2 type hydraulic crimping pliers has produced for more than 20years. Its performance is good by using import jointing

QYS-300-1 Hydraulic pliers is a tool for cold-pressure of wire and cable. It has the advantages of large force. Light and fast crimping. The method of crimping is hexagonal compressed connection. And it has no damage to pressed connector and the cable core. It is special for the installation of heat shrinkable and pre-molded accessory. Now it is the ideal tool for cold-pressure of wire and cable



The two hydraulic pliers is suitable for crimping large section cable, It is the ideal tool for cold-pressure connection of wire and cable

Toolings and connector



Application :

Suitable for cutting of power cable with armor, communication cable, control cable, bare copper aluminium strand (no ACSR).

Features :

It is a whirling knife, mechanical driven. So, it is efficient, save effort in operating, but QLD-30 is not suited to power cable with armor.



LTD35-60 Cutting Plastic Knife

It is special for cutting the cable insulating layer. It can adjust the blade angle ($0^{\circ} \sim 10^{\circ}$) and the depth of radial feed (0~12mm). No damage to the cable core and suitable for the cable OD, $\phi 35 \sim \phi 60$ mm.

LBD3560 Stripping Plastic Knife

It is special for stripping outer semi-conductor layer of $\phi 35 \sim \phi 60$ mm cable insulation. No damage to the insulating layer.

Application:

The mechanical crimping pliers is a special and manual tool for the cold-pressure of wire and cable. It is not limited by the Flame proof and fireproof requirements.

Features :

This series of crimping pliers is mechanical driven. When the connecting connector reaches the depth required, the pressing die can only reset, so good quality is ensured. This pliers has the advantages of light weight, large force, easy operation and service. Type QX-18, QX-24, are suitable for pressing copper or aluminium core power cable.

