

Catalog | May 2015

Cable Accessories 7.2 – 42 kV EPR- and XLPE-insulated cables

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Cable Accessories

7.2–42 kV

1



Cable Accessories factory and Technical Lead Center situated in Alingsås, Sweden.

We work to create safe electrical distribution via power cable networks. To achieve this, we develop, manufacture and market a broad range of cable accessories, for distribution and transmission.

Our main customers are utilities, EPC and OEM. Our core competencies are electrical connections in cable systems and manage electric field grading systems. Our own test laboratories are essential for our product development and quality assurance.

Catalog

This catalog covers cable accessories in the range from 7.2 to 42 kV.

List of content sorted by name or product category can be found in the end of this catalog. The product catalog can also be downloaded from our website.

Other product catalogs available on request:

- Cable Accessories ≤ 1 kV, XLPE cables
- Cable Accessories 12–52 kV, PILC cables
- Cable Accessories 52–420 kV, XLPE cables

We reserve the right to alter the design and range of our products without prior notice.

Our business idea

“We provide companies that work with electric power with solutions which enable them to joint and connect cables easily and safely, and distribute electricity“.

Satisfying customer needs, Quality and Environment are our priorities.

We work continuously to improve our processes. Important foundations for this work are our quality and environment management systems.

- ISO 9001
- ISO 14001
- OHSAS 18001

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Our five core competencies

1. Understanding the total cost and value for cable accessories as elements in systems

We as supplier of components that are pieces in a puzzle, the cable system and the related interfaces, need to understand the demand and requirements on the single component in order to optimize the value and performance. The value offer for components is in relationship with the system, we also add value in later stages in this value chain. By knowing the actual expectations and trends we are able to meet the demand in the long term. Our expertise and extensive global footprint ensure we understand the product requirements and future trends.

2. Manufacturing and quality assurance of insulation system based on rubber

With modern manufacturing technology and quality management processes we can keep up the productivity and thereby offer competitive products. We have material expertise as well as test facilities for rubber material development and improvements, by both know-how and know-why we are able deliver insulation systems in the complete range of cable accessories.

3. Workmanship in installation of cable accessories

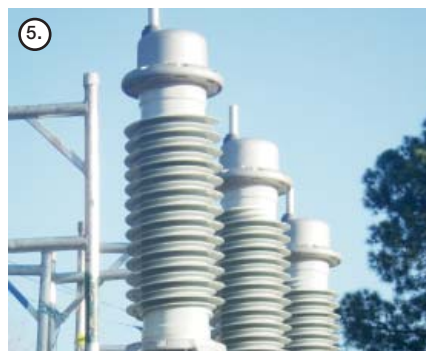
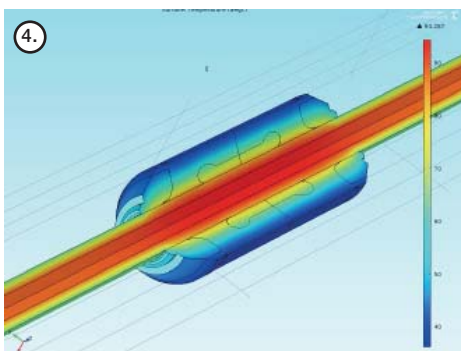
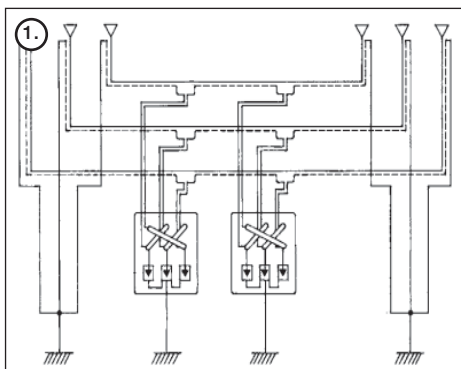
Joints and terminations are regarded as critical components in cable systems, and the workmanship during installation is very important when considering the risk of future failures. When preparing cable several layers need to be removed or treated without damaging other layers, this requires skills and knowledge how to handle tools for this application. Knowledge about what are the critical steps in accessories assembling gives the best foundation for successful and safe installation.

4. Electrical, mechanical and thermal design of insulation systems and connectors

The design of our accessories are based on expertise within electrical, mechanical and thermal performance. It is essential to understand the connection between them since all the three technologies comes down to one parameter namely coupled electrical, mechanical and thermal properties. We have long extensive experience and use modern FEM software that allows us to calculate coupled electrical and thermal fields as well as thermo-mechanical conditions. Our electrical designs involves geometrical, resistive and refractive field controlling involving advanced field grading rubber materials.

5. Performance of rubber and metal materials in outdoor conditions

Cable accessories are exposed to harsh outdoor climate conditions. Insulators are exposed to UV radiation and pollution, joints are operating underground often in wet conditions, and they shall perform for many years without breakdown. It is essential for us to keep up the expertise within outdoor insulation performance and corrosion protection, with expertise and our test facilities, e.g. Weather-O-Meter test, we can ensure the product deliver what we promise.



Requirements and approvals

1

Definition of voltages

Cables and cable accessories are classified according to the voltages at which they operate. A rapid survey at standards all over the world shows that the designations are slightly different. However, IEC designations gives a clear picture of used vocabulary. The voltages normally used in this context are:

U_0 = the rated r.m.s.(root mean square) power-frequency voltage between each conductor and screen or sheath for which cables and accessories are designed.

U = the rated r.m.s power-frequency voltage between two different conductors for which the cables and accessories are designed.

U_m = the maximum r.m.s power-frequency voltage between two different conductors for which the cables and accessories are designed. It is the highest voltage that can be sustained under normal operating conditions at any time and at any point in a system. It excludes temporary voltage variations due to fault conditions and the sudden disconnection of large loads.

Standards

Electrical components must meet numerous requirements in areas such as functional safety, technical performance, personal safety and so on. For cable accessories, compliance with the quality requirements is checked by type and routine testing. We perform these tests to various standards, both international and national.

The standards on which our tests are usually based: IEC

(International Electrotechnical Commission) An international standard used worldwide.

EN

(European Norm)

HD

(Harmonization Document)

These standards were developed by CENELEC for the European countries. In most cases, these standards harmonize with IEC standards. Each European country publishes the standard as its own, and there may be some national deviations and special requirements.

Voltage range U_m 7.2-42 kV

IEC: Current standards are IEC 61442, which covers test methods, and IEC 60502-4, which sets out the testing requirements.

IEC contains $U_m \leq 36$ kV.

CENELEC: Current standards are EN 61442 which covers test methods and is identical to IEC 61442.

HD 629.1 S2, which sets out the testing requirements. The main difference between IEC and CENELEC is that CENELEC stipulates a longer period of temperature cycling under voltage.

HD 629.2 S1 applies to accessories for paper-insulated cables and transition joints. A test conducted in accordance with CENELEC also satisfies the IEC requirements. To include the less common voltages which occur in certain European countries, CENELEC has included more voltage classes than IEC. In addition, CENELEC runs up to U_m 42 kV.

CENELEC voltage classes

U_0	U	U_m
3.6	6	7.2
3.8	6.6	7.2
6	10	12
6.35	11	12
8.7	15	17.5
12	20	24
12.7	22	24
18	30	36
19	33	36
20.8	36	42

Reasons for choosing ABB Cable Accessories

A power cable network must be capable of supplying electric power without interruption. If a failure does occur, it is usually the junction points in the network that are at fault, rarely the cable. So it pays to choose cable accessories with care.

One reason for our success is that we have constantly developed cable accessories for all types of cables. This has given us both broad and deep experience base. We have also developed our accessories to manage optical fiber in power cables, and integrated screen separation in cable joints. This enables system designers to improve and optimize their systems.

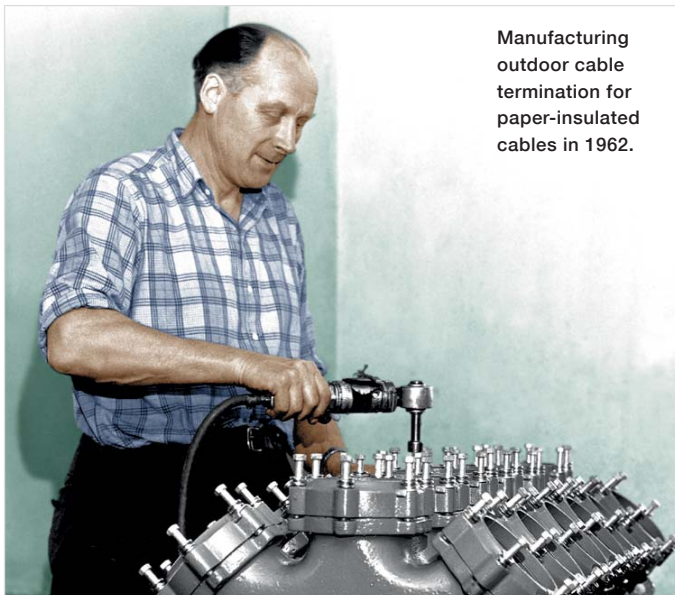
Our products are made with modular design, this makes the accessories exceptionally easy to install. The jointers can easily become familiar with the components, and this reduces the risk of mistakes.

Another advantage is that our cable terminations can be assembled on the ground with controlled conditions and then lifted into place – simple and safe!

Unless otherwise specified, the cable accessories are supplied as standard with bolt connections for conductors.

Experience

Long experience brings great expertise. We have been manufacturing cable accessories for paper-insulated cables for about 100 years. When XLPE-insulated cables were introduced more than 50 years ago, we were involved from the outset. Since then we have been in the forefront of development. We have a long experience in high voltage engineering and have always led the field in research and development.



Manufacturing outdoor cable termination for paper-insulated cables in 1962.



Reasons for choosing ABB Cable Accessories

1

Research and Development

Our core competence is our expertise in electrical connections in power cable systems. Successful product development requires proper resources. We have an advanced chemistry laboratory, a profound expertise in the field of polymers and well-equipped high voltage and high-current laboratories.

Our corporate research Centers enables us to conduct long term development of new technologies.

Better Economy

ABB Cable Accessories provide greater safety. This means major savings in the long term, as well as lower costs from simplified routines for purchase, delivery and storage.

Also shorter installation time reduces the total cost for the system.

Professional Training

The technology of cables and their installation is constantly developing. We offer a broad range of courses in cable technology and cable accessories. Our instructors are involved in our development projects, so you can be sure that they have access to the latest technology.

We arrange training programmes and practical exercises in the assembly of cable accessories up to 420 kV. All course participants will receive a diploma or a training certificate after successfully passing theoretical and practical tests.

We facilitate the training in our factory or we may arrange in suitable location in agreement with you.

If you would like to know more about the courses, please contact your ABB representative or our training department directly.



Cable Accessories

7.2–42 kV

ABB cable accessories for 7.2–42 kV are characterized by simple solutions with a reliable function. Long experience and continuous product development enable us to offer products that meet future requirements for reliable and dependable systems.

At the time when XLPE-insulated cable was introduced in the beginning of the 1960s, we already realized the importance of the cable accessories having a constant, active pressure over the cable, in this way following the physical changes in the cable in service. The solution at the time was to use tapes with different properties. Our patented field-control material and the first premolded products were introduced in the 1970s. The technology has since been a guiding force for our product development.

Our current range includes cable joints, cable terminations and screened separable cable connectors in line with this concept.

The fact that the products are premolded means that they are manufactured in a single piece including important functions such as electrical field-control, insulation and sealing.

The use of flexible materials enables the cable accessory

to follow the variations in the cable under load, thus ensuring an active pressure for a reliable power transmission.

Manufacturing the products from soft rubber also means that fewer sizes covers different cable dimensions. All of this, in combination with the bolt technology that we use in our cable connectors and cable lugs, gives a reliable and dependable system.

More than one million premolded cable joints, cable terminations and cable connectors have already been installed by customers in electricity distribution networks all over the world. Our cable terminations and screened separable cable connectors are also purchased by customers who manufacture switchgears and other installations.

In addition to the products presented in this catalogue, we offer especially adapted products and solutions for different markets and cables and a range of cable preparation tools. Please do not hesitate to contact us if you have any other needs or queries.

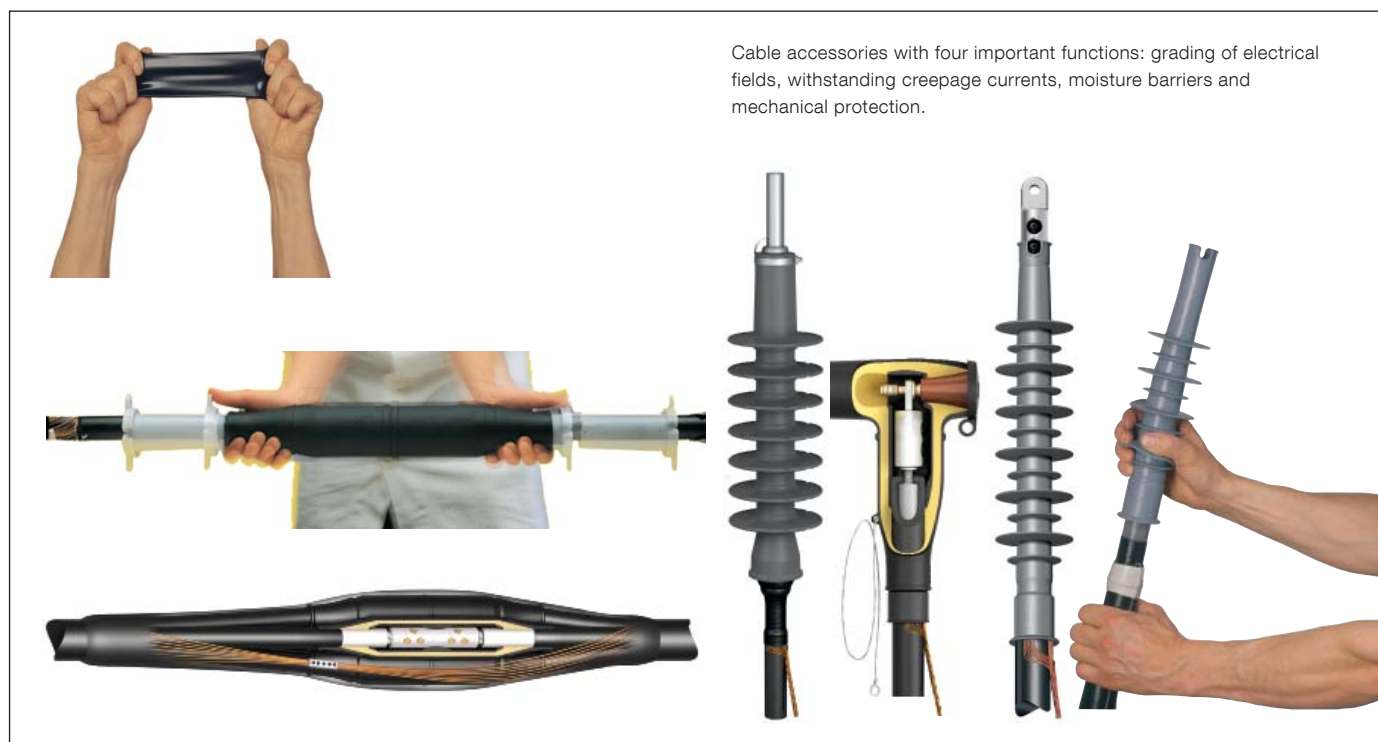




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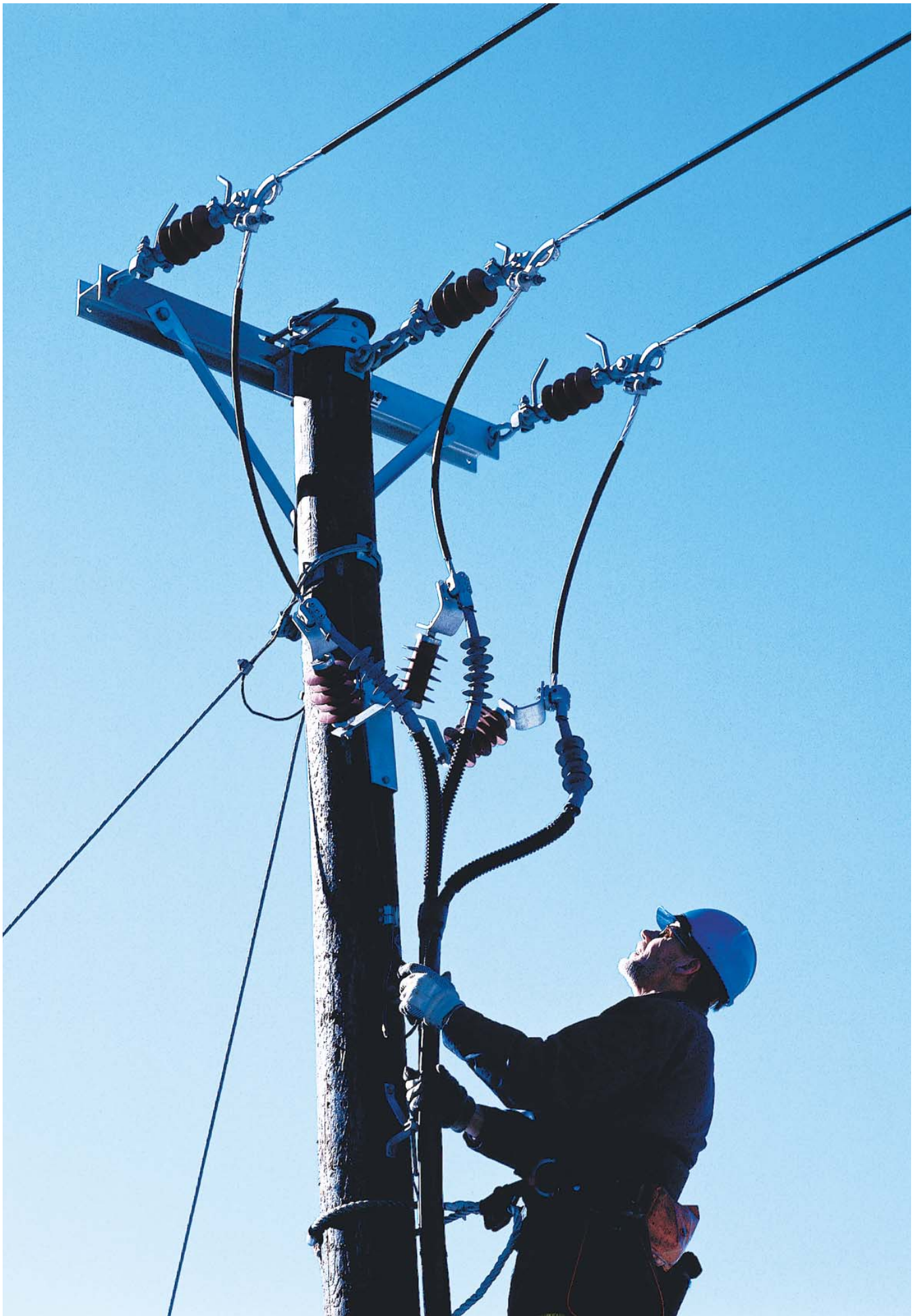
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Premolded cable joint with cold shrink outer jacket

SOJ 12–24 kV

Use

Premolded cable joint for XLPE- and EPR-insulated 1- or 3-core cables with Al or Cu conductor, 12–24 kV.

Standards

- CENELEC, HD 629.1 S1
- SS 424 14 45 Edition 1
- VDE 0278
- KEMA S8
- IEEE 404 1993

Design

The joint body is made of rubber in three layers: a conductive outer layer, an insulating layer and a conductive inner layer. The kit contains all mounting material.

The joint body is pre-expanded on plastic inserts before installation. When the cables have been connected and the joint is centred, the inserts are pulled out. This way the joint body will provide an active pressure on the cable insulation and will follow variations in the cable during load.

Always select products by Insulation diameter.



SOJ CSS

The kits are selected as follows:

SOJ CSS

Contains cold-shrink outer jacket and connectors with shear-off bolts for conductor and screen.

SOJ CS

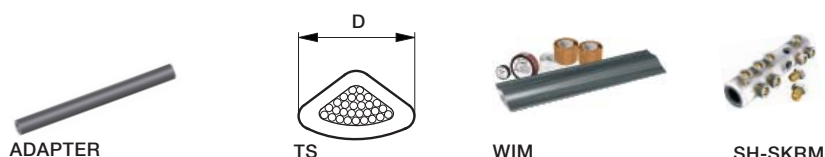
Contains cold-shrink outer jacket. Connectors are not included.

Note:

- For 16–35 mm² cables ADAPTER must be ordered separately, see following pages.
- WIM 3 to be used as complement when jointing 3-core watertightened cable, see following pages.

Insulation diameter mm	Cable cross section		Designation 1-core	CSS	CS	Designation 3-core	CSS	CS
	12 kV	24 kV		Weight kg/kit	Weight kg/kit		Weight kg/kit	Weight kg/kit
	mm ²							
15–19.5	50–70	–	SOJ 121-1	2.5	2.4	SOJ 121-3	5.0	4.7
18.5–24	95–150	–	SOJ 122-1	2.6	2.5	SOJ 122-3	5.5	5.2
23–28	185–240	–	SOJ 123-1	3.4	3.2	SOJ 123-3	7.0	6.2
27–34	300–400	–	SOJ 124-1	4.7	4.2	SOJ 124-3	–	7.3
33.5–46	500–630	–	SOJ 125-1	5.5	4.8	–	–	–
19–23.5	–	50–70	SOJ 241-1	3.3	3.2	SOJ 241-3	5.8	5.5
22.5–28	–	95–150	SOJ 242-1	3.6	3.5	SOJ 242-3	6.9	6.5
27–35	–	185–240	SOJ 243-1	4.3	4.0	SOJ 243-3	8.8	8.0
27–35	–	300		4.5	4.0	–	–	–
33.5–46	–	400	SOJ 244-1	5.3	4.8	–	–	–
33.5–46	–	500–630		5.5	4.8	–	–	–

Accessories, to be ordered separately



Accessories	Use	SOJ CSS	SOJ CS	See page
ADAPTER	Cables with different dimensions	X	X	2/10
TS	Additional kit for sector shaped 3-core cables	X	X	2/10
WIM 3	Diffusion seal	X	X	2/11
SH-SKRM	Bolt connector	–	X	2/53
JSA 10–13	Cables with Cu-tape screen	X	X	2/50
JSA 14–16	Cables with Al-foil screen	X	X	2/50

Premolded cable joint for radially watertightened cable

SOJ 12–24 kV

2

Use

Premolded cable joint for XLPE- and EPR-insulated 1- or 3-core cables with Al- or Cu-conductor and radially watertightened aluminium foil for 12–24 kV.

Standards

Meets the requirements of:

- CENELEC, HD 629.1 S1
- SS 424 14 45 edition 1
- VDE 0278
- KEMA S8
- IEEE 404 1993

Design

The joint body is made of rubber in three layers: a conductive outer layer, an insulating layer and a conductive inner layer. The kit contains all mounting material.

The joint body is pre-expanded on plastic inserts before installation. When the cables have been connected and the joint is centred, the inserts are pulled out. This way the joint body will provide an active pressure on the cable insulation and will follow variations in the cable during load.

The kits are selected as follows:

SOJ CSWS

Used for jointing watertightened 1-core cables with Cu-wire screen. Contains cold-shrink outer jacket, Al-foil tube and connectors for conductor and screen.



SOJ CSWS



SOJ RWI



SOJ RWIT

SOJ RWI

Used for jointing three 1-core cables, Prysmian type WISKI™ or similar. Contains copper braids to connect screens, Al foil tubes for radially watertightness and also outer jacket RULLE. Connectors and items for jointing of separate earth wire are not included.

SOJ RWIT

Used for jointing three 1-core cables Prysmian type WISKI™ or similar, to a standard 3-core cable. Contains copper braids to connect screens, STOP longitudinal watertightness and outer jacket RULLE. Connectors and articles for jointing a separate earth wire are not included.

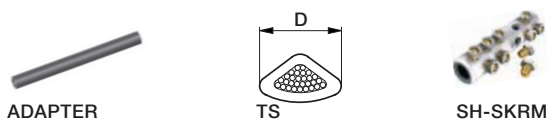
Note:

- For 16–35 mm² cables, ADAPTER must be ordered separately, see the table below.

Always select products by Insulation diameter.

Insulation diameter	Cable cross section		Designation	CSWS	Designation	RWI	RWIT
	12 kV	24 kV		Weight		3 x 1-core	Weight
mm	mm ²		1-core	kg/kit		kg/kit	kg/kit
15–19.5	50–70	–	SOJ 121-1 50	3.0	SOJ 121-31	7.3	5.0
18.5–24	95–150	–	SOJ 122-1 95 150	3.2	SOJ 122-31	7.9	5.5
23–28	185–240	–	SOJ 123-1 240	4.0	SOJ 123-31	10.3	7.0
27–34	300–400	–	SOJ 124-1 400	5.3	–	–	–
33.5–46	500–630	–	SOJ 125-1 630	6.1	–	–	–
19–23.5	–	50–70	SOJ 241-1 50	3.9	SOJ 241-31	10.0	5.5
22.5–28	–	95–150	SOJ 242-1 95 150	4.2	SOJ 242-31	10.9	6.5
27–35	–	185–240	SOJ 243-1 240	4.9	SOJ 243-31	13.0	8.0
33.5–46	–	300–400	SOJ 244-1 400	5.9	–	–	–
33.5–46	–	500–630	SOJ 244-1 630	6.1	–	–	–

Accessories, to be ordered separately



Accessories	Use	SOJ CSWS	SOJ RWI	SOJ RWIT	See page
Adapter	Adapter kit for cables with different dimensions	X	X	X	2/10
TS	Additional kit for sector shaped cables	–	X	X	2/10
SH-SKRM	Bolt connector	–	X	X	2/53

Premolded cable joint with or without outer jacket, RULLE SOJ 12–24 kV

Use

Premolded cable joint for XLPE- and EPR-insulated 1- or 3-core cables with Al or Cu conductor for 12–24 kV.

Standards

Meets the requirements of:

- CENELEC, HD 629.1 S1
- SS 424 14 45 edition1
- VDE 0278
- KEMA S8
- IEEE 404 1993

Design

The joint body is made of rubber in three layers: a conductive outer layer, an insulating layer and a conductive inner layer.

The joint body is pre-expanded on plastic inserts before installation. When the cables have been connected and the joint is centred, the inserts are pulled out. This way the joint body will provide an active pressure on the cable insulation and will follow variations in the cable during load.



SOJ R

The kits are selected as follows:

SOJ R

- Contains outer jacket RULLE; a two-layer tape of EPDM-rubber and mastic, which is wrapped around the joint.
- Connectors are not included.

SOJ SL

- Supplied without outer jacket. An outer jacket approved by ABB must be added, for example type ARM.
- Connectors are not included.

Note:

- For 16–35 mm² cables ADAPTER must be ordered separately, see the table below.
- WIM 3 / WIM 4 – used as complement when jointing 3-core watertightened cable, see the table below.

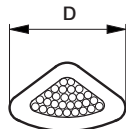
Always select products by Insulation diameter.

Insulation diameter	Cable cross section		Designation	R	Designation	SL	Designation	R	Designation	SL
	12 kV	24 kV								
mm	mm ²			kg/kit		kg/kit		kg/kit		kg/kit
15–19.5	50–70	–	SOJ 121-1 R	2.6	SOJ 121-1 SL	1.0	SOJ 121-3 R	4.7	SOJ 121-3 SL	2.0
18.5–24	95–150	–	SOJ 122-1 R	3.0	SOJ 122-1 SL	1.1	SOJ 122-3 R	5.6	SOJ 122-3 SL	2.3
23–28	185–240	–	SOJ 123-1 R	3.1	SOJ 123-1 SL	1.2	SOJ 123-3 R	6.4	SOJ 123-3 SL	2.7
27–34	300–400	–	SOJ 124-1 R	4.3	SOJ 124-1 SL	1.6	SOJ 124-3 R	8.9	SOJ 124-3 SL	4.2
33.5–46	500–630	–	SOJ 125-1 R	5.9	SOJ 125-1 SL	2.2	–	–	–	–
19–23.5	–	50–70	SOJ 241-1 R	3.2	SOJ 241-1 SL	1.3	SOJ 241-3 R	6.2	SOJ 241-3 SL	2.8
22.5–28	–	95–150	SOJ 242-1 R	3.9	SOJ 242-1 SL	1.5	SOJ 242-3 R	7.0	SOJ 242-3 SL	3.4
27–35	–	185–300	SOJ 243-1 R	4.5	SOJ 243-1 SL	1.8	SOJ 243-3 R	9.1	SOJ 243-3 SL	4.5
33.5–46	–	400	SOJ 244-1 R	6.4	SOJ 244-1 SL	2.2	–	–	–	–

Accessories, to be ordered separately



ADAPTER



TS



WIM



STOP



SH-SKRM

Accessories	Use	SOJ R	SOJ SL	See page
Adapter	Cables with different dimensions	X	X	2/10
JSA 10–13	Cables with Cu-tape screen	X	X	2/50
JSA 14–16	Cables with Al-foil screen	X	X	2/50
TS	Additional kit for sector shaped 3-core cables	X	X	2/10
WIM	Diffusion seal	X	X	2/11
ARM	Armouring kit	–	X	2/51
STOP	Crutch seal when 3 x 1-core cables are jointed to a 3-core	X	–	2/10
SH-SKRM	Bolt connector	X	X	2/53

Premolded cable joint with heat-shrink outer jacket

SOJ HSTS 12–24 kV

2

Use

Premolded cable joint with heat-shrink outer jacket and bolt connector. For jointing 12–24 kV XLPE- and EPR-insulated 1- or 3-core cables with Al- or Cu-conductors.

Standard

Meets the requirements of:

- SS 424 14 45 edition 1
- VDE 0278
- CENELEC, HD 629.1 S1
- KEMA S8
- IEEE 404 1993

Design

The joint body is made of rubber in three layers: a conductive inner layer, an insulating layer and a conductive outer layer. The joint kit is complete and restores all the parts of the cable.

The joint body is pre-expanded on plastic inserts before installation. When the cables have been connected and the joint is centred, the inserts are pulled out. This way the joint body will provide an active pressure on the cable insulation and will follow variations in the cable during load.

Always select products by Insulation diameter.

Voltage	Insulation diameter	Conductor cross section	Designation	Weight
kV	mm	mm ²		kg/kit
Cable joint for 1-core				
12	15–19.5	50–70	SOJ 121-1 70 HSTS	2.5
12	18.5–24	95–150	SOJ 122-1 150 HSTS	2.6
12	23–28	185–240	SOJ 123-1 240 HSTS	3.4
12	27–34	300–400	SOJ 124-1 400 HSTS	4.7
12	33.5–46	500–630	SOJ 125-1 630 HSTS	5.5
Cable joint for 3-core				
12	15–19.5	50–70	SOJ 121-3 70 HSTS	5.0
12	18.5–24	95–150	SOJ 122-3 150 HSTS	5.5
12	23–28	185–240	SOJ 123-3 240 HSTS	7.0
12	27–34	300–400	SOJ 124-3 400 HSTS	9.1
Cable joint for 1-core				
24	19–23.5	50–70	SOJ 241-1 70 HSTS	3.3
24	22.5–28	95–150	SOJ 242-1 150 HSTS	3.6
24	27–35	185–240	SOJ 243-1 240 HSTS	4.3
24	27–35	300	SOJ 243-1 300 HSTS	4.5
24	33.5–46	400	SOJ 244-1 400 HSTS	5.3
24	33.5–46	500–630	SOJ 245-1 630 HSTS	5.5
Cable joint for 3-core				
24	19–23.5	50–70	SOJ 241-3 70 HSTS	5.8
24	22.5–28	95–150	SOJ 242-3 150 HSTS	6.9
24	27–35	185–240	SOJ 243-3 240 HSTS	8.8



SOJ HSTS 3-core kit

The kits include:

- Heat-shrink outer jacket, vulcanizing tape and connectors with shear-off bolts for conductor and screen.

Note:

- Branch seal kit CSK 2, CSK 3 for transition between 3- or 1-core cables. Kits include a branch seal in heat-shrink material, tapes and an installation instruction. CSK is to be ordered separately according to the table.
- For 16–35 mm² cables ADAPTER must be ordered separately, see the table below.
- WIM 3 – used as complement when jointing watertightened cable, see the table below.

Accessories, to be ordered separately



CSK



ADAPTER



WIM

Accessories	Use	See page
CSK	Branch seal for transition between 3- and 1-core cables	2/11
Adapter	Cables with different dimensions	2/10
WIM 3	Diffusion seal	2/11
JSA 10–13	Cables with Cu-tape screen	2/50
JSA 14–16	Cables with Al-foil screen	2/50

Premolded cable joint with heat-shrink outer jacket

SOJ HSTS 36 kV

Use

Premolded cable joint with heat-shrink outer jacket and bolt connector. For jointing 36 kV XLPE- and EPR-insulated 1- or 3-core cables with Al or Cu conductors.

Design

The joint body is made of rubber in three layers: a conductive inner layer, an insulating layer and a conductive outer layer. The joint kit is complete and restores all the parts of the cable.

The joint body is pre-expanded on plastic inserts before installation. When the cables have been connected and the joint is centred, the inserts are pulled out. This way the joint body will provide an active pressure on the cable insulation and will follow variations in the cable during load.



SOJ HSTS 3-core kit

The kits are included:

- Heat-shrink outer jacket, vulcanizing tape and connectors with shear-off bolts for conductor and screen.

Note:

- Branch seal kit CSK 2, CSK 3 for transition between 3- or 1-core cables. Kits include a branch seal in heat-shrink material, tapes and an installation instruction. CSK is to be ordered separately according to the table.
- For 16–35 mm² cables ADAPTER must be ordered separately, see the table below.
- WIM 3 – used as complement when jointing watertightened cable, see the table below.

Always select products by Insulation diameter.

Voltage	Insulation diameter	Conductor cross section	Designation	Weight
kV	mm	mm ²		kg/kit
Cable joint for 1-core				
36	19–23.5	50–70	SOJ 361-1 70 HSTS	3.3
36	22.5–28	50–70	SOJ 362-1 70 HSTS	3.6
36	22.5–28	95	SOJ 362-1 95 HSTS	3.6
36	27–35	95–150	SOJ 363-1 150 HSTS	4.3
36	27–35	185–240	SOJ 363-1 240 HSTS	4.3
36	33.5–46.5	185–240	SOJ 364-1 240 HSTS	5.2
36	33.5–46.5	300–400	SOJ 364-1 400 HSTS	5.3
36	33.5–46.5	500–630	SOJ 365-1 500 HSTS*	5.5
Cable joint for 3-core				
36	19–23.5	50–70	SOJ 361-3 70 HSTS	5.8
36	22.5–28	50–70	SOJ 362-3 70 HSTS	6.9
36	22.5–28	95	SOJ 362-3 95 HSTS	6.9
36	27–35	95–150	SOJ 363-3 150 HSTS	8.8
36	27–35	185–240	SOJ 363-3 240 HSTS	8.8
36	33.5–46.5	185–240	SOJ 364-3 240 HSTS	10.6
36	33.5–46.5	300–400	SOJ 364-3 400 HSTS	10.7
36	33.5–46.5	500–630	SOJ 365-3 500 HSTS*	10.9

Fits to 630 mm² if insulation diameter is 33.5–46.5.

Accessories, to be ordered separately



CSK



ADAPTER



WIM

Accessories	Use	See page
CSK	Branch seal for transition between 3- and 1-core cables	2/11
Adapter	Cables with different dimensions	2/10
WIM 3	Diffusion seal	2/11
JSA 10–13	Cables with Cu-tape screen	2/50
JSA 14–16	Cables with Al-foil screen	2/50

Premolded cable joint, for cables with Cu-tape screen SOJ EA 12–24 kV

Use

Premolded cable joint for XLPE- and EPR-insulated 1- or 3-core cable with Al or Cu conductors and Cu-tape screen for 12–24 kV.



Standards

Meets the requirements of:

- SS 424 14 45 edition 1
- VDE 0278
- CENELEC, HD 629.1 S1
- KEMA S8
- IEEE 404 1993

Design

The joint body is made of rubber in three layers: a conductive inner layer, an insulating layer and a conductive outer layer.

The joint body is pre-expanded on plastic inserts before installation. When the cables have been connected and the joint is centred, the inserts are pulled out. This way the joint body will provide an active pressure on the cable insulation and will follow variations in the cable during load.

The kits are selected as follows: SOJ EA

- Contains copper stockings and constant force springs to restore the Cu-tape screen and cast resin armouring kit to restore the outer jacket.

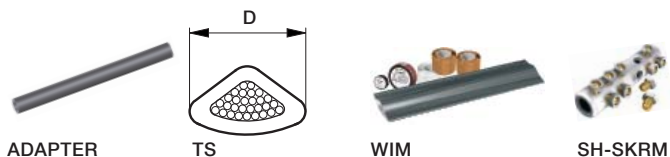
Note:

- Connectors for the cable conductors must be ordered separately.

Always select products by Insulation diameter.

Insulation diameter	Cable cross section		Designation
	12 kV	24 kV	
mm	mm ²		
15–19,5	50–70	–	SOJ 121–3 EA
18,5–24	95–150	–	SOJ 122–3 EA
23–28	185–240	–	SOJ 123–3 EA
27–34	300–400	–	SOJ 124–3 EA
19–23,5	–	50–70	SOJ 241–3 EA
22,5–28	–	95–150	SOJ 242–3 EA
27–35	–	185–300	SOJ 243–3 EA

Accessories, to be ordered separately



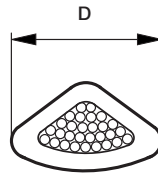
Accessories	Use	See page
Adapter	Cables with different dimensions	2/10
TS	Additional kit for sector shaped 3-core cables	2/10
WIM	Diffusion seal	2/11
ARM	Armouring kit	2/51
SH-SKRM	Bolt connector	2/53

Accessories, to be ordered separately

Premolded cable joint, SOJ 12–24 kV

Additional kit TS

Additional kit for sector shaped 3-core cables, for use when the D-dimension over the insulation is above the value as below.



Designation	Fitting joint	D	Weight
		mm	kg/item
TS 121	SOJ 121-3	20	0.1
TS 242	SOJ 242-3	29	0.1
TS 243	SOJ 243-3	39	0.1

Adapter kit, ADAPTER

Adapter for cables from 10 mm² and for jointing cables with a smaller cross section. Manufactured and tested to take one step down to the nearest joint size (each kit contains one adapter).



Designation	Fitting joint	Minimum conductor cross section	Insulation diameter	Weight
		mm ²	mm	kg/item
ADAPTER 1*	SOJ 121, 241, 361	10	Minimum 10	0.1

* Minimum diameter over connector is 12 mm.

Crutch seal, STOP

For sealing when three 1-core cables are jointed to a 3-core cable. Used only for SOJ R (see page 2/6).



Designation	Voltage	Suitable for 1-core cables with conductor cross section	Weight
	kV	mm ²	kg/item
STOP 1	12	50–185	0.2
	24–36	50–95	0.2
STOP 2	12	> 240	0.2
	24–36	> 120	0.2

Accessories, to be ordered separately

Premolded cable joint, SOJ 12–36 kV

Diffusion seal, WIM

Used as complement to SOJ CS, SOJ CSS or SOJ R when jointing 1- or 3-core watertightened cables with diffusion barrier of aluminium.



WIM 3

Designation	Fitting joint	Type of cable	Weight
			kg/kit
WIM 3	SOJ 121-3, 122-3, 123-3 SOJ 241-3, 242-3, 243-3 SOJ 361-3, 362-3, 364-3	3-core with Al foil in direct contact with screen	0.3
WIM 5	SOJ 121-1, SOJ 122-1	1-core with Al-foil in direct contact with screen	0.4
WIM 6	SOJ 123-1, SOJ 124-1, SOJ 125-1 SOJ 241-1, SOJ 242-1, SOJ 243-1 SOJ 244-1, SOJ 245-1, SOJ 361-1 SOJ 362-1, SOJ 363-1, SOJ 364-1, SOJ 365-1	1-core with Al-foil in direct contact with screen	0.4

Accessories, to be ordered separately



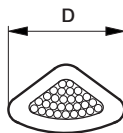
CSK

Branch seal kit for , SOJ HSTS when transition between 3- and 1-core cables.

Accessories	Conductor cross section		
	12 kV	24 kV	36 kV
	mm ²		
CSK 2	95–300	50–300	50–95
CSK 3	–	–	150–300



ADAPTER



TS



WIM



STOP

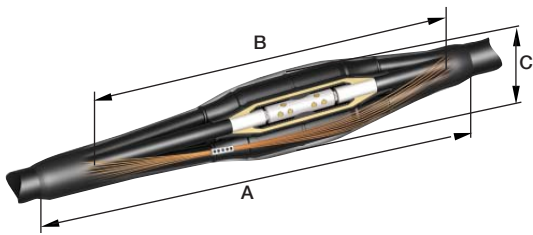


SH-SKRM

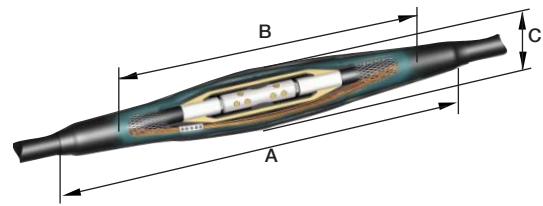
Accessories	Description	CSS	CS	R	SL	RWI	RWIT	HSTS	See page
ADAPTER	Cables with different dimensions	X	X	X	X	X	X	X	2/10
TS	Additional kit for sector shaped 3-core cables	X	X	X	X	–	X	X	2/10
WIM	Diffusion seal	X	X	X	–	–	–	X	2/11
STOP	Crutch seal when 3 x 1-core cables are jointed to a 3-core	–	–	X	–	–	–	–	2/10
CSK	Branch seal for transition between 3- and 1-core cables	–	–	–	–	–	–	X	2/11
SH-SKRM	Bolt connector	X	X	X	X	X	–	X	2/53
JSA 10–13	Earthing kit for cable with Cu-tape screen	X	X	X	–	–	–	X	2/50
JSA 14–16	Earthing kit for cable with Al-foil screen only	X	X	X	–	–	–	X	2/50
ARM	Armoured cable or when extra mechanical protection is required	–	–	–	X	–	–	–	2/51

Dimensional drawings

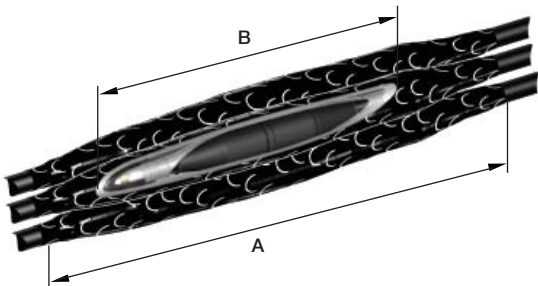
Premolded cable joint, SOJ 12–36 kV



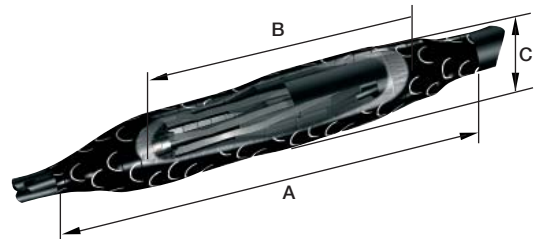
SOJ with cold-shrink outer jacket.



SOJ with cold-shrink outer jacket for watertightened 1-core cables.



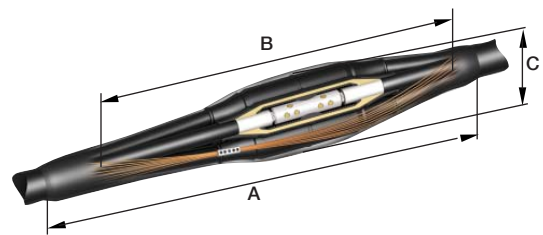
SOJ with RULLE outer jacket on 3 x 1-core WISKI™ cables.



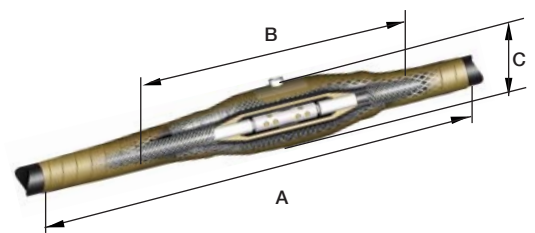
SOJ with RULLE outer jacket on 3 x 1-core WISKI™ cables to a 3-core XLPE-insulated cable.

Designation	Dimensions		
	A*	B*	C*
	mm		
1-core			
SOJ 121-1	970–1050	740–850	60
SOJ 122-1	980–1090	780–890	65
SOJ 123-1	1070–1150	820–950	75
SOJ 124-1	1190–1270	970–1070	75
SOJ 125-1	1280–1400	980–1200	90
SOJ 241-1	1010–1090	770–890	75
SOJ 242-1	1070–1150	810–950	80
SOJ 243-1	1190–1270	940–1070	85
SOJ 244-1	1280–1400	980–1200	90
SOJ 361-1	1070	770	75
SOJ 362-1	1110	810	80
SOJ 363-1	1240	940	85
SOJ 364-1	1280	980	90
SOJ 365-1	1280	980	90
3-core			
SOJ 121-3	1120–1150	850–1000	120
SOJ 122-3	1170–1270	970–1150	125
SOJ 123-3	1310	1010–1190	140
SOJ 124-3	1350–1470	1170–1310	165
SOJ 241-3	1210–1240	940–1090	145
SOJ 242-3	1260–1310	1010–1140	160
SOJ 243-3	1330–1450	1150–1310	180
SOJ 361-3	1240	940	145
SOJ 362-3	1310	1010	160
SOJ 363-3	1450	1150	180
SOJ 364-3	1600	1300	200
SOJ 365-3	1600	1300	200

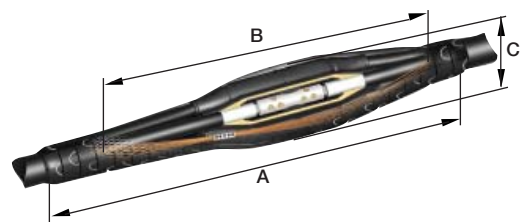
*Estimated dimensions depending on installation and type of outer jacket.



SOJ with heat-shrink outer jacket.



SOJ with cast resin as armouring outer jacket.



SOJ with RULLE outer jacket.

Tape cable joint

SMXB 12–36 kV

Use

For jointing XLPE- and EPR-insulated 1- and 3-core cables with Al or Cu conductor 12–36 kV.



Standard

Meets the requirements of:

- SEN 24 14 34
- SS 424 14 17 Edition 4
- VDE 0278

Design

The joint kit consists of tapes, stress grading pads FSD and a copper net.

Note:

- Connectors for conductor and screen and welding equipment must be ordered separately.

Designation	Weight kg/item	Designation	Weight kg/item
1 x 3-core or 3 x 1-core cables		1 x 1-core cable	
SMXB 1-3	2.6	SMXB 1-1	0.9
SMXB 2-3	3.7	SMXB 2-1	1.1
SMXB 3-3	4.0	SMXB 3-1	1.4
SMXB 4-3	4.3	SMXB 4-1	1.6
SMXB 5-3	4.5	SMXB 5-1	2.0
SMXB 6-3	5.9	SMXB 6-1	2.2
SMXB 7-3	6.7	SMXB 7-1	2.5
SMXB 8-3	9.7	SMXB 8-1	3.6
SMXB 9-3	12.9	SMXB 9-1	5.1
For selecting size see next page.		SMXB 10-1	3.8
		SMXB 11-1	5.1
		SMXB 12-1	6.7
		SMXB 13-1	7.8

To be ordered separately



STOP



WIM



SC-B

Accessories	Description	See page
STOP	Crutch seal when 3 x 1-core cables are jointed to a 3-core	2/10
WIM	Diffusion seal	2/11
SC-B	Bolt connector	2/53
JSA 14-16	Earthing kit for cable with Al-foil screen only	2/50

Tables for selection of tape cable joint SMXB 12–36 kV

For compression of aluminium conductors

Voltage kV	Insulation thickness mm	Cross section mm ²																
		10	25	35	50	70	95	120	150	185	240	300	400	500	630	800	1000	1200
One 3-core or three 1-core cables		Cable joint SMXB No.																
12	3.4	1	1	1	1	1	2	2	2	3	3	6	7	7	8	9	11*	12*
24	5.5	2	3	4	4	4	5	5	6	6	6	8	8	8	9	9	11*	13*
One 1-core cable		Cable joint SMXB No.																
36	8.0	–	10	10	10	10	10	10	10	11	11	11	11	11	12	13	13	13

* For 3-core cables choose 3 kits.

For compression of Cu-conductors

Voltage kV	Insulation thickness mm	Cross section mm ²																
		25	30	50	70	95	120	150	185	240	300	400	500	630	800	1000	1200	
One 3-core or three 1-core cables		Cable joint SMXB No.																
12	3.4	1	1	1	1	1	1	1	2	2	3	3	7	7	7	8	8	9
24	5.5	3	3	3	3	3	3	5	5	5	6	6	7	8	8	9	9	11*
One 1-core cable		Cable joint SMXB No.																
36	8.0	10	10	10	10	10	10	10	10	11	11	11	11	11	11	13	13	13

* For 3-core cables choose 3 kits.

For termite welding of aluminium or Cu-conductors

Voltage kV	Insulation thickness mm	Cross section mm ²					
		400	500	630	800	1000	1200
One 3-core or three 1-core cables		Cable joint SMXB No.					
12	3.4	7	7	7	–	–	–
24	5.5	7	8	8	–	–	–
One 1-core cable		Cable joint SMXB No.					
36	8.0	11	11	11	11	12	12

Always select products by Insulation diameter.

Accessories, to be ordered separately

STOP

Crutch seal for sealing when 3 x 1-core cables are jointed to a 3-core cable.

Designation	Voltage	Suitable for 1-core cables with conductor cross section	Weight
	kV	mm ²	kg/item
STOP 1	12	50–185	0.2
	24	50–95	0.2
	36	50–95	0.2
STOP 2	12	>240	0.2
	24	>120	0.2
	36	>120	0.2

WIM

Diffusion seal kits for restoring radial watertightness on cables with diffusion barrier of aluminium.

Designation	Fitting joint	Type of cable	Weight
			kg/kit
WIM 1	SMXB 1-1, 2-1, 3-1, 4-1	1-core with Al-foil	0.5
WIM 2	SMXB 5-1, 6-1, 7-1, 8-1,9-1,10-1,11-1,12-1	1-core with Al-foil	0.5
WIM 3	SMXB 1-3, 2-3, 3-3, 4-3, 5-3, 6-3	3-core with Al-foil in direct contact with screen	0.3



Cable cabinet, 250 A

HDC-A 12–24 kV

2

Use

For jointing or branching XLPE- and EPR-insulated 1-core or 3-core, 12–24 kV cables with conductor cross sections 25–95 mm², 250 A.

When branching in a cable grid, a branching point may be necessary to enable selected cable runs to be sectionalized during maintenance. With HDC-A, a solution is provided that makes this possible. Up to three cables can be connected in parallel.

Standards

- Enclosure meets the requirements of mechanical impact tests according to: IEC 60439-5
- Cable connectors meet the requirements of electrical tests according to CENELEC, HD 629.1 S2

Design

The enclosure is made of hot-dip-galvanized sheet steel plates with a foundation base plate and additional corrosion protection on parts that will be buried under ground.

The screened separable cable connectors are connected with coupling pieces pre-mounted in the cabinet.

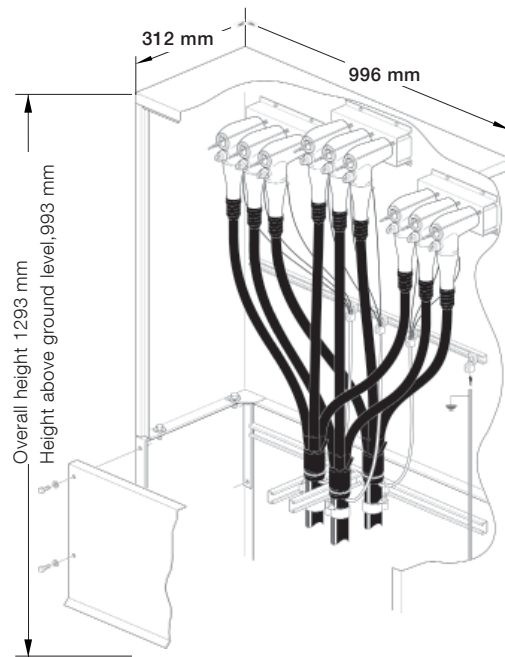
The cable cabinet is supplied with:

- 9 screened separable connectors
- Standard locks and padlock shackle

Note:

- For 3-core cables, branch seal kit type TSH or screen separation kit type PSSK must be used. To be ordered separately.
- For foundation kit for floor installation, contact us.

Always select products by Insulation diameter.



Voltage	Insulation diameter	Conductor cross section	Designation	Weight
kV	mm	mm ²	Basic configuration	kg /unit
12	13–22	25–95*	HDC-A 12250	117
24	17–25.5	25–95*	HDC-A 24250	117

* For cables smaller than 25 mm², contact us.

Accessories, to be ordered separately

Cable cabinet, HDC 12–24 kV, 250 A



IP 250
Screened insulating plug for installation in the connector so that the cable can be energized even when the cable connector is disconnected.



IH-A 24250
Insulating hood made of flexible rubber with outer conductive layer and an already installed insulating rod. To be mounted on the bushing in HDC-A 250 for insulation when a cable is temporary disconnected and remaining cables are under voltage.



MA 250
Measurement adapter used for mega ohm Ω measurements and to perform different measurements up to 5 kV DC, for example determination of phases.



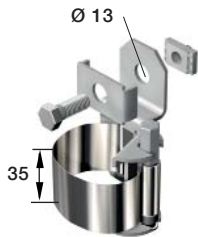
KA 250
Transversal anchor bar.



PSSK L: Heat-shrink screen separation kit for cables with Al/Cu-wire screen.



TSH
Branch seal kit



UKRA 90
Universal clamp.

Designation	Description	Qty	Weight	See page
		kit	kg/unit	
IP 250	Screened insulating plug	1	0.8	2/16
IH-A 24250	Insulating hood	3	2.3	2/16
MA 250	Measurement adapter	1	0.3	2/16
KA 250	Busbar	1	0.5	2/16
PSSL 1 L	Screen separation kit, heat-shrink, reinforced and extended, for 3-core cable 10–70 mm ² / 12 kV, 10–35 mm ² /24 kV	1	3.3	2/47
PSSL 2 L	Screen separation kit, heat-shrink, reinforced and extended, for 3-core cable, 95–300 mm ² / 12 kV, 50–300 mm ² / 24 kV	1	3.9	2/47
TSH	Branch seal	1	0.3–1.0	2/48
UKRA 90	Clamp for fixing cables	1	0.23	4/3

Cable cabinet, 630 A

HDC-A 12–36 kV

2

Use

For jointing or branching of XLPE- and EPR-insulated, 12–36 kV 1-core or 3-core cables with conductor cross sections 25–630 mm², 630 A. Up to four cables can be connected in parallel.

When branching in a cable grid, a branching point may be necessary to enable selected cable runs to be sectionalized during maintenance. With HDC-A a solution is provided that makes this possible.

Standard

The cable cabinet meets the requirements for mechanical impact testing according to IEC 60439-5.

The cable connectors meet the electrical requirements according to CENELEC, HD 629.1 S2.

Design

The enclosure is made of hot-dip-galvanized sheet steel plates with a foundation base plate and additional corrosion protection on parts that will be buried under ground.

The screened separable cable connectors are connected with coupling pieces pre-mounted in the cabinet.

The cable cabinet is supplied with:

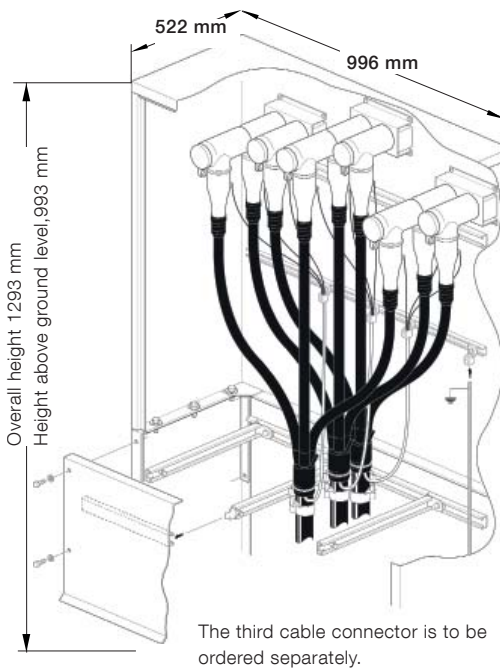
- 6 screened separable cable connectors
- Locks and padlock shackle

Required when connecting more cables:

- 6 screened separable cable connectors type CSE-A.
- Parallel coupling piece type PC.

Note:

- For 3-core cables, branch seal kit type TSH or screen separation kit type PSSK must be used. To be ordered separately.
- For foundation kit for floor installation, contact us.



Always select products by Insulation diameter.

Voltage	Insulation diameter	Conductor cross section	Designation	Weight
kV	mm	mm ²	Basic configuration	kg /unit
12	13–20	25–70	HDC-A 12630-01	140
12	18.5–30.5	95–300	HDC-A 12630-02	140
12	30.5–45	400–630	HDC-A 12630-03	140
24	17–24	25–70	HDC-A 24630-01	140
24	22.5–35	95–300	HDC-A 24630-02	140
24	30.5–45	400–630	HDC-A 24630-03	140
36	24.5–34	50–95	HDC-A 36630-01	140
36	27.5–42	95–300	HDC-A 36630-02	140
36	38–55	400–630	HDC-A 36630-03	140

Accessories, to be ordered separately

Cable cabinet, HDC-A 12–36 kV, 630 A



CSE-A
Screened separable connector 630 A for connection of an external cable.



IH-A 24630, IH-A 42630
Insulating sealing hood of flexible rubber with outer conductive layer and an already installed insulating hood. To be installed in HDC-A 630 instead of cable connector in order to temporarily insulate 630 A switchgear or transformer bushings.



PG 630
Bushing for voltage testing of the cable. Adapted to cable connectors 12–24 kV.



PSSK L
Screen separation kit for 3-core cables with Al/Cu-wire screen including heat-shrink branch seal and 2 meters long protective hoses.



PC 630-3
Parallel coupling piece. Replaces the plug in CSE-A when making a parallel connection to another CSE-A 12–24 kV.



IP 630
Screened insulating plug for installation in the screened separable connector so that the cable can be energized even when the connector is disconnected from the switchgear or transformer.



PG-A 630
Bushing for voltage testing of the cable. Adapted to cable connectors 36 kV.



TSH
Branch seal kit.



PC 630-3 L
Parallel coupling piece. Replaces the plug in CSE-A when making a parallel connection to another CSE-A 36 kV.



PC 630/250
Connector for connecting a CSE-A 250, in parallel with a previously mounted CSE-A 630. 3 pieces in the kit, tool is included.



MA-A 630
Measurement adapter used for mega ohm Ω measurements and to perform different measurements up to 5 kV DC, for determination of phases.



UKRA 90
Universal clamp.

Designation	Description	Qty.	Weight	See page
		per kit	kg/kit	
CSE-A	Screened separable connector.	3	Olika	2/24–2/26
IH-A 24630	Insulating sealing hood, 12–24 kV	3	5.2	2/18
IH-A 42630	Insulating sealing hood, 36 kV	3	5.2	2/18
PC 630-3	Parallel coupling piece, 630, 12–24 kV	3	1.1	2/18
PC 630-3 L	Parallel coupling piece, 630, 36 kV	3	1.1	2/18
PG 630	Bushing for voltage testing of the cable, 12–24 kV	1	1.5	2/18
PG-A 630	Bushing for voltage testing of the cable, 36 kV	1	2.0	2/18
IP 630	Insulating plug, 630 A	1	0.8	2/18
MA-A 630	Measurement adapter, 630 A	3	0.1	2/18
PC 630/250	Parallel coupling piece between CSE-A 630 and CSE-A 250	3	3.0	2/18
PSSK 2 L	Screen separation for 3-core cable 50–95 mm ²	1	2.5 / 3.9 / 2.5	2/47
PSSK 3 L	Screen separation for 3-core cable 95–300 mm ²	1	3.4 / 4.8 / 3.4	2/47
TSH	Branch seal	1	0.3–1.0	2/48
UKRA 90	Clamp for fixing cables	1	0.23	4/3

Premolded screened separable cable connectors

CSE-A 12–24 kV, 250 A

CSS-A 12–24 kV, 250 A

Application areas

Premolded screened separable connectors for XLPE- and EPR-insulated 1- or 3-core cables with Al- or Cu-conductors for 12–24 kV. Can be installed both indoors and outdoors.

Fits standard bushings of outer cone type according to EN 50181. Connector with rated current:

- 250 A: Interface A with plug-in Ø 7.9 mm.

Standard

Meets the requirements of:

- CENELEC, HD 629.1 S2

Design

CSE-A and CSS-A are manufactured in rubber with three layers; a conductive inner layer, an insulation layer and a conductive outer layer, that are vulcanized together for the best possible interface between the layers.

The cable connectors include both a capacitive test point with protection and an integrated earthing wire.

- Delivered in 3-phase kits, complete with cable lugs, bolt connection and stress grading adapter, designed to ensure a reliable installation.

Note:

- For 3-core cable with common copper screen wires, a screen separation kit or a branch seal kit must be used. To be ordered separately.

Always select products by cable insulation diameter.

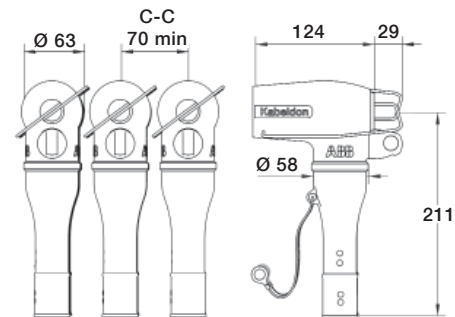
Voltage	Insulation diameter	Conductor cross section	Designation	Weight
kV	mm	mm ²		kg/unit
Elbow cable connector				
12	10–12	10–16	CSE-A 12250-01	2.2
12	13–22	25–95	CSE-A 12250-02	2.2
24	13–22	10–16	CSE-A 24250-01	2.2
24	17–25.5	25–95	CSE-A 24250-02	2.2
Straight cable connector				
12	10–12	10–16	CSS-A 12250-01	2.2
12	13–22	25–95	CSS-A 12250-02	2.2
24	13–22	10–16	CSS-A 24250 01	2.2
24	17–25.5	25–95	CSS-A 24250 02	2.2
Elbow cable connector complete with screen separation kit				
12	10–12	10–16	CSE-A 12250-01 P	5.5
12	13–22	25–95	CSE-A 12250-02 P	5.5
24	13–22	10–16	CSE-A 24250-01 P	5.5
24	17–25.5	50–95	CSE-A 24250-02 P	6.1



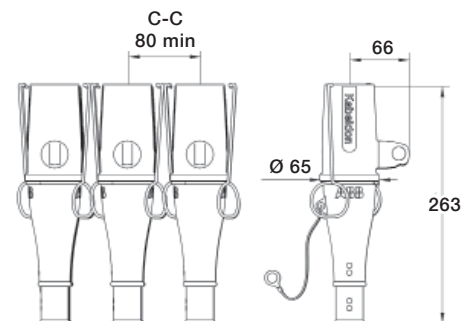
CSE-A 12250
CSE-A 24250

CSS-A 12250
CSS-A 24250

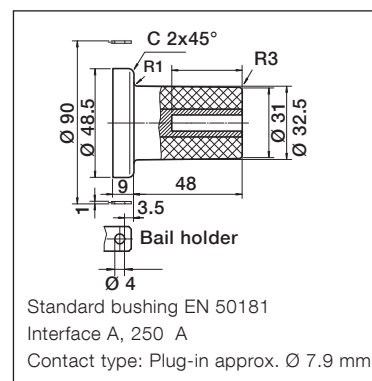
Dimensions in mm.



CSE-A 250 A, 12–24 kV



CSS-A 250 A, 12–24 kV



Premolded screened separable connector for cables with Cu-tape screen CSE-A 12–24 kV, 250 A

Application areas

Premolded screened separable connectors for XLPE- and EPR-insulated 1- or 3-core 12–24 kV cables with Al- or Cu-conductors with copper tape screens, with or without aluminium or steel wire armouring. Can be installed both indoors and outdoors.

Fits standard bushings of outer cone type according to EN 50181. Connector with rated current:

- 250 A: Interface A with plug-in Ø 7.9 mm.

Standard

Meets the requirements of:

- CENELEC, HD 629.1 S2

Design

CSE-A is manufactured in rubber with three layers; a conductive inner layer, an insulation layer and a conductive outer layer, that are vulcanized together for the best possible interface between the layers. The cable connectors include both a capacitive test point with protection and an integrated earthing wire.

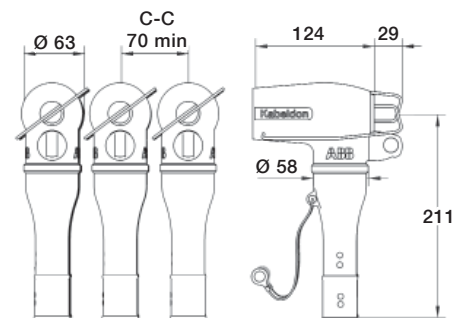
Delivered in 3-phase kits, complete with cable lugs, bolt connection, earthing kit and stress grading adapters. The adapters are designed to ensure a reliable installation.

For 3-core cables, a branch seal kit is included.



CSE-A 12250
CSE-A 24250

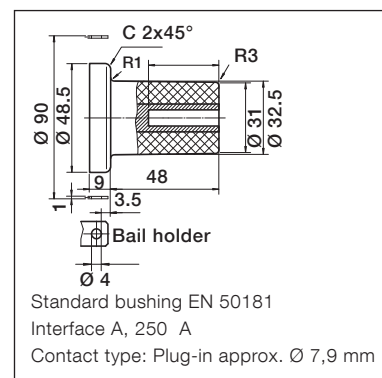
Dimensions in mm.



CSE-A 250 A, 12–24 kV

Always select products by cable insulation diameter.

Voltage	Insulation diameter	Conductor cross section	Designation	Outer sheath diameter	Weight
kV	mm	mm ²		mm	kg/unit
Elbow cable connector, 3 x 1-core					
12	13–22	25–95	CSE-A 12250-02 R	–	2.7
24	19–25.5	35–95	CSE-A 24250-02 S	–	2.7
Elbow cable connector, 3-core					
12	13–22	25–50	CSE-A 12250-02 RA	31–50	2.9
12	13–22	70–95	CSE-A 12250-02 RB	44–70	2.9
24	19–25.5	35–95	CSE-A 24250-02 SB	47–70	2.9



Accessories, to be ordered separately

CSE-A and CSS-A 12–24 kV, 250 A

2



IH-A 24250

Insulating hood of flexible rubber with outer conductive layer and a preinstalled insulating rod. To be mounted on the bushing in a switchgear or a transformer 250 A to insulate it when a cable is temporarily disconnected but other cables are energized.



PSSK

Screen separation kit to achieve a metallic screen on each core for 3-core cables.



JP 250

Earth circuit connector for short-circuit protective earthing. For mounting on the disconnected connector CSE-A for 250 A.



IP 250

Screened insulating plug for installation in the connector so that the cable can be energized even when disconnected from the switchgear or transformer 250 A.



TSH

Branch seal kit to achieve a sealing on each core for 3-core cables.



CU 250

Coupling piece to connect two connectors.



PC 630/250

Parallel coupling piece. Replaces the plug in CSE-A 630 A when making a parallel connection to CSE-A 250 A. Delivered in 3-phase kits and hex bit socket.



MA 250

Measurement adapter used for mega ohm Ω measurements and to perform different measurements up to 5 kV DC, for example determination of phases, 250 A.

Designation	Description	Qty. per kit	Weight	See page
			kg/kit	
IH-A 24250	Insulating hood, 12–24 kV, 250 A	3	2.3	2/21
IP 250	Screened insulating plug, 250 A	1	0,8	2/21
PSSK	Screen separation kit, heat-shrink for 3-core cable	1	1.0–1.1	2/47
TSH	Branch seal kit	1	0.3–1.0	2/48
PC 630/250	Parallel coupling piece	3	3.0	2/21
JP 250	Earthing device, 250 A	1	2.7	2/21
CU 250	Coupling piece between two cable connectors, 250 A	1	0.2	2/21
MA 250	Measurement adapter, 250 A	1	0.3	2/21

Premolded screened separable cable connector

CSE-A 12–42 kV, 400 A

Application areas

Premolded screened separable connector for XLPE- and EPR-insulated 1- or 3-core cables with Al- or Cu-conductors for 12–42 kV. Can be installed both indoors and outdoors.

Fits standard bushings of outer cone type according to EN 50181. Connector with rated current:

- 400 A: series 400 interface type B with plug-in Ø 14 mm.

Standard

- Meets the requirements of:
- CENELEC, HD 629.1 S2

Design

CSE-A is manufactured in rubber with three layers; a conductive inner layer, an insulation layer and a conductive outer layer, that are vulcanized together for the best possible interface between the layers.

The cable connector includes both a capacitive test point with protection and an integrated earthing wire.

- Delivered in 3-phase kits complete with cable lugs, bolt connection and stress grading adapter, designed to ensure a reliable installation.

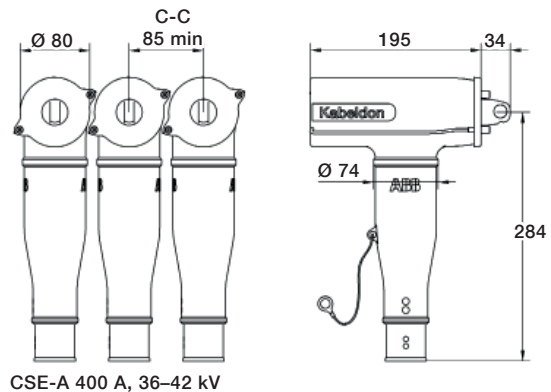
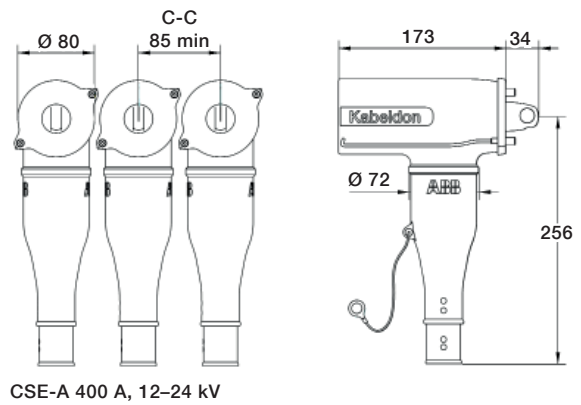
Note:

- For 3-core cables with common Cu-screen wires, a screen separation kit or a branch seal kit must be used. To be ordered separately.

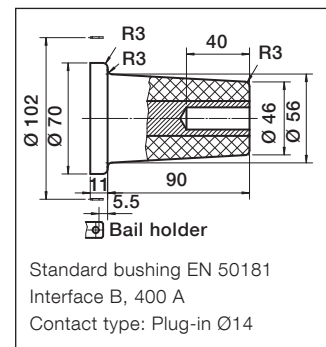
Always select products by cable insulation diameter.



Dimensions in mm.



Voltage	Insulation diameter	Conductor cross section	Designation	Rated current	Weight
				A	kg/unit
12	13–20	25–70	CSE-A 12400-01	400	6.1
12	18.5–30.5	95–300	CSE-A 12400-02	400	6.6
24	17–24	25–70	CSE-A 24400-01	400	6.1
24	22.5–35	95–300	CSE-A 24400-02	400	6.6
36	24.5–34	50–95	CSE-A 36400-01	400	6.1
36	27.5–42	95–300	CSE-A 36400-02	400	6.6
42	24.5–34	50–70	CSE-A 42400-01	400	6.1
42	27.5–42	95–300	CSE-A 42400-02	400	6.6



Accessories, to be ordered separately

CSE-A 12–42 kV, 400 A

2



IH-A 24400, 42400

Insulating hood, of flexible rubber with outer conductive layer and a preinstalled insulating rod. To be mounted on the bushing in a switchgear or a transformer 400 A to insulate it when a cable is temporarily disconnected but other cables are energized.



PSSK

Screen separation kit to achieve a metallic screen on each core for 3-core cable.



IP 400

Screened insulating plug for installation in the connector so that the cable can be energized even when disconnected from the switchgear or transformer 400 A.



TSH

Branch seal kit to achieve a sealing on each core for 3-core cable.

Designation	Description	Qty. per kit	Weight	See page
			kg/kit	
IH-A 24400	Insulating hood, 12–24 kV, 400 A	3	5.2	2/23
IH-A 42400	Insulating hood, 36–42 kV, 400 A	3	5.5	2/23
IP 400	Screened insulating plug, 400 A	1	2.2	2/23
PSSK	Screen separation kit, heat-shrink for 3-core cable	1	1.0–1.1	2/47
TSH	Branch seal	1	0.3–1.0	2/48

Premolded screened separable cable connector

CSE-A 12–42 kV, 630 A

Application areas

Premolded screened separable connector for XLPE- and EPR-insulated 1- or 3-core cables with Al- or Cu-conductors for 12–42 kV. Can be installed both indoors and outdoors.

Fits standard bushings of outer cone type according to EN 50181. Connector with rated current:

- 630 A: Interface C1 with bolt M16.
- 1250 A: Interface C2 with bolt M16.

Standard

Meets the requirements of:

- CENELEC, HD 629.1 S2

Design

CSE-A is manufactured in rubber with three layers; a conductive inner layer, an insulation layer and a conductive outer layer, that are vulcanized together for the best possible interface between the layers.

The cable connector includes both a capacitive test point with protection and an integrated earthing wire.

- Delivered in 3-phase kits, complete with cable lugs, bolt connection and stress grading adapter, designed to ensure a reliable installation.

Note:

- For 3-core cables with common Cu-screen wires, a screen separation kit or a branch seal kit must be used. To be ordered separately.

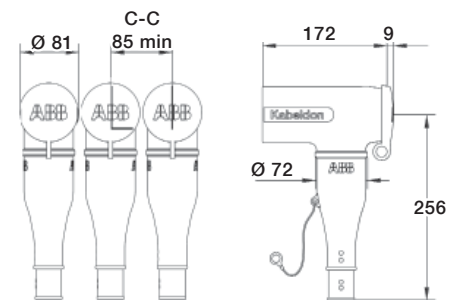


CSE-A 12630, CSE-A 24630

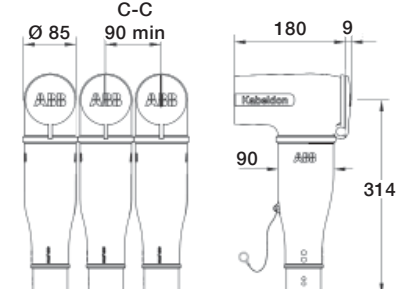
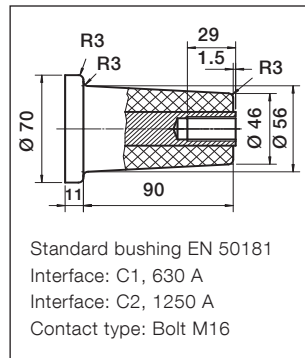


CSE-A 36630, CSE-A 42630

Dimensions in mm.



CSE-A 630 A, 12–24 kV, sizes 1–2



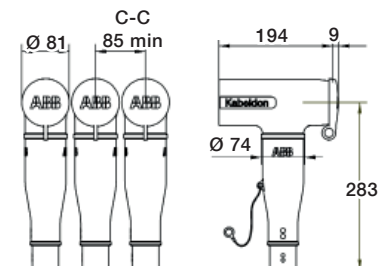
CSE-A 630 A, 12–24 kV, size 3

Always select products by cable insulation diameter.

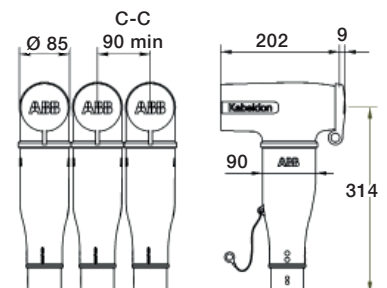
Voltage	Insulation diameter	Conductor cross section	Designation	Weight
kV	mm	mm ²		kg/unit
12	13–20	25–70	CSE-A 12630-01	5.1
12	18.5–30.5	95–300	CSE-A 12630-02	5.5
12	30.5–45	400–630	CSE-A 12630-03	7.7
24	17–24	25–70	CSE-A 24630-01	5.1
24	22.5–35	95–300	CSE-A 24630-02	5.5
24	30.5–45	400–630	CSE-A 24630-03	7.7
36	24.5–34	50–95	CSE-A 36630-01	6.1
36	27.5–42	95–300	CSE-A 36630-02	6.6
36	38.0–55	400–630	CSE-A 36630-03	8.7
42	24.5–34	50–70	CSE-A 42630-01	6.1
42	27.5–42	95–300	CSE-A 42630-02	6.6
42	38–55	400–630	CSE-A 42630-03	8.7

Cable connector complete with screen separation kit

12	13–20	25–70	CSE-A 12630-01 P	8.4
12	18.5–30.5	95–300	CSE-A 12630-02 P	9.4
24	17–24	50–70	CSE-A 24630-01 P	9
24	22.5–35	95–300	CSE-A 24630-02 P	9.4
36	23–34	50–95	CSE-A 36630-01 P	10
36	27.5–42	95–300	CSE-A 36630-02 P	1.4



CSE-A 630 A, 36–42 kV sizes 1–2.



CSE-A 630 A, 36–42 kV size 3.

Premolded screened separable cable connector for cables with copper tape screen CSE-A 12–36 kV, 630 A

Application areas

Premolded screened separable connector for XLPE- and EPR-insulated 1- or 3-core 12–36 kV cables, with Al- or Cu-conductors with Cu-tape screens, with or without aluminium or steel wire armouring. Can be installed both indoors and outdoors.

Fits standard bushings of outer cone type according to EN 50181. Connectors with rated current:

- 630 A: Interface type C1 with bolt M16.
- 1250 A: Interface type C2 with bolt M16.

Standard

Meets the requirements of:

- CENELEC, HD 629.1 S2

Design

CSE-A is manufactured in rubber with three layers; a conductive inner layer, an insulation layer and a conductive outer layer, that are vulcanized together for the best possible interface between the layers. The cable connector includes both a capacitive test point with protection and an integrated earthing wire.

- Delivered in 3-phase kits, complete with cable lugs, bolt connection, earthing kit and stress grading adapters. The adapters are designed to ensure a reliable installation. For 3-core cables, a branch seal kit is included.

Always select products by cable insulation diameter.

Voltage	Insulation diameter	Conductor cross section	Outer sheath diameter	Designation	Weight
kV	mm	mm ²	mm		kg/unit

Elbow cble connectors, 3 x 1-core cables

12	13–20	25–70	–	CSE-A 12630-01 R	5.6
12	19–29	95–300	–	CSE-A 12630-02 S	6.0
12	30.5–37	400	–	CSE-A 12630-03 T	8.2
24	19–24	35–70	–	CSE-A 24630-01 S	5.6
24	25–35	95–300	–	CSE-A 24630-02 T	6.0
24	30.5–37	400	–	CSE-A 24630-03 T	8.2
36	19–29	50–70	–	CSE-A 36630-01 S	6.8
36	27.5–37	95–300	–	CSE-A 36630-02 T	7.3
36	38–50	400	–	CSE-A 36630-03 U	9.4

Elbow cable connectors, 3-core cables

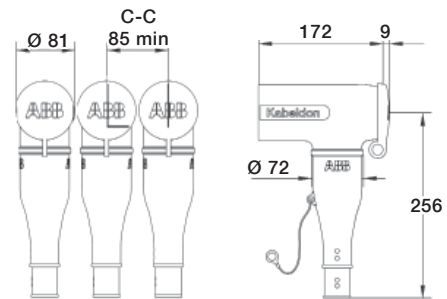
12	13–20	25–70	31–50	CSE-A 12630-01 RA	5.8
12	19–29	95–185	47–70	CSE-A 12630-02 SB	6.2
12	25–30.5	240–300	58–94	CSE-A 12630-02 TB	6.2
12	30.5–37	400	58–94	CSE-A 12630-03 TB	8.4
24	19–24	35–70	47–70	CSE-A 24630-01 SB	5.8
24	25–35	95–300	58–94	CSE-A 24630-02 TB	6.2
24	30.5–37	400	65–110	CSE-A 24630-03 TB	8.4
36	19–29	50–95	58–94	CSE-A 36630-01 SB	6.8
36	27.5–37	95–300	65–110	CSE-A 36630-02 TB	7.3



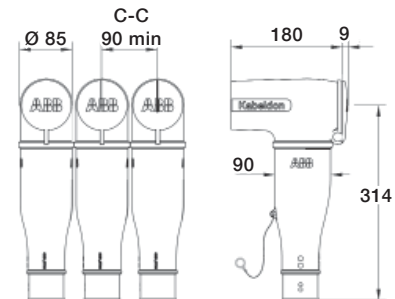
CSE-A 12630 / CSE-A 24630

CSE-A 36630

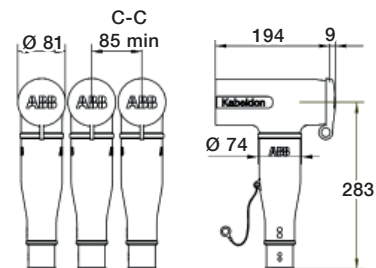
Dimensions in mm.



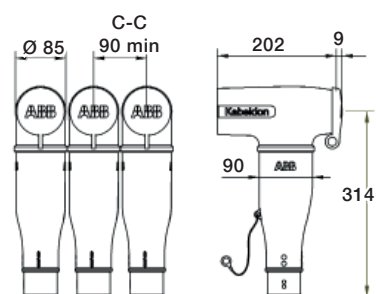
CSE-A 630 A, 12–24 kV, sizes 1–2



CSE-A 630 A, 12–24 kV, size 3



CSE-A 630 A, 36–42 kV sizes 1–2.



CSE-A 630 A, 36–42 kV size 3.

Accessories, to be ordered separately

CSE-A 12–42 kV, 630 A



IH-A 24630, IH 42630
Insulating hood, of flexible rubber with outer conductive layer and a preinstalled insulating rod. To be mounted on the bushing in a switchgear or a transformer 630 A to insulate it when a cable is temporarily disconnected but other cables are energized.



PSSK
Screen separation kit to achieve a metallic screen on each core for 3-core cable.



CSAP-A
Surge arrester, 630 A.



CSEP-A
Parallel cable connector.



IP 630
Screened insulating plug for installation in the connector so that the cable can be energized even when disconnected from the switchgear or transformer 630 A.



TSH
Branch seal kit to achieve a sealing on each core for 3-core cable.



PG 630
Bushing for voltage testing.



JPB 630
Universal earthing device with two fields of application for 630 A and 12–42 kV:
– As earthing-for-work device mounted at the back of a connected cable connector CSE-A for 630 A.
– As short-circuit protective earthing mounted in front of a disconnected cable connector CSE-A for 630 A.



PC 630/250
Parallel coupling piece. Replaces the plug in CSE-A 630 A when making a parallel connection to CSE-A 250 A. Delivered in 3-phase kits and hex bit socket.



MA-A 630
Measurement adapter used for mega ohm Ω measurements and to perform different measurements up to 5 kV DC, for example determination of phases, 630 A.



PG-A 630
Bushing for voltage testing, 36–42 kV.



JPA V
Tool for earthing device, JPB 630.

Designation	Description	Qty. per kit	Weight kg/kit	See page
IH-A 24630	Insulating hood, 12–24 kV, 630 A	3	5.2	2/26
IH-A 42630	Insulating hood, 36–42 kV, 630 A	3	5.5	2/26
IP 630	Screened insulating plug, 630 A	1	2.2	2/26
PC 630/250	Parallel coupling piece	3	3.0	2/26
PSSK	Screen separation kit, heat-shrink for 3-core cable	1	1.0–1.1	2/47
TSH	Branch seal	1	0.3–1.0	2/48
MA-A 630	Measurement adapter, 630 A	3	0.2	2/26
CSAP-A	Surge arrester, 630 A, 12–24 kV	1	3.6–5.0	2/28
PG 630	Bushing for voltage testing, 630 A, 12–24 kV	1	1.5	2/26
PG-A 630	Bushing for voltage testing, 630 A, 36–42 kV	1	2.0	2/26
CSEP-A	Parallel cable connector	1	5.7–9.8	2/27
JPB 630	Earthing device, 630 A	1	5.0	2/26
JPA V	Tool for earthing-for-work device, JPB 630	1	1.8	2/26

Parallel separable connector for 630 A cable connector CSEP-A 12–42 kV

2

Application area

CSEP-A is a screened separable parallel cable connector designed to be connected to a screened separable cable connector type CSE-A 630. Used with XLPE- och EPR-insulated 1- or 3-core cables with Al- or Cu-conductor for 12–42 kV.

Standard

- Fulfills the requirements of CENELEC HD 629.1 S2.

Design

CSEP-A is manufactured in rubber with three layers; a conductive inner layer, an insulation layer and a conductive outer layer that are vulcanized together for the best possible interface between the layers.

When installing CSEP-A on the CSE-A the plug and the protective cap must be moved from CSE-A to parallel connector CSEP-A. In that way the capacitive test point is re-established.

- Delivered in 3-phase kits complete with cable lugs, bolt connections, stress grading adapters and also an integrated earthing wire.

Note:

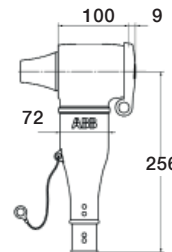
- For 3-core cables with common Cu-screen wires, a screen separation kit or a branch seal kit must be used. For screen separation kit see table at page 3/45.

Always select products by cable insulation diameter.

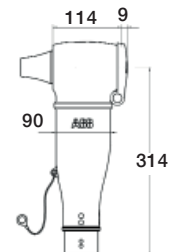
Voltage kV	Conductor cross section mm ²	Insulation diameter mm	Designation	Weight
				kg/kit
12	25–70	13–20	CSEP-A 12630-01	5.7
12	95–300	18.5–30.5	CSEP-A 12630-02	6.1
12	400–630	30.5–45	CSEP-A 12630-03	8.6
24	25–70	17–24	CSEP-A 24630-01	5.7
24	95–300	22.5–35	CSEP-A 24630-02	6.1
24	400–630	30.5–45	CSEP-A 24630-03	8.6
36	50–95	24.5–34	CSEP-A 36630-01	6.7
36	95–300	27.5–42	CSEP-A 36630-02	7.1
36	400–630	38–55	CSEP-A 36630-03	9.8
42	50–70	24.5–34	CSEP-A 42630-01	6.7
42	95–300	27.5–42	CSEP-A 42630-02	7.1
42	400–630	38–55	CSEP-A 42630-03	9.8
Parallel connector complete with screen separation kit				
12	13–20	25–70	CSEP-A 12630-01P	9
12	18.5–30.5	95–300	CSEP-A 12630-02P	10
24	17–24	50–70	CSEP-A 24630-01P	9.6
24	22.5–35	95–300	CSEP-A 24630-02P	10
36	23–34	50–95	CSEP-A 36630-01P	10.6
36	27.5–42	95–300	CSEP-A 36630-02P	11.9



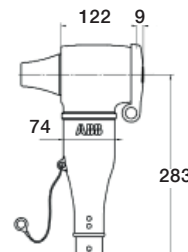
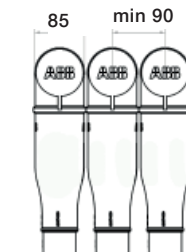
Dimensions in mm.



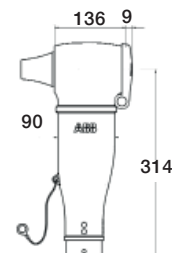
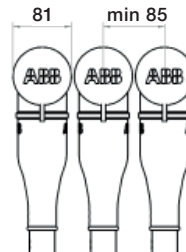
CSEP-A, 12–24 kV sizes 1–2



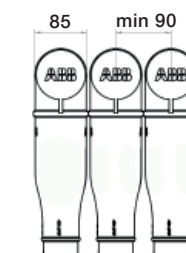
CSEP-A, 12–24 kV size 3



CSEP-A, 36–42 kV sizes 1–2



CSEP-A, 36–42 kV size 3



Parallel screened separable connector for cable with copper tape screen, 630 A CSEP-A 12–42 kV

Application area

CSEP-A is a screened separable parallel connector designed to be connected to a screened separable connector type CSE-A 630. Used with XLPE- and EPR-insulated 1- or 3-core 12–36 kV cables, with Al- or Cu-conductors with copper tape screens, with or without aluminium or steel wire armouring.

Standard

- Fulfills the requirements of GENELEC HD 629.1 S2.

Design

CSEP-A is manufactured in rubber with three layers; a conductive inner layer, an insulation layer and a conductive outer layer that are vulcanized together for the best possible interface between the layers.

When installing CSEP-A on the CSE-A, the plug and the protective cap must be moved from CSE-A to the parallel connector CSEP-A. In that way the capacitive test point is re-established.

- Delivered in 3-phase kits complete with cable lugs, bolt connections, stress grading adapters and also an integrated earthing wire.

Note:

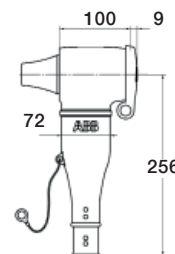
- For 3-core cables with common Cu-tape screen, a screen separation kit or a branch seal kit must be used. See table at page 3/45.

Always select products by cable insulation diameter.

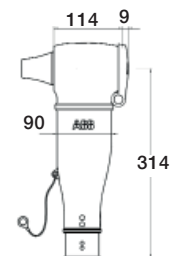
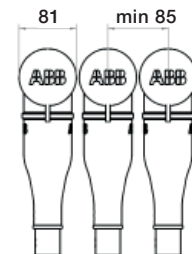
Voltage	Insulation diameter	Conductor cross section	Designation	Weight
kV	mm	mm ²		kg/kit
Parallel connector for 3 x 1-core cables				
12	13–20	25–70	CSEP-A 12630-01 R	5.8
12	18.5–30.5	95–300	CSEP-A 12630-02 S	6.2
12	30.5–45	400	CSEP-A 12630-03 T	8.7
24	17–24	35–70	CSEP-A 24630-01 S	5.8
24	22.5–35	95–300	CSEP-A 24630-02 T	6.2
24	30.5–45	400	CSEP-A 24630-03 T	8.7
36	24.5–34	50–70	CSEP-A 36630-01 S	6.8
36	27.5–42	95–300	CSEP-A 36630-02 T	7.2
36	38–55	400	CSEP-A 36630-03 U	9.9
Parallel connector for 3-core cables				
12	13–20	25–70	CSEP-A 12630-01 RA	5.8
12	18.5–30.5	95–185	CSEP-A 12630-02 SB	6.2
12	18.5–30.5	240–300	CSEP-A 12630-02 TB	6.2
12	30.5–45	400	CSEP-A 12630-03 TB	8.7
24	17–24	35–70	CSEP-A 24630-01 SB	5.8
24	22.5–35	95–300	CSEP-A 24630-02 TB	6.2
24	30.5–45	400	CSEP-A 24630-03 TB	8.7
36	24.5–34	50–95	CSEP-A 36630-01 SB	6.8
36	27.5–42	95–300	CSEP-A 36630-02 TB	7.2



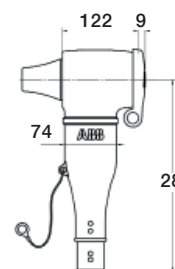
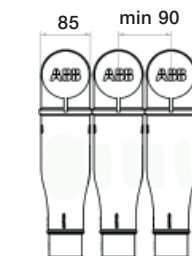
Dimensions in mm.



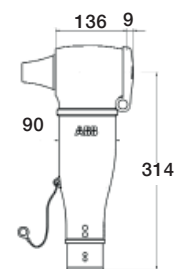
CSEP-A, 12–24 kV sizes 1–2



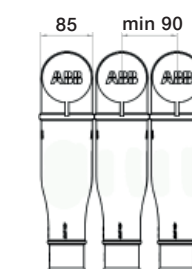
CSEP-A, 12–24 kV size 3



CSEP-A, 36–42 kV sizes 1–2



CSEP-A, 36–42 kV size 3



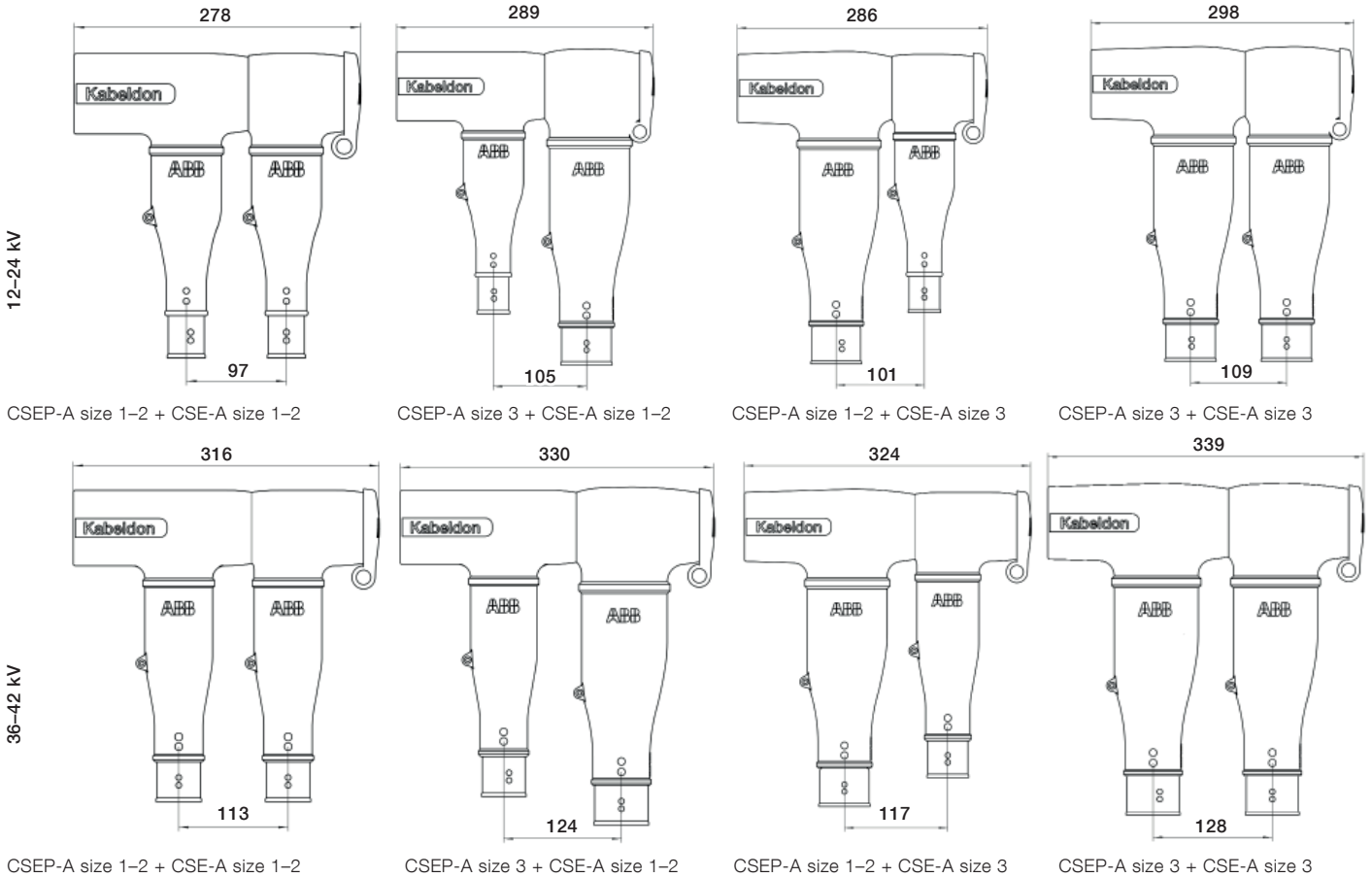
Dimensional drawings

- Parallel connection of CSE-A and CSEP-A 12-42 kV
- Parallel connection of two CSE-A 12-42 kV

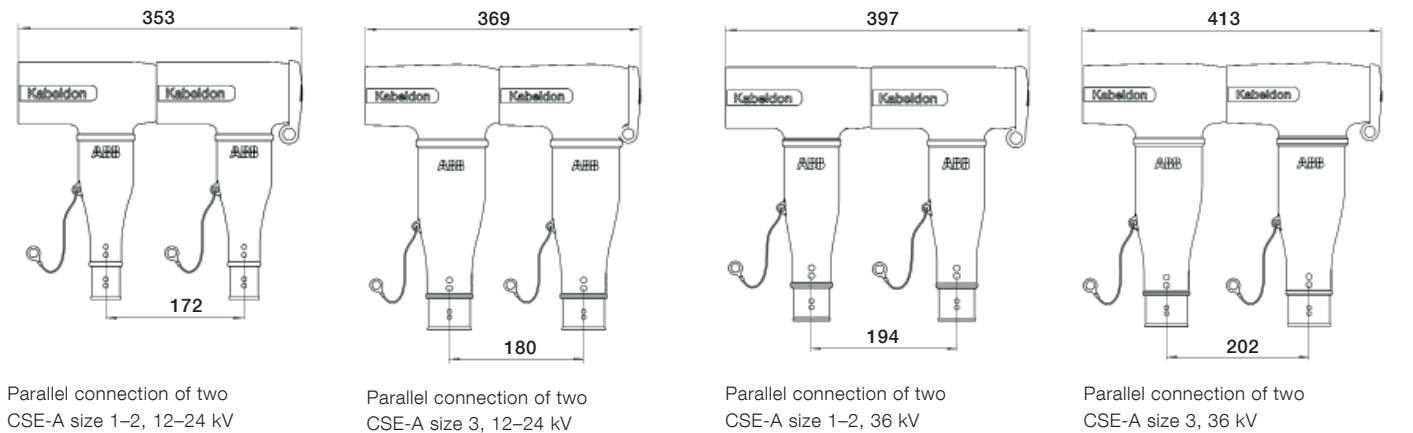
Connection of parallel connector type CSEP-A to cable connector type CSE-A meets the requirements according to the standard CENELEC HD 629.1 S2.

Dimensions in mm.

2



Parallel connection of two cable connectors type CSE-A with parallel coupling piece PC 630-3 / PC 630-3 L meets the requirements according to the standard CENELEC HD 629.1 S2.



Accessories, to be ordered separately:

Designation	Description	See page
TSH, SSH	Branch seal and additional hoses	2/48
PSSK	Screen separation kit	2/47



Surge arresters for 630 A separable connector CSAP-A 6–24 kV

Application area

CSAP-A is a screened separable surge arrester designed to be connected in parallel with screened separable cable connector type CSE-A 630 A.

- Protects electrical components against overvoltage and transients.

Standard

- Fulfills the requirements of IEC 60099-4.
- Parallel connection of surge arrester CSAP-A connected to cable connector CSE-A meets the requirements according to standard CENELEC HD 629.1 S2.

Design

CSAP-A includes a premolded body, manufactured in three layers; a conductive inner layer, an insulation layer and a conductive outer layer vulcanized together for the best possible interface between the layers.

The surge arrester's active part is made of metal oxide. The connected earth braid manages short circuit currents according to the standard.

When installing CSAP-A on the CSE-A 630, the plug and the protective cap must be moved from CSE-A to the surge arrester CSAP-A. In that way the capacitive test point is re-established.

Delivered in 1-core kits complete with bolt connection, earth braid and also an integrated earthing wire.

Voltage kV	Designation	Weight kg/kit
6	CSAP-A 6/5 kA	3.6
6	CSAP-A 6/10 kA	3.6
12	CSAP-A 12 5 kA	3.6
12	CSAP-A 12 10 kA	4.0
24	CSAP-A 24 5 kA	4.6
24	CSAP-A 24 10 kA	5.0

Explanation of symbols according to IEC 60099-4

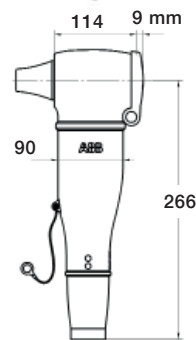
U _c	continuous operating voltage rms
U _r	rated voltage rms
U _{res}	residual voltage peak at 8/20 μs
I _n	nominal discharge current 8/20 μs
I _{hc}	high current impulse 4/10 μs
I _s	short circuit rating 50 Hz rms for 0.2 s

Technical data

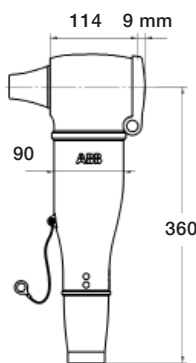
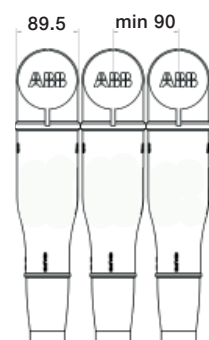
Designation	U _c	U _r	U _{res}	I _n	I _{hc}	I _s	IEC line discharge class
	[kV]	[kV]	[kV]	[kA]	[kA]	[kA]	
CSAP-A 6/5 kA	6			5	16		–
CSAP-A 6/10 kA	6			10	16		1
CSAP-A 12 5 kA	12	15	39.1	5	65	16	–
CSAP-A 12 10 kA	12	15	40	10	100	16	1
CSAP-A 24 5 kA	24	30	78.2	5	65	16	–
CSAP-A 24 10 kA	24	30	80	10	100	16	1



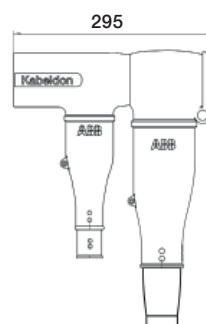
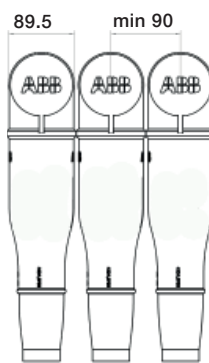
Dimensions in mm.



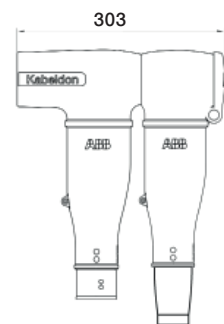
CSAP-A sizes 12/5 and 12/10



CSAP-A sizes 24/5 and 24/10



CSE-A sizes 1–2 + CSAP-A



CSE-A size 3 + CSAP-A

Shrouded termination, 630 A

TB-A 12, 12 kV

2

Use

Shrouded cable termination for connecting XLPE- and EPR-insulated 12 kV cables in switchgear, type ABB Safelink.

Standard

Meets the requirements of:
 – CENELEC, HD 629.1

Design

TB-A is a shrouded cable termination made of rubber. Supplied in complete 3-phase kits including cable terminations, two-piece boots, cable lugs with shear-off bolts, grease, cleaning cloth and installation instructions. Due to the smart installation method the upper part of the two-piece boot will stick to the bushing.

For measuring, the lower part of the boot can easily be pulled down to expose the palm of the bushing.

Note:

- For 3-core cables with common Cu-screen wires, a screen separation kit or a branch seal kit must be used.



Connector cross section	Designation	Length	Weight
mm ²		mm	kg/kit
Three 1-core or one 3-phase kits			
10–35	TB-A 12630-1	400	2.65
50–150	TB-A 12630-2	400	2.90
185–300	TB-A 12630-3	450	3.10

Accessories, to be ordered separately



PSSK



TSH

Designation	Description	See page
PSSK	Screen separation kit	2/47
TSH	Branch seal	2/48

Shrouded termination, 630 A

KAP 630, 12–24 kV

Use

For XLPE- and EPR-insulated 1- or 3-core cables with Al or Cu conductor for 12–24 kV.

KAP can be used to connect a cable to gas-insulated switchgear and in other compact installations, as well as for substation transformers. To be used indoors only.

Standards

Meets the requirements of:

- SEN 24 14 34
- SS 424 14 17 Edition 4

Design

KAP is an insulated connector made of rubber. It is supplied complete with cable termination and bolt cable lug. The covers are provided with a removable plastic plug to allow direct voltage testing on the conductor.

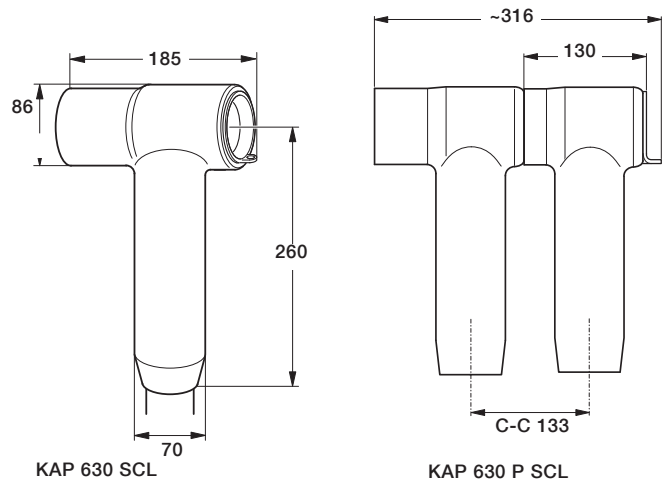
Also available for parallel installation. The connectors are supplied in 3-phase kits.

Note:

- For 3-core cables with common Cu-screen wires, a screen separation kit or a branch seal kit must be used.
- For plug-in connector 250 A or 400 A, choose CSE-A.



Dimensions in mm.



KAP 630 SCL

KAP 630 P SCL

Installed in parallel with KAP 630 SCL.

Always select products by Insulation diameter.

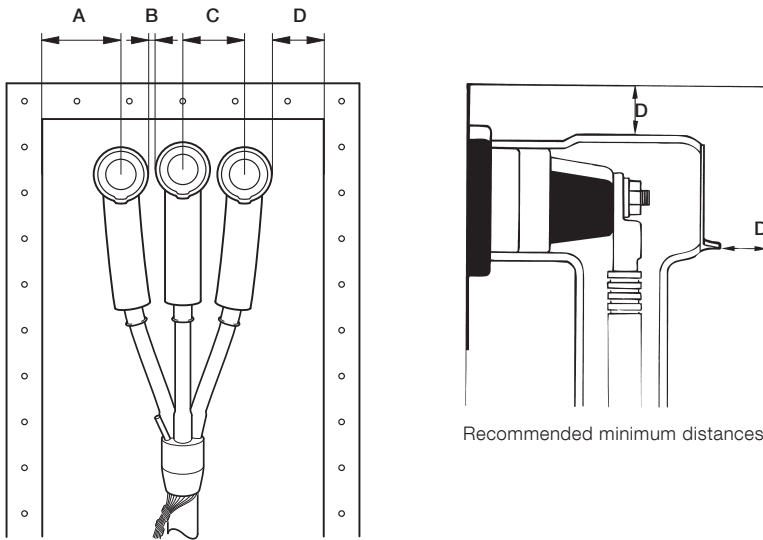
Type	Insulation diameter	Conductor cross section		Designation	Connection type	Weight
	Ø	12 kV	24 kV			
	mm	mm ²				
Standard	15–25	50–150	25–95	KAP 630-1 SCL 3	Bolt M16	2.2
Standard	24–37	185–300	120–300	KAP 630-2 SCL 5	Bolt M16	2.5
Parallel	15–25	50–150	25–95	KAP 630 P-1 SCL 3	Bolt M16	2.5
Parallel	24–37	185–300	120–300	KAP 630 P-2 SCL 5	Bolt M16	2.5

Dimensional drawings and accessories

KAP 630

2

The indicated recommended minimum distances are generally applicable. For applications in which type testing has been performed, other minimum distances may be applied. This is the case, for example, for gas-insulated Ring Main Unit (RMU).



Recommended minimum air gap

Voltage	Insulation level	A	B	C	D
kV	kV	mm			
12	75	50	10	90	10
24	125	90	30	110	50

Accessories, to be ordered separately



PSSK



TSH

Designation	Description	See page
PSSK	Screen separation kit	2/47
TSH	Branch seal	2/48

Insulating boot

KAP 300 U, 12–24 kV

Use

For XLPE- and EPR-insulated 1- or 3-core cables with Al or Cu conductor, for 12–24 kV, indoors.

KAP 300 U is especially well suited for the renovation of, for example, oil-filled transformer boxes, when replacing paper-insulated cable with XLPE-insulated cable. An indoor termination type SOT (must be ordered separately) is installed together with KAP 300 U on the XLPE-insulated cable, thus insulating the connection point when the oil is drained from the cable box. KAP 300 U can also be mounted straight.

Standards

Meets the requirements of:

- SEN 24 14 34
- SS 424 14 17 Edition 4

Design

An insulating boot made of rubber. The covers are fitted with a removable plastic plug to allow direct voltage testing on the conductor.

Note:

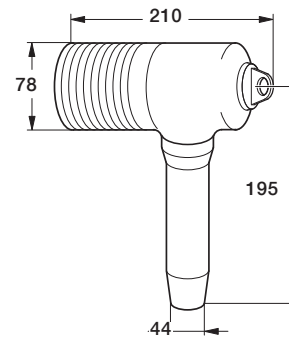
- For 3-core cables with common Cu-screen wires, a screen separation kit or a branch seal kit must be used. See dimensional drawings for minimum distance to earth.
- Termination and cable lug are not included.

Conductor cross section 12 -24 kV	Designation	Specification	Weight
mm ²			kg/item
25–300	KAP 300-U	Bolt	2.0

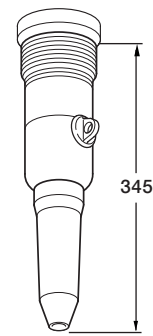
Accessories, to be ordered separately



Designation	Description	See page
PSSK, PSSK-E, PSSK L	Screen separation kit	2/47
TSH	Branch seal kit	2/48
SCL-B	Bolt cable lug	2/53
SOT	Cable termination	2/37–2/41



Elbow KAP 300 U.



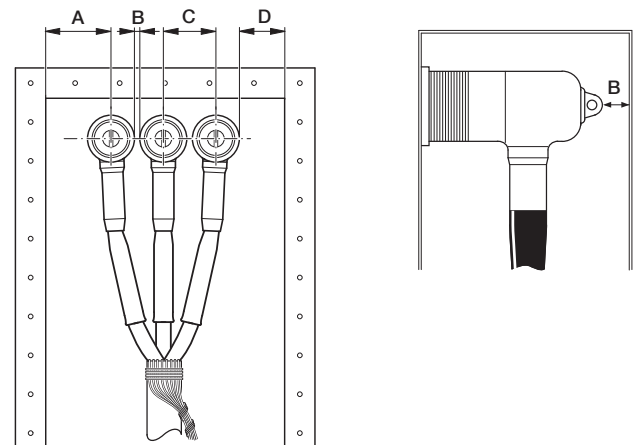
Straight KAP 300 U.

Recommended minimum distances

The indicated recommended minimum distances are generally applicable.

Recommended minimum air gap

Voltage kV	Insulation level kV	mm			
		A	B	C	D
12	75	50	10	90	10
24	125	110	50	130	50



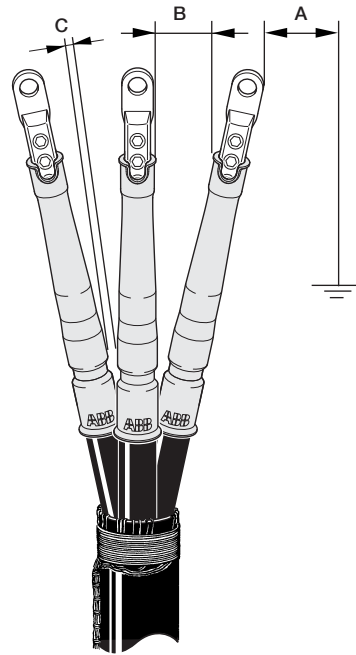
Dimensional drawings

Installation of cable termination

2

Minimum air gap

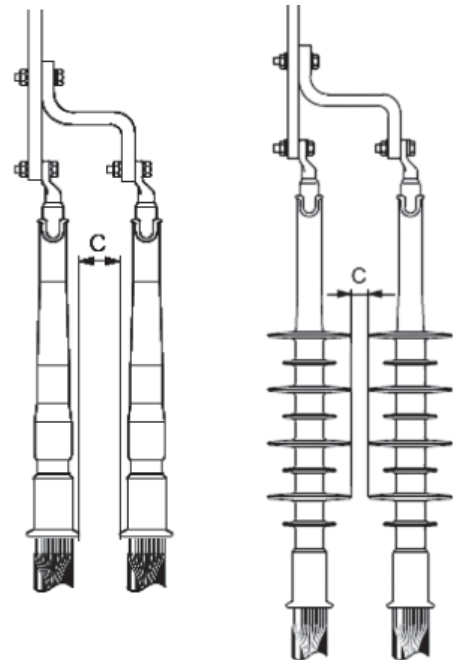
Max voltage	Indoor			Outdoor	
	kV	Phase to earth A	Phase to phase B	Phase to phase C	Phase to earth A
10	90	90	10	130	130
12	120	120	10	160	160
24	220	250	30	270	270
36	320	370	50	380	380



Minimum air gap between cores* in parallel

	10 kV	12 kV	24 kV	36 kV
C	10 mm	10 mm	30 mm	50 mm

* The cable terminations must be placed in level.



Premolded cable termination, indoors

SOT 7.2 kV

Use

Premolded cable termination for XLPE- and EPR-insulated cables 1- or 3-core with Al or Cu conductor for 6.6/7.2 kV, indoors. It can also be installed in an indoor humid environment*.

Standards

Meets the requirements of:
 – CENELEC, HD 629.1 S1

Design

Premolded cable termination made of silicone rubber with integrated field control.

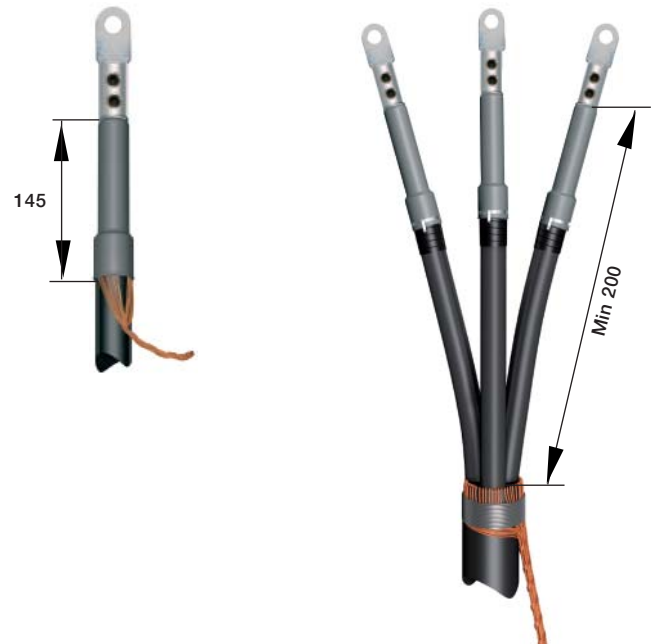
The length of the termination is approximate 145 mm which also makes it suitable for installations in narrow spaces.

The termination is supplied in kits for 3 single-core cables.

Note:

- Cable lugs are to be ordered separately.
- Branch seal TSH for 3-core cable is to be ordered separately.

* For the best watertightness in an indoor humid environment, order branch seal kit TSH. See page 2/48.



Always select products by cable insulation diameter.

Insulation diameter	Conductor cross section	Designation	Weight
mm	mm ²		kg/kit
3-core / three 1-core			
10.5–15	10–35	SOT 101-3	0.2
12.9–25.8	50–185	SOT 102-3	0.2
21.4–34.9	185–500	SOT 103-3	0.2

Premolded cable termination, indoors and outdoors, complete SOT SCL 12–36 kV

Use

Premolded cable termination for XLPE- and EPR-insulated 1- or 3-core cable with Al- or Cu- conductor for 12–36 kV. The indoor termination can also be installed in a humid indoor environment*.

Standard

Fulfills requirements of:

- SS 424 14 45 edition 1
- IEEE 48 1996
- CENELEC HD 629.1

Design

Premolded cable termination made of silicone rubber with integrated field control and top sealing. The outdoor type is provided with permanent sheds for extended creepage distance.

The cable termination is supplied in kits for 1- or 3-core cables.

The kits include:

- Bi-metallic shear-off cable lugs SCL-B for Al- and Cu-conductor. The cable lug has bolts which breaks off once the correct torque is reached.
- Branch seal and protective heat-shrink hoses in kits for outdoor, 3-core cables.



SOT 1- and 3-core outdoor.

SOT 1- and 3-core indoor.

* For the best watertightness in an indoor humid environment, order branch seal kit TSH. See page 2/48.

Always select products by cable insulation diameter.

Insulation diameter mm	Conductor cross section mm ²			Designation	weight kg/kit	Designation	weight kg/kit
	12 kV	24 kV	36 kV				
				3-core / 3 x 1-core indoor	1-core indoor		
11–15	10–35	10–16	–	SOT 241 A-3 SCL2	0.90	SOT 241 A SCL2	0.30
15–26	50–150	25–95	–	SOT 241–3 SCL3	1.35	SOT 241 SCL3	0.45
24–39	185–300	120–300	–	SOT 242-3 SCL5	1.80	SOT 242 SCL5	0.60
24–39	400	400	–	SOT 242-3 SCL5B	3.30	–	–
24–39	500	500	–	SOT 242-3 SCL6	3.40	SOT 242 SCL6	1.15
38–54	630	630	–	SOT 242 B-3 SCL6	3.60	SOT 242 B SCL6	1.20
				3-core outdoor including branch seal kit	1-core outdoor		
11–15	10–35	10–16	–	SOT 243 A-3 SCL2	2.20	SOT 243 A SCL2	0.40
15–24	50–150	25–95	–	SOT 243-3 SCL3	2.55	SOT 243 SCL3	0.55
22–33	185–300	120–300	–	SOT 244-3 SCL5	3.05	SOT 244 SCL5	0.70
31–40	400	400	–	SOT 245-3 SCL5B	5.10	SOT 245 SCL5B	1.30
31–40	500–630	500–630	–	SOT 245-3 SCL6	5.20	SOT 245 SCL6	1.40
				3-core indoor/outdoor including branch seal kit			
26–39	–	–	70–300	SOT 361–3 SCL5	3.10	–	–
				3 x 1-core outdoor			
11–15	10–35	10–16	–	SOT 243 A-31 SCL2	1.10	–	–
15–24	50–150	25–95	–	SOT 243-31 SCL3	1.65	–	–
22–33	185–300	120–300	–	SOT 244-31 SCL5	2.15	–	–
31–40	400	400	–	SOT 245-31 SCL5B	4.10	–	–
31–40	500	500	–	SOT 245-31 SCL6	4.20	–	–
38–54	630	630	–	SOT 246-31 SCL6	5	–	–
				3 x 1-core indoor/outdoor	1-core indoor/outdoor		
26–39	–	–	70–300	SOT 361–31 SCL5	2.45	SOT 361 SCL5	0.82
38–54	–	–	400–630	SOT 362–31 SCL6	4.30	SOT 362 SCL6	1.45

Premolded cable termination, indoors and outdoors

SOT 12–36 kV

Use

Premolded cable termination for XLPE- and EPR-insulated cables 1- or 3-core with Al or Cu conductors for 12–36 kV. The indoor termination can also be installed in a humid indoor environment*.

Standard

Meets the requirements of:

- CENELEC, HD 629.1 S1
- IEEE 48 1996

Design

Premolded cable termination made of silicone rubber with integrated field control and top sealing. The outdoor type is provided with permanent sheds for extended creepage distance.

The termination is supplied in kits for 1- or 3-core cables.

- 3-phase kits for outdoor use include branch seal and protective heat-shrink hoses.



SOT 1- and 3-core outdoor.

SOT 1- and 3-core indoor.

* For the best watertightness in an indoor humid environment, order branch seal kit TSH for 3-core cables. See page 2/48.

Note:

- Cable lugs are to be ordered separately.

Always select products by cable insulation diameter.

Insulation diameter mm	Conductor cross section mm ²			Designation	Weight kg/kit	Designation	Weight kg/kit
	12 kV	24 kV	36 kV				
Indoor termination incl. branch seal for 3-core							
11–15	10–35	10–16	–	SOT 241A-3C	0.9	–	–
15–26	50–95	25–50	–	SOT 241–3C	0.9	–	–
15–26	120–185	70–120	–	SOT 241–3D	1.3	–	–
24–39	185–400	150–400	–	SOT 242-3D	1.4	–	–
				Indoor termination 3-core / 3 x 1-core		Indoor termination 1-phase kit	
11–15	10–35	10–16	–	SOT 241 A-3	0.60	SOT 241 A	0.20
15–26	50–185	25–120	–	SOT 241–3	0.60	SOT 241	0.19
24–39	185–500	150–400	–	SOT 242-3	0.70	SOT 242	0.23
38–54	630**	500–630**	–	SOT 242 B-3	0.90	SOT 242 B	0.30
				Outdoor termination incl. branch seal for 3-core		Outdoor termination 1-phase kit	
11–15	10–35	10–16	–	SOT 243 A-3	1.90	SOT 243 A	0.31
15–24	50–150	25–70	–	SOT 243-3	1.80	–	–
22–33	150–300	95–240	–	SOT 244-3	2.00	–	–
31–40	400–500	300–400	–	SOT 245-3	2.50	–	–
				Indoor/outdoor termination 3-core		Indoor/outdoor termination 1-phase kit	
	–	–		SOT 361–3			
				Outdoor termination 3 x 1-core		Outdoor termination 1-phase kit	
15–24	50–150	25–70	–	SOT 243-31	0.80	SOT 243	0.27
22–33	150–300	95–240	–	SOT 244-31	0.90	SOT 244	0.30
31–40	400–500	300–400	–	SOT 245-31	1.11	SOT 245	0.38
38–54	500–630**	500–630*	–	SOT 246-31	1.50	SOT 246	0.51
				Indoor/outdoor termination 3 x 1-core		Indoor/outdoor termination 1-phase kit	
26–39	–	–	70–300	SOT 361–31	1.40	SOT 361	0.42
38–54	–	–	400–630*	SOT 362-31	1.60	SOT 362	0.52

* Can be mounted on cables with 800 and 1000 mm² by using silicone rubber tape IA 2342 (1 per kit) as top seal, see page 3/3.

Premolded cable termination for 1-core cable with Cu-tape screen SOT 7.2–36 kV

2

Use

Premolded cable termination for XLPE- and EPR-insulated 1-core cables with Al or Cu conductors and Cu-tape screen for 7.2–36 kV. The indoor termination can also be installed in a humid indoor environment*.

Standard

Meets the requirements of:

- CENELEC HD 629.1 S1
- IEEE 48 1996

Design

Premolded cable termination made of silicone rubber with integrated field control and top sealing. The outdoor type is provided with permanent sheds for extended creepage distance.

The indoor termination can also be installed in a humid indoor environment.

The kits includes copper braids and constant force springs for connection of the Cu-tape screen to earth.

One kit includes material for three single core terminations.



Note:

- Cable lugs are to be ordered separately.

Always select products by cable insulation diameter.

Insulation diameter	Conductor cross section					Designation	Size of copper braid
	Ø	7.2 kV	12 kV	17.5 kV	24 kV		
mm	mm ²						mm ²
Indoor termination for three 1-core cables with Cu-tape screen							
10.5–15	16–50	–	–	–	–	SOT 101-3 R	10
12.9–25.8	70–185	–	–	–	–	SOT 102-3 R	10
21.5–34.9	240–400	–	–	–	–	SOT 103-3 S	22
11–15	–	16–35	–	–	–	SOT 241A-3 R	10
15–26	–	50–120	25–95	–	–	SOT 241-3 R	10
15–26	–	150–185	120–185	35–120	–	SOT 241-3 S	22
24–39	500–630	185–240	–	–	–	SOT 242-3 S	22
24–39	–	300–630	240–500	150–400	–	SOT 242-3 T	22
26–39	–	–	–	–	70–185	SOT 361-3 T	22
26–39	–	–	–	–	240–300	SOT 361-3 U	35
Outdoor termination for three 1-core cables with Cu-tape screen							
11–15	25–50	16–35	–	–	–	SOT 243A-3 R	10
15–24	70–185	50–150	25–120	–	–	SOT 243-3 R	10
15–24	–	–	–	35–70	–	SOT 243-3 S	22
22–33	240–400	185–240	150–185	95–120	–	SOT 244-3 S	22
22–33	–	300–400	240–300	150–240	–	SOT 244-3 T	22
31–40	500–630	500–630	400–500	300–400	–	SOT 245-3 T	22
26–39	–	–	–	–	70–185	SOT 361-3 T	22
26–39	–	–	–	–	240–300	SOT 361-3 U	35

Premolded cable termination for 3-core cable with Cu-tape screen SOT 7.2–36 kV

Use

Premolded cable termination for XLPE- and EPR-insulated cables 3-core with Al or Cu conductors and Cu-tape screen for 7.2–36 kV.

Standard

Meets the requirements of:

- CENELEC HD 629.1 S1
- IEEE 48 1996

Design

Premolded cable termination made of silicone rubber with integrated field control and top sealing.

The outdoor type is provided with permanent sheds for extended creepage distance.

The indoor termination can also be installed in a humid indoor environment.

The kits includes Cu-brands and constant force springs for connection of the Cu-tape screen to earth. The kits also include branch seal and protective hoses of heat-shrink type.



2

Note:

- Cable lugs are to be ordered separately.

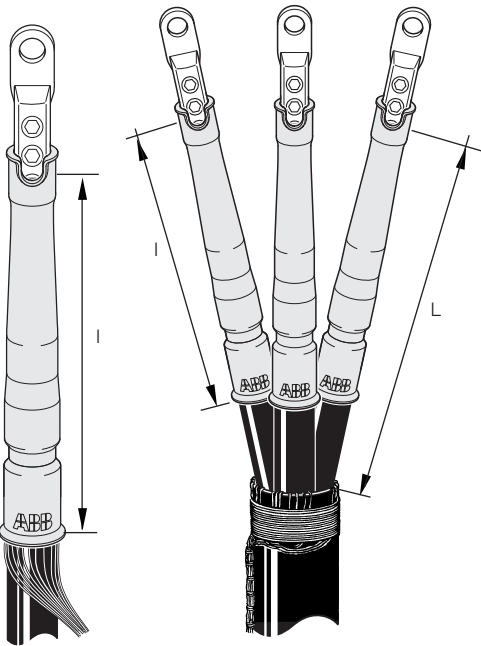
Always select products by cable insulation diameter.

Insulation diameter Ø mm	Conductor cross section mm ²					Designation	Size of Cu-braid mm ²
	7.5 kV	12 kV	17.5 kV	24 kV	36 kV		
Indoor termination for 3-core cables with Cu-tape screen							
10.5–15	16–50	–	–	–	–	SOT 101–3 RC	3 x 10
12.9–25.8	70	–	–	–	–	SOT 102–3 RC	3 x 10
12.9–25.8	95–185	–	–	–	–	SOT 102–3 RD	3 x 22
21.4–34.9	240–400	–	–	–	–	SOT 103–3 SD	3 x 22
11–15	–	16–35	–	–	–	SOT 241A–3 RC	3 x 10
15–26	–	50	25–35	–	–	SOT 241–3 RC	3 x 10
15–26	–	70–120	50–95	–	–	SOT 241–3 RD	3 x 10
15–26	–	150–185	120–150	35–120	–	SOT 241–3 SD	3 x 22
24–39	–	185–240	185	–	–	SOT 242–3 SD	3 x 22
24–39	–	300–400	240–400	150–400	–	SOT 242–3 TD	3 x 22
26–39	–	–	–	–	70–185	SOT 361–3 TB	3 x 22
26–39	–	–	–	–	240–300	SOT 361–3 UB	3 x 35
Outdoor termination for 3-core cables with Cu-tape screen							
11–15	25–50	16–35	–	–	–	SOT 243A–3 RA	3 x 10
15–24	70	50	25–35	–	–	SOT 243–3 RA	3 x 10
15–24	95–185	70–150	50–120	–	–	SOT 243–3 RB	3 x 10
15–24	–	–	–	35–70	–	SOT 243–3 SB	3 x 22
22–33	240–400	185–240	150–185	95–120	–	SOT 244–3 SB	3 x 22
25–33	–	300–400	240–400	150–400	–	SOT 244–3 TB	3 x 22
31–40	–	–	–	300–400	–	SOT 245–3 TB	3 x 22
26–39	–	–	–	–	70–185	SOT 361–3 TB	3 x 22
26–39	–	–	–	–	240–300	SOT 361–3 UB	3 x 35

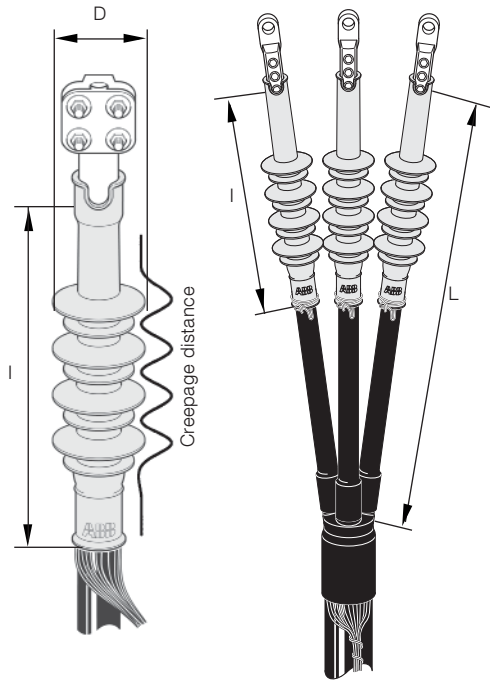
Dimensional drawings and accessories

Premolded cable termination, SOT 12–36 kV

2



SOT indoor



SOT outdoor

Designation	l	L	D	Creepage distance
SOT 241/242/242 B	235	min 300	–	–
SOT 243/244/245	330	min 430	70/75/80	min 520
SOT 246/361/362	390	min 500	80/85	min 725

Accessories, to be ordered separately



SCL-B



UKR



FK



TSH



PSSK

Designation	Description	See page
SCL-B	Cable lug	2/53
UKR	Universal clamp for fastening cable to a pole, etc.	4/3
JSA, JXT	Earthing kits when the cable does not have a Cu-wire screen	2/49
FK	Overhead line clamp	2/52
TSH, SSH	Branch seal kit	2/48
PSSK	Screen separation kit (if needed for indoor)	2/47

Premolded termination with geometrical field control, indoors

APIT 12–36 kV

Use

Cable termination with geometric field control for XLPE- and EPR-insulated 1- or 3-core cables.

This type of termination is recommended to be used in applications where significant harmonics may occur.

Standard

Meets the requirements of:

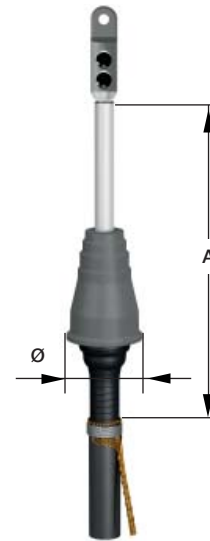
- CENELEC HD 629.1
- IEEE 48-1975

Design

The cable termination consists of a premolded stress relief cone with an integrated deflector for geometrical field control. The cable's conducting layer is connected to the stress relief cone for optimal function. The termination is supplied in kits for 3-core cables.

Note:

- Cable lugs and branch seal for 3-core cables are to be ordered separately.



Always select products by cable insulation diameter.

Designation	Insulation diameter	12kV			24kV			36kV			Diameter	Weight
		Cable cross section	Creepage distance	Length	Cable cross section	Creepage distance	Length	Cable cross section	Creepage distance	Length		
				A			A			A		
mm	mm ²	mm	mm ²	mm	mm ²	mm	mm ²	mm	mm	mm	kg/each	
APIT 4	25.0–28.0	240	170	270	120–150	310	410	50–95	460	560	96	3.0
APIT 5	27.5–30.5	300	170	270	185–240	310	410	95–120	460	560	96	2.9
APIT 6	30.5–33.6	400	170	270	300	310	410	150–240	460	560	96	2.9
APIT 7	33.0–36.6	500	170	270	400	310	410	240	460	560	96	2.8
APIT 8	35.7–39.7	630	170	270	500	310	410	300	460	560	96	2.8
APIT 9	39.3–43.1	800	170	270	500–630	310	410	400	460	560	96	2.6
APIT 10	42.5–48.1	1000	170	270	630–800	310	410	500–630	460	560	96	2.5
APIT 11	48.0–54.0	1200	170	270	1000	310	410	630–800	460	560	96	2.5
APIT 12	54.0–60.0	–	–	–	1200	310	410	1000	460	560	99	2.5
APIT 13	60.0–66.0	–	–	–	–	–	–	1200	460	560	99	2.5

Accessories, to be ordered separately



Designation	Description	See page
SCL-B	Cable lug	2/53
UKR	Universal clamp for fastening cable to a pole, etc.	4/3
JSA	Earthing kits when the cable does not have a Cu-wire screen	2/49
FK	Overhead line clamp	2/52
TSH, SSH	Branch seal kit and extension protective hoses	2/48
PSSK	Screen separation kit	2/47

Premolded termination with geometrical field control, outdoors

APSEA 12–36 kV

Use

Cable termination with geometric field control for XLPE- and EPR-insulated 1- or 3-core cables.

2

This type of termination is recommended to be used in applications where significant harmonics may occur. It is also suitable for environments where a longer creepage distance is required.

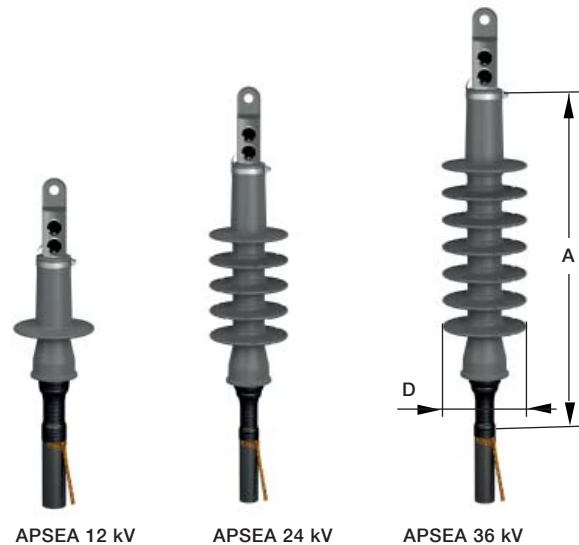
Standard

Meets the requirements of:

- CENELEC HD 629.1
- IEEE 48-1975

Design

The cable termination is made of rubber with prefabricated geometrical field control in the stress relief cone. The cable's conducting layer is connected to the stress relief cone for optimal function. The creepage distance is built up with separate sheds and also a top cap that provides a diffusion sealed protection against the cable lug. The termination is supplied in kits for 3-core cables.



Note:

- Top caps, three pieces must be ordered separately.
- Top bolts, cable lugs and branch seal for 3-core cables are to be ordered separately.

Always select products by cable insulation diameter.

Voltage	Insulation diameter	Conductor cross section	Designation	Top cap type	Creepage distance	Length	Diameter	Weight
	mm					A	Ø	
12	25.0–28.0	240	APSEA 121-3	THS	300	345	165	4.0
12	27.5–30.5	300	APSEA 122-3	THS	300	345	165	3.9
12	30.5–33.6	400	APSEA 123-3	THS	300	345	165	3.9
12	33.0–36.6	500	APSEA 124-3	THS	300	345	165	3.8
12	35.7–39.7	630	APSEA 125-3	THS	300	345	165	3.8
12	39.3–43.1	800	APSEA 126-3	THS	300	345	165	3.6
12	42.5–48.1	1000	APSEA 127-3	THS	300	345	165	3.5
12	48.0–54.0	1200	APSEA 128-3	THSA	300	375	165	3.5
24	25.0–28.0	120–150	APSEA 241-3	THS	830	560	165	9.0
24	27.5–30.5	185–240	APSEA 242-3	THS	830	560	165	9.0
24	30.5–33.6	300	APSEA 243-3	THS	830	560	165	8.7
24	33.0–36.6	400	APSEA 244-3	THS	830	560	165	8.5
24	35.7–39.7	500	APSEA 245-3	THS	830	560	165	8.3
24	39.3–43.1	500–630	APSEA 246-3	THS	830	560	165	8.0
24	42.5–48.1	630–800	APSEA 247-3	THS	830	560	165	7.8
24	48.0–54.0	1000	APSEA 248-3	THSA	830	590	165	7.5
24	54.0–60.0	1200	APSEA 249-3	THSA	830	580	165	7.5
36	25.0–28.0	50–95	APSEA 361-3	THS	1100	670	165	10.0
36	27.5–30.5	95–120	APSEA 362-3	THS	1100	670	165	10.0
36	30.5–33.6	150–240	APSEA 363-3	THS	1100	670	165	9.8
36	33.0–36.6	240	APSEA 364-3	THS	1100	670	165	9.7
36	35.7–39.7	300	APSEA 365-3	THS	1100	670	165	9.5
36	39.3–43.1	400	APSEA 366-3	THS	1100	670	165	9.5
36	42.5–48.1	500–630	APSEA 367-3	THS	1100	670	165	9.3
36	48.0–54.0	630–800	APSEA 368-3	THSA	1100	700	165	8.8
36	54.0–60.0	1000	APSEA 369-3	THSA	1100	690	165	8.5
36	60.0–66.0	1200	APSEA 3610-3	THSA	1100	680	165	8.5

Accessories, to be ordered separately

APSEA 12–36 kV

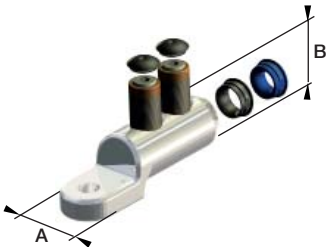
Top caps, cable lugs and top bolts are supplied in one-piece kits, to be ordered separately.



THS, THSA
Top cap.



A/K-TBF SKR
Top bolt. Tightening torque, 45 Nm.



SCL-B
Cable lug with shear-off bolts.

Top bolts and cable lugs

The top cap THS or THSA is selected with regards to the size of the cable termination (see table at page 3/12) and the outer diameter of thickest part of the cable lug or top bolt. See dimension B in the table below.

Max. diameter of cable connection	Top hole	Top cap	Top cap
	mm	THS	THSA
30		THS 28	THSA 28
40		THS 37	THSA 37
50		THS 47	THSA 47
65		THS 60	THSA 60

Accessory	Diameter		Cable cross section	Designation Top bolts	Cable conductor material	Net weight kg/item
	A	B				
	mm		mm ²			
Top bolt	30	45	120	A-TBF 30 120 SKR	Al	0.5
Top bolt	30	45	150, 185	A-TBF 30 185 SKR	Al	0.5
Top bolt	30	50	240	A-TBF 30 240 SKR	Al	0.8
Top bolt	30	55	300, 400	A-TBF 30 400 SKR	Al	0.8
Top bolt	30	60	500	A-TBF 30 500 SKR	Al	0.9
Top bolt	30	60	630	A-TBF 30 630 SKR	Al	0.9
Top bolt	40	65	800	A-TBF 40 800 SKR	Al	1.2
Top bolt	40	65	1000	A-TBF 40 1000 SKR	Al	1.2
Top bolt	40	65	1200	A-TBF 40 1200 SKR	Al	1.1
Top bolt	30	45	120	K-TBF 30 120 SKR	Cu	1.6
Top bolt	30	45	150, 185	K-TBF 30 185 SKR	Cu	1.6
Top bolt	30	50	240	K-TBF 30 240 SKR	Cu	2.4
Top bolt	30	55	300, 400	K-TBF 30 400 SKR	Cu	2.4
Top bolt	30	60	500	K-TBF 30 500 SKR	Cu	2.8
Top bolt	30	60	630	K-TBF 30 630 SKR	Cu	2.8
Top bolt	40	65	800	K-TBF 40 800 SKR	Cu	4.0
Top bolt	40	65	1000	K-TBF 40 1000 SKR	Cu	3.8
Top bolt	40	65	1200	K-TBF 40 1200 SKR	Cu	3.5
Cable lug	24	24	10–95	SCL-B 95-12	Al/Cu	0.10
Cable lug	28	28	25–150	SCL-B 150-12	Al/Cu	0.25
Cable lug	33	33	50–240	SCL-B 240-12	Al/Cu	0.30
Cable lug	38	38	70–300	SCL-B 300-16	Al/Cu	0.35
Cable lug	42	42	400	SCL-B 400-16	Al/Cu	0.70
Cable lug	50	52	300–630	SCL-B 630-16	Al/Cu	0.90

Accessories, to be ordered separately



THS, THSA A/K-TBF SKR SCL-B UKR



FK TSH SSH PSSK

Designation	Description	See page
THS, THSA	Top caps for outdoor termination APSEA	2/44
A/K-TBF SKR	Top bolt	2/44
SCL-B	Cable lug	2/53
UKR	Universal clamp for fastening cable to a pole, etc.	4/3
FK	Overhead line clamp	2/52
TSH, SSH	Branch seal kit and protective hoses	2/48
PSSK	Screen separation kit	2/47
JSA	Earthing kits when the cable does not have a Cu-wire screen	2/49

Outdoor cable termination

APED 12–36 kV

2

Use

Suitable for outdoor and indoor installations in which the termination is to be used as a fixed connection point.

Standard

Meets the requirements of:

- IEC 60840
- IEEE 48

Design

The cable termination consists of a composite or porcelain insulator fitted on a box body made of aluminium.

The electrical stress control component is a premolded rubber stress cone. The insulator has sheds of short-long type and is filled with synthetic insulating oil.

The composite insulator is available in grey. A post insulator kit which includes three stand-off insulators and a supporting plate used for insulated installation can be included.

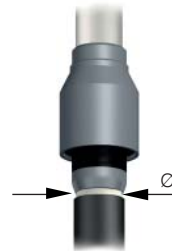
A top bolt with a diameter of 30 mm is included in the kit.

Installation

Installation can be simplified by assembling the termination horizontally on the ground before lifting it into place.

The following cable data should be stated when ordering:

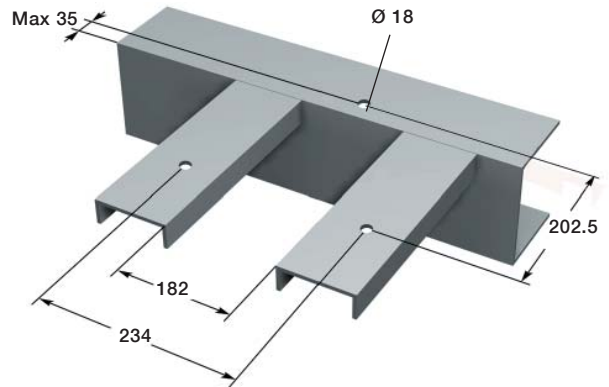
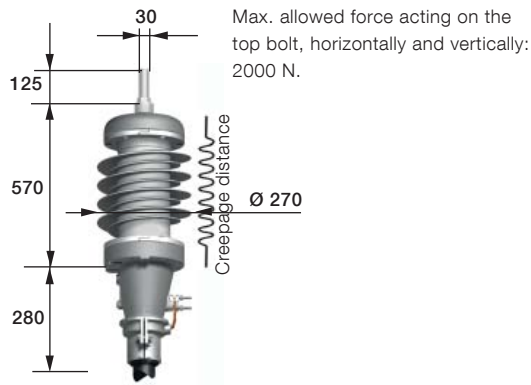
- Voltage
- Diameter over prepared insulation
- Conductor cross section
- Conductor material copper or aluminium
- Screen, sheath design and cross section
- Overall cable diameter
- Insulator, composite
- Top bolt with bolt connection as standard



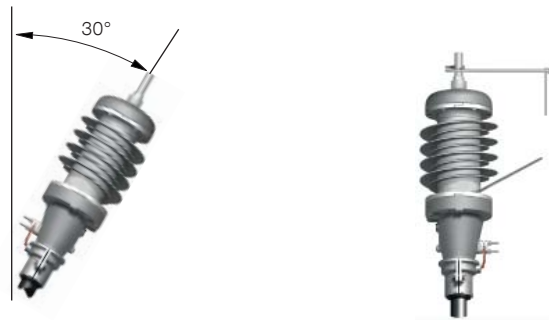
Designation	Insulation diameter		Cable overall diameter	Max conductor cross section	Creepage distance	Net weight
	min	max	max Ø		min	
	mm		mm	mm ²	mm	kg/item
APED 360 P	25	66	85	1200	950	27

Technical specification

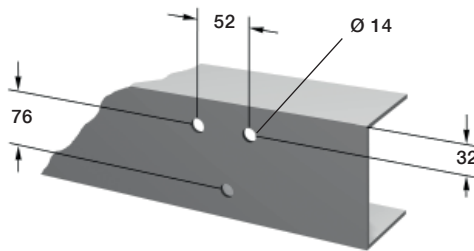
APED 12–36 kV



Attachment to bracket for insulated installation
Three 18 mm holes for M16 bolts.

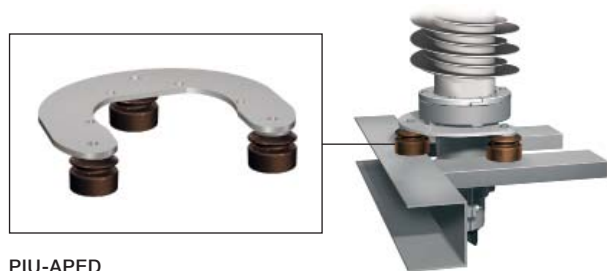


Inclination up to 30°.



Attachment to beam
Three 14 mm hole for M10 bolts.

Accessories, to be ordered separately



Post insulator kit for fixing to a supporting plate for insulated screen/sheath installation.

Designation	Description	Use
GAP-APED	Rod gap	Protects against over-voltage.
PIU-APED	Post insulator kit	When insulated installation.

Screen separation kit

PSSK

Use

Heat-shrink screen separation kit for XLPE- and EPR-insulated 3-core cables with common Cu- or Al-wire screen.

2

Used to prevent flashover between the phases in small spaces, for example in a switchgear bay. Used together with screened separable connector CSE-A, shrouded termination KAP or cable termination SOT.

Standard

Meets the requirements of Swedish standard, EBR KJ 41:09.

Design

PSSK: Length 1.2 m for cable with Cu-wire screen. A copper stocking with a screen cross section of 25 mm² is fitted on each phase and connected to the wire screens of the cable. A heat-shrink branch seal and protective hoses are used as an outer sheath. It can also be cut for shorter installation.

PSSK E: Length 1.2 m for cable with Al-wire screen. A copper stocking with a screen cross section of 25 mm² is fitted on each phase and connected to the wire screens of the cable. A heat-shrink branch seal and protective hoses are used as an outer sheath. It can also be cut for shorter installation.

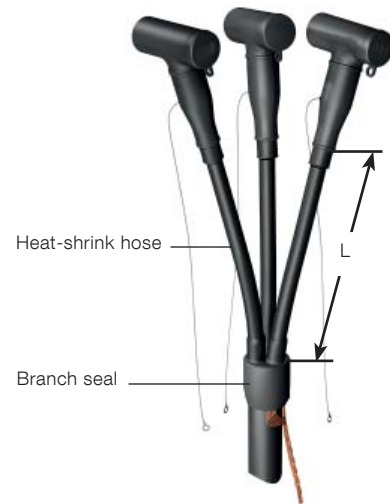
PSSK L: Length 2 m for cable with Cu- or Al-wire screen. The extended variant in heat-shrink when the branch area might be placed below ground. To achieve watertightness; mastic, vulcanizing tape and protective tape are applied to the lower part of the branch seal.

Note!

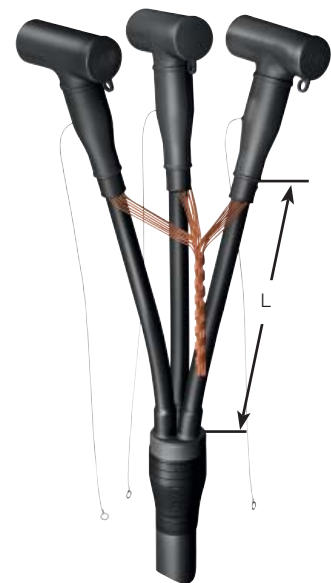
- Cable connectors or cable terminations to be ordered separately.



PSSK



PSSK with cable termination CSE-A.



PSSK L with cable termination CSE-A.

Conductor cross section				Designation	Length	Weight
12 kV	24 kV	36 kV	42 kV		L	
mm ²					mm	Kg/item
10-95	10-35	-	-	PSSK 1	1200	1.9
95-300	50-300	50-150	-	PSSK 2	1200	2.5
-	-	95-300	95-300	PSSK 3	1200	3.4
10-95	10-35	-	-	PSSK 1 E	1200	1.9
95-300	50-300	50-150	-	PSSK 2 E	1200	2.5
-	-	95-300	95-300	PSSK 3 E	1200	3.4
10-70	10-35	-	-	PSSK 1 L	2000	3.3
95-300	50-300	50-95	50-95	PSSK 2 L	2000	3.9
-	-	95-300	95-300	PSSK 3 L	2000	4.8

Branch seal kit

TSH

Use

TSH L are branch seal kits for sealing the 3-core cables' branch when installing cable termination SOT, indoor or outdoor.

SSH are kits with protective hoses to be used as additional extension of the branch seal together with TSH L.

Design

Branch seal and protective hoses of heat-shrink material as per below, lashing wire for mechanical reinforcement of the branch, earth wire and non-corrosive band-strip for connection of earth potential to termination.

TSH 1 L and TSH 2 L include a branch seal and 3 protective hoses, length 1.2 m.

SSH 1 L and SSH 2 L include only 3 heat-shrink protective hoses, length 1.2 m.

SSH 1 S and SSH 2 S include only 3 heat-shrink hoses, length 0.4 m.



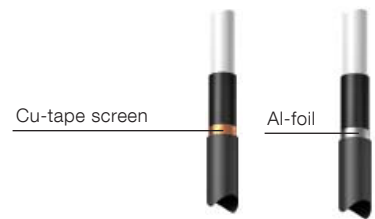
Designation	Outer diameter cable		Core diameter		Cable cross section			Length	Weight
	Min	Max	Min	Max	12 kV	24 kV	36 kV		
	mm		mm		mm ²			m	kg/kit
TSH 1 L	22	60	9	27	10-95	10-50	-	Approx. 1.25	0.5
TSH 1 S	22	60	9	27	10-95	10-50	-	Approx. 0.45	0.3
TSH 2 L	47	110	16	50	120-300	70-300	50-240	Approx. 1.25	1.0
TSH 2 S	47	110	16	50	120-300	70-300	50-240	Approx. 0.45	0.7
SSH 1 L	-	-	9	27	10-95	10-50	-	1.2	0.4
SSH 1 S	-	-	9	27	10-95	10-50	-	0.4	0.1
SSH 2 L	-	-	16	50	120-300	70-300	50-240	1.2	0.6
SSH 2 S	-	-	16	50	120-300	70-300	50-240	0.4	0.2

Earthing kit for cable terminations

JXT 1–3 and JSA 4–6

2

Earthing kits for XLPE- and EPR-insulated cables with earth screen of Cu-tape or Al-foil. The kits are designed for cable terminations and cable connectors. There is enough material in the kits for three 1-core cable terminations. There are also complete kits for 1-core cables.



Cable Ø Screen mm	For cables with Cu-tape screen			For cables with Al-foil screen		
	15 – 25	20 – 30	31 – 50	20-30	25-40	20 – 30
Earthing kit	JXT 1	JXT 2	JXT 3	JSA 4	JSA 5	JSA 6
Cable accessories				IV-tape	IV-tape	Shrink sleeve
SOT 241	X			X		X
SOT 242		X			X	
SOT 242 B			X			
SOT 243	X			X		
SOT 244		X		X		X
SOT 245			X		X	
SOT 246			X		X	
SOT 361			X		X	
SOT 362			X			
CSS-A 12250-01	X			X		X
CSS-A 12250-02	X			X		X
CSS-A 24250-01	X			X		X
CSS-A 24250-02	X			X		X
CSE-A 12250-01	X			X		X
CSE-A 12250-02	X			X		X
CSE-A 24250-01	X			X		X
CSE-A 24250-02	X			X		X
CSE-A 12400-01	X			X		X
CSE-A 12400-02		X		X		X
CSE-A 24400-01		X		X		X
CSE-A 24400-02		X		X		X
CSE-A 12630-01	X			X		X
CSE-A 12630-02		X		X		X
CSE-A 12630-03			X		X	
CSE-A 24630-01		X		X		X
CSE-A 24630-02		X		X		X
CSE-A 24630-03			X		X	
CSE-A 36400-01		X			X	X
CSE-A 36400-02			X		X	
CSE-A 36630-01		X			X	X
CSE-A 36630-02			X		X	
CSE-A 36630-03			X		X	
CSE-A 42400-01		X			X	X
CSE-A 42400-02			X		X	
CSE-A 42630-01		X			X	X
CSE-A 42630-02			X		X	
CSE-A 42630-03			X		X	
KAP 630-1 SCL 3	X			X		
KAP 630-2 SCL 5		X	X		X	X
APIT 4		X			X	
APIT 5		X			X	
APIT 6			X		X	
APIT 7			X		X	
APIT 8			X		X	
APIT 9			X			
APIT 10			X			
APSEA xx1		X			X	
APSEA xx2		X			X	
APSEA XX3			X		X	
APSEA XX4			X		X	
APSEA XX5			X		X	
APSEA XX6			X			
APSEA XX7			X			

For cables with Cu-tape screen

JXT 1–3 contains copper braids which are connected to the screen with constant force springs.

For cables with aluminium foil screen

JSA 4–6 contains copper braids which are connected to the screen with a plate and constant force springs.

Note:

- If the cable has only Cu-wire screen, no earthing kit is needed.
- For cables with other screen types, or 3-core cable with Cu-tape screen, contact us for information.

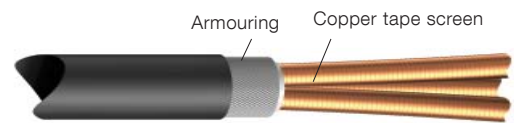
Screen connection for cable joints

JSA 10–16

Screen connection kits for XLPE- and EPR-insulated cables with earth screen of copper tape or aluminium foil. The kits are designed for cable joints type SOJ and SMXB. There is enough material in the kits for one 3-core joint or three 1-core joints.

Cables with copper tape screen

JSA 10–13 contains copper stockings which are connected to the screen with constant force springs. Connections to armouring (if any) are made with lashing wire.



Cables with aluminium foil screen

JSA 14–16 contains copper braids which are connected to the screen with a plate and constant force springs.

Note:

- If the cable has only copper wire screen, no earthing kit is needed.
- For cables with other screen types, or 3-core cables with Cu-tape screen, contact us for information.

Cable	For cables with copper tape screen				For cables with aluminium foil screen		
	17 – 20	19 – 27	25 – 35	31 – 48	19 – 27	25 – 35	31 – 48
Earthing kit for 1-core	JSA 10-1	JSA 11-1	JSA 12-1	JSA 13-1	JSA 14-1	JSA 15-1	JSA 16-1
Earthing kit for 3-core	JSA 10-3	JSA 11-3	JSA 12-3	JSA 13-3	JSA 14-3	JSA 15-3	JSA 16-3
Cable joint							
SOJ 121	X						
SOJ 122		X			X		
SOJ 123			X			X	
SOJ 124			X			X	
SOJ 125				X			X
SOJ 241		X			X		
SOJ 242		X			X		
SOJ 243			X			X	
SOJ 244				X			X
SOJ 361		X			X		
SOJ 362		X			X		
SOJ 363			X			X	
SOJ 364				X			X
SOJ 365				X			X
SMXB 1	X						
SMXB 2		X			X		
SMXB 3			X			X	
SMXB 4		X			X		
SMXB 5		X			X		
SMXB 6			X			X	
SMXB 7				X			X
SMXB 8				X			X
SMXB 9				X			X
SMXB 10			X			X	
SMXB 11				X			X

Armouring kit for cable joints

ARM

Use

For restoring a steel wire or steel tape armoured cable. ARM can be used with SOJ and SMXB joints, as well as other joints.



Design

The kit consists of plastic mesh, spiral, funnel with holder, transparent tape and cast resin. The mesh and spiral are placed over the joint and sealed with the tape. The cast resin, which contains a base and hardener in a partitioned bag, is mixed and poured into the funnel until the mesh is full.

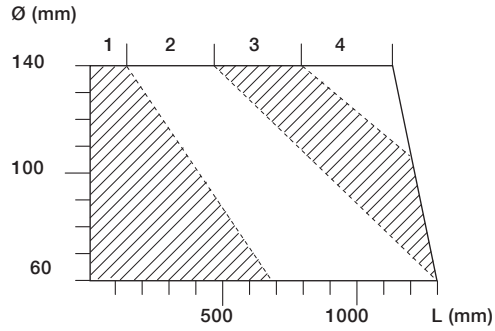
The maximum storage temperature for the cast resin is 30 °C.

Cable joints type SOJ and SMXB are completed with ARM as following

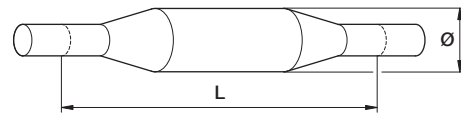
Cable joint	ARM 1	ARM 2	ARM 3
SOJ 121-3	X		
SOJ 122-3		X	
SOJ 123-3		X	
SOJ 124-3			X
SOJ 241-3	X		
SOJ 242-3		X	
SOJ 243-3		X	
SMXB 1-3	X		
SMXB 2-3		X	
SMXB 3-3		X	
SMXB 4-3	X		
SMXB 5-3		X	
SMXB 6-3			X
SMXB 7-3			X
SMXB 8-3			X

Designation	Weight
	kg/item
ARM 1	3.5
ARM 2	6.5
ARM 3	8.0
ARM 4	10.0

Selecting ARM for unknown application requires the length of joint "L" and diameter over joint "Ø" as below.



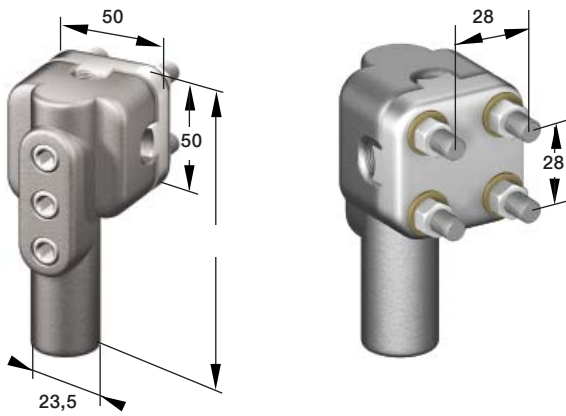
ARM kit size



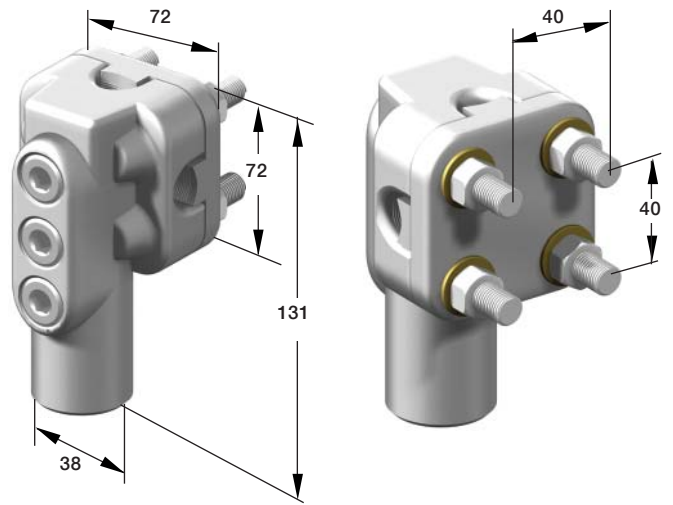
E.g. Ø 115 and L 850 mm give ARM 3.

Cable connection

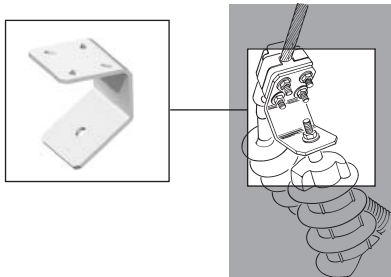
Overhead line clamps



FK 120
Overhead line clamp. A greased tin-plate must be used when connecting to a Cu conductor outdoors.



FK 300
Overhead line clamp. A greased tin-plate must be used when connecting to a Cu conductor outdoors.



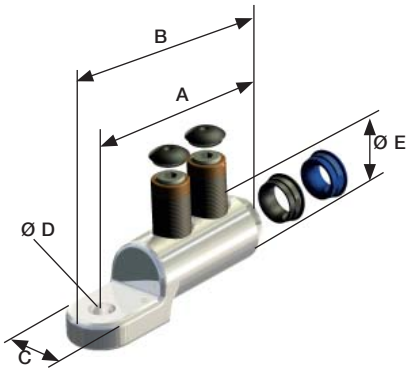
FKFB
Bracket to connect overhead line clamp FK to surge arrester.

Designation	Conductor Al or Cu		Tightening torque	Overhead line Al		Weight kg/item
	size	max Ø		size	max Ø	
	mm ²	mm		mm ²	mm	
FK 120	50–120	13	25 Nm	31–99	5–12	0.5
FK 300	50–300	21	25 Nm when 50–100 mm ² 45 Nm when 100–300 mm ²	62–234	10–20.5	0.9
FKFB	–	–	–	–	–	0.1

Cable connection

Cable lugs and connectors

2

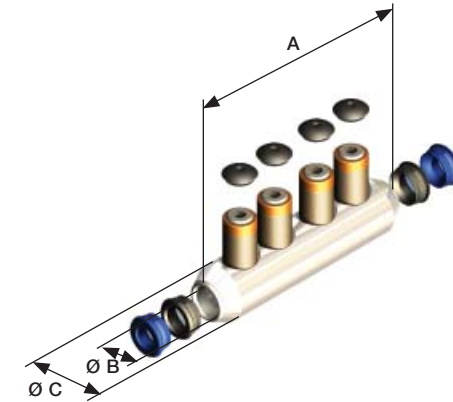


SCL-B
Bolt cable lug for cable terminations, type SOT, APIT and APSEA. For indoor and outdoor connection of both Cu- and Al-conductors. A greased cupal washer must be used when connecting to a Cu conductor outdoors.

- Meets the requirements of EN 61238-1.
- The cable lug is manufactured in an aluminium alloy surface-treated with tin.
- Shear-off bolts are made of brass. Breaks off once the correct torque is reached. Thanks to its design, the bolts will always break off directly at the edge of the cable lug.
- Single core kits

The kit also includes:

- Adapter rings for different conductor cross sections.
- Covers used as protection over the bolts.



SC-B
Bolt connector with partition and shear-off bolts for Al- and Cu-conductors.

Meets the requirements of EN 61238-1.

The connector is equipped with shear-off bolts made of brass. Breaks off once the correct torque is reached. Thanks to its design, the bolt will always break off directly at the edge of the connector.

The kit also includes:

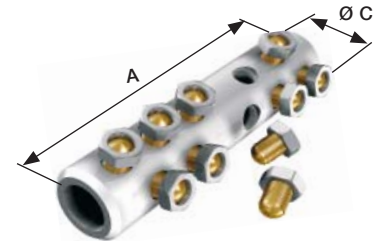
- Adapter rings for different conductor cross sections.
- Covers used as protection over bolts.



CW 3013, CW 3817

Cupal washer, to be used when connecting cable lug SCL-B to a copper busbar outdoors. The washers are coated with contact grease.

- Supplied in bags of three.



SH-SKRM
Bolt connector with partition and shear-off bolts for Al- and Cu-conductors.

- Meets the requirements of IEC 61238-1.
- The connector is equipped with turnable two-sided shear-off bolts and a specially designed nut. The bolt is rotated in the appropriate direction, and the nut is then assembled. When the specified torque is reached, the bolt will shear off and the installation is completed.
- Single core kits.

Designation	Conductor cross section Al / Cu				Tightening torque	Dimensions					Weight
	Round stranded	Solid round	Sector shaped	max Ø		A	B	Ø B	Ø C	Ø D	
		mm ²		mm	Nm			mm			kg/unit
SCL-B 95-12	10-95	50-95	-	13	25 ¹⁾	58	70	24	13	24	0.10
SCL-B 150-12	25-150	35-120	-	16	25 ¹⁾	74	91	28	13	28	0.25
SCL-B 240-12	50-240	50-185	-	20	36 ¹⁾	100	115	33	13	33	0.30
SCL-B 300-16	70-300 ²⁾	95-240	-	24	52 ¹⁾	101	120	38	16.5	38	0.35
SCL-B 400-16	185-400 ³⁾	185-240	-	26	52 ¹⁾	121	138	42	16.5	42	0.70
SCL-B 630-16	300-630 ⁴⁾	-	-	33	80 ¹⁾	165	180	50	16.5	50	0.90
SC-B 95	10-95	10-95	50-95	-	25 ¹⁾	65	-	13	24	-	0.1
SC-B 150	25-150	25-150	35-120	-	25 ¹⁾	102	-	16.3	28	-	0.2
SC-B 240	50-240	50-240	50-185	-	36 ¹⁾	126	-	20	33	-	0.3
SC-B 400	185-400	185-500	185-240	-	52 ¹⁾	170	-	26	42	-	0.35
SC-B 630 ⁵⁾	300-630	300-800	-	-	80 ¹⁾	230	-	33	52	-	0.9
SH-SKRM 70	16-70	11	25-70	-	15	100	-	-	21.5	-	0.25
SH-SKRM 150	95-150	16	95	-	20	114	-	-	27	-	0.35
SH-SKRM 240	185-240	20	120-185	-	30	144	-	-	33.5	-	0.60
SH-SKRM 400	300-400	25.5	240	-	40	175	-	-	41.5	-	0.90
SH-SKRM 630	500-630	33	-	-	45	210	-	-	49	-	1.20

1) The bolt will be sheared-off at the right tightening torque. 2) Solid round conductor up to 400 mm². 3) Solid round conductor up to 500 mm². 4) Solid round conductor up to 800 mm². 5) Fits only tape joints, type SMXB.

Designation	Outer diameter	Hole diameter	Thickness	Weight
	mm	mm	mm	g/unit
CW 3013	30	13	2	5
CW 3817	38	17	2	8

Accessories

Bird protection

Use

Used for bird protection on the high-voltage bushings for pole-mounted transformers. To prevent short-circuits caused by larger birds, HU is also placed on the surge arresters. For total protection, HU should be combined with an insulated down-conductor. This is done with insulation spiral HUS.

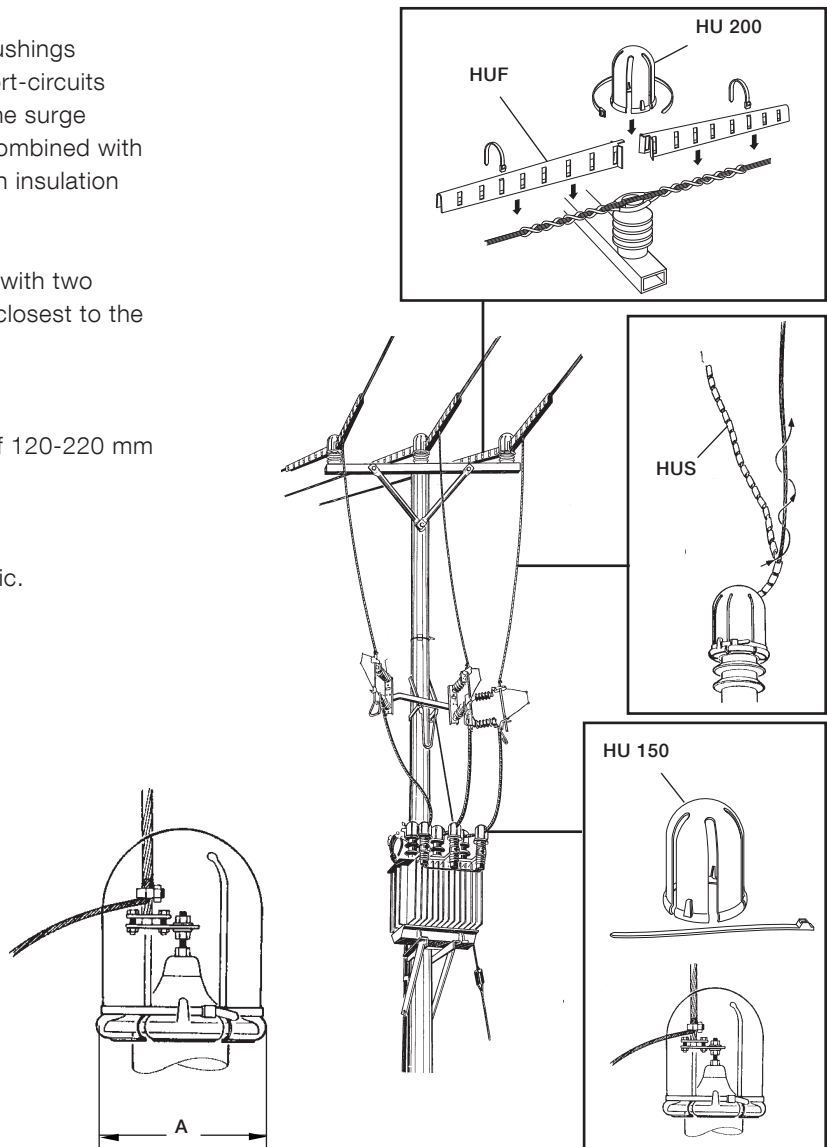
On post insulators, HU is used in combination with two wings HUF. This will protect the overhead line closest to the insulator from short-circuiting.

Standards

HU is designed for bushings with a diameter of 120-220 mm according to DIN 42531 standard.

Design

All components are made of UV-resistant plastic.



Designation	Bushings diameter A		Pieces/kit	Length	Weight
	min	max			
	mm				
HU 150	120	160	3	–	0.6
HU 200	160	220	3	–	0.8
HUF	–	–	6	0.6	1.1
HUS	–	–	1	30	1.8



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General accessories and tools, 12–42 kV

Accessories and tools

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Accessories Tapes

3



IA 2333 - 2338
Insulating vulcanizing tape.



IA 2339
Insulating vulcanizing tape.



IA 2342
Silicon rubber tape.



IA 2343
Silicon rubber tape.



IA 2352
Semiconducting tape.



IA 2362
Filling tape.



IA 2441 - 2444
Protective tape.



RULLE
Two-layer insulating tape made of EPDM and butyl rubber.



IA 2421
Electrical tape.

Designation	Length	Width	Thickness	Weight
	m	mm	mm	kg/item
IA 2333	9	38	0.8	0.50
IA 2337	9	19	0.5	0.20
IA 2338	9	38	0.5	0.40
IA 2339	2	25	0.76	0.10
IA 2342	9	25	0.5	0.16
IA 2343	2.5	25	0.5	0.30
IA 2352	4.5	19	0.8	0.10
IA 2362	1.5	38	3.2	0.30
IA 2421	10	19	0.18	0.06
IA 2441	10	25	0.4	0.20
IA 2443	10	50	0.4	0.30
IA 2444	30.5	50	0.4	0.90
RULLE 1	3.5	60	2.0	0.60
RULLE 2	5.5	60	2.0	0.90

Other accessories



IK 1105, 1106, 1107, 1108, 1109
Abrasive cloth.



IK 1405, IK 1406
Lashing wire (tin-coated copper wire).



IK 1401, IK 1407
Lashing wire (tin-coated copper wire).



IK 2221
Silicone grease, 25 g.



IK 2233
Grease, type AP paste, 10 g.

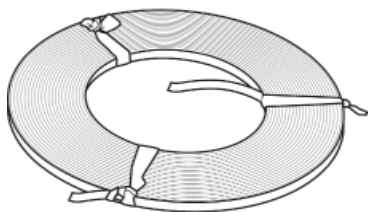


IK 1502
Lashing wire (galvanized steel wire).

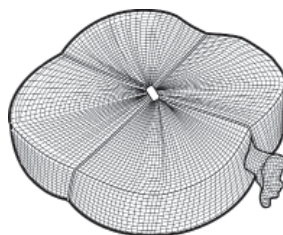
Designation	Length	Diameter	Coarseness	Weight
	m	mm		kg/item
IK 1105	1	–	100	0.1
IK 1106	1	–	80	0.1
IK 1107	1	–	120	0.1
IK 1108	1	–	220	0.1
IK 1109	1	–	400	0.1
IK 1405	5	1.4	–	0.1
IK 1406	9.5	1.4	–	0.2
IK 1401	2	1.4	–	0.1
IK 1407	6	1.0	–	0.2
IK 1502	4	1.5	–	0.1
IK 2221	–	–	–	0.03
IK 2233	–	–	–	0.02

Other accessories

3



IA 1701
Earthing braid, sold by the metre, 10 mm².



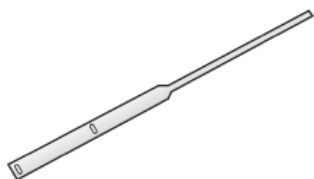
IA 1706
Copper net for e.g. SMXB, sold by the metre, approx. 10 mm².



IK 2230
Washing cloth, 3 alcohol-soaked paper cloths 200 x 300 mm.



SKALUS
Peeling string for XLPE-insulation.



MBR 250
Stainless marking tape, 100 units/kit.

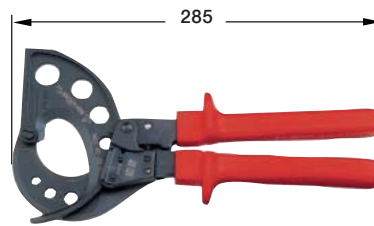
Designation	Length	Width	Thickness	Weight
	m	mm	mm	
IA 1701	–	16	1.0	0.10 kg/m
IA 1706	–	80	1.0	0.06 kg/m
IK 2230	–	–	–	0.03 kg/unit
SKALUS	2	–	1.0	0.02 kg/unit
MBR 250	0.25	–	1.0	0.50 kg/kit

Tools (all dimensions in mm)



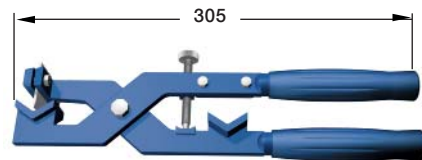
730 R

Torque wrench for bolt connectors, bolt cable lugs, overhead line clamps, etc. Supplied with 7 mm socket head, extension and 8 mm internal hexagon head.
Torque range 6-50 Nm.



Intercable No. RKS 1607 054

Cable shears for cutting cable Ø max 54 mm.



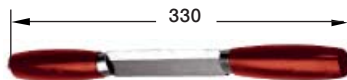
RKM 1055

Splitting tool for longitudinal splitting off XLPE-insulation with Ø 10-55 mm.



RKM 670

Cable knife, 30 mm blade.



RKM 672

Sheath removing knife with two handles for plastic sheathed cable.



RKM 1435 and RKM 2550

Brace for use in the assembly of the connectors and cable lugs with a torque or shear-off screw. Provides a secure and stable mounting. Adjustable between min and max diameter of the connector or cable lug. Available in two sizes according to the table. Meets the insulation requirements of EN/IEC 60900.



RKM SB

Cordless impact wrench set to fit connectors and cable lugs with shear-off bolts. Meets the insulation requirements of EN/IEC 60900.

The kit includes:

- Impact wrench
- Battery: 18 V/3.0Ah - 2 st
- Battery charger
- Allen nut: SW5, SW6, SW8

Designation	Description
730 R	Torque wrench
RKS 1607 054	Cable shears
RKM 1055	Splitting tool
RKM 1055 K	Spare blade for RKM 1055
RKM 672	Sheath removing knife
RKM 1435	Brace for bolted connector for outer diameter of 14-35 mm
RKM 2550	Brace for bolted connector for outer diameter of 25-50 mm
RKM 670	Cable knife
RKM SB	Cordless impact wrench set

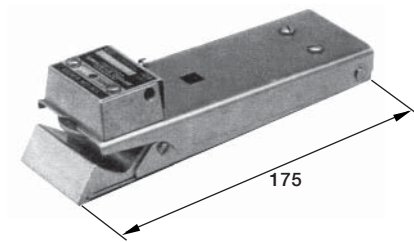
Accessories

Tools (all dimensions in mm)

3



Intercable No. AV 6220
Sheath removing tool for PE-sheathed cable
Ø > 20 mm.



Model 1700 Series
Peeling tool for strippable outer conductive layer on
XLPE-insulated cable Ø 13-51 mm.



Intercable No. FBS 1722 1
Stripping tool for the vulcanized, outer conducting
layer of XLPE-insulated cable Ø 10-52 mm.
The tool is supplied in a rigid case with a tube of
silicone grease.



GB-M20
Cutting tool for cable sheath and XLPE-insulation:
Diameter: Ø 15-50 mm
Cutting depth: ≤ 8 mm



GB-M20 S8
Spare peeling blade to GB-M20.
Delivered 1 per kit.

Designation	Description
AV 6220	Sheath removing tool
Model 1700 Series	Peeling tool
FBS 1722 1	Stripping tool
GB-M20	XLPE stripping tool
GB-M20 S8	Spare blade for GB-M20 S8





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Universal clamps

Universal clamps	
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Universal clamps

UKR 90, UKRA 90

UKR 90

Use

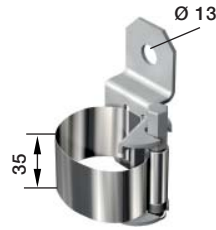
For fixing cables, tubes, hoses, etc. It will fix round profiles with \varnothing 20–90 mm or angular profiles with circumferences of 60–300 mm.

Design

The bracket is made of non-magnetic hot-dip galvanized steel. The band is made of stainless steel SS 2333-02 with rounded edges and has a thickness of 0.2 mm. The band can be tightened and locked in one operation. The locking bolt is made of die-cast zinc alloy.

UKRS 90

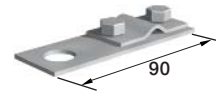
Consists of one UKR 90 and a spacer with a hexagon head wood screw for fastening on a wooden pole e.g.



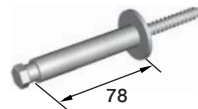
UKR 90
Universal clamp.



UKRS 90
Universal clamp with spacer.



UKJ
Earthing plate.



UKS 90
Spacer.

4

Applications:



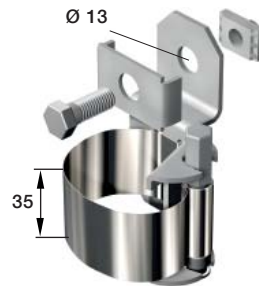
UKRA 90

Use

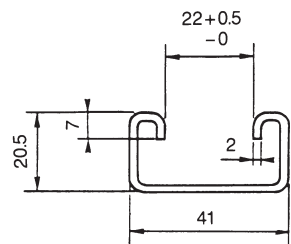
For fixing cables with \varnothing 20–90 mm to the anchor bars in a cable distribution cabinet, etc.

Design

The bracket is made of non-magnetic hot-dip galvanized steel. The band is made of stainless steel according to SS 2333-02 with rounded edges and has a thickness of 0.2 mm. The band can be tightened and locked in one operation. The locking bolt is made of die-cast zinc alloy. A spring-loaded nut with a reversible locking washer offers a choice of fixed or flexible position and direction.



UKRA 90
Universal clamp with bracket for anchor bar.



Dimensional drawing of the anchor bar.

Designation	Weight
	kg/item
UKR 90	0.17
UKRA 90	0.23
UKS	0.28
UKRS 90	0.45
UKJ	0.14

Universal clamps

UKR 200, UKRA 200

UKR 200

Use

For bundling cables with \varnothing 50–275 mm.

Design

The bracket is made of non-magnetic hot-dip galvanized steel. The band is made of stainless steel SS 2333-02 with rounded edges and has a thickness of 0.2 mm.

The band can be tightened and locked in one operation. The locking bolt is made of die-cast zinc alloy.

UKRF

For fixing cables, etc., to cable ladders. For use together with UKR 200. The height of the ladder profile is approx. 16 mm and will fit within the specified dimensions.

The bracket is made of hot-dip galvanized steel.

UKRS 200

Consists of one UKR 200 and a spacer with a hexagon head wood screw for fastening cables on a wall or a wooden pole.

UKRA 200

Use

For fixing cables with \varnothing of 50–275 mm to the anchor bars.

Design

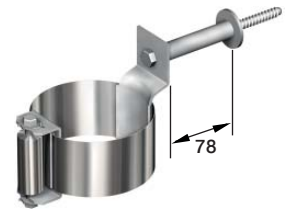
The bracket is made of non-magnetic hot-dip galvanized steel. The band is made of stainless steel SS 2333-02 with rounded edges and a thickness of 0.2 mm.

The locking bolt is made of die-cast zinc alloy and can be tightened and locked in one operation.

A spring-loaded nut with a reversible locking washer offers a choice of fixed or flexible position and direction.



UKR 200
Universal clamp.



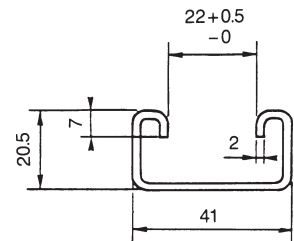
UKRS 200
Universal clamp UKR 200 with spacer.



UKRF
Fixing bracket.



UKRA 200
Universal clamp with bracket for anchor bar.



Dimensional drawing of the anchor bar.

Designation	Weight
	kg/item
UKR 200	0.32
UKRA 200	0.45
UKRF	0.21
UKRS 200	0.81

Typical applications

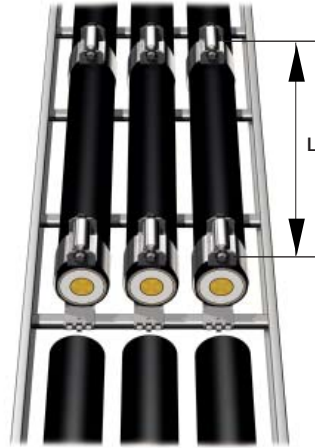
UKR 200, UKRA 200

Flat configuration

4

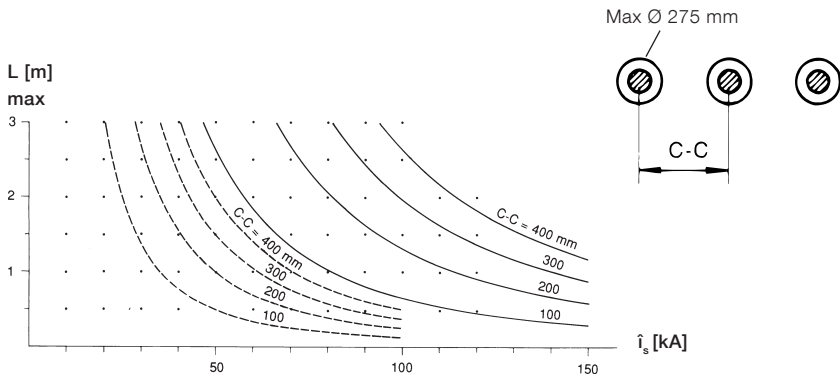


UKR 200 with fixing brackets UKRF.



UKR 200 with one fixing bracket, UKRF.

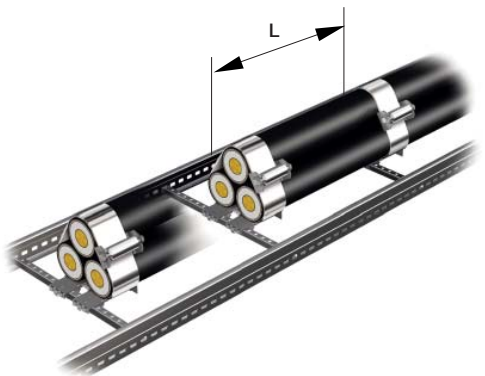
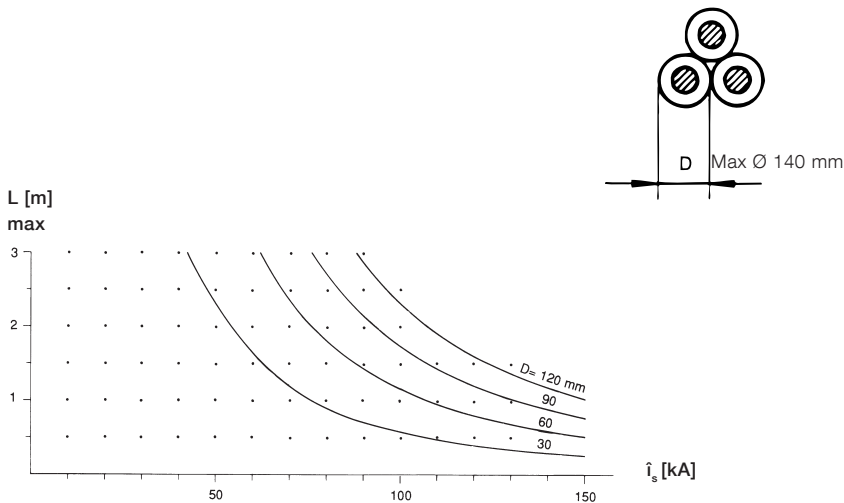
Universal clamp (results of testing with 2 turns of steel band).



\hat{i}_s = Short circuit current (peak value)
 C-C = Distance between cable centres
 L max = Distance between clamps

———— UKR 200 with fixing bracket, UKRF
 - - - - UKRA 200

Trefoil configuration



UKR 200 with two fixing brackets, UKRF.

\hat{i}_s = Short circuit current (peak value)
 D = Outer diameter of cable
 L max = Distance between clamps

———— UKR 200 with fixing bracket, UKRF

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