

Cellplux series - Separable connectors for switchgears, transformers and junction boxes

U_{\max} up to 36 kV and I_n up to 1250 A



We connect your energy

www.cellpack.com

What is a separable connector?

Screened separable connectors from BBC Cellpack are used for connection of MV cables to switchgears, transformers or other equipment, equipped with an outer cone bushing according EN 50180 and EN 50181. Screened separable connectors are touch-proof and suitable for quick connection and disconnection of cable line. Besides of that they don't require maintaining phase-to-phase and phase-to-earth air clearances and can be used in the most compact locations. They differ by type of fixing to the bushing: bolted or sliding (pin) contact type. Screened separable connectors from BBC Cellpack are made of EPDM which provides excellent electrical and mechanical properties. Product portfolio includes solutions for bushing with interface types A, B & C.

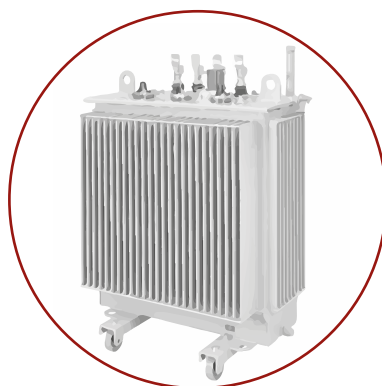
Interface	Product	Type	Voltage level	Maximal current
Type A	CWS 250 A	Elbow connector	12, 24 kV	250 A
	CGS 250 A	Straight connector		
Type B	CWS 400 A	Elbow connector	12, 24, 36 kV	400 A
Type C1	CTS 630 A	T-connector	12, 24, 36 kV	630 A
	CTS-S 630 A	T-connector	12, 24 kV	630 A
Type C2	CTS 1250 A	T-connector	12, 24, 36 kV	1250 A

There are T-shaped, elbow and straight separable connectors. There are symmetrical and asymmetrical T-shaped separable connectors. Symmetrical separable connectors have two similar standardized ends (for interface types of bushings provided in EN 50180 and EN 50181). Asymmetrical T-shaped separable connectors have standardized front end (connected to bushing) and not standardized rear end, which differs from producer to producer. Asymmetrical T-connector is the most demanded product of them.



SWITCHGEARS

for secondary (RMU) & primary (GIS) distribution



TRANSFORMERS



JUNCTION BOXES



T-shaped asymmetrical separable connector type CTS



- 1 Protective semiconductive cap with an eyelet
- 2 Insulating plug with capacitive test point
- 3 Contact bolt
- 4 Interface type C bushing
- 5 Insulation
- 6 Conductor cable lug
- 7 Fixing tie
- 8 Conductive inner electrode
- 9 Conductive outer electrode
- 10 Earthing clamp
- 11 Cable adapter
- 12 Earthing wire with a cable lug
- 13 Wire screen cable lug



EPDM

(Ethylen-Propylen-Dien monomer rubber) – synthetic rubber that is used in many applications, for different purposes and particularly as insulation material in electrical power industry. Robust material and internationally established especially for separable connectors.

PROPERTIES OF EPDM

- Long service life
- Oxygen resistance
- Vapor & Fog resistance
- Ozone resistance
- Resistant to UV radiation
- High dielectric strength
- High tear resistance
- Chemical resistance against various substances
- Safe for the environment
- Silicone-free



SUITABLE FOR DIFFERENT TYPES OF CABLES WITH EXTRUDED INSULATION

standard type

Cu-wire screen

NA2XS(F)2Y, XKDT, RHZ1, ARG7H1R, ARE4H1R, XRUHAKXS, YMeKrvasqwd

on request

Cu-tape screen

FG16H1R12, FG7H1R

Al-foil screen

RH5Z1, NF C 33-226, XDALT, ARP4H5E, RE4H5R4R

“Wiski”

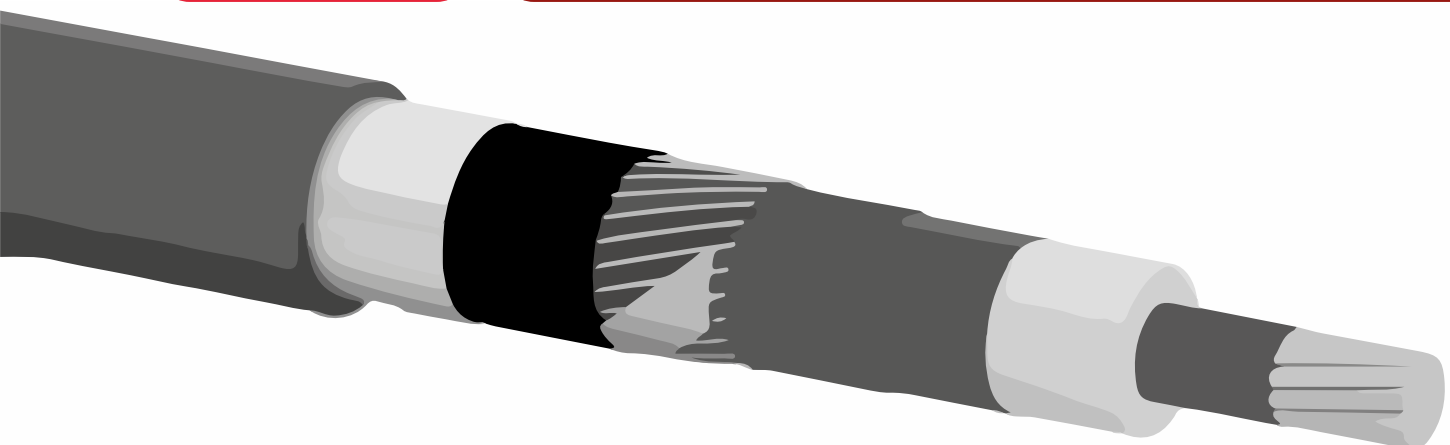
AHXAMK-W and AHXAMK-WM

Armoured

SWA, AWA

“Ericsson”

EXCEL, AXCES and AXAL





CABLE ADAPTER

- One component for both stress control and sealing of plug-in body and cable
- Simple one step installation
- Not conductive- sheath resistance continuity testing of the cable possible
- One design for multiple screen types -> less risks, less trainings

EARTHING KIT PRE-INSTALLED IN FACTORY

- On-site installation of small components (e.g. bolts, nuts, compression cable lugs) not required
- Reduced installation costs & time
- Less risk of fault installations

STANDARDISED EARTHING KIT

- Earthing wire inclusive of cable lug (M12) pre-installed in factory
- On-site adaptability. Cable lugs can easily be replaced with other sizes.
- One screw cable lug offering a range of cross-sections suitable for a cable wire screen

CAPACITIVE TEST POINT

- Safe detection of electric potential through capacitive test point

NO MAINTENANCE NECESSARY

- Reliable in various environmental conditions

SEMICONDUCTIVE CAP FIXED TO THE PLUG-IN BODY

- Assurance, that cap will not fall or get lost
- Easy handling (simple to install / remove) e.g. to have access to capacitive test point

COMPATIBLE WITH VOLTAGE AND CURRENT SENSORS

- Smart grid management such as: metering, protection, fault detections, load flow optimisation and power quality of the distribution network

INSTALLATION

- No minimum phase-to-phase and phase-to-earth air clearances
- Multi cross-section application for Cu & Al conductors of class 1, 2, 5, 6 (IEC 60228), thanks to technologically advanced screw cable lug
- Standard installation tools, that are available in a common toolbox
- Immediate operation after installation possible

ROUTINE TESTS

- AC test
- PD test
- X-ray test



Separable connectors' family



CTS

ASYMMETRICAL T-SHAPED CONNECTOR



CTS-S

SYMMETRICAL T-SHAPED CONNECTOR



CTKS 24 kV

COUPLING T-SHAPED SEPARABLE CONNECTOR FOR CTS



CTKS 36 kV

COUPLING T-SHAPED SEPARABLE CONNECTOR FOR CTS



CWS 400 A

ELBOW L-SHAPED SEPARABLE CONNECTOR



CWS 250 A

ELBOW L-SHAPED SEPARABLE CONNECTOR



CTKSA

COUPLING SURGE ARRESTER FOR CTS & CTKS



CGS

STRAIGHT SEPARABLE CONNECTOR

DOWNLOADS



Product catalogue from BBC
Cellpack Electrical Products



Technical information
about selection of surge
arresters for MV grids



Possible combinations

CTS & CTKS



CPAS & CTS & CKS & CTS



Note: For CPAS for this solution use ZS Art.-Nr. 374292

CTS & CKS & CTS



CTS & CTKSA



CTS 24 kV & CTKS 36 kV & CTKSA



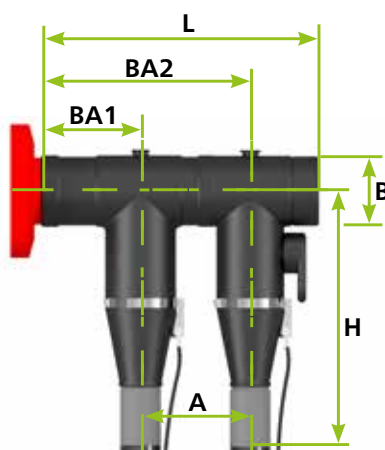
CWS & CVS & CGS

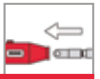




Combinations, dimensions and installation depths

1 st cable	Coupling element	2 nd cable	3 rd cable	Surge arrester	BA1	BA2	BA3	A	B	L	H
					bushing-axis mm			axis- axis	Width	Length	Height (with CA)
mm											
250 A											
CWS 250 A	—	—	—	—	88	—	—	—	80	200	209
CWS 250 A	CVS	CGS 250 A	—	—	88	—	—	—	80/110	508	209
CGS 250 A	—	—	—	—	—	—	—	—	110	—	278
CGS 250 A	CVS	CGS 250 A	—	—	—	—	—	—	110	581	—
400 A											
CWS 400 A	—	—	—	—	116	—	—	—	107	215	271
630 A 24 kV											
CTS 630 A 24 kV	—	—	—	—	106	—	—	—	85	196	271
CTS-S 630 A 24 kV	—	—	—	—	106	—	—	—	85	228	271
CTS 630 A 24 kV	—	CTKS 630 A 24 kV	—	—	106	221	—	115	85	289	271
CTS 630 A 24 kV	—	—	—	CTKSA	106	221	—	115	85	289	380
CTS 630 A 24 kV	—	CTKS 630 A 36 kV	—	CTKSA	106	221	336	115/115	85	404	380
CTS 630 A 24 kV	—	CTKS 630 A 36 kV	CTKS 630 A 24 kV	—	106	221	336	115	85	404	271
CTS 630 A 24 kV	CKS	CTS 630 A 24 kV	—	—	106	313	—	208	85	404	271
CTS 630 A 24 kV	CKS	CTS 630 A 24 kV	CTKS 630 A 24 kV	—	106	313	428	208/115	85	497	271
CTS 630 A 24 kV	CKS	CTS 630 A 24 kV	—	CTKSA	106	313	336	208/115	85	497	380
630 A 36 kV											
CTS 630 A 36 kV	—	—	—	—	106	—	—	—	85	196	271
CTS 630 A 36 kV (35-240 mm ²)	—	CTKS 630 A 36 kV	—	—	106	221	—	115	85	311	271
CTS 630 A 36 kV (240-400 mm ²)	—	CTKS 630 A 36 kV	—	—	106	221	—	115	85	311	286
CTS 630 A 36 kV	—	—	—	CTKSA	106	221	—	115	85	289	380
CTS 630 A 36 kV	—	CTKS 630 A 36 kV	—	CTKSA	106	221	336	115/115	85	404	380
CTS 630 A 36 kV	CKS	CTS 36 kV 630 A	—	—	106	113	—	208	85	404	271
CTS 630 A 36 kV	—	CTKS 630 A 36 kV	CTKS 630 A 36 kV	—	106	221	336	115/115	85	426	271
CTS 630 A 36 kV	CKS	CTS 630 A 36 kV	CTKS 630 A 36 kV	—	106	113	428	208/115	85	519	271
1250 A											
CTS 1250 A	—	—	—	—	110	—	—	—	87	205	331
CTS 1250 A	CKS	CTS 1250 A	—	—	110	327	—	217	87	422	331
CTS 1250 A	—	—	—	CTKSA	110	230	—	120	87	298	380
CTS 1250 A	—	CTKS 630 A 36 kV	—	—	110	230	—	120	87	320	331





How to choose a separable connector?

Catalogue products from BBC Cellpack were designed for single core cables with wire screen in accordance with HD 620. For other cables additional earthing kits might be needed.

Following questionnaire will help to make a correct selection.

- What is the rated current?
- What is the system and cable voltage?
- What is the cross-section of the cable?
- What is the minimum diameter over insulation?
- What maximum installation depth (length) is allowed?
- What maximum height is allowed?
- What is the interface type of the bushing?
- What is the class of the conductor (acc. IEC 60228)? If class 5 & 6 please contact technical support.
- What is the type of the metallic screen? If other than Cu wire screen please contact technical support.
- If any customisation is required – please contact technical support.

WHAT TO DO BEFORE INSTALLATION?

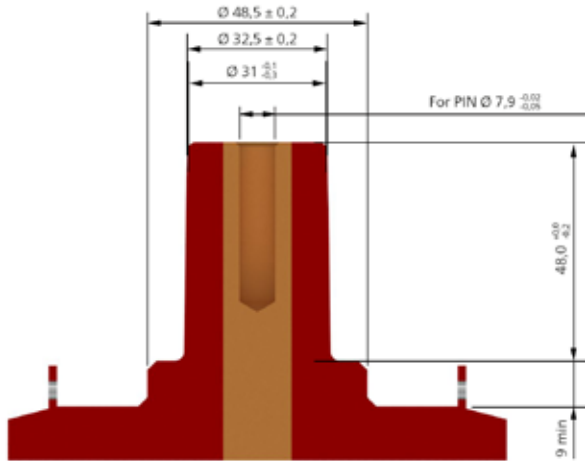
- Make sure that: current, voltage, cross-section and min. diameter over insulation of the separable connector are appropriate to the cable.
- Read working instructions
- Assure that the end of the cable was properly sealed and there is no moisture in it.
- Follow cable and switchgear manufacturer's instructions and other relevant documents regarding installation (e.g. cable bending radius, operating temperatures etc.)

WHAT TO DO AFTER INSTALLATION?

- Fasten the cables accordingly, so that there is no leverage effect on separable connectors and bushings
- Connect earthing wire of separable connectors with cable screen (to ensure same potential)

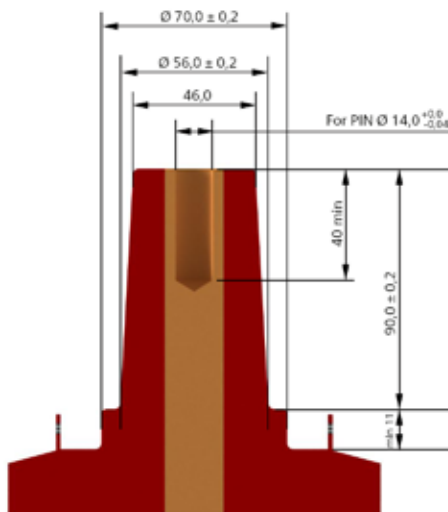
Bushing types

TYPE A



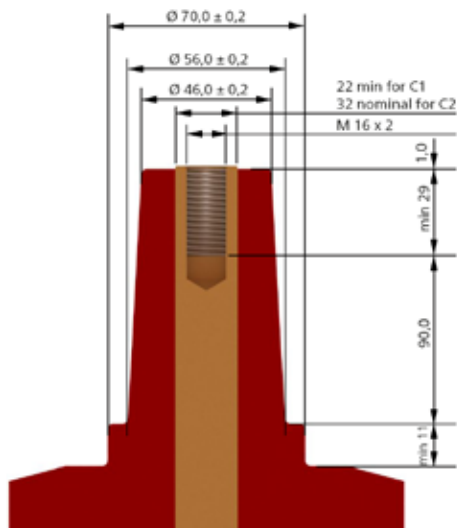
- >> max. current 250 A
- >> Sliding contact
- >> Bail holder

TYPE B



- >> max. current 400 A
- >> Sliding contact
- >> Bail holder

TYPE C



TYPE C1

- >> max. current 630 A
- >> Bolted contact
- >> Thread M16

TYPE C2

- >> max. current 1250 A
- >> Bolted contact
- >> Thread M16

Accessories



CVS 250 A | Connecting element up to 24 kV

For separable connectors type CWS 250 A and type CGS 250 A, for outer cone interfaces type A

Art. No. 225844



CKS 1250 A | Coupling element up to 36 kV

For connection of CTS 630/1250 A T-connectors

Art. No. 450152



CPAS | End-plugs

Insulating plug for front end of CTS. Dimensionally similar to bushing type C. Together with Test and earthing kit CPES makes it possible to carry out testing of cables installed with CTS separable connectors without connecting them to bushing under voltage.

Art. No. 367094



ZS | Accessory kit

Kit for reassembly of CTS or installation of test set and cone type voltage sensors (IEC 61869-11)

Art.-No. 257622, 374292, 365078



CPES | Test and earthing kit

Test and earthing kit for AC 45-60 Hz and VLF 0.1 Hz cable tests.

Art.-No. 414307



CPS | Test kit

Test kit for AC 45-60 Hz and VLF 0.1 Hz cable tests.

Art.-No. 302227



CIK | Voltage-resistant cap

for insulation of unused bushings (outer cone) type A 250 A and type C 630 A

CIK 250A 24kV 265023

CIK 630A 24kV 372710

CIK 630A 36kV 265024

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