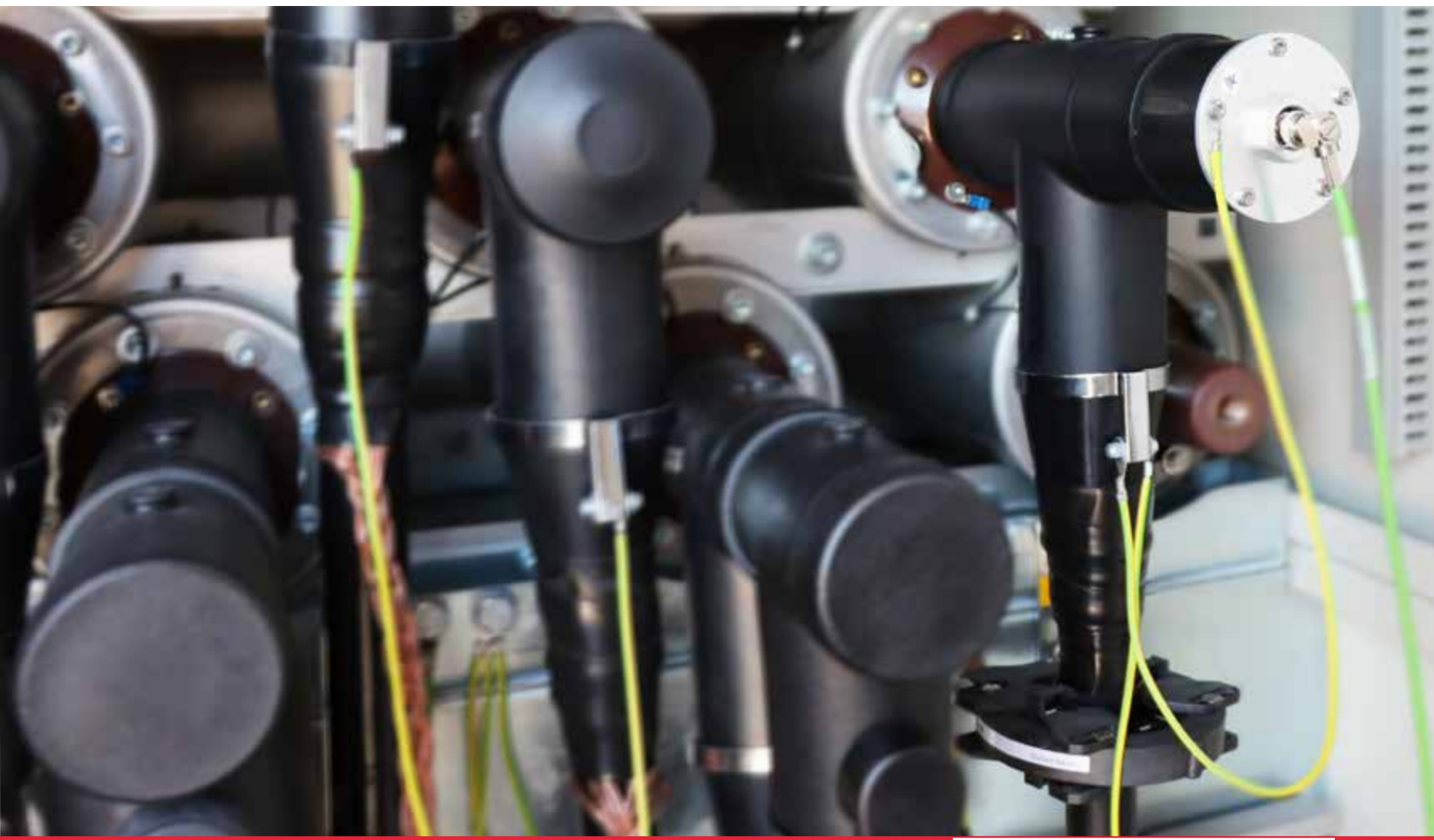
BBC CELLPACK

Electrical Products



Medium Voltage

BBC Cellpack T-Separable Connectors with ABB Smart Sensors

For voltages up to 24 kV and current up to 630 A

We connect your energy

www.cellpack.com

D996 | SAP-Nr. 402784 | 0122

Company Profile

Electrical Products

Being an SME company within the Behr Bircher Cellpack (BBC) Group in Villmergen/Switzerland, BBC Cellpack Electrical Products has successfully established itself in the global markets, in the fields of development, production and customer-oriented sales of cable connecting systems and accessories for the low and medium voltage up to 42 kV.

Systems for professionals

Power utilities, electrical wholesalers, specialist electrical trade or the industry – they all share one thing in common: their first priority is ensuring high operational safety for the power supply services in the distribution network. The system solutions and products developed by BBC Cellpack for complex, high-tech applications have significantly contributed to this.

Technology & Innovation

With our customer-oriented understanding of technologies and the distinctive culture of innovation, we have committed ourselves to concentrate, not only on the demands of our customers for technically innovative and thoroughly tested products, but also to ensure the safe and reliable functioning of our system solutions.

Quality & Service

BBC Cellpack has gained worldwide recognition for highest material and product quality with standards being continuously controlled in our high-performance laboratories and testing facilities in Germany. This high benchmark also applies to the availability and delivery service of our products. The quality standard "Swiss Quality – Made in Germany" is our commitment.

1935 Founding of Cellpack AG by the Dreifuss brothers

1964 Expansion of cable fittings programme

1967 Construction of factory for electrical pipes and cable fittings

1983 *the Netherlands

1990 *Singapore

1991 *Spain

1992 *Italy

1993 *France

2003 Integration into Behr Bircher Cellpack BBC Group

2006 *Poland

2008 Opening of the manufacturing site in Malaysia

2010 New manufacturing site in Radeberg

2011 Take over of connector production in Czech Republic

2015 *Australia

2019 *India

2021 *Dubai

*Founding of distribution company in

Smart Solutions: Sensors for T-Separable Connectors

As Gas-insulated Substations (GIS) are gaining more popularity due to its compactness, efficiency and reliability of power network, the demand for high quality sophisticated “Separable Connectors” to make a safe & secure connection is increasing. As a renowned supplier, BBC Cellpack is already offering such high reliable and touch proof separable connectors to the power & industry sector and has market presence globally. The Separable Connectors (CGS, CWS, CTS, CTS-S, CTKS) from BBC Cellpack allows you to connect / disconnect the polymeric cables from Gas-insulated switchgears or transformers with high safety.

To further help the customer with Smart Grid Analysis, our bushing type-C Separable Connectors (CTS, CTS-S, CTKS) and surge arrestors (CTKSA) are now compatible with smart sensors from ABB. **By installing the sensors on the BBC Cellpack separable connectors and networking them to IEDs, they enable grid management such as metering, protection, fault detections, load flow optimization and power quality of the distribution network with fast response times.** Thus, our separable connectors are not only safe but now also smart.

BBC Cellpack Separable Connectors are not just safe but now also Smart!

The Voltage Sensors are tailor made to suit upto 24kV, 630A separable connectors (CTS, CTS-S, CTKS) and surge arrestors (CTKSA) thereby making the installation of sensors fast, easy and reliable. The Current Sensors on the other hand are suitable for all shielded cables and all types of screened separable connectors upto 630 A.

The current sensors are tested according to IEC 60044-8 & IEC 61869-10 and the voltage sensors are tested according to both IEC 60044-7, IEC 61869-11 & **CENELEC HD 629.1 S2.**

Product Features:

- Easy, fast, and secure installation
- Compact design suitable for GIS applications
- Allows both new and retrofit installation as the sensors are independent of Switchgears
- Safe and easy handling
- High measurement accuracy
- Eliminates conventional instrument transformers to be used in Switchgears, thereby reducing both size and cost of switchgears

Sensor Types - suitable with BBC Cellpack Separable Connectors

Voltage Sensors

These Voltage Sensors offer an efficient way to make voltage measurements needed for protection and monitoring of medium voltage power systems. Alternative to the conventional instrument transformers, these sensors are compact, safer and provide greater rating standardization & a wider functionality range. Voltage measurement is based on the resistive divider principle. The output voltage is directly proportional to the input voltage. In all cases, the transmitted output signal reproduces the actual waveform of the primary voltage signal

1. KEVA 24 C10
2. KEVA 24 C10(c)
3. KEVA 24 C25
4. KEVA 24 C25(c)

Current Sensors

KECA 80 C85

KECA 80 D85

These Current Sensors on the other hand offer an efficient way to make current measurements needed for protection and monitoring of medium voltage power systems. Current measurement is based on the Rogowski coil principle. A Rogowski coil is a toroidal coil, without an iron core, placed around the primary conductor in the same way as the secondary winding in a current transformer. The main benefit of not using an iron core is that the behavior of the sensor is not influenced by non-linearity and width of hysteresis curve, which results in a highly accurate and linear response over a wide dynamic range of measured quantities.

Sensor Assembly

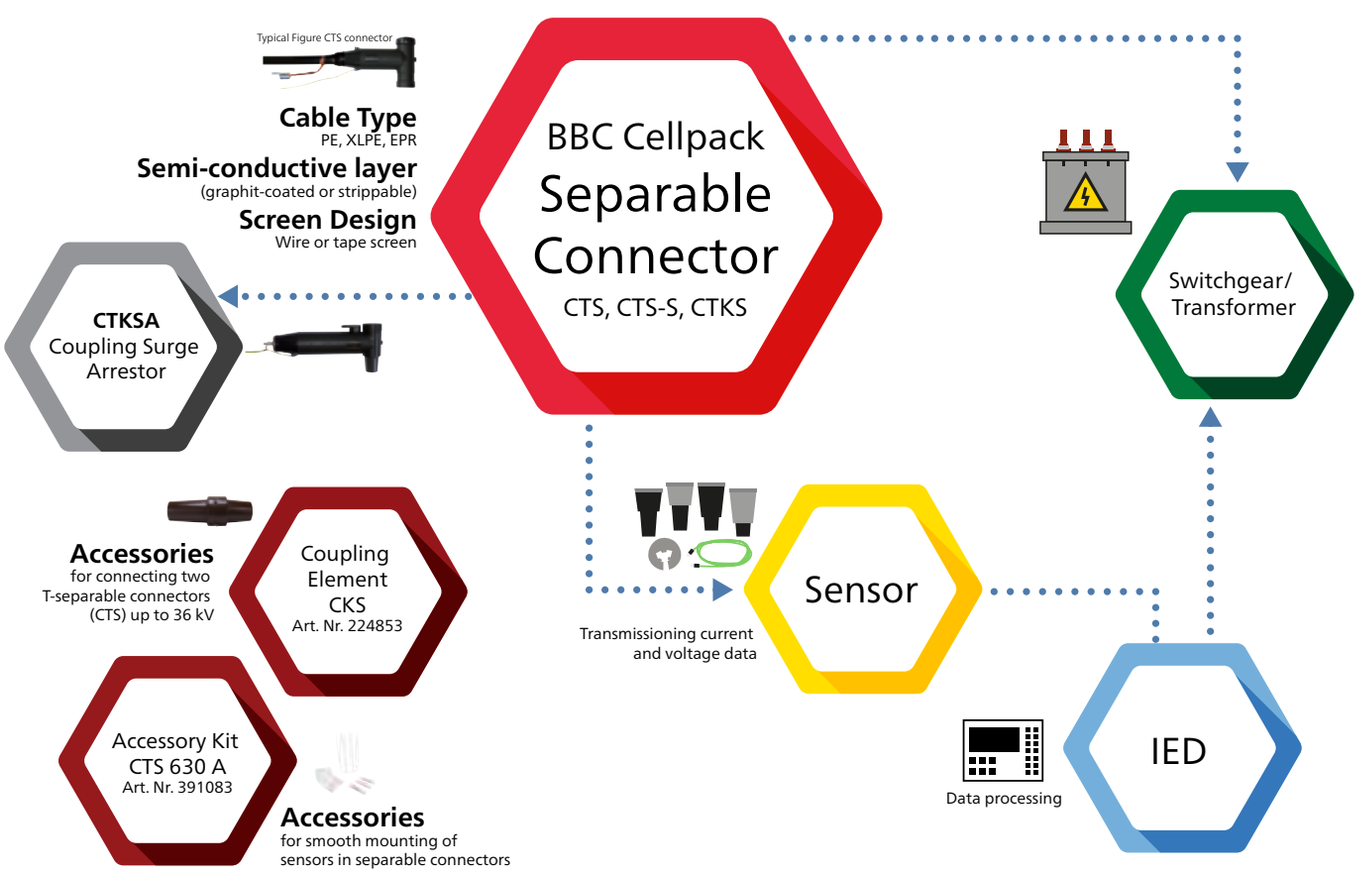
Current Sensors KECA 80 C85 shall be installed on shielded head of cable connector using clamping system. Current Sensor KECA 80 D85 shall be installed on shielded cable using clamping system which allows assembly on different diameters of MV cable.

Voltage Sensors KEVA are assembled as easy replacement of originally used insulating plugs in the separable connectors. Depending on the connector type an appropriate sensor must selected. Please refer product selection table in page 7.

Important: While installing the voltage sensor, it is necessary to use additional set (art.nr. 391083), which enables a smooth mounting of the sensors in the separable connectors.

Please refer installation manual for step by step mounting instructions

"Separable Connector & Sensor" Combination



Technical Data Voltage Sensors

KEVA C
Indoor Voltage sensors for BBC Cellpack Separable Connectors

Standards	
IEC 60044-7 (1999-12) Instrument transformers - Part7: Electronic voltage transfomers	
IEC 61869-11 (2017-12) Instrument transfomers - Part 11: Additional requirements for low-power passive voltage transformers	
HD 629.1 S2 (02/2006) + A1 (09/2008) Table 10, test requirements	
Highest voltage for equipment and test voltage	
Highest voltage for equipment, U_m	24 kV
Rated power frequency test voltage	50 kV
Rated lightning impulse test voltage	125 kV
Insulation requirements for secondary terminals according to IEC 61869-11	
Power frequency voltage withstand capability	0.82 kV
Impulse voltage withstand capability	1.5 kV 1.2/50 µs
Voltage sensor, rated values	
Rated primary voltage, U_{pn}/U_{pr}	22/ √3 kV
Rated frequency, f_r	50/60 HZ
Accuracy class	0.5/3P
Rated burden, R_{br} - IEC 60044-7 - IEC 61869-11	 10 MΩ 2 MΩ; 50 pF
Rated transformation ratio, K_n/K_r	10 000:1
Rated voltage factor, k_u/Fv	1.9/8h
Temperature category	
Operation	-25°C/+80°C
Transport and storage	-40°C/+80°C
Cable	
Length	2.2; 5 m
Connector	RJ45 (CAT-6)
Grounding wire length	0.5 m
Compatable IEDs	
ABB Relion® series	
A-eberle EOR-3D Compact	

Technical Data Voltage Sensors

KEVA C with 3.25 V output
Indoor Voltage sensors for BBC Cellpack Separable Connectors

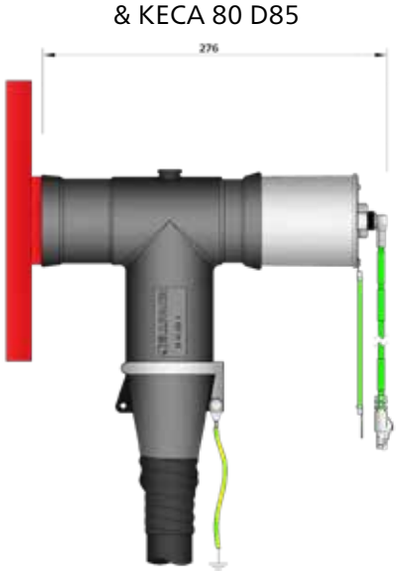
Standards	
IEC 61869-11 (2017-12) Instrument transformers - Part11: Additional requirements for low-power passive transformers	
HD 629.1 S2 (02/2006) + A1 (09/2008) Table 10, test requirements	
Highest voltage for equipment and test voltage	
Highest voltage for equipment, U_m	24 kV
Rated power frequency test voltage	50 kV
Rated lightning impulse test voltage	125 kV
Insulation requirements for secondary terminals according to IEC 61869-11	
Power frequency voltage withstand capability	0.82 kV
Impulse voltage withstand capability	1.5 kV 1.2/50 µs
Voltage sensor, rated values	
Rated primary voltage, U_{pr}	20/ √3 kV 15/ √3 kV 10/ √3 kV
Rated frequency, f_r	50/60 HZ
Accuracy class	0.5/3P
Rated burden, R_{br} - IEC 61869-11	 2 MΩ; 50 pF or 200 kΩ; 350 pF
Rated secondary voltage, U_{sr}	3.25/√3 V
Rated voltage factor, Fv	1.9/8h
Temperature category	
Operation	-25°C/+55°C
Transport and storage	-40°C/+80°C
Cable	
Length	2.2; 5 m
Connector	RJ45 (CAT-6) ferrules
Grounding wire length	0.5 m
Compatable IEDs	
A-eberleEOR-3D Compact	
Horstmann Compass B 2.0	
Kries IKI 50	
Siemens Siprotec 7SJ81	

Technical Data Current Sensors

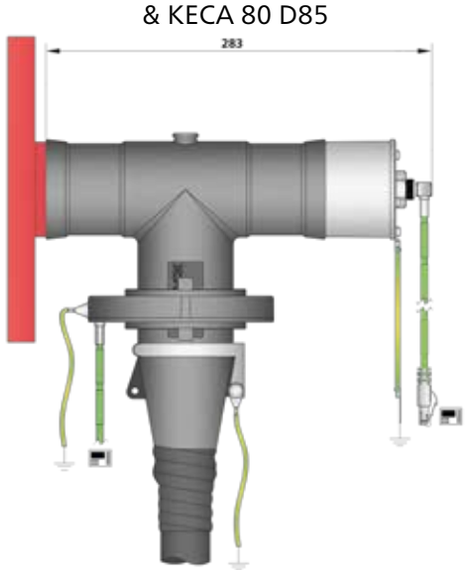
KECA 80 D85 & KECA 80 C85 Indoor Current sensors for BBC Cellpack Separable Connectors	
Parameters for Application	
Rated primary current of application	up to 4000 A
Current sensor, rated values	
Rated primary current I_{pr}	80 A
Rated transformation ratio K_{ra}	80 A/0.150 V at 50 Hz 80 A/0.180 V at 60 Hz
Rated secondary output U_{sr}	3 mV/Hz i.e. 150 mV at 50 Hz or 180 mV at 60 Hz
Rated contonuous thermal current I_{cth}	4000 A
Rated short-time thermal current I_{th}	85 kA/3s
Rated dynamic current I_{dyn}	230 kA
Rated frequency f_r	50/60 Hz
Rated extended primary current factor K_{pcr}	50
Accuracy limit factor K_{alf}	630
Accuracy class	0.5/5P630
Rated burden R_{br}	2 MΩ, 50 pF (IEC 61869-10) 10 MΩ (IEC 60044-8)
Temperature category	
Operation	-25 °C up to 80 °C
Transport and storage	-40 °C up to 80 °C
Cable	
Length	2.2 m; 5 m
Connector	RJ45 (CAT-6)
Grounding wire length	0.25 m - KECA 80 C85 0.5 m - KECA 80 D85

"Separable Connector & Sensor" Combination

CTS 630A 24kV with KEVA 24 C25c
& KECA 80 D85



CTS-S 630A 24kV with KEVA 24 C10c
& KECA 80 D85



Product Selection Table

Voltage Sensors

Separable Connector Type	Sensor type	Cable length	Art.-No.	Installation depth mm
CTS 630 A 24 kV	KEVA 24 C25c (IEC 60044-7)	5m	371530	276
	KEVA 24 C25c (IEC 61869-11)	5m	371536	276
	KEVA 24 C25 (without semi-con surface)	2.2m 5m	Direct purchase from ABB	276
CTS + CTKS 630 A 24 kV & CTS 630 A 24 kV + CTKSA	KEVA 24 C25c (IEC 60044-7)	5m	371530	392
	KEVA 24 C25c (IEC 61869-11)	5m	371536	392
	KEVA 24 C25 (without semi-con surface)	2.2m 5m	Direct purchase from ABB	392
CTS-S 630 A 24 kV	KEVA 24 C10 (without semi-con surface)	2.2m 5m	Direct purchase from ABB	283
	KEVA 24 C10c	2.2m 5m	Direct purchase from ABB	283

Note: For mounting a voltage sensor, an additional set (S) art. no. 391083 must be ordered.

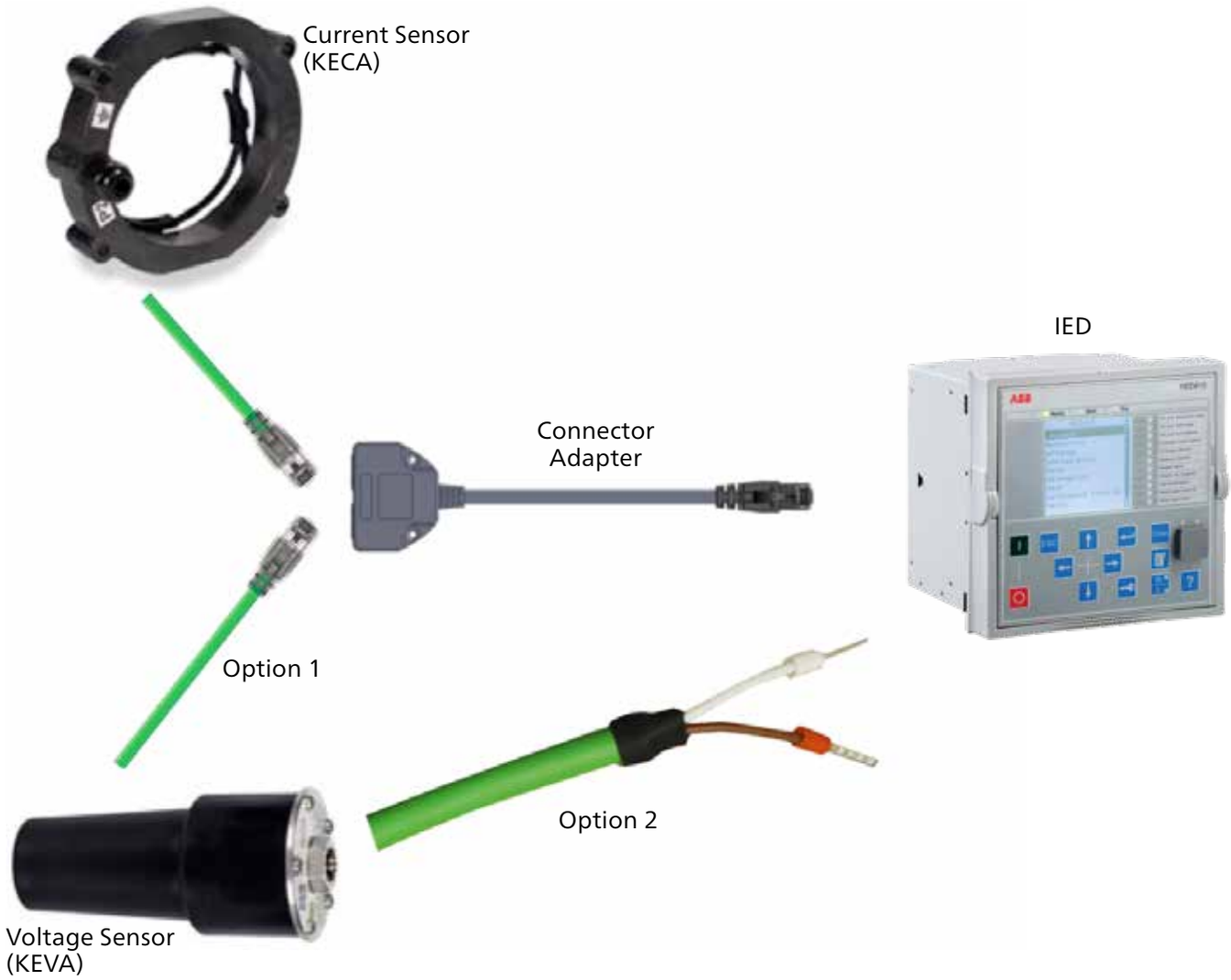
Voltage sensors KEVA C with 3.25 V output – Available upon Request (Direct purchase from ABB)

Current Sensors

Separable Connector Type	Sensor type	Cable length	Art.-No.	Installation depth mm
CTS 630 A 24 kV	KECA 80 C85	2.2m 5m	Direct purchase from ABB	194
	KECA 80 D85 (IEC 60044-8) (Split-core type)	5m	371538	194
	KECA 80 D85 (IEC 61869-10) (Split-core type)	5m	371537	194
CTS + CTKS 630 A 24 kV & CTS + CTKSA	KECA 80 C85	2.2m 5m	Direct purchase from ABB	290
	KECA 80 D85 (IEC 60044-8) (Split-core type)	5m	371538	290
	KECA 80 D85 (IEC 61869-10) (Split-core type)	5m	371537	290
CTS-S 630 A 24 kV	KECA 80 C85	2.2m 5m	Direct purchase from ABB	216
	KECA 80 D85 (IEC 60044-8) (Split-core type)	5m	371538	216
	KECA 80 D85 (IEC 61869-10) (Split-core type)	5m	371537	216

Accessories

Connector Adapter | Direct purchase from ABB



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