DISTRIBUTUSENSE® SENSORS

KECA indoor current sensors, UL Certified
Frequently asked questions

What is the primary application of the KECA family?
KECA current sensors are used for current measurement in low or medium voltage equipment, including, but not limited to, switches and switchgear.

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<th>KECA switchgear applications</th>
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Why are the products in the KECA family called “sensors” instead of “current transformers”?
KECA sensors are low power, low inductance devices and therefore designated as sensors. Current sensors are made using a Rogowski coil rather than a ferromagnetic core, which is used in conventional current transformers.

How is a current sensor selected for an application?
Primary current, primary voltage, short circuit, and compatible IED must be identified prior to selecting a sensor. In many cases, the key parameter is the low current measurement capability required. Other than this, the main consideration is the space available (including size of the opening) for mounting the sensor. See table above for KECA switchgear applications.

How does a sensor combine metering and protection classes in one device?
Due to the absence of a ferromagnetic core, a sensor’s performance is not influenced by the non-linear performance of electrical steel. This results in a highly accurate and linear response over a wide dynamic range of measured quantities and no possibility of core saturation.

What is the accuracy class of the sensors?
Current sensors fulfill requirements of IEC-60044 metering class 0.5 and protection class 5P, up to 31.5 or 50 kA depending upon sensor type.

What is the accuracy limit factor, $K_{pcr}$?
The accuracy limit factor for a Rogowski coil is not limited by saturation level like conventional current transformers, therefore reaching values 400 or 630 times nominal that correspond to primary currents 31.5 kA or 50 kA, still within class 5P.

Can the KECA cable be replaced or modified?
KECA sensors are equipped with various cable lengths and RJ45 cable connectors, as well as optional cable extensions and adapters. Modifying the cable is not recommended, but the reusable cable tie supplied with the sensor can be used to bundle unused cable if desired. Special cable lengths are available upon request.

How does the sensor cable and RJ45 connector withstand harsh environments?
The RJ45 connector complies with CAT-6 classification and the contact is gold plated to ensure best performance. CAT-6 features more stringent specifications for crosstalk and system noise. The cable type used with these sensors is a special industrial trailing cable with polyurethane jacket that is more durable than standard PVC ethernet cables. Sensors are designed for indoor use only and shall be installed in a humidity-controlled environment.

Are KECA sensors compatible with all IEDs?
To ensure accurate measurement and proper performance, the sensor and IED must be compatible. Due to the wide variety of relays and controllers offered in the market today, contact the factory or your ABB sales representative to ensure sensor compatibility.
What is the recommended sensor cable length? Available cable lengths are specified in the sensor product literature on the ABB website. Choose the minimum cable length appropriate for your application. Contact your ABB representative if different lengths are required.

Product literature indicates support of up to 4000 A rating factor. Can a sensor be applied for higher ratings (e.g., 5000 A)? Yes, but it depends upon the application and design of the current sensor. Contact your ABB representative for assistance with appropriate sensor selection.

Why are current sensors considered to be safer than conventional current transformers (CTs)? With conventional CTs, if the secondary wiring becomes an open circuit while the CT is energized, extremely high voltage is produced on the wiring, which can lead to flashovers or injuries. Current sensors produce a millivolt output with very low energy and, if the circuit is opened, do not produce the same high voltage output as CTs.

Are ABB sensors proven reliable in the field? Sensors made by ABB are designed for a thirty-year lifetime. ABB introduced sensor technology in the early 1990s and currently has a large installed base of more than 200,000 units worldwide. Twenty-five years of field experience has proven the reliability of sensor technology in operation.

What are maintenance requirements for sensors? After installation, commissioning, and testing, no additional maintenance is required.

Are KECA sensors UL certified? KECA sensors are UL certified according to the IEC 60044-8 standard, file #501098.

Does ABB offer other indoor sensors? ABB also offers a UL certified indoor voltage sensor, KEVA 17.5 B21. In addition to indoor sensors, ABB offers the RSS-1 submersible current sensor for vault or other applications. Contact your ABB representative if additional indoor sensors are desired.