MEDIUM VOLTAGE PRODUCT

KECR 17,5 AC1 current sensor
Instructions for installation, use and maintenance
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Instructions for installation, use and maintenance for the KECR 17,5 AC1 current sensor

These instructions for installation, use and maintenance are valid for the Current Sensors type KECR 17,5 AC1. The routine test report is normally delivered with the sensor and it includes results from accuracy measurements. Sensors measure currents needed for protection and monitoring in medium voltage power systems.

They are used to:
- convert large currents in the primary circuit of the network to an appropriate signal for secondary equipment (e.g. relays)
- insulate primary and secondary circuits from each other
- protect the secondary equipment from the harmful effects of large voltages and currents during abnormal situations in network

The output circuit of the sensor shall be connected to secondary equipment (e.g. relay) specified by the manufacturer. The use of sensor for other purposes than those described above is forbidden.

1. Operating conditions

The current sensor is intended for indoor mounting. The temperature category is –25/55 meaning that the ratings are valid in an ambient temperature between –25 and +55°C. The ambient air shall not be significantly polluted by dust, smoke, corrosive gases, vapours or salt. The sensor must be protected against direct sunshine. The altitude for mounting is up to 1000 m above sea level, if exceeded please contact the manufacturer.

2. Technical details

For sensor dimensions see separate dimension drawings. Rated values for each individual sensor are mentioned on the rating delivered with the sensor. Values mentioned on the rating plate must not be exceeded.
3. Instructions for installation

Mounting
The current sensor has been type-tested installed to the CB type IN-CB, 17,5 kV, 1 250 A, 31,5 kA. It can be used as well in derived CB type IN-CB with lower rated voltages, lower rated currents or lower rated short-circuit currents. Use in other equipment is prohibited. The sensor is to be fixed to the CB with an M8 screw; care must be taken to ensure a reliable earthing via the screw. **Optimal tightening torque for this connection is 9-10 Nm.**

Secondary connections
The secondary cable is designed to give a maximum EMI shielding. Every sensor is accuracy tested equipped with its own, individual cable. The routine test report is not valid for the accuracy measurements if the cable is changed, shortened, lengthened or replaced. The minimum bending radius for the cable is 30 mm. It is not allowed to bend the cable, when the temperature is below –25°C.

Connection to the relay
The secondary cable has a Twin-BNC connector that shall be connected to the inputs of the relay. Special precaution shall be taken to avoid mechanical strain or bending on the cable and the connectors during installation and use. A cable not connected to the relay can be left open or short-circuited without any harm for the sensor. Even during a primary short-circuit the voltage in the secondary circuit of the current sensor will be below 100 V. Nevertheless it is a good safety practice to earth cables not connected. Twin-BNC connectors have polarized contacts and two-stud bayonet lock coupling. When mating the Twin-BNC connector it is important to check that the plug’s polarized contacts mates with the contacts of the receptacle. The plug must be inserted properly with the matting receptacle before completing the coupling with the bayonet lock. Take care and do not use force to plug-in these connectors. Do not rotate and press at the same time – the connector is sensitive and could be damaged or destroyed.

4. Instructions for use

Voltage test:
Maximum power frequency test voltage for current sensor secondary terminals is 1.5 kV. Test voltage can be connected between two signal connectors in cable terminal connected together and earth.

5. Instructions for maintenance

Excessive dust or other kind of pollution must be brushed off the sensor. Polluted sensors can be cleaned with spirit, petrol or toluene. Traces of arcs and minor surface damages can be easily removed with sandpaper after which the surface has to be treated by applying a thin layer of silicone paste on it. Instructions for repairing greater surface damages (such as cracks) must be requested from the manufacturer.

6. Transport and storage

Temperature limits for storage and transportation is from –40 to +70°C. During transport and storage the sensors must be protected against precipitation and direct sunshine.

7. Recommended procedure for disposal of the sensor

The sensor does not contain environmentally hazardous materials. For disposal of the product after taken out of use, local regulations if any should be followed.