MEDIUM VOLTAGE PRODUCT

KECA 80 C85 Current Sensor
Instructions for installation, use and maintenance
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Instructions for installation, use and maintenance for the KECA 80 C85 current sensor

These instructions for installation, use and maintenance are valid for KECA 80 C85 current electronic transformers (sensors) operating in indoor conditions.

1. Operating conditions

The sensor should be mounted in dry, indoor conditions without excess ingress of dust and corrosive gases. The sensor must be protected against unusually heavy deposits of dust or similar pollution, as well as against direct sunshine. The sensor is designed for standard ambient temperature between -25°C and +80°C (storage and transportation temperature between -40°C and +80°C). The altitude for mounting should be lower than 1000 m above sea level. The sensor may also be used at higher altitudes when agreed upon with the manufacturer.

The current sensor type KECA 80 C85 is intended for use in current measurement in medium voltage switchgear. The current sensor should be installed over a bushing insulator, insulated cable, insulated & shielded cable connector or any other type of insulated conductor. The case of sensor is made from plastic, the internal parts are shielded and this shielding is earthed. The primary conductor must be insulated for the application voltage. The insulation of primary conductor determines the highest permissible system voltage.

2. Technical details

For sensor dimensions see dimension drawings at the end of these instructions. Rated values for each individual sensor are mentioned on the rating plate glued to the sensor. Values mentioned on the rating plate must not be exceeded.
3. Instructions for installation

Safety instruction
Always ground the sensor grounding terminal.

Installation conditions
The sensor should be installed in dry, indoor conditions. The temperature during the assembly must be between 0°C and +40°C. The sensor cable should not be moved or bent if the temperature is below 0°C.

Installation on cable connectors
Sensor is only put on the cable connector without clamping system in use. The final sensor positioning is necessary to perform after final connector installation to the bushing. Place the sensor in the center of the measuring area and use a clamping system for sensor position fixation. Cable sensor output must be at the top. Sensor can be additionally slightly centered to achieve optimal function after fixation, see Figure 5.

Installation on cable
The sensor can be used also for cable installation. In this case the end of the shield near the sensor is grounded by a wire that passes through the sensor window, as shown in Figure 6. The wire must be kept outside the clamping systems. The current flowing in the shield flows through the grounding lead, which is also in the sensor window. The fluxes produced by the current flow in the shield and in the grounding lead are equal but opposite in direction and, therefore, the output of the current sensor is not affected by the flow of current in the shield.
Clamping system

It is necessary to install tightening strip in the correct position according to Figure 7 where the place for the strip connection must be observed.

Secondary connections

The secondary cable is a single shielded cable designed to give maximum EMI shielding. The secondary cable is an inseparable part of each sensor and cannot be additionally extended, shortened, branched, modified, withdrawn or changed due to the guarantee of accuracy and performance of the sensor.

The cable must be connected directly (or via a connector adapter if needed - for more information about connector adapters and coupling adapter refer to Doc. No. 1VLC000710 - Sensor Accessories) to electronic measurement equipment (e.g. IED). The electrical shielding of the cable is connected to connector shielding and must be earthed on “electronic measurement equipment” side. The cable must be fixed close to metal wall or inserted inside of metal cable tray far from power cables! The minimal bending radius for the cable is 35 mm. The cable is not to be moved if the temperature is below 0°C. If cable, connector or connector grommet is damaged please contact the manufacturer for instructions.
The used RJ-45-type connectors are screened and designed to guarantee low resistance shielding; they are particularly adapted to applications where electromagnetic compatibility (EMC) is important. The connectors are robust but it is necessary to be careful during their assembly – do not use force!

**Note:** It is recommended to use a cable tie to fasten long sensor cables approximately 10 cm from the RJ-45 socket. The sensor plug connector pin’s assignment is shown on Figure 11. (Front view).

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4. Instructions for use

The current sensors are used:
- To convert large currents in the primary circuit of the network to the appropriate signal for the secondary equipment (e.g. IEDs)
- To insulate primary and secondary circuits from each other
- To protect secondary equipment from harmful effects or large currents during abnormal situations in the network

The use of a sensor for other purposes than those described above is forbidden.
Routine test report
The routine test report includes following tests:
• Verification of terminal marking
• Power-frequency withstand test on secondary circuits (see Note 1)
• Test for accuracy

Correction factors are measured separately for each sensor during routine testing and are marked on the rating plate. The use of correction factors is required condition in order to achieve the declared accuracy class.

Note 1: The maximum power-frequency test voltage for current sensor secondary terminals (connector) is 0.5 kV. Test voltage can be connected between short-circuits signal wires and the earth.

5. Instructions for maintenance
Excessive dust or other kinds of pollution must be brushed off the sensor. Polluted sensors can be cleaned with spirit, petrol or toluene. Otherwise, during normal use the sensors do not need any additional maintenance.

6. Transport and storage
The permissible transport and storage temperature for sensors is from -40 to +80°C. During transport and storage the sensors must be protected against direct sunshine. The sensors are delivered packed into wooden boxes or transport pallets.

7. Recommended procedure for disposal of the sensor
The sensor does not contain environmentally hazardous materials. For disposal of the product after it has been taken out of use, local regulations, if there are any, should be followed.
Appendix 1
Dimensional Drawing KECA 80 C85

KECA 80 C85

CONNECTOR RJ45 CAT6

GROUND WIRE LENGTH IS 250mm

CABLE LENGTH

RATING PLATE

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<thead>
<tr>
<th>ORDERING N.</th>
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<tr>
<td>1VL5400056V0101</td>
<td>2.2 m</td>
</tr>
<tr>
<td>1VL5400056V0102</td>
<td>3.6 m</td>
</tr>
<tr>
<td>1VL5400056V0103</td>
<td>3.4 m</td>
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