MEDIUM VOLTAGE PRODUCT

KECA 80 C260 Current Sensors
Instructions for installation, use and maintenance
## Scope of Contents

<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1. Operating conditions</td>
</tr>
<tr>
<td>3</td>
<td>2. Technical details</td>
</tr>
<tr>
<td>5</td>
<td>3. Instructions for installation</td>
</tr>
<tr>
<td></td>
<td>Safety instruction</td>
</tr>
<tr>
<td></td>
<td>Mounting</td>
</tr>
<tr>
<td>5</td>
<td>Secondary connections</td>
</tr>
<tr>
<td>5</td>
<td>Connection to relay</td>
</tr>
<tr>
<td>6</td>
<td>Connection to the sensor</td>
</tr>
<tr>
<td>6</td>
<td>4. Instructions for use</td>
</tr>
<tr>
<td></td>
<td>Routine test report</td>
</tr>
<tr>
<td>6</td>
<td>5. Instructions for maintenance</td>
</tr>
<tr>
<td>7</td>
<td>6. Transport and storage</td>
</tr>
<tr>
<td>7</td>
<td>7. Recommended procedure for disposal of the sensor</td>
</tr>
</tbody>
</table>
Instructions for installation, use and maintenance for the KECA 80 C260 current sensor

These instructions for installation, use and maintenance are valid for KECA 80 C260 current sensor (low-power passive current transformers according to IEC 61869-10 standard) operating in indoor condition.

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 sensors type KECA 80 C260 are intended to be used in medium voltage switch-gears. The sensors are intended to be used in factory installation if current measurement is required. The sensor chasses is made of plastic, the internal parts are shielded and grounded. The primary conductor must be insulated for the application voltage. The insulation of primary conductor determines the highest permissible system voltage.

2. Technical details

Technical details for each individual current sensor are mentioned on the rating plate placed on the sensor surface. Values mentioned on the rating plate cannot be exceeded.
02 Example of data stored in 2D Bar Code

03 Example of Ratio Correction factor (CFI) setting current sensor into REF601

04 Example of Ratio Correction factor (CFI) setting for current sensor into REF615

<table>
<thead>
<tr>
<th>POSITION</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATA</td>
<td>K</td>
<td>E</td>
<td>C</td>
<td>8</td>
<td>0</td>
<td>C</td>
<td>2</td>
<td>6</td>
<td>0</td>
<td>S</td>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSITION</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
<td>31</td>
<td>32</td>
<td>33</td>
<td>34</td>
<td>35</td>
<td>36</td>
<td>37</td>
<td>38</td>
</tr>
<tr>
<td>DATA</td>
<td>1</td>
<td>V</td>
<td>L</td>
<td>T</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>8</td>
<td>7</td>
<td>2</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSITION</td>
<td>39</td>
<td>40</td>
<td>41</td>
<td>42</td>
<td>43</td>
<td>44</td>
<td>45</td>
<td>46</td>
<td>47</td>
<td>48</td>
<td>49</td>
<td>50</td>
<td>51</td>
<td>52</td>
<td>53</td>
<td>54</td>
<td>55</td>
<td>56</td>
<td>57</td>
</tr>
<tr>
<td>DATA</td>
<td>O</td>
<td>C</td>
<td>T</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>8</td>
<td>C</td>
<td>F</td>
<td>I :</td>
<td>1</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSITION</td>
<td>58</td>
<td>59</td>
<td>60</td>
<td>61</td>
<td>62</td>
<td>63</td>
<td>64</td>
<td>65</td>
<td>66</td>
<td>67</td>
<td>68</td>
<td>69</td>
<td>70</td>
<td>71</td>
<td>72</td>
<td>73</td>
<td>74</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>DATA</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>F</td>
<td>o</td>
<td>c</td>
<td>o</td>
<td>r :</td>
<td>+</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sensor Constant

<table>
<thead>
<tr>
<th>Sensor constant</th>
<th>I1</th>
<th>X XXX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor constant</td>
<td>I2</td>
<td>X XXX</td>
</tr>
<tr>
<td>Sensor constant</td>
<td>I3</td>
<td>X XXX</td>
</tr>
</tbody>
</table>

Analog Inputs

<table>
<thead>
<tr>
<th>Current (LCT) 1</th>
<th>Current (LCT) 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary current</td>
<td>250</td>
</tr>
<tr>
<td>Amplitude corr. A</td>
<td>1.002</td>
</tr>
<tr>
<td>Amplitude corr. B</td>
<td>1.002</td>
</tr>
<tr>
<td>Amplitude corr. C</td>
<td>1.002</td>
</tr>
<tr>
<td>Nominal Current</td>
<td>250</td>
</tr>
<tr>
<td>Rated Secondary Value</td>
<td>3.000</td>
</tr>
<tr>
<td>Reverse polarity</td>
<td>False</td>
</tr>
</tbody>
</table>
3. Instructions for installation

**Safety instruction**
Always ground the sensor grounding terminal.

**Mounting**

KECA 80 C260 - 3 position mounting system

The sensor is intended to be used in ZS2 36 SWG around the spouts. The sensor fixation system is designed to correspond with the spouts mounting system. The spouts are fixed by special screws (not included), which create the right distance sensor-spout and provide fixing point for the sensors. The sensors are additionally fixed by three M6 nuts, the tightening torque is 2-3 Nm. In the first step the sensors in phases L1 & L3 are mounted, then sensor in phase 2, which is above the others two.

KECA 80 C260 - 4 position mounting system

The sensor should be fixed by 4 screws M6 (not included), the tightening torque is 2-3 Nm. Either metallic or plastic screws can be used.

Following rules should be fulfilled in the installation:
1) Primary conductor has to have sufficient insulation/shielding to provide adequate dielectric properties.
2) Primary conductor centered acc. to A2 class definition (PF 0.5 / inclination ±15°) described in IEC 61869-10 standard
3) Phase distance not less than 275mm

**Secondary connections**
The secondary cable is a special shielded cable designed to give maximum EMI shielding. The cable is separable part of each sensor and cannot be changed or withdrawn. The cable must be connected directly to electronic measurement equipment (e.g. protective relay) or to the adapter device if needed (see sensor accessories catalogue, 1VLC000710). The electrical shielding of 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 maximal bending radius for the cable is 7.5x cable diameter. The cable is not to be moved if the temperature is below 0 °C. If cable, connector or connector grommet is destroyed please contact the manufacturer for instructions.

**Connection to the relay**
The sensor cable is terminated by shielded RJ45 plug connector (EIA/TIA 568A Standard) that shall be connected to the inputs of the relay. The sensor plug connector pin’s assignment is shown on Figure 7. (Front view).

---

*Note:* It is recommended to use a cable tie to fasten long sensor cables approximately 10 cm from the RJ45 socket.
The sensor plug connector pin’s assignment is shown on Figure 7. (Front view).

Sensor wires connected according to the following assignment:
- PIN 1 … S1 (Rog. Coil – start)
- PIN 2 … S1 (Rog. Coil – end)
- Other pins remain unused

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 to the relay.

RJ45 plug connector has 8 contacts and locking latch coupling. The sensor connector plug must be inserted properly to the relay matting receptacle. Take care and do not use excessive force to plug-in and plug-out these connectors.

Used RJ45 connector type are screened and designed to guarantee low resistance to shell electrical continuity, they are particularly adapted to applications where electromagnetic compatibility (EMC) is important. The connectors are robust, but it is necessary to put attention during assembling - don’t use strength!

**Connection to the sensor**
The connection between cable and sensor is provided by LEMO/ODU push-pull type connector, see Fig.8.

4. **Instructions for use**
The current sensors are used:
- to convert large currents in the primary circuit of the network to an appropriate signal for secondary circuit equipment (e.g. protective relays)
- to insulate primary and secondary circuits from each other
- to protect secondary equipments from the harmful effects of large currents during a short-circuit 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:

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

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:** The maximum power-frequency test voltage for current sensor secondary terminals (connector) is 0.82 kV. Test voltage can be connected between short-circuits signal wires and the earth.

5. **Instructions for maintenance**
The current sensor does not need any maintenance during the normal use. When needed, sensor can be cleaned by dry cloth or with industrial alcohol. Petrol, toluene or other solvents are not allowed!
6. Transport and storage

The permissible transport and storage temperature for sensors is -40...+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.
Dimensional Drawing

KECA 80 C260
3 position mounting system

GROUNDING WIRE 0.5m, EYE Ø 8.3mm

CONNECTOR RJ45, CAT 6

PIN 1 - COIL START (S1)
PIN 2 - COIL END (S2)
KECA 80 C260
4 position mounting system