MEDIUM VOLTAGE PRODUCT

KEVA 24 Cxx(c) indoor voltage sensors with 3.25V output
Instructions for installation, use and maintenance
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Instructions for installation, use and maintenance for the KEVA 24 Cxx(c) indoor voltage sensors with 3.25V output

These instructions for installation, use and maintenance are valid for KEVA 24 Cxx(c) types voltage electronic transformers (Low-power passive voltage transformers according to IEC 61869-11 standard) operating in indoor conditions. The voltage sensors type KEVA 24 Cxx(c) are intended for use in voltage measurement in gas insulated medium voltage switchgear.

The voltage sensors are designed as easy replacement of originally used insulating plugs in the cable connectors (e.g. NEXANS-EUROMOLD, ABB KABELDON, NKT, TE CONNECTIVITY-RAYCHEM, CELLPACK, PRYSMIAN, SÜDKABEL). Due to their compact size and optimized design sensors can be used for retrofit purposes as well as in new installations. The housing of sensors is made from plastic; the internal parts are shielded and earthed.

<table>
<thead>
<tr>
<th>Sensor type designation</th>
<th>Cable connectors</th>
<th>Manufacturer</th>
<th>Type</th>
<th>Connecting screw for sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>KEVA 24 C10 KEVA 24 C10c</td>
<td>Nexans-Euromold</td>
<td>(K)400 TB/G; (K)440 TB/G; (K)944 TB/G; (K)400 TE/G; (K)400 BE/G-E</td>
<td>KAA4 400PB-xSA (x = up to 24 kV)</td>
<td>M16</td>
</tr>
<tr>
<td>KEVA 24 C10 KEVA 24 C10c</td>
<td>Cellpack</td>
<td>CTS-6 630A</td>
<td>FMCTs-400</td>
<td></td>
</tr>
<tr>
<td>KEVA 24 C10 KEVA 24 C10c</td>
<td>Prysmian</td>
<td>FMCTs-1250 (C/D)</td>
<td>FMCTXs-630/C</td>
<td></td>
</tr>
<tr>
<td>KEVA 24 C10 KEVA 24 C10c</td>
<td>Südkabel</td>
<td>SEHDT 13, 23</td>
<td>MUT 33</td>
<td></td>
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<tr>
<td>KEVA 24 C21 KEVA 24 C21c</td>
<td>ABB Kabeldon</td>
<td>CSE-A 12630, CSE-A 24630</td>
<td>CSEP-A 12630, CSEP-A 24630</td>
<td>M16</td>
</tr>
<tr>
<td>KEVA 24 C21 KEVA 24 C21c</td>
<td>NKT</td>
<td>CB 12-630, CB 24-630</td>
<td>CC 12-630, CC 24-630</td>
<td>M12</td>
</tr>
<tr>
<td>KEVA 24 C21 KEVA 24 C21c</td>
<td>TE connectivity</td>
<td>CB 40,5 630 (max for 24 kV)</td>
<td>CSA M12, CSA M16</td>
<td></td>
</tr>
<tr>
<td>KEVA 24 C22 KEVA 24 C22c</td>
<td>NKT</td>
<td>CBC 40,5 630 (max for 24 kV)</td>
<td>CB 36-400 (for max 24 kV)</td>
<td></td>
</tr>
<tr>
<td>KEVA 24 C22 KEVA 24 C22c</td>
<td>TE connectivity</td>
<td>RSTI LSxx</td>
<td>RSTI-CC LSxx</td>
<td></td>
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<tr>
<td>KEVA 24 C22 KEVA 24 C22c</td>
<td>TE connectivity</td>
<td>RSTI 58xx/39xx</td>
<td>RSTI 58xx/39xx</td>
<td>M16</td>
</tr>
<tr>
<td>KEVA 24 C22 KEVA 24 C22c</td>
<td>TE connectivity</td>
<td>RSTI 58xx/39xx</td>
<td>RSTI LCxx/LAxx (older)</td>
<td></td>
</tr>
<tr>
<td>KEVA 24 C22 KEVA 24 C22c</td>
<td>TE connectivity</td>
<td>RSTI CC L56xx</td>
<td>RSTI-CC L56xx</td>
<td></td>
</tr>
<tr>
<td>KEVA 24 C23 KEVA 24 C23c</td>
<td>NKT</td>
<td>CB 12-630, CB 24-630</td>
<td>CC 12-630, CC 24-630</td>
<td></td>
</tr>
<tr>
<td>KEVA 24 C23 KEVA 24 C23c</td>
<td>NKT</td>
<td>CBC 40,5 630 (max for 24 kV)</td>
<td>CSA M12, CSA M16</td>
<td></td>
</tr>
<tr>
<td>KEVA 24 C23 KEVA 24 C23c</td>
<td>NKT</td>
<td>(K)430 TB</td>
<td>(K)300 PBM/G-630 A</td>
<td></td>
</tr>
<tr>
<td>KEVA 24 C23 KEVA 24 C23c</td>
<td>NKT</td>
<td>300 SA-10-xN (x = up to 24 kV)</td>
<td>MSCEA/EC-630-C</td>
<td></td>
</tr>
<tr>
<td>KEVA 24 C24 KEVA 24 C24c</td>
<td>Nexans-Euromold</td>
<td>(K)430 TB</td>
<td>(K)300 PBM/G-630 A</td>
<td>M16</td>
</tr>
<tr>
<td>KEVA 24 C24 KEVA 24 C24c</td>
<td>Prysmian</td>
<td>FMCEAs 630/400</td>
<td>MSCEA/EC-630-C</td>
<td></td>
</tr>
</tbody>
</table>
1. Operating conditions

The sensors should be mounted in dry, indoor conditions without excess ingress of dust and corrosive gases. The sensors shall be protected against unusually heavy deposits of dust or similar pollution, as well as against direct sunshine. The sensors are designed for standard ambient temperature between -25°C and +55°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 sensors may also be used at higher altitudes when agreed upon with the manufacturer.

2. Technical details

For sensor dimensions see dimension drawings at the end of these instructions. Interface of KEVA 24 C10(c) sensor (dimensions of sensor cone) is done according to CENELEC EN 50180 & 50181 type C. Interfaces of other sensors KEVA 24 C2x(c) are given by manufacturers, please refer to the sensor drawings below. 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.

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Tab. 1. Sensor variants and use in cable connectors

<table>
<thead>
<tr>
<th>Sensor type designation</th>
<th>Cable connectors</th>
<th>Manufacturer</th>
<th>Type</th>
<th>Connecting screw for sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>KEVA 24 C25</td>
<td>Cellpack</td>
<td>CTKS 630A 24 kV</td>
<td>M16</td>
<td></td>
</tr>
<tr>
<td>KEVA 24 C25c</td>
<td></td>
<td>CTS 630A 24kV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>KEVA 24 C26</td>
<td>Südakabel</td>
<td>SET 12, 24, SAT 12,24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>KEVA 24 C26c</td>
<td></td>
<td>SEHDK 13.1, 23.1, SAK 12,24</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>SEHDT 23.1</td>
<td>M16</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>MUT 23, MUT 23.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>AD 23.1 SP</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: For use in alternative cable connectors please contact ABB.

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Tab. 3. Labels abbreviation definitions

<table>
<thead>
<tr>
<th>KEVA 24 C10c</th>
<th>Type code</th>
</tr>
</thead>
<tbody>
<tr>
<td>S/N</td>
<td>Serial number 1VLT5416001234</td>
</tr>
<tr>
<td>Upr</td>
<td>Rated primary voltage</td>
</tr>
<tr>
<td>Usr</td>
<td>Rated secondary voltage</td>
</tr>
<tr>
<td>Rbr</td>
<td>Rated burden (in case of rated burned 2 MO, 50pF, this value will not be given on rating plate.)</td>
</tr>
<tr>
<td>cl</td>
<td>Accuracy class</td>
</tr>
<tr>
<td>Fv</td>
<td>Rated voltage factor</td>
</tr>
<tr>
<td>fr</td>
<td>Rated frequency in Hz</td>
</tr>
<tr>
<td>24/50/125 kV</td>
<td>Insulation level</td>
</tr>
<tr>
<td>0.62 kV</td>
<td>Insulation requirement for secondary terminal - power frequency voltage withstand capacity</td>
</tr>
<tr>
<td>0.85 kg</td>
<td>Weight</td>
</tr>
<tr>
<td>E</td>
<td>Insulation class</td>
</tr>
<tr>
<td>IEC 61869-11</td>
<td>IEC – standard referred to</td>
</tr>
<tr>
<td>-25/55°C</td>
<td>Ambient temperature</td>
</tr>
<tr>
<td>24 Oct 2018</td>
<td>Date of production</td>
</tr>
</tbody>
</table>

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Connected device shall fulfill requirements according IEC 61869-11 for nominal burden. Standard define to have input impedance 2MΩ and 50pF. Other option to have 200 kΩ ±1% which cover other solution from some other suppliers. Impact of other devices with different input impedance can have influence on output of sensors and defined accuracy is not valid.

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 shall be between 0 and +40°C. The sensor cable shall not be moved or bent if the temperature is below 0°C.

**Mechanical installation**
The sensors can be mounted into the multiple types of cable connectors according to the used type according Tab. 1. The mounting position for voltage sensor is shown in Fig. 3. The sensor is screwed into the cable connectors. Proper mounting is ensured by the tightening hex nut of size 24 mm which is part of the grounding cover (recommended tightening torque shall be used) - see next pages.

| POSITION | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|----------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|
| DATA     | KEVAC |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| POSITION | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 |
| DATA     | 1VLT5416001234 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| POSITION | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 |
| DATA     | OICT2018CFU |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| POSITION | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 |     |
| DATA     | F0000F |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

Required input impedance:
- 2 MΩ/50 pF
- 200 kΩ/350 pF
Before mounting of sensor remove dust from the surface of sensor using a paper towel. Then a mounting grease (e.g. Nexans-Euromold: Nova-gard G687 or PE 1352 WT; Cellpack: GM1; Prysmian: Silicone; Südkabel: AP; ABB-Kabeldon: IK2233; NKT: MV3; TE connectivity-Raychem: EPPA-064-60; or any other recommended by producers of cable connectors) must be used on the contact surface between the sensor and the cable connector to avoid the formation of air bubbles. The mounting grease contributes in making interfaces watertight and easy to install, see Fig. 4. Use a brush or a glove (for KEVA 24 C10(c), KEVA 24 C25(c) for lightly lubricating of the mounting grease.
Mechanical installation KEVA 24 C10 and KEVA 24 C10c

The KEVA 24 C10(c) sensors are designed to be fixed to the cable connector using the screw M16 which is a part of the cable connectors, see Fig. 5 – picture 4.

**Attention:** Be careful when unpacking and handling to avoid damages to the sensor. Damages that occur during unpacking or poor handling will not be covered by the warranty.

Mechanical installation according to the next steps, see Fig. 5:

- **0 step** the state before of installation process, see picture 0
- **1 step** remove the conductive protection cap, see picture 1
- **2 step** remove the insulating plug, see picture 2
- **3 step** clean the inside surface of the connector by Cellpack cleaning tissue, consistently must be checked that on the surface of inside cone are not the metal burrs, see picture 3
- **4 step** check the tightening of the screw M16, the tightening hex nut of size 22 mm, recommended tightening torque 50 Nm shall be used, see picture 4, in order to achieve the correct applied torque ensure that there is no lubricant on the threaded parts
- **5 step** lightly lubricate the lubricant and filling agent GM1 on the inside connector surface (where there is contact between the sensor and the cable connector) by glove, first consistently must be checked that on the surface of inside cone are not any metal burrs, see picture 4
- **6 step** screw the KEVA 24 C10(c) sensor, the tightening hex nut of size 24 mm, recommended tightening torque 30 Nm shall be used, in order to achieve the correct applied torque ensure that there is no lubricant on the threaded parts.

**Attention:** During assembling, ventilate the air with a tongue EH from the applicator AH. Moisten the tongue slightly with GM1 before using (see picture 5). When the cone of sensor is 2 mm from the connector body, pull gently the tongue then tighten and use the cleaning tissue to remove remaining lubricant and filling agent GM1.

- **7 step** connect the grounding wire by a screw M8 which is at the frame, see picture 6
- **8 step** connect the secondary cable of sensor KEVA 24 C10(c) to the BNC connector (check that secondary cable with the same ID number as mentioned on the sensor label is connected), see picture 7
Mechanical installation KEVA 24 C21 and KEVA 24 C21c
The KEVA 24 C21(c) sensors are designed to be fixed to the ABB Kabeldon cable connectors using the screw M16 which is a part of the cable connectors, see Fig. 6 – pictures 4, 5 and 6.

Attention: Be careful when unpacking and handling to avoid damages to the sensor. Damages that occur during unpacking or poor handling will not be covered by the warranty.

Mechanical installation according to the next steps, see Fig. 6:

0 step  the state before of installation process, see picture 0
1 step  remove the plug cover, see picture 1
2 step  remove the insulating plug, see picture 2
3 step  clean the inside surface of the connector by paper towel, consistently must be checked that on the surface of inside cone are not the metal burrs, see picture 3
4 step  check the tightening of the screw M16, the tightening internal hexagon of size 8, recommended tightening torque 45 Nm shall be used, see picture 4 and 5, in order to achieve the correct applied torque ensure that there is no lubricant on the threaded parts
5 step  lightly lubricate the IK 2233 mounting grease on the inside connector surface (where there is contact between the sensor and the cable connector, see picture 6) by brush or glove, first consistently must be checked that on the surface of inside cone are not any metal burrs, see picture 4
6 step  screw the KEVA 24 C21(c) sensor, the tightening hex nut of size 24 mm, recommended tightening torque 15 Nm shall be used, see picture 6, in order to achieve the correct applied torque ensure that there is no lubricant on the threaded parts
7 step  connect the grounding wire by a screw M8 which is at the frame, see picture 7
8 step  connect the secondary cable of sensor KEVA 24 C21(c) to the BNC connector (check that secondary cable with the same ID number as mentioned on the sensor label is connected), see picture 8
Mechanical installation KEVA 24 C22 and KEVA 24 C22c

The KEVA 24 C22(c) sensors are designed to be fixed to the NKT (TE connectivity-Raychem) cable connectors using the screw M12 which is a part of the cable connectors, see Fig. 7 – pictures 4, 5 and 6.

Attention: Be careful when unpacking and handling to avoid damages to the sensor. Damages that occur during unpacking or poor handling will not be covered by the warranty.

Mechanical installation according to next steps, see Fig. 7:

0 step the state before of installation process, see picture 0
1 step remove the plug cover, see picture 1
2 step remove the insulating plug, see picture 2
3 step clean the inside surface of the connector by paper towel, consistently must be checked that on the surface of inside cone are not the metal burrs, see picture 3
4 step check the tightening of the screw M16, the tightening hex nut of size 14 mm or the internal hexagon of size 6, recommended tightening torque 35 Nm shall be used, than the tightening hex of size 19 mm, recommended tightening torque 30 Nm shall be used, see picture 4 and 5, in order to achieve the correct applied torque ensure that there is no lubricant on the threaded parts
5 step lightly lubricate the NKT: MV3; TE connectivity-Raychem: EPPA-064-60 mounting grease on the inside connector surface (where there is contact between the sensor and the cable connector, see picture 6) by brush or glove, first consistently must be checked that on the surface of inside cone are not any metal burrs, see picture 4
6 step screw the KEVA 24 C22(c) sensor, the tightening hex nut of size 24 mm, recommended tightening torque 30 Nm for NKT and TE connectivity-Raychem shall be used, see picture 6, in order to achieve the correct applied torque ensure that there is no lubricant on the threaded parts

Attention: During assembling, ventilate the air with a cable tie or string. When the cone of sensor is 2 mm from the connector body, pull the cable tie then tighten.

7 step connect the grounding wire by a screw M8 which is at the frame, see picture 7
8 step connect the secondary cable of KEVA 24 C22(c) sensor to the BNC connector (check that secondary cable with the same ID number as mentioned on the sensor label is connected), see picture 8
Mechanical installation KEVA 24 C23 and KEVA 24 C23c

The KEVA 24 C23(c) sensors are designed to be fixed to the TE connectivity-Raychem (NKT) cable connectors using the screw M16 which is a part of the cable connectors, see Fig. 8 – pictures 4, 5 and 6.

Attention: Be careful when unpacking and handling to avoid damages to the sensor. Damages that occur during unpacking or poor handling will not be covered by the warranty.

Mechanical installation according to the next steps, see Fig. 8:

0 step the state before of installation process, see picture 0
1 step remove the plug cover, see picture 1
2 step remove the insulating plug, see picture 2
3 step clean the inside surface of the connector by paper towel, consistently must be checked that on the surface of inside cone are not the metal burrs, see picture 3
4 step check the tightening of the screw M16, the tightening internal hexagon of size 8, recommended tightening torque 35 Nm shall be used, than the tightening hex nut of size 24 mm, recommended tightening torque 30 Nm shall be used, see picture 4 and 5, in order to achieve the correct applied torque ensure that there is no lubricant on the threaded parts
5 step lightly lubricate the NKT: MV3; TE connectivity-Raychem: EPPA-064-60 mounting grease on the inside connector surface (where there is contact between the sensor and the cable connector, see picture 6) by brush or glove, first consistently must be checked that on the surface of inside cone are not any metal burrs, see picture 4
6 step screw the KEVA 24 C23(c) sensor, the tightening hex nut of size 24 mm, recommended tightening torque 30 Nm for TE connectivity-Raychem and NKT shall be used, see picture 6, in order to achieve the correct applied torque ensure that there is no lubricant on the threaded parts
Attention: During assembling, ventilate the air with a cable tie or string. When the cone of sensor is 2 mm from the connector body, pull the cable tie then tighten.
7 step connect the grounding wire by a screw M8 which is at the frame, see picture 7
8 step connect the secondary cable of KEVA 24 C23(c) sensor to the BNC connector (check that secondary cable with the same ID number as mentioned on the sensor label is connected), see picture 8
Mechanical installation KEVA 24 C24 and KEVA 24 C24c
The KEVA 24 C24(c) sensors are designed to be fixed to the cable connector using the screw M16 which is a part of the cable connectors, see Fig. 9 – pictures 4, 5 and 6.

**Attention:** Be careful when unpacking and handling to avoid damages to the sensor. Damages that occur during unpacking or poor handling will not be covered by the warranty.

**Important notes:** Do not allow hydrocarbon oils or solvents to contaminate the E.P.D.M. rubber of cable connector.

Mechanical installation according to next steps, see Fig. 9:

0 step the state before of installation process, see picture 0
1 step remove the plug cover, see picture 1
2 step remove the insulating plug, see picture 2
3 step clean the inside surface of the connector by paper towel or dry cloth, consistently must be checked that on the surface of inside cone are not the metal burrs, see picture 3,
4 step check the tightening of the screw M16, the tightening hex nut of size 22 mm, recommended tightening torque 50 Nm for Nexans-Euromold; 40 Nm for Prysmian shall be used, see picture 4 and 5, in order to achieve the correct applied torque ensure that there is no lubricant on the threaded parts
5 step lightly lubricate the Nexans-Euromold: Novagard G687 or PE 1352 WT silicone; Prysmian: Silicone grease on the inside connector surface (where there is contact between the sensor and the cable connector, see picture 6) by brush or glove, first consistently must be checked that on the surface of inside cone are not any metal burrs, see picture 4
6 step screw the KEVA 24 C24(c) sensor, the tightening hex nut of size 24 mm, recommended tightening torque 30 Nm for Nexans, 25 Nm for Prysmian shall be used, see picture 6, in order to achieve the correct applied torque ensure that there is no lubricant on the threaded parts
7 step connect the grounding wire by a screw M8 which is at the frame, see picture 7
8 step connect the secondary cable of sensor KEVA 24 C24(c) to the BNC connector (check that secondary cable with the same ID number as mentioned on the sensor label is connected), see picture 8
Mechanical installation KEVA 24 C25 and KEVA 24 C25c

The KEVA 24 C25(c) sensors are designed to be fixed to the Cellpack cable connectors using the screw M16 which is a part of the cable connectors, see Fig. 10 – picture 4.

**Attention:** Be careful when unpacking and handling to avoid damages to the sensor. Damages that occur during unpacking or poor handling will not be covered by the warranty.

Mechanical installation according to the next steps, see Fig. 10:

0 step the state before of installation process, see picture 0

1 step remove the conductive protection cap, see picture 1

2 step remove the insulating plug, see picture 2

3 step clean the inside surface of the connector by Cellpack cleaning tissue, consistently must be checked that on the surface of inside cone are not the metal burrs, see picture 3

4 step check the tightening of the screw M16, the tightening hex nut of size 22 mm, recommended tightening torque 50 Nm shall be used, see picture 4, in order to achieve the correct applied torque ensure that there is no lubricant on the threaded parts

5 step lightly lubricate the lubricant and filling agent GM1 on the inside connector surface (where there is contact between the sensor and the cable connector), use glove, first consistently must be checked that on the surface of inside cone are not any metal burrs, see picture 4

6 step screw the KEVA 24 C25(c) sensor, the tightening hex nut of size 24 mm, recommended tightening torque 30 Nm shall be used, in order to achieve the correct applied torque ensure that there is no lubricant on the threaded parts

**Attention:** During assembling, ventilate the air with a tongue EH from the applicator AH. Moistening the tongue slightly with GM1 before using (see picture 5). When the cone of sensor is 2 mm from the connector body, pull gently the tongue then tighten and use the cleaning tissue to remove remaining lubricant and filling agent GM1.

7 step connect the grounding wire by a screw M8 which is at the frame, see picture 6

8 step connect the secondary cable of sensor KEVA 24 C25(c) to the BNC connector (check that secondary cable with the same ID number as mentioned on the sensor label is connected), see picture 7
Mechanical installation KEVA 24 C26 and KEVA 24 C26c

The KEVA 24 C26(c) sensors are designed to be fixed to the Südkabel cable connectors using the screw M16 which is a part of the cable connectors, see Fig. 11 – pictures 4, 5 and 6.

**Attention:** Be careful when unpacking and handling to avoid damages to the sensor. Damages that occur during unpacking or poor handling will not be covered by the warranty.

Mechanical installation according to next steps, see Fig. 11:

0 step  the state before of installation process, see picture 0
1 step  remove the plug cover, see picture 1
2 step  remove the insulating plug, see picture 2
3 step  clean the inside surface of the connector by paper towel or dry cloth, consistently must be checked that on the surface of inside cone are not the metal burrs, see picture 3,
4 step  check the tightening of the screw M16, the tightening hex nut of size 22 mm, recommended tightening torque 45 Nm shall be used, see picture 4 and 5, in order to achieve the correct applied torque ensure that there is no lubricant on the threaded parts
5 step  lightly lubricate the AP installation grease on the inside connector surface (where there is contact between the sensor and the cable connector, see picture 6) by brush or glove, first consistently must be checked that on the surface of inside cone are not any metal burrs, see picture 4
6 step  screw the KEVA 24 C26(c) sensor, the tightening hex nut of size 24 mm, recommended tightening torque 15 Nm shall be used, see picture 6, in order to achieve the correct applied torque ensure that there is no lubricant on the threaded parts
7 step  connect the grounding wire by a screw M8 which is at the frame, see picture 7
8 step  connect the secondary cable of sensor KEVA 24 C26(c) to the BNC connector (check that secondary cable with the same ID number as mentioned on the sensor label is connected), see picture 8
Secondary cable, secondary connections

The secondary cable is a special shielded cable designed to give maximum EMI shielding. The secondary cable is 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 shall 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 Intelligent Electronic Device (e.g. protection relay). The electrical shielding of cable is connected to connector shielding and shall be earthed on IED side. The cable shall be fixed close to metal wall or inserted inside of metal cable tray far from power cables! The minimal bending radius for the secondary cable is 35 mm. The cable cannot to be moved if the temperature is below 0°C. If cable, connector or connector grommet is damaged please contact the manufacturer for instructions.

Connection to the IED

The sensor cable is terminated by shielded RJ45 plug connector that shall be connected to the inputs of the IED.

Note: It is recommended to use a cable tie to fasten long sensor cables approximately 10 cm from the RJ45 socket.

A cable not connected to the IED can be left open or short-circuited without any harm for the sensor. Nevertheless it is a good safety practice to earth cables not connected to the IED.

RJ45 plug connector has 8 contacts and locking latch coupling. The sensor connector plug shall be inserted properly with the IED mating receptacle before completing the coupling with the bayonet lock. Take care and do not use excessive force to plug-in and plug-out these connectors.

The used RJ45-type connectors (EIA/TIA 568A Standard) 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!

Grounding terminal

The sensor grounding terminal is located on the same side as the sensor secondary cable and shall be connected to the ground during the sensor operation. To ground the sensor the grounding wire (length 0,5 m) with the cable eye M8 is used.
4. Instructions for use

The voltage sensors are used:

• To convert large voltages 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 equipments from harmful effects or large voltages 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 the following tests:

a) Verification of terminal marking;
b) Power-frequency withstand test on primary voltage terminal;
c) Partial discharge measurement;
d) 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.

5. Instructions for maintenance

Excessive dust or other kinds of pollution must be brushed off the sensor. Polluted sensors can be cleaned with spirit or petrol. 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 -40°C...+80°C. During transport and storage the sensors shall be protected against direct sunshine. The sensors are delivered packed into paper boxes or transport pallets. The conical surface must be protected against damage.

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 Drawings

KEVA 24 C10(c)

Outline drawing numbers:
2RKA015654A0001 (KEVA 24 C10)
2RKA015654A0002 (KEVA 24 C10c)

Weight: 0.85 kg
KEVA 24 C21(c)

Outline drawing numbers:
2RKA017064A0001 (KEVA 24 C21)
2RKA017064A0002 (KEVA 24 C21c)

Weight: 0.85 kg
KEVA 24 C22(c)

Outline drawing numbers:
2RKA017065A0001 (KEVA 24 C22)
2RKA017065A0002 (KEVA 24 C22c)

Weight: 0.85 kg
KEVA 24 C23(c)

Connection interface is by Raychem and NKT

Tightening hexagon 24

Rating plate

Grounding wire length 0.5m, eye M8

Secondary cable several lengths

With or without conductive layer

Connector RJ45 CAT6

* Available reduction M16/M12

Outline drawing numbers:
2RKA017066A0001 (KEVA 24 C23)
2RKA017066A0002 (KEVA 24 C23c)

Weight: 0.85 kg
KEVA 24 C25(c)

Outline drawing numbers:
2RKA019522A0001 (KEVA 24 C25)
2RKA019522A0002 (KEVA 24 C25c)

Weight: 0.85 kg
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