Safety Instructions

**Memosens COS22E**

**Memosens COS51E**

EAC Ex 0Ex ia IIC T6 ... T4 Ga X

Safety instructions for electrical apparatus in explosion-hazardous areas
Memosens COS22E
Memosens COS51E

EAC Ex 0Ex ia IIC T6 ... T4 Ga X

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Associated documentation

This document is an integral part of the Memosens COS22E Operating Instructions BA02145C.
This document is an integral part of the Memosens COS51E Operating Instructions BA02146C.

Supplementary documentation

- Competence Brochure CP00021Z
  - Explosion Protection: Guidelines and General Principles
  - www.endress.com

Identification

The nameplate provides you with the following information on your device:
- Manufacturer identification
- Order code
- Extended order code
- Serial number
- Safety information and warnings

- Compare the information on the nameplate with the order.

Ex-approval

EAC Ex

0Ex ia IIC T6...T3 Ga

Notified body

ООО "НАНИО ЦСВЭ"
Russian Federation

Safety instructions

The Memosens COS22E and COS51E oxygen sensors are suitable for use in hazardous areas in accordance with:
EAC Ex certificate ЕАЭС RU C-DE.AA87.B.00833/21

- The product has been certified in accordance with Directive TR CU 012/2011 valid within the Eurasian Economic Area (EAEU). The EAC conformity mark has been affixed to the product.
- A maximum ambient temperature of 90 °C (194 °F) must not be exceeded at the sensor head.
- Oxygen sensors for use in hazardous areas have a special conductive O-ring. The electrical connection of the metallic sensor shaft to the conductive mounting location (such as a metallic assembly) is via the O-ring.
- Appropriate measures must be taken to connect the assembly or the mounting location to ground in accordance with the Ex guidelines.
- The plastic housing may only be cleaned with a damp cloth.
- Hazardous area versions of digital sensors with Memosens technology are marked by an orange/red ring on the plug-in head.
- The maximum permitted cable length between the sensor and transmitter is 100 m (330 ft).
- When using devices and sensors, observe the regulations for electrical systems in hazardous areas (EN/IEC 60079-14).

Only Memosens COS22E:
- Oxygen sensors for use in hazardous areas have a special conductive O-ring. The electrical connection of the metallic sensor shaft to the conductive mounting location (such as a metallic assembly) is via the O-ring.
- Sensors containing parts made of titanium or other light metals must be protected against impact.
- The sensors must not be operated under electrostatically critical process conditions. Avoid strong steam or dust currents that act directly on the connection system.

Only Memosens COS51E:
- The sensors may not be operated under electrostatically critical process conditions in which electrostatic charging of the sensor and the connection system is likely to occur.
- Use of the sensor for its intended purpose in liquids with a conductivity of at least 10 nS/cm can be classified as electrostatically safe.

<table>
<thead>
<tr>
<th>Memosens</th>
<th>COS22E-aabbccdde+g</th>
</tr>
</thead>
<tbody>
<tr>
<td>aa</td>
<td>Approval (no ex-relevance)</td>
</tr>
<tr>
<td></td>
<td>GA</td>
</tr>
<tr>
<td></td>
<td>OEx ia IIC T6 ... T4 Ga X</td>
</tr>
<tr>
<td>bb</td>
<td>Measuring range (no ex-relevance)</td>
</tr>
<tr>
<td>cc</td>
<td>Cap characteristics</td>
</tr>
<tr>
<td></td>
<td>AA = Stainless steel</td>
</tr>
<tr>
<td></td>
<td>BA = Titanium</td>
</tr>
<tr>
<td></td>
<td>CA = Alloy C22</td>
</tr>
<tr>
<td></td>
<td>YY = Special version</td>
</tr>
<tr>
<td>dd</td>
<td>Sensor length (no ex-relevance) max. 600 mm</td>
</tr>
<tr>
<td>e</td>
<td>Material of O-ring (in the cap) (no ex-relevance)</td>
</tr>
<tr>
<td>g</td>
<td>Optional = one or more characters determining optional features (no ex-relevance), e.g. test or other certificates/declarations</td>
</tr>
</tbody>
</table>
Temperature tables

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Process temperature $T_p$</th>
<th>Ambient temperature $T_a$</th>
</tr>
</thead>
<tbody>
<tr>
<td>COS22E</td>
<td>-5 ≤ $T_p$ ≤ 70 °C (T6)</td>
<td>-25 ≤ $T_a$ ≤ 70 °C (T6)</td>
</tr>
<tr>
<td></td>
<td>-5 ≤ $T_p$ ≤ 100 °C (T4)</td>
<td>-25 ≤ $T_a$ ≤ 70 °C (T4)</td>
</tr>
<tr>
<td>COS51E</td>
<td>-5 ≤ $T_p$ ≤ 60 °C (T6)</td>
<td>-5 ≤ $T_a$ ≤ 60 °C (T6)</td>
</tr>
</tbody>
</table>

The above temperature table applies only under the following installation conditions, which are described in the following graphic → 7. If the installation conditions cannot be met, the maximum process temperature $T_p$ must not exceed the maximum ambient temperature $T_a$.

Connection

Ex specification

- The Memosens COS22E and Memosens COS51E oxygen sensors are approved EAC Ex certificate ЕАЭС RU C-DE.AA87.B.00833/21 and suitable for use in hazardous environments.
- The approved Memosens COS22E and Memosens COS51E digital oxygen sensors have an intrinsically safe input with the following parameter set:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$P_i$</td>
<td>180 mW</td>
</tr>
</tbody>
</table>

The approved Memosens COS22E and Memosens COS51E digital oxygen sensors must be connected to a Memosens cable or cable transmitter with intrinsically safe output with the following parameter:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$P_o$</td>
<td>max. 180 mW</td>
</tr>
</tbody>
</table>
1 Installation conditions

1 Limit
2 Distance between plug-in head (lower edge) and process medium, without ring and thrust collar
3 Process temperature range $T_p$
4 Ambient temperature range $T_a$