

Safety Instructions

Memosens COS22E

Memosens COS51E

Supplement to BA02145C

Supplement to BA02146C

Safety instructions for electrical apparatus in explosion-hazardous areas



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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.

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

JapanEx

Ex ia IIC T6... T4 Ga

The product meets the requirements of the Regulation on the Testing of Machinery and other Instruments set down by the Ministry of Health, Labor and Welfare in Japan.

Safety instructions

Oxygen sensors Memosens COS22E and COS51E are suitable for use in explosive atmospheres according to:

JPN type-examination certificate **CML 21JPN2324X** including appendices

- A maximum ambient temperature of 90 °C (194 °F) must not be exceeded at the sensor head.
- Oxygen sensors for use in the hazardous area have a special conductive O-ring. The metallic sensor shaft is electrically connected to the conductive mounting location (for example a metallic assembly) 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, comply with the regulations for electrical systems in explosive atmospheres (e.g. JNIO SH-TR-NO. 44).
- This device also complies with the following standards:
 - JNIO SH-TR-46-1:2015 "Equipment – General requirements"
 - JNIO SH-TR-46-6:2015 "Equipment protection by intrinsic safety "i" "
 - JNIO SH-TR-46-11 "Protection of equipment and transmission systems using optical radiation "op" "

Only Memosens COS22E:

- Oxygen sensors for use in the hazardous area have a special conductive O-ring. The metallic sensor shaft is electrically connected to the conductive mounting location (for example a metallic assembly) 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.


Type code

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

Memosens	COS51E-aabbcc+g	
	aa	Approval (no ex-relevance) JA: Ex ia IIC T6 Ga
	bb	Measuring range (no ex-relevance)
	cc	Cap characteristics TF = Response time T90, 0.5 minutes TN = Response time T90, 3 minutes YY = Special version
	g	Optional = one or more characters determining optional features (no ex-relevance), e.g. test or other certificates/declarations

Temperature tables

Sensor	Process temperature T_p	Ambient temperature T_a
COS22E	$-5 \leq T_p \leq 70^\circ\text{C}$ (T6) $-5 \leq T_p \leq 100^\circ\text{C}$ (T4)	$-25 \leq T_a \leq 70^\circ\text{C}$ (T6) $-25 \leq T_a \leq 70^\circ\text{C}$ (T4)
COS51E	$-5 \leq T_p \leq 60^\circ\text{C}$ (T6)	$-5 \leq T_a \leq 60^\circ\text{C}$ (T6)

The above temperature table applies only under the following installation conditions, which are described in the following graphic →  6. 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

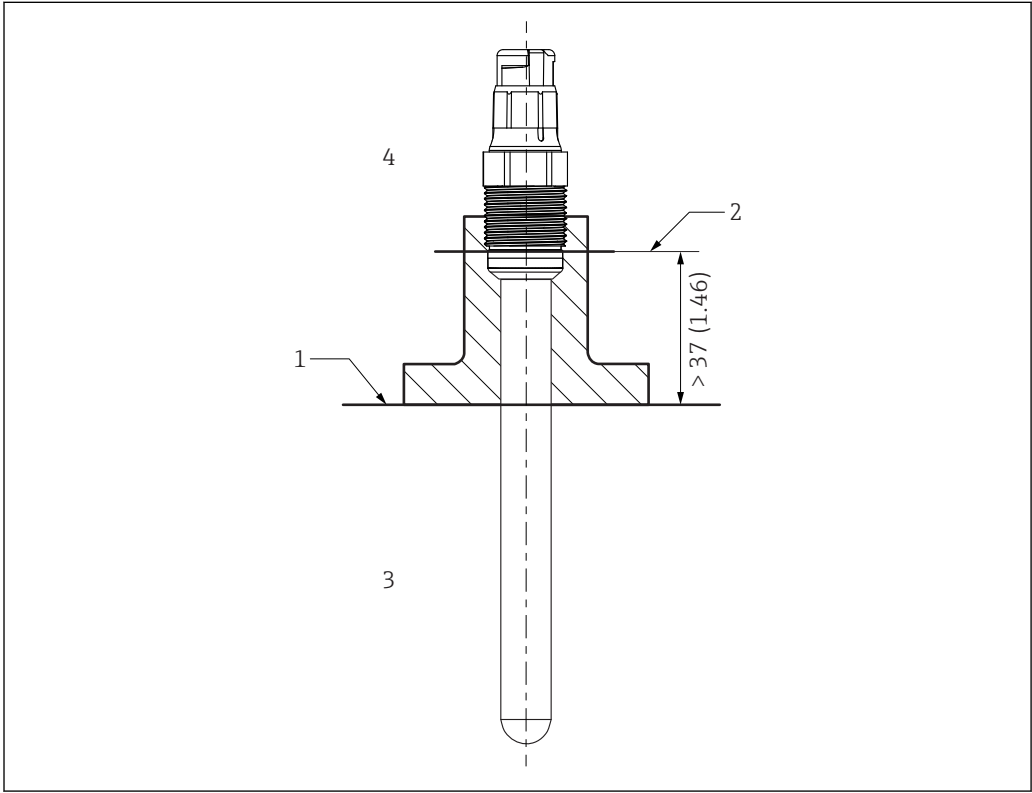
- The Memosens COS22E and Memosens COS51E oxygen sensors are approved in accordance with the JPN type-examination certificate CML 21JPN2324X and suitable for use in hazardous environments.
- The customer must apply the yellow / black stick-on label (included in the product packaging) next to the installed sensor (e.g. on the installed cable)
- The approved Memosens COS22E and Memosens COS51E digital oxygen sensors have an intrinsically safe input with the following parameter set:

Parameter	Value
P_1	180 mW

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:

Parameter	Value
P _o	max. 180 mW

Installation conditions



A0041281

- 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



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