

Safety Instructions

Memosens COS22E

Memosens COS51E

Supplement to BA02145C

Supplement to BA02146C

Safety instructions for electrical equipment for 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.
Supplementary documentation	 Competence Brochure CP00021Z ■ Explosion Protection: Guidelines and General Principles ■ www.endress.com
Manufacturer's certificate	EU Declaration of Conformity <i>CE mark</i> The product meets the requirements of the harmonized European standards. As such, it complies with the legal specifications of the EU directives. The manufacturer confirms successful testing of the product by affixing to it the CE mark.
Identification	The following information on the device can be found on the nameplate: ■ Manufacturer identification ■ Order code ■ Extended order code ■ Serial number ■ Safety information and warnings ■ Certificate number ► Compare the information on the nameplate with the order. Declaration of Conformity With this declaration of conformity, the manufacturer guarantees that the product conforms to the regulations of European EMC Directive 2014/30/EU and ATEX Directive 2014/34/EU. Compliance is verified by adherence to the standards listed in the Declaration of Conformity. Ex approvals <i>ATEX</i>  II 1G Ex ia IIC T6... T4 Ga <i>IECEx</i> Ex ia IIC T6... T4 Ga The product meets the requirements of the "IEC Certification Scheme for Explosive Atmospheres". This is verified by compliance with the standards listed in the IECEx Certificate. The IECEx certificate can be viewed on the following website: www.iecex.com. Notified body IBExU Institut für Sicherheitstechnik GmbH
Safety instructions	Oxygen sensors Memosens COS22E and COS51E are suitable for use in explosive atmospheres according to: ■ IECEx certificate IECEx IBE 20.0011X including amendments ■ EU type-examination certificate IBExU 20 ATEX 1093 X The corresponding EU Declaration of Conformity is part of this document.

- 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 (EN/IEC 60079-14).
- The procedures for electrical connection described in the Operating Instructions must be followed.
- This device has been designed and manufactured in accordance with Directive 2014/34/EU of February 26, 2014 and also complies with the following standards:
 - EN IEC 60079-0:2018 / IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment:- General requirements
 - EN 60079-11:2012 / IEC 60079-11:2011 + Cor.:2012 Explosive Atmospheres - Part 11: Equipment Protection by Intrinsic Safety "I"

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) BA: II 1G Ex ia IIC T6 ... T4 Ga IF: 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-aabcc+g	
	aa	Approval (no ex-relevance) BA: II 1G Ex ia IIC T6 ... T4 Ga IF: Ex ia IIC T6 ... T4 Ga
	bb	Measuring range (no ex-relevance)

Memosens	COS51E-aabbcc+g	
	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	$-5 \leq T_p \leq 70\text{ °C}$ (T6) $-5 \leq T_p \leq 100\text{ °C}$ (T4)	$-25 \leq T_a \leq 70\text{ °C}$ (T6) $-25 \leq T_a \leq 70\text{ °C}$ (T4)
COS51E	$-5 \leq T_p \leq 60\text{ °C}$ (T6)	$-5 \leq T_a \leq 60\text{ °C}$ (T6)

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

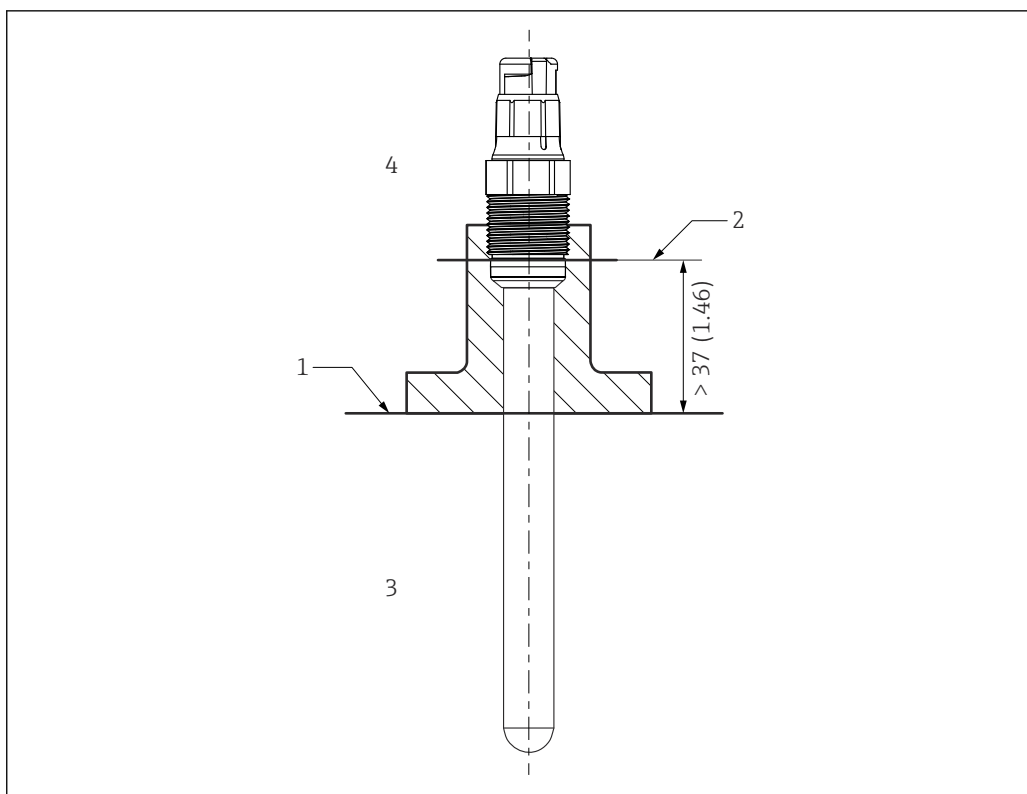
- The Memosens COS22E and Memosens COS51E oxygen sensors are approved in accordance with the EU type-examination certificate IBExU 20 ATEX 1093 X and suitable for use in hazardous environments. The corresponding EU Declaration of Conformity is an integral part of this document.
- The approved Memosens COS22E and Memosens COS51E digital oxygen sensors have an intrinsically safe input with the following parameter set:

Parameter	Value
P_i	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



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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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