Safety Instructions
Memosens COS22E
Memosens COS51E

Supplement to BA02145C
Supplement to BA02146C

Safety instructions for electrical apparatus in explosion-hazardous areas

Endress+Hauser **EH**

People for Process Automation

EU-Konformitätserklärung
EU-Declaration of Conformity
Déclaration UE de Conformité

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CE

Company	**Endress+Hauser Conducta GmbH+Co. KG**
	Dieselstraße 24, 70839 Gerlingen, Germany
	erklärt als Hersteller in alleiniger Verantwortung, dass das Produkt
	declares as manufacturer under sole responsibility, that the product
	déclare sous sa seule responsabilité en qualité de fabricant que le produit
Product	Memosens
	COS22E-BA*****+***
	COS51E-BA**+***
Regulations	den folgenden Europäischen Richtlinien entspricht:
	conforms to following European Directives:
	est conforme aux prescription des Directives Européennes suivantes :

EMC   2014/30/EU (L96/79)
ATEX   2014/34/EU (L96/309)
RoHS   2011/65/EU (L174/88)

Standards

angewandte harmonisierte Normen oder normative Dokumente:
applied harmonized standards or normative documents:
normes harmonisées ou documents normatifs appliqués :

EN 61326-1	(2013)	EN IEC 60079-0	(2018)
EN 61326-2-3	(2013)	EN 60079-11	(2012)
EN IEC 63000	(2018)		

Certification

EU-Baumusterprüfbescheinigung Nr.   IBExU 20 ATEX 1093 X
EU-Type Examination Certificate No.
Numéro de l'attestation d'examen UE de type

Ausgestellt von/issued by/délivré par   IBExU Institut für
                                                         Sicherheitstechnik GmbH
Qualitätssicherung/Quality assurance/Système d'assurance DEKRA EXAM GmbH (0158)
qualité

Gerlingen, 23.06.2021
Endress+Hauser Conducta GmbH+Co. KG

i. V. Jörg-Martin Müller   i. V. Marco Rottmann
Technology   Technology Certifications and Approvals

EC_00913_01.21

Memosens COS22E

Memosens COS51E

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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**

CE mark

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 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.

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

ATEX

⟨Ex⟩ II 1G Ex ia IIC T6... T4 Ga

IECEx

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	The Memosens COS22E and COS51E oxygen sensors are suitable for use in hazardous areas in accordance with: • IECEx certificate **IECEx IBE 20.0011X** including amendments • EU type-examination certificate **IBExU 20 ATEX 1093 X**

The corresponding EU declaration of conformity is an integral 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 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.
- Ex versions of digital sensors with Memosens technology are identified 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).
- The procedures for electrical connection described in the Operating Instructions must be followed.
- This device has been developed 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 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.

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-aabbcc+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
	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

Temperature tables

Sensor	Process temperature T_p	Ambient temperature T_a
COS22E	$-5 \leq T_p \leq 70\ °C$ (T6) $-5 \leq T_p \leq 100\ °C$ (T4)	$-25 \leq T_a \leq 70\ °C$ (T6) $-25 \leq T_a \leq 70\ °C$ (T4)
COS51E	$-5 \leq T_p \leq 60\ °C$ (T6)	$-5 \leq T_a \leq 60\ °C$ (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
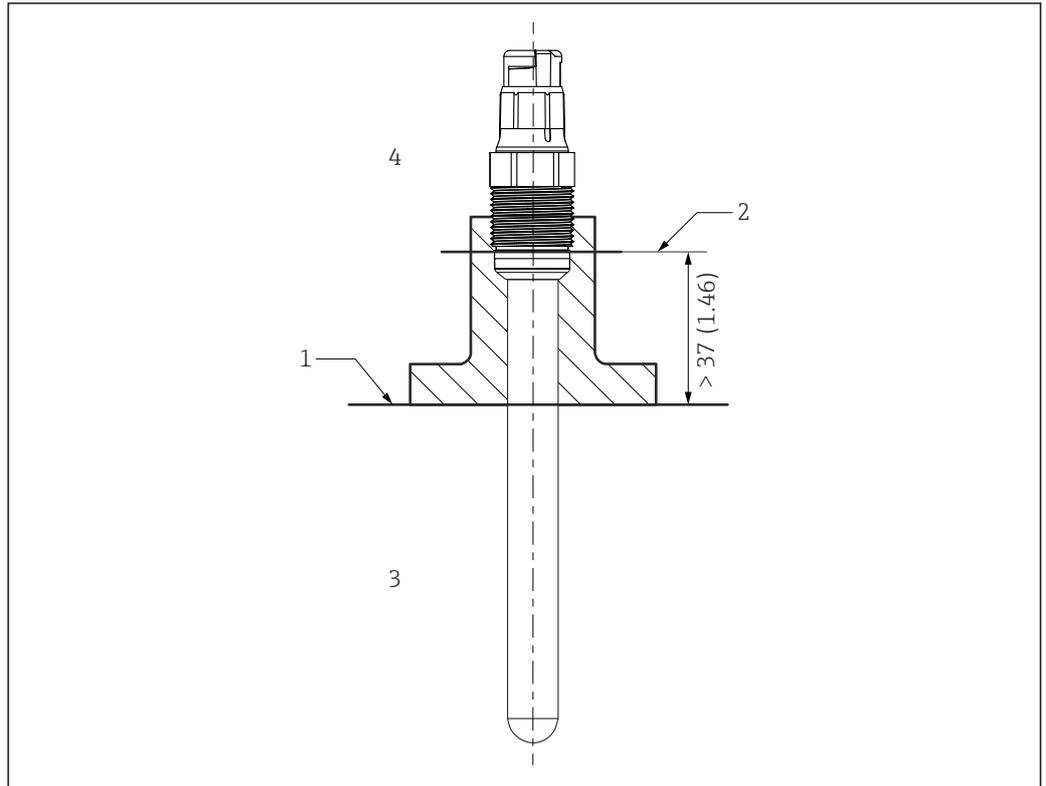
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▣ *1   Installation conditions*

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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