

# Safety Instructions

## Memosens COS22E

## Memosens COS51E

KOR Ex ia IIC T6... T4 Ga

Safety instructions for electrical apparatus in  
explosion-hazardous areas





# Memosens COS22E

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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](http://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

*KoreaEx*

Ex ia IIC T6... T4 Ga

## Notified body

KTL - Korea Testing Laboratory

## Safety instructions

The Memosens COS22E and COS51E oxygen sensors are suitable for use in hazardous areas in accordance with:

KoreaEx certificates **21-KA4BO-0439X (COS22E)** and **21-KA4BO-0440X (COS51E)**

- 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 (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 the following standards:
  - IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
  - 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) <b>KA</b> 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

Memosens	COS22E-aabccdde+g	
	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) <b>KA</b> 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	$-5 \leq T_p \leq 70 \text{ }^\circ\text{C}$ (T6) $-5 \leq T_p \leq 100 \text{ }^\circ\text{C}$ (T4)	$-25 \leq T_a \leq 70 \text{ }^\circ\text{C}$ (T6) $-25 \leq T_a \leq 70 \text{ }^\circ\text{C}$ (T4)
COS51E	$-5 \leq T_p \leq 60 \text{ }^\circ\text{C}$ (T6)	$-5 \leq T_a \leq 60 \text{ }^\circ\text{C}$ (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

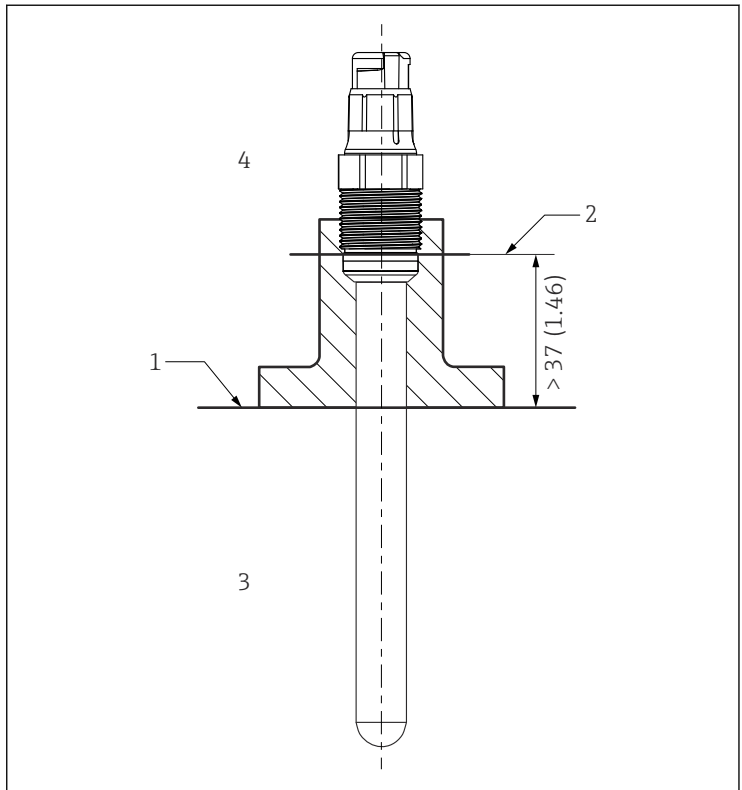
The approved Memosens COS22E and Memosens COS51E digital oxygen sensors have an intrinsically safe input with the following parameter set:

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
$P_0$	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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