Safety Instructions
Memosens COS81E

Supplement to BA02066C

Safety instructions for electrical apparatus in explosion-hazardous areas

Segurança

INMETRO OCP 0004

TÜVRheinland®

Endress+Hauser

People for Process Automation

Memosens COS81E

Supplement to BA02066C

Table of contents

Associated documentation	This document is an integral part of Operating Instructions BA02066C.

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
• Ex marking on hazardous area versions

▶ Compare the information on the nameplate with the order.

Ex-approval

INMETRO

Ex ia op is IIC T6... T3 Ga
Ex ia op is IIIC T90°C... T200°C Da

Notified body

TÜV Rheinland do Brasil Ltda

Safety instructions

The Memosens COS81E oxygen sensor is suitable for use in hazardous areas in accordance with: INMETRO certificate **TÜV 21.0090 X** including amendments

• 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 sensors must not be operated under electrostatically critical process conditions. Avoid strong steam or dust currents that act directly on the connection system.
• 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 (ABNT NBR 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 Regulation 179 of May 18, 2010, issued by INMETRO, and also complies with the following standards:
  • ABNT NBR IEC 60079-0: 2013 Explosive atmospheres - Part 0: Equipment - General requirements
  • ABNT NBR IEC 60079-11:2013 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
  • ABNT NBR IEC 60079-28-2016 Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
• Sensors containing parts made of titanium or other light metals must be protected against impact.

Type code

Memosens	COS81E-aabbccdde+g	
	aa	Approval (no ex-relevance)
		MG: INMETRO Ex ia op is IIC T6 … T3 Ga
		M5: • INMETRO Ex ia op is IIC T6 … T3 Ga • INMETRO Ex ia op is IIIC T90℃… T200℃ Da
	bb	Measuring range (no ex-relevance)
	cc	Cap characteristics AC = Stainless steel C-shape AU = Stainless steel U-shape BC = Titanium C-shape BU = Titanium U-shape CC = Alloy C22 C-shape CU = Alloy C22 U-shape 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 table

Sensor	Process temperature T_p	Ambient temperature T_a
COS81E	$-15 \leq T_p \leq 130$ ℃ (T3 rep. T200 ℃) $-15 \leq T_p \leq 120$ ℃ (T4 rep. T135 ℃) $-15 \leq T_p \leq 70$ ℃ (T6 rep. T90℃)	$-25 \leq T_a \leq 70$ ℃ (T3 rep. T200 ℃) $-25 \leq T_a \leq 90$ ℃ (T4 rep. T135 ℃) $-25 \leq T_a \leq 70$ ℃ (T6 rep. T90℃)

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 COS81E oxygen sensor is approved in accordance with the INMETRO TÜV 21.0090X certificate and suitable for use in hazardous environments.
• The approved Memosens COS81E digital oxygen sensor has an intrinsically safe input with the following parameter set:

Parameter	Value
P_i	180 mW

The approved Memosens COS81E digital oxygen sensor uses inherently safe optical radiation:

Parameter	Value
P_{opt} (sensor signal)	≤15 mW

The approved Memosens COS81E digital oxygen sensor 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
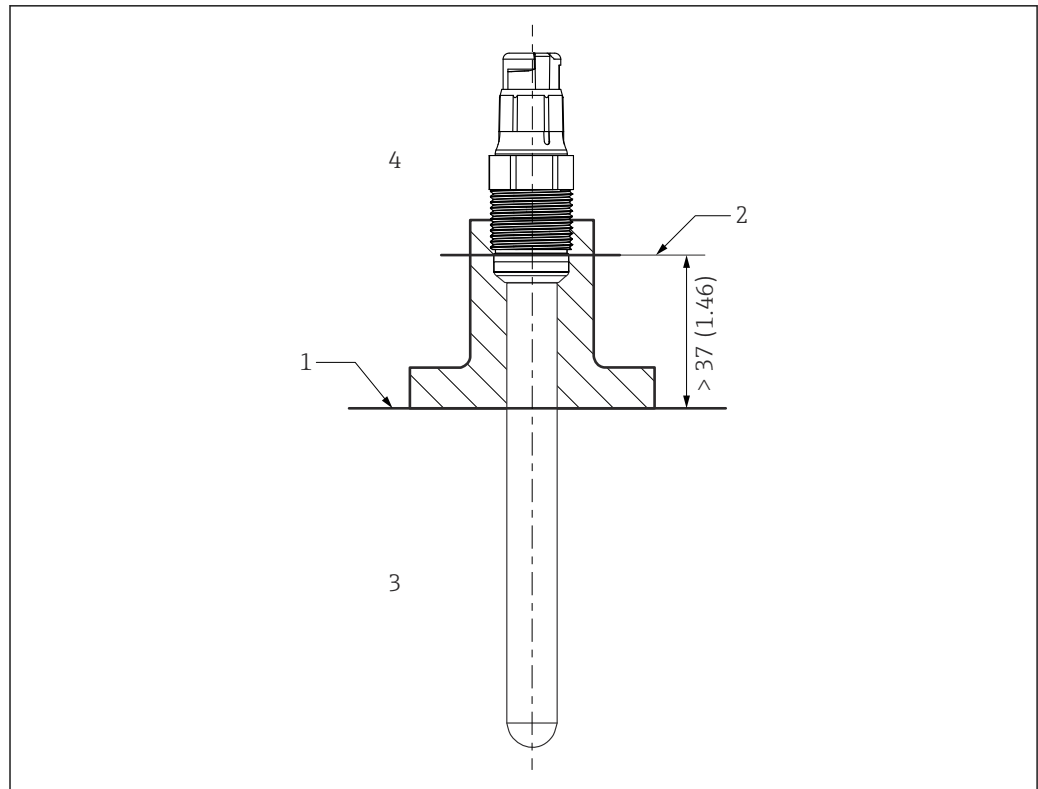
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⊡ *1   Installation conditions*

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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