

# Safety Instructions

## **Memosens CLS15E, CLS16E, CLS21E, CLS82E**

Digital conductivity sensors with Memosens technology

INMETRO Ex ia IIC T3/T4/T6 Ga





# Memosens CLS15E, CLS16E, CLS21E, CLS82E

Digital conductivity sensors with Memosens technology

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**Associated documentation**

This document is an integral part of



Operating Instructions Memosens CLS21E, BA02020C



Operating Instructions Memosens CLS15E, BA02018C



Operating Instructions Memosens CLS16E, BA02019C



Operating Instructions Memosens CLS82E, BA02027C

**Supplementary documentation**

Competence Brochure CP00021Z

- Explosion Protection: Guidelines and General Principles
- [www.endress.com](http://www.endress.com)

**Certificate**

Certificate number: TÜV 24.0578 X  
TÜV Rheinland do Brasil Ltda

**Identification**

The nameplate provides you with the following information on your device:

- Manufacturer identification
- Extended order code
- Serial number
- Safety information and warnings
- Ex marking on hazardous area versions

► Compare the information on the nameplate with the order.

**Type code**

Type	Version					
xLS15E <sup>1)</sup>	- MA	**	**	a <sup>2)</sup>	***	+*
xLS16E	- MA	**	**	***	+*	
xLS21E	- MA	**	**	***	+*	
xLS82E	- MA	**	**	***	+*	
	INMETRO Ex ia IIC T3/T4/T6 Ga					

1) x=C, O, OC

2) a = A, B

**Certificates and approvals**

This device has been developed and manufactured according to Portaria INMETRO n° 115 de 21/03/2022 and also complies with the following standards:

- ABNT NBR IEC 60079-0: 2020 Explosive atmospheres Part 0: General requirements
- ABNT NBR IEC 60079-11:2013 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

**Safety instructions**


The CLSxxE-type conductivity sensors are suitable for use in explosion-hazardous areas according to the mentioned certificates.

- Considerable vapor and dust clouds that act directly on the Memosens sensor head must be avoided at all times.
- Ex-protected digital sensors with Memosens technology are identified by an orange-red ring on the terminal head.
- When using devices and sensors, the regulations for electrical systems in explosion-hazardous areas must be observed (ABNT NBR IEC 60079-14).

- The electrical connection information provided in the Operating Instructions must be adhered to.
- CLS15E, CLS16E, CLS21E: Metallic process connection parts have to be mounted electrostatically conductive at the mounting location (< 1 MΩ).
- CLS15E and CLS21E: Sensor versions with a non-metallic process connection may only be used in liquid media with a conductivity of at least 10 nS/cm.
- CLS15E: Sensor versions with a non-metallic process connection may not be operated on processing conditions, in which an electrostatic loading of the sensor and in particular of the electrically separated outer electrode, could be expected to occur.
- CLS82E:
  - The sensor must not be operated under electrostatically critical process conditions.
  - Intense vapor or dust flows directly impacting on the connection system must be avoided.
  - The metallic parts of the sensor have to be mounted at the mounting location electrostatically conductive (< 1 MΩ). With the Pg 13.5 version, this condition is already fulfilled by the preassembled conductive O-ring.

**Temperature tables**

Sensor	T Class	T <sub>p</sub> (process)		T <sub>a</sub> (ambient)
		Min.	Max.	Max.
CLS15E-*****B****+*	T3	-20 °C	135 °C	60 °C
	T4	-20 °C	100 °C	60 °C
	T6	-20 °C	50 °C	60 °C
CLS15E-*****A****+*	T3	-20 °C	135 °C	60 °C
	T4	-20 °C	120 °C	60 °C
	T6	-20 °C	70 °C	60 °C
CLS16E-*****+*	T3	-5 °C	135 °C	60 °C
	T4	-5 °C	115 °C	60 °C
	T6	-5 °C	65 °C	60 °C
CLS21E-*****+*	T3	-20 °C	135 °C	60 °C
	T4	-20 °C	115 °C	60 °C
	T6	-20 °C	65 °C	60 °C
CLS82E-*****+*	T3	-20 °C	140 °C	60 °C
	T4	-20 °C	120 °C	60 °C
	T6	-20 °C	70 °C	60 °C

The above temperature table applies only under the following installation conditions, which are described in the following graphic →  1. If the installation conditions cannot be met, the maximum process temperature T<sub>p</sub> must not exceed the maximum ambient temperature T<sub>a</sub>.

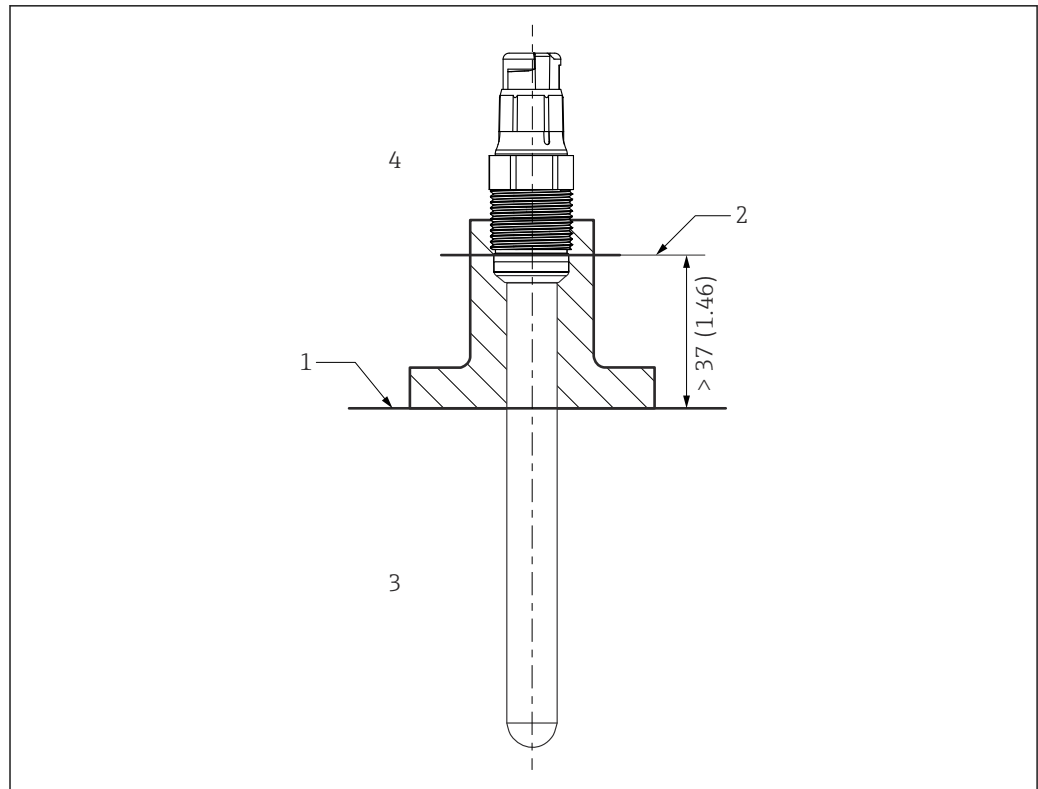
**Connection**

**Ex specification**

The CLSxxE-type conductivity sensors are approved and are suitable for use in explosion-hazardous environments.

- The approved CLSxxE-type digital conductivity sensors have an intrinsically safe input with the following parameter set:  
P<sub>i</sub> = 180 mW
- The approved CLSxxE-type digital conductivity sensors may only be connected to a Memosens cable or a compact transmitter with an intrinsically safe output with the following parameter set:  
P<sub>o</sub> 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  $T_p$ 4 Ambient temperature  $T_a$





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