

# Safety Instructions

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

Supplement to: BA02018C, BA02019C, BA02020C and  
BA02027C

Safety instructions for electrical apparatus in explosion-  
hazardous areas



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# Memosens CLS15E, CLS16E, CLS21E, CLS82E

Supplement to: BA02018C, BA02019C, BA02020C and BA02027C

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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)

**Identification**

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

- Manufacturer identification
- Extended order code
- Serial number
- Safety information and warnings
- Ex labeling 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	**	**	***	+*	
	BRA Ex ia IIC T3/T4/T6 Ga	No Ex relevance				

1) x=C, O, OC

2) a = A, B

**Certificates and approvals***Hazardous area approvals*

Ex ia IIC T3/T4/T6 Ga

The product has been certified according to:

- ABNT NBR IEC 60079-0:2013
- ABNT NBR IEC 60079-11:2013
- Portaria INMETRO n° 179 de 18/05/2010

Certificate number: TÜV 20.0537 X


TÜV Rheinland do Brasil Ltda

**Safety instructions**

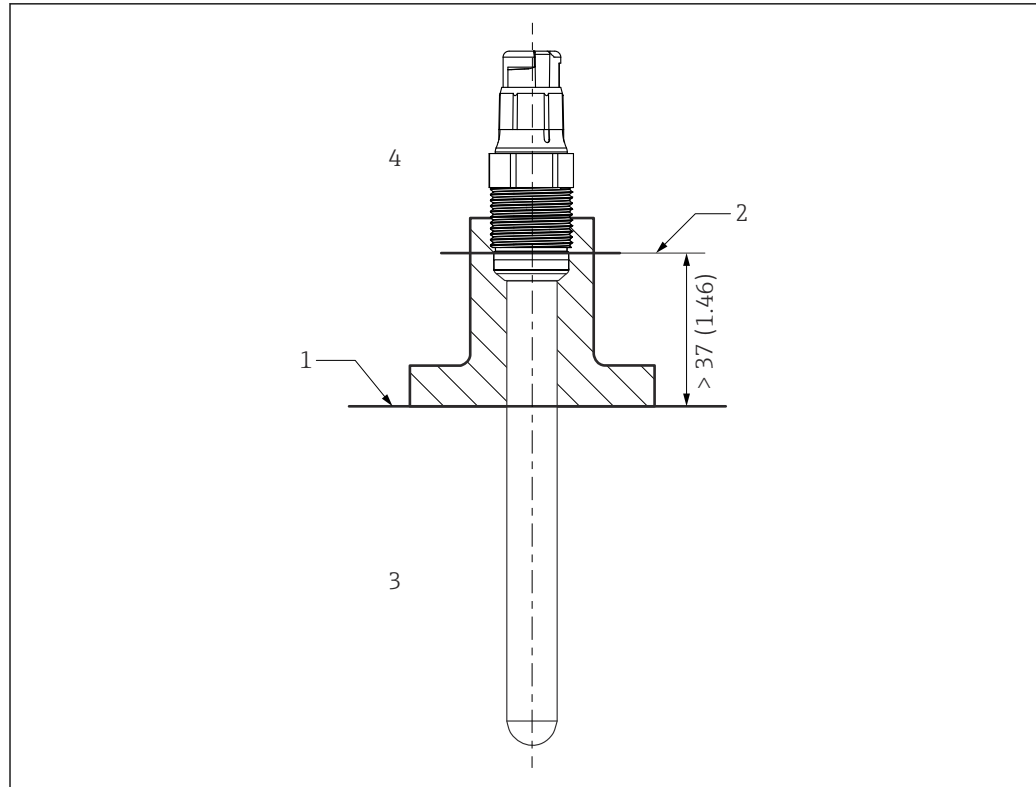
- It is not permitted to operate the sensor under electrostatically critical process conditions. Considerable steam and dust clouds that act directly on the Memosens sensor head must be avoided at all times.
- Ex-protected digital sensors with Memosens technology are identified by an orange-red ring 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.
- The CLS15E-type sensors with non-metal process connections and the CLS21E-type sensors may only be employed for measurement in liquids with a minimum conductivity of 10 nS/cm.

**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>.

## 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  $T_a$

## Connection

### Ex specification

The CLSxxE-type conductivity sensors are approved according to INMETRO type-examination certificate TÜV 20.0537 X 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:  
 $P_i = 180 \text{ mW}$
- 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:  
 $P_0 \text{ max. } 180 \text{ mW}$

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