

# Safety Instructions

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

Supplement to: BA02018C, BA02019C, BA02020C and  
BA02027C

Safety instructions for electrical apparatus in explosion-  
hazardous areas

KOR Ex ia IIC T6...T3 Ga





# 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)

**Certificate**

- Korean Certification of Compliance
  - 21-KA4BO-0619X
  - 21-KA4BO-0620X
- IECEx certificate  
IECEX\_TUR\_19.0030X

**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					
CLS15E	- KA	**	**	a <sup>1)</sup>	***	+*
CLS16E	- KA	**	**	***	+*	
CLS21E	- KA	**	**	***	+*	
CLS82E	- KA	**	**	***	+*	
	KOR Ex ia IIC T3/T4/T6 Ga	No Ex relevance				

1) a = A, B

**Certificates and approvals**

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](http://www.iecex.com).

KOR Ex ia IIC T3/T4/T6 Ga

**Safety instructions**


The CLSxxE-type conductivity sensors are suitable for use in explosion-hazardous areas according to:

- IECEx certificate IECEx TUR 19.0030X including amendments
- Korean Certification of Compliance 21-KA4BO-0619X and 21-KA4BO-0620X

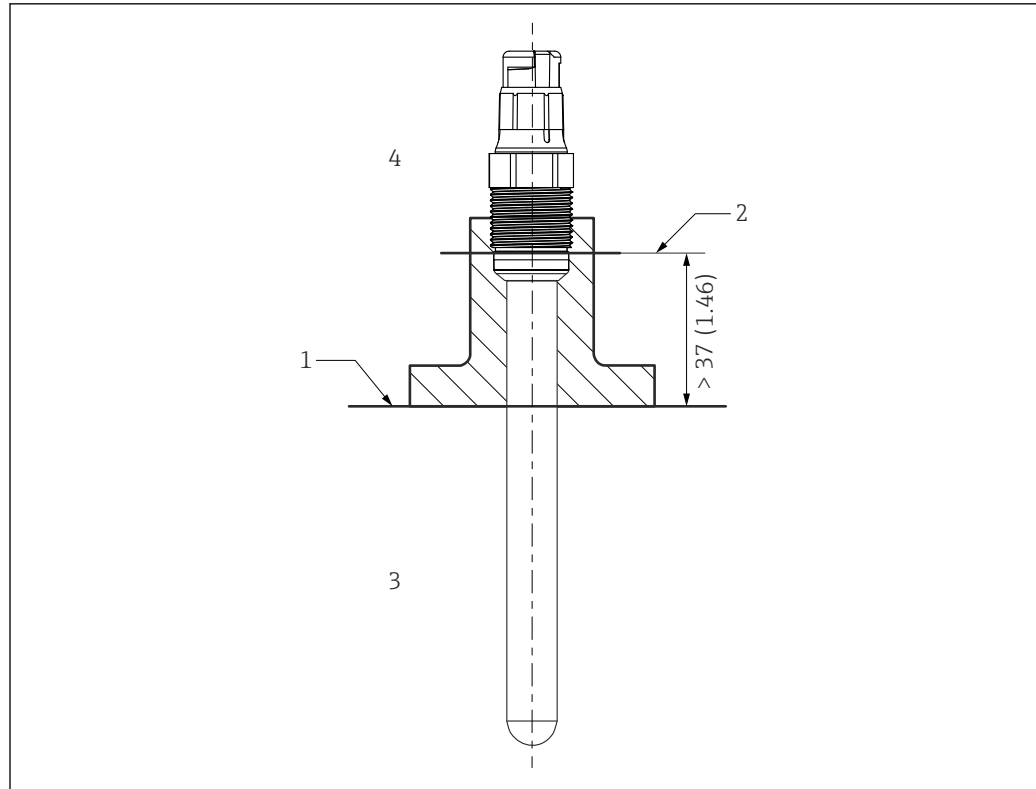
- It is not permitted to operate the sensor under electrostatically critical process conditions. Considerable steam and dust clouds that act directly on the Memosens sensor head must be avoided at all times.
- Ex-protected digital sensors with Memosens technology are identified by an orange-red ring on the terminal head.
- When using devices and sensors, the regulations for electrical systems in explosion-hazardous areas must be observed (EN/IEC 60079-14).
- 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.
- This device has been developed and manufactured according to Directive 2014/34/EU and also complies with the following standards:
  - EN IEC 60079-0:2018 / IEC 60079-0:2017, Explosive Atmospheres Part 0: General Requirements
  - EN 60079-11:2012 / IEC 60079-11:2011, Explosive Atmospheres Part 11: Equipment Protection by Intrinsic Safety "I"
- 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	Temperature class	Process temperature $T_p$	Ambient temperature $T_a$
CLS15E-*****B****+*	T3	$-20\text{ °C} \leq T_p \leq +135\text{ °C}$	$-20\text{ °C} \leq T_a \leq +70\text{ °C}$
	T4	$-20\text{ °C} \leq T_p \leq +120\text{ °C}$	$-20\text{ °C} \leq T_a \leq +75\text{ °C}$
		$-20\text{ °C} \leq T_p \leq +110\text{ °C}$	$-20\text{ °C} \leq T_a \leq +80\text{ °C}$
		$-20\text{ °C} \leq T_p \leq +100\text{ °C}$	$-20\text{ °C} \leq T_a \leq +85\text{ °C}$
		$-20\text{ °C} \leq T_p \leq +90\text{ °C}$	$-20\text{ °C} \leq T_a \leq +90\text{ °C}$
T6	$-20\text{ °C} \leq T_p \leq +60\text{ °C}$	$-20\text{ °C} \leq T_a \leq +60\text{ °C}$	
CLS15E-*****A****+* CLS21E-*****+*	T3	$-20\text{ °C} \leq T_p \leq +140\text{ °C}$	$-20\text{ °C} \leq T_a \leq +70\text{ °C}$
	T4	$-20\text{ °C} \leq T_p \leq +120\text{ °C}$	$-20\text{ °C} \leq T_a \leq +75\text{ °C}$
		$-20\text{ °C} \leq T_p \leq +110\text{ °C}$	$-20\text{ °C} \leq T_a \leq +80\text{ °C}$
		$-20\text{ °C} \leq T_p \leq +100\text{ °C}$	$-20\text{ °C} \leq T_a \leq +85\text{ °C}$
		$-20\text{ °C} \leq T_p \leq +90\text{ °C}$	$-20\text{ °C} \leq T_a \leq +90\text{ °C}$
T6	$-20\text{ °C} \leq T_p \leq +70\text{ °C}$	$-20\text{ °C} \leq T_a \leq +70\text{ °C}$	
CLS16E-*****+*	T3	$-5\text{ °C} \leq T_p \leq +135\text{ °C}$	$-5\text{ °C} \leq T_a \leq +70\text{ °C}$
		$-5\text{ °C} \leq T_p \leq +120\text{ °C}$	$-5\text{ °C} \leq T_a \leq +75\text{ °C}$
	T4	$-5\text{ °C} \leq T_p \leq +115\text{ °C}$	$-5\text{ °C} \leq T_a \leq +75\text{ °C}$
		$-5\text{ °C} \leq T_p \leq +110\text{ °C}$	$-5\text{ °C} \leq T_a \leq +80\text{ °C}$
$-5\text{ °C} \leq T_p \leq +100\text{ °C}$		$-5\text{ °C} \leq T_a \leq +85\text{ °C}$	
T6	$-5\text{ °C} \leq T_p \leq +90\text{ °C}$	$-5\text{ °C} \leq T_a \leq +90\text{ °C}$	
CLS82E-*****+*	T3	$-20\text{ °C} \leq T_p \leq +140\text{ °C}$	$-20\text{ °C} \leq T_p \leq +65\text{ °C}$
		$-20\text{ °C} \leq T_p \leq +135\text{ °C}$	$-20\text{ °C} \leq T_p \leq +70\text{ °C}$
		$-20\text{ °C} \leq T_p \leq +125\text{ °C}$	$-20\text{ °C} \leq T_p \leq +75\text{ °C}$
	T4	$-20\text{ °C} \leq T_p \leq +120\text{ °C}$	$-20\text{ °C} \leq T_p \leq +75\text{ °C}$
		$-20\text{ °C} \leq T_p \leq +110\text{ °C}$	$-20\text{ °C} \leq T_p \leq +80\text{ °C}$
		$-20\text{ °C} \leq T_p \leq +100\text{ °C}$	$-20\text{ °C} \leq T_p \leq +85\text{ °C}$
		$-20\text{ °C} \leq T_p \leq +90\text{ °C}$	$-20\text{ °C} \leq T_p \leq +90\text{ °C}$
	T6	$-20\text{ °C} \leq T_p \leq +70\text{ °C}$	$-20\text{ °C} \leq T_p \leq +70\text{ °C}$

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  $T_p$  must not exceed the maximum ambient temperature  $T_a$ .

### 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 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:  
 $P_o \text{ max. } 180 \text{ mW}$





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