

Safety Instructions

Memosens CLS15E, CLS16E, CLS21E, CLS82E

Supplement to: BA02018C, BA02019C, BA02020C and
BA02027C

Safety instructions for electrical apparatus in explosion-
hazardous areas

UK II 1 G Ex ia IIC T3/T4/T6 Ga



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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

Certificate

CML 21UKEX2130X

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 ¹⁾	- UA	**	**	a ²⁾	***	+*
xLS16E	- UA	**	**	***	+*	
xLS21E	- UA	**	**	***	+*	
xLS82E	- UA	**	**	***	+*	
	UK II 1 G Ex ia IIC T3/T4/T6 Ga	No Ex relevance				

1) x=C, O, OC

2) a = A, B

Certificates and approvals*Declaration of Conformity*

With this declaration of conformity, the manufacturer guarantees that the product conforms to UK statutory requirements:

- The Electromagnetic Compatibility Regulations SI 2016 No. 1091
- The Equipment and Protective Systems Intended for use in Potentially Explosive Atmosphere Regulations SI 2016 No. 1107
- The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations SI 2012 No. 3032

Compliance is verified by adherence to the standards listed in the Declaration of Conformity.

Hazardous area approvals

UK II 1G Ex ia IIC T3/T4/T6 Ga

Approved Body

Eurofins E&E CML Limited (UK)

Safety instructions


The CLSxxE-type conductivity sensors are suitable for use in explosion-hazardous areas according to: UK Type Examination Certificate No. CML 21UKEX2130X

The corresponding UK Declaration of Conformity is part of this document.

- 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 (BS EN 60079-14).
- The electrical connection information provided in the Operating Instructions must be adhered to.
- This device has been developed and manufactured according to SI 2016 No. 1107 and also complies with the following standards:
 - BS EN IEC 60079-0 :2018 Electrical apparatus for explosive gas atmospheres
 - BS EN 60079-11:2012 Explosive atmospheres. 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	$-5\text{ °C} \leq T_p \leq +135\text{ °C}$ $-5\text{ °C} \leq T_p \leq +120\text{ °C}$	$-5\text{ °C} \leq T_a \leq +70\text{ °C}$ $-5\text{ °C} \leq T_a \leq +75\text{ °C}$
	T4	$-5\text{ °C} \leq T_p \leq +115\text{ °C}$	$-5\text{ °C} \leq T_a \leq +75\text{ °C}$
		$-5\text{ °C} \leq T_p \leq +110\text{ °C}$	$-5\text{ °C} \leq T_a \leq +80\text{ °C}$
		$-5\text{ °C} \leq T_p \leq +100\text{ °C}$ $-5\text{ °C} \leq T_p \leq +90\text{ °C}$	$-5\text{ °C} \leq T_a \leq +85\text{ °C}$ $-5\text{ °C} \leq T_a \leq +90\text{ °C}$
T6	$-5\text{ °C} \leq T_p \leq +65\text{ °C}$	$-5\text{ °C} \leq T_p \leq +65\text{ °C}$	
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	$-20\text{ °C} \leq T_p \leq +120\text{ °C}$	$-20\text{ °C} \leq T_p \leq +75\text{ °C}$
		$-20\text{ °C} \leq T_p \leq +110\text{ °C}$	$-20\text{ °C} \leq T_p \leq +80\text{ °C}$
		$-20\text{ °C} \leq T_p \leq +100\text{ °C}$ $-20\text{ °C} \leq T_p \leq +90\text{ °C}$	$-20\text{ °C} \leq T_p \leq +85\text{ °C}$ $-20\text{ °C} \leq T_p \leq +90\text{ °C}$
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 .

Connection

Ex specification

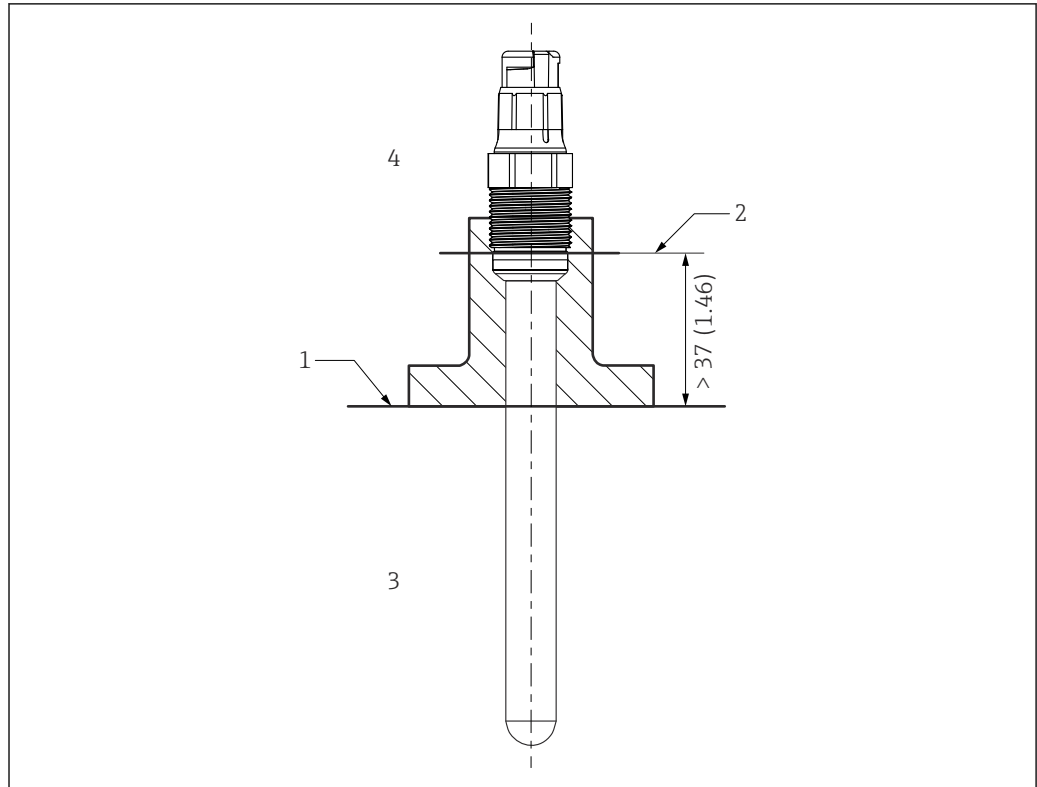
The CLSxxE-type conductivity sensors are approved according to UK type-examination certificate CML 21UKEX2130X and are suitable for use in explosion-hazardous environments. The corresponding UK Declaration of Conformity is an integral part of this document.

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

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 T_p

4 Ambient temperature T_a





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