

Safety Instructions

Memosens CLS15E, CLS16E, CLS21E, CLS82E

Digital conductivity sensors with Memosens technology

CSA C/US IS Cl. 1 Div. 1 GP A-D T3/T4/T6 + CSA C/US IS
Cl. 1 Zone 0 AEx ia IIC T3/T4/T6



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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

CSA C/US certificate, certificate number: CSA20CA80021490X

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⁾	- CI	**	**	a ²⁾	***	+*
xLS16E ¹⁾	- CI	**	**	***	+*	
xLS21E ¹⁾	- CI	**	**	***	+*	
xLS82E ¹⁾	- CI	**	**	***	+*	
	CSA C/US IS Cl. I Div. 1 GP A-D T3/T4/T6 + CSA C/US IS Cl. I Zone 0 AEx ia IIC T3/T4/T6	No Ex relevance				

1) x=C, O, OC

2) a = A, B

Certificates and approvals**Ex approval**

The product meets the requirements of:

- CLASS 2258 04 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe Entity - For Hazardous Locations
- CLASS 2258 84 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe Entity - For Hazardous Locations - Certified to US Standards



This is verified by compliance with the following standards:

- CAN/CSA-C22.2 No. 60079-0:19
- CAN/CSA-C22.2 No. 60079-11:14
- ANSI/UL 60079-0:19
- ANSI/UL 60079-11:13
- CAN/CSA-C22.2 No. 61010-1-12 (May 2012)
- UL Std. No. 61010-1 (3rd Edition)

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Safety instructions

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

- 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.
- Install the device according to the National Electrical Code (NFPA70) or the Canadian Electrical Code, Part 1 (C22.1), where applicable.
- The electrical connection information provided in the Operating Instructions must be adhered to.
- xLS15E, xLS16E, xLS21E: Metallic process connection parts have to be mounted electrostatically conductive at the mounting location (< 1 MΩ).
- xLS15E and xLS21E with non-metallic process connection may only be used in liquid media with a conductivity of at least 10 nS/cm.
- xLS15E with 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.
- xLS82E: The sensor may not be operated in electrostatically critical processing conditions. Intense vapour 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 pre-assembled conductive o-ring.
- The maximum ambient and process temperatures for temperature classes T3, T4 or T6 are limited as specified in the tables of this certificate.
- The device must be installed as specified in Control Drawing 961005034. →  1,  6

Temperature tables

Sensor type	T-Class	T _p (process)		T _a (ambient)	
		min.	max.	min.	max.
CLS15E-*****A****+	T3	-20 °C	135 °C	-20 °C	60 °C
	T4	-20 °C	120 °C	-20 °C	60 °C
	T6	-20 °C	70 °C	-20 °C	60 °C
CLS15E-*****B****+	T3	-20 °C	135 °C	-20 °C	60 °C
	T4	-20 °C	100 °C	-20 °C	60 °C
	T6	-20 °C	50 °C	-20 °C	60 °C
CLS16E-*****+*	T3	-5 °C	135 °C	-20 °C	60 °C
	T4	-5 °C	115 °C	-20 °C	60 °C
	T6	-5 °C	65 °C	-20 °C	60 °C
CLS21E-*****+*	T3	-20 °C	135 °C	-20 °C	60 °C
	T4	-20 °C	115 °C	-20 °C	60 °C
	T6	-20 °C	65 °C	-20 °C	60 °C
CLS82E-*****+*	T3	-20 °C	140 °C	-20 °C	60 °C
	T4	-20 °C	120 °C	-20 °C	60 °C
	T6	-20 °C	70 °C	-20 °C	60 °C

The above temperature table applies only under the following installation conditions, which are described in the following graphic →  1,  6. If the installation conditions cannot be met, the maximum process temperature T_p must not exceed the maximum ambient temperature T_a.

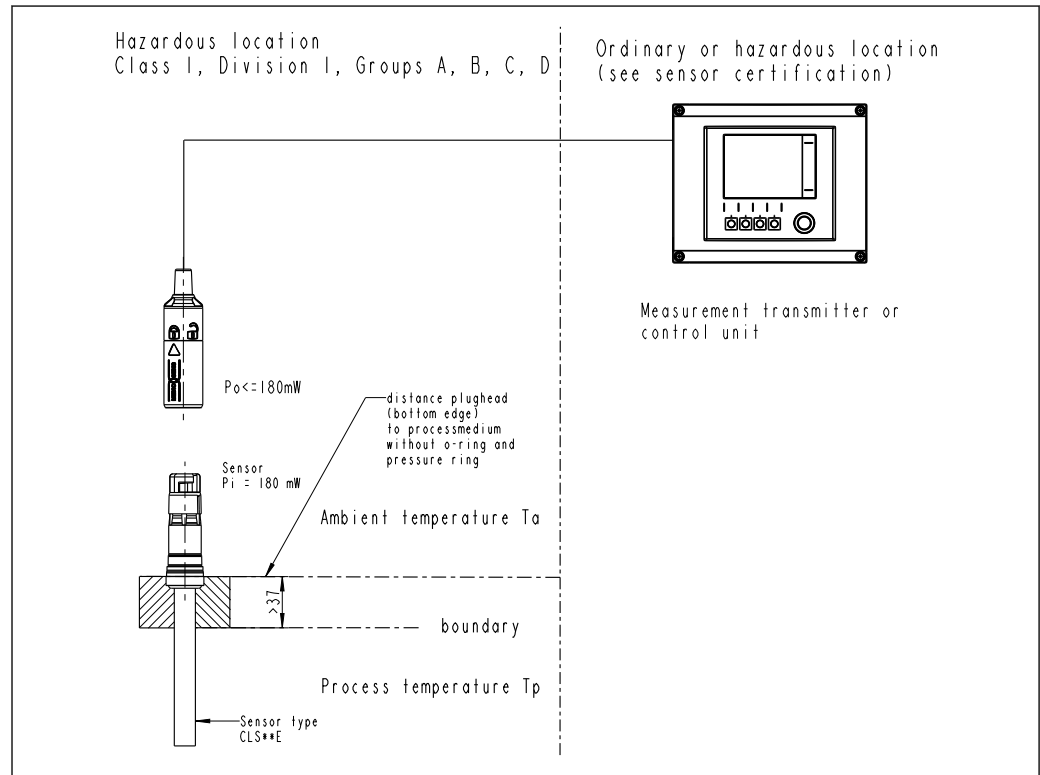
Connection

Ex specification

The 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:
 $P_i = 180 \text{ mW}$
- 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:
 $P_0 \text{ max. } 180 \text{ mW}$

Installation conditions



A0055292

1 Installation in hazardous location



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