

Safety Instructions

Memosens CLS15E, CLS16E, CLS21E, CLS82E

Digital conductivity sensors with Memosens technology

KOR Ex ia IIC T6...T3 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

- Certificate**
- Korean Certification of Compliance
- 21-KA4BO-0619X (CLS15E)
 - 21-KA4BO-0620X (CLS16E, CLS21E, CLS82E)

- 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 ¹⁾ | *** | +* | |
| CLS16E | - KA | ** | ** | *** | +* | | |
| CLS21E | - KA | ** | ** | *** | +* | | |
| CLS82E | - KA | ** | ** | *** | +* | | |
| | KOR Ex ia IIC T3/T4/T6 Ga | No Ex relevance | | | | | |


1) a = A, B

- Safety instructions**
- The CLSxxE-type conductivity sensors are suitable for use in explosion-hazardous areas according to the mentioned certificates.
- 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).
 - The electrical connection information provided in the Operating Instructions must be adhered to.
 - This device has been developed and manufactured according to 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"
 - CLS15E, CLS16E, CLS21E: Metallic process connection parts have to be mounted electrostatically conductive at the mounting location (< 1 MΩ).

- CLS15E and CLS21E with non-metallic process connection may only be used in liquid media with a conductivity of at least 10 nS/cm.
- CLS15E 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.
- CLS82E: 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.

Temperature tables

| Sensor type | T-Class | T _p (process) | | T _a (ambient) |
|--------------------|---------|--------------------------|--------|--------------------------|
| | | min. | max. | max. |
| CLS15E-*****A****+ | T3 | -20 °C | 135 °C | 60 °C |
| | T4 | -20 °C | 120 °C | 60 °C |
| | T6 | -20 °C | 70 °C | 60 °C |
| CLS15E-*****B****+ | T3 | -20 °C | 135 °C | 60 °C |
| | T4 | -20 °C | 100 °C | 60 °C |
| | T6 | -20 °C | 50 °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_p must not exceed the maximum ambient temperature T_a.

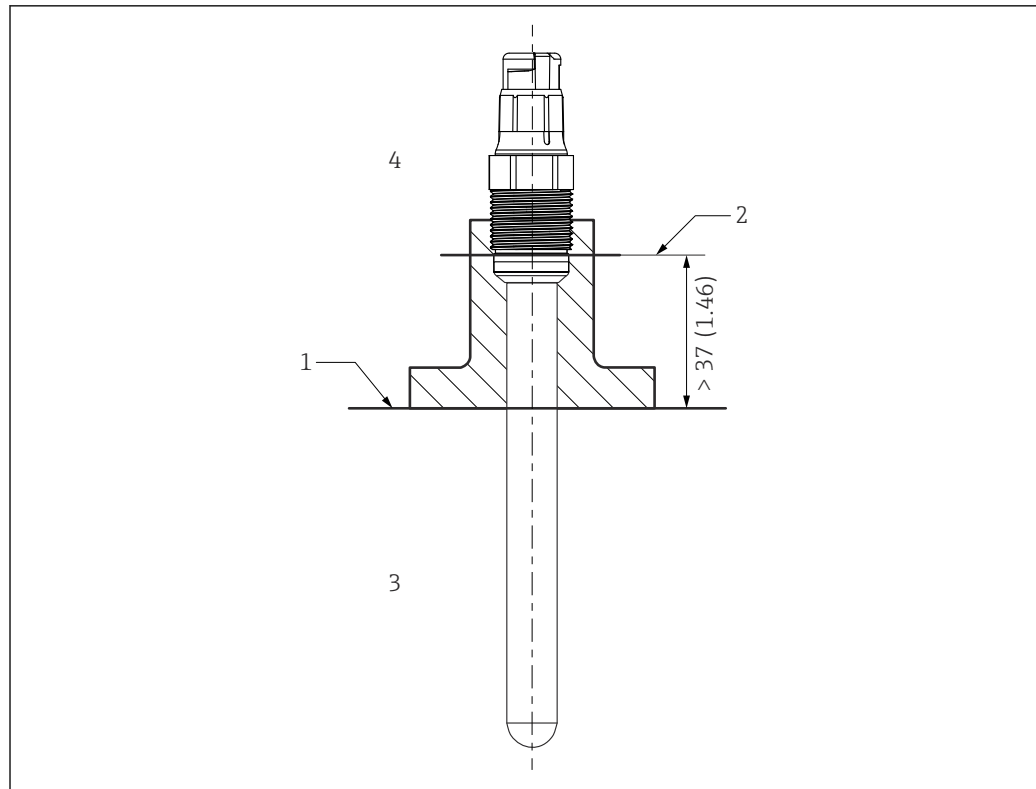
Connection

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 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 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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