Safety Instructions

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

Supplement to: BA02018C, BA02019C, BA02020C and BA02027C

Safety instructions for electrical apparatus in explosion-hazardous areas
EU-Konformitätserklärung
EU-Declaration of Conformity
Déclaration UE de Conformité

Company
Endress+Hauser Conducta GmbH+Co. KG
Dieselstraße 24, 70839 Gerlingen, Germany

Product
Memosens
CLS15E-BA*a****4*a
CLS16E-BA***4*a
CLS21E-BA***4*a
CLS82E-BA***4*a

a = A or B

Regulations
den folgenden Europäischen Richtlinien entspricht:
conforms to following European Directives:
est conforme aux prescription des Directives Européennes suivantes :

EMC  2014/30/EU (L96/79)
ATEX  2014/34/EU (L96/309)
RoHS  2011/65/EU (L174/88)

Standards
angewandte harmonisierte Normen oder normative Dokumente:
applied harmonized standards or normative documents:
normes harmonisées ou documents normatifs appliqués :

EN 50581 (2012)

Certification
EG-Baumusterprüfbescheinigung Nr.  TÜV 19 ATEX 8377 X
EC-Type Examination Certificate No.  TÜV Rheinland Industrie Service
Numéro de l’attestation d’examen CE de type  GmbH (0035)
Ausgestellt von/issued by/delivé par  DEKRA EXAM GmbH (0158)
Qualitätssicherung/Quality assurance/Système d’assurance   
qualité

Gerlingen, 19.11.2020
Endress+Hauser Conducta GmbH+Co. KG

i. V. Jörg Martin Müller
Technology

i. V. Mohamed Algafy
Technology Certifications and Approvals
# Memosens CLS15E, CLS16E, CLS21E, CLS82E

Supplement to: BA02018C, BA02019C, BA02020C and BA02027C

## Table of contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associated documentation</td>
<td>4</td>
</tr>
<tr>
<td>Supplementary documentation</td>
<td>4</td>
</tr>
<tr>
<td>Manufacturer's certificates</td>
<td>4</td>
</tr>
<tr>
<td>Identification</td>
<td>4</td>
</tr>
<tr>
<td>Safety Instructions</td>
<td>5</td>
</tr>
<tr>
<td>Temperature tables</td>
<td>5</td>
</tr>
<tr>
<td>Installation conditions</td>
<td>7</td>
</tr>
<tr>
<td>Connection</td>
<td>7</td>
</tr>
</tbody>
</table>
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

Manufacturer's certificates

EU Declaration of Conformity

→ 2

Identification

The nameplate provides you with the following information on your device:
- Manufacturer identification
- Order code
- Serial number
- Safety information and warnings
- Cell constant (nominal value)
- Ex labeling on hazardous area versions

> Compare the information on the nameplate with the order.

Type code

**ATEX**

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<th>Type</th>
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<th>1</th>
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II 1 G Ex ia IIC T3/T4/T6 Ga
No Ex relevance

1) x=C, O, OC
2) a = A, B

**IECEx**

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</tbody>
</table>

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

ATEX
With this declaration of conformity, the manufacturer guarantees that the product conforms to the regulations of European EMC Directive 2014/30/EU and ATEX Directive 2014/34/EU. Compliance is verified by adherence to the standards listed in the Declaration of Conformity.

IECEEx
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.

Hazardous area approvals

II 1 G Ex ia IIC T3/T4/T6 Ga
- ExAC Ex, OEx ia IIC T3/T4/T6 Ga X
- Zone 0
- Certificate number: TC RU C-DE.AA87.B.00088
- The product has been certified in accordance with Directive TR CU 012/2011 which applies in the European Economic Area (EEA). The EAC conformity mark has been affixed to the product.

Ex ia IIC T3/T4/T6 Ga

Ex-inspection body

TÜV Rheinland Industrie Service GmbH
Am Grauen Stein, 51105 Cologne, Germany

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
- EU type-examination certificate TÜV 19 ATEX 8377 X
  The corresponding EU 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 (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 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
- 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

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Temperature class</th>
<th>Process temperature $T_p$</th>
<th>Ambient temperature $T_a$</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLS15E.*<em><strong><strong>B</strong></strong>+</em></td>
<td>T3</td>
<td>$-20 ^\circ C \leq T_p \leq +135 ^\circ C$</td>
<td>$-20 ^\circ C \leq T_a \leq +70 ^\circ C$</td>
</tr>
<tr>
<td></td>
<td>T4</td>
<td>$-20 ^\circ C \leq T_p \leq +120 ^\circ C$</td>
<td>$-20 ^\circ C \leq T_a \leq +75 ^\circ C$</td>
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<tr>
<td></td>
<td></td>
<td>$-20 ^\circ C \leq T_p \leq +110 ^\circ C$</td>
<td>$-20 ^\circ C \leq T_a \leq +80 ^\circ C$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$-20 ^\circ C \leq T_p \leq +100 ^\circ C$</td>
<td>$-20 ^\circ C \leq T_a \leq +85 ^\circ C$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$-20 ^\circ C \leq T_p \leq +90 ^\circ C$</td>
<td>$-20 ^\circ C \leq T_a \leq +90 ^\circ C$</td>
</tr>
<tr>
<td></td>
<td>T6</td>
<td>$-20 ^\circ C \leq T_p \leq +60 ^\circ C$</td>
<td>$-20 ^\circ C \leq T_a \leq +60 ^\circ C$</td>
</tr>
<tr>
<td>Sensor</td>
<td>Temperature class</td>
<td>Process temperature $T_p$</td>
<td>Ambient temperature $T_a$</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-------------------</td>
<td>---------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>CLS15E.*<em><strong><strong>A</strong></strong>+</em></td>
<td>T3</td>
<td>$-20 , ^\circ C \leq T_p \leq +140 , ^\circ C$</td>
<td>$-20 , ^\circ C \leq T_a \leq +70 , ^\circ C$</td>
</tr>
<tr>
<td>CLS15E.*<em><strong><strong>A</strong></strong>+</em></td>
<td>T4</td>
<td>$-20 , ^\circ C \leq T_p \leq +120 , ^\circ C$</td>
<td>$-20 , ^\circ C \leq T_a \leq +75 , ^\circ C$</td>
</tr>
<tr>
<td>CLS21E.********<em>+</em></td>
<td>T6</td>
<td>$-20 , ^\circ C \leq T_p \leq +100 , ^\circ C$</td>
<td>$-20 , ^\circ C \leq T_a \leq +85 , ^\circ C$</td>
</tr>
<tr>
<td>CLS16E.********<em>+</em></td>
<td>T3</td>
<td>$-5 , ^\circ C \leq T_p \leq +135 , ^\circ C$</td>
<td>$-5 , ^\circ C \leq T_a \leq +70 , ^\circ C$</td>
</tr>
<tr>
<td>CLS16E.********<em>+</em></td>
<td>T4</td>
<td>$-5 , ^\circ C \leq T_p \leq +110 , ^\circ C$</td>
<td>$-5 , ^\circ C \leq T_a \leq +80 , ^\circ C$</td>
</tr>
<tr>
<td>CLS16E.********<em>+</em></td>
<td>T6</td>
<td>$-5 , ^\circ C \leq T_p \leq +90 , ^\circ C$</td>
<td>$-5 , ^\circ C \leq T_a \leq +85 , ^\circ C$</td>
</tr>
<tr>
<td>CLS82E.********<em>+</em></td>
<td>T3</td>
<td>$-20 , ^\circ C \leq T_p \leq +110 , ^\circ C$</td>
<td>$-20 , ^\circ C \leq T_a \leq +65 , ^\circ C$</td>
</tr>
<tr>
<td>CLS82E.********<em>+</em></td>
<td>T4</td>
<td>$-20 , ^\circ C \leq T_p \leq +100 , ^\circ C$</td>
<td>$-20 , ^\circ C \leq T_a \leq +70 , ^\circ C$</td>
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<tr>
<td>CLS82E.********<em>+</em></td>
<td>T6</td>
<td>$-20 , ^\circ C \leq T_p \leq +90 , ^\circ C$</td>
<td>$-20 , ^\circ C \leq T_a \leq +75 , ^\circ C$</td>
</tr>
</tbody>
</table>

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 $T_a$. 

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*Endress+Hauser*
Installation conditions

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 EU type-examination certificate TUV 19 ATEX 8377 X and are suitable for use in explosion-hazardous environments. The corresponding EU 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:
  $P_0 \text{ max. } 180 \text{ mW}$