

# Safety Instructions

## **Memosens pH/ORP sensors**

pH and ORP measurement

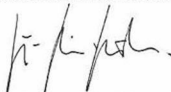

Safety instructions for electrical apparatus in explosion-hazardous areas



**EU-Konformitätserklärung**  
**EU-Declaration of Conformity**  
**Déclaration UE de Conformité**

**Endress+Hauser**   
 People for Process Automation



<b>Company</b>	<b>Endress+Hauser Conducta GmbH+Co. KG</b> <b>Dieselstraße 24, 70839 Gerlingen, Germany</b> erklärt als Hersteller in alleiniger Verantwortung, dass das Produkt declares as manufacturer under sole responsibility, that the product déclare sous sa seule responsabilité en qualité de fabricant que le produit													
<b>Product</b>	Memosens pH-/Redox-Sensoren / pH/ORP sensors / capteurs pH/redox <b>CPSxxE-BA* * * * * +* xx = 11, 12, 16, 31, 41, 42, 61, 62, 71, 72, 76, 91, 92, 96</b>													
<b>Regulations</b>	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)													
<b>Standards</b>	angewandte harmonisierte Normen oder normative Dokumente: applied harmonized standards or normative documents: normes harmonisées ou documents normatifs appliqués :  <table border="0"> <tr> <td>EN 61326-1</td> <td>(2013)</td> <td>EN IEC 60079-0</td> <td>(2018)</td> <td>EN IEC 63000</td> <td>(2018)</td> </tr> <tr> <td>EN 61326-2-3</td> <td>(2013)</td> <td>EN 60079-11</td> <td>(2012)</td> <td></td> <td></td> </tr> </table>		EN 61326-1	(2013)	EN IEC 60079-0	(2018)	EN IEC 63000	(2018)	EN 61326-2-3	(2013)	EN 60079-11	(2012)		
EN 61326-1	(2013)	EN IEC 60079-0	(2018)	EN IEC 63000	(2018)									
EN 61326-2-3	(2013)	EN 60079-11	(2012)											
<b>Certification</b>	EU-Baumusterprüfbescheinigung Nr. EU-Type Examination Certificate No. Numéro de l'attestation d'examen UE de type  Ausgestellt von/issued by/délivré par Qualitätssicherung/Quality assurance/Système d'assurance qualité  Gerlingen, 15.03.2021 Endress+Hauser Conducta GmbH+Co. KG  i. V. Jörg-Martin Müller Technology	BVS 19 ATEX E 062 X  DEKRA EXAM GmbH (0158) DEKRA EXAM GmbH (0158)												
		 i. V. Marco Rottmann Technology Certifications and Approvals												

EC\_00832\_03.20


# Memosens pH/ORP sensors

pH and ORP measurement

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**Associated documentation** This document is an integral part of Operating Instructions BA01988C.

**Additional documentation**  Competence Brochure CP00021Z  
 ■ Explosion Protection: Guidelines and General Principles  
 ■ [www.endress.com](http://www.endress.com)

**Manufacturer's certificate** **EU Declaration of Conformity**

**Identification** The nameplate provides you with the following information on your device:

- Manufacturer identification
- Order code
- 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**

*ATEX*

Item type	Version						
xPS11E xPS12E xPS16E xPS41E xPS42E xPS61E xPS62E xPS71E xPS72E xPS76E	BA	*	*	**	*	***	+*
x = C, OC No Ex relevance	II 1G Ex ia IIC T3/T4/T6 Ga	No Ex relevance					

Item type	Version						
xPS31E xPS91E xPS92E xPS96E	BA	*	*	**	*	***	+*
x = C, OC No Ex relevance	II 1G Ex ia IIC T4/T6 Ga	No Ex relevance					

*IECEX*

Item type	Version						
xPS11E xPS12E xPS16E xPS41E xPS42E xPS61E xPS62E xPS71E xPS72E xPS76E	IA	*	*	**	*	***	+*
x = C, OC No Ex relevance	Ex ia IIC T3/T4/T6 Ga	No Ex relevance					

Item type	Version						
xPS31E xPS91E xPS92E xPS96E	IA	*	*	**	*	***	+*
x = C, OC No Ex relevance	Ex ia IIC T4/T6 Ga	No Ex relevance					

**Certificates and approvals**

*Declaration of Conformity*

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.

*Ex approvals*

**xPS11E/xPS12E/xPS16E/xPS41E/xPS42E/xPS61E/xPS62E/xPS71E/xPS72E/xPS76E:**

Ⓔ II 1G Ex ia IIC T3/T4/T6 Ga

**xPS31E/xPS91E/xPS92E/xPS96E:**

Ⓔ II 1G Ex ia IIC T4/T6 Ga

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).

**xPS11E/xPS12E/xPS16E/xPS41E/xPS42E/xPS61E/xPS62E/xPS71E/xPS72E/xPS76E:**

Ex ia IIC T3/T4/T6 Ga

**xPS31E/xPS91E/xPS92E/xPS96E:**

Ex ia IIC T4/T6 Ga

*Notified body*

**DEKRA EXAM GmbH**

**Safety instructions**

The inductive Memosens pH/ORP sensors CPS11E, CPS12E, CPS16E, CPS31E, CPS41E, CPS42E, CPS61E, CPS62E, CPS71E, CPS72E, CPS76E, CPS91E, CPS92E, CPS96E are suitable for use in hazardous areas in accordance with:


- IECEx certificate IECEx BVS 19.0056X including amendments
- EU type-examination certificate BVS 19 ATEX E 062 X

The corresponding EU Declaration of Conformity is an integral part of this document.

- It is not permitted to operate the sensor under electrostatically critical process conditions. Significant vapor and dust clouds, which have a direct impact on the Memosens sensor head, must be avoided.
- Ex-protected digital sensors with Memosens technology are identified by an orange-red ring on the terminal head.
- When using devices and sensors, observe the regulations for electrical systems in hazardous areas (EN/IEC 60079-14).
- The procedures for electrical connection described in the Operating Instructions must be followed.
- This device was developed and manufactured in accordance with Directive 2014/34/EU dated February 26, 2014 and also complies with the following standards:
  - EN IEC 60079-0:2018/IEC 60079-0:2017  
Hazardous areas  
Part 0: General requirements
  - EN 60079-11:2012/IEC 60079-11:2011 + Corrigendum:2012  
Electrical apparatus for explosive atmospheres  
Part 11: Intrinsic safety "I"

### Temperature tables

Sensor	Temperature class	Process temperature $T_p$	Ambient temperature $T_a$
xPS11E xPS12E xPS16E xPS41E xPS42E xPS72E	T3	$-15\text{ °C (5 °F)} \leq T_p \leq 135\text{ °C (275 °F)}$	$-15\text{ °C (5 °F)} \leq T_a \leq 70\text{ °C (158 °F)}$
	T4	$-15\text{ °C (5 °F)} \leq T_p \leq 120\text{ °C (248 °F)}$	$-15\text{ °C (5 °F)} \leq T_a \leq 75\text{ °C (167 °F)}$
		$-15\text{ °C (5 °F)} \leq T_p \leq 110\text{ °C (230 °F)}$	$-15\text{ °C (5 °F)} \leq T_a \leq 80\text{ °C (176 °F)}$
		$-15\text{ °C (5 °F)} \leq T_p \leq 100\text{ °C (212 °F)}$	$-15\text{ °C (5 °F)} \leq T_a \leq 85\text{ °C (185 °F)}$
	$-15\text{ °C (5 °F)} \leq T_p \leq 90\text{ °C (194 °F)}$	$-15\text{ °C (5 °F)} \leq T_a \leq 90\text{ °C (194 °F)}$	
T6	$-15\text{ °C (5 °F)} \leq T_p \leq 70\text{ °C (158 °F)}$	$-15\text{ °C (5 °F)} \leq T_a \leq 70\text{ °C (158 °F)}$	
xPS61E xPS62E xPS71E xPS76E	T3	$0\text{ °C (32 °F)} \leq T_p \leq 140\text{ °C (284 °F)}$	$0\text{ °C (32 °F)} \leq T_a \leq 70\text{ °C (158 °F)}$
	T4	$0\text{ °C (32 °F)} \leq T_p \leq 120\text{ °C (248 °F)}$	$0\text{ °C (32 °F)} \leq T_a \leq 75\text{ °C (167 °F)}$
		$0\text{ °C (32 °F)} \leq T_p \leq 110\text{ °C (230 °F)}$	$0\text{ °C (32 °F)} \leq T_a \leq 80\text{ °C (176 °F)}$
		$0\text{ °C (32 °F)} \leq T_p \leq 100\text{ °C (212 °F)}$	$0\text{ °C (32 °F)} \leq T_a \leq 85\text{ °C (185 °F)}$
	$0\text{ °C (32 °F)} \leq T_p \leq 90\text{ °C (194 °F)}$	$0\text{ °C (32 °F)} \leq T_a \leq 90\text{ °C (194 °F)}$	
T6	$0\text{ °C (32 °F)} \leq T_p \leq 70\text{ °C (158 °F)}$	$0\text{ °C (32 °F)} \leq T_a \leq 70\text{ °C (158 °F)}$	
xPS31E	T4	$0\text{ °C (32 °F)} \leq T_p \leq 80\text{ °C (176 °F)}$	$0\text{ °C (32 °F)} \leq T_a \leq 90\text{ °C (194 °F)}$
	T6	$0\text{ °C (32 °F)} \leq T_p \leq 70\text{ °C (158 °F)}$	$0\text{ °C (32 °F)} \leq T_a \leq 70\text{ °C (158 °F)}$
xPS91E xPS92E xPS96E	T4	$0\text{ °C (32 °F)} \leq T_p \leq 110\text{ °C (230 °F)}$	$0\text{ °C (32 °F)} \leq T_a \leq 80\text{ °C (176 °F)}$
		$0\text{ °C (32 °F)} \leq T_p \leq 100\text{ °C (212 °F)}$	$0\text{ °C (32 °F)} \leq T_a \leq 85\text{ °C (185 °F)}$
		$0\text{ °C (32 °F)} \leq T_p \leq 90\text{ °C (194 °F)}$	$0\text{ °C (32 °F)} \leq T_a \leq 90\text{ °C (194 °F)}$
	T6	$0\text{ °C (32 °F)} \leq T_p \leq 70\text{ °C (158 °F)}$	$0\text{ °C (32 °F)} \leq T_a \leq 70\text{ °C (158 °F)}$

The temperature table above applies only under the following installation conditions, which are described in the following graphic →  7. 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

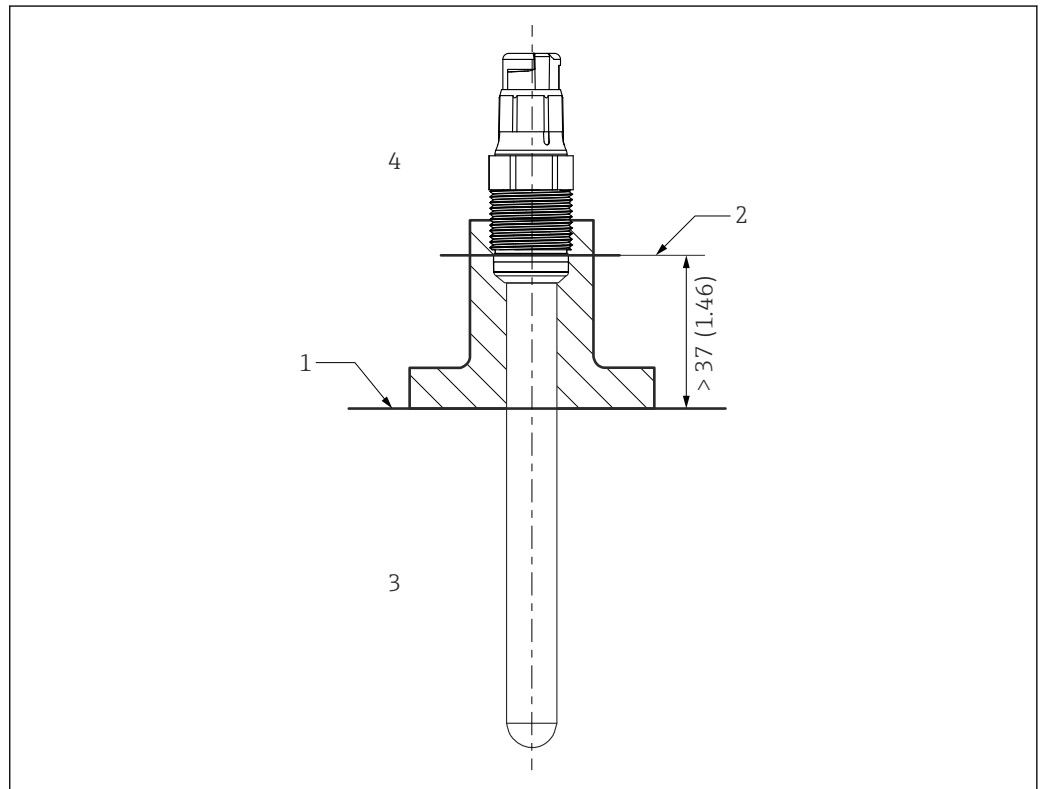
- The pH/ORP sensors of the model series xPSxxE are approved according to the EU type-examination certificate BVS 19 ATEX E 062 X and are suitable for use in hazardous environments. The corresponding EU Declaration of Conformity is an integral part of this document.
- The approved digital pH/ORP sensors of the model series xPSxxE have an intrinsically safe input with the following parameter set:

Parameter	Value
P <sub>i</sub>	180 mW

The approved digital pH/ORP sensors of the model series xPSxxE must be connected to a Memosens cable or a cable transmitter with an intrinsically safe output with the following parameter:

Parameter	Value
P <sub>o</sub>	Maximum 180 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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