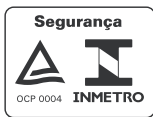


# Safety Instructions

## Memosens pH/ORP sensors

pH and ORP measurement

Safety instructions for electrical apparatus in explosion-hazardous areas





# Memosens pH/ORP sensors

pH and ORP measurement

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**Associated documentation** This document is an integral part of Operating Instructions BA01988C, BA02142C.

**Additional documentation**  Competence Brochure CP00021Z

- Explosion Protection: Guidelines and General Principles
- [www.endress.com](http://www.endress.com)

**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

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

Type	Version	*	*	**	*	***	+*
xPS31E xPS91E xPS92E xPS96E	MA						
x = C, OC No Ex relevance	INMETRO Ex ia IIC T4/T6 Ga	No Ex relevance					

### Certificates and approvals

#### Ex approvals

The product has been certified in compliance with the following:

- ABNT NBR IEC 60079-0:2020
- ABNT NBR IEC 60079-11:2013
- Portaria INMETRO n° 115 de 21/03/2022

Item type	Version	
xPS11E, xPS41E, xPS61E, xPS71E xPS12E, xPS42E, xPS62E, xPS72E xPS16E, xPS76E	Ex ia IIC T3/T4/T6	Ga
xPS31E, xPS91E xPS92E xPS96E	Ex ia IIC T4/T6	Ga

Certificate number: TÜV 23.1277 X

Notified body


TÜV Rheinland do Brasil Ltda

**Safety Instructions**

- 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 plug-in head.
- When using devices and sensors, observe the regulations for electrical systems in hazardous areas (ABNT NBR IEC 60079-14).
- The procedures for electrical connection described in the Operating Instructions must be followed.

**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 →  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**

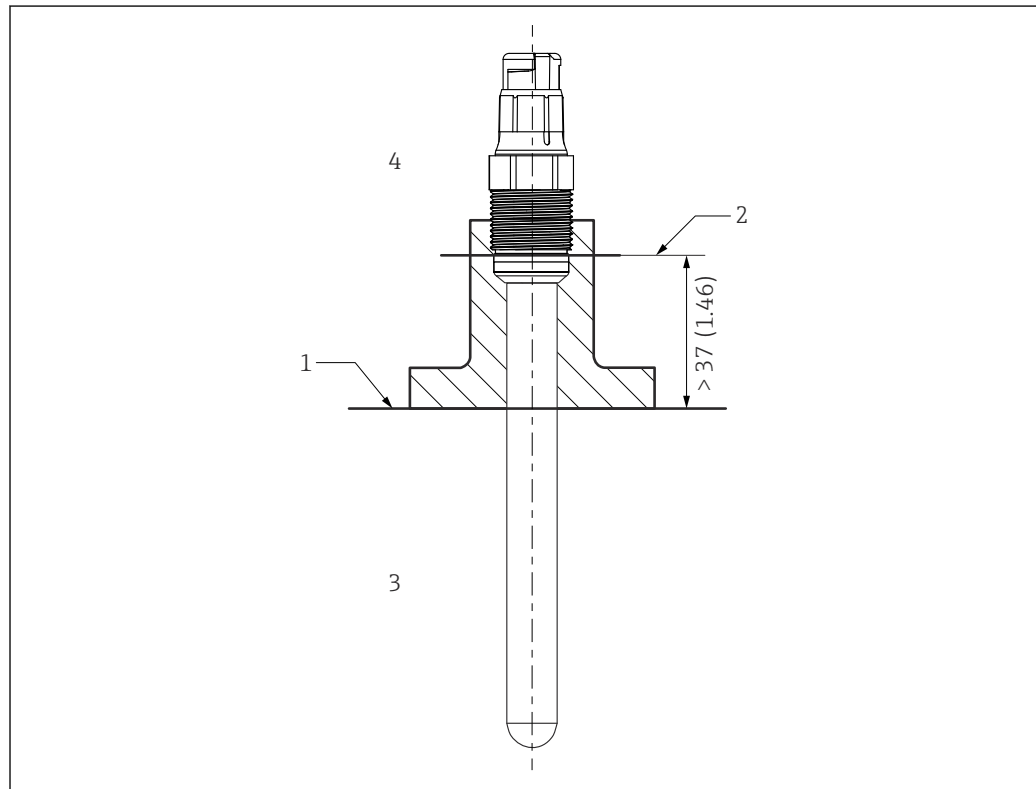
- The pH/ORP sensors of the series xPSxxE are approved according to the INMETRO type-examination certificate TÜV 23.1277 X and are suitable for use in hazardous environments.
- The approved digital pH/ORP sensors of the model series xPSxxE feature an intrinsically safe input with the following parameter set:

Parameters	Value
$P_i$	180 mW

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

Parameters	Value
$P_o$	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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