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Safety Instructions
Memosens ISFET pH sensors

pH measurement

Safety instructions for electrical apparatus in explosion-hazardous areas

Segurança
OCP 0004 INMETRO

Endress+Hauser
People for Process Automation

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pH measurement

Table of contents

Associated documentation

This document is an integral part of Operating Instructions BA02154C.

Additional documentation

Competence Brochure CP00021Z
- Explosion Protection: Guidelines and General Principles
- www.endress.com

Certificates

The certificates and declarations of conformity are available in the Downloads area of the Endress+Hauser website:

www.endress.com/download

INMETRO

The number of the INMETRO certificate that applies to the product can be found on the nameplate. And the according standards can be found on the certificate.

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

Item type	Version						
xPS47E xPS77E	MA	*	*	**	*	+*	
x = C, OC No Ex relevance	INMETRO Ex ia IIC T3/T4/T6 Ga	No Ex relevance					

Item type	Version						
xPS97E	MA	*	*	**	*	+*	
x = C, OC No Ex relevance	INMETRO Ex ia IIC T4/T6 Ga	No Ex relevance					

Certificates and approvals

Ex approvals

Item type	Version	
CPS47E, CPS77E	Ex ia IIC T3/T4/T6	Ga
CPS97E	Ex ia IIC T4/T6	Ga

Safety Instructions

- The sensors may not be operated in electrostatically critical processing conditions. Intense vapour or dust flows directly impacting on the connection system must be avoided.
- The sensor may not be operated on processing conditions, in which an electrostatic loading of the sensor and the connecting system is to be counted. Operation in product application intended fluid media providing conductivity of least 10 ns/cm can be assumed as electrostatic uncritical.
- 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 (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	
		minimum	maximum	minimum	maximum
CPS47E CPS77E	T3	−15 °C (5 °F)	135 °C (275 °F)	−15 °C (5 °F)	70 °C (158 °F)
	T4	−15 °C (5 °F)	115 °C (239 °F)	−15 °C (5 °F)	75 °C (167 °F)
			110 °C (230 °F)		80 °C (176 °F)
			100 °C (212 °F)		85 °C (185 °F)
			90 °C (194 °F)		90 °C (194 °F)
	T6	−15 °C (5 °F)	65 °C (149 °F)	−15 °C (5 °F)	65 °C (149 °F)
CPS97E	T4	−15 °C (5 °F)	110 °C (230 °F)	−15 °C (5 °F)	80 °C (176 °F)
			100 °C (212 °F)		85 °C (185 °F)
			90 °C (194 °F)		90 °C (194 °F)
	T6	−15 °C (5 °F)	65 °C (149 °F)	−15 °C (5 °F)	65 °C (149 °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

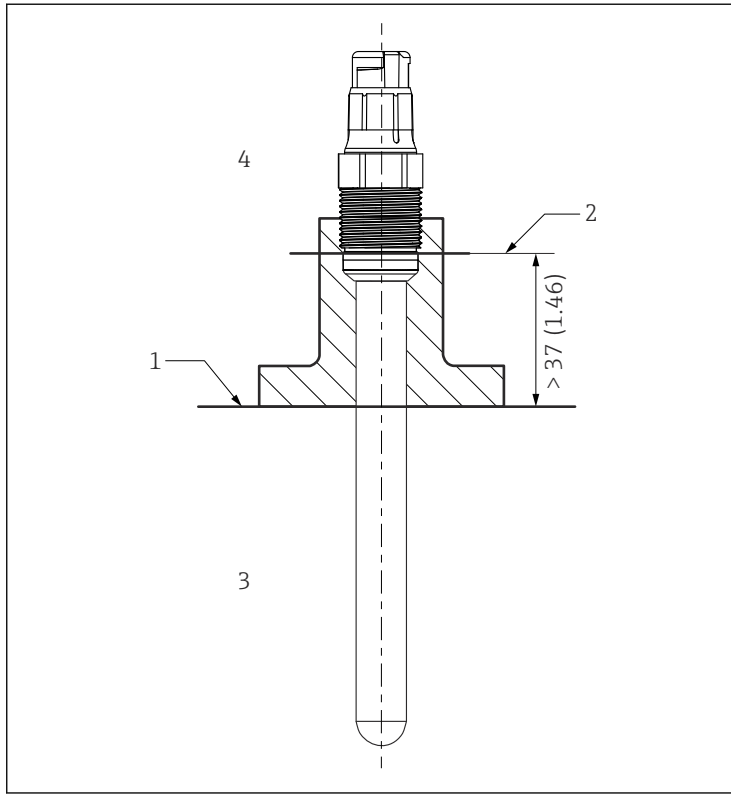
- The CPSx7E-type ISFET pH sensors are suitable for use in hazardous environments.
- The approved digital CPSx7E ISFET pH sensors feature an intrinsically safe input with the following parameter set:

Parameters	Value
P_i	180 mW

The approved CPSx7E ISFET pH sensors 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



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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