XA02647C/07/EN/01.21
71531209
2021-06-21

Safety Instructions
Memosens ISFET pH sensors

pH measurement

Supplement to BA02154C
Safety instructions for electrical apparatus in explosion-hazardous areas
UK Ex II 1 G Ex ia IIC T3/T4/T6 Ga
Uk Ex II 1 G Ex ia IIC T4/T6 Ga

Endress+Hauser
People for Process Automation

UK-Declaration of Conformity

Endress+Hauser
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UK CA
2503

Company **Endress+Hauser Conducta GmbH+Co. KG**
Dieselstraße 24, 70839 Gerlingen, Germany
declares as manufacturer under sole responsibility, that the product

Product ISFET sensors
CPSxxE-UA * * ** * +* **xx = 47,77,97**

Regulations conforms to following UK statutory requirements:

The Electromagnetic Compatibility Regulations	SI 2016 No. 1091
The Equipment and Protective Systems Intended for use in Potentially Explosive Atmosphere Regulations	SI 2016 No. 1107
The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations	SI 2012 No. 3032

Standards applied designated standards:

EN 61326-1	(2013)	EN IEC 60079-0	(2018)
EN 61326-2-3	(2013)	EN 60079-11	(2012)
EN 61326-2-5	(2013)		
EN IEC 63000	(2018)		

Certification

UK Type Examination Certificate No.	CML 21UKEX2129X
issued by Approved Body	Eurofins E&E CML Limited-UK (2503)
Quality assurance	Eurofins E&E CML Limited-UK (2503)

Gerlingen, 10 June 2021
Endress+Hauser Conducta GmbH+Co. KG

i. V. Jörg-Martin Müller
Technology

i. V. Mohamed Algafy
Technology Certifications and Approvals

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Memosens ISFET pH sensors

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

Manufacturer's certificate

UK 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

UK Ex

Item type	Version					
xPS47E xPS77E	UA	*	*	**	*	+*
x = C, OC No Ex relevance	UK Ex II 1G Ex ia IIC T3/T4/T6 Ga	No Ex relevance				

Item type	Version					
xPS97E	UA	*	*	**	*	+*
x = C, OC No Ex relevance	UK Ex II 1G 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 UK statutory requirements:

- The Electromagnetic Compatibility Regulations SI 2016 No. 1091
- The Equipment and Protective Systems Intended for use in Potentially Explosive Atmosphere Regulations SI 2016 No. 1107
- The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations SI 2012 No. 3032

Compliance is verified by adherence to the standards listed in the Declaration of Conformity.

Ex approvals

xPS47E / xPS77E:

Ⓔx II 1G Ex ia IIC T3/T4/T6 Ga

xPS97E:

Ⓔx II 1G Ex ia IIC T4/T6 Ga

Approved Body

Eurofins E&E CML Limited (UK)

Safety Instructions

The inductive Memosens ISFET pH sensors CPS47E, CPS77E, CPS97E are suitable for use in hazardous areas in accordance with:
UK type-examination certificate CML 21UKEX2129X

The corresponding UK 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.
- The sensors must not be operated under process conditions where the sensor and the connection system can become electrostatically charged. Sensor operation in liquid media that are in contact with the process and have a minimum conductivity of 10 nS/cm is not considered problematic with regard to electrostatic charge.
- 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 60079-14).
- The procedures for electrical connection described in the Operating Instructions must be followed.
- This device was developed and manufactured in accordance with SI 2016 No. 1107 dated 2016 and also complies with the following standards:
  - EN IEC 60079-0 :2018 Electrical apparatus for explosive gas atmospheres
  - EN 60079-11:2012 Explosive atmospheres. Equipment protection by intrinsic safety "i"

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

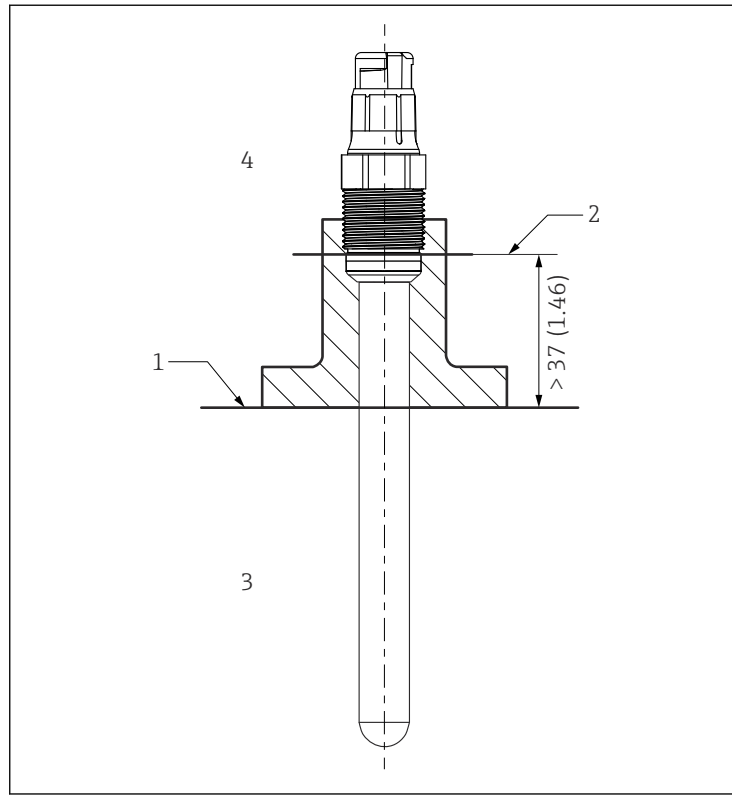
- The CPSx7E-type ISFET pH sensors are approved in accordance with and are suitable for use in hazardous environments.
- The approved digital ISFET pH sensors feature an intrinsically safe input with the following parameter set:

Parameters	Value
P_i	180 mW

The approved CPSx7E-type digital ISFET pH sensors must be connected to a Memosens measuring cable 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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