

Safety Instructions

Indumax CLS50D, CLS50

Inductive conductivity sensor for standard, Ex and high-temperature applications

NEPSI Ex ia IIC T4/T6 Ga





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Associated documentation These Safety Instructions are integral part of the following manuals, which can be found on the product pages on the Internet:



Operating Instructions for Indumax CLS50D/CLS50, BA00182C

Supplementary documentation



Competence Brochure CP00021Z

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

Certificate

The number of the Nepsi certificate valid for the product can be found on its nameplate.

Identification

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

- Manufacturer identification
- 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						
CLS50D	-	NA	a ¹⁾	b ²⁾	c ³⁾	d ⁴⁾	+ e ... e ⁵⁾

- 1) Process connection (no ex-relevance)
- 2) Sensor-, Seal-, Adapter material: B = PEEK, VITON, PEEK; C = PEEK, Chemraz, PEEK; D = PFA, CHEMRAZ, 1.4571
- 3) Cable length (no ex-relevance): 1 = 3 m; 2 = 7 m; 3 = 15 m; 7 = 1 up to 50 m; 8 = 1 up to 164 ft
- 4) Cable connection (no ex-relevance): 1 = Fixed cable, crimp sleeves; 2 = Fixed cable, M12 plug
- 5) Optional = one or more characters determining optional features (no ex-relevance), e.g. test or other certificates or declarations

Type	Version					
CLS50	-	H	a ¹⁾	b ²⁾	c ³⁾	+ d ⁴⁾

- 1) Process connection (no ex-relevance)
- 2) Sensor-, Seal-, Adapter material: A = PFA, CHEMRAZ, 1.4571; B = PEEK, VITON, PEEK; C = PEEK, Chemraz, PEEK
- 3) Cable connection (no ex-relevance): 1 = 5 m (125 °C); 2 = 10 m (125 °C); 3 = 20 m (125 °C); 4 = 10 up to 55 m (125 °C); 5 = 5 m (180 °C); 6 = 10 m (180 °C)
- 4) Optional tagging (no ex-relevance)

Certificates and approvals

Ex approval

The CLS50D and CLS50 type conductivity sensors, have been certified by the National Supervision and Inspection Centre for Explosion Protection and Safety of Instrumentation (NEPSI).

Ex ia IIC T4/T6 Ga

Safety instructions

- The sensor must be connected and operated in accordance with the Operating Instructions of the sensor and of the transmitter to be connected. All sensor operating data must be observed.
- Metallic process connection parts have to be mounted electrostatically conductive at the mounting location (< 1 MΩ).
- The sensor may only be used in liquid media with a conductivity of a least 10 nS/cm.
- Non-metal process connections must be protected against electrostatic charge.

- In order to avoid electrostatic charge clean the sensor with a damp cloth only.
- Full compliance with regulations for electrical systems in hazardous locations (EN/IEC 60079-14) is mandatory when using the devices and sensors.
- Ensure correct installation to maintain the housing protection type. (Use original seal. Fit cable entry properly. Tighten nut).
- The degree of protection only applies when the flange is mounted.
- The end user must adhere to the Operating Instructions and the following standards for the installation, operation and maintenance of the product:
 - GB 3836.13 "Explosive atmospheres - Part 13: Equipment repair, overhaul, reclamation and modification"
 - GB/T 3836.15 "Explosive atmospheres - Part 15: Electrical installations design, selection and erection"
 - GB/T 3836.16 "Explosive atmospheres - Part 16: Electrical installations inspection and maintenance"
 - GB/T 3836.18 "Explosive atmospheres - Part 18: Intrinsically safe electrical systems"
 - GB 50257 "Code for construction and acceptance of electric device for explosion atmospheres and fire hazard electrical equipment installation engineering".
- To ensure that the explosion protection of the device is maintained, the operator must not change the configuration. Any modification may affect safety.
- Observe the instructions of the NEPSI certificate, available via the website of the product: endress.com/cls50d or endress.com/cls50.

Temperature tables

	Temperature class	
Typ	T4	T6
CLS50D-NA*B** CLS50D-NA*C**	$-20\text{ °C} \leq T_a \leq 120\text{ °C}$	$-20\text{ °C} \leq T_a \leq 70\text{ °C}$
CLS50D-NA*D**	$-20\text{ °C} \leq T_a \leq 110\text{ °C}$	$-20\text{ °C} \leq T_a \leq 70\text{ °C}$
CLS50-H***	$-20\text{ °C} \leq T_a \leq 125\text{ °C}$	$-20\text{ °C} \leq T_a \leq 75\text{ °C}$

The above temperature table applies only under the installation conditions, which are described in the Operating Instructions. If the installation conditions cannot be met, the maximum process temperature T_p must not exceed the maximum ambient temperature T_a .

Connection

The conductivity sensors are approved according to NEPSI certificate (see nameplate) and are suitable for use in explosion-hazardous environments.

- The sensor may only be connected to the following transmitter: Liquiline type CM42-LJ (CLS50D) or CM42-IJ (CLS50)
- CLS50 only
The maximum permissible length of the measuring cable is as follows: 55 m (180 ft).

Installation conditions



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