

Safety Instructions

Indumax CLS50D, CLS50

FM IS/NI Cl.I Div. 1/2 GP A, B, C and D

Safety instructions for electrical apparatus in explosion-hazardous areas



Indumax CLS50D, CLS50

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Table of contents

Associated documentation	4
Supplementary documentation	4
Certificate	4
Identification	4
Safety instructions	5
Temperature tables	5
Connection	5
Installation conditions	5

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

FM16US0145X

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	-	FB	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	-	O	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)
- 4) Optional tagging (no ex-relevance)

Certificates and approvals

The product is verified by compliance with the following standards:

- FM Class 3600 FM Class 3610
- ANSI/UL121201 (old: FM Class 3611)
- FM Class 3810
- ANSI/ISA 60079-0
- ANSI/ISA 60079-11
- ANSI/IEC 60529

Intrinsically Safe for Class I, Division 1, Groups A, B, C and D; Class I, Zone 0, Group IIC; IP67
Non Incendive for Class I, Division 2; Groups A, B, C and D; Class I, Zone 2, Group IIC

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 ($< 1 \text{ M}\Omega$).
- The sensor may only be used in liquid media with a conductivity of at 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.
- Observe the documentation and the control drawings of the transmitter.


Temperature tables

Typ	Temperature class	
	T4	T6
CLS50D-FB*B** CLS50D-FB*C**	$-20 \text{ }^\circ\text{C} \leq T_a \leq 120 \text{ }^\circ\text{C}$ $-4 \text{ }^\circ\text{F} \leq T_a \leq 248 \text{ }^\circ\text{F}$	$-20 \text{ }^\circ\text{C} \leq T_a \leq 70 \text{ }^\circ\text{C}$ $-4 \text{ }^\circ\text{F} \leq T_a \leq 158 \text{ }^\circ\text{F}$
CLS50D-FB*D**	$-20 \text{ }^\circ\text{C} \leq T_a \leq 110 \text{ }^\circ\text{C}$ $-4 \text{ }^\circ\text{F} \leq T_a \leq 230 \text{ }^\circ\text{F}$	$-20 \text{ }^\circ\text{C} \leq T_a \leq 70 \text{ }^\circ\text{C}$ $-4 \text{ }^\circ\text{F} \leq T_a \leq 158 \text{ }^\circ\text{F}$
CLS50-O***	$-20 \text{ }^\circ\text{C} \leq T_a \leq 125 \text{ }^\circ\text{C}$ $-4 \text{ }^\circ\text{F} \leq T_a \leq 257 \text{ }^\circ\text{F}$	$-20 \text{ }^\circ\text{C} \leq T_a \leq 75 \text{ }^\circ\text{C}$ $-4 \text{ }^\circ\text{F} \leq T_a \leq 167 \text{ }^\circ\text{F}$

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**Ex specification**

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

 Safety Instructions Liquiline CM42, XA01687C

The sensors can be connected both Class I Division 1 and Class I Division 2: Division 1 equipment can be used in Division 2 as long as they are installed in the same manner as they were intended for Division 1 (NEC 500.8 (B)(2)). This is the case for Memosens sensor with inductive coupling between sensor and cable. There are no different installation methods between sensor and cable. For the cable-transmitter connection the XA of the transmitter must be considered.

Installation conditions

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