

Safety Instructions

Indumax CLS50D, CLS50

ATEX II 1G Ex ia IIC T4/T6 Ga
IECEX ia IIC T4/T6 Ga (CLS50D only)

Safety instructions for electrical equipment in explosion-hazardous areas



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Associated documentation

Operating Instructions for Indumax CLS50D/CLS50, BA00182C

Documentation

Competence Brochure CP00021Z

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

Certificates**CLS50D**

- EU Declaration of Conformity EC_00368
- Type-examination certificate BVS 12 ATEX E 048 X
- IECEx certificate: IECEx BVS 14.0004X

CLS50

- EU Declaration of Conformity EC_00438
- Type-examination certificate DMT 99 ATEX 075 X

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	-	BA	a ¹⁾	b ²⁾	c ³⁾	d ⁴⁾	+ e ... e ⁵⁾
CLS50D	-	IA	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 to 50 m, 8: 1 to 164 ft
- 4) Cable connection (no Ex relevance), 1: fixed cable with ferrules, 2: fixed cable with M12 connector
- 5) Additional options (no Ex relevance), calibration, service, other approvals, measuring point identification

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

- 1) Process connection (no Ex relevance)
- 2) Sensor, seal, adapter material; 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 to 55 m (125 °C), 5: 5 m (180 °C), 6: 10 m (180 °C)
- 4) Optional measuring point identification (no Ex relevance)

Certificates and approvals*Ex approvals*

- ATEX II 1G Ex ia IIC T4/T6 Ga
- IECEx Ex ia IIC T4/T6 Ga (CLS50D only)

Ex inspection authority

DEKRA Testing and Certification GmbH
Bochum

Safety instructions

Sensors with ATEX approval have been developed and manufactured in accordance with the applicable European standards and guidelines and are suitable for use in explosive atmospheres. The Declaration of Conformity confirms compliance with the harmonized European standards for using the sensors in hazardous areas.

- The sensors may be operated in an environment specified as Ex Zone 0 (1G).
- The sensors may only be used in liquid media with a minimum conductivity of 10 nS/cm.
- If the connecting cable runs through Ex Zone 0 (1G), it must be protected against electrostatic charge.
- Compliance with the specified ambient and medium temperature ranges is a prerequisite for safe use.
- 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.
- Avoid electrostatic charge. Metal process connections must be electrostatically connected at the mounting location ($R \leq 1 \text{ M}\Omega$).
- 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 explosive atmospheres (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 IP68 degree of protection applies only when the flange is mounted.

Temperature tables

Type	Temperature class	
	T4	T6
CLS50D-BA*B** CLS50D-BA*C** CLS50D-IA*B** CLS50D-IA*C**	$-20 \text{ }^\circ\text{C} \leq T_a \leq 120 \text{ }^\circ\text{C}$	$-20 \text{ }^\circ\text{C} \leq T_a \leq 70 \text{ }^\circ\text{C}$
CLS50D-BA*D** CLS50D-IA*D**	$-20 \text{ }^\circ\text{C} \leq T_a \leq 110 \text{ }^\circ\text{C}$	$-20 \text{ }^\circ\text{C} \leq T_a \leq 70 \text{ }^\circ\text{C}$
CLS50-G***	$-20 \text{ }^\circ\text{C} \leq T_a \leq 125 \text{ }^\circ\text{C}$	$-20 \text{ }^\circ\text{C} \leq T_a \leq 75 \text{ }^\circ\text{C}$

The temperature tables apply only under the installation conditions 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****CLS50D-BA**** and CLS50D-IA******

- The sensor is a digital sensor with the Memosens protocol and its connection values are those specified below.
- The sensor may also be connected to the intrinsically safe Memosens connection of module FSDG1 of the ATEX- and IECEx-certified CM42 transmitter.
- The maximum permitted length of the measuring cable is 100 m (330 ft) here.

U_i	5.1 V
I_i	130 mA
P_i	166 mW
C_i	18 μF
L_i	0.72 μH

CLS50-G***

- The sensor may only be connected to the following transmitters:
 - ATEX- and IECEx-certified CM42 transmitter
 - Mycom type CLM153-Z with transmitter module type FCL1, EC type-examination certificate DMT 99 ATEX E 076
 - Mycom type CLM153-G, EC type-examination certificate DMT 01 ATEX E 174
- The maximum permitted length of the measuring cable is 55 m (180 ft) here.

**CLS50 only**

In the CLS50 sensor, the internal sensor circuits are connected with the shielded wire of the supply cable. When installing the CM42 or CLM153 transmitter, the shielding of the sensor cable must be connected to functional ground as prescribed. As a result, the intrinsically safe sensor circuits of CLS50 are also connected to ground. Therefore, the power supply of the transmitter must be galvanically isolated and connected to ground.

The CM42 and CLM153 transmitters already have secure internal galvanic isolation and therefore safely separate the sensor circuit from the other circuits.

Installation conditions

Operating Instructions for Indumax CLS50D/CLS50, BA00182C



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