

# Safety Instructions

## Indumax CLS54

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

CHN Ex ia IIC T3/T4/T6 Ga



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# Indumax CLS54

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

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**Associated documentation**

This document is an integral part of



Operating Instructions for Indumax CLS54, BA01591C

**Supplementary documentation**

Competence Brochure CP00021Z

- Explosion Protection: Guidelines and General Principles
- [www.endress.com](http://www.endress.com)

**Certificate**

The NEPSI certificates and other certificates/declarations of conformity are available in the Downloads area of the Endress+Hauser website: [www.endress.com/download](http://www.endress.com/download).

The number of the NEPSI certificate that applies to the product can be found on the nameplate.

**Identification**

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

- Manufacturer identification
- Extended order code
- Serial number
- Safety information and warnings
- Cell constant (nominal value)
- Ex marking on hazardous area versions

- Compare the information on the nameplate with the order.

**Type code****Certificates and approvals**

The Analog conductivity sensor Indumax CLS54, has been certified by the National Supervision and Inspection Centre for Explosion Protection and Safety of Instrumentation (NEPSI). These products meet the following standards:

- GB 3836.1 Explosive atmospheres-Part 1: Equipment-General requirements.
  - GB 3836.4 Explosive atmospheres-Part 4: Equipment protection by intrinsic safety "i".
  - GB 3836.20 Explosive atmospheres-Part 20: Equipment with equipment protection level (EPL) Ga
- Please find the current versions of the standards on the certificate.

**CLS54**

Ex ia IIC T3/T4/T6 Ga

**Safety instructions****CLS54**

- The regulations for electrical installation in hazardous areas are to be observed for the use of the instrument and sensors.
- The sensor must be connected and operated in accordance with its associated Operating Instructions and the Operating Instructions of the connected transmitter.
- All operating data of the sensor must be observed.
- Adherence to the specified ambient and medium temperature ranges is a prerequisite for safe operation of the equipment.
- The sensor may be operated in Zone 0 (1G) classified areas.
- Proper installation is required in order to maintain the protection type (IP67): use original seal, install cable gland properly.
- The product may only be used in liquid media with a conductivity of least 10 nS/cm.
- Metallic process connection parts have to be mounted at the mounting location electrostatically conductive (< 1 MΩ).
- Non-metallic process connectors must be protected from electrostatic charging (even when applied in Ex-Zone 1 (2G)).
- The measurement cable must be protected from electrostatic charging when applied in Ex-Zone 0 (1G).
- The maximum permissible measurement cable length must not exceed 50 m.

The end user must adhere to the operating Instructions and the following standards for the installation, operation and maintenance of the product:

- GB 50257 "Code for construction and acceptance of electric device for explosion atmospheres and fire hazard electrical equipment installation engineering".
- GB 3836.13 "Explosive atmospheres - Part 13: Equipment repair, overhaul and reclamation".
- 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".

Please find the current versions of standards on the certificate.

## Temperature tables

Sensor	Temperature class		
	T3	T4	T6
CLS54-N*****	$-10\text{ °C} \leq T_a \leq 125\text{ °C}^{1)}$	$-10\text{ °C} \leq T_a \leq 105\text{ °C}$	$-10\text{ °C} \leq T_a \leq 55\text{ °C}$

1) 150 °C for max. 60 min.

The temperature table above applies only under the installation conditions, which are described in the Operating Instructions BA00182C. If the installation conditions cannot be met, the maximum process temperature  $T_p$  must not exceed the maximum ambient temperature  $T_a$ .

## Connection

The sensor may be connected to the approved intrinsic safe sensor output of transmitters:

- Transmitter type Liquiline M CM42  
Connected via sensor module FSLI1, Terminals 111-113, 215-218
- Transmitter Liquiline type CM42B  
VSLI1/ Cond. i module (field wiring terminals: 11, 12, 13, 15, 16, 17, 18, 20)

## Installation conditions



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