

Safety Instructions

Indumax CLS50D

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

JPN Ex ia IIC T4 Ga



Indumax CLS50D

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

Table of contents

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

Associated documentation

This document is an integral part of



Operating Instructions for Indumax CLS50D/CLS50, BA00182C

Supplementary documentation

Competence Brochure CP00021Z

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

Certificate

JPN type-examination certificate, certificate number: DEK19.0021X

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	-	JA	a ¹⁾	b ²⁾	c ³⁾	d ... d ⁴⁾

- 1) Process connection (no ex-relevance)
- 2) Shaft material: B = PEEK; VITON; PEEK, C = PEEK; Chemraz; PEEK, D = PFA; CHEMRAZ; 1.4571
- 3) Cable length: 1 = 3 m, 2 = 7 m, 3 = 15 m, 7 = 1 to 50 m, 8 = 1 to 164 ft
- 4) Other options irrelevant to explosion safety; alpha-numeric characters or/and symbols

Certificates and approvals**Ex approval**

The product meets the requirements of the Regulation on the Testing of Machinery and other Instruments set down by the Ministry of Health, Labor and Welfare in Japan.

JapanEx

Ex ia IIC T4 Ga

Safety instructions

The inductive Memosens conductivity sensor CLS50D is suitable for use in hazardous areas in accordance with: JPN type-examination certificate DEK19.0021X including appendices.

- 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.
- 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 guidelines for interconnecting intrinsically safe circuits (e.g. JNIOHS-TR-NO.44).
- The procedures for electrical connection described in the Operating Instructions must be followed.
- The user must attach the yellow/black label (contained in the product packaging) beside the installed sensor (e.g. on the installed cable).
- 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 ($R \leq 1 \text{ M}\Omega$).

- Non-metal process connections have to be protected from electrostatic charging. The connecting cable has to be protected from electrostatic charge, if installed through areas requiring EPL Ga equipment.
- The maximum permitted length of the measuring cable is 100 m here.
- This device was developed, manufactured and assessed in accordance with the following standards:
 - JNIOH-TR-46-1:2015 "Equipment – General requirements"
 - JNIOH-TR-46-6:2015 "Equipment protection by intrinsic safety "i" "

Temperature tables

Sensor	Temperature class	Process temperature range T_p	Ambient temperature range T_a
CLS50D	T4	$-20\text{ °C} \leq T_p \leq 110\text{ °C}$	$-20\text{ °C} \leq T_a \leq 60\text{ °C}$

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

Ex specification

- The conductivity sensors of the model CLS50D are approved according to JPN type-examination certificate DEK19.0021X and are suitable for use in hazardous environments.
- The approved digital conductivity sensors of the model series CLS50D have an intrinsically safe input with the following parameter set:

Parameter	Value
U_i	5.1 V DC
I_i	130 mA
P_i	166 mW
C_i	18 μF
L_i	72.6 μH

The sensor may also be connected to the intrinsically safe Memosens connection of the FSDG1 module of the Liquiline transmitter, types CM42-LU.

Installation conditions



Operating Instructions for Indumax CLS50D/CLS50, BA00182C



71608072