

Safety Instructions

Memosens CYK10

NEPSI Ex ia IIC T3/T4/T6 Ga

Safety instructions for electrical apparatus in
explosion-hazardous areas



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Associated documentation

This document is an integral part of Operating Instructions BA00118C.

Supplementary documentation



- Competence Brochure CP00021Z
 - Explosion Protection: Guidelines and General Principles
 - www.endress.com

Certificates

The NEPSI certificates and other certificates/declarations of conformity are available in the Downloads area of the Endress+Hauser website:

www.endress.com/download

NEPSI 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
 - Order code
 - Extended order code
 - Serial number
 - Safety information and warnings
 - Ex labeling on hazardous area versions
- Compare the information on the nameplate with the order.

Type code

Type	Version		
CYK10	G, J	**	*
	Ex ia IIC T3/T4/T6 Ga	No Ex relevance	

Certificates and approvals

Ex approvals

The Memosens cable CYK10 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 3836.1-2010 Explosive atmospheres-Part 1: Equipment-General requirements
- GB 3836.4-2010 Explosive atmospheres-Part 4: Equipment protection by intrinsic safety "I"
- GB 3836.20-2010 Explosive atmospheres-Part 20: Equipment with equipment protection level (EPL) Ga

Safety Instructions

The Memosens inductive sensor cable connection system, consisting of:

- Approved sensors
- Measuring cable CYK10

is approved for measuring applications in explosive atmospheres.

The sensor must be connected and operated in accordance with its operating instructions and the operating instructions of the connected transmitter. All operational data of the sensor must be observed by the operator.

- It is not permitted to operate the cable under electrostatically critical process conditions. Significant vapor and dust clouds, which have a direct impact on the connection system, must be avoided.
- The terminal head of the Memosens data cable must be protected against electrostatic charging if it is installed in the areas EPL Ga (Zone 0).
- Ex versions of Memosens cables are marked with an orange-red ring.
- The maximum permitted cable length is 100 m (328.1 ft).

- The regulations for electrical installations in potentially explosive atmospheres (e.g. EN/IEC 60079-14) must be observed when using devices and sensors.
- In order to maintain and guarantee the explosion protection of the device, the user may not modify the configuration in any way. Every change can compromise the safety of the device. Overvoltage category specification: I (Supply through limited energy circuit)
- The end user must adhere to the Operating Instructions and the following standards for the installation, operation and maintenance of the product:
 - GB 50257-2014 "Code for construction and acceptance of electric device for explosion atmospheres and fire hazard electrical equipment installation engineering".
 - GB 3836.13-2013 "Explosive atmospheres - Part 13: Equipment repair, overhaul and reclamation"
 - GB/T 3836.15-2017 "Explosive atmospheres - Part 15: Electrical installations design, selection and erection"
 - GB/T 3836.16-2017 "Explosive atmospheres - Part 16: Electrical installations inspection and maintenance"
 - GB/T 3836.18-2017 "Explosive atmospheres - Part 18: Intrinsically safe electrical systems"



Pay attention to the ex-related safety instructions of the transmitter and sensors when cabling.

Temperature tables

Cable Type	Ambient temperature range T_a		
	T3	T4	T6
CYK10	$-15\text{ °C (5 °F)} \leq T_a \leq 135\text{ °C (275 °F)}$	$-15\text{ °C (5 °F)} \leq T_a \leq 120\text{ °C (248 °F)}$	$-15\text{ °C (5 °F)} \leq T_a \leq 70\text{ °C (158 °F)}$

If the ambient temperatures specified above are not exceeded, there are no invalid temperatures at the cable according to the temperature class.

Connection

Ex specification

The Memosens data cable is used to connect to the Ex-approved intrinsically safe sensor output circuits of the Liquiline CM42 transmitter (e.g. with sensor module FSDG1). The cable can alternatively be used with connectable devices certified with Ex approval. These must have an intrinsically safe Memosens sensor output specified with the following maximum values. In particular, the

certified intrinsically safe sensor output may not exceed the effective inner inductance and capacitance of the values indicated below:

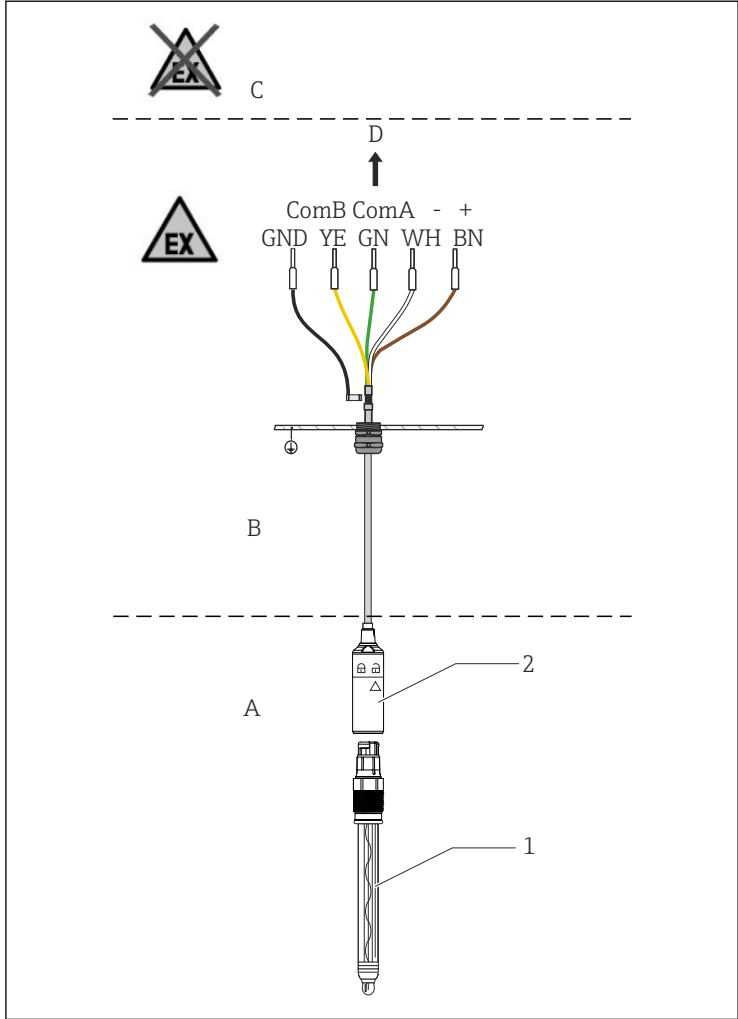
1. Entity parameter set	2. Entity parameter set
$U_0 = 5.1 \text{ V}$	$U_0 = 5.04 \text{ V}$
$I_0 = 130 \text{ mA}$	$I_0 = 80 \text{ mA}$
$P_0 = 166 \text{ mW}$ (linear output curve)	$P_0 = 112 \text{ mW}$ (trapezoid output curve)
$C_i = 15 \text{ }\mu\text{F}$	$C_i = 14.1 \text{ }\mu\text{F}$
$L_i = 95 \text{ }\mu\text{H}$	$L_i = 237.2 \text{ }\mu\text{H}$

The connection of energy-limited Memosens sensors (with a defined P_i) to the energy-limited Memosens data cable by means of inductive coupling is permitted, taking into consideration the following value:

Maximum output power P_0	178 mW
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The electrical connection must be performed in accordance with the Operating Instructions.

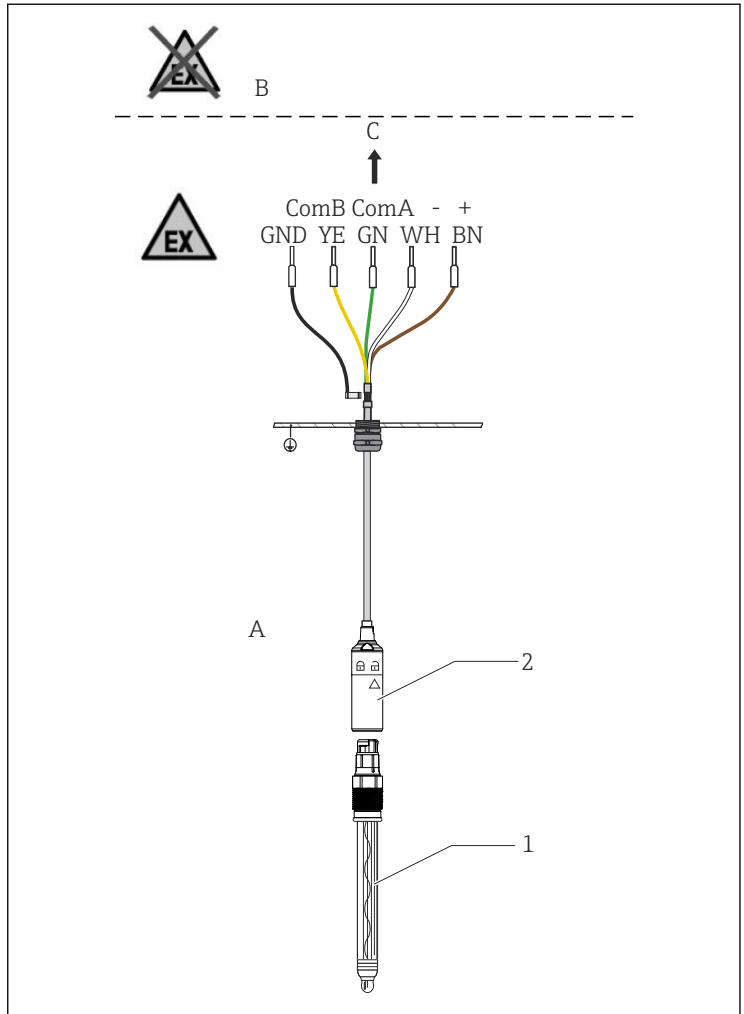
Installation conditions



A0031034

1 Memosens data cable in Zone 0

- A Hazardous area Zone 0
- B Hazardous area Zone 1
- C Non-hazardous area
- D Ex-certified transmitter CM42 or transmitter with an intrinsically safe output power
- 1 Certified Memosens sensor
- 2 Memosens data cable, $P_0 = 178 \text{ mW}$



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2 Memosens data cable in Zone 1

A Hazardous area Zone 1

B Non-hazardous area

C Ex-certified transmitter CM42 or transmitter with an intrinsically safe output power

1 Certified Memosens sensor

2 Memosens data cable, $P_0 = 178 \text{ mW}$



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