

# Safety Instructions

## Liquiline Compact CM72

## Liquiline Compact CM82

Compact transmitter for Memosens sensors

EAC Ex 0Ex ia IIC T4/T6 Ga

EAC Ex 0Ex ia IIC T4/T6 Ga + EAC Ex ia IIIC T85°C/  
T135°C Db





# Liquiline Compact CM72

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- Associated documentation** This document is an integral part of Operating Instructions BA01797C and BA01845C.
- Additional documentation**  Competence Brochure CP00021Z
- Explosion Protection: Guidelines and General Principles
  - [www.endress.com](http://www.endress.com)
- Certificates and declarations** The certificates and declarations of conformity are available in the Downloads area of the Endress +Hauser website:
- [www.endress.com/download](http://www.endress.com/download)

**EAC Ex Certificate**

EA3C KZ 7500525.01.01.01922

**Applied standards**

The product has been certified in accordance with Directive TR CU 012/2011 valid within the Eurasian Economic Area (EAEU). The EAC conformity mark has been affixed to the product.

**Identification****Nameplate**

The device is labeled on the exterior housing. The nameplate contains the following information:

- Name and address of manufacturer and manufacturer's logo
- Device type/order code
- Explosion protection (Ex) marking according to the required standards
- Reference number of third-party provider for QA testing
  - serial number
  - coded year of production
- Approval No.
- Ambient temperature range

Only the approvals indicated on the nameplate apply for the CM82 or CM72 transmitters.

**Type code**

Type	Version		
CM72-	GA	*	(+*)
	EAC Ex 0Ex ia IIC T4/T6 Ga	* means all options are certified.	
CM72-	G4	*	(+*)
	EAC Ex 0Ex ia IIC T4/T6 Ga + EAC Ex ia IIIC T85°C/T135°C Db	* means all options are certified.	
CM82-	GA	*	(+*)
	EAC Ex 0Ex ia IIC T4/T6 Ga	* means all options are certified.	
CM82-	G4	*	(+*)
	EAC Ex 0Ex ia IIC T4/T6 Ga + EAC Ex ia IIIC T85°C/T135°C Db	* means all options are certified.	

**Ex approvals**

CM72
EAC Ex 0Ex ia IIC T4/T6 Ga X
EAC Ex 0Ex ia IIC T4/T6 Ga X + EAC Ex ia IIIC T85°C/T135°C Db X

<b>CM82</b>
EAC Ex 0Ex ia IIC T4/T6 Ga X
EAC Ex 0Ex ia IIC T4/T6 Ga X + EAC Ex ia IIIC T85°C/T135°C Db X

**Name of certification body**

ТОО/ЖШС "Т-Стандарт"

**Safety instructions**

- The transmitter meets the requirements of the equipment and protective systems intended for use in potentially explosive atmospheres and is suitable for use in hazardous areas.
- The transmitter is an intrinsically safe electrical device which is suitable for:
  - Equipment group II, equipment category 1G for use in Zone 0, which offers equipment protection level Ga.
  - Equipment group II, equipment category 2D for use in Zone 21, which offers equipment protection level Db.
- An intrinsically safe power supply as per Ex ia requirements is absolutely essential. Intrinsically safe Memosens sensors can be connected and may be located in Zone 0.
- If installing in Zone 0/Zone 21, the CM82 and CM72 transmitters and their plugs must be protected against electrostatic charge.
- The process temperature of the sensor depends on the sensor's temperature class and can deviate from the ambient temperature range of the CM82/CM72. Suitable measures must be taken to guarantee the decoupling of the CM82/CM72 temperature and the process temperature.
- Installation, connection to the power supply, commissioning, inspection, maintenance and repair of the devices must be performed by qualified and skilled staff who are appropriately trained to perform work on Ex-devices according to applicable regulations, e.g. EN 60079-14, -17, -19 and according to these Operating Instructions.
- CM82/CM72 transmitters which are certified for hazardous areas have a red ring.
- Only sensors that are designed for the use as specified in the Operating Instructions may be connected.
- Suitable Memosens sensors that can be located in Zone 0 have a red ring.
- The nominal values of the input and output circuits must be observed.

**Temperature tables**

The CM82 and CM72 transmitters are suitable for operation in the following ambient temperature ranges:

For EPL Ga:

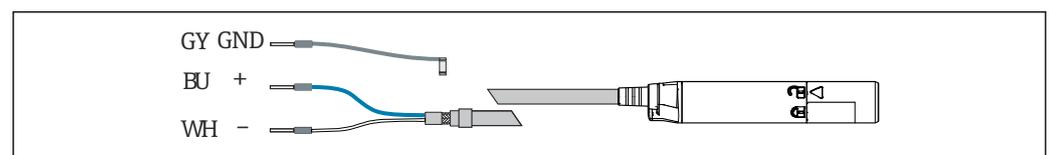
- Temperature class T6:  $-20\text{ °C} \leq T_a \leq 55\text{ °C}$  ( $-4\text{ °F} \leq T_a \leq 131\text{ °F}$ )
- Temperature class T4:  $-20\text{ °C} \leq T_a \leq 80\text{ °C}$  ( $-4\text{ °F} \leq T_a \leq 176\text{ °F}$ )

For EPL Db:

- Temperature class T85°C:  $-20\text{ °C} \leq T_a \leq 55\text{ °C}$  ( $-4\text{ °F} \leq T_a \leq 131\text{ °F}$ )
- Temperature class T135°C:  $-20\text{ °C} \leq T_a \leq 80\text{ °C}$  ( $-4\text{ °F} \leq T_a \leq 176\text{ °F}$ )

**Connection****Ex-specification**

*Current output*



Current outputs: BU+, WH- wires

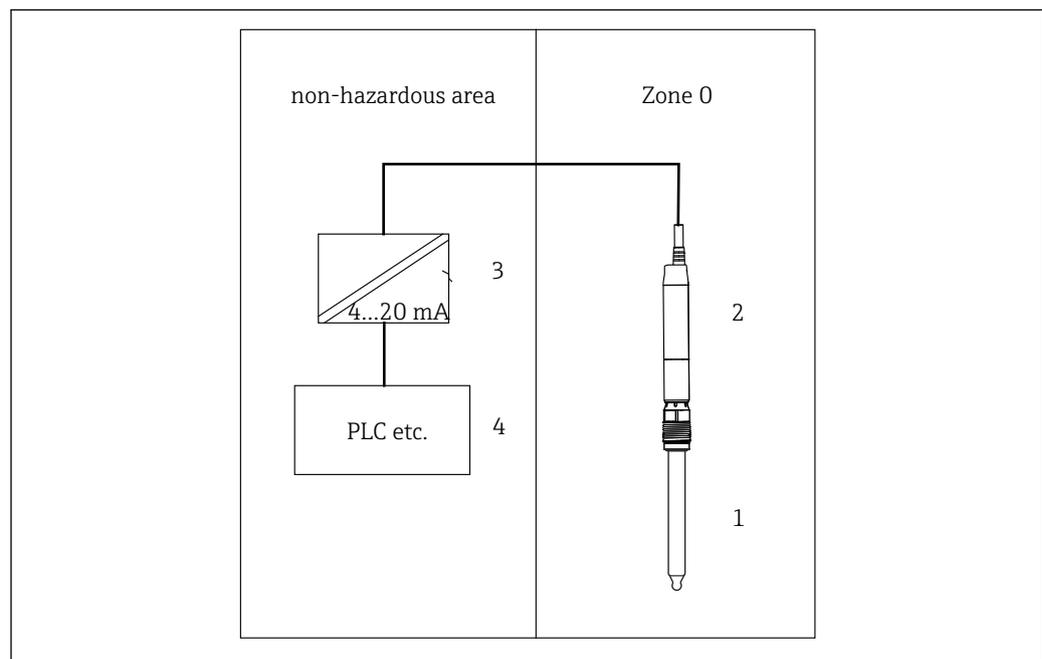
Intrinsically safe power supply and signal circuit (ia circuit)	
Max. input voltage $U_i$	30 V
Max. input current $I_i$	100 mA
Max. input power $P_i$	750 mW
Max. internal capacitance $C_i$	7 nF (including 15 m (49 ft) cable)
Max. internal inductance $L_i$	20 $\mu$ H (including 15 m (49 ft) cable)

Memosens sensors

Memosens interface, intrinsically safe sensor circuit with Ex ia IIC protection	
Max. output power $P_o$	105 mW
For connecting to certified Memosens sensors with input parameter $P_i$ .	

The Memosens interface makes it possible to connect to certified Memosens sensors. CM82/CM72 provides galvanic isolation in relation to Memosens sensors. The insulation voltage is 500 Vrms. The galvanic isolation corresponds to an infallible separation according to intrinsic safety requirements.

### Connection diagram



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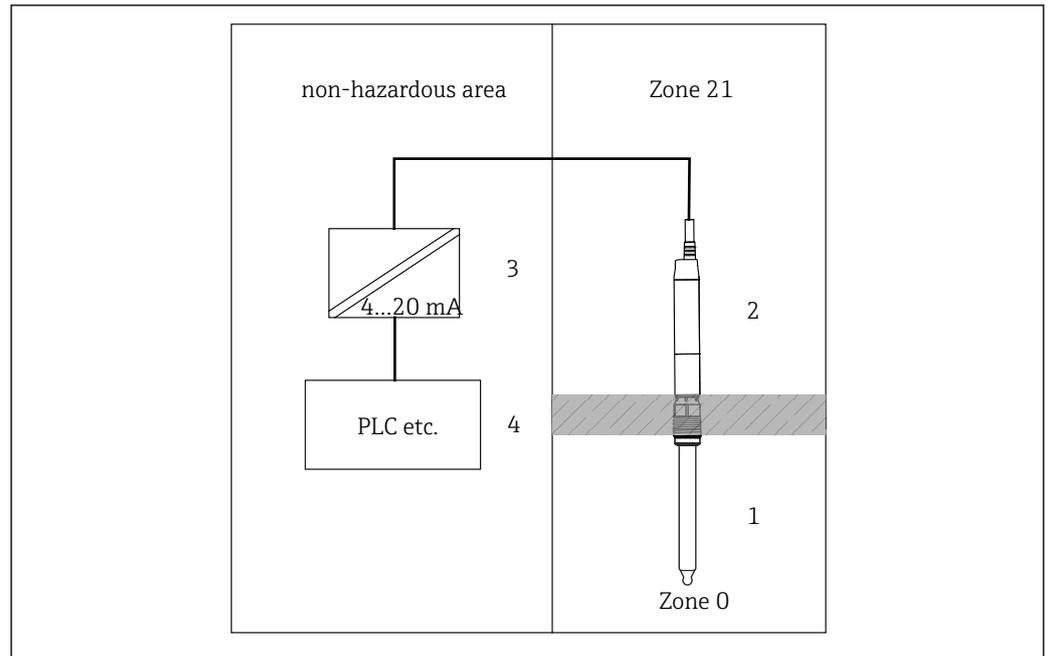
1 Installation in hazardous area: CM82/CM72 and sensor in explosive gas atmosphere

2 Sensor with suitable Ex protection

3 Transmitter Liquiline Compact CM82 or CM72

4 Ex ia certified power supply and signal circuit (4 to 20 mA), e.g. active barrier RN221N

5 Programmable logic controller etc.



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- 2 Installation in hazardous area: CM82/CM72 in explosive dust atmosphere (Zone 21) and sensor in explosive gas atmosphere (Zone 0)
- 1 Sensor with suitable Ex protection
  - 2 Transmitter Liquiline Compact CM82 or CM72
  - 3 Ex ia certified power supply and signal circuit (4 to 20 mA), e.g. active barrier RN221N
  - 4 Programmable logic controller etc.



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