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71774808
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Safety Instructions
Liquiline Compact CM72
Liquiline Compact CM82

Compact transmitters for Memosens sensors

ATEX: II 1G Ex ia IIC T4/T6 Ga
II 1G Ex ia IIC T6/T4 Ga + II 2D Ex ia IIIC T85oC/T135oC Db

IECEx: Ex ia IIC T4/T6 Ga
Ex ia IIC T6/T4 Ga + Ex ia IIIC T85oC/T135oC Db

Endress+Hauser
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Table of contents

Associated documentation

This document is an integral part of Operating Instructions BA01797C and BA01845C

Supplementary documentation

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

Identification

Nameplate

The nameplate provides you with the following information on your device:
- Manufacturer identification
- Order code
- Extended order code
- Serial number
- Firmware version
- Ambient and process conditions
- Input and output values
- Safety information and warnings
- Approvals as per version ordered

▶ Compare the data on the nameplate with your order.

Type code

Type	Version		
CM72-	BA	*	(+*)
	ATEX II 1G Ex ia IIC T4/T6 Ga	Not Ex relevant	
CM72-	B5	*	(+*)
	ATEX II 1G Ex ia IIC T6/T4 Ga + ATEX II 2D Ex ia IIIC T85oC/ T135oC Db	Not Ex relevant	
CM72-	IA	*	(+*)
	IECEx Ex ia IIC T4/T6 Ga	Not Ex relevant	
CM72-	I4	*	(+*)
	IECEx Ex ia IIC T6/T4 Ga + IECEx Ex ia IIIC T85oC/T135oC Db	Not Ex relevant	
CM82-	BA	*	(+*)
	ATEX II 1G Ex ia IIC T4/T6 Ga	Not Ex relevant	
CM82-	B5	*	(+*)

Type	Version		
	ATEX II 1G Ex ia IIC T6/T4 Ga + ATEX II 2D Ex ia IIIC T85oC/ T135oC Db	Not Ex relevant	
CM82-	IA	*	(+*)
	IECEx Ex ia IIC T4/T6 Ga	Not Ex relevant	
CM82-	I4	*	(+*)
	IECEx Ex ia IIC T4/T6GA + IECEx Ex ia IIIC T85oC/T135oC Db	Not Ex relevant	

Certificates and declarations

CE mark

The product meets the requirements of the harmonized European standards. As such, it complies with the legal specifications of the EU directives. The manufacturer confirms successful testing of the product by affixing to it the CE mark.

EU Declaration of Conformity

With this Declaration of Conformity, the manufacturer guarantees that the product complies with the regulations of ATEX Directive 2014/34/EU, EMC Directive 2014/30/EU and RoHS Directive 2011/65/EU. Compliance is verified by adherence to the standards listed in the Declaration of Conformity.

Ex marking

ATEX

CM72	
Ex	ATEX II 1G Ex ia IIC T4/T6 Ga
Ex	ATEX II 1G Ex ia IIC T6/T4 Ga + ATEX II 2D Ex ia IIIC T85oC/T135oC Db

ATEX

CM82	
Ex	ATEX II 1G Ex ia IIC T4/T6 Ga
Ex	ATEX II 1G Ex ia IIC T6/T4 Ga + ATEX II 2D Ex ia IIIC T85oC/T135oC Db

IECEx

CM72
IECEx Ex ia IIC T4/T6 Ga
IECEx Ex ia IIC T6/T4 Ga + IECEx Ex ia IIIC T85oC/T135oC Db

IECEx

CM82
IECEx Ex ia IIC T4/T6 Ga
IECEx Ex ia IIC T4/T6GA + IECEx Ex ia IIIC T85oC/T135oC Db

Only the certificates indicated on the nameplate apply to the CM82 or CM72 transmitters.

Certificate number

TÜV 18 ATEX 8194 X

IECEx TUR 18.0037X

Notified body

TÜV Rheinland Industrie Service GmbH

Applied standards

ATEX: EN 60079-0: 2012+A11:2013, EN 60079-11:2012

IECEx: IEC 60079-0 : 2011, IEC 60079-11 : 2011

All the applied standards are listed in the relevant certificates and manufacturer declarations.

Manufacturer address

Endress+Hauser Conducta GmbH+Co. KG
Dieselstraße 24
70839 Gerlingen
Germany

Safety instructions

The transmitter meets the requirements of the Explosion Protection Directive 2014/34/EU and is suitable for use in hazardous areas.

The harmonized standards or normative documents that have been applied are listed in the EU Declaration of Conformity.

The transmitter meets the requirements of the "IEC Certification Scheme for Explosive Atmospheres" and is suitable for use in hazardous areas.

The transmitter is an intrinsically safe electrical device which is suitable for:
- Use in Zone 0 with equipment protection level Ga.
- Use in Zone 21 with equipment protection level Db.

An intrinsically safe power supply according to Ex ia specifications is absolutely essential. Intrinsically safe Memosens sensors can be connected and can 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 skilled staff who are appropriately trained to perform work on Ex devices in accordance with the applicable regulations, e.g. IEC 60079-14, -17, -19, or JNIOSH-TR-44 for Japan, and in accordance with these Operating Instructions.

Certified CM82/CM72 transmitters 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.

The transmitter may only be connected to a suitable power supply.

Maintenance and repair work may only be performed by service personnel or specially trained and authorized staff.

Temperature tables

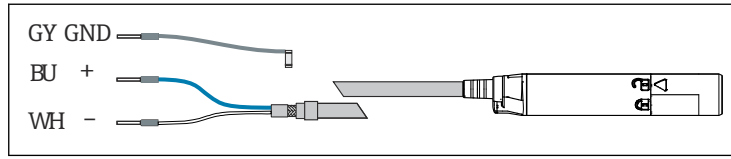
The CM82 and CM72 transmitters are suitable for operation in the following ambient temperature ranges:

For EPL Ga:
- Temperature class T6: -20 °C ≤ T_a ≤ 55 °C (-4 °F ≤ T_a ≤ 131 °F)
- Temperature class T4: -20 °C ≤ T_a ≤ 80 °C (-4 °F ≤ T_a ≤ 176 °F)

For EPL Db:
- Temperature class T85°C: -20 °C ≤ T_a ≤ 55 °C (-4 °F ≤ T_a ≤ 131 °F)
- Temperature class T135°C: -20 °C ≤ T_a ≤ 80 °C (-4 °F ≤ T_a ≤ 176 °F)

Connection values

Ex-specification for current output



Current outputs: BU+, WH- wires

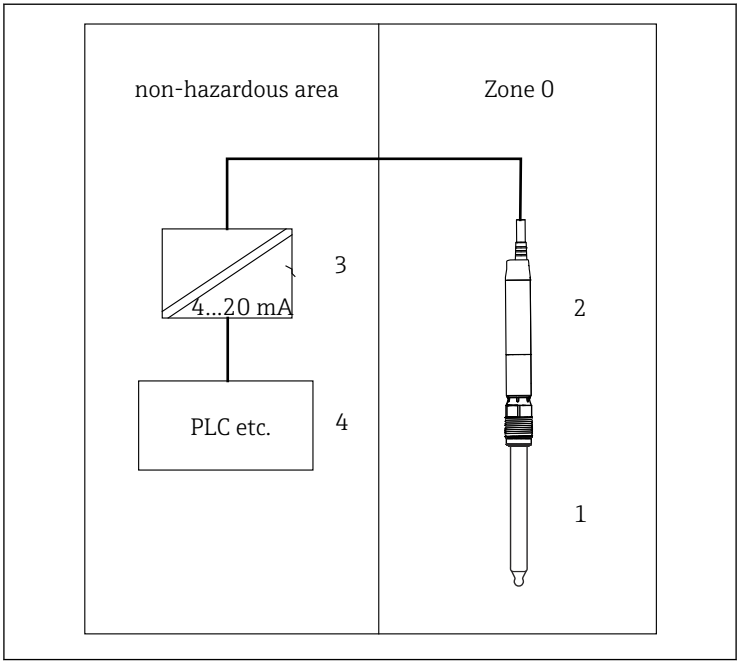
Intrinsically safe power supply and signal circuit (ia circuit)	
Max. input voltage U_i	30 V
Max. input current I_i	100 mA
Max. input power P_i	750 mW
Max. internal capacitance C_i	7 nF (including 15 m (49 ft) cable)
Max. internal inductance L_i	20 µH (including 15 m (49 ft) cable)

Connecting 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.	

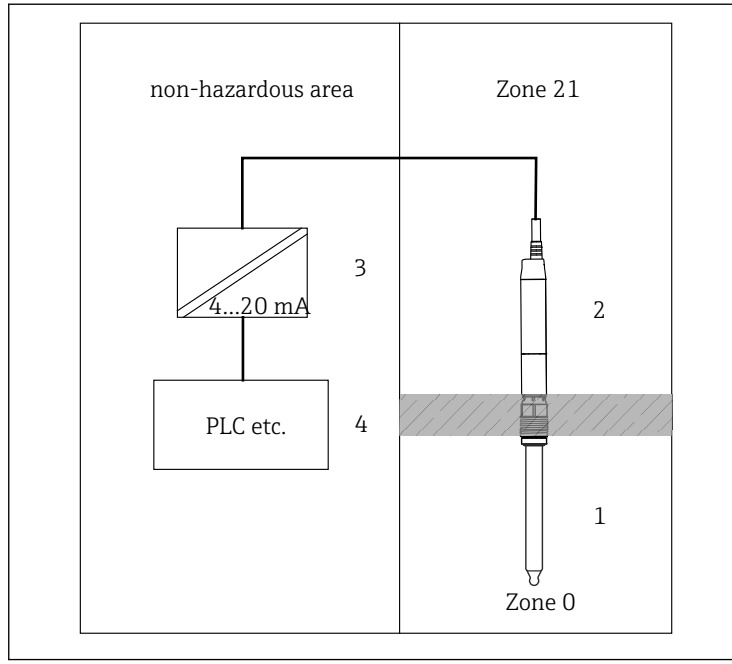
The Memosens interface makes it possible to connect to certified Memosens sensors. CM82/CM72 provides galvanic isolation in relation to Memosens sensors. The insulation voltage is 500 Vrms. The galvanic isolation corresponds to an infallible separation according to intrinsic safety requirements.

Connection diagram



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

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.



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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