

# Safety Instructions

## **Liquiline CM82 und CM72**

Supplement to:  
BA01797C and BA01845C

Safety instructions for electrical apparatus in  
explosion-hazardous areas



BG - Правила за техниката на безопасност за електрически средства за производство във взривоопасни зони. Ако не разбирате езика на това ръководство има възможност да си поръчате при нас едно ръководство, преведено на езика на Вашата страна.

**Заявление за съответствие с EG**  
Производителят Endress+Hauser декларира с това заявление за съответствие и с предявяването на сертификата CE, че този продукт отговаря на изискванията на съответните европейски директиви. Прилаганите директиви, норми и документи са указани в заявлението за съответствие.

CS - Bezpečnostní pokyny pro elektrické přístroje v místech s nebezpečím výbuchu. Pokud nemáte možnost přístít si tento návod, můžete si u nás objednat návod přeložený do svého jazyka.

**Prohlášení o shodě s ES**  
Společnost Endress+Hauser prohlašuje prostřednictvím tohoto prohlášení a použitím značky CE, že tento výrobek vyhovuje příslušným evropským směrnicím. Zmíněné směrnice, normy a dokumenty jsou uvedeny v Prohlášení o shodě.

DA - Sikkerhedsforskrifter for elektriske apparater certificeret til brug i eksplosionsfarlige områder. Hvis du ikke forstår denne manual, kan en oversat kopi af den på dit eget sprog bestilles fra os.

**EF-overensstemmelseserklæring**  
Med denne overensstemmelseserklæring og tilføjjelsen af CE-mærket sikrer producenten Endress+Hauser, at produktet er i overensstemmelse med relevante europæiske direktiver. Dokumentation for overensstemmelsen gives i de anførte direktiver, standarder og dokumenter.

EL - Οδηγίες ασφαλείας ηλεκτρικών συσκευών για επικίνδυνες για έκρηξη περιοχές. Σε περίπτωση που δεν μπορείτε να διαβάσετε αυτές τις οδηγίες, τότε μπορείτε να παραγγείλετε ένα αντίτυπο μεταφρασμένο στη γλώσσα σας.

**Δήλωση πιστότητας ΕΚ**  
Με αυτή τη δήλωση πιστότητας και την τοποθέτηση του σήματος CE ο κατασκευαστής Endress+Hauser δηλώνει, ότι αυτό το προϊόν συμμορφώνεται με τις ευρωπαϊκές οδηγίες που πρέπει να εφαρμόστούν. Οι οδηγίες, τα πρότυπα και τα έγγραφα που εφαρμόστηκαν αναφέρονται στη δήλωση πιστότητας.

ES - Instrucciones de seguridad de aparatos eléctricos homologados para su utilización en áreas expuestas a riesgos de deflagración. Si no entiende este manual, puede pedir un ejemplar en su idioma.

**Declaración de conformidad CE**  
Por la presente declaración y la inclusión de la marca CE, el fabricante Endress+Hauser, declara que el producto cumple con las directivas europeas pertinentes. Las directivas, normas y documentos de aplicación se indican en la declaración de conformidad.

ET - Ohutusjuhised plahvatusohtlikus keskkonnas kasutatavate elektriseadmete kohta. Kui Te ei saa käesolevast juhendist aru, võite meilt tellida Teie riigikeelde tõlgitud juhendi.

**EL vastavusdeklaratsiooin**  
Tootja Endress+Hauser kinnitab juurdelisatud vastavusdeklaratsiooni esitamisega ja CE-märgise kandmisega tootele, et käesolev toode vastab kohaldatavate Euroopa Liidu direktiivide nõuetele. Kohaldatavad direktiivid, standardid ja dokumendid on ära toodud vastavusdeklaratsioonis.

FI - Turvallisuusohjeita sähkölaitteille, jotka on vahvistettu käytettäväksi räjähdysvaarallisilla alueilla. Jos et ymmärrä tätä käsikirjaa, voit tilata meiltä käänöksen omalla kansallisella kielelläsi.

**EU-vaatimustenmukaisuustodistus**  
Valmistaja Endress+Hauser vakuuttaa täällä vaatimustenmukaisuustodistuksella ja CE-merkin kiinnittämisellä, että tämä tuote täyttää sovellettavien EU-direktiivien määräykset. Sovellettavat direktiivit, normit ja dokumentit on merkitty vaatimustenmukaisuustodistukseen.

HR - Sigurnosni naputici za elektromaterijal u sredini u kojoj prijeti opasnost od eksplozije. Ako Vam nije moguće čitati ovaj naputak, onda imate mogućnost da kod nas naručite naputak sastavljen na Vašem materinskom jeziku.

**Izjava o usluganosti sa normama EZ-a**  
Dobavljač Endress+Hauser jamči ovom izjavom i stavljanjem oznake CE da ovaj proizvod udovoljava zahtjevima europskih direktiva koje su na snazi. U izjavi o usluganosti se navode direktive, norme i dokumenti koji su na snazi.

HU - Biztonsági információk robbanásveszélyes területre való elektromos eszközökhöz. Amennyiben nem tudja elolvadni ezt az útmutatót, akkor megrendelheti az Ön anyanyelvére lefordítva is.

**EK-megfelelőségi nyilatkozat**  
Az Endress+Hauser mint gyártó jelen megfélelőségi nyilatkozattal és a CE-jelzés felhelyezésével kijelenti, hogy ez a termék megfelel az alkalmazandó európai irányelveknek. Az alkalmazott irányelvek, szabványok és dokumentumok a megfeleléségi nyilatkozatban fel vannak tüntetve.

IT - Istruzioni di sicurezza per apparecchiature elettriche certificate per l'utilizzo in aree con pericolo di esplosione. Se il presente manuale non risulta comprensibile potete ordinarne una copia tradotta nella vostra lingua.

**Dichiarazione di conformità CE**  
Con questa dichiarazione e con l'applicazione del marchio CE, il costruttore Endress+Hauser, assicura che il prodotto è conforme alle direttive europee vigenti. Prova della conformità è fornita dall'osservanza delle direttive, delle norme e dei documenti elencati.

LT - Elektros įrenginio saugumo nurodymai, susiję su sprogimo zonomis. Jeigu negalite perskaityti šios instrukcijos, kreipkitės į mus, kad išsiskaitumėte į jūsų gimtąją kalbą išverstą instrukciją.

**EB atitikties deklaracija**  
Gamintojas Endress+Hauser šia atitikties deklaracija ir CE ženkliniu patvirtina, kad gaminys atitinka taikytinas ES direktyvas. Taikomos direktyvos, normos ir dokumentai yra pateikiami atitikties deklaracijoje.

LV - Drošības norādījumi elektrisko darba instrumentu lietošanai apgalbos, kas pakļauti sprādzienbīstamībai. Ja jums nav iespēju izlasīt šos norādījumus, Jūs varat pasūtīt pie mums tulkojumā Jūsu valsts valodā.

**ES atbilstības apliecinājums**  
Ražotājs Endress+Hauser ar šo atbilstības apliecinājumu un CE zīmola lietojumu apstiprina, ka produkts izgatavots saskaņā ar atbilstošajām Eiropas vadlīnijām. Piemērotās vadlīnijas, normas un dokumenti atrunāti atbilstības apliecinājumā.

NL - Veiligheidsinstructies voor elektrisch materieel in explosiegevaarlijke omgeving. Wanneer u deze handleiding niet kunt lezen, kunt u een in uw landstaal vertaalde handleiding bij ons bestellen.

**EG Conformiteitsverklaring**  
De leverancier Endress+Hauser waarborgt met deze verklaring en het aanbrengen van het CE-teken, dat dit product overeenstemt met de geldende Europese richtlijnen. De geldende richtlijnen, normen en documenten zijn aangegeven in de conformiteitsverklaring.

PL - Wskazówki dot. bezpieczeństwa dla urządzeń elektrycznych stosowanych w obszarze zagrożonym wybuchem. Jeśli niniejsza instrukcja napisana jest w języku, którym się nie posługujecie, możecie zamówić u nas przetłumaczony dokument.

**Deklaracja zgodności WE**  
Producent Endress+Hauser w niniejszej deklaracji zgodności wraz z nadaniem znaku CE oświadcza, że produkt ten jest zgodny z obowiązującą Europejską Dyrektywą. Zastosowane wytyczne, normy oraz dokumenty podane są w deklaracji zgodności.

PT - Instruções de segurança para dispositivos eléctricos certificados para utilização em áreas de risco de incêndio. Se não compreender este manual, pode encomendar-nos directamente uma cópia na sua língua.

**Declaração de conformidade CE**  
Com esta declaração de conformidade e a aplicação da marca CE, o fabricante Endress+Hauser, garante que o produto obedece às directivas europeias a aplicar. As directivas, normas e documentos são apresentadas na declaração de conformidade.

RO - Indicații de siguranță pentru mijloacele de producție electrice pentru zonele periclitate de explozie. Dacă nu puteți citi aceste instrucțiuni, puteți puteți comanda la noi instrucțiunile traduse în limba țării dumneavoastră.

**Declarație de conformitate CE**  
Producătorul Endress+Hauser declară prin declarația de conformitate alăturată și prin aplicarea semnelui CE că acest produs corespunde directivelor europene aplicabile. Directivele, normele aplicate și documentele sunt menționate în declarația de conformitate.

SK - Bezpečnostné pokyny pre elektrické zariadenie prevádzkované v priestoroch s nebezpečenstvom výbuchu. Ak nemáte možnosť 'prečítať' si tento návod, môžete si u nás objednať 'návod preložený do svojho jazyka.

**Vyhlasenie o konformite s ES**  
Spoločnosť Endress+Hauser vyhlasuje prostredníctvom tohto vyhlásenia o konformite a použitím značky CE, že tento výrobok vyhovuje príslušným európskym smerniciam. Zmienované smernice, normy a dokumenty sú uvedené vo Vyhlásení o konformite.

SL - Varnostni napotki glede električne opreme, namenjene za uporabo v eksplozivnih območjih. Če teh navodil ne morete razumeti, lahko pri nas naročite prevod v vaš jezik.

**Pojasnilo glede potrdila o skladnosti EU**  
Proizvajalec Endress+Hauser s to izjavo o skladnosti in navedbo oznake CE izjavlja, da je ta izdelek skladen s predpisanimi evropskimi smernicami. Upoštewane smernice, standardi in dokumenti so navedeni v izjavi o skladnosti.

SV - Säkerhetsföreskrifter för elektrisk utrustning certifierad för användning i explosionsfarliga områden. Om du inte förstår denna manual, kan en översatt kopia på ditt eget språk beställas från oss.

**EG-försäkran om överensstämmelse**  
Endress+Hauser försäkrar med vidståendet försäkran om överensstämmelse och med CE-märkningen att denna produkt överensstämmer med de tillämpbara europeiska riktlinjerna. De tillämpade riktlinjerna, normerna och dokumenten anges i försäkran om överensstämmelse.

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# Liquiline CM82 und CM72

Supplement to:  
BA01797C and BA01845C

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**Associated documentation**

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

**Designated use**

For use in hazardous areas (explosive atmospheres).

Liquiline Compact CM82 and CM72 are loop-powered transmitters for liquid analysis in all areas of process engineering.

The devices are designed for use in the following industries:

- Life science
- Chemical industry
- Water and wastewater
- Food and beverages
- Power stations
- Other industrial applications

The use of the transmitter depends greatly on the sensor that is used.

Therefore please pay attention to the notes on "designated use" provided in the Operating Instructions. If the device is used for any purpose other than that described here, this poses a threat to the safety of people and the entire measuring system, and is therefore not permitted.

The manufacturer does not accept any liability for damage caused by improper or non-designated use.

**Supplementary documentation**

Competence Brochure CP00021Z

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

**Manufacturer's certificates****Declaration of Conformity**

With this declaration of conformity, Endress+Hauser guarantees that the product complies with the provisions of ATEX guideline 2014/34/EU. Compliance is verified by adherence to the standards listed in the Declaration of Conformity.

**Identification**

	NEPSI (China)	Japan Ex
Certificate number	GYJ19.1132X	CML 19JPN2116X
Degree of protection	1G: ia Ga 2D: iaD	ia Ga ia Db

	NEPSI (China)	Japan Ex
Marking	Ex ia IIC T4/T6 Ga Ex iaD21 T85/T135	Ex ia IIC T6/T4 Ga Ex ia IIIC T85°C/T135°C Db
Certification body	National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation	Certification Management Limited (CML)

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

**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
- CE mark (ATEX versions)

**Manufacturer's address**

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

**Additional standards**

The following standards have been applied:  
ATEX: EN 60079-0: 2012+A11:2013, EN 60079-11:2012  
IECEx: IEC 60079-0 : 2011, IEC 60079-11 : 2011

**Extended order code**

**Structure of the extended order code**

*Device type*

The device and the device design is defined in the "Device type" section (Product root).

*Basic specifications*

The features that are absolutely essential for the device (mandatory features) are specified in the basic specifications. The number of

positions depends on the number of features available.  
The selected option of a feature can consist of several positions.

### *Optional specifications*

The optional specifications describe additional features for the device (optional features). The number of positions depends on the number of features available. The features have a 2-digit structure to aid identification (e.g. JA). The first digit (ID) stands for the feature group and consists of a number or a letter (e.g. J = Test, Certificate). The second digit constitutes the value that stands for the feature within the group (e.g. A = 3.1 material (wetted parts), inspection certificate).

## **General 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:

- 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 are 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 according to applicable regulations, e.g. EN 60079-14, -17, -19, or JNOSH-TR-44 in the case of Japan, and according to 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.

For Japan: The transmitter satisfies the requirements of the JNIOSSH-TR-46 standard series, and is suitable for use in hazardous areas.

Temperature tables

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

For epl Ga:

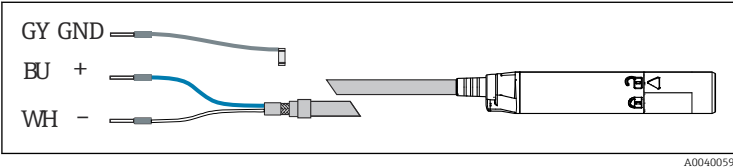
- Temperature class T6:  $-20^{\circ}\text{C} \leq T_a \leq 55^{\circ}\text{C}$  ( $-4^{\circ}\text{F} \leq T_a \leq 131^{\circ}\text{F}$ )
- Temperature class T4:  $-20^{\circ}\text{C} \leq T_a \leq 80^{\circ}\text{C}$  ( $-4^{\circ}\text{F} \leq T_a \leq 176^{\circ}\text{F}$ )

For epl Db:

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

Connection data

Ex-specification, current output



Current outputs: BU+, WH- wires

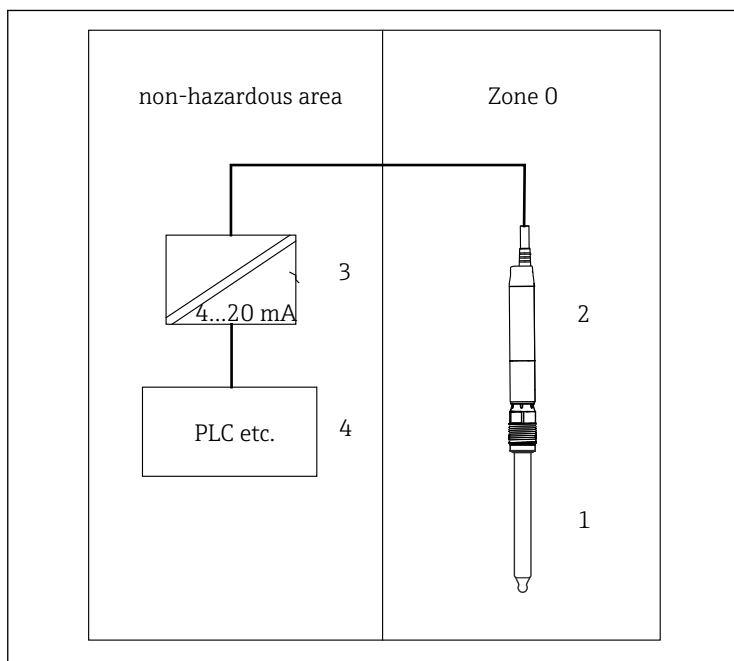
Intrinsically safe power supply and signal circuit (ia circuit)	
Max. input voltage $U_i$	30 V
Max. input current $I_i$	100 mA
Max. input power $P_i$	750 mW
Max. internal capacitance $C_i$	7 nF (including 15 m (49 ft) cable)
Max. internal inductance $L_i$	20 uH (including 15 m (49 ft) cable)

## Connecting Memosens sensors

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

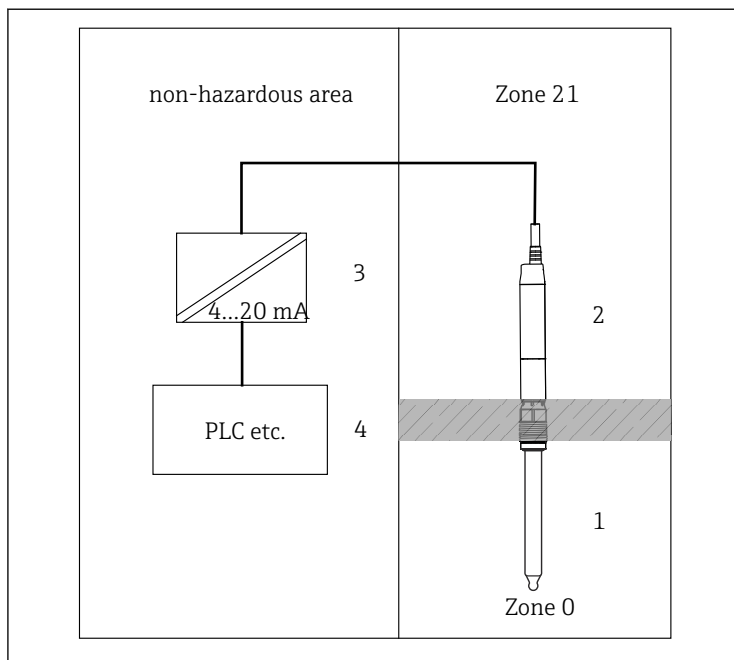
The Memosens interface makes it possible to connect to certified Memosens sensors. CM82/CM72 provides galvanic isolation in relation to Memosens sensors. The insulation voltage is 500 Vrms. The galvanic isolation corresponds to isolation that is not susceptible to interference (60 V peak voltage value) in accordance with the requirements of intrinsic safety.

### Connection diagram



A0040055

- 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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[www.addresses.endress.com](http://www.addresses.endress.com)

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