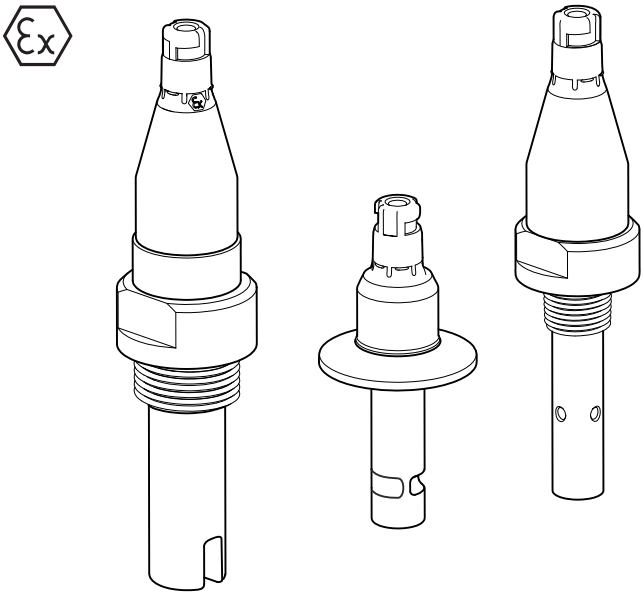
Level Pressure Flow Temperature Liquid Analysis Registration Systems Components Services Solutions

Operating Instructions

Condumax CLS15D/16D/21D

Sensors with Memosens protocol

For conductive measurement of conductivity in liquids



BA01147C/07/EN/01.12
71195841

Endress+Hauser

People for Process Automation

Documentation information

Warnings

The structure, signal words and safety colors of the signs comply with the specifications of ANSI Z535.6 ("Product safety information in product manuals, instructions and other collateral materials").

Safety message structure	Meaning
⚠ DANGER **Cause (/consequences)** Possible consequences if ignored ► Preventive measures	This symbol alerts you to a dangerous situation. Failure to avoid the situation **will** result in a fatal or serious injury.
⚠ WARNING **Cause (/consequences)** Possible consequences if ignored ► Preventive measures	This symbol alerts you to a dangerous situation. Failure to avoid the situation **can** result in a fatal or serious injury.
⚠ CAUTION **Cause (/consequences)** Possible consequences if ignored ► Preventive measures	This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or medium injury.
NOTICE **Cause/situation** Possible consequences if ignored ► Action/note	This symbol alerts you to situations that can result in damage to property and equipment.

Symbols used

→ 1 This symbol indicates a cross reference to a defined page (e.g. p. 1).

→ 2 This symbol indicates a cross reference to a defined figure (e.g. fig. 2).

Table of contents

1 Basic safety instructions

1.1 Requirements for personnel

- ► Installation, commissioning, operation and maintenance of the measuring system must only be carried out by trained technical personnel.
- ► The technical personnel must be authorized by the plant operator to carry out the specified activities.
- ► The electrical connection may only be performed by an electrical technician.
- ► The technical personnel must have read and understood these Operating Instructions and must follow the instructions they contain.
- ► Measuring point faults may only be rectified by authorized and specially trained personnel.

Repairs not described in the enclosed Operating Instructions may only be carried out directly at the manufacturer's or by the service organization.

1.2 Designated use

The conductivity sensors are designed for conductive measurement of the conductivity in liquids. They are applied in the following fields:

Sensor	Fields of application	Hazardous areas
Condumax CLS15D	Measurements in pure and ultrapure water	approved for hazardous areas, zone 1
Condumax CLS16D	Measurements in pure and ultrapure water hygienic processes	approved for hazardous areas, zone 1
Condumax CLS21D	Measurements in media with medium or high conductivities	approved for hazardous areas, zone 1

Any other use than the one described here compromises the safety of persons and the entire measuring system and is not permitted.
The manufacturer is not liable for damage caused by improper or non-designated use.

1.3 Occupational safety

As the user, you are responsible for complying with the following safety conditions:
- Installation instructions
- Local prevailing standards and regulations.

1.4 Operational safety

- ► Before commissioning the entire measuring point, make sure all the connections are correct. Ensure that electrical cables and hose connections are not damaged.
- ► Do not operate damaged products, and safeguard them to ensure that they are not operated inadvertently. Mark the damaged product as defective.
- ► If faults cannot be rectified, the products must be taken out of service and secured against unintentional commissioning.

1.5 Product safety

1.5.1 State of the art

The sensor has been designed and tested according to the state of the art and left the factory in perfect functioning order.
Relevant regulations and European standards have been met.

1.5.2 Safety instructions for electrical equipment in hazardous locations

ATEX /NEPSI II 1G Ex ia IIC T3 / T4 / T6, IECEx Ex ia IIC T6 Ga

- The inductive sensor-cable plug-in system Memosens is suitable for use in hazardous areas in accordance with the EC type examination certificate BVS 04 ATEX E 121.
  The related EC declaration of conformity forms an integral part of this document.
- The certified conductivity sensor types CLS15D / CLS16D / CLS21D may only be connected via the CYK10-G measuring cable to the certified intrinsically safe digital sensor output circuits of the transmitter Liquiline M, type CM42-*G..... in accordance with the EC type examination certificate EX 5 05 03 30266 012 (1. to 5. supplement).
- The electrical connection must correspond to the wiring diagram of the used transmitter.
- Metallic process connection parts must be mounted at the mounting location electrostatically conductive (< 1 MΩ).
- The sensors type CLS15D with non-metallic process connections and the sensors type CLS21D may only be used in liquid media with a conductivity of at least 10 nS/cm.
- The sensors type CLS15D with non-metallic process connections may not be operated under process conditions in which an electrostatic charging of the sensor and in particular of the electrically separated outer electrode is likely to occur.
- The CYK10-G measuring cable must be protected from electrostatic charging if it is run through zone 0.
- The maximum permitted cable length is 100 m.
- Ex versions of digital sensors with Memosens technology are indicated by an orange-red ring in the plug-in head.
- The regulations for electrical installations in hazardous areas (EN/IEC 60079-14) must be observed for the use of the devices and sensors.

ATEX/NEPSI II 3G Ex nL IIC T3 / T4 / T6

- The inductive sensor-cable plug-in system Memosens is suitable for use in hazardous areas, zone 2. The related EC declaration of conformity forms an integral part of this document.
- The certified conductivity sensor types CLS15D / CLS16D / CLS21D may only be connected via the CYK10-V measuring cable to the certified intrinsically safe digital sensor output circuits of the transmitter Liquiline M, type CM42-*V.....
- The electrical connection must correspond to the wiring diagram of the used transmitter.
- Metallic process connection parts must be mounted at the mounting location electrostatically conductive (< 1 MΩ).
- The sensors type CLS15D with non-metallic process connections and the sensors type CLS21D may only be used in liquid media with a conductivity of at least 10 nS/cm.
- The sensors type CLS15D with non-metallic process connections may not be operated under process conditions in which an electrostatic charging of the sensor and in particular of the electrically separated outer electrode is likely to occur.
- The maximum permitted cable length is 100 m.
- The regulations for electrical installations in hazardous areas (EN/IEC 60079-14) must be observed for the use of the devices and sensors.

2 Identification

2.1 Type code for versions with Ex approval

Name	Type				Version
Condumax	CLS15D CLS16D CLS21D	- - -	x xx x	xx xx xx	G G G
			Process connections, material no Ex relevance		for use in hazardous locations, ATEX/NEPSI II 1G Ex ia IIC T3/T4/T6 Ga, IECEx Ex ia IIC T6 Ga

Name	Type				Version
Condumax	CLS15D CLS16D CLS21D	- - -	x xx x	xx xx xx	V V V
			Process connections, material no Ex relevance		for use in hazardous locations, ATEX/NEPSI II 3G Ex nL IIC T3/T4/T6

2.2 Nameplate

The nameplate can be found on the sensor.

The following information is provided on the nameplate:
- Order code
- Extended order code
- Serial number
- Cell constant (nominal value)
- Protection class
- Pressure specification at 20 °C
- Continuous service temperature
- Ex marking for versions with Ex approval

Compare the data on the nameplate with your order.

2.3 Order code interpretation

2.3.1 Product page links

www.products.endress.com/cls15d
www.products.endress.com/cls16d
www.products.endress.com/cls21d

2.3.2 Product configurator

1. You can choose from the following options on the product page located on the right:

Product page function
:: Add to product list :: Price & order information :: Compare this product :: Configure this product

2. Click "Configure this product".
3. The configurator opens in a separate window.
   Use the radio buttons to configure the order code from the nameplate of your device.
4. Afterwards, you can export the order code as a PDF or Excel file.
   To do so, click the appropriate button at the top of the page.

2.4 Temperature classes for hazardous locations

2.4.1 ATEX/NEPSI II 1G Ex ia IIC T3/T4/T6 Ga, IECEx Ex ia IIC T6 Ga

Name	Type					Process temperature T_a within temperature class (Tn)	Cat.
Condumax	CLS15D	-	A		G	-20 °C ≤ T_a ≤ +135 °C (T3) -20 °C ≤ T_a ≤ +120 °C (T4) -20 °C ≤ T_a ≤ +70 °C (T6)	II 1G
Condumax	CLS15D	-	B		G	-20 °C ≤ T_a ≤ +135 °C (T3) -20 °C ≤ T_a ≤ +100 °C (T4) -20 °C ≤ T_a ≤ +50 °C (T6)	II 1G
Condumax	CLS16D	-	**	**	G	-5 °C ≤ T_a ≤ +135 °C (T3) -5 °C ≤ T_a ≤ +115 °C (T4) -5 °C ≤ T_a ≤ +65 °C (T6)	II 1G
Condumax	CLS21D	-	C		G	-20 °C ≤ T_a ≤ +135 °C (T3) -20 °C ≤ T_a ≤ +115 °C (T4) -20 °C ≤ T_a ≤ +65 °C (T6)	II 1G

If the process temperatures indicated are observed, no impermissible temperatures for the temperature class in question occur at the equipment.

2.4.2 ATEX/NEPSI II 3G Ex nL IIC T3/T4/T6

Name	Type					Process temperature T_a within temperature class (Tn)	Cat.
Condumax	CLS15D	-	A	**	V	-20 °C ≤ T_a ≤ +135 °C (T3) -20 °C ≤ T_a ≤ +120 °C (T4) -20 °C ≤ T_a ≤ +70 °C (T6)	II 3G
Condumax	CLS15D	-	B	**	V	-20 °C ≤ T_a ≤ +135 °C (T3) -20 °C ≤ T_a ≤ +100 °C (T4) -20 °C ≤ T_a ≤ +50 °C (T6)	II 3G
Condumax	CLS16D	-	**	**	V	-5 °C ≤ T_a ≤ +135 °C (T3) -5 °C ≤ T_a ≤ +115 °C (T4) -5 °C ≤ T_a ≤ +65 °C (T6)	II 3G
Condumax	CLS21D	-	C	**	V	-20 °C ≤ T_a ≤ +135 °C (T3) -20 °C ≤ T_a ≤ +115 °C (T4) -20 °C ≤ T_a ≤ +65 °C (T6)	II 3G

If the process temperatures indicated are observed, no impermissible temperatures for the temperature class in question occur at the equipment.

2.5 Certificates and approvals

2.5.1 CE conformity

Declaration of conformity
The product meets the requirements of the harmonized European standards. It thus complies with the legal requirements of the EC directives. The manufacturer confirms successful testing of the product by affixing the CE symbol.

2.5.2 EX approvals

- ATEX /NEPSI II 1G Ex ia IIC T3 / T4 / T6, IECEx Ex ia IIC T6 Ga
- FM/CSA IS/NI CL I Div. 1 & 2 GP A - D in combination with the Liquiline CM42 transmitter
- ATEX/NEPSI II 3G Ex nL IIC T3 / T4 / T6 for the use in Zone 2 with transmitter Liquiline CM42-KV***

ATEX and FM/CSA versions of digital sensors with Memosens technology are indicated by an orange-red ring in the plug-in head.

2.5.3 Test certificate acc. to EN 10204 3.1

available for clamp 1½" process connection

2.5.4 Notified body

DEKRA EXAM GmbH
Bochum (Germany)

3 Installation

Clamp connection: (all sensors)
Sensors with clamp connections can be fixed using sheet metal brackets or solid brackets.
Sheet metal brackets have a lower dimensional stability, uneven bearing surfaces causing point loads and sometimes sharp edges that can damage the clamp.
We strongly recommend to always use solid brackets because of their higher dimensional stability. Solid brackets may be applied over the total pressure-temperature range (see temperature-pressure load curve).

3.1 CLS15D

The sensors are mounted directly via the thread NPT ½" or ¾" or clamp 1 ½" process connections. Optionally, the sensor can be installed in cross or T-pieces or in a flow chamber.

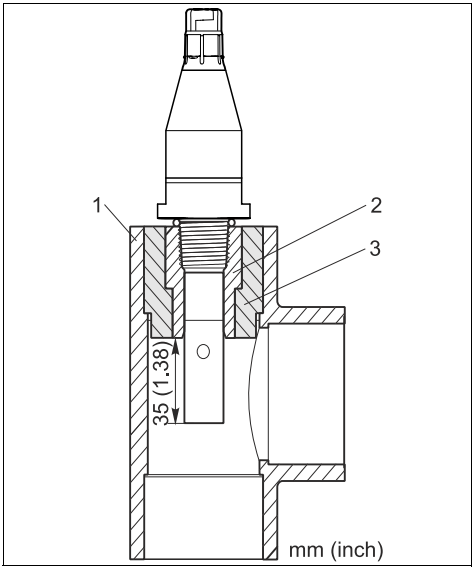


Fig. 1: With NPT ½" installed in T- or cross piece

1 T- or cross piece (DN 32, 40 or 50)
2 PVC-threaded coupling for cementing (NPT ½" for DN 20, see Accessories)
3 Adapter coupling for cementing (for DN 32, 40 or 50, see Accessories)

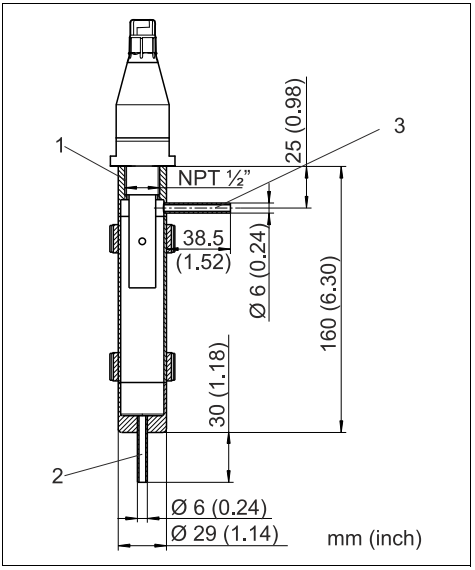


Fig. 2: With NPT ½" installed in flow assembly 71042405

1 Sensor support NPT ½"
2 Inlet
3 Outlet

The measuring surfaces of the sensor must be completely immersed in the medium during operation. Minimum immersion depth is 32 mm (1.26").
When working in ultrapure water, ingress of air must be prevented since dissolved air, particularly CO_2, may increase conductivity by up to 3 µS/cm.

3.2 CLS16D

The sensors are mounted directly via the process connection.
When installing the sensor in pipes, note the flow direction of the medium (see figure below).

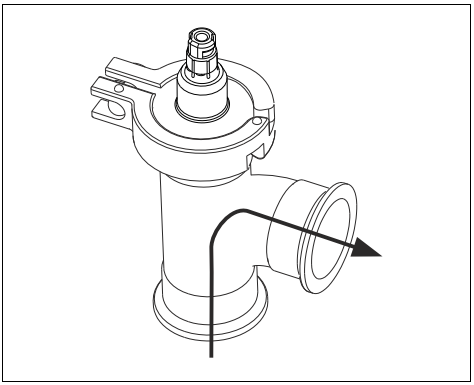


Fig. 3: Permissible flow direction

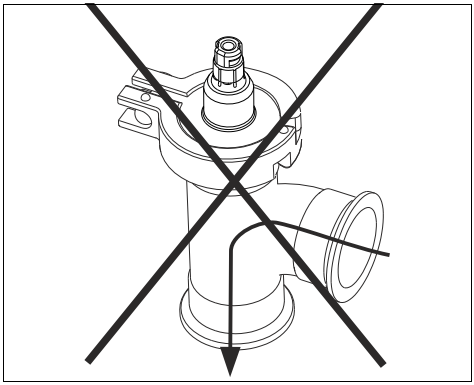
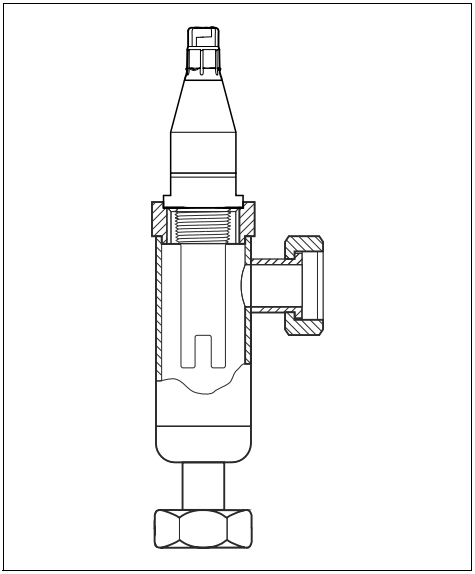


Fig. 4: Non-permissible flow direction

The measuring surfaces must be completely immersed in the medium during operation.
When working in ultrapure water, ingress of air must be prevented since dissolved air, particularly CO_2, may increase conductivity by up to 3 µS/cm.

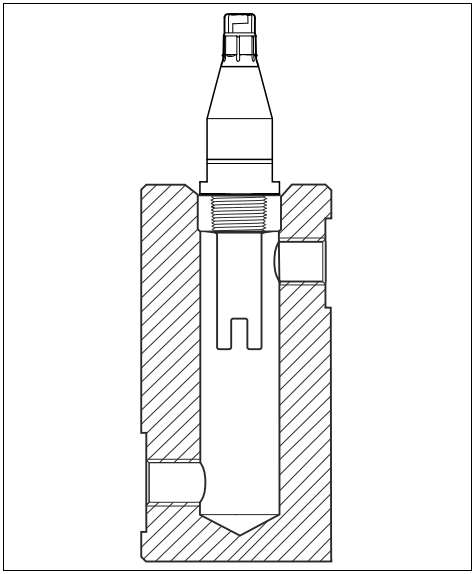
3.3 CLS21D

The sensors are mounted directly via the process connection.
Optionally, they can be installed in flow assemblies.



a0019019

Fig. 5: Installation in the CLA751 flow assembly



a0019020

Fig. 6: Installation in the CLA752 flow assembly

For installation of sensors with G1 thread in tanks, the CLA111 immersion and process assembly is available (see Accessories).

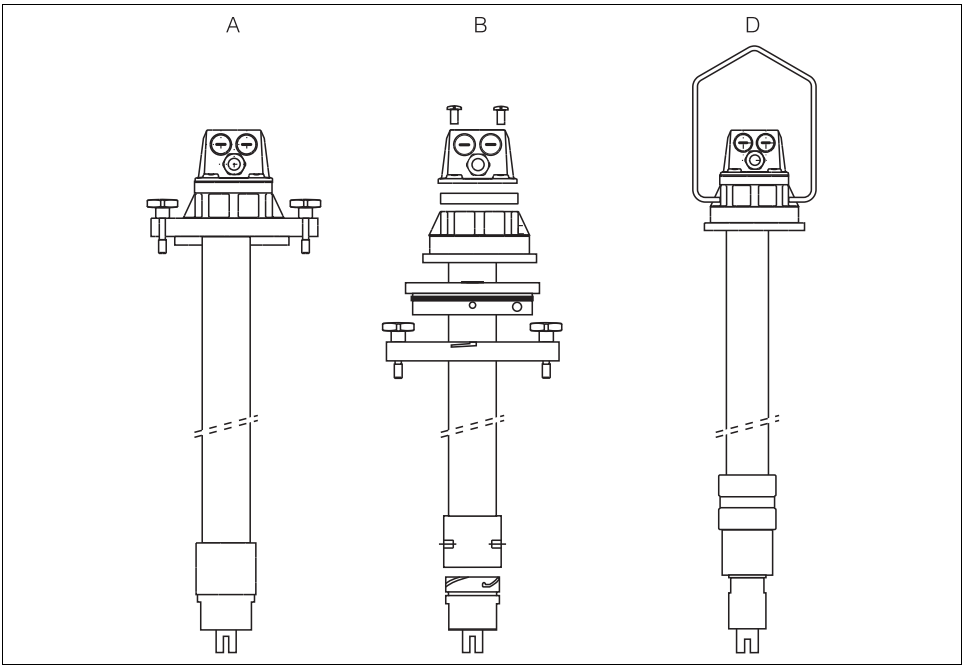


Fig. 7: Dipfit CLA111, mounting versions A, B and D

The measuring surfaces must be completely immersed in the medium during operation.

3.4 Post-installation check

- ► Are sensor and cable undamaged?
- ► Is the sensor installed via process connection and not suspended from the cable?

4 Wiring

⚠ WARNING

Device is energized

Improper connection can cause injury or death.

- ► The electrical connection must only be carried out by a certified electrician.
- ► Technical personnel must have read and understood the instructions in this manual and must adhere to them.
- ► **Prior to beginning** any wiring work, make sure voltage is not applied to any of the cables.

4.1 Connection to the transmitter

The sensor is connected to the transmitter via the measuring cable CYK10.

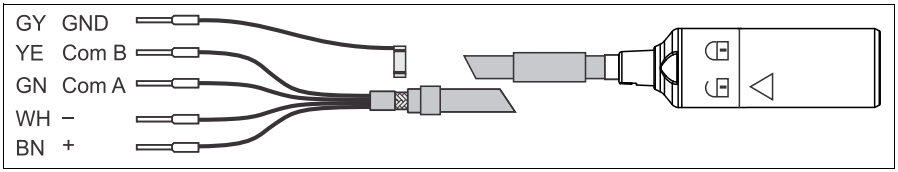


Fig. 8: Measuring cable CYK10

4.2 Wiring diagram for explosion-hazardous areas

4.2.1 Sensors for Zone 0

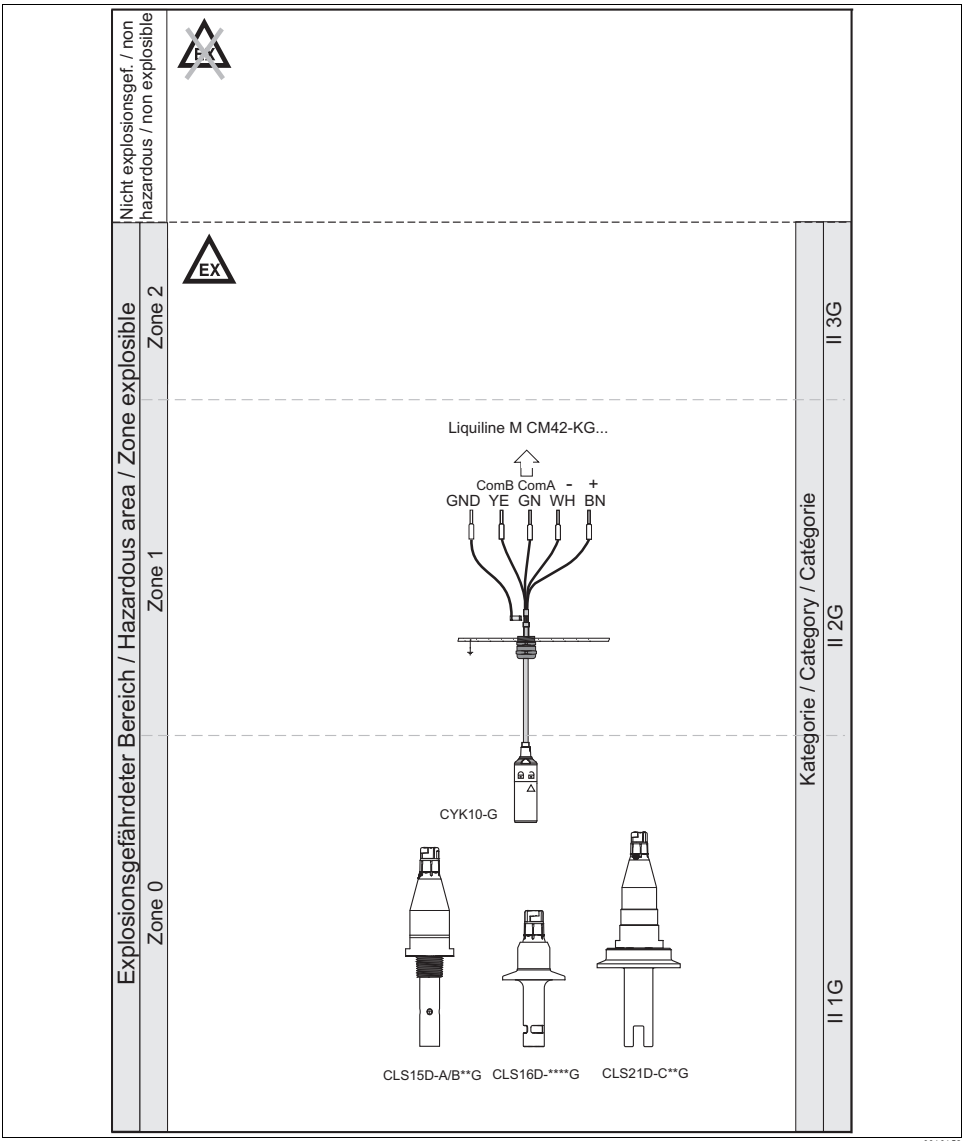


*Fig. 9: Connection of CLSxxD-***(*)G and CYK10-G*

4.2.2 Sensors for Zone 2

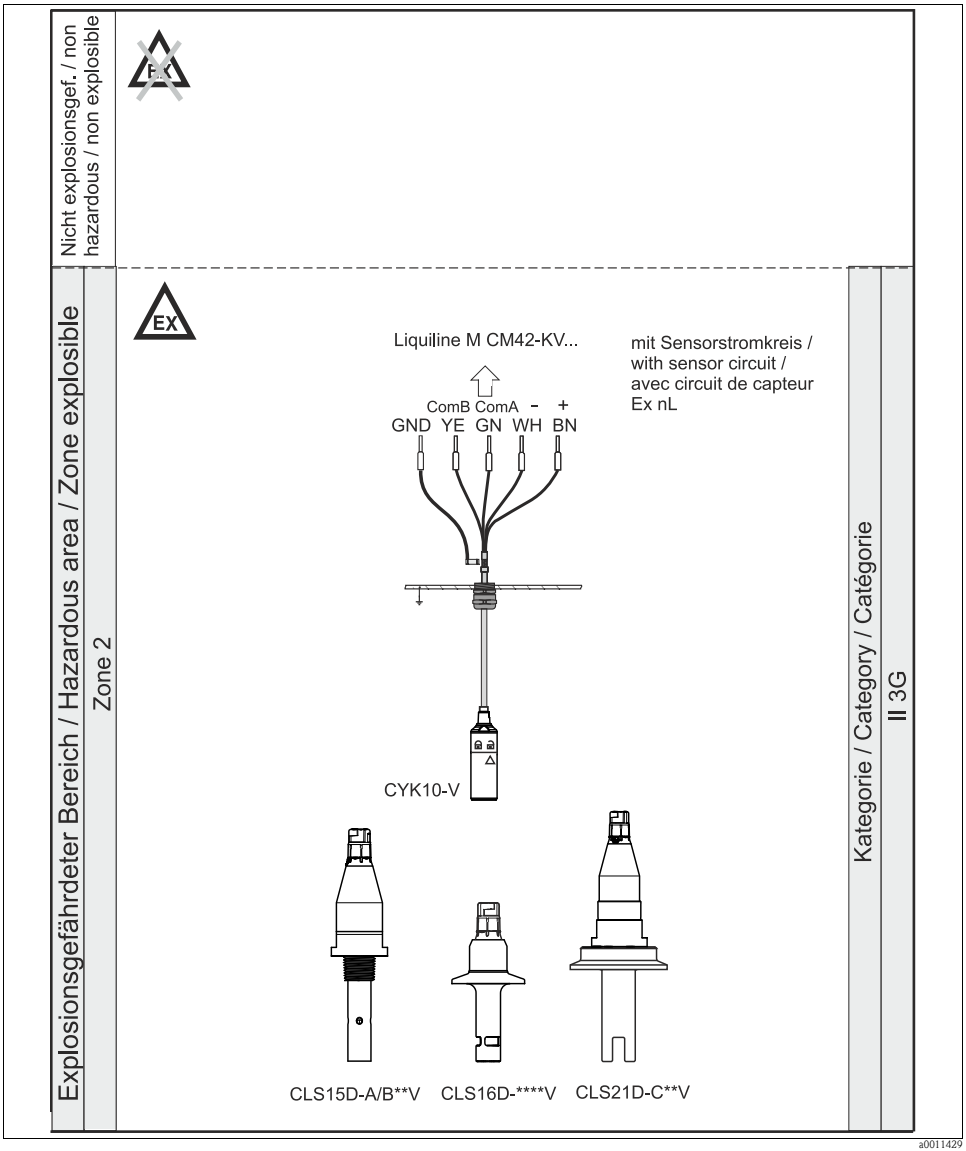


*Fig. 10: Connection of CLSxxD-***(*)V and CYK10-V*

5 Commissioning

Before first commissioning, check if:
- the sensor is correctly installed
- the electrical connection is correct.

If using an assembly with automatic cleaning, check the correct connection of the cleaning agent (e.g. water or air).

⚠ WARNING

Incorrect connection of a cleaning unit to an assembly

Danger of medium leaking off

► Before applying compressed air to an assembly with cleaning facility, make sure the connections are correctly fitted. Otherwise, the assembly may not be inserted into the process.

6 Maintenance

6.1 Cleaning

⚠ WARNING

Burning chemicals

Danger of chemicals burns to the eyes and skin. Danger of damage to clothing and equipment.

► It is absolutely essential to protect the eyes and hands properly when working with acids, bases and organic solvents!

► Wear protective goggles and safety gloves.

► Clean away splashes on clothes and other objects to prevent any damage.

► Pay particular attention to the information provided in the safety data sheets for the chemicals used.

Clean away fouling on the sensor as follows depending on the particular type of fouling:
- Oily and greasy films:
  Clean with grease remover, e.g. alcohol, acetone, as well as hot water and dishwashing detergent if necessary.
- Lime and metal hydroxide buildup:
  Dissolve buildup with diluted hydrochloric acid (3 %) and then rinse thoroughly with plenty of clear water.
- Sulfidic buildup (from flue gas desulfurising or sewage treatment plants):
  Use a mixture of hydrochloric acid (3 %) and thiocarbamide (commercially available) and then rinse thoroughly with plenty of clear water.
- Buildup containing proteins (e.g. food industry):
  Use a mixture of hydrochloric acid (0.5 %) and pepsin (commercially available) and then rinse thoroughly with plenty of clear water.

6.2 Seal replacement (CLS16D only)

6.2.1 Checking the sensors

Intact seals are a prerequisite for safe and accurate measurement.
To ensure highest operational reliability and complete hygiene of the sensor according to 3-A Standard 74-, the seal should be replaced at regular intervals.

The actual maintenance intervals can only be determined by the operator since they strongly depend on the operating conditions such as:
- type and temperature of the medium
- type and temperature of the cleaning solution
- number of cleanings
- number of sterilizations
- ambient conditions

Recommended intervals for seal replacement

Application	Seal replacement (recommended interval)
Medium temperature from 50 up to 100 °C (122 to 212 °F)	approx. every 18 months
Medium temperature below 50 °C (122 °F)	approx. every 36 months
Sterilization cycles, max. 145 °C (293 °F), 30 min	approx. 400 cycles

Replacement of seals and recalibration
If the sensor is exposed to very high loads, you can have it regenerated at the Endress+Hauser Service (see Accessories). Regeneration includes replacement of seals and recalibration of the sensor. Send the sensor to the responsible Endress+Hauser sales center.

6.2.2 Seal replacement

- Factory replacement of seals and factory recalibration of sensors;
  order no. 51505585

6.3 Return

The device must be returned if repairs or a factory calibration are required, or if the wrong device has been ordered or delivered. According to legal regulations, Endress+Hauser, as an ISO-certified company, is required to follow certain procedures when handling returned products that are in contact with medium.

To ensure swift, safe and professional device returns, please read the return procedures and conditions on the internet site:
www.services.endress.com/return-material

7 Technical data

7.1 Input

7.1.1 Measured variable

- Conductivity
- Temperature

7.1.2 Measuring range

Conductivity	(referenced to water at 25 °C (77 °F))
CLS15D-A	0.04 to 20 µS/cm
CLS15D-B	0.10 to 200 µS/cm
CLS16D	0.04 to 500 µS/cm
CLS21D	10 µS/cm to 20 mS/cm

valid in the specified temperature range
specified measuring accuracy up to 100 °C (212 °F)

Temperature
specified measuring accuracy up to 100 °C (212 °F)

7.1.3 Cell constant

CLS15D-A
$k = 0.01\ cm^{-1}$

CLS15D-B
$k = 0.1\ cm^{-1}$

CLS16D
$k = 0.1\ cm^{-1}$

CLS21D
$k = 1.0\ cm^{-1}$, nominal

7.1.4 Temperature compensation

NTC

7.2 Performance characteristics

7.2.1 Accuracy

CLS15D

Each individual sensor is factory measured in a solution of approx. 5 µS/cm for cell constant 0.01 cm^{-1} or approx. 50 µS/cm for cell constant 0.1 cm^{-1} on a reference measuring system referred to NIST or DKD. The accurate cell constant is entered in the supplied quality certificate. The maximum measured error in cell constant determination is 1.0%.

CLS16D

Each individual sensor is factory-measured in a solution of approx. 5 µS/cm with a reference system traceable to NIST or DKD. The exact cell constant is entered into the supplied quality certificate. The maximum measured error in cell constant determination is 1.0 %.

CLS21D

Each individual sensor is factory measured in a solution of approx. 5 mS/cm on a reference measuring system referred to NIST or DKD. The accurate cell constant is entered in the supplied quality certificate. The maximum measured error in cell constant determination is 1.0 %.

7.2.2 Conductivity response time

$t_{95} \leq 3$ s

7.2.3 Temperature response time

CLS15D-A
$t_{90} \leq 39$ s

CLS15D-B
$t_{90} \leq 17$ s

CLS16D
$t_{90} \leq 13$ s

CLS21D
$t_{90} \leq 296$ s

7.2.4 Maximum measured error

CLS15D
2 % of the measured value

CLS16D
2 % of the measured value up to 200 µS/cm
3 % of the measured value from 200 to 500 µS/cm

CLS21D
5 % of the measured value

7.2.5 Repeatability

CLS15D
0.2 % of the measured value + 3 nS/cm

CLS16D
0.2 % of the measured value + 3 nS/cm

CLS21D
0.2 % of the measured value

7.3 Environment

7.3.1 Ambient temperature

–20 to +60 °C (–4 to +140 °F)

7.3.2 Storage temperature

–25 to +80 °C (–10 to +180 °F)

7.3.3 Humidity

5 to 95%

7.3.4 Protection degree

IP 68 / NEMA Type 6P (10 m water column, 25 °C, 168 h)

7.4 Process

7.4.1 Process temperature

CLS15D

Normal operation:	–20 to 120 °C (–4 to 248 °F)
Sterilization (max. 1 h):	max. 140 °C (284 °F)

CLS16D

Normal operation:	–5 to 120 °C (23 to 248 °F)
Sterilization (max. 45 min):	max. 150 °C (302 °F) at 5 bar (73 psi)

CLS21D
–20 to +135 °C (–4 to 275 °F) at 2.5 bar (36 psi)

The maximum temperature for communication between Memosens sensors and the transmitter is 130 °C (266 °F).

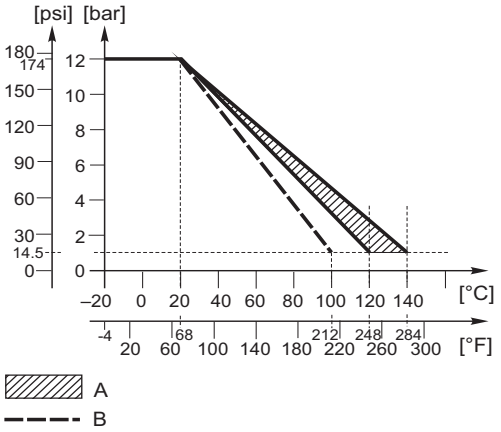
7.4.2 Process pressure

CLS15D
12 bar (170 psi) at 20 °C (68 °F)

CLS16D
12 bar (170 psi) at 20 °C (68 °F)
8 bar (120 psi) at 120 °C (248 °F)
0.1 bar abs. (1.5 psi abs. (depression)) at 20 °C (68 °F)

CLS21D
16 bar (230 psi) at 20 °C (68 °F)

7.4.3 Pressure/temperature load curves



a0006142

Fig. 11: Mechanical pressure-temperature stability of CLS15D

A Short-time sterilizable (1 h)
B Thread version with fixed cable

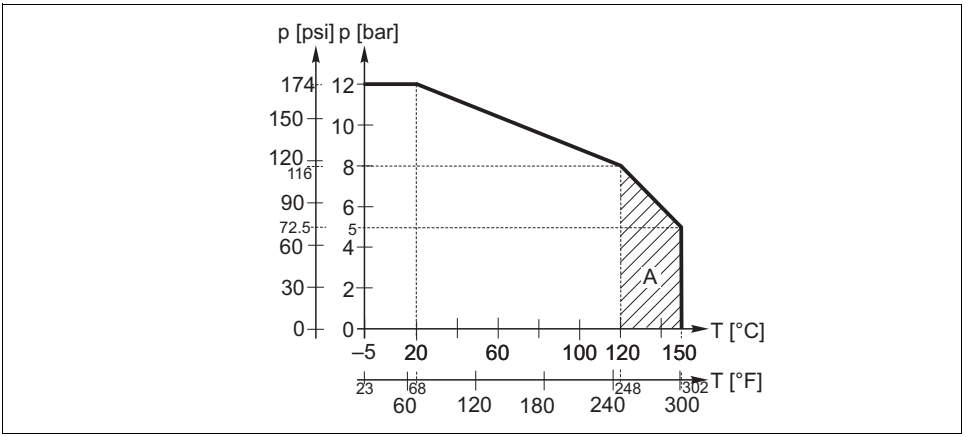


Fig. 12: Mechanical pressure-temperature stability of CLS16D

A Short-time sterilizable (45 min)

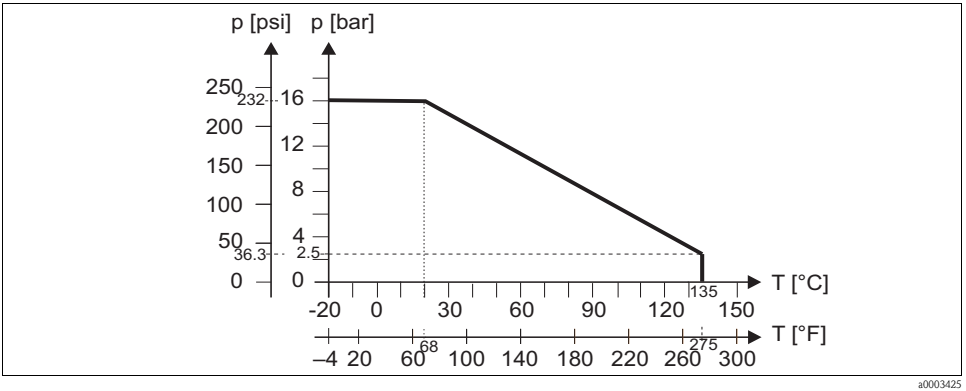


Fig. 13: Mechanical pressure-temperature stability of CLS21D

7.5 Mechanical construction

7.5.1 Weight

CLS15D and CLS21D

Depending on version, approx. 0.3 kg (0.7 lb.)

CLS16D

Depending on version, approx. 0.13 to 0.75 kg (0.3 to 1.7 lb.)

7.5.2 Material

CLS15D

Electrodes:	polished, stainless steel 1.4435 (AISI 316L)
Sensor shaft:	polyether sulfone (PES-GF20)
O-ring, in contact with medium: (clamp version only)	EPDM

CLS16D

Electrodes:	electro-polished, stainless steel 1.4435 (AISI 316L)
Seal:	molded seal ISOLAST (FFKM), listed with FDA

CLS21D

Electrodes:	graphite
Sensor shaft:	polyether sulfone (PES-GF20)
Thermal conductivity socket for temperature sensor:	titanium 3.7035

7.5.3 Surface roughness

CLS15D

$R_a \leq 0.8$ µm
($R_a \leq 0.4$ µm available as TSP C-LS020130-02)

CLS16D

$R_a \leq 0.8$ µm, electro-polished
$R_a \leq 0.4$ µm, electro-polished, optional

7.5.4 Process connections

CLS15D

Thread NPT ½" and ¾"
Clamp 1½" acc. to ISO 2852

CLS16D

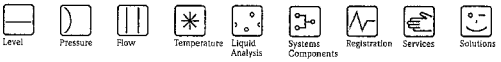
Clamp 1", 1½", 2" acc. to ISO 2852 (also suitable for TRI-CLAMP, DIN 32676)
Tuchenhagen VARIVENT N DN 50 to 125
NEUMO BioControl D50

CLS21D

Thread G1
Thread NPT 1"
Clamp 2" acc. to ISO 2852
Dairy fitting DN 25 acc. to DIN 11851

8 Declaration of conformity

8.1 ATEX /NEPSI II 1G Ex ia IIC T3 / T4 / T6, IECEx Ex ia IIC T6 Ga



EG 153A/07/a3

EG-Konformitätserklärung
EC Declaration of Conformity
CE Déclaration de Conformité

Endress+Hauser Conducta Gesellschaft für Mess- und Regeltechnik mbH+Co. KG
Dieselstrasse 24, 70839 Gerlingen, Germany

erklärt in alleiniger Verantwortung, dass die Produkte
declares in sole responsibility that the products
déclare sous sa seule responsabilité que les produits

Memosens CLS15D-***G
CLS16D-****G
CLS21D-***G
mit Kabel / with cable / avec câble CYK10-G**1

EG-Baumusterprüfbescheinigung:
EC type examination certificate: BVS 04 ATEX E 121 X
Certificat de l'examen CE de type :
ausgestellt von / issued by / exposé par : DEKRA EXAM GmbH

mit den Vorschriften folgender Europäischen Richtlinien übereinstimmt:
is in conformity with the regulations of the following European Directives:
est conforme aux prescriptions et directives Européennes suivantes:

94/9/EG (Geräte zur Verwendung in explosionsgefährdeten Bereichen)
(Equipment for use in potentially explosive atmospheres)
(Appareils et systèmes de protection en atmosphère explosive)
2004/108/EG (Elektromagnetische Verträglichkeit)
(Electromagnetic Compatibility)
(Compatibilité électrotechnique))

Angewandte harmonisierte Normen oder normative Dokumente:
Applied harmonized standards or normative documents:
Normes harmonisées ou documents normatives appliquées:
EN 60079-0:2006, EN 60079-11:2007, EN 60079-26:2004
EN 61326-1:2006, EN 61326-2-3:2006

Benannte Stelle für QS-Überwachung:
Notified body for QA control:
Organisme notifié pour l'assurance qualité :
DEKRA EXAM GmbH
Kennnummer / Identification number /
numéro d'identification (0158)

Gerlingen, 2008-07-07

i.V. Dr. Achim Gahr
Director Development

i.V. Dr. Dieter Klingeter
Manager Certifications and Approvals

Endress+Hauser
People for Process Automation

a0010161

8.2 ATEX/NEPSI II 3G Ex nL IIC T3 / T4 / T6

Level Pressure Flow Temperature Liquid Analysis Systems Components Registration Services Solutions

EG 157A/07/a3

EG-Konformitätserklärung
EC Declaration of Conformity
CE Déclaration de Conformité

Endress+Hauser Conducta Gesellschaft für Mess- und Regeltechnik mbH+Co. KG
Dieselstrasse 24, 70839 Gerlingen, Germany

erklärt in alleiniger Verantwortung, dass die Produkte
declares in sole responsibility that the products
déclare sous sa seule responsabilité que les produits

Condumax W CLS15D-*V**
Condumax H CLS16D-**V**
Condumax W CLS21D-*V**

mit Kabel / with cable / avec câble **CYK10-V**1**

mit den Vorschriften folgender Europäischen Richtlinien übereinstimmen:
are in conformity with the regulations of the following European Directives:
sont conformes aux prescriptions et directives Européennes suivantes:

94/9/EG (Geräte zur Verwendung in explosionsgefährdeten Bereichen - Kategorie 3G)
(Equipment for use in potentially explosive atmospheres - Category 3G)
(Appareils et systèmes de protection en atmosphère explosive - Catégorie 3G)

2004/108/EG (Elektromagnetische Verträglichkeit)
(Electromagnetic Compatibility)
(Compatibilité électrotechnique))

Angewandte harmonisierte Normen oder normative Dokumente:
Applied harmonized standards or normative documents:
Normes harmonisées ou documents normatives appliquées:
EN 60079-0:2006, EN 60079-15:2005
EN 61326-1:2006, EN 61326-2-3:2006

Gerlingen, 2008-10-08

i.V. Dr. Achim Gehr
Director Development

i.V. Dr. Dieter Kfügeler
Manager Certifications and Approvals

Endress+Hauser
People for Process Automation

a0011448

www.addresses.endress.com

Endress+Hauser

People for Process Automation

BA01147C/07/EN/01.12
FM9

71195841