

(1) EU-TYPE EXAMINATION CERTIFICATE



- (2) Equipment and Protective Systems intended for use in
Potentially Explosive Atmosphere - **Directive 2014/34/EU**
- (3) EU-Type Examination Certificate Number

TÜV 15 ATEX 7778 X

Issue: 02

- (4) Equipment: **Sensor type CLS** -***** and CLS16B-*******
- (5) Manufacturer: **Endress+Hauser Conducta GmbH+Co.KG**
- (6) Address: **Dieselstraße 24, 70839 Gerlingen
Germany**

- (7) This product and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.
- (8) The TÜV Rheinland Zertifizierungsstelle für Explosionsschutz of TÜV Rheinland Industrie Service GmbH, Notified Body No. 0035 in accordance with Article 21 of the Council Directive 2014/34/EU of 26th February 2014, certifies this product which has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmosphere, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report 557/Ex7778.02/15

- (9) Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule of this certificate, has been assessed by reference to:

EN IEC 60079-0:2018

EN 60079-11:2012

- (10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.
- (11) This EU-Type Examination Certificate relates only to the design and specification for construction of the equipment or protective system. It does not cover the process for actual manufacture or supply of the equipment or protective system, for which further requirements of the directive are applicable.
- (12) The marking of the equipment shall include the following:



II 1G Ex ia IIC T6...T2 Ga (Sensor type CLS13-***)**

II 1G Ex ia IIC T6...T3 Ga (All other types)

TÜV Rheinland Zertifizierungsstelle für Explosionsschutz

Cologne, 2023-12-13

Dipl.-Ing. Christian Mehrhoff



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This EU-Type Examination Certificate may be circulated only without alteration. Extracts or alterations are subject to approval by the
TÜV Rheinland Industrie Service GmbH TÜV Rheinland Group Am Grauen Stein 51105 Köln
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(13)

Annex

(14)

EU Type Examination Certificate

TÜV 15 ATEX 7778 X

Issue: 02

(15)

Description of equipment

15.1 Equipment and type:

Sensor type CLS**-*****

| Name | Type | | | | | | | | Process Temperature Range | Cat. |
|----------|------|----|---|-------------|----|---|--------|-------|---|-------|
| Condumax | CLS | 12 | – | A B | ** | * | A | (***) | -20°C ≤ Ta ≤ +75°C(T6) -20°C ≤ Ta ≤ +125°C(T4) -20°C ≤ Ta ≤ +160°C(T3) | II 1G |
| Condumax | CLS | 13 | – | A B | ** | * | A | (***) | -20°C ≤ Ta ≤ +75°C(T6) -20°C ≤ Ta ≤ +125°C(T4) -20°C ≤ Ta ≤ +190°C(T3) -20°C ≤ Ta ≤ +250°C(T2) | II 1G |
| Condumax | CLS | 15 | – | A B L | ** | * | A | (***) | -20°C ≤ Ta ≤ +65°C(T6) -20°C ≤ Ta ≤ +115°C(T4) -20°C ≤ Ta ≤ +140°C(T3) | II 1G |
| Condumax | CLS | 16 | – | X | ** | * | A B | (***) | -5°C ≤ Ta ≤ +65°C(T6) -5°C ≤ Ta ≤ +115°C(T4) -5°C ≤ Ta ≤ +150°C(T3) | II 1G |
| Condumax | CLS | 21 | – | C L | ** | * | A | (***) | -20°C ≤ Ta ≤ +65°C(T6) -20°C ≤ Ta ≤ +115°C(T4) -20°C ≤ Ta ≤ +135°C(T3) | II 1G |
| Condumax | CLS | 21 | – | C L | ** | * | D | (***) | -20°C ≤ Ta ≤ +80°C(T6) -20°C ≤ Ta ≤ +130°C(T4) -20°C ≤ Ta ≤ +135°C(T3) | II 1G |

(xxx) = three characters determining
OEM / label partner (no Ex relevance)
+ one or more characters determining
optional features (no Ex relevance)

xx = two characters determining additional option
(no Ex relevance)

A = temperature sensor Pt100
B = temperature sensor Pt1000
D = without temperature sensor

one character determining cable connection (no Ex relevance)**

1,4,5 = without fixed cable

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- 2 = with 5m fixed cable
 3 = with 10 m fixed cable
 9 = Special version (in accordance to ex regulatory)

xx = two characters determining process connection, materials and additional option (no Ex relevance**)

- A = Measuring Range, Cell Constant k=0.01/cm
 B = Measuring Range, Cell Constant k=0.1/cm
 C = Measuring Range, Cell Constant k=1/cm
 L = Cleaning Procedure PWIS free: xLS15-L* = PWIS free version of xLS15-B*, xLS21-L* = PWIS free version of xLS21-C* (no Ex relevance)

CLS = Alternative product designation (no Ex relevance)

OLS = Alternative product designation (no Ex relevance)

OCLS = Alternative product designation (no Ex relevance)

Sensor type CLS16B-*****

| Name | Type | | | | | | | | | |
|--|--------|---|----|----|----|---|---|-----|---|---|
| Condumax | xLS16B | - | ** | ** | ** | * | * | *** | + | * |
| <p>optional</p> <p>+* = + one or more characters determining optional features (no Ex relevance)</p> <p>only if x = O, OC</p> <p>*** = three characters determining OEM/label partner (no Ex relevance)</p> <p>* = one character determining temperature sensor</p> <p>A = Pt100</p> <p>B = Pt1000</p> <p>* = one character determining cable connection (no Ex relevance)</p> <p>** = two characters determining materials (no Ex relevance)</p> <p>** = two characters determining process connection (no Ex relevance)</p> <p>** = two characters determining order option Approval (no Ex relevance)</p> <p>x = C E+H-labeled version (no Ex relevance)</p> <p>x = O OEM/label partner-labeled version (no Ex relevance)</p> <p>x = OC OEM/label partner-labeled version (no Ex relevance)</p> | | | | | | | | | | |

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15.2 Description / Details of Change

General product information

The sensor type CLS**-***** and CLS16B-***** measures the conductivity of liquids with a measuring system that has 2 coaxially arranged electrodes like a capacitor. The electric resistance or its reciprocal value, the conductance G, is measured according to Ohm's law. The sensors have large coaxial or face-to-face measuring electrodes which allow high flow rates and high accuracy.

In addition, a Pt 100 or Pt1000 temperature sensor is installed inside the inner electrode or inside a thermal conductivity socket to measure the medium temperature.

Technical Data

1 Electrical data

CLS12 or CLS13: Terminals

CLS15, CLS16, CLS16B or CLS21: Connector or permanent connected cable

| | | |
|------------------------------|-------|-------------|
| Maximum input voltage | U_i | 15 V DC |
| Maximum input current | I_i | 30 mA |
| Maximum input power | P_i | 130 mW |
| Maximum internal capacitance | C_i | 1 nF/m |
| Maximum internal inductance | L_i | 6 μ H/m |

The input circuit has to be considered to be grounded when connected to the sensor.

2 Cable data

| | | |
|------------------------------|-------|-------------|
| Maximum internal capacitance | C_i | 1 nF/m |
| Maximum internal inductance | L_i | 6 μ H/m |

3 Thermal data

3.1 Ambient temperature range of the sensor head

$$-20\text{ °C} \leq T_a \leq +60\text{ °C}$$

3.2 Ambient temperature range of the sensor tip (Process temperature range)

| Name | Type | | | | | | | | Process Temperature Range | Cat. |
|----------|------|-----------|---|-------------|----|---|--------|-------|---|-------|
| Condumax | CLS | 12 | — | A B | ** | * | A | (***) | -20°C ≤ Ta ≤ +75°C(T6) -20°C ≤ Ta ≤ +125°C(T4) -20°C ≤ Ta ≤ +160°C(T3) | II 1G |
| Condumax | CLS | 13 | — | A B | ** | * | A | (***) | -20°C ≤ Ta ≤ +75°C(T6) -20°C ≤ Ta ≤ +125°C(T4) -20°C ≤ Ta ≤ +190°C(T3) -20°C ≤ Ta ≤ +250°C(T2) | II 1G |
| Condumax | CLS | 15 | — | A B L | ** | * | A | (***) | -20°C ≤ Ta ≤ +65°C(T6) -20°C ≤ Ta ≤ +115°C(T4) -20°C ≤ Ta ≤ +140°C(T3) | II 1G |
| Condumax | CLS | 16 16B | — | <div></div> | ** | * | A B | (***) | -5°C ≤ Ta ≤ +65°C(T6) -5°C ≤ Ta ≤ +115°C(T4) -5°C ≤ Ta ≤ +150°C(T3) | II 1G |

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| | | | | | | | | | | |
|----------|-----|----|---|--------|----|---|---|-------|--|-------|
| Condumax | CLS | 21 | – | C L | ** | * | A | (***) | -20°C ≤ Ta ≤ +65°C(T6) -20°C ≤ Ta ≤ +115°C(T4) -20°C ≤ Ta ≤ +135°C(T3) | II 1G |
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Details of Change:

- Introduction of special version variant for the cable length
- Introduction of sensor CLS16B

(16) Test-Report No. 557/Ex7778.02/15

(17) Special Conditions for safe use

The sensor heads of types CLS12-***** and CLS13-***** have to be protectively installed against impacts and friction.

(18) Basic Safety and Health Requirements

Covered by afore mentioned standard

TÜV Rheinland ExNB for explosion protected equipment

Cologne, 2023-12-13

Dipl.-Ing. Christian Mehrhoff



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