

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx BVS 11.0052X	Page 1 of 5	Certificate history:
Status:	Current	Issue No: 11	lssue 10 (2023-06-05) Issue 9 (2021-06-16)
Date of Issue:	2025-04-30		lssue 8 (2019-06-05) Issue 7 (2018-10-10)
Applicant:	Endress+Hauser Conducta GmbH+Co. KG Dieselstr. 24 70839 Gerlingen Germany		Issue 6 (2017-07-26) Issue 5 (2016-03-14) Issue 4 (2015-08-27) Issue 3 (2014-07-16) Issue 2 (2013-08-07)
Equipment:	Inductive sensor-cable connection system M consisting of Sensor and measuring cable T see "Subject and Type"	/EMOSENS ype : Details	Issue 1 (2012-12-17)
Optional accessory:			
Type of Protection:	Intrinsic safety "i"		
Marking:	See Annex		
Approved for issue or Certification Body:	behalf of the IECEx	Dr Franz Eickhoff	
Position:		Senior Lead Auditor, Certification Manager a recognised expert	and officially
Signature: (for printed version) Date:		Cichoff 2025-04-30	
(for printed version)			
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Certificate issued	by:		

DEKRA Testing and Certification GmbH Certification Body Dinnendahlstrasse 9 44809 Bochum Germany





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Date of issue:	2025-04-30		Issue No: 11		
Manufacturer:	Endress+Hauser Conducta GmbH+Co. KG Dieselstr. 24 70839 Gerlingen Germany				
Manufacturing locations:	Endress+Hauser Conducta GmbH+Co. KG Dieselstr. 24 70839 Gerlingen Germany	Endress + Hauser Conducta Inc. 4123 E. La Palma Ave. Anaheim, CA 92807 United States of America	Endress+Hauser Conducta GmbH+Co. KG Landsberger Straße 28 04736 Waldheim Germany		
See following pages for more locations					
This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended					
STANDARDS : The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards					
IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements Edition:7.0					
IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i" Edition:6.0					
This Certificate does not indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.					
TEST & ASSESSMENT REPORTS: A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:					
Test Report:					
DE/BVS/ExTR11.0074/11					

Quality Assessment Reports:

DE/BVS/QAR06.0005/15

DE/TUR/QAR13.0004/06

DE/TUR/QAR14.0002/06



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

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General product information:

For the inductive sensor-cable connection system MEMOSENS, instead of measuring cable type ***YK10-**********+*** or type ***YK20-***********+***, an in hardware and function identical and IECEx-certified measuring cable can be used.

The connection between sensor and measuring cable is galvanically isolated via a completely isolated connection system (inductive coupling).

The sensor's and measuring cable's electronic circuits are completely encapsulated.

Subject and Type:

See Annex

Parameters:

See Annex

SPECIFIC CONDITIONS OF USE: YES as shown below: See Annex



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

The ratings were supplemented, the connection to transmitter type Liquiline CM42B was added.

The electronics of the measuring cables was slightly modified.



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Additional manufacturing locations:

Endress+Hauser Analytical Instruments(Suzhou) Co.,LTD. No.31 JiangTianLiLu Suzhou Industrial Park 215126 China

Annex:

BVS_11_0052X_E+H Conducta_Annex_issue11.pdf



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Dissolved Oxygen

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MEMOSENS Measuring cable and Sensor details - type, designation, marking, ambient temperature range depend on temperature class:

Туре	Designation	Marking	Ambient temperature range
*YK10-******	Measuring cable	Ex ia IIC T3/T4/T6 Ga	$\begin{array}{l} -15 \ ^{\circ}C \leq T_{a} \leq +135 \ ^{\circ}C \ \ (T3) \\ -15 \ ^{\circ}C \leq T_{a} \leq +120 \ ^{\circ}C \ \ (T4) \\ -15 \ ^{\circ}C \leq T_{a} \leq + \ 70 \ ^{\circ}C \ \ (T6) \end{array}$
*YK20-*******+*	Measuring cable	Ex ia IIC T6 Ga	$-10 \ ^{\circ}C \le T_a \le + 50 \ ^{\circ}C \ (T6)$
*PS11D-****G***+* *PS12D-****G***+* *PS16D-****G***+*	Orbisint	Ex ia IIC T3/T4/T6 Ga	$\begin{array}{l} -15 \ ^{\circ}C \leq T_{a} \leq +135 \ ^{\circ}C \ \ (T3) \\ -15 \ ^{\circ}C \leq T_{a} \leq +120 \ ^{\circ}C \ \ (T4) \\ -15 \ ^{\circ}C \leq T_{a} \leq + \ 70 \ ^{\circ}C \ \ (T6) \end{array}$
*PS31D-****G***+*	Memosens	Ex ia IIC T4/T6 Ga	$0 \ ^{\circ}C \le T_a \le + \ 80 \ ^{\circ}C \ (T4)$ $0 \ ^{\circ}C \le T_a \le + \ 70 \ ^{\circ}C \ (T6)$
*PS41D-*****G***+* *PS42D-*****G***+*	Ceraliquid	Ex ia IIC T3/T4/T6 Ga	$\begin{array}{l} -15 \ ^{\circ}C \leq T_{a} \leq +135 \ ^{\circ}C \ \ (T3) \\ -15 \ ^{\circ}C \leq T_{a} \leq +120 \ ^{\circ}C \ \ (T4) \\ -15 \ ^{\circ}C \leq T_{a} \leq + \ 70 \ ^{\circ}C \ \ (T6) \end{array}$
*PS71D-****G***+* *PS76D-****G***+*	Ceragel	Ex ia IIC T3/T4/T6 Ga	$\begin{array}{l} 0 \ ^{\circ}C \leq T_{a} \leq +135 \ ^{\circ}C \ \ (T3) \\ 0 \ ^{\circ}C \leq T_{a} \leq +120 \ ^{\circ}C \ \ (T4) \\ 0 \ ^{\circ}C \leq T_{a} \leq + \ 70 \ ^{\circ}C \ \ (T6) \end{array}$
*PS72D-****G***+*	Ceragel	Ex ia IIC T3/T4/T6 Ga	$\begin{array}{l} -15 \ ^{\circ}\text{C} \leq \text{T}_{a} \leq +135 \ ^{\circ}\text{C} \ (\text{T3}) \\ -15 \ ^{\circ}\text{C} \leq \text{T}_{a} \leq +120 \ ^{\circ}\text{C} \ (\text{T4}) \\ -15 \ ^{\circ}\text{C} \leq \text{T}_{a} \leq + \ 70 \ ^{\circ}\text{C} \ (\text{T6}) \end{array}$
*PS91D-****G***+* *PS92D-****G***+* *PS96D-****G***+*	Orbipore	Ex ia IIC T4/T6 Ga	0 °C \leq T _a \leq +110 °C (T4) 0 °C \leq T _a \leq + 70 °C (T6)
*YP01D-*******+*	Memocheck Plus	Ex ia IIC T6 Gb	$-15 \text{ °C} \le T_a \le + 70 \text{ °C}$ (T6)
*YP02D-******+*	Memocheck	Ex ia IIC T6 Gb	-15 °C ≤ T _a ≤ + 70 °C (T6)
*OS22D-BA***B*3***+* *OS22D-BA***D*3***+* *OS22D-BA***E*3***+*	Oxymax or Oxymax H	Ex ia IIC T3/T4/T6 Ga	- 5 °C ≤ $T_a ≤ +135$ °C (T3) - 5 °C ≤ $T_a ≤ +120$ °C (T4) - 5 °C ≤ $T_a ≤ +$ 70 °C (T6)
COS51D-G*8*0	Oxymax or Oxymax W	Ex ia IIC T6 Ga	- 5 °C ≤ T _a ≤ + 50 °C (T6)
*PS441D-7***G***+* *PS471D-7**G***+*	Tophit	Ex ia IIC T3/T4/T6 Ga	$\begin{array}{l} -15 \ ^{\circ}C \leq T_{a} \leq +135 \ ^{\circ}C \ \ (T3) \\ -15 \ ^{\circ}C \leq T_{a} \leq +120 \ ^{\circ}C \ \ (T4) \\ -15 \ ^{\circ}C \leq T_{a} \leq + \ 70 \ ^{\circ}C \ \ (T6) \end{array}$
*PS491D-7**G***+*	Tophit	Ex ia IIC T4/T6 Ga	-15 °C ≤ T _a ≤ +110 °C (T4) -15 °C ≤ T _a ≤ + 70 °C (T6)

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Туре	Designation	Marking	Ambient temperature range
CLS15D-A**G	Condumax or Condumax W	Ex ia IIC T3/T4/T6 Ga	$\begin{array}{l} -20 \ ^{\circ}\text{C} \leq \text{T}_{a} \leq +135 \ ^{\circ}\text{C} \ (\text{T3}) \\ -20 \ ^{\circ}\text{C} \leq \text{T}_{a} \leq +120 \ ^{\circ}\text{C} \ (\text{T4}) \\ -20 \ ^{\circ}\text{C} \leq \text{T}_{a} \leq + \ 70 \ ^{\circ}\text{C} \ (\text{T6}) \end{array}$
CLS15D-B**G CLS15D-L**G	Condumax or Condumax W	Ex ia IIC T3/T4/T6 Ga	$\begin{array}{l} -20 \ ^{\circ}\text{C} \leq \text{T}_{a} \leq +135 \ ^{\circ}\text{C} \ (\text{T3}) \\ -20 \ ^{\circ}\text{C} \leq \text{T}_{a} \leq +100 \ ^{\circ}\text{C} \ (\text{T4}) \\ -20 \ ^{\circ}\text{C} \leq \text{T}_{a} \leq + \ 50 \ ^{\circ}\text{C} \ (\text{T6}) \end{array}$
*LS21D-***G	Condumax or Condumax W	Ex ia IIC T3/T4/T6 Ga	$\begin{array}{l} -20 \ ^{\circ}\text{C} \leq \text{T}_{a} \leq +135 \ ^{\circ}\text{C} \ (\text{T3}) \\ -20 \ ^{\circ}\text{C} \leq \text{T}_{a} \leq +115 \ ^{\circ}\text{C} \ (\text{T4}) \\ -20 \ ^{\circ}\text{C} \leq \text{T}_{a} \leq + \ 65 \ ^{\circ}\text{C} \ (\text{T6}) \end{array}$
*LS16D-****G***+*	Condumax or Condumax H	Ex ia IIC T3/T4/T6 Ga	- 5 °C ≤ T_a ≤ +135 °C (T3) - 5 °C ≤ T_a ≤ +115 °C (T4) - 5 °C ≤ T_a ≤ + 65 °C (T6)
*PS171D-BA7******+*	pH-Sensor	Ex ia IIC T3/T4/T6 Ga	$\begin{array}{l} 0 \ ^{\circ}C \leq T_{a} \leq +135 \ ^{\circ}C \ \ (T3) \\ 0 \ ^{\circ}C \leq T_{a} \leq +120 \ ^{\circ}C \ \ (T4) \\ 0 \ ^{\circ}C \leq T_{a} \leq + \ 70 \ ^{\circ}C \ \ (T6) \end{array}$
*PS341D-7******+*	pH-enamel Sensor	Ex ia IIC T3/T4/T6 Ga	$\begin{array}{l} -15 \ ^{\circ}C \leq T_{a} \leq +135 \ ^{\circ}C \ \ (T3) \\ -15 \ ^{\circ}C \leq T_{a} \leq +120 \ ^{\circ}C \ \ (T4) \\ -15 \ ^{\circ}C \leq T_{a} \leq + \ 70 \ ^{\circ}C \ \ (T6) \end{array}$
*LS82D-*******	Conductivity Sensor	Ex ia IIC T3/T4/T6 Ga	$\begin{array}{l} -20 \ ^{\circ}\text{C} \leq \text{T}_{a} \leq +140 \ ^{\circ}\text{C} \ (\text{T3}) \\ -20 \ ^{\circ}\text{C} \leq \text{T}_{a} \leq +120 \ ^{\circ}\text{C} \ (\text{T4}) \\ -20 \ ^{\circ}\text{C} \leq \text{T}_{a} \leq + \ 70 \ ^{\circ}\text{C} \ (\text{T6}) \end{array}$
*OS81D-*****13***+* *OS81D-*****93***+*	Dissolved Oxygen Sensor	Ex ia IIC T3/T4/T6 Ga	-10 °C \leq T _a \leq +130 °C (T3) -10 °C \leq T _a \leq +120 °C (T4) -10 °C \leq T _a \leq + 70 °C (T6)
*OS81D-*****33***+*	Dissolved Oxygen Sensor	Ex ia IIC T3/T4/T6 Ga	$\begin{array}{l} 0 \ ^{\circ}C \leq T_{a} \leq +130 \ ^{\circ}C \ \ (T3) \\ 0 \ ^{\circ}C \leq T_{a} \leq +120 \ ^{\circ}C \ \ (T4) \\ 0 \ ^{\circ}C \leq T_{a} \leq + \ 70 \ ^{\circ}C \ \ (T6) \end{array}$

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Ratings:

All sensors listed above, in connection with the measuring cable type ***YK10-********+* or type *YK20-************ or an in hardware and function identical and IECEx-certified measuring cable, may be connected to the sensor module FSDG1 of the field measuring device type Liquiline M CM42-.... (IECEX TUR 11.0007X)

as well as to the communication module type 2DS Ex-i of the transmitter type Liquiline CM44**-*** (IECEx TUR 21.0004X)

as well as to the digital sensor interface (Memosens, terminals 87, 88, 97, 98) of the transmitter type Liquiline CM42B (IECEx TUR 24.0001X).

Furthermore, the connection of all above listed sensors with measuring cable to an intrinsically safe output circuit (Ex ia IIC) with the following maximum values is possible:

Maximum output voltage	Uo	DC	5.1	V
Maximum output current	lo		130	mΑ
Maximum output power	Po		166	mW
(linear output characteristic)				
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The maximum internal capacity and inductivity of the intrinsically safe output circuit may not exceed the following maximum values:

Maximum internal capacity Maximum internal inductivity	Ci Li		15 95	μF μH
Alternative:				·
Maximum output voltage	Uo	DC	5.0	4V
Maximum output current	lo		80	mΑ
Maximum output power	Po		112	mW
(trapezoid output characteristic)				

The maximum internal capacity and inductivity of the intrinsically safe output circuit may not exceed the following maximum values:

Maximum internal capacity	Ci	14.1 µF
Maximum internal inductivity	Li	237.2 µH

Further connectivity's can be taken from the actual manufacturer's instructions.

Furthermore, the connection of power limited MEMOSENS sensors (Pi is defined) to the power limited inductive coupling of the measuring cable type ***YK10**-******+* or type ***YK20**-*******+* is possible considering of the following value:

Po

Maximum output power

178 mW

Note: Po is the maximum possible value under conditions mentioned above and shall be used for all calculations.

Temperature class and ambient temperature range – see table above.

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Specific Conditions of Use:

1 The inductive sensor-cable connection system MEMOSENS, consisting of the sensors and of

the measuring cable type ***YK10-********+* or type ***YK20-*********+* may be used in the following ambient temperature range: Temperature class and ambient temperature range - see table above.

- 2 The measuring cable type ***YK10**-******+* or type ***YK20**-*******+* and its connecting head must be protected from electrostatic charging, if installed through areas of EPL Ga (Zone 0).
- 3 For the sensors type ***PS11D-****G***+***, ***PS12D-****G***+***. ***PS16D-****G***+***. *PS31D-*****G***+*, *PS41D-*****G***+*, *PS42D-*****G***+*, *PS71D-****G***+*, *PS72D-****G***+*, *PS76D-****G***+*, *PS91D-****G***+*, *PS92D-****G***+*, *PS96D-****G***+*, *YP01D-*******+*, *YP02D-*******+* and *PS171D-BA7******+* valid: The sensors may not be operated in electrostatically critical processing conditions. Intense vapour or dust flows directly impacting on the connection system must be avoided.
- 4 For the sensor type ***OS22D-BA*****3***+*** and ***PS341D-7******+*** valid: The sensors may not be operated in electrostatically critical processing conditions. Intense vapour or dust flows directly impacting on the connection system must be avoided. The metallic parts of the sensors have to be mounted at the mounting location electrostatically conductive (< 1 M Ω).

For the non-metallic sensor shaft of type ***PS341D-7********+*: Operation in product application intended fluid media providing conductivity of at least 10 nS/cm can be assumed as electrostatic uncritical.

Additional for the sensor type ***OS22D-BA***D*3***+*** valid: The sensor shaft must be effectively protected against mechanical influences such as impacts or mechanical friction.

5 For the sensors type COS51D-G*8*0. *PS441D-7***G*** +*. *PS471D-7**G*** +* and *PS491D-7**G*** +* valid: The sensors may not be operated on processing conditions, in which an electrostatic loading of the sensor and the connecting system is to be counted. Operation in product application intended fluid media providing conductivity of at least 10 nS/cm can be assumed as electrostatic uncritical.

6 For the sensors type CLS15D-A**G, CLS15D-B**G, CLS15D-L**G, *LS21D-***G and *LS16D-****G***+* valid:

Metallic process connection parts have to be mounted at the mounting location electrostatically conductive (< 1 M Ω).

The sensors type CLS15D-A**G, CLS15D-B**G and CLS15D-L**G with non-metallic process connection and the sensor type *LS21D-***G may only be used in liquid media with a of at least 10 nS/cm. conductivity

The sensors type CLS15D-A**G, CLS15D-B**G and CLS15D-L**G with non-metallic process connection may not be operated on processing conditions, in which an electrostatic loading of the sensor and in particular of the electrically separated outer electrode, could be expected to occur.

7 For the sensor type ***LS82D-******** and ***OS81D-******** ard ***OS81D-********

The sensor may not be operated in electrostatically critical processing conditions. Intense vapour or dust flows directly impacting on the connection system must be avoided. The metallic parts of the sensor have to be mounted at the mounting location electrostatically conductive (< 1 M Ω).

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Marking:

For the measuring cable type ***YK10**-******+* and the sensors type ***PS11D**-****G***+* *PS12D-****G***+*, *PS16D-****G***+*, *PS41D-*****G***+*, *PS42D-*****G***+*, *PS71D-****G***+*, *PS72D-****G***+*, *PS76D-****G***+*, *OS22D-BA*****3***+*, *PS441D-7***G***+*, *PS471D-7**G***+*, CLS15D-A**G, CLS15D-B**G, CLS15D-L**G, *LS16D-****G***+*, *LS21D-***G, *PS171D-BA7******+*, *PS341D-7******+*, *LS82D-*******+*, *OS81D-******3***+*:

The name of the manufacturer or his trademark Type Ex ia IIC T3/T4/T6 Ga Serial number Certificate number

For the sensors type *PS31D-****G***+*, *PS91D-****G***+*, *PS92D-****G***+*, *PS96D-****G***+*, *PS491D-7**G*** +*:

The name of the manufacturer or his trademark Type Ex ia IIC T4/T6 Ga Serial number Certificate number

For the Sensor-simulators type *YP01D-*******+*, *YP02D-******+*:

The name of the manufacturer or his trademark Type Ex ia IIC T6 Gb Serial number Certificate number

For the sensor type **COS51D-G*8*0** and the measuring cable type ***YK20-**********+*:

The name of the manufacturer or his trademark

Type Ex ia IIC T6 Ga Serial number Certificate number