IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

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

Certificate No.:	IECEx BVS 11.0052X issue No.:0	Certificate history:
Status:	**Current**	
Date of Issue:	**2011-07-01** Page 1 of 3	
Applicant:	**Endress+Hauser Conducta Gesellschaft für Mess- und Regeltechnik mbH + Co. KG** Dieselstr. 24 70839 Gerlingen **Germany**	
Electrical Apparatus: *Optional accessory:*	**Inductive sensor-cable connection system MEMOSENS (for details see annex)**	
Type of Protection:	**Equipment protection by intrinsic safety "i", Equipment with equipment protection level (EPL) Ga**	
Marking:	**Ex ia IIC T3/T4/T6 Ga or** **Ex ia IIC T4/T6 Ga or** **Ex ia IIC T6 Gb or** **Ex ia IIC T6 Ga**	
Approved for issue on behalf of the IECEx Certification Body:	H.-Ch. Simanski	
Position:	Head of Certification Body	
Signature: *(for printed version)*	H.-Ch. Simanski	
Date:	1/7/2011	

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2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

DEKRA EXAM GmbH
Dinnendahlstrasse 9
44809 Bochum
Germany

DEKRA
DEKRA EXAM GmbH

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Date of Issue: **2011-07-01** Issue No.: **0**

Manufacturer: **Endress+Hauser Conducta Gesellschaft für Mess- und Regeltechnik mbH + Co. KG**
Dieselstr. 24
70839 Gerlingen
Germany

Manufacturing location(s):

Endress+Hauser Conducta Gesellschaft für Mess- und Regeltechnik mbH + Co. KG
Sensorkompetenzzentrum Waldheim
Landsbergerstr. 28
04736 Waldheim
Germany

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

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 electrical apparatus 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 : 2007-10 Edition: 5	Explosive atmospheres - Part 0:Equipment - General requirements
IEC 60079-11 : 2006 Edition: 5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-26 : 2006 Edition: 2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga

*This Certificate **does not** indicate compliance with electrical 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/ExTR11.0074/00

Quality Assessment Report:

DE/BVS/QAR06.0005/04

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Schedule

EQUIPMENT:
Equipment and systems covered by this certificate are as follows:

Description
The inductive sensor-cable connection system MEMOSENS, consisting of a sensor and of the measuring cable type CYK 10-G*** (L < 100 m), is used to measure different parameters of fluid media.
For the inductive sensor-cable connection system MEMOSENS, instead of measuring cable type CYK 10-G***, 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 circuit is completely encapsulated.

Subject and type
See annex

Parameters
See annex

Marking
See annex

CONDITIONS OF CERTIFICATION: YES as shown below:

1 The inductive sensor-cable connection system MEMOSENS, consisting of the sensors and the measuring cable type CYK 10-G*** may be used in the following ambient temperature range: Temperature class and ambient temperature range – see annex.
2 The measuring cable type CYK 10-G*** and its connecting head must be protected from electrostatic charging, if installed through areas of EPL Ga (Zone 0).
3 Valid for the sensors type CPS11D-****G, CPS12D-****G, CPS41D-*****G, CPS42D-*****G, CPS71D-****G, CPS72D-****G, CPS91D-****G, CPS92D-****G, CYP01D-****G and CYP02D-***G:
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 Valid for the sensor type COS22D-BA****3:
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 sensor shaft of the sensors has to be mounted at the mounting location electrostatically conductive (< 1 MΩ).
5 Valid for the sensors type COS51D-G*8*0, CPS441D-7***G, CPS471D-7**G and CPS491D-7**G :
The sensors may not be operated on processing conditions, in which an electrostatic loading of the sensor and the connecting system is to be expected. Operation in product application intended fluid media providing conductivity of at least 10 nS/cm can be assumed as electrostatic uncritical.
6 Valid for the sensors type CLS15D-A**G, CLS15D-B**G, CLS15D-L**G, CLS21D-***G and CLS16D-****G:
Metallic process connection parts have to be mounted at the mounting location electrostatically conductive (< 1 MΩ).
The sensors type CLS15D-A**G, CLS15D-B**G and CLS15D-L**G with non-metallic process connection and the sensor type CLS21D-***G may only be used in liquid media with a conductivity of at least 10 nS/cm.
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.

Annexe: BVS_11_0052X_E+H Conducta_Annex.pdf

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Annex

Subject and Type

Measuring cable — type CYK 10-G ** *

- * = Connection: 1 = Cable, 2 = Cable with plug-in connector
- ** = Cable length ≤ 100 m
  e. g. 03=3 m, 25=25 m
  90 = xx m (SIL-version)
  91 = xx ft (SIL-version)

pH/ORP-Sensor — type CPS ** D- * ** * * G

- G = A, B = electrolyte supply
  (only for type CPS4*D; non Ex-relevant)
- * = 2, 4, 5, 6, 9 = Shaft length 120 mm up to 425 mm
  (non Ex-relevant)
- ** = 2 characters for application specified
  version (non Ex-relevant)
- * = 7 = Basic version
  8 = SIL version (only for type CPS11D)
- ** = 11, 12, 41, 42, 71, 72, 91, 92 (details see table)

Sensor-simulator Memocheck Plus — type CYP01D- **** G

- **** = non ex-relevant

Sensor-simulator Memocheck — type CYP02D- *** G

- *** = non ex-relevant

Oxymax (H) — type COS22D- BA **** 3

- **** = non ex-relevant

Oxymax (W) — type COS51D- G * 8 * 0

- * * = non ex-relevant

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Tophit type CPS441D- 7 * * * G
- * * * G: non ex-relevant
- * * * G: A, B (electrolyte supply), non ex-relevant

Tophit type CPS471D- 7 * * G

Tophit type CPS491D- 7 * * G
- * * G: non ex-relevant
- * * G: shaft length 2 = 120 mm, 4 = 225 mm, 5 = 360 mm, 6 = 425 mm

Condumax (W) type CLS15D-A ** G

Condumax (W) type CLS15D-B ** G

Condumax (W) type CLS15D-L ** G

Condumax (W) type CLS21D- *** G
- *** G: non ex-relevant

Condumax (H) type CLS16D- **** G
- **** G: non ex-relevant

MEMOSENS measuring cable and sensor details - type, designation, marking, ambient temperature range depends on temperature class:

Type	Designation	Marking	Ambient temperature range
CYK 10-G* **	Measuring cable	**Ex ia IIC T3/T4/T6 Ga**	-15 °C ≤ T_a ≤ +135 °C (T3) -15 °C ≤ T_a ≤ +120 °C (T4) -15 °C ≤ T_a ≤ + 70 °C (T6)
CPS11D-**G** **CPS12D-****G**	Orbisint	**Ex ia IIC T3/T4/T6 Ga**	-15 °C ≤ T_a ≤ +135 °C (T3) -15 °C ≤ T_a ≤ +120 °C (T4) -15 °C ≤ T_a ≤ + 70 °C (T6)
CPS41D-***G** **CPS42D-*****G**	Ceraliquid	**Ex ia IIC T3/T4/T6 Ga**	-15 °C ≤ T_a ≤ +135 °C (T3) -15 °C ≤ T_a ≤ +120 °C (T4) -15 °C ≤ T_a ≤ + 70 °C (T6)
CPS71D-**G**	Ceragel	**Ex ia IIC T3/T4/T6 Ga**	0 °C ≤ T_a ≤ +135 °C (T3) 0 °C ≤ T_a ≤ +120 °C (T4) 0 °C ≤ T_a ≤ + 70 °C (T6)
CPS72D-**G**	Ceragel	**Ex ia IIC T3/T4/T6 Ga**	-15 °C ≤ T_a ≤ +135 °C (T3) -15 °C ≤ T_a ≤ +120 °C (T4) -15 °C ≤ T_a ≤ + 70 °C (T6)

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Type	Designation	Marking	Ambient temperature range
CPS91D-**G** **CPS92D-****G**	Orbipore	**Ex ia IIC T4/T6 Ga**	0 °C ≤ T_a ≤ +110 °C (T4) 0 °C ≤ T_a ≤ + 70 °C (T6)
CYP01D-**G**	Memocheck Plus	**Ex ia IIC T6 Gb**	-15 °C ≤ T_a ≤ + 70 °C (T6)
CYP02D-*G**	Memocheck	**Ex ia IIC T6 Gb**	-15 °C ≤ T_a ≤ + 70 °C (T6)
COS22D-BA**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)
CPS441D-7*G** **CPS471D-7**G**	Tophit	**Ex ia IIC T3/T4/T6 Ga**	-15 °C ≤ T_a ≤ +135 °C (T3) -15 °C ≤ T_a ≤ +120 °C (T4) -15 °C ≤ T_a ≤ + 70 °C (T6)
CPS491D-7G**	Tophit	**Ex ia IIC T4/T6 Ga**	-15 °C ≤ T_a ≤ +110 °C (T4) -15 °C ≤ T_a ≤ + 70 °C (T6)
CLS15D-AG**	Condumax or Condumax W	**Ex ia IIC T3/T4/T6 Ga**	-20 °C ≤ T_a ≤ +135 °C (T3) -20 °C ≤ T_a ≤ +120 °C (T4) -20 °C ≤ T_a ≤ + 70 °C (T6)
CLS15D-BG** **CLS15D-L**G**	Condumax or Condumax W	**Ex ia IIC T3/T4/T6 Ga**	-20 °C ≤ T_a ≤ +135 °C (T3) -20 °C ≤ T_a ≤ +100 °C (T4) -20 °C ≤ T_a ≤ + 50 °C (T6)
CLS21D-*G**	Condumax or Condumax W	**Ex ia IIC T3/T4/T6 Ga**	-20 °C ≤ T_a ≤ +135 °C (T3) -20 °C ≤ T_a ≤ +115 °C (T4) -20 °C ≤ T_a ≤ + 65 °C (T6)
CLS16D-**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)

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Parameters

All sensors listed above, in connection with the measuring cable type **CYK 10-G***** (L ≤ 100 m) 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-.....
(TÜV Rheinland Industrie Service GmbH – IECEx TUR 11.0007X).

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	U_o	DC	5.1	V
Maximum output current	I_o		130	mA
Maximum output power	P_o		166	mW
(linear output characteristic)				

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

Maximum internal capacity	C_i	15	µF
Maximum internal inductivity	L_i	95	µH

Alternative:

Maximum output voltage	U_o	DC	5.04	V
Maximum output current	I_o		80	mA
Maximum output power	P_o		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	C_i	14.1	µF
Maximum internal inductivity	L_i	237.2	µH

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

Temperature class and ambient temperature range – see table above.

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Marking

For the measuring cable type **CYK 10-G*** ** and the sensors type **CPS11D-****G, CPS12D-****G, CPS41D-*****G, CPS42D-*****G, CPS71D-****G, CPS72D-****G, COS22D-BA****3, CPS441D-7***G, CPS471D-7**G, CLS15D-A**G, CLS15D-B**G, CLS15D-L**G, CLS16D-****G, CLS21D-***G**:

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

For the sensors type **CPS91D-****G, CPS92D-****G, CPS491D-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 **CYP01D-****G, CYP02D-***G**:

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**:

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