

Translation

(1) **EU-Type Examination Certificate**

(2) Equipment and protective systems intended for use in potentially explosive atmospheres, **Directive 2014/34/EU**



(3) **Certificate Number** TÜV 18 ATEX 226168 X **issue:** 01

(4) for the product: Capacity liquid sensor type HBCS-EX01-X resp. HBCS-EX01-X-PT1000

(5) of the manufacturer: **HB Products A/S**

(6) Address: Bøgekildevej 21
DK 8361 Hasselager
Denmark

Order number: 8003013418

Date of issue: 2019-12-06

(7) The design of this product and any acceptable variation thereto are specified in the schedule to this EU-Type Examination Certificate and the documents therein referred to.

(8) The TÜV NORD CERT GmbH, Notified Body No. 0044, in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential ATEX Assessment Report No. 19 203 259193.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018

EN 60079-11:2012

except in respect of those requirements listed at item 18 of the schedule.

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions for Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design, and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the product shall include the following:

 **II 1 G Ex ia IIC T6...T1 Ga; see thermal data for details.**

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, notified by the central office of the countries for safety engineering (ZLS), Ident. Nr. 0044, legal successor of the TÜV NORD CERT GmbH & Co. KG Ident. Nr. 0032

The head of the notified body


Roder

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(13) **SCHEDULE**

(14) **EU-Type Examination Certificate No. TÜV 18 ATEX 226168 X issue 00**

(15) Description of product

The capacity liquid sensor type HBCS-EX01-X resp. HBCS-EX01-X-PT1000 is suited for use in areas requiring EPL Ga and designed for level measurement of refrigerants in refrigeration systems. The electronic part HBCS-EX01 consists of an enclosure from plastic containing printed circuit boards, fitted with electronic components and embedded in casting compound according to type of protection intrinsic safety 'ia'.

Type key

HBCS-EX01-X

- HBX-01: Mechanical part B016-HBX_01 (HBx-co2-3_4-Komp-Mek-R1)
- HBX-02: Mechanical part B017-HBX_02 (HBCP-MEK-SAM-R6)
- HBX-03: Mechanical part B018-HBX_03 (HBDX-SAM-MEK1-1_2-R5)
- HBX-04: Mechanical part B031-HBX_04 (DN65-Komp-R1)
- HBLT-01: Mechanical part B019-BLT_01 (HBSC2-SAM-MEKM5-R7)
- HBLT-02: Mechanical part B020-BLT_02 (HBAC-SAM-MEK-R2)
- HBLT-03: Mechanical part B021-BLT_03 (HBLC-W-SAM-MEK-R10)
- HBLT-04: Mechanical part B022-BLT_04 (HBLT-A1-MEK-SAM-R2)
- HBLT-05: Mechanical part B023-BLT_05 (HBLC-Fgas-SAM-MEK-R1)
- HBLT-06: Mechanical part B029-BLT_06 (HBLC-CO2-10-Split-MEK-R1)
- HBLS-01: Mechanical part B024-BLS_01 (HBLC-R-IP-SAM-MEK-R4)
- HBLS-02: Mechanical part B025-BLS_02 (HBLC-OIL-SAM-MEK-R1)
- HBLS-03: Mechanical part B026-BLS_03 (HBSO1-HBOC-SAM-MEK-ENG-R2)
- HBLS-04: Mechanical part B027-BLS_04 (HBSO1-HT-SAM-MEK-R1)
- HBLS-05: Mechanical part B028-BLS_05 (HBSO-SF-SAM-MEK-R5)
- HBLS-06: Mechanical part B032-BLS_06 (HBSR-SAM_MEK_ENG-R2)
- HBLS-07: Mechanical part B033-BLS_07 (HBLS-KOMP-R2)

Electronic part **without** PT1000

Schedule to EU-Type Examination Certificate No. TÜV 18 ATEX 226168 X issue 01

HBCS-EX01-X-PT1000

- Mechanical part B030-HBX_01 (PT1000)
- HBX-01: Mechanical part B016-HBX_01 (HBx-co2-3_4-Komp-Mek-R1)
- HBX-02: Mechanical part B017-HBX_02 (HBCP-MEK-SAM-R6)
- HBX-03: Mechanical part B018-HBX_03 (HBDX-SAM-MEK1-1_2-R5)
- HBX-04: Mechanical part B031-HBX_04 (DN65-Komp-R1)
- HBLT-01: Mechanical part B019-BLT_01 (HBSC2-SAM-MEKM5-R7)
- HBLT-02: Mechanical part B020-BLT_02 (HBAC-SAM-MEK-R2)
- HBLT-03: Mechanical part B021-BLT_03 (HBLC-W-SAM-MEK-R10)
- HBLT-04: Mechanical part B022-BLT_04 (HBLT-A1-MEK-SAM-R2)
- HBLT-05: Mechanical part B023-BLT_05 (HBLC-Fgas-SAM-MEK-R1)
- HBLT-06: Mechanical part B029-BLT_06 (HBLC-CO2-10-Split-MEK-R1)
- HBLS-01: Mechanical part B024-BLS_01 (HBLC-R-IP-SAM-MEK-R4)
- HBLS-02: Mechanical part B025-BLS_02 (HBLC-OIL-SAM-MEK-R1)
- HBLS-03: Mechanical part B026-BLS_03 (HBSO1-HBOC-SAM-MEK-ENG-R2)
- HBLS-04: Mechanical part B027-BLS_04 (HBSO1-HT-SAM-MEK-R1)
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- HBLS-06: Mechanical part B032-BLS_06 (HBSR-SAM_MEK_ENG-R2)
- HBLS-07: Mechanical part B033-BLS_07 (HBLS-KOMP-R2)
- Electronic part **with** PT1000

Electrical data

Power supply and signal circuit (0...20 mA)
(M12 Plug; PIN 1 and 4)

In type of protection intrinsic safety Ex ia IIC
Only for connection to certified intrinsically safe circuit
Maximum values:

- U_i = 28 V
- I_i = 116 mA
- P_i = 585 mW
- Effective internal capacitances C_i = 20 nF
- Effective internal inductances L_i = 150 µH

Thermal data

For the capacity liquid sensor type HBCS-EX01-X-PT1000 the following values apply:

Marking	Ambient temperature range on the electronic part HBCS-EX01	Temperature at the tip of PT1000 (measuring cable, rod)
II 1 G Ex ia IIC T6 Ga	-40 °C...+50 °C	-60 °C...+70 °C
II 1 G Ex ia IIC T5 Ga	-40 °C...+65 °C	-60 °C...+85 °C
II 1 G Ex ia IIC T4 Ga	-40 °C...+70 °C	-60 °C...+90 °C
II 1 G Ex ia IIC T3...T1 Ga	-40 °C...+70 °C	-60 °C...+90 °C

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For the capacity liquid sensor type HBCS-EX01-X the following values apply:

Marking	Ambient temperature range at the electronic part HBCS-EX01	Temperature on mechanical parts
II 1 G Ex ia IIC T6 Ga	-40 °C...+50 °C	-60 °C...+80 °C
II 1 G Ex ia IIC T5 Ga	-40 °C...+65 °C	-60 °C...+90 °C
II 1 G Ex ia IIC T4 Ga	-40 °C...+70 °C	-60 °C...+90 °C
II 1 G Ex ia IIC T3...T1 Ga	-40 °C...+70 °C	-60 °C...+90 °C

(16) Drawings and documents are listed in the ATEX Assessment Report No. 19 203 259193

(17) Specific Conditions for Use

1. By end-installation all metallic part have to be included in the local potential equalization.
2. The devices have to be installed and used in such a way that electrostatic charging from operation, maintenance or cleaning is excluded.
3. The capacity liquid sensor type HBCS-EX01-X resp. HBCS-EX01-X-PT1000 may be operated in hazardous areas in which equipment of EPL Ga is required only if atmospheric pressure exists (0.8 bar to 1.1 bar).
4. A reverse heat flow from the process exceeding the permissible ambient temperature of the electronic part HBCS-EX01 is not allowed and shall be avoided by a suitable thermal insulation or a suitable temperature decoupler.
5. The ambient temperature range depending on temperature class is to be taken from the operating instructions.

(18) Essential Health and Safety Requirements

No additional ones

- End of Certificate -