[1]

EU-TYPE EXAMINATION CERTIFICATE

[2] Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014

[3] EU-Type Examination Certificate Number: **DNV 22 ATEX 84942X** **Issue 0**

[4] Product: **Temperature Sensor**

[5] Manufacturer: **UTECO**

[6] Address: **5-7, Mantos Mavrogenous str.**
18542 Piraeus, Greece

[7] This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] DNV Product Assurance AS, notified body number 2460, in accordance with Article 17 and Article 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 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 confidential reports listed in item 16.

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN IEC 60079-0:2018, EN 60079-1:2014 and EN 60079-31:2014

Where additional criteria beyond those given here have been used, they are listed at item 18 in the Schedule.

[10] If the sign “X” is placed after the certificate number, it indicates that the product is subject to the “Specific Conditions of Use” listed under item 17 of this certificate.

[11] This EU-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

[12] The marking of the product shall include the following:

II 2 G Ex db IIC T6... T1 Gb
II 2 D Ex tb IIIC T80°C.... T310°C Db

Date of issue:
2022-12-01

NORSK AKKREDITERING
PROD 021

Asle Kaastad
For DNV Product Assurance AS
The Certificate has been digitally signed.
See www.dnv.com/digitalsignatures for info

[13] **Schedule**

[14] **EU-Type Examination Certificate No:** DNV 22 ATEX 84942X Issue 0

[15] **Description of Product**

UTX BMRY Temperature Sensors, which measure the temperature consist of a flameproof connection head properly connected to a protection tube -made of AISI 316-, enclosing a measuring insert with an RTD element. The measuring insert can be optionally equipped with a transmitter which converts the electrical output of the sensor into 4…20mA signal or simply with a terminal. The EUT uses Ex db & Ex tb certified connection head, XD-AD, an aluminium housing.

Type designation

1) UTX BMRY TEMPERATURE SENSORS- WITH TRANSMITTERS.
E.g., of order code:
UTX BMRY 1xPt100 4.5-6/22-70mm AISI 316 G 1/8" Adj.M Cl.B 3-w -50…260°C (4…20mA/ 0…100°C) AD.

2) UTX BMRY TEMPERATURE SENSORS- WITH TERMINAL BLOCKS
E.g., of order code:
UTX BMRY 1xPt100 4.5-6/22-70mm AISI 316 G 1/8" Adj.M Cl.B 3-w -50…260°C AD

Measuring inserts:
Pt 100
E.g., of order code: MS10 1xPt100 3/125mm AIS 316 Cl.B 3-w -50…260°C (4…20mA/ Tmin…Tmax)

Degrees of protection (IP Code)
IP 66

Routine tests.
Routine test to be performed for protective tube for 32 bar according to clause 16 of EN 60079-1:2014

Table 1: List of ATEX certified component used

Product	Certificate	Standard compliance
Connection head type XD-A*** series (Aluminium version)	ATEX component Certificate	EN 60079-0:2018 EN 60079-1:2014 EN 60079-31:2014

Table 2: Ambient temperature:

Connection head with terminals	-50°C to +100°C
Connection head with Transmitters 707031	-50°C to +85°C
Connection head with Transmitters 707081	-40°C to +70°C
Connection head with Transmitters PR5333A, APAQ-C130, 5335A-HART, TiXo3-HART & TiXo1A	-40°C to +85°C

Permitted Process temperature:
Process temperature shall be selected based on the minimum Toperating between the terminals device (Transmitter or terminal block).
-40°C to +300°C
-50°C to +300°C

Electrical Data

Table 3:

MODEL	APAQ -C130 RT	5335A-HART	TiX03-HART	TiXo1A
UTECO CODE No.	3730075	3730031	3730046	3730093
Description	2-wire Programmable RTD transmitter	2-wire programmable RTD transmitter	2-wire programmable RTD transmitter	2-wire programmable RTD transmitter
Output signal	4..20 mA	4..20 mA	4..20 mA	4..20 mA
Supply voltage	6…32V DC	8…35V DC	10..30 V DC	8..30 V DC

MODEL	707031	707081	5333A
UTECO CODE No.	3730002	3730026	3730012
Description	D TRANS T03 B 2-wire Programmable RTD transmitter	DTRANS T07 B SIL- 2 wire programmable RTD transmitter with SIL approval	2-wire programmable RTD transmitter
Output signal	4..20 mA	4..20 mA	4..20 mA
Supply voltage	7.5...30V DC	11... 42V DC	8..35 V DC

Connection method:

The thermometer is connected to the system electronics with either a 2-wire or 3-wire if it has a terminal block or with a 2-wire connection if it has a transmitter.

The possible combinations of sensor elements and connected wires are shown in table as below:

Single Elements	Connection Methods
1x2 wire circuit (Terminal block version)	• 2-wire circuit: not for high accuracy and only for short conductor leads. Rarely used due to need for electrical compensation & line resistance fluctuation with Temperature. • Reason: the resistance of conductors is added to the resistance of RTD, which ends up as increased Temperature. E.g. the error is calculated as conductors resistance R=2*[(ρ*l)/A], where ρ: resistivity (Ω*mm2/m), l: cable length (m), A: cable cross-section (mm2). The longer the conductors the greater the shift in measured value. • Line resistance shall be compensated electrically to avoid error. The system electronics resistance is designed to always allow a line resistance of 10 Ohm.
1x3 wire circuit (Terminal block version)	• 3-wire circuit: High Accuracy. Mostly used due to eliminating the need for electrical compensation & line resistance fluctuation with Temperature. • Wires shall be of identical properties & shall be exposed to identical temperatures.
2- wire transmitter	• 2-wire transmitter: High Accuracy, due to eliminating the need for electrical compensation & line resistance fluctuation with Temperature. • Transmitter converts the sensor signal to current signal 4…20mA proportionally to temperature.

[16] **Report No**.: 113415

[17] **Specific Conditions of Use**

1. Flameproof joints are not intended to be repaired.
2. Appropriate ATEX blanking plugs and cable glands to be used with IP66.
3. The component must be installed to avoid risk from propagating brush discharge for application in explosive dust atmosphere.
4. Accepted variants of temperature sensor assembly with protective tube & compression fitting must be checked in the instruction manual.
5. Refer to Instruction manual for Ex related information's.

[18] **Essential Health and Safety Requirements**

Met by compliance with the requirements mentioned in item 9.

[19] **Drawings and documents**

Number	Title	Rev.	Date
WF-08.03.01-ATEX	WELDING CAP	A	24-04-2019
WF-08.03.02-ATEX	STEPPED TUBE 6/4.5 Barstock 6mm	A	20.09.2019
WF-08.03.03-ATEX	STEPPED TUBE 12/4.5 Barstock 12mm	A	23.09.2020
WF-08.03.04-ATEX	WELDING NIPPLE 1/2NPT W/ WELD LIP THROUGH BORE	A	20.09.2019
WF-08.03.05-ATEX	Marking Plate Ø 58x0.8	A	23.09.2019
WF-08.03.07-ATEX	UTX BMRY 1/2"-14 NPT, Barstock Sheath Assembly	A	23.01.2021
WF-08.03.08-ATEX	UTX BMRY UTX MS Sensor Assembly (Terminal Block)	A	19.04.2021
WF-08.03.09-ATEX	UTX BMRY UTX MS Sensor Assembly (Transmitter)	A	19.04.2021
WF-08.03.10-ATEX	UTX BMRY Product Marking	A	19.04.2021
WF-08.02.01	Manual UTX BMRY	0	09.07.2021
WF-08.04.01-ATEX	BOM-UTX BM XD..SD,XD..AD Tube w/ RTD	0	08.12.2021
WF-08.04.02-ATEX	BOM-UTX BM XD..SD,XD..AD Tube w/ RTD	0	08.12.2021
WF-08.05.03-ATEX	Calculation Sheet_ATEX	1	13.12.2021
WF-08.03.11	ATEX, UTX BMRY General arrangement	A	20.09.2021
WF-08.03.11.01	ATEX, General arrangement drawing UTX -BMRY	0	20.09.2021

[20] **Certificate History**

Issue	Description	Issue date	Report no.
0	Original issue	2022-12-01	113415

END OF CERTIFICATE