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TYPE EXAMINATION CERTIFICATE



[2]

**Equipment or Protective System intended for use
in Potentially Explosive Atmospheres
Directive 94/9/EC**

[3]

Type Examination Certificate Number: **DEMKO 11 ATEX 1015266X Rev. 1**

[4]

Equipment: **Transmitter Part No. TB8-xx-xx-xx-03 used with Sensor Head Part No. SH-xxx-xx-xA-xxx-03 and
standalone Transmitter Part No. TB8-xx-xx-xx-04**

[5]

Manufacturer: **Expro Meters Inc.**

[6]

Address: **50 Barnes Park North, Wallingford, CT 06492 USA**

[7]

This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

[8]

UL International Demko A/S certifies that this equipment has been found to comply with the Essential Health and Safety Requirements that relate to the design of **Category 3** equipment, which is intended for use in potentially explosive atmospheres. These Essential Health and Safety Requirements are given in Annex II to the European Union Directive 94/9/EC of 23 March 1994.

The examination and test results are recorded in confidential report no. **12NK10476**

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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 Standards:

EN 60079-0:2012

EN 60079-11:2012

EN 60079-15:2010

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If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

[11]

This Type examination certificate relates only to the design of the specified equipment, and not to specific items of equipment subsequently manufactured.

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The marking of the equipment or protective system shall include the following:

II 3 G Ex ic nA [ic] IIB T4 Gc
 II 3 G Ex ic nA IIB T4 Gc

Certification Manager

Jan-Erik Storgaard

Certification Body

This is to certify that the Product(s) described herein has been investigated to the Standard(s) indicated on this Certificate, in accordance with the ATEX Equipment Certification Program Requirements. The certificate and test results obtained apply only to the Product(s) tested. UL has not established Follow-Up Service or other surveillance of the product. The Manufacturer is solely and fully responsible for conformity of all Product(s) described herein to all applicable standards, specifications, requirements and Directives.

Date of issue: 2011-06-17

Re-issued: 2013-05-15



UL International Demko A/S, Borupvang 5A, 2750 Ballerup, Denmark
Tel. +45 44 85 65 65, info.dk@ul.com, www.ul.com

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Schedule
TYPE EXAMINATION CERTIFICATE No.
DEMKO 11 ATEX 1015266X Rev. 1
Report: 12NK10476

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Description of Equipment:

The Passive SONAR Flow Monitoring System is a clamp-on, non-wetted, flow measurement system used to measure certain properties of process fluids within enclosed pipes. An ATEX Zone 2 approved system consists of a clamp-on Sensor Head Part No. SH-xxx-xx-xA-xxx-03 which sends conditioned sensor array signals through a cable to a Transmitter Part No. TB8-xx-xx-xx-03 which processes the sensor signals and outputs calculated fluids properties, such as flow velocity, in a variety of electronic formats. Either or both of these components may be located in areas classified ATEX Zone 2 when installed in accordance with system control drawing 20907-03C. TB8-xx-xx-xx-03 has been evaluated with the sensor head (SH-xxx-xx-xA-xxx-03) as a system (Ex ic nA [ic] IIB T4 Gc). Alternatively under this certificate, an ATEX certified flow measurement system may be comprised of a certified Transmitter Part No. TB8-xx-xx-xx-04 which connects via a cable to a separately certified Sensing device installed in accordance with the restrictions of each component's certification. The Transmitter Part No. TB8-xx-xx-xx-04 (Ex ic nA IIB T4 Gc) may be installed in ATEX Zone 2 in accordance with its Control Drawing 20908-03C.

Nomenclature for Transmitter

TB8-aa-bb-cd-ee

aa: Software

Any alphanumeric combination

bb: Input Power

05-AC

06-DC

c: Communication I/F

0-RS232/485

1-RS232/485, MODBUS

2-Foundation Fieldbus

3-Profibus

d: Terminal block options

Any alphanumeric except for "0" or "1"

ee: Hazardous Area Location Rating

03-European ATEX Zone 2 Transmitter in system with Sensor head SH-xxx-xx-xA-xxx-03

(Ex ic nA [ic] IIB T4 Gc)

04-European ATEX Zone 2 Transmitter standalone (Ex ic nA IIB T4 Gc)

Nomenclature for Sensor Head (SH-xxx-xx-xA-xxx-03) has been evaluated with the transmitter box (TB8-xx-xx-xx-03) as a system).

SH-abb-cc-dd-eee-ff

abb: Pipe/Tube Type and Size

abb: Any 3-digit number no greater than 914

OR

a: Pipe/Tube Type, Any Alphabetic (non-numeric) character

bb: Pipe/Tube Size, Any 2-digit number no greater than 36

cc: Band Type

00,01,02,04,05,06,07,08,09,12,18,19,26,28,45,46,48,50,51,52

dd: Cover Type

xA – where "x" can be any alphanumeric character

eee: Preamp Type

Any alphanumeric combination

ff: Hazardous Area Location Rating

03 – European ATEX Zone 2 Sensor head in system

Temperature range

The ambient temperature range is:

-20°C to +57°C for Transmitters and

-40°C To +100°C for Sensor Head.



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Schedule

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DEMKO 11 ATEX 1015266X Rev. 1

Report: 12NK10476

Electrical data

Models TB8 xx-xx-xx-04 and TB8-xx-xx-xx-03 Series
 POWER ENTRY:
 TB8-xx-05-xx-xx Transmitter: 100 - 240VAC, 50/60HZ, 25W
 TB8-xx-06-xx-xx Transmitter: 18-36VDC, 25W

Entity Parameters for Model TB--xx-xx-xx-03
 Transmitter Provisional Sensor Input (Energy Limited Inputs)
 Uo : 24.1 V
 Io : 47 mA
 Ca : 60 nF
 La : 200 uH
 Po: 0.29W

Installation instructions

- Cable glands to be ATEX certified for Group II or IIB gasses, have IP55 rating and be sized for cable and mounting hole.
- External transient protection shall be provided to prevent rated voltage being exceeded by transient disturbance of more than 40%..
- Installation shall be per Control Drawing 20907-03C for complete system and per Control Drawing 20908-03C for Transmitter alone.
- The Transmitter and Sensor Head enclosures shall not be rubbed except with a clean rag dampened with water or water based cleaner (non-flammable solvent).

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Descriptive Documents

Project Report No.: 12NK10476 (Hazardous Location Testing)

Drawings:

Certification, Transmitter Enclosure, Expro, Zone 2	20873-03C	02	2013-04-26
Certification, Transmitter Electronics, Zone 2	20873-03SC	01	2011-05-13
Certification, Cable Gland, Expro, Zone 2	20885-03C	02	2013-04-26
Certification, Fiberglass Cover, Zone 2 & Label	20874-03C	01	2011-05-13
Certification, Sensor Head Electronics, Zone 2	20874-03SC	01	2011-05-13
Control Drawing, System ATEX, Zone 2	20907-03C	02	2013-04-26
Control Drawing, Transmitter, Expro, ATEX, Zone 2	20908-03C	02	2013-04-26
Installation Instruction	20909-03C	03	-

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Special conditions for safe use:

- Cable glands to be ATEX certified for Group II or IIB gasses, have at least IP55 rating and be sized for cable and mounting hole where installed, temperature rating of -20°C to +57°C.
- External transient protection shall be provided to prevent rated voltage being exceeded by transient disturbance of more than 40%.
- Installation shall be per Control Drawing 20907-03C for complete system, Transmitter Part No. TB8-xx-xx-xx-03 used with Sensor Head Part No. SH-xxx-xx-xA-xxx-03, or per Control Drawing 20908-03C for Transmitter Part No. TB8-xx-xx-xx-04.
- The Transmitter and Sensor Head enclosures shall not be rubbed except with a clean rag dampened with water or water based cleaner (non-flammable solvent).
- This equipment will be used in an area not more than pollution degree 2 as defined by IEC60664-1.

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Essential Health and Safety Requirements

Met by compliance with the standards EN 60079-0:2012, EN 60079-11:2012, EN 60079-15:2010.



Additional information

The Transmitter and Sensor models mentioned above have in addition passed the tests for Ingress Protection to IP 55 in accordance with EN60529: 1991/A1 2000. These products have also been evaluated to the requirements found in standards EN60079-0:2012, EN60079-11:2012, and EN 60079-15:2010.