

TYPE EXAMINATION CERTIFICATE



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**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. 0**

[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**

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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. **10NK15266**

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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 60079-0:2006

EN 60079-15:2005

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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.


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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 nA nL [nL] IIC T4**

 **II 3 G Ex nA nL IIC T4**

Certification Manager

Jan-Erik Storgaard

This certificate may only be reproduced in its entirety and without any change, schedule included

Date of issue: 2011-06-17

Certification Body

UL International Demko A/S, Lyskaer 8, P.O. Box 514, DK-2730 Herlev, Denmark, Tel. +45 44 85 65 65, info.dk@dk.ul.com
www.ul-europe.com

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Schedule
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DEMKO 11 ATEX 1015266X Rev. 0
Report: 10NK15266

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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 nA nL [nL] IIC T4). 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 nA nL IIC T4) may be installed in ATEX Zone 2 in accordance with its installation 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 Class 1, Zone 2, ATEX, Transmitter in system with Sensor head SH-xxx-xx-xA-xxx-03
(Ex nA nL [nL] IIC T4)
04-European Class 1, Zone 2, ATEX Transmitter standalone (Ex nA nL IIC T4)

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 through 11 – not including 03 or 10

dd: Cover Type
xA – where "x" can be any alphanumeric character

eee: Preamp Type
Any alphanumeric combination

ff: Hazardous Area Location Rating
03 – European Class 1, Zone 2, ATEX 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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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 IIC gasses, have 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 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).

Routine tests

Routine Dielectric Strength test according to EN 60079-15:2005, cl. 34.2.1 is required.

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Descriptive Documents

Project Report No.: 10NK15266 (Hazardous Location Testing)

Drawings:

Description:	Drawing No.:	Rev. Level:	Date:
Certification Transmitter Enclosure, Zone 2 & Label	20873-03C	01	2011-05-13
Certification, Fiberglass Cover, Zone 2 & Label	20874-03C	01	2011-05-13
Control Drawing, System, Ex, Class I, Zone 2	20907-03C	01	2011-05-13
Installation Drawing, Transmitter, Ex, Class I, Zone 2	20908-03C	01	2011-05-13
Installation Instruction	20909-03C	01	-

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Special conditions for safe use:

- Cable glands to be ATEX certified for Group II or IIC 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 Installation 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 60079-0:2006, EN 60079-15:2005.

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 EN60079-0:2006 and EN 60079-15:2005.