

1 EC-TYPE EXAMINATION CERTIFICATE



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

3 EC-Type Examination Certificate No: **FM09ATEX0038X**
4 Equipment or protective system:
(Type Reference and Name) **Series QEX1000 ActiveSONAR Flowmeter System**
5 Name of Applicant: **Expro Meters, Inc.**
6 Address of Applicant: **50 Barnes Park North
Wallingford, CT 06492 USA**

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and documents therein referred to.

8 FM Approvals Ltd, notified body number 1725 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in confidential report number 3034211EC dated 29th May 2009.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:
prEN 60079-0 (IEC 60079-0:2007), EN 60079-1 2007, EN 60079-18:2004 (Incorporating Corrigendum April 2006) : EN 60529 +A1:2000

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

11 This EC-Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

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



QEX1000 ActiveSONAR Flowmeter System
II 2 G Ex d mb IIB T6...T4 Ta = -45°C (-50°C) to +60°C; IP66/IP67
Incorporating the following
Transducer Assy - II 2 G Ex mb IIB T6...T4 Ta = -45°C to +60°C; IP67
Junction Box Assy - II 2 G Ex d IIB T6...T4 Ta = -50°C to +60°C; IP66
Transmitter Assy - II 2 G Ex d IIB T6...T4 Ta = -50°C to +60°C; IP66

Andrew Was
Certification Manager, FM Approvals Ltd.

Issue date: **23rd June 2009.**



THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

SCHEDULE



to EC-Type Examination Certificate No. FM09ATEX0038X

13 Description of Equipment or Protective System:

The QEX1000 ActiveSONAR Flowmeter System is a family of clamp-on flowmeters designed to attach to the outside of a process pipe and use ultrasonic signals to measure properties of the fluid or gas flowing within. An array of ultrasonic transducers (Transducer Assy) on one side of the pipe communicates ultrasonically with a similar array on the opposite side. The driver and receiver electronics are located in a separate enclosure (Flow Transmitter Assy) and extract the flow information from the ultrasonic signals. That module is powered by external DC power connections and provides I/O signals to the customer which includes the measured flow information. An additional enclosure (Junction Box Assy) located between the electronics enclosure and the transducer arrays houses the electrical interconnections. The specific models described by this Certificate are as follows:

QEX1000a-b-A Flow Meter System consisting of the following electrical sub-assemblies:

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II 2 G Ex d mb IIB T6...T4 Ta = -45°C (-50°C) to +60°C; IP66/IP67

a = alphanumeric string indicating general configuration and application (Not Ex safety related)

b = alphanumeric. Operational process temperature [never exceeding 125°C] (Not Ex safety related)

TA1000-aaa-bbb-cc-de-Agh-ii-1-k-A. Transducer Assy

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II 2 G Ex mb IIB T6...T4 Ta = -45°C to +60°C – ECD00022; IP67

a = alphanumeric indicating pipe (Not Ex safety related)

b = alphanumeric indicating the set of transducer components (limited to those elements listed in ECD00021)

c = alphanumeric indicating primary transducer interface (Not Ex safety related)

d = 1 or 2 Protective cover material

e = alphanumeric indicating cover features (Not Ex safety related)

g = 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F, G, H, J, K, L, M, N, P, Q, R, S, or T. Cable gland

h = alphanumeric indicating cable length (Not Ex safety related)

i = alphanumeric indicating language (Not Ex safety related)

k = alphanumeric. Operational process temperature [never exceeding 125°C] (Not Ex safety related)

JB1000-Ebc-1-e-ff-1-h-A. Junction Box Assy

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II 2 G Ex d IIB T6...T4 Ta = -50°C to +60°C – ECD00022; IP66

b = alphanumeric indicating non-Ex safety-related enclosure options

c = A, B, C, or D. Ex safety-related enclosure options.

e = alphanumeric indicating bracket (Not Ex safety related)

f = alphanumeric indicating language (Not Ex safety related)

h = alphanumeric. Operational process temperature [never exceeding 125°C] (Not Ex safety related)

FT1000-aa-Ecd-Afg-hh-ij-1-A. Flow Transmitter Assy

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II 2 G Ex d IIB T6...T4 Ta = -50°C to +60°C – ECD00022; IP66

a = alphanumeric indicating software (Not Ex safety related)

c = alphanumeric indicating non-Ex safety-related enclosure options

d = A, B, C, or D. Ex safety-related enclosure options.

f = 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F, G, H, J, K, L, M, N, P, Q, R, S, or T. Cable gland

g = alphanumeric indicating cable length (Not Ex safety related)

h = alphanumeric indicating electronics option (Not Ex safety related)

i = alphanumeric indicating communication protocol (Not Ex safety related)

j = alphanumeric indicating language (Not Ex safety related)

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SCHEDULE



to EC-Type Examination Certificate No. FM09ATEX0038X

14 Specific Conditions of Use:

1. *Special temperature measurements are required if process temperatures can exceed 100°C. See instructions in ECD00022.*
2. *Special gland and cable selection requirements apply if temperature to which the Flow Transmitter Assy bracket is attached can exceed 100°C. See instructions in ECD00022.*

15 Essential Health and Safety Requirements:

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

16 Test and Assessment Procedure and Conditions:

This EC-Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Ltd's ATEX Certification Scheme.

17 Approved Drawings

Drawing No:	Revision	Title / Description
ECD00021	01	QEX1000 Certification Drawing – ATEX
ECD00022	01	QEX1000 Ex Safety Instructions – IECEx / ATEX

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Supplement 1 to
 EC-Type Examination Certificate No. FM09ATEX0038X
 in accordance with Clause 6 of Annex III to Directive 94/9/EC.

Equipment or protective system: **Series QEX ActiveSONAR Flowmeter System**
 (Type Reference and Name)

Name of Applicant: **Expro Meters, Inc.**

Address of Applicant: **50 Barnes Park North
 Wallingford CT 06492
 USA**

The examination and test results are recorded in confidential report number: Supplement 1 to Report No 3034211EC dated 1st April 2010

Description of the supplements and modifications:

13. Description of the Revisions to the Product:

An alternative construction of the Transducer Housing Module can be provided to accommodate a thicker transducer element, up to 13.5 mm. The power dissipation and protection are unchanged. The alternative Transducer Housing Module is necessary to continue to provide the required minimum thicknesses of encapsulant. The EMI shield and the Ultem[®] housing are increased in height to accommodate the thicker transducer, but continue to have no direct effect on type of protection "mb".

17 Approved Drawings

Drawing No.	New Issue	Description
ECD00021	02	QEX1000 Certification Drawing - ATEX



Ron Webb
 Deputy Certification Manager, FM Approvals Ltd.

Issue date: 5th April 2010

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