1 EU-TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective systems intended for use in Potentially Explosive Atmospheres - Directive 2014/34/EU**

3 **EU-Type Examination Certificate No:** **FM15ATEX0074X**

4 **Equipment or protective system: (Type Reference and Name)** **LMT Series Magnetostrictive Level Transmitters**

5 **Name of Applicant:** **ABB Inc.**

6 **Address of Applicant:** **17100 Manchac Park Lane, Suite B**
Baton Rouge, LA 70817
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 17 of Directive 2014/34/EU of 26 February 2014, 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:

3048977 dated 30th November 2016

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:

EN 60079-0:2012 + A11:2013, EN 60079-1:2014, EN 60079-26:2015, EN 60079-31:2014 and EN 60529:1991 + A1:2000

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

11 This EU-Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 2014/34/EU. 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:

II 1/2 G Ex db IIC T6…T2 Ga/Gb Ta = -40°C to +85°C; IP66

II 2 D Ex tb IIIC T85°C…T300°C Db Ta = -40°C to +85°C; IP66

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Mick Gower
Certification Manager, FM Approvals Ltd.

Issue date: 23rd May 2017

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13 **Description of Equipment or Protective System:**

The LMT Series of level transmitters are a range of field-mounted, microprocessor-based electronic transmitters utilizing multiple sensor technologies. The transmitters provide measurement of liquid levels and can be configured to provide specific industrial output signals according to 4-20 mA with HART digital communication. The LMT Series consists of three model types: the LMT100 which is insertion-mounted, the LMT200 which is externally mounted on gauge and the LMT300 which is insertion-mounted, sanitary.

The LMT Series level transmitters are comprised of a two compartment enclosure attached to the "front end assembly" which is attached to the probe or sensor. The front end assembly contains a glass-to-metal feedthrough which separates the enclosure from the probe.

The LMT Series level transmitters operate on 10.5 - 42 Vdc. The transmitters are intended for use in an ambient temperature of -40°C to +85°C. The equipment is rated for a process temperature range of -196°C to +420°C with the insertion-mounted versions rated for a maximum process pressure up to 3000 psi depending on probe.

LMT100.a.b.c.d.e.f.g.h.i.j.k.l.m.n – o.p.q.r.s.t.u.v.x // z.aa.bb.cc.dd.ee.ff.gg.hh.ii.jj Magnetostrictive Level Transmitters.
a = Approvals A4, B4, C4, D4, E2, G4, J4, K4, M1, M2 or P4.
j = Housing D1, D2, D3 or D4.
k = Display L0, L1, L2, L3, L4 or L8.
l = Output H1.
Model code option variables "b" through "i" and beyond variable "l" do not affect product safety.
Model code options "o" to "jj" are optional. Model code "x" = AR is not applicable.

LMT200.a.b.c.e.j.k.l – o.p.q.r.s.t.u.v.w.x.y // z.aa.bb.cc.dd.ee.ff.gg.hh.ii.jj Magnetostrictive Level Transmitters.
a = Approvals A4, B4, C4, D4, E2, G4, J4, K4, M1, M2 or P4.
j = Housing D1, D2, D3 or D4.
k = Display L0, L1, L2, L3, L4 or L8.
l = Output Y0 or H1.
Model code option variables "b" through "i" and beyond variable "l" do not affect product safety.
Model code options "o" to "jj" are optional. Model code "x" = AR is not applicable.

LMT300.a.b.c.d.e.f.g.h.i.j.k.l.m.n – o.p.q.r.s.t.u.v.x // z.aa.bb.cc.dd.ee.ff.gg.hh.ii.jj Magnetostrictive Level Transmitters.
a = Approvals A4, B4, C4, D4, E2, G4, J4, K4, M1, M2 or P4.
j = Housing D1, D2, D3 or D4.
k = Display L0, L1, L2, L3, L4 or L8.
l = Output Y0 or H1.
Model code option variables "b" through "i" and beyond variable "l" do not affect product safety.
Model code options "o" to "jj" are optional. Model code "x" = AR is not applicable.

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14 **Specific Conditions of Use:**

1. The flameproof joints of the equipment are not intended to be repaired. Consult the manufacturer if repair of the flameproof joints is necessary.
2. For Category II 1/2 G installations, parts of the equipment containing light metals (Aluminum, Titanium, Zirconium or Magnesium) shall be protected from impact so that impact or friction sparks cannot occur, taking into account rare malfunction. Measures to prevent impact or friction sparks when using the equipment containing light metals include but are not limited to:
   a. Mounting the probe vertically
   b. No mechanical agitation shall be used
   c. Use of stilling wells to mitigate effect of agitation.
   d. Limit rate of change of level to values such that friction sparks cannot occur
3. The user shall take the appropriate mitigation measures in accordance with their own risk assessment to prevent any other conditions capable of producing impact or friction sparks.
4. If additional non-conductive paint/coatings are applied to the process connection, flange or instrument housing (for example to provide additional corrosion resistance) there may exist a risk of electrostatic discharge due to charge build-up on the non-conductive paint/coating layer. The user shall take the appropriate mitigation measures in accordance with their own risk assessment.
5. When non-metallic sensor well or probe sleeve materials are used there is a risk of ignition from electrostatic discharge due to the flow of non-conductive media (for example in stirring vessels and pipes). The user shall decide on the suitability of the equipment for the particular application.
6. When the manufacturer of the equipment has not identified the type of protection on the label, the user shall, on installation, mark the label with the type of protection used.
7. The equipment temperature class rating is according to the following table:

Process Temperature	Ambient Temperature	Temperature Class "db"	Temperature Class "tb"
-196°C to +80°C	-40°C to +57.9°C	T6	T85°C
-196°C to +95°C	-40°C to +67.4°C	T5	T100°C
-196°C to +130°C	-40°C to +85°C	T4	T135°C
-196°C to +195°C	-40°C to +85°C	T4	T135°C
-196°C to +295°C	-40°C to +85°C	T3	T165°C
-196°C to +420°C	-40°C to +85°C	T2	T300°C

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 EU-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.

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17 **Schedule Drawings**

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by the Notified Body.

18 **Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
01st December 2016	Original Issue.
31st January 2017	Supplement 1: Report Reference: RR207861 dated 25th January 2017 Description of the Change: -Update to ABB model code structure.
23rd May 2017	Supplement 2: Report Reference: RR208054 dated 22nd May 2017 Description of the Change: -Update note in model code. -Minor drawing revisions/corrections based on changes agreed upon under original Approval project.

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Blueprint Report

ABB Inc - (Baton Rouge,LA) (1000000452)

Class No 3615

Original Project I.D. 3048977

Certificate I.D. FM15ATEX0074X

Drawing No.	Revision Level	Drawing Title	Last Report	Electronic Drawing
3KXL000064U0101	D	Magnetostrictive Front End PCB	RR208054	Yes (pdf)
3KXL000065U0101	E	Magnetostrictive Front End Board	RR208054	Yes (pdf)
3KXL000065U0111	A	Magnetostrictive Front End	3048977	Yes (pdf)
3KXL000102U0107	NC	LMT SPECIFICATION NAMEPLATE ARTWORK	3048977	Yes (pdf)
3KXL140000G0022	B	Intrinsic Safety Schematic for LMT HART Variant	3048468	Yes (pdf)
3KXL140000G0209	NC	LMT ATEX, IECEx & OTHER APPROVALS NAMEPLATE ARTWORK	3048977	Yes (pdf)
3KXL140000G0409	NC	LMT ATEX, IECEx, FM & CSA CERTIFICATION PLATE ARTWORK	3048977	Yes (pdf)
3KXL140000G0509	A	LMT MAGNETOSTRICTIVE TRANSMITTER FLAMEPATH	RR208054	Yes (pdf)
3KXL140000G0609	NC	LMT SPECIFICATION NAMEPLATE	3048977	Yes (pdf)
3KXL140100G0001	A	LMT100 GENERAL ASSEMBLY AND OPTIONS	3048977	Yes (pdf)
3KXL140200G0001	A	LMT200 GENERAL ASSEMBLY AND OPTIONS	3048977	Yes (pdf)
3KXL140300G0001	A	LMT300 GENERAL ASSEMBLY AND OPTIONS	3048977	Yes (pdf)
LMT-0303-2	B	LMT Explosives Atmospheres Option Codes	RR208054	Yes (pdf)
SM/LMT100/200/300-EN	A	LMT Series Safety manual for magnetostrictive level transmitter	3048977	Yes (pdf)