



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx FME 17.0004X

Issue No: 1

Certificate history:

Issue No. 1 (2018-11-02)

Issue No. 0 (2017-08-31)

Status: **Current**

Page 1 of 4

Date of Issue: **2018-11-02**

Applicant: **ABB Engineering (Shanghai) Ltd**
No 4528, KangXin Road,
KangQiao Town,
Pudong New District,
Shanghai 201319
China

Equipment: **LMT Series Magnetostrictive Level Transmitters**

Optional accessory:

Type of Protection: **Flameproof 'db', Intrinsic safety 'ia' and 'ic', protection by enclosure 'tb'; Type n**

Marking:

Ex db IIC T6 ...T2 Ga/Gb Ex ia IIC T6 ...T4 Ga

Ex ia IIIC T80°C Da Ex nA IIC T6 ...T4 Gc

Ex tb IIIC T85°C...T300°C Db Ex ic IIC T6 ...T4 Gc

Ex ic IIIC T80°C Dc

-40°C ≤ Ta ≤ +85°C

FISCO Field Device

*Approved for issue on behalf of the IECEx
Certification Body:*

Andrew Was

Position:

Deputy Certification Manager

*Signature:
(for printed version)*

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

FM Approvals Ltd
1 Windsor Dials
SL4 1RS Windsor
United Kingdom



Member of the FM Global Group



IECEX Certificate of Conformity

Certificate No: IECEX FME 17.0004X Issue No: 1

Date of Issue: 2018-11-02 Page 2 of 4

Manufacturer: **ABB Engineering (Shanghai) Ltd**
No 4528, KangXin Road,
KangQiao Town,
Pudong New District,
Shanghai. 201319
China

Additional Manufacturing location(s):

ABB Inc.
125 East County Line Road
Warminster, PA 18974
United States of America

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Edition:6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-1 : 2014-06 Edition:7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-11 : 2011 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-15 : 2010 Edition:4	Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
IEC 60079-26 : 2014-10 Edition:3.0	Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga
IEC 60079-31 : 2013 Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

[GB/FME/ExTR17.0004/00](#) [GB/FME/ExTR17.0004/01](#)

Quality Assessment Report:

[GB/FME/QAR10.0007/09](#) [NO/PRE/QAR17.0003/01](#)



IECEX Certificate of Conformity

Certificate No: IECEx FME 17.0004X

Issue No: 1

Date of Issue: 2018-11-02

Page 3 of 4

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

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 feedthru which separates the enclosure from the probe. The enclosure was previously evaluated as a component IECEx FME 13.0001U. The enclosure and communication board electronics remain the same and are commonly referred to as the "Top Works" enclosure or assembly.

Three communications options are included, HART, Foundation Fieldbus and Profibus PA

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.

The intrinsically safe versions of the LMT operate at a maximum voltage of 30 V per Control Drawing 3KXL140000G0109.

SPECIFIC CONDITIONS OF USE: YES as shown below:

See attachment



IECEX Certificate of Conformity

Certificate No: IECEX FME 17.0004X

Issue No: 1

Date of Issue: 2018-11-02

Page 4 of 4

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Addition of Fieldbus and Profibus communication options

Annex:

[IECEX attachment_01 26-02-18.pdf](#)

Specific Conditions of Use.

1. For Ex d installation - 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 EPL Ga installations - The LMT main electronics enclosure option j = D1 or D2 contains aluminium and is considered to present a potential risk of ignition by impact or friction. Care shall be taken into account during installation and use to prevent impact or friction.
3. When EPL Ga/Gb, Ga or Da is required (for example in Zone 0 or Zone 20 hazardous areas), parts of the equipment containing light metals (Aluminium, 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:
 - Mounting the probe vertically
 - No mechanical agitation shall be used
 - Use of stilling wells to mitigate effect of agitation.
 - Limit rate of change of level to values such that friction sparks cannot occur
4. 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.
5. 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.
6. 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.
7. 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.
8. For Option Code "I" = H1, the equipment temperature class rating is according to the following table:

Process Temperature	Ambient Temperature	Temperature Class						
		"db"	"tb"	"ia" Ga	"ia" Da	"ic" Ga	"nA"	"ic" Dc
-196°C to +80°C	-40°C to +57.9°C	T6	T85°C	T6	T80°C	T6	T6	T80°C
-196°C to +95°C	-40°C to +67.4°C	T5	T100°C	T5	N/A	T5	T5	N/A
-196°C to +130°C	-40°C to +85°C	T4	T135°C	T4	N/A	T4	T4	N/A
-196°C to +195°C	-40°C to +85°C	T4	T135°C	T4	N/A	T4	T4	N/A
-196°C to +295°C	-40°C to +85°C	T3	T165°C	N/A	N/A	N/A	N/A	N/A
-196°C to +420°C	-40°C to +85°C	T2	T300°C	N/A	N/A	N/A	N/A	N/A

FM Approvals Ltd.
1 Windsor Dials,
Windsor, Berkshire, UK. SL4 1RS
T: +44 (0) 1753 750 000 F: +44 (0) 1753 868 700
www.fmapprovals.com

9. For Option Code “I” = F1 or P1, the equipment temperature class rating is according to the following table:

Process Temperature	Ambient Temperature	Temperature Class							
		“db”	“tb”	“ia” Ga	“ia” Da	“ic” Ga	“nA”	“ic” Dc	
-196°C to +80°C	-40°C to +57.9°C	T6	T85°C	T6	T80°C	T6	T6	T80°C	
-196°C to +95°C	-40°C to +67.4°C	T5	T100°C	T5	T100°C	T5	T5	N/A	
-196°C to +130°C	-40°C to +85°C	T4	T135°C	T4	T135°C	T4	T4	N/A	
-196°C to +195°C	-40°C to +85°C	T4	T135°C	T4	T135°C	T4	T4	N/A	
-196°C to +295°C	-40°C to +85°C	T3	T165°C	N/A	N/A	N/A	N/A	N/A	
-196°C to +420°C	-40°C to +85°C	T2	T300°C	N/A	N/A	N/A	N/A	N/A	

10. On installation as Type nA apparatus the LMT shall be provided with supply transient protection external to the apparatus such that the voltage at the supply terminals of the LMT does not exceed 140% of the voltage rating of the equipment.

Model Code breakdown.

LMT100.a.b.c.d.e.f.g.h.i.j.k.l.m.n - o.p.q.r.s.t.u.v.w.x.y.z.aa // bb.cc.dd.ee.ff.gg.hh.ii.jj.kk.ll.mm. Magnetostrictive Level Transmitters.

Ex db IIC T6...T2 Ga/Gb Ta = -40°C to +85°C; IP66

Ex tb IIIC T85°C...T300°C Db Ta = -40°C to +85°C; IP66

a = Approvals E2

j = Housing D1, D2, D3 or D4.

k = Display L0, L1, L2, L3, L4 or L8.

l = Output F1, H1, P1 or Y0.

Model code option variables “b” through “i” and beyond variable “l” do not affect product safety.

LMT200.a.b.c.e.i.j.k.l.m.n - o.p.q.r.s.t.u.v.w.x.y.z.aa // bb.cc.dd.ee.ff.gg.hh.ii.jj.kk.ll.mm. Magnetostrictive Level Transmitters.

Ex db IIC T6...T2 Ga/Gb Ta = -40°C to +85°C; IP66

Ex tb IIIC T85°C...T300°C Db Ta = -40°C to +85°C; IP66

a = Approvals E2

j = Housing D1, D2, D3 or D4.

k = Display L0, L1, L2, L3, L4 or L8.

l = Output F1, H1, P1 or Y0.

Model code option variables “b” through “i” and beyond variable “l” do not affect product safety.

LMT300.a.b.c.d.e.f.g.h.i.j.k.l.m.n - o.p.q.r.s.t.u.v.w.x.y.z.aa // bb.cc.dd.ee.ff.gg.hh.ii.jj.kk.ll.mm. Magnetostrictive Level Transmitters.

Ex db IIC T6...T2 Ga/Gb Ta = -40°C to +85°C; IP66

Ex tb IIIC T85°C...T300°C Db Ta = -40°C to +85°C; IP66

a = Approvals E2

j = Housing D1, D2, D3 or D4.

k = Display L0, L1, L2, L3, L4 or L8.

l = Output F1, H1, P1 or Y0.

Model code option variables “b” through “i” and beyond variable “l” do not affect product safety.

LMT100.a.b.c.d.e.f.g.h.i.j.k.l.m.n - o.p.q.r.s.t.u.v.w.x.y.z.aa //

bb.cc.dd.ee.ff.gg.hh.ii.jj.kk.ll.mm. Magnetostrictive Level Transmitters.

Ex ia IIC T6...T4 Ga Ta = -40°C to +85°C, IP66

Ex ia IIIC T80°C Da Ta = -40°C to +85°C, IP66

a = Approvals A4, B4, C4, D4, E1, G4, J4, K4, M1, M2 or P4.

j = Housing D1, D2, D3 or D4.

k = Display L1 or L2.

l = Output H1.

Model code option variables “b” through “i” and beyond variable “l” do not affect product safety.

LMT200.a.b.c.d.e.f.g.h.i.j.k.l.m.n - o.p.q.r.s.t.u.v.w.x.y.z.aa //

bb.cc.dd.ee.ff.gg.hh.ii.jj.kk.ll.mm. Magnetostrictive Level Transmitters.

Ex ia IIC T6...T4 Ga Ta = -40°C to +85°C, IP66

Ex ia IIIC T80°C Da Ta = -40°C to +85°C, IP66

a = Approvals A4, B4, C4, D4, E1, G4, J4, K4, M1, M2 or P4.

j = Housing D1, D2, D3 or D4.

k = Display L1 or L2.

l = Output H1.

Model code option variables “b” through “i” and beyond variable “l” do not affect product safety.

LMT300.a.b.c.d.e.f.g.h.i.j.k.l.m.n - o.p.q.r.s.t.u.v.w.x.y.z.aa //

bb.cc.dd.ee.ff.gg.hh.ii.jj.kk.ll.mm. Magnetostrictive Level Transmitters.

Ex ia IIC T6...T4 Ga Ta = -40°C to +85°C, IP66

Ex ia IIIC T80°C Da Ta = -40°C to +85°C, IP66

a = Approvals A4, B4, C4, D4, E1, G4, J4, K4, M1, M2 or P4.

j = Housing D1, D2, D3 or D4.

k = Display L1 or L2.

l = Output H1.

Model code option variables “b” through “i” and beyond variable “l” do not affect product safety.

LMT100.a.b.c.d.e.f.g.h.i.j.k.l.m.n - o.p.q.r.s.t.u.v.w.x.y.z.aa //

bb.cc.dd.ee.ff.gg.hh.ii.jj.kk.ll.mm. Magnetostrictive Level Transmitters.

Ex nA IIC T6...T4 Gc Ta = -40°C to +85°C, IP66

Ex ic IIC T6...T4 Gc Ta = -40°C to +85°C, IP66

Ex ic IIIC T80°C Dc Ta = -40°C to +85°C, IP66

a = Approvals A4, B4, C4, D4, E3, E8, G4, J4, K4, M1, M2 or P4.

j = Housing D1, D2, D3 or D4.

k = Display L1 or L2.

l = Output H1.

Model code option variables “b” through “i” and beyond variable “l” do not affect product safety.

LMT200.a.b.c.d.e.f.g.h.i.j.k.l.m.n - o.p.q.r.s.t.u.v.w.x.y.z.aa //
bb.cc.dd.ee.ff.gg.hh.ii.jj.kk.ll.mm. Magnetostrictive Level Transmitters.

Ex nA IIC T6...T4 Gc Ta = -40°C to +85°C, IP66

Ex ic IIC T6...T4 Gc Ta = -40°C to +85°C, IP66

Ex ic IIIC T80°C Dc Ta = -40°C to +85°C, IP66

a = Approvals A4, B4, C4, D4, E3, E8, G4, J4, K4, M1, M2 or P4.

j = Housing D1, D2, D3 or D4.

k = Display L1 or L2.

l = Output H1.

Model code option variables “b” through “i” and beyond variable “l” do not affect product safety.

LMT300.a.b.c.d.e.f.g.h.i.j.k.l.m.n - o.p.q.r.s.t.u.v.w.x.y.z.aa //
bb.cc.dd.ee.ff.gg.hh.ii.jj.kk.ll.mm. Magnetostrictive Level Transmitters.

Ex nA IIC T6...T4 Gc Ta = -40°C to +85°C, IP66

Ex ic IIC T6...T4 Gc Ta = -40°C to +85°C, IP66

Ex ic IIIC T80°C Dc Ta = -40°C to +85°C, IP66

a = Approvals A4, B4, C4, D4, E3, E8, G4, J4, K4, M1, M2 or P4.

j = Housing D1, D2, D3 or D4.

k = Display L1 or L2.

l = Output H1.

Model code option variables “b” through “i” and beyond variable “l” do not affect product safety.

LMT100.a.b.c.d.e.f.g.h.i.j.k.l.m.n - o.p.q.r.s.t.u.v.w.x.y.z.aa //
bb.cc.dd.ee.ff.gg.hh.ii.jj.kk.ll.mm. Magnetostrictive Level Transmitters.

Ex ia IIC T6...T4 Ga FISCO Ta = -40°C to +85°C, IP66

Ex ia IIIC T80°C Da FISCO Ta = -40°C to +85°C, IP66

a = Approvals A4, B4, C4, D4, E1, G4, J4, K4, M1, M2 or P4.

j = Housing D1, D2, D3 or D4.

k = Display L2.

l = Output F1 or P1.

Model code option variables “b” through “i” and beyond variable “l” do not affect product safety.

LMT200.a.b.c.d.e.f.g.h.i.j.k.l.m.n - o.p.q.r.s.t.u.v.w.x.y.z.aa //
bb.cc.dd.ee.ff.gg.hh.ii.jj.kk.ll.mm. Magnetostrictive Level Transmitters.

Ex ia IIC T6...T4 Ga FISCO Ta = -40°C to +85°C, IP66

Ex ia IIIC T80°C Da FISCO Ta = -40°C to +85°C, IP66

a = Approvals A4, B4, C4, D4, E1, G4, J4, K4, M1, M2 or P4.

k = Display L2.

l = Output F1 or P1.

Model code option variables “b” through “i” and beyond variable “l” do not affect product safety.

LMT300.a.b.c.d.e.f.g.h.i.j.k.l.m.n - o.p.q.r.s.t.u.v.w.x.y.z.aa //
bb.cc.dd.ee.ff.gg.hh.ii.jj.kk.ll.mm. Magnetostrictive Level Transmitters.

Ex ia IIC T6...T4 Ga FISCO Ta = -40°C to +85°C, IP66

Ex ia IIIC T80°C Da FISCO Ta = -40°C to +85°C, IP66

a = Approvals A4, B4, C4, D4, E1, G4, J4, K4, M1, M2 or P4.

j = Housing D1, D2, D3 or D4.

k = Display L2.
l = Output F1 or P1.

Model code option variables “b” through “i” and beyond variable “l” do not affect product safety.

***LMT100.a.b.c.d.e.f.g.h.i.j.k.l.m.n - o.p.q.r.s.t.u.v.w.x.y.z.aa //
bb.cc.dd.ee.ff.gg.hh.ii.jj.kk.ll.mm. Magnetostrictive Level Transmitters.***

Ex ic IIC T6...T4 Gc FISCO Ta = -40°C to +85°C, IP66
Ex ic IIIC T80°C Dc FISCO Ta = -40°C to +85°C, IP66
a = Approvals A4, B4, C4, D4, E8, G4, J4, K4, M1, M2 or P4.
j = Housing D1, D2, D3 or D4.
k = Display L2.
l = Output F1 or P1.

Model code option variables “b” through “i” and beyond variable “l” do not affect product safety.

***LMT200.a.b.c.d.e.f.g.h.i.j.k.l.m.n - o.p.q.r.s.t.u.v.w.x.y.z.aa //
bb.cc.dd.ee.ff.gg.hh.ii.jj.kk.ll.mm. Magnetostrictive Level Transmitters.***

Ex ic IIC T6...T4 Gc FISCO Ta = -40°C to +85°C, IP66
Ex ic IIIC T80°C Dc FISCO Ta = -40°C to +85°C, IP66
a = Approvals A4, B4, C4, D4, E8, G4, J4, K4, M1, M2 or P4.
j = Housing D1, D2, D3 or D4.
k = Display L2.
l = Output F1 or P1.

Model code option variables “b” through “i” and beyond variable “l” do not affect product safety.

***LMT300.a.b.c.d.e.f.g.h.i.j.k.l.m.n - o.p.q.r.s.t.u.v.w.x.y.z.aa //
bb.cc.dd.ee.ff.gg.hh.ii.jj.kk.ll.mm. Magnetostrictive Level Transmitters.***

Ex ic IIC T6...T4 Gc FISCO Ta = -40°C to +85°C, IP66
Ex ic IIIC T80°C Dc FISCO Ta = -40°C to +85°C, IP66
a = Approvals A4, B4, C4, D4, E8, G4, J4, K4, M1, M2 or P4.
j = Housing D1, D2, D3 or D4.
k = Display L2.
l = Output F1 or P1.

Model code option variables “b” through “i” and beyond variable “l” do not affect product safety.