



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

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

Certificate No.: **IECEx FMG 19.0006X**

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Certificate history:

Status: **Current**

Issue No: 2

[Issue 1 \(2019-10-29\)](#)

[Issue 0 \(2019-07-25\)](#)

Date of Issue: 2020-04-02

Applicant: **ABB Inc.**
3400 Rue Pierre-Ardouin
Quebec, QC, G1P 0B2
Canada

Equipment: **LWT Series Level Transmitters**

Optional accessory:

Type of Protection: **"db", "ia", "[ia]", "ic", "nAc", "tb"**

Marking: Refer to attached addendum

Approved for issue on behalf of the IECEx
Certification Body:

J. E Marquedant

Position:

VP, Manager - Electrical Systems

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 www.iecex.com or use of this QR Code.



Certificate issued by:

FM Approvals LLC
1151 Boston-Providence Turnpike
Norwood, MA 02062
United States of America





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Manufacturer: **ABB Shanghai**
No. 4528, KangXin Highway
Pudong New District, Shanghai, 201319
China

Additional
manufacturing
locations: **ABB Inc.**
3400 Rue Pierre-Ardouin
Quebec, QC, G1P 0B2
Canada

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 equipment 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 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-1:2014-06 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

IEC 60079-15:2010 Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
Edition:4

IEC 60079-26:2014-10 Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga
Edition:3.0

IEC 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

This Certificate **does not** indicate compliance with 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 Reports:

[US/FMG/ExTR19.0005/00](#)

[US/FMG/ExTR19.0005/01](#)

[US/FMG/ExTR19.0005/02](#)

Quality Assessment Reports:

[GB/FME/QAR10.0007/09](#)

[NL/DEK/QAR12.0049/08](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

LWT Series Guided Wave Level Transmitter LWT3.aa.bb.cc.dd.ee.f.g.hh.iii.jj.kk.ll, where:

aa = Device type: 10, 20, 30, 40, 50

bb = Certification: E1, E2, E3, E9, M1, M2

cc = Wetted material: Two characters

dd = Seal type: Two characters

ee = Process connection: Two characters

f = Process connection pressure rating: One character

g = Process connection size: One character

hh = Probe type: Two characters

iii = Probe material: Four characters

jj = Housing: D1, D2, D3, D4, R1, R2, R3, R4

kk = Display: L0, L1, L2

ll = Output: H1

LWT Series Guided Wave Level Transmitter LWT4.aa.bb.cc.dd.ee.ff.g.h.ii.jjj.kk.ll.mm, where:

aa = Device type: 10, 20, 30, 40, 50

bb = Process condition: C1, H1, H2, H3

cc = Certification: E1, E2, E3, E9, M1, M2

dd = Wetted material: Two characters

ee = Seal type: Two characters

ff = Process connection: Two characters

g = Process connection pressure rating: One character

h = Process connection size: One character

ii = Probe type: Two characters

jjj = Probe material: Four characters

kk = Housing: D1, D2, D3, D4, R1, R2, R3, R4

ll = Display: L0, L1, L2

mm = Output: H1

Refer to attachment for details of certification ratings by certification option code and energy limitation parameters.

SPECIFIC CONDITIONS OF USE: YES as shown below:

Refer to attachment for specific conditions of use.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Minor changes to electronics and documentation.

Specifically:

- Increase microprocessor supply voltage from 2.5 V to 3 V.
- Change values of Microprocessor PCA parallel resistor network R26, R2, R3, R8, R19. Minimum equivalent parallel resistance remains unchanged at 14 Ohms.



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Additional information:

IECEx FMG 19.0006X, Issue No. 1 associated with Revision RR220237 to original Project ID 3063611

IECEx FMG 19.0006X, Issue No. 2 associated with Revision RR222784 to original Project ID 3063611

Annex:

[IECEx FMG 19.0006X Attachment.pdf](#)

Certification ratings by certification option code:

Certification option LWT3.**.bb LWT4.**.**.cc						Ratings (“X” in certification option & probe columns indicates that certification is applicable)	Probe type	
E1	E2	E3	E9	M1	M2		Local	Remote
X				X	X	Ex ia IIC T4...T1 Ta = -50°C to 43°C...75°C Ga - 3KXL001177U0109; Entity; IP66, IP68*	X	
X				X	X	Ex ia IIC T6...T4 Ta = -50°C to 40°C...85°C Ga - 3KXL001177U0109; Entity; IP66, IP68*		X
X				X	X	Ex ia IIIC T88°C...T368°C Ta = -50°C to 43°C...75°C Da - 3KXL001177U0109; Entity; IP66, IP68*	X	
X				X	X	Ex ia IIIC T52°C...T93°C Ta = -50°C to 40°C...85°C Da - 3KXL001177U0109; Entity; IP66, IP68*		X
	X			X	X	Ex db/ia IIB T6...T1 Ta = -50°C to 70°C...85°C Gb/Ga - 3KXL001177U0209; IP66, IP68*	X	
	X			X	X	Ex tb/ia IIIC T77°C...T358°C Ta = -50°C to 70°C...85°C Db/Da - 3KXL001177U0209; IP66, IP68*	X	
	X			X	X	Ex db[ia Ga] IIB T6...T5 Ta = -50°C to 75°C...85°C Gb - 3KXL001177U0209; IP66, IP68*		X
	X			X	X	Ex tb[ia Da] IIIC T77°C...T87°C Ta = -50°C to 75°C...85°C Db - 3KXL001177U0209; IP66, IP68*		X
			X			Ex ic[ia Ga] IIB T6...T4 Ta = -50°C to 40°C...85°C Gc - 3KXL001177U0309; IP66, IP68*		X
			X			Ex ic[ia Da] IIIC T52°C...T93°C Ta = -50°C to 40°C...85°C Dc - 3KXL001177U0309; IP66, IP68*		X
		X				Ex nAc[ia Ga] IIB T6...T4 Ta = -50°C to 40°C...85°C Gc - 3KXL001177U0309; IP66, IP68*		X

* IP68 certified to a depth of 1 meter for up to 72 hours

Refer to applicable control drawing for details of temperature classification

Energy limitation parameters:

Parameter	Set 1	Set 2	Set 3	Set 4
Ui (V)	30	Not used	30	30
Ii (mA)	100	Not used	100	50
Pi (W)	0.75	Not used	1.4	0.4
Ci (nF)	19			
Li (μH)	20			

Specific conditions of use:

1. Light metals can generate ignition-capable sparks when subjected to impact or friction.
 - a. Transmitter enclosure: When installed in Zone 0, 1, 20, 21 (EPL Ga, Gb, Da, Db required), transmitter enclosures which are constructed of aluminum alloy shall be protected such that sparks resulting from impact or friction cannot occur, taking into account rare malfunctions. Such enclosures include housing model/option types D1, D2, R1 and R2. Where special housing type Z9 is present, it is the responsibility of the installer to determine if the transmitter housing is constructed of aluminum alloy.
 - b. Probe: When installed in Zone 0, 1, 20, 21 (EPL Ga, Gb, Da, Db required), probes which are constructed of light metals, including aluminum, magnesium, titanium or zirconium shall be protected such that sparks resulting from impact or friction cannot occur, taking into account rare malfunctions. Such probes include wetted part model/option types PMT2, PMT5 and PMU9. Where special probe type PMZ9 is present, it is the responsibility of the installer to determine if the probe incorporates light metals.
2. When EPL Da is required, the instrument housing shall not be subjected to uncontrolled dust layers.
3. The equipment includes flameproof joints. Consult with ABB if repair of flameproof joints is required.
4. For installations relying upon type of protection Ex nAc [ia Ga] Gc, the transmitter shall be installed within a location providing protection against pollution of not less than Pollution Degree 2. In Pollution Degree 2, only non-conductive pollution occurs except that occasionally a temporary conductivity caused by condensation is expected. This restriction is not applicable to the probe (simple apparatus supplied by intrinsically safe [ia] circuit).
5. The equipment presents a potential risk of electrostatic sparking. Clean only with a damp cloth.
6. The transmitter does not provide isolation from earth. When installed as Ex ia, Ex ic [ia], the associated apparatus used to limit energy to the transmitter shall provide isolation from earth at not less than 500 Vrms.
7. Using the box provided on the nameplate, the user shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.
8. Wetted materials for LWT300 series include TEFLON (PTFE), along with alloy and O-ring materials selected in order matrix for process coupler and probe. Wetted materials for LWT400 series include alumina (Al₂O₃), graphite gasket, along with alloy materials selected in order matrix for process coupler and probe. It is the responsibility of the user to ensure that process and environment do not damage the equipment.