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 ETL 17.0017X

Issue No: 0

Certificate history:
Issue No. 0 (2017-04-19)

Status: **Current**

Date of Issue: **2017-04-19**

Applicant: **ABB Inc.**
Measurements & Analytics - Industrial Automation
3400, RuePierre-Ardouin
Quebec, Quebec, G1P 0B2
Canada

Equipment: **MT5000, MT5100 and MT5200 Guided Wave Radar Level Transmitter**

Optional accessory:

Type of Protection: **Flameproof "d", Intrinsic Safety "i", Equipment Dust Ignition Protection by Enclosure "t"**

Marking:

Ex ia/db IIC T6 Ga/Gb

Ex ia ta IIIC T80°C Da

IECEx ETL 17.0017X

Approved for issue on behalf of the IECEx Certification Body:

Kevin J. Wolf

Position:

Certification officer

Signature:
(for printed version)

Date:

2017-04-19

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.

Certificate issued by:

Intertek
3933 US Route 11 South
Cortland NY 13045-2995
United States of America

IECEx Certificate of Conformity

Certificate No:	IECEx ETL 17.0017X	Issue No: 0
Date of Issue:	**2017-04-19**	Page 2 of 3
Manufacturer:	**ABB Inc.** Measurements & Analytics - Industrial Automation 3400, RuePierre-Ardouin Quebec, Quebec, G1P 0B2 **Canada**	

Additional Manufacturing location(s):

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 electrical 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 60079-26 : 2006 Edition:2	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:

US/ETL/ExTR17.0022/00

Quality Assessment Report:

NL/DEK/QAR12.0049/05

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Certificate No: IECEx ETL 17.0017X Issue No: 0

Date of Issue: **2017-04-19** Page 3 of 3

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The MT5000 is a guided wave impulse radar for detecting levels. The electronics are mounted inside a dual compartment enclosure which is made of Stainless steel 316 or Aluminium 360.

Sensor material is made of Stainless steel 316, Alloy 20, Hastelloy (Alloy C-276) or Inconel 625.

The MT5000 Series is available with either a 4-20mA loop powered device with HART communication or with Fieldbus communication.

It uses very low power microwave energy to determine the level of the product being measured. The probes are protected by Intrinsic Safety, and are separated from the electronic compartment by the use of process seal.

For additional information, refer to the annex to this certificate.

SPECIFIC CONDITIONS OF USE: YES as shown below:

For conditions of certification, refer to the annex to this certificate.

Annex:

Annex for COC IECEx ETL 17.0017X.pdf

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Certificate No:	IECEx ETL 17.0017X/00	Issue No. 0
Annex No. 1		

1. Description of Equipment

The **ABB MT5000** series of guided wave radar level transmitters uses low power microwave energy to determine the level of the product being measured, with communication by 4-20mA current loop with Hart protocol or by Fieldbus.
The MT5000 is used for single level measurement of liquids, the MT 5100 is for dual level measurements and the MT 5200 is for the measurement of bulk products.
The equipment is housed within a dual compartment flameproof / dust protected enclosure with IP rating IP66. The enclosure is made from either aluminium or stainless steel.
The sensor probe is protected by intrinsic safety "ia" in all versions, and may be installed in areas requiring EPL Ga or Da.
Um = 253V AC.
The following describes the permitted model option codes:
For a full explanation of the code meanings, refer to the relevant ABB product literature.
MT5xxx.xx.x(x).x.xx(x).x(x).xx(xxx).xx(x).x(x).xx.x(xxx).xx.xx.xx.xx(xxxx).
xx(x).xx(x). ***XXX. XXX. XX. XX. XX. XX. XX.XX. XX. XXX. XX***
Device Type: 000, 100 or 200.
Coupler material: Y0, S6, S4, H1, H3, M4, T2, T5, N2, A2, D1, D2, N1, Z9.
Transmitter configuration:, L, LW, R, RW, Z9.
Transmitter Housing: A, S.
Process Connection / Waveguide Coupler: C1, C1H, C2, C2H, C3, C4, C4H, C5, C5H, C6, C7, C8, C9, CZ.
Process Seal Type: Y, V, SV, K, SK, E, SE, A, SA, B, SB, S, Z9
Probe Type: P01, P02, P03, P21, P22, P411F, P412F, P421F, P422F, P41EP, P42EP, P43, P11, P12, P31, P32, P33, P61, P51, P52, P71, P81, P91, Z9.
Probe End Attachment: Y, W09, W10, W13, W16, W19, W29, WS6, W61, W99, D15, D20, D23, D28, D38, D60, D99, E1, E2, Z9.
Probe End Attachment Material: Y, S6, S4, H1, H3, M4, T2, T5, N2, A2, D1, D2, N1, Z9
Process Temperature Extension: HO, H6, Z9.
Electronic module: M7A, M7AM, M7AF, M7B, M7BM, M7BF
Agency Approvals: E2.
Process Connection Type: P1, P2, P3, P4.
Process Connection Material: Y0, S4, S6, C1, H1, H3, M4, T2, T5, N2, A2, D1, D2, N1, Z9.
Flange or Plug Size II Rating I Type: YYYY, NTBN, NTCN, NTEN, NTFN, NTGN, GTBN, GTCN, GTEN, GTFN, GTGN, R11, R13, R16, R151, R153, R156, R21, R23, R26, R251, R253, R256, R31, R33, R36, R41, R43, R46, R61, R63, R66, D2525, D2540, D3225, D3240, D4025, D4040, D5025, D5040, D6525, D6540, D8025, D8040, D10025, D10040, D12525, D12540, D15025, D15040, P1, P15, P2, P25, P3, P4, SCC, SCE, SCF, SCG, SCH, SCJ, , SRC, SRE, SRF, SRG, SRH, SRJ, SSC, SSE, SSF, SSG, SSH, SSJ, Z9.
Additional Approvals or Certifications: CRN, CC, CS, CP, CL2, CL3, CWL, CWG, P4, PZ
Sensor Options: SEL, SEP, SEN, SEB, SE1, SE2, SE3, P1, P7, SEZ
Target Float Options: FT1, FT2, FT3, FT4, FT5, FZ9.

Remote electronics signal cable length: SRW, SRT, SR1, SRR, SR2, SR3, SR4, SR5, SR6, SR7, SR8, SR9, SRA, SRB, SRZ.
Repeat Indicator: AR.
Add extension rod: AR1, AR2, AR3, AR9

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Annex No. 1		

Gas phase compensation: NP1, NP2, N3, NPZ
Centering disk for cable weight: WD1, WD2, WD3, WD4, WD5, WD6, WDZ
Device Identification Plate: T1, TS, TZ
Electrical Connector: Type: U8, U9
Special Other: STT, TEZ, STH, STF
Mounted Accessories: AS, A3
Additional option codes are permitted according to product configuration, but are not noted on the marking label.

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Annex No. 1		

2. **Conditions of Certification**

(a). Special Conditions for safe use

- When EPL Ga or Da is required (for example in Zone 0 or Zone 20 hazardous areas), parts of the equipment containing light metals (Aluminium, Titanium and Zirconium) shall be protected from impact so that impact or friction sparks cannot occur, taking into account rare malfunction.
- Where EPL Da is required, the equipment housing shall not be subjected to uncontrolled dust layers.
- The cable entry device shall be appropriately IECEx certified and maintain the appropriate level of ingress protection in order to maintain the required ingress protection rating according to the installation conditions.
- Flamepath joints are not intended to be repaired

(b). Conditions of Manufacture

- The probe coupler shall be pressure tested at a pressure of at least 328 psi for at least 10 seconds. There shall be no leakage or permanent deformation.

3. **Manufacturer's drawings and documents associated with Issue 0 of this certificate:**

Title:	Drawing No.:	Rev. Level:	Date:
OptionsMT5000, MT5100, MT5200 Series General Assembly &	MT5000-0000-1	G	04/14/14
AtmospheresMT5000, MT5100,ApprovalsMT5200OptionATEXCodes & IECEx Explosives	MT5000-0303-1	NC	12/18/2014
SafeMT5000DiagramMT5100for HART& MT5200VariantM7A & M7B Intrinsically	ELE1057	NC	12/12/2014
SafeMT5000DiagramMT5100for Fieldbus& MT5200VariantM7AF & M7BF Intrinsically	ELE1058	NC	12/12/2014
MT Series Coupler Flamepath and Process Seal	HSG2013 Sheet 3	K	08/28/14
MT5000NametagMT5100HART &&FieldbusMT5200VariantsATEX & IEC Flameproof	AA015666-03	B	03/25/16
Dual Compartment Enclosure Flamepath	HSG2017	G	10/07/2014
MT Series Hermetic Seal Adapter	MEC2189	D	02/03/14

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