



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 17.0016X

Issue No: 0

Certificate history:

Issue No. 0 (2017-04-10)

Status: **Current**

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Date of Issue: **2017-04-10**

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

Equipment: **MT5000, MT5100, MT5200**

Optional accessory:

Type of Protection: **Intrinsic Safety "Ia" & "Ic"**

Marking:

Ex ia IIB / IIC T4 Ga

Ex ia III C T80°C Da

Ex ic / ia IIB / IIC T4 Gc / Ga

Ex ic / ia III C T80°C Dc / Da

Ex ic IIB / IIC T4 Gc

Ex ic III C T80°C Dc

-40°C ≤ Ta ≤ 66°C

IECEx ETL 17.0016x

Approved for issue on behalf of the IECEx

Certification Body:

Kevin J. Wolf


Position:

Certification Officer

Signature:

(for printed version)

Date:


2017-04-10

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:



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Manufacturer: **ABB Inc.**
Measurements & Analytics - Industrial Automation
3400, Rue Pierre-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 60079-11 : 2011 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "I"
IEC 60079-26 : 2014-10 Edition:3.0	Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga

*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/ExTR17.0020/00

Quality Assessment Report:

NL/DEK/QAR12.0049/05



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

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 Intrinsically Safe 4-20mA current loop with Hart protocol or by FISCO / Fieldbus.

The MT5000 is used for single level measurement of liquids, the MT5100 is for dual level measurements and the MT5200 is for the measurement of bulk products

Units are manufactured in Group MB and Group IIC versions with intrinsic safety types "ia", "ic" or "ic/ia" according to model number.

Refer to the equipment marking plate.

The equipment is housed within a dual compartment enclosure with IP rating IP66. The enclosure is made from either aluminium or stainless steel.

For equipment with "ic / ia" intrinsic safety, the probe is "ia", EPL Ga / Da and the control compartment "ic", EPL Gc / Dc. A process seal is provided between the probe and the control enclosure.

Refer to Annex for additional information and IS Parameters

SPECIFIC CONDITIONS OF USE: YES as shown below:

Refer to Annex for Conditions of Certification and Special Conditions for Safe Use.

Annex:

Annex for COC IECEx ETL 17.0016X.pdf



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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 Intrinsically Safe 4-20mA current loop with Hart protocol or by FISCO / Fieldbus.

The MT5000 is used for single level measurement of liquids, the MT5100 is for dual level measurements and the MT5200 is for the measurement of bulk products.

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The equipment is housed within a dual compartment enclosure with IP rating IP66. The enclosure is made from either aluminium or stainless steel.

IS Parameters (ia):

HART variant	Fieldbus variant	FISCO variant Ex ia IICT4 Ga Ex ia NIC T80°C Da
Pi = 0.7W Ui = 28 V Ii = 250mA Ci = 4.8nF Li = 10 uH	Pi = 0.7W Ui = 28 V Ii = 250mA Ci = 4.8nF Li = 10 uH	Pi = 5.32W Ui = 17.5V Ii = 380mA Ci = 4.8nF Li = 10 uH

IS Parameters (ic):

HART variant	Fieldbus variant	FISCO variant Ex i c / ia MC T4 Gc / Ga Ex i c / ia /IIICT80°C Dc/Da
Ui = 28 V Ci = 4.8nF Li = 10 uH	Ui = 28 V Ci = 4.8nF Li = 10 uH	Ui = 17.5V Ci = 4.8nF Li = 10 uH

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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 I 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: Y0, W09, W10, W13, W16, W19, W29, WS6, W61, W99, D15, D20, D23, D28, D38, D60,

D99, E1, E2, Z9.

Probe End Attachment Material: Y0, S6, S4, H1, H3, M4, T2, T5, N2, A2, D1, D2, N1, Z9

Process Temperature Extension: HO, H6, Z9.

Electronic module: M7A, M7AF, M7B, M7BF, M71A, M71AF, M71B, M71BF

Agency Approvals: E1, F1, E8, F5, E9, F6.

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

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

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Additional option codes are permitted according to product configuration, but are not noted on the marking label.

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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, Magnesium, 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.
- For Group IIC models equipped with Fieldbus communication, for connection to a FISCO trunk, an additional current limiting assembly, ABB part number 010-1000-2, shall be fitted to the input terminals. Refer to ABB Instruction document.
- The cable entry device shall comply with the requirements of IEC 60079-0 and maintain IP 54 or better.

(b). Conditions of Manufacture

- Equipment with "ic / ia" intrinsic safety shall be fitted with the MT Series Hermetic Seal Adapter.

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

Title:	Drawing No.:	Rev. Level:	Date:
MT5000, MT5100, MT5200 Series General Assembly & Options	MT5000-0000-1	H	05/22/15
MT5000, MT5100, MT5200 ATEX & IECEx Explosives Atmospheres Approvals Option Codes	MT5000-0303-1	A	12/21/2015
MT5000 MT5100 & MT5200 M7A & M7B Intrinsically Safe Diagram for HART Variant	ELE1032	D	09/16/2015
MT5000 MT5100 & MT5200 M71A & M71B Intrinsically Safe Diagram for HART Variant	ELE1057	A	09/16/2015
MT5000 MT5100 & MT5200 M7AF & M7BF Intrinsically Safe Diagram for Fieldbus Variant	ELE1039	B	09/16/2015
MT5000 MT5100 & MT5200 M71AF & M71BF Intrinsically Safe Diagram for Fieldbus Variant	ELE1058	A	09/16/2015
MT Series Coupler Flamepath and Process Seal	HSG2013 Sheet 3	K	08/28/14
MT5000 MT5100 & MT5200 ATEX & IEC Flameproof Nametag HART & Fieldbus Variants	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
Additional Board for FISCO (6 sheets)	010-1000-1AW	NC	04/02/14

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Title:	Drawing No.:	Rev. Level:	Date:
MT2000-4000-2AW PC Board	MT2000-4000-2AW	E	07/09/08
MT2001-5000-1PC Board Artwork (2 sheets)	MT2001-5000-1AW	B	06-06-05
F. Fieldbus PC Board Artwork (2 sheets)	MT2001-5000-3AW	A	09-16-05
MT5000 Series LCD Board (7 sheets)	MT5000-7000-2AW	NC	06/08/2011
Connector Board Artwork	SPM201-3000-2AW	B	08/28/08
SPM201 6000-3AW PC Board	SPM201-6000-3AW	B	07/17/2007
Hart Interface PC Board Artwork	SPM201-6000-1AW	C	07/23/07
MT5000 SERIES M7 HART OR FIELDBUS MODULES ATEX & IECEx NAMETAG E1 OPTION	AA015666-01	B	01/30/17
MT5000 SERIES M71 HART OR FIELDBUS MODULES ATEX & IECEx NAMETAG E1 OPTION	AA015666-04	A	01/09/17
MT5000 SERIES M71 FIELDBUS ENTITY + FISCO MODULES ATEX & IECEx NAMETAG F1 OPTION	AA015666-02	B	01/09/17
MT5000 SERIES M7 HART OR FIELDBUS MODULES ATEX & IECEx NAMETAG E9 OPTION	AA015666-08	A	01/30/17
MT5000 SERIES M71 FIELDBUS ENTITY+FISCO MODULES ATEX & IECEx NAMETAG F6 OPTION	AA015666-09	A	01/09/17
MT5000 SERIES M71 HART OR FIELDBUS MODULES ATEX & IECEx NAMETAG E9 OPTION	AA015666-10	A	01/09/17
MT5000 SERIES M7 HART OR FIELDBUS MODULES ATEX & IECEx NAMETAG E8 OPTION	AA015666-05	A	01/30/17
MT5000 SERIES ATEX & IECEx NAMETAG FIELDBUS+FISCO F5 OPTION	AA015666-06	A	01/09/17
MT5000 SERIES M71 HART OR FIELDBUS MODULES ATEX & IECEx NAMETAG E8 OPTION	AA015666-07	A	01/09/17

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