

EU-Type Examination Certificate



1. **EU-TYPE EXAMINATION CERTIFICATE**
2. **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres
Directive 2014/34/EU**
3. **EU-Type Examination Certificate Number: ITS17ATEX201813X Issue 0**
4. **Product:** MT5000 Series Guide Wave Radar Level Transmitters
5. **Manufacturer:** ABB Inc.
6. **Address:** Measurements & Analytics - Industrial Automation
3400, Rue Pierre-Ardouin
Quebec, Quebec, G1P 0B2, Canada
7. This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
8. Intertek Testing and Certification Limited, Notified Body number 0359 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council dated 26 February 2014, certifies that the product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential Intertek Report 102977088DAL-003 Issue 0 dated 5-Apr-2017.
9. Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 60079-0:2012, EN 60079-11:2012 and EN 60079-26:2015 except in respect of those requirements referred to at item 16 of the Schedule.
10. If the sign "X" is placed after the certificate number, it indicates that the product is subject to Specific Conditions of Safe Use specified in the Schedule to this certificate.
11. This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.
12. The marking of the product shall include the following:


II 1 GD Ex ia IIB / IIC T4 Ga

Ex ia IIIC T80°C Da

-40°C ≤ Ta ≤ 66°C

Refer to schedule for additional marking information

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Kevin J. Wolf
Certification Officer
10APR2017

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13. Description of Equipment or Protective System

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 IIB and Group IIC versions 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.

IS Parameters (ia):

HART variant	Fieldbus variant	FISCO variant Ex ia IIC T4 Ga Ex ia IIIC T80°C Da
Pi = 0.7W Ui = 28V Ii = 250mA Ci = 4.8nF Li = 10 uH	Pi = 0.7W Ui = 28V Ii = 250mA Ci = 4.8nF Li = 10 uH	Pi = 5.32W Ui = 17.5V Ii = 380mA Ci = 4.8nF Li = 10 uH

The MT5000 series may be used in "ic" intrinsically safe systems, in which case the following marking is applied:



II 3/1 GD

Ex ic / ia IIB / IIC T4 Gc / Ga

Ex ic / ia IIIC T80°C Dc / Da

-40°C ≤ Ta ≤ 66°C

When powered from an "ic" intrinsically safe source, the body of the level transmitter is Category 3 and the probe is Category 1 / intrinsic safety type "ia".

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IS Parameters (ic):

HART variant	Fieldbus variant	FISCO variant
		Ex ic / ia IIC T4 Gc / Ga Ex ic / ia /IIIC T80°C Dc / Da
Ui = 28V Ci = 4.8nF Li = 10 uH	Ui = 28V Ci = 4.8nF Li = 10 uH	Ui = 17.5V Ci = 4.8nF Li = 10 uH

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, 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: H0, 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 // Rating / 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.

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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

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

14. Report Number

Intertek Report Ref: 102977088DAL-003 Issue 0 dated 5-Apr-2017.

15. Special Conditions of Certification

(a). Specific Conditions of 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 EN 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.

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16. Essential Health and Safety Requirements (EHSRs)

The relevant Essential Health and Safety Requirements (EHSRs) have been identified and assessed in Intertek Report Ref: 102977088DAL-003 Issue 0 dated 5-Apr-2017.

17. Drawings and Documents

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	09/16/2015
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
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

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