1 # EU-TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective systems intended for use in Potentially Explosive Atmospheres - Directive 2014/34/EU**

3 **EU-Type Examination Certificate No:** **FM18ATEX0017X**

4 **Equipment or protective system: (Type Reference and Name)** **AWT210 2-Wire Electrochemical Transmitters**

5 **Name of Applicant:** **ABB Limited**

6 **Address of Applicant:** **Howard Road**
**Eaton Socon**
**St Neots**
**Cambridgeshire, PE19 8EU**
**UNITED KINGDOM**

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and documents therein referred to.

8 FM Approvals Europe Ltd, notified body number 2809 in accordance with Article 17 of Directive 2014/34/EU of 26th February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report number:

3053362 dated 08th March 2019

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN IEC 60079-0:2018, EN 60079-11:2012 and EN 60529:1991+A1:2000+A2:2013

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.

11 This EU-Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include:

II 1 G Ex ia IIC T4 Ga Ta = -20 °C to +60 °C
FISCO (for option d = F1 or P1)

**Martin Crowe**
**Certification Manager, FM Approvals Europe Ltd.**

Issue date: 14th January 2022

**THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE**

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13 **Description of Equipment or Protective System:**

The AWT210 2-wire transmitters are designed for use with a variety of electrochemical sensors for measurement of conductivity, or pH/ORP. There are four different type of sensors that can be used with the AWT210. The communications and the sensor circuits are modular designed for easy installation and replacement and fit to the baseplate inside the enclosure using quarter turn locking devices. HART, Fieldbus and Profibus communications options are available and each use a separate module. It is not possible to fit two communication modules into the same transmitter. A display is fitted to the door of the enclosure.

The AWT210 transmitter housing is made of plastic or aluminium and has an ingress protection rating of IP66.

Operation Temperature Ranges:
The ambient operating temperature range of the AWT210 is -20 °C to +60 °C.

Electrical data:
The AWT210 transmitter has the following electrical ratings;

Energy limitation parameters:
HART
Ui < 30 Vdc; Ii < 100 mA; Pi < 0.8 W; Ci < 0.56 nF; Li = 3.3 mH – Linear

Fieldbus and Profibus
Ui ≤ 24 V; Ii ≤ 250 mA; Pi ≤ 1.2 W, Ci = 1.1 nF, Li = 0 – FF Linear
Ui ≤ 17.5 V; Ii ≤ 380 mA; Pi ≤ 5.32 W, Ci = 1.1 nF, Li = 0– FF Non-Linear
Ui ≤ 24 V; Ii ≤ 250 mA; Pi ≤ 1.2 W, Ci = 1.1 nF, Li = 0 – PA Linear
Ui ≤ 17.5 V; Ii ≤ 360 mA; Pi ≤ 2.52 W, Ci = 1.1 nF, Li = 0 – PA Non-Linear

Output parameters for HART and FF/PA
Uo = 11.8 V; Io = 11.8 mA; Po = 36 mW; Co = 1.5 uF; Lo = 1 H

Output parameters for EzLink
Uo = 5.21 V Io = 98.2 mA Pi = 0.1279 W Co = 60 µF Lo = 43 mH

***AWT210abcdefgh Electrochemical Transmitter***

a = Reserved for future use
b = Enclosure Type: 1 or 2
c = sensor input: C2, C4, C1, D1 or P1
d = Communications; H1, F1 or P1
e = Approvals: E3, E5 or E6
f = Mounting kits: A1, A2, A3 or A4
g = Cable entry options: U1, U2, or U3
h = Documentation: Not relevant to safety

14 **Specific Conditions of Use:**

1. The AWT210 (enclosure option b = 2) 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.

2. The AWT210 (enclosure option b = 1), the Lexan enclosure, may store electrostatic charge and become a source of ignition in applications with a low relative humidity <-30% relative humidity where the Lexan is relatively free of surface contamination such as dirt, dust, or oil. Guidance on protection against the risk of ignition due to electrostatic discharge can be found in IEC TS 60079-32-1. Cleaning of the surface shall only be done in accordance with the manufacturer's instructions.
3. The user shall mark, on installation, the variant of communication module and sensor module on the label**.**

15 **Essential Health and Safety Requirements:**

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

16 **Test and Assessment Procedure and Conditions:**

This EU-Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Europe Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Europe Ltd's ATEX Certification Scheme.

17 **Schedule Drawings**

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by the Notified Body.

18 **Certificate History**

Details of the supplements to this certificate are described below:

| **Date** | **Description** |
|---|---|
| 27th March 2019 | Original Issue. |
| 09th September 2019 | Supplement 1:<br>Report Reference: – PR451085 dated 25th July 2019.<br>Description of the Change:<br>Addition of Fieldbus and Profibus communications option. |
| 16th October 2019 | Supplement 2:<br>Report Reference: – RR220670 dated 15th October 2019.<br>Description of the Change:<br>Minor documentation changes. |
| 16th December 2019 | Supplement 3:<br>Report Reference: – RR221380 dated 10th December 2019.<br>Description of the Change: Minor documentation updates including adding alternatives to safety components. |

# SCHEDULE

to EU-Type Examination Certificate No. FM18ATEX0017X

| Date | Description |
|---|---|
| 06th May 2020 | Supplement 4:<br>Report Reference: – RR223483 dated 24th April 2020.<br>Description of the Change: Minor documentation changes. Electrical parameters corrected to align with labels and installation drawing. |
| 24th June 2020 | Supplement 5:<br>Report Reference: – RR223948 dated 12th June 2020.<br>Description of the Change: Minor documentation changes. |
| 20th July 2020 | Supplement 6:<br>Report Reference: – RR224438 dated 17th July 2020.<br>Description of the Change: Minor documentation changes. |
| 07th October 2020 | Supplement 7:<br>Report Reference: – RR224932 dated 28th September 2020.<br>Description of the Change: Minor documentation changes. |
| 11th December 2020 | Supplement 8:<br>Report Reference: – RR225752 dated 10th December 2020.<br>Description of the Change: Minor documentation changes. |
| 14th September 2021 | Supplement 9:<br>Report Reference: – PR458235 dated 9th September 2021.<br>Description of the Change: Addition of EzLink sensor module option.<br>Update to EN IEC 60079-0:2018 |
| 14th January 2022 | Supplement 10:<br>Report Reference: – RR230198 dated 15th December 2021.<br>Description of the Change: Documentation update. |



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# Blueprint Report

## ABB Ltd (1000000485)

**Class No 3610**

***Original Project I.D. 3053362***

***Certificate I.D. FM18ATEX0017X***

| Drawing No. | Revision Level | Drawing Title | Last Report |
|---|---|---|---|
| 3KXA005165U0101 | B | Anti Static Warning Label - FRENCH | PR451085 |
| 3KXA005213U0101 | C | Weather Shield | PR451085 |
| 3KXA005217U0101 | A | Display Board Assembly | 3053362 |
| 3KXA005219U0101 | A | Anti Static Warning Label - English | 3053362 |
| 3KXA005220U0101 | B | Cable Rating Label | 3053362 |
| AWT200020 | 5 | EC SENSOR BOARD SCHEMATIC | 3053362 |
| AWT200021 | 2 | BASE BOARD SCHEMATIC | 3053362 |
| AWT200022 | 9 | HART COMMUNICATION BOARD SCHEMATIC | PR451085 |
| AWT200023 | 5 | DISPLAY BOARD SCHEMATIC | 3053362 |
| AWT200024 | 7 | PH SENSOR BOARD SCHEMATIC | 3053362 |
| AWT200025 | 6 | TC SENSOR BOARD SCHEMATIC | 3053362 |
| AWT200027 | 6 | TE SENSOR BOARD SCHEMATIC | 3053362 |
| AWT200028 | 7 | FF-PA COMMUNICATIONS BOARD SCHEMATIC | PR451085 |
| AWT200029 | 5 | EZLINK MODULE SCHEMATIC | PR458235 |
| AWT200034 | M | ATEX-IECEx Instrinsic Safety Control Drawing | PR458235 |
| AWT200035 | A | ATEX-IECEx Instrinsic Safety Control Drawing | PR458235 |
| AWT200036 | H | Certification Drawing of Enclosure GA - Plastic | RR230198 |
| AWT200037 | H | Certification Drawing of Enclosure GA - Aluminium | RR230198 |
| AWT200039 | F | Hazardous Area Approved Product Code | PR458235 |
| AWT200050 | M | Main Box Build Assembly 2-Wire (Plastic) | RR220670 |
| AWT200051 | Q | Main Box Build Assembly 2-Wire (Metal) | RR224438 |
| AWT200070 | E | Ribbon Cable | PR451085 |
| AWT200090 | A | Voltis Transformer | PR451085 |
| AWT200091 | B | 4-Electrode Transformer | 3053362 |
| AWT200092 | B | Toroidal Transformer | 3053362 |
| AWT200093 | A | Voltis Transfomer | PR451085 |
| AWT200156 | E | Module Serial No. Label | RR230198 |
| AWT200157 | I | AluminiumTransmitter Label | PR458235 |
| AWT200158 | H | Plastic Transmitter Label | PR458235 |
| AWT200159 | J | Product Serial No Label | RR225752 |
| AWT200253 | 5 | HART COMMUNICATION BOARD MANUFACTURING | 3053362 |
| AWT200255 BOT | 5 | HART COMMUNICATION BOARD ASSEMBLY BOT | 3053362 |
| AWT200255 TOP | 5 | HART COMMUNICATION BOARD ASSEMBLY TOP | 3053362 |
| AWT200256 | 15 | HART COMMUNICATION BOARD BOM.xlsx | RR221380 |
| AWT200263 | 5 | EC SENSOR BOARD MANUFACTURING | PR451085 |
| AWT200265 BOT | 5 | EC SENSOR BOARD ASSEMBLY BOT | PR451085 |
| AWT200265 TOP | 5 | EC SENSOR BOARD ASSEMBLY TOP | PR451085 |
| AWT200265 | 5 | EC SENSOR BOARD BOM.xlsx | RR220670 |
| AWT200273 | 6 | BASE BOARD MANUFACTURING | 3053362 |
| AWT200275 TOP | 6 | BASE BOARD ASSEMBLY TOP | 3053362 |
| AWT200275 | 3 | BASE BOARD BOM.xlsx | 3053362 |
| AWT200283 | 5 | DISPLAY BOARD MANUFACTURING | 3053362 |
| AWT200285 BOT | 7 | Display Board Assembly (Bottom) | RR223948 |
| AWT200285 TOP | 7 | Display Board Assembly (Top) | RR223948 |
| AWT200285 | 7 | DISPLAY BOARD BOM.xlsx | 3053362 |
| AWT200293 | 6 | TC SENSOR BOARD MANUFACTURING | 3053362 |
| AWT200295 BOT | 6 | TC SENSOR BOARD ASSEMBLY BOT | 3053362 |
| AWT200295 TOP | 6 | TC SENSOR BOARD ASSEMBLY TOP | 3053362 |
| AWT200295 | 7 | TC SENSOR BOARD BOM.xlsx | 3053362 |
| AWT200303 | 7 | TE SENSOR BOARD MANUFACTURING | 3053362 |

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|---|---|---|---|
| AWT200305 BOT | 7 | TE SENSOR BOARD ASSEMBLY BOT | 3053362 |
| AWT200305 TOP | 7 | TE SENSOR BOARD ASSEMBLY TOP | 3053362 |
| AWT200305 | 8 | TE SENSOR BOARD BOM.xlsx | PR451085 |
| AWT200313 | 8 | PH SENSOR BOARD MANUFACTURING | 3053362 |
| AWT200315 BOT | 8 | PH SENSOR BOARD ASSEMBLY BOT | 3053362 |
| AWT200315 TOP | 8 | PH SENSOR BOARD ASSEMBLY TOP | 3053362 |
| AWT200315 | 9 | PH SENSOR BOARD BOM.xlsx | 3053362 |
| AWT200323 | 7 | FF-PA COMMUNICATIONS BOARD MANUFACTURING | PR451085 |
| AWT200325 BOT | 7 | FF-PA COMMUNICATIONS BOARD ASSEMBLY BOT | PR451085 |
| AWT200325 TOP | 7 | FF-PA COMMUNICATIONS BOARD ASSEMBLY TOP | PR451085 |
| AWT200326 | 12 | FF-PA COMMUNICATIONS BOARD BOM | PR451085 |
| AWT200363 | 4 | EZLink Sensor Module | RR230198 |
| AWT200365 | 12 | EZLINK MODULE BOM | PR458235 |
| CI/AWT210-EN | H | Commisioning Instructions | PR458235 |
| CM40-0181 | 4 | Transmitter Bulkhead Connector (120mm) | PR458235 |
| DS/AWT210-EN | F | Datasheet | PR458235 |
| OI/AWT210-EN | H | Operating Instructions | PR458235 |