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 BAS 18.0047X**	Page 1 of 4	Certificate history:
Status:	**Current**	Issue No: 2	Issue 1 (2019-11-27) Issue 0 (2018-08-22)
Date of Issue:	2020-06-10		
Applicant:	**ABB Limited** Oldends Lane Stonehouse Gloucestershire GL10 3TA **United Kingdom**		
Equipment:	**500 PRO-D and 500-PRO-D HT Digital pH/ORP Sensor**		
Optional accessory:			
Type of Protection:	**Intrinsic Safety - Ex i**		
Marking:	**Ex ia IIC T4 Ga (-5 °C ≤ T_a ≤ +100 °C)**		

Approved for issue on behalf of the IECEx Certification Body: **R S Sinclair**

Position: **Technical Manager**

Signature: (for printed version)

Date: 11 - 6 - 2020

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:

SGS Baseefa Limited
Rockhead Business Park
Staden Lane
Buxton, Derbyshire, SK17 9RZ
United Kingdom

IECEx Certificate of Conformity

Certificate No.: **IECEx BAS 18.0047X**

Date of issue: 2020-06-10

Issue No: 2

Manufacturer: **ABB Limited**
Oldends Lane
Stonehouse
Gloucestershire
GL10 3TA
United Kingdom

Additional manufacturing locations:

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 60079-0:2011 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"

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:

GB/BAS/ExTR18.0155/00 GB/BAS/ExTR19.0302/00 GB/BAS/ExTR20.0035/00

Quality Assessment Report:

GB/BAS/QAR08.0001/06

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The 500 PRO-D and 500 PRO-D HT Digital pH/ORP sensors are devices for measuring the pH level or Oxidation-Reduction Potential of a process medium. The sensors are available in a standard model and a "Hot Tap" model. The difference between the models is enclosure shape and application. The "Hot Tap" model allows the end user to insert the sensor in to the process medium through use of a special valve not covered by this certification while the process is active.

The equipment is formed of a moulded plastic enclosure that is resistant to most aggressive substances. The sensing part of the assembly is glass part that may be curved (bullet shaped) or flat. The glass is either filled with a conductive liquid or empty depending on the application.

The pH and ORP sensors are differentiated by the glass bullet or flat sensing head used. The pH sensor can be identified by means of a colouration of the glass that may or may not be present and, more importantly, no wiring passing through the surface of the glass. The OPR sensor can appear the same as the pH sensor. The primary identifiable feature that differentiates between the two type of sensors is that protruding from the glass there is a wire that is considered the sensing head.

Electrical connections are then made to either the plug and socket arrangement or directly to the barrier via a coaxial cable to a maximum length of 10 m.

The sensor is exposed, in its end-use application, a process medium that may have a maximum pressure of up to and including 10 bar.

The 500 PRO-D sensors are barrier powered device considered against the level of protection "ia" with the following input entity and load parameters.

Ui = 6.00V
Ii = 100mA
Ci = 30µF
Li = 20µH
Pi = 600mW

Optional accessories allow for a metallic sheath to be used in conjunction with the sensor. The metallic sheath element is not covered under the scope of this project.

For a full nomenclature breakdown of the products covered by this certificate refer to the attached Annex.

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. The plastic enclosure is a potential electrostatic hazard. Clean only with a damp cloth and do not mount in a high velocity dust laden atmosphere.
2. The stainless steel threaded connector is a potential electrostatic hazard. Ensure that the earth connection on the connector is provided with an earth connection as described in the instructions.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Variation 2.1

To permit an increase to the maximum input current (Ii) and maximum input power (Pi) described in the terminal parameters to 100 mA and 600 mW respectively.

ExTR: **GB/BAS/ExTR20.0035/00**	File Reference: **20/0088**

Annex:

IECEx BAS 18.0047X Issue 0 Annex.pdf

Annex A.1 – 500 PRO-D and 500 PRO-D HT Digital Nomenclature Breakdown

The 500 PRO-D and 500 PRO-D HT Digital pH/ORP sensors are devices for measuring the pH level or Oxidation-Reduction Potential of a process medium. The sensor is available in a standard model and a "Hot Tap" model. The difference between the models is enclosure shape and application.

The 500 PRO-D models covered by this certificate are described by the part number/ordering code as follows:

APS522	XX	XX	D	XX
I	II	III	IV	V

Where:

I	Signifies the model reference;
II	Signifies the sensor type and may be P2 (pH Sensor – general purpose bullet shaped glass), P3 (pH Sensor – general purpose flat shaped glass), P4 (pH Sensor – low resistance and temperature glass), P5 (pH Sensor – HF/Acid resistant glass), P6 (pH Sensor – high performance, coating resistant and high temperature glass) or R2 (ORP Sensor)
III	Signifies the body type and may be K1 for a 3/4" threaded insertion/immersion - no sensor guard (flush) or K2 for a 3/4" threaded insertion/immersion - notched sensor guard.
IV	Signifies the connection type and is a D relating to a EZLink Digital Connection.
V	Signifies integrated cable length and may be 00 (No integrated cable – only available with the VarioPin Option), 01 (1 m integrated cable), 03 (3 m integrated cable), 05 (5 m integrated cable) or 10 (10 m integrated cable).

The 500 PRO-D HT models covered by this certificate are described by the part number/ordering code as follows:

APS526	XX	XX	Y0	Y0	D	XX
I	II	III	IV	V	VI	VII

Where:

I	Signifies the model reference;
II	Signifies the sensor type and may be P2 (pH Sensor – general purpose bullet shaped glass), P3 (pH Sensor – general purpose flat shaped glass), P4 (pH Sensor – low resistance and temperature glass), P5 (pH Sensor – HF/Acid resistant glass), P6 (pH Sensor – high performance, coating resistant and high temperature glass) or R2 (ORP Sensor)
III	Signifies the body type and may be K3 for a hot-tap ball valve insertion - no sensor guard (flush) or K4 for a hot-tap ball valve insertion - notched sensor guard.
IV	Signifies an option to provide a protective sheath to the sensor. Y0 signifies no protective sheath and certification does not cover protective sheath for use in this application.
V	Signifies the accessory hardware for fitting of the protective sheath. Y0 signifies no accessory hardware.
VI	Signifies the connection type and is a D relating to a EZLink Digital Connection
VII	Signifies integrated cable length and may be 01 (1 m integrated cable), 03 (3 m integrated cable), 05 (5 m integrated cable) or 10 (10 m integrated cable).