



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 17.0049X

Issue No: 0

Certificate history:

[Issue No. 0 \(2017-10-26\)](#)

Status: **Current**

Page 1 of 3

Date of Issue: **2017-10-26**

Applicant: **ABB Inc.**
125 East County Line Road
Warminster, PA 18974 USA
United States of America

Equipment: **RS-85 Vibrating Fork Level Switch**

Optional accessory:

Type of Protection: **Flameproof 'db', Dust-ignition Proof 'ta'**

Marking:

Ex db IIC T6...T3 Ga/Gb (-40°C ≤ Ta ≤ TX)

Ex tb III C T150 Db (-40°C ≤ Ta ≤ 66°C)

Maximum Process Temperature: Refer to Annex

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

Kevin J. Wolf

Position:

Certification Officer

*Signature:
(for printed version)*

Date:

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 17.0049X

Issue No: 0

Date of Issue: 2017-10-26

Page 2 of 3

Manufacturer: **ABB Inc.**
125 East County Line Road
Warminster, PA 18974 USA
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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 60079-26 : 2014-10 Edition:3.0	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/ExTR17.0066/00](#)

Quality Assessment Report:

[NO/PRE/QAR17.0003/00](#)



IECEx Certificate of Conformity

Certificate No: IECEx ETL 17.0049X

Issue No: 0

Date of Issue: 2017-10-26

Page 3 of 3

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The Vibrating Fork Level Switch, Model RS85 utilizes a piezoelectric driven tuning fork that is used for monitoring liquids. The apparatus is composed of a sensor housing and a probe. The sensor housing may be a 'single compartment' aluminium housing or a 'dual compartment' housing made of aluminium or 316L stainless steel. The housings may have either a blank cover or a window. The probe can be between 86mm to 2133mm long, depending on the end users requirements.

The equipment probe may be installed in an area requiring EPL Ga.

Refer to the Annex for additional information.

SPECIFIC CONDITIONS OF USE: YES as shown below:

Refer to the Annex for Conditions of Certification.

Annex:

[Annex to IECEx ETL 17.0049X.pdf](#)



IECEx Certificate of Conformity

Certificate No:	IECEx ETL 17.0049X	Issue No. 0
Annex No. 1		

Product information associated with Issue 0 of this certificate:

AMBIENT TEMPERATURE:

For group IIIC, the ambient temperature range is -40°C to +66°C.

For group IIC, the ambient temperature range and process temperature influence the temperature class. Refer to the special conditions of safe use for a table showing the temperature classes.

For both the IIC and IIIC installations, the maximum process temperature is +121°C, unless the equipment is provided with the high temperature extension which extends the maximum process temperature to +177°C.

NOMENCLATURE

RS85.a.b.c.d.e.f.g.h.i.j.k.l.m.n Example: RS85.A1W.P1.S6.2.E2.111.HT6

a. Housing

A1 Single Compartment Aluminum Housing

A1W Single Compartment Aluminum Housing with Glass Viewing Window

A2 Dual Compartment Aluminum Housing

A2W Dual Compartment Aluminum Housing with Glass Viewing Window

S2 Dual Compartment 316L Stainless Steel Housing

S2W Dual Compartment 316L Stainless Steel Housing with Glass Viewing Window

b. Process Connection

P7 3/4" MNPT

P1 1" MNPT

B7 3/4" BSPT

B1 1" BSPT

T Tri-Clamp

WP Welded Flange - Minimum 1"

FL Loose Flange - Minimum 1"

c. Process Connection Material

S6 316 Stainless Steel

HC Hastelloy C

MO Monel

d. Flange Connection Size/Rating type

X None

10 1" Tri-Clamp

15 1.5" Tri-Clamp

20 2" Tri-Clamp

25 2.5" Tri-Clamp

30 3" Tri-Clamp

40 4" Tri-Clamp

60 6" Tri-Clamp

XXX Specify Type and size from flange designation table (SLG-0001-1)

e. Sensor Material

S6 316 Stainless Steel

HC Hastelloy C

MO Monel

f. Probe Finish

X Standard Finish

1F 180 grit finish

2F 240 grit finish

EP 240 grit and Electro-polished (316 Stainless Steel only)

TN6 Teflon "S" Coated (316 Stainless Steel only, Flange Units Only)

HL6 Halar Coated (316 Stainless Steel only, Flange Units Only)

TF6 Tefzel Coated (316 Stainless Steel only, Flange Units Only)

g. Power

1 18-36 VDC

2 100-136 VAC

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Intertek Testing & Certification Limited
ITS House, Cleeve Road,
Leatherhead,
Surrey, KT22 7SB
United Kingdom





IECEx Certificate of Conformity

Certificate No:	IECEx ETL 17.0049X	Issue No. 0
Annex No. 1		

3 200-245 VAC

- h. Approvals**
E2 ATEX & IECEx
- i. Probe Length**
086 3-3/8" (86mm)
111 4-3/8" (111mm)
136 5-3/8" (136mm)
EXT Extended Length Probe, up to 84" (2133mm)
- j. Temperature Extension**
X None
HT6 6" 316 Stainless Steel High Temperature Extension (EPL Gb only)
- k. Electrical Connection**
X None
MM M20 Conduit Connection - Brass
MMS M20 Conduit Connection - Stainless Steel
- l. Hermetic Seal**
X None
HS Hermetic Seal between Probe and Housing (Hastelloy or Stainless only)
- m. Remote Mounted Electronic**
X None
R10 Remote Mounted Electronic; 10 ft (3.048m)
R20 Remote Mounted Electronic; 20 ft (6.096m)
- n. Packing Gland**
X None

Conditions of safe use associated with Issue 0 of this certificate:

- Blanking plugs, cable glands, and wiring must be suitable for the service temperature range of $-40^{\circ}\text{C} \leq T_{\text{service}} \leq 90^{\circ}\text{C}$.
- When equipment is installed using type protection Ex tb, cable entries and blanking elements must maintain the ingress protection of the enclosure to at least IP6X.
- When equipment is provided with an M20 thread adaptor, no additional adaptor or reducer may be used, and stopping plugs must not be installed in the adaptor
- When non-metallic probe coatings are used, there is a risk of ignition from electrostatic discharge due to the flow of non-conductive media (for example in stirring vessels or pipes). The user must decide on the suitability of the equipment for the particular application.
- The High Temperature Extension (HT6) must only be installed in an area requiring EPL Gb, while the probe may be installed in an area requiring EPL Ga.
- Flampaths are not intended to be repaired.
- The temperature class for group IIC installation is determined by the following table:

Temperature Class	Ambient Temperature (TX)	Maximum Process Temperature
T6	50°C	80°C
T5	60°C	95°C
T4	60°C	130°C
T3	60°C	177°C

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Certificate No:	IECEx ETL 17.0049X	Issue No. 0
Annex No. 1		

Conditions of manufacturing associated with Issue 0 of this certificate:

Each probe must be subject to routine testing according to clause 15.1.3.1 of EN 60079-1 to a pressure of at least 200.3 bar.

Each window must be routine tested according to clause 15.1.3.1 of EN 60079-1 to a pressure of at least 47.9 bar.

Manufacturer's documents

Drawings associated with Issue 0 of this certificate:

Title:	Drawing No.:	Rev. Level:	Date:
RS 85 GENERAL ASSEMBLY AND OPTIONS	RS85-0000-1	E	12/18/14
SINGLE COMPARTMENT HOUSING EXPLOSIONPROOF / FLAMEPROOF CERTIFICATION	HSG2020	F	10/07/14
DUAL COMPARTMENT HOUSING EXPLOSIONPROOF / FLAMEPROOF CERTIFICATION	HSG2017	G	10/07/14
RS85 SERIES ATEX & IECEx NAMETAG CEX, IEX & E2 FLAMEPROOF OPTIONS	TAG0123	B	08/24/17
RS85 Marking Procedure for FM, CSA, ATEX & IECEx	TAG0250	A	11/30/16
RS85 SERIES WELDED FLANGE (WP) ASSEMBLY DETAIL	FAB2169	B	09/24/12
RS85 SERIES TRI-CLOVER ASSEMBLY DETAIL	FAB2170	B	09/24/12
RS85 SERIES THREADED PROCESS CONNECTION ASSEMBLY DETA	FAB2171	B	09/21/12
0.75" SCH 80 MACHINED PIPE NIPPLE	FAB3002	D	09/21/12
FLAMEPATH FOR HIGH TEMPERATURE EXTENSION ADAPTER	HSG2046	A	07/22/13
Adapter 0.75 Inch MNPT X 0.75 Inch with 0.875 Inch OD X 0.065 Inch Wall Tube	MEC2002	F	10/29/12
Adapter 0.75 MNPT X 1 MNPT With 0.875 OD X .065 Wall Tube	MEC2023	C	10/29/12
Adapter 0.375 Inch MNPT X 0.875 Inch OD X 0.065 Inch Wall Tube	ME2024	C	10/29/12
Adapter 0.75 Inch MNPT With 0.875 Inch OD X 0.065 Inch Wall Tube	MEC2025	C	10/29/12
Adapter 0.75 Inch MNPT X 0.875 Inch OD X 0.0625 Inch Wall Tube-Model	MEC2577	A	10/29/12

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