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: ITS13ATEX17809X Issue 1**

4. **Product:** **Buoyancy Level Switch, Model MS50**

5. **Manufacturer:** ABB Inc.

6. **Address:** 17100 Manchac Park Lane, (Suite B),
Baton Rouge, LA 70817; USA

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 Reports102612865CRT-004a and 102612865CRT-004b dated 2017-05-12.

9. Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 60079-0: 2012; EN 60079-1: 2007; EN 60079-31: 2009; & EN60079-26: 2007 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 1/2 G Ex d IIC T6...T1 Ga/Gb

    II 1 D Ex ta IIIC T80°C...T430°C Da

    -40°C ≤ Tamb ≤ +70°C

Kevin J. Wolf
Certification Officer
28th April 2018

Intertek Testing & Certification Limited
Intertek House, Cleeve Road, Leatherhead, Surrey, KT22 7SB
Tel: +44 (0)1372 370900 Fax: +44 (0)1372 370977
www.intertek.com
Registered No 3272281 Registered Office: Academy Place, 1-9 Brook Street, Brentwood, Essex, CM14 5NQ.

SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE NUMBER ITS13ATEX17809X Issue 1

13. Description of Equipment or Protective System

The buoyancy level switch, Model MS50 is an applicable switching mechanism for level sensing that uses buoyancy to detect the level or interface of liquids. The apparatus is composed of a sensor head and a probe. The probe can be between 0.2 to 6 meters long depending on the end users requirements. The sensor head is to be used with a blank cover only.

The equipment has been evaluated with types of protection 'd' and 'ta' independently. For equipment installed in atmospheres that rely on type protection 'ta', the conditions of safe use listed in section 17(a)(ii) must be met. For equipment installed in atmospheres that rely on type protection 'd', the conditions of safe use listed in section 17(a)(i) must be met.

The probe has been evaluated as being suitable for use in EPL Ga atmospheres. If the equipment is to be used in this manner, the conditions of safe use listed in section 17(a)(iii) must be met.

AMBIENT TEMPERATURE:
Ambient temperature range is -40°C to +66°C for the housing.
The probe can be placed in process temperatures between -45°C to +196°C when installed as per the manufacturers' instructions.

TEMPERATURE CODE:
The maximum temperature code (for gas) and maximum surface temperature (for dust) is directly related to the maximum process temperature the equipment is designed for. The requirements are as follows:

Maximum Process Temperature	Temperature Code
≤76°C	T6
≤91°C	T5
≤126°C	T4
≤149°C	T3

NOMENCLATURE:
MS50.a.b.c.d.e.f.g
Examples: MS50.A1.SS6.CE.P1.F70B.HT
MS50.A1.SS6.CE.P7.F71B.HT.MF2

.a Housing
A1 Aluminium housing

.b Probe Material
SS6 Type 316L Stainless Steel
A20 Alloy 20
HSC C-276 Hastelloy
PVC PVC, this is an outer casing that is mounted around a metal probe
CPV CPVC, this is an outer casing that is mounted around a metal probe
PVD KYNAR, this is an outer casing that is mounted around a metal probe

SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE NUMBER ITS13ATEX17809X Issue 1

.c Approvals

E2 ATEX

.d Process Connection

P7	3/4" MNPT				
P1	1.0" MNPT	SR11	1.0" 150# Flange	SR13	1.0" 300# Flange
P15	1.5" MNPT	SR151	1.5" 150# Flange	SR153	1.5" 300# Flange
P2	2.0" MNPT	SR21	2.0" 150# Flange	SR23	2.0" 300# Flange
P3	3.0" MNPT	SR31	3.0" 150# Flange	SR33	3.0" 300# Flange
P4	4.0" MNPT	SR41	4.0" 150# Flange	SR43	4.0" 300# Flange
P7A	3/4" MNPT with compression fitting for adjustable length "L"				

.e Float

FX Float:

This option is selected from SLG-0003-1

.f Options

HT High Temperature Option:
This is required for process temperatures between +93°C and +149°C

.g Multi-Float Option

MF2 Dual-switch configuration
MF3 Three-switches configuration
MF4 Four- switches configuration
MF5 Five- switches configuration
MF6 Six- switches configuration

14. Report Number

Intertek Reports102612865CRT-004a and 102612865CRT-004b dated 2017-05-12.

15. Special Conditions of Certification

(a). Specific Conditions of Safe Use
i) Installation Requirements (Ex d):

Appropriate Ex d blanking plugs, cable glands, and wiring need to be suitable for +75°C or greater.

With the use of cable or conduit entries, a certified sealing device shall be provided immediately on the entrance of the enclosure.

There may be no more than 3 switches per 0.6 m

The yield stress of all special fasteners is not less than 200 MPa (30,000 psi).

Temperature codes are based on the following table in relation to the maximum surface temperature:

Maximum Process Temperature	Temperature Code
≤76°C	T6
≤91°C	T5

SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE NUMBER ITS13ATEX17809X Issue 1

≤126°C T4
≤149°C T3

(ii) Installation Requirements (Ex ta):

Cable entries and blanking elements must be used which maintain the ingress protection of the enclosure to at least IP6X.

Temperature codes are based on the following table in relation to the maximum surface temperature:

Maximum Process Temperature	Temperature Code
≤76°C	T6
≤91°C	T5
≤126°C	T4
≤149°C	T3

(iii) Installation Requirements (EPL Ga):

When non-metallic probe materials are used (PVC, CPVC, and PVD), 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.

(b). Conditions of Manufacture - Routine Tests

- Due to welded construction, the probe must be subject to routine testing according to clause 15.1.3.1 of EN 60079-1 to a pressure of at least 186 bar.

SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE NUMBER ITS13ATEX17809X Issue 1

16. Essential Health and Safety Requirements (EHSRs)

The relevant Essential Health and Safety Requirements (EHSRs) have been identified and assessed in Intertek Reports102612865CRT-004a and 102612865CRT-004b dated 2017-05-12.

17. Drawings and Documents

Title:	Drawing No.:	Rev. Level:	Date:
MS50 Buoyancy Level Switch General Assembly and Options	MS50-0000-1	A	10/23/2013
MS50 Buoyancy Level Switch Shop Fabrication Document Hex Plug Process Connection	MS50-0005-1	D	05/17/2013
MS50 Buoyancy Level Switch Flanged Process Connection Shop Fabrication Document	MS50-0005-2	D	05/17/2013
MS50 Buoyancy Level Switch Thermoplastic Version (Flange) Shop Fabrication Document	MS50-0005-3	D	05/17/2013
MS50 Buoyancy Level Switch Thermoplastic Version (Flange) Shop Fabrication Document	MS50-0005-4	D	06/25/2013
MS50 Buoyancy Level Switch Thermoplastic Version (Flange) Shop Fabrication Document	MS50-0005-5	D	06/25/2013
MS50 Buoyancy Level Switch Shop Fabrication Document P7 Process Connection Option	MS50-0005-6	B	05/17/2013
MS50 Buoyancy Level Switch Shop Fabrication Document P7A Process Connection Option	MS50-0005-8	B	05/17/2013
Float Selection Guide	SLG-0003-1	E	7-2012
Single Compartment Housing Explosionproof / Flameproof Certification	HSG2020	D	10/16/2013
MS50 Buoyancy Level Switch for P7A Compression Process Connection	FAB2301	NC	06/25/2013
MS50 Buoyancy Level Switch for Hex Plug Process Connection	FAB2302	NC	06/25/2013
MS50 Buoyancy Level Switch For Flanged Process Connection	FAB2304	NC	06/25/2013
MS50 Buoyancy Level Switch ATEX & IEC Nametag	TAG0255	A	02/22/16

18. Details of Certificate changes Issue 1

Update manufacture and applicant address, fixed typo in description

Update the QAR for new address

Updated drawing list