CERTIFICATE OF CONFORMITY

1. **HAZARDOUS LOCATION ELECTRICAL EQUIPMENT PER CANADIAN REQUIREMENTS**
2. **Certificate No:** **FM16CA0090X**
3. **Equipment:** **LMS 100 Magnetic Level Gauge Switch**
   (Type Reference and Name)
4. **Name of Listing Company:** **ABB, Inc. – BU Measurement Products**
5. **Address of Listing Company:** **125 East County Line Road**
   Warminster, PA 18974
   USA
6. The examination and test results are recorded in confidential report number:

   3051174C dated 22nd December 2014

7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

   CSA-C22.2 No. 0.4:R2013, CSA-C22.2 No. 0.5:R2012, CSA-C22.2 No. 25:R2014,
   CSA-C22.2 No. 30:R2012, CSA-C22.2 No. 94:R2011, CSA-C22.2 No. 157:R2012,
   CSA-C22.2 No. 213:R2013, CSA-C22.2 No. 1010:R2009,
   CAN/CSA-C22.2 No. 60079-0:2015, CAN/CSA-C22.2 No. 60079-1:2016,
   CAN/CSA-C22.2 No. 60079-11:2014, , CAN/CSA-C22.2 No. 60079-15:2016,
   CSA-C22.2 No. 60529:R2005,

8. 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.
9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.

Certificate issued by:

J.E. Marquedant
VP, Manager, Electrical Systems

27 October 2017
Date

To verify the availability of the Approved product, please refer to www.approvalguide.com

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SCHEDULE

Canadian Certificate Of Conformity No: FM16CA0090X

10. Equipment Ratings:

Explosionproof for Class I, Division 1, Groups A, B, C, and D; Dust-ignitionproof for Class II, III, Division 1, Groups E, F, and G; and Flameproof for Class I, Zone 1, Ex db IIC T6…T1 Gb Hazardous Locations, indoor/outdoor Type 4X.

Intrinsically safe for Class I, II and III, Division 1, Groups A, B, C, D, E, F, and G; Intrinsically safe for Class I, Zone 0, Group IIC T6…T1; Nonincendive for Class I, Division 2, Groups A, B, C and D; Suitable for Class II, Division 2, Groups E, F and G; Suitable for Class III, Division 1; and type of protection 'n' for Ex nC IIC T6…T1 Hazardous Locations, indoor/outdoor Type 4X. Temperature classification T6…T1 Ta = -40°C to 70°C when installed per control drawing 3KXL130100G0122.

11. The marking of the equipment shall include:

Class I Division 1, Groups A, B, C, D, E, F, G; T6 Ta = -40°C to +70°C; Type 4X

Class I, Zone 0 Ex ia IIC T6 … T1, Ta = -40°C to +70°C; Type 4X

Class I, Zone 1 Ex db IIC T6…T1 Gb Ta = -40°C to 70°C; Type 4XClass I Division 2, Groups A, B, C, D; T6…T1 Ta = -40°C to +70°C; Type 4X

Class I, Zone 2, Ex nC IIC T6 … T1, Ta = -40°C to +70°C; Type 4X

Class II, Division 2, Groups E, F, G, Class III, Division 1; T4 Ta = -40°C to +70°C; Type 4X

12. **Description of Equipment:**

The LMS100 Magnetic Level Gauge Switch enclosure is made from 316 Stainless Steel. The enclosure body is less than 100cm3. The enclosure body has one ½"-14 NPT entry and one cover with M42-1.5 6g/6H thread. The cover contains one O-ring made from nitrile that seats into the retention groove. The enclosure body also contains two screws used for the rotational mounting bracket. Earth Grounding is made through internal and external grounding terminals made from 316 Stainless Steel. The enclosure ½ "-14 NPT entry has one M20 316SS Adapter 1/2" X 20MM thread adapter, one 1/2" MNPT X 1/2" FNPT Nickel Brass Elbow thread adapter and one 1/2" MNPT X M20F Nickel Brass Elbow thread adapter.

The LMS100 is a magnetically actuated single pole double-throw switch. When the LMS100 is mounted on a KM26 Magnetic liquid level indicator, LS Series Cage Level switch or an external chamber that contains a magnetic float, it can sense high or low levels within a vessel. The unique magnetic coupling action eliminates the need for seals, diaphragms, springs, or torque tubes. There is no physical contact between the switch and the process. Magnetic coupling eliminates the necessity of process connections and insures total isolation from the process. The LMS100 consists of a form C reed switch actuated by a rotating permanent magnet. The reed switch uses precious metal contacts in an inert gas atmosphere sealed by glass to metal bond. A magnetic float traveling in a chamber, relative to the LMS100 causes the reed switch to change state. After the float has passed, the reed switch will maintain this state until the float reverses direction and passes the switch in the opposite direction. The action of the switch is break before make. The hermetically sealed contacts serve to insure a high degree of hazardous area safety, weather resistance and general reliability of the product. The LMS100 will provide either a normally open or normally closed dry contact which may be used to activate external devices such as alarms or a device that annunciates. Its main application is to sense the passing of a magnetic float in a KM26 level gauge, or similar chamber, attached to a vessel containing a fluid. These trip points can be used for alarms to activate a pump motor starter relay.

SCHEDULE

Canadian Certificate Of Conformity No: FM16CA0090X

Electrical Ratings: 250Vac/dc, 1A, 60W/VA

LMS100.a.b.c.d Magnetic Level Gauge Switch
XP/I/1/ABCD/T6 Ta = -40°C to 70°C; Type 4X
I/1/ Ex db IIC/T6…T1 Gb Ta = -40°C to 70°C; Type 4X
DIP/II,III/ 1/EFG/T6 Ta = -40°C to 70°C; Type 4X
a = Mounting; A1 or A2
b = High Temperature process insulator options; Y0 or P1
c = Approval: N4
d= Electric cable connection: A1, U8, E8, or E9

LMS100.a.b.c.d. Magnetic Level Gauge Switch
IS / I, II, III / 1 / ABCDEFG/T6 Ta = -40°C to 70°C; Type 4X, 3KXL130100G0122
I / 0 / Ex ia IIC / T6…T1 Ta = -40°C to 70°C; Type 4X, 3KXL130100G0122
I / 2 / Ex nC IIC / T6…T1 Ta = -40°C to 70°C; Type 4X, 3KXL130100G0122
NI / I / 2 / ABCD / T6 Ta = -40°C to 70°C; Type 4X, 3KXL130100G0122
DIP / II / 2 / EFG / T6 Ta = -40°C to 70°C; Type 4X, 3KXL130100G0122
DIP / III / 1 / T6 Ta = -40°C to 70°C; Type 4X, 3KXL130100G0122
a = Mounting; A1 or A2
b = High Temperature process insulator options; Y0 or P1
c = Approval: N4
d= Electric cable connection: A1, U8, E8, or E9

For Gases and Vapours:

Max Process Temp	Temperature Class
75°C	T6
90°C	T5
125°C	T4
190°C	T3
290°C	T2
416°C	T1

13. **Specific Conditions of Use:**
For XP, DIP version:
1. Consult the manufacturer if dimensional information on the flameproof joints is necessary.
2. The non-metallic label may store an electrostatic charge and become a source of ignition. Clean with a damp cloth.
3. The relationship between the temperature class, the maximum surface temperature, the ambient temperature and the process temperature is as shown in the table.

For IS, NI DIP version:
1. The non-metallic label may store an electrostatic charge and become a source of ignition. Clean with a damp cloth.
2. The relationship between the temperature class, the maximum surface temperature, the ambient temperature and the process temperature is as shown in the table.

SCHEDULE

Canadian Certificate Of Conformity No: FM16CA0090X

14. **Test and Assessment Procedure and Conditions:**

This Certificate has been issued in accordance with FM Approvals Canadian Certification Scheme.

15. **Schedule Drawings**

A copy of the technical documentation has been kept by FM Approvals.

16. **Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
22nd December 2014	Original Issue.
27th June 2016	Supplement 2: Report Reference: – RR203894 dated 27 June 2016 Description of the Change: Manufacturer address change and conversion of this certificate to a new format.
8th August 2017	Supplement 3: Report Reference: – RR209734 dated 8th August 2017 Description of the Change: Change design and production address.
27th October 2017	Supplement 4: Report Reference: – RR210916 dated 27th October 2017 Description of the Change: Update standards to latest editions. Correct Ex d to Ex db and removed reference to Group III as this rating not on nameplate.