



CERTIFICATE OF COMPLIANCE

Certificate Number: SGSNA/24/CA/00001X

Contract Number: 802601
Certificate Project Number: BAS-CERT240100001

Certified Product: Tank Level Sensor
Trademarks:



Model(s): Model 9415-B0001-00, Model 9415-C0001-xx
Technical Data: Class I, Zone 0 AEx ia IIA T3 Ga;
Ex ia IIA T3 Ga
Class I, Division 1, Group D, T3;
I.S. Class I, Division 1, Group D, T3;
-40 °C ≤ Ta ≤ +85 °C;

For Equipment Specification and Entity Parameters See Schedule

Certificate Holder: Rochester Sensors, LLC
1025 S Belt Line Road Suite 100, 75019, Coppell, Texas, United States of America

This certificate supercedes previous certificates issued with the same certificate number. Certification is valid when products are indicated on the SGS directory of certified products at www.sgs.com or using the QR code below. The product is certified according to ISO/IEC Guide 17067, Conformity assessment - Fundamentals of product certification, System 3, and in accordance with:

- UL 60079-0** Explosive Atmospheres – Part 0: Equipment – General Requirements – 7th Edition – Revision: March 26, 2019.
- UL 60079-11** Explosive Atmospheres – Part 11: Equipment Protection by Intrinsic Safety “i” – 6th Edition – Revision: February 15, 2013.
- CAN/CSA C22.2 No. 60079-0:19** Explosive Atmospheres – Part 0: Equipment – General Requirements (IEC 60079-11: 2017, MOD) – Revision: February 2019.
- CAN/CSA C22.2 No. 60079-11:14** Explosive Atmospheres – Part 11: Equipment Protection by Intrinsic Safety “i” (IEC 60079-11, MOD) – Revision: February 2014.
- UL 913** Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II and III, Division 1, Hazardous (Classified) Locations – 8th Edition, 12 October 2018

Authorized by:

David Brearley
Certifier

Effective date: 21 October 2024



Certification Body

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Equipment Description

Radar Sensor 9415-x0001 is an intrinsically safe telemetry device designed for a remote measuring of liquid level in tanks. The device is mounted on the top of the tank with use of special glued or threaded adapter. As a sensor of fluid level radar chip is used. Information related to measured level is presented on LCD display and can be read via Bluetooth interface.

The device is powered from two non-replaceable lithium primary cells or from external cable connection. All components are located on one printed board inside of plastic enclosure.

Version with primary cells has no external connectors. The second version has permanently connected cable with two circuits – power supply and for 0...5V analogue signal output.

Models

The following models are covered by this certificate:

- 9415-B0001-00 Battery powered version with no external connections as specified by the “00” suffix.
- 9415-C0001-XX Integral cable version with suffix “-xx” specifying cable length in feet to a maximum length of 50 ft

Specification

| | |
|---|--------------------------------|
| Power supply Model: 9415-B0001-00 | Two (2) Primary Cells, 3.6 V |
| Power supply Model: 9415-C0001-XX | External, Um = 5.00 V |
| Ambient Temperature Range | -40 °C ≤ Ta ≤ +85 °C |
| Radio Communication Interface | Bluetooth |
| Radio Frequency Range | 2.4 GHz |
| Maximum Radio Power | ≤ 4 mW |
| Data Output Interface (Model: 9415-C0001-XX Only) | Analogue Signal, 0 V to 5 V |
| Housing Material | Plastic |
| Degree of Protection | Not less than IP20 (IEC 60529) |
| Maximum Allowable Cable Capacitance | 60 pF/ft |
| Maximum Allowable Cable Inductance | 0.2 μH/ft |

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Input Parameters (Model: 9415-C0001-XX Only)

$$\begin{aligned}
 U_i &= 6.60 \text{ V} \\
 I_i &= 450 \text{ mA} \\
 P_i &= 800 \text{ mW} \\
 C_i &= 430 \text{ } \mu\text{F} - C_{\text{cable}}; \text{ See Note} \\
 L_i &= L_{\text{cable}}; \text{ See Note}
 \end{aligned}$$

Note: The terms C_{cable} and L_{cable} apply to the cable capacitance and inductance respectively that must be considered. Only cables with a capacitance of no more than 60 pF/ft and a cable inductance of no more than 0.2 $\mu\text{H}/\text{ft}$ up to a maximum length of 50 ft. Maximum allowable cable capacitance and inductance is 3 nF and 10 μH respectively.

Output Parameters – Data Output Interface (Model: 9415-C0001-XX Only)

For Model 9415-C0001-XX, the core with the white insulation is active i.e. 0 V to 5 V Data Output Interface. If the output connection is used the output parameters associated with the connection are as follows:

$$\begin{aligned}
 U_i &= 5.88 \text{ V} \\
 I_i &= 131 \text{ mA} \\
 P_i &= 193 \text{ mW} \\
 C_i &= 1000 \text{ } \mu\text{F} - C_{\text{cable}} \\
 L_i &= 150 \text{ } \mu\text{H} - L_{\text{cable}}
 \end{aligned}$$

The equipment has also been assessed against the requirements of UL 62368-1: 2019 and CAN/CSA C22.2 No. 62368-1:2019.

Conditions of Acceptability:

1. The ambient temperature range of the equipment is $-40 \text{ }^\circ\text{C} \leq T_a \leq +85 \text{ }^\circ\text{C}$.
2. Potential electrostatic charging hazard. Refer to instructions for guidance on prevention of build up-of electrostatic charge.
3. For Model 9415-C0001-XX, the core with the white insulation is active i.e. 0 V to 5 V Data Output Interface. If the output connection is used the output parameters associated with the connection are $U_o = 5.88 \text{ V}$; $I_o = 131 \text{ mA}$; $P_o = 193 \text{ mW}$; $L_o = 150 \text{ } \mu\text{H} - L_{\text{cable}}$; $C_o = 1000 \text{ } \mu\text{F} - C_{\text{cable}}$.

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