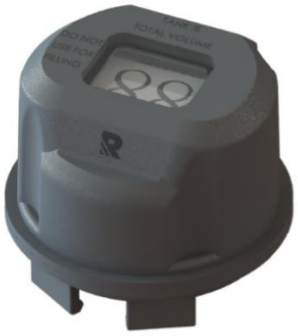
Rochester Sensors
Engineering Innovative Solutions™

6318 Wireless BLE Dial Installation Guide

Remote-read BLE output sensors for use with existing ASME Tanks and DOT Cylinders



The 6318 Wireless BLE Dial provides a wireless reading of a Rochester Mechanical Gauge installed in a tank. The unit replaces the existing snap-on or screw-on dial and optional wired R3D module with a new BLE Dial that broadcasts tank volume over Bluetooth. An integrated LCD display shows the tank volume as a percentage.

The unit is battery operated and fully sealed and contains no serviceable parts inside.

The dial is suitable for most field applications including tanks that are pressure washed.

General Information and Features

- Temp Range Static: -40ºC to +65ºC / -40ºF to +149ºF
- Ingress Protection: IP69K Rated
- System Accuracy: +/- 2%
- Always-on LCD
- Bluetooth data broadcast every 2.4 seconds
- Operational Life Span: Up to 10 years
- Operational Range: up to 8 meters
- See SD-587 for entity parameters

Dial Installation Instructions

These instructions are made to assist tradesmen and others generally familiar with liquid storage tank equipment. Most consumers are not qualified to perform the installation described herein. If you have any questions concerning installation or operation of this product, contact Rochester Sensors LLC or one of our authorized distributors for assistance.

1. Remove the existing dial and any connected wired R3D module. Dispose of according to location standards for metal and electronic disposal.
2. Remove the BLE Dial from the shipping container.
3. Before installing the new BLE dial, clean the head of any foreign debris or liquids.
4. For snap-on dials, position the BLE Dial's alignment key over the slot on the gauge head. Gently press into place until all four latching tabs snap onto the existing gauge head.
5. For screw-on dials:
    a. Jr dials: Align the round and rectangular ends of the new BLE Dial housing with the corresponding impressions on the gauge head. Install the screws, tighten to 8 in-lb with hand tools only.
    b. Sr dials: Install the adapter ring on the outside of the new BLE Dial housing. Align the BLE Dial with corresponding round and rectangular impressions of the adapter ring. Align the round and rectangular ends of the adapter ring with the corresponding impressions on the gauge head. Install the screws, tighten to 8 in-lb with hand tools only.
6. Verify the LCD is displaying the appropriate level. This could take approximately 1 minute.

7. The installer may optionally verify the BLE dial is broadcasting wirelessly by using the Rochester BLE App.
8. Equipment is intended for fixed and grounded installation only.

LCD Status Indicators

The 6318 Wireless BLE Dial is equipped with a 2-digit 7-segment LCD display. The LCD will show status codes to indicate different conditions. Some status codes are considered errors while some are considered warnings and will affect the level value system wide. Refer to each code for an expected behavior. Refer to Appendix A for all system errors and warnings.

LCD Output	Description
	bL: Battery low. Battery is estimated to be within 1-2 years of expected end of life. The measured level will alternate on the LCD with this code.
	bC: Battery critical. Battery is estimated to be < 1 year of expected end of life. The measured level will alternate on the LCD with this code.
	Er: Device error. Contact Rochester Sensors.
	Lo: Low or Low-Low Warning. Tank level is below expected operating range.
	Hi: High or High-High Warning. Tank level is above expected operating range.
	Float arm position is out of measureable range and the sensor cannot determine a meaningful number. Bluetooth level indicates 0xFFFF.

Warnings

Tank may contain high pressure and flammable gas.

These units are not meant to be repaired or serviced. Doing so will void the intrinsically safe rating of the device.

The product is a sealed unit and is never meant to be opened or modified in any way. Doing so will nullify all certifications and safety listings.

Safety Specifications

- **WARNING -** POTENTIAL ELECTROSTATIC CHARGING HAZARD
  Caution must be used when handling or cleaning products so there is no static charge buildup. Do not wipe off the 6318 Wireless BLE Dial with dry cloth. Use only water damp cloth and allow to air dry for cleaning device. Do not use or install in high charge areas. See IEC60079-32-1 for further information.

- **AVERTISSEMENT -** RISQUE DE CHARGE ÉLECTROSTATIQUE POTENTIELIl faut être prudent lors de la manipulation ou du nettoyage des produits afin qu'il n'y ait pas d'accumulation de charge statique. N'essuyez pas le capteur avec un chiffon sec. Utilisez uniquement un chiffon humide et laissez sécher à l'air pour nettoyer l'appareil. Ne pas utiliser ou installer dans des zones de charge élevée. Voir IEC 60079-32-1 pour plus d'informations.

Standards Information

Ordinary Locations Safety Standards	
Conforms to UL STD 61010-1 Ed. 3	Electrical Equipment for Measurement, Control, and Laboratory Use; Part 1: General Requirements *Note: For USA ordinary locations listing certification
Certified to CSA STD C22.2 #61010-1-12 Ed.3	Electrical Equipment for Measurement, Control, and Laboratory Use; Part 1: General Requirements *Note: For Canada ordinary locations listing certification
Hazardous Locations Safety Standards	
IEC 60079-0: 2017	Explosive atmospheres - Part 0 Equipment - General requirements *Note: For IECEx Certification
IEC 60079-11: 2011 + C1: 2012	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i" *Note: For IECEx Certification
IEC 60079-25: 2010 Ed 2.	Explosive atmospheres – Part 25: Intrinsically safe electrical systems *Note: For IECEx Certification
EN 60079-0: 2018	Explosive atmospheres - Part 0: Equipment - General requirements *Note: For ATEX Certification
EN 60079-11:2012	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i" *Note: For ATEX Certification
IEC 60079-25: 2010 Ed 2.	Explosive atmospheres – Part 25: Intrinsically safe electrical systems *Note: For ATEX Certification
Conforms to UL 60079-0, 7th Ed.	Explosive atmospheres - Part 0: Equipment - General requirements *Note: For USA listing certification
Conforms to UL 60079-11, 6th Ed.	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i" *Note: For USA listing certification
Certified to CSA C22.2 No. 60079-0: Ed. 4	Explosive atmospheres - Part 0: Equipment - General requirements *Note: For Canada listing certification
Certified to CSA C22.2 No. 60079-11: Ed. 2	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i" *Note: For Canada listing certification

Certification Information

Rochester's 6318 Wireless BLE Dial does not require any external connections or sources of power. The dial is certified as complete intrinsic safety system (Reference Intrinsic Safety Control Drawings SD-587). This dial is intended for use in Class 1, Division 1, Groups C and D, T4 or Zone 0, Group IIB, T4 Hazardous Locations under the certification schemes and ratings noted below:

IECEx (Global Certification) :	ATEX (EU Certification) :	North America (USA & Canada) :	United Kingdom (UK) :
Ex ia IIB T4 Ga	CE2575 Ex II 1G Ex ia IIB T4 Ga	Class 1 Zone 0 AEx ia IIB T4 Ga Class 1, Division 1, Groups C & D, T4 Ex ia IIB T4 Ga	UKCA0359 Ex II 1G Ex ia IIB T4 Ga
-40°C ≤ T_{AMB} ≤ +80°C IECEx Cert # **IECEx ETL 23.0060X**	-40°C ≤ T_{AMB} ≤ +80°C ATEX Cert # **ETL23ATEX0359X**	-40°C ≤ T_{AMB} ≤ +80°C CSA Cert # **ETL23CA105206098X**	-40°C ≤ T_{AMB} ≤ +80°C UKEX Cert# **ITS23UKEX0794X**

Intrinsic Safety System Level Verification

Model	BLE Dial Entity Parameters
Equipment Group	Groups C&D (Group IIB)
Level of protection	Ex ia
Temperature Classification	T4
Ambient Temperatures	−40°C to +80°C
Parameter Comparison	
Voltage	Ui: N/A
Current	Ii: N/A
Power	Pi: N/A
Capacitance	Ci: N/A
Inductance	Li: N/A
L/R Ratio	N/A
Earthing	N/A

CE Compliance Section

A. Electromagnetic Compatibility
   1. EN 61000-6-2:2005 - Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments IEC 61000-6-2:2005
   2. EN 61000-6-4:2007 - Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments IEC 61000-6-4:2006

B. Restriction of Hazardous Substances in Electrical and Electron Equipment
   1. EN 50581:2012 - Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substance.

Special Conditions of Use

1. Equipment is intended for fixed and grounded installation only.
2. The device contains an internal battery that cannot be changed by the user.

FCC Interference Statement (Part 15.19)(a)(3)

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Interference Statement — PART 15.105 (B)

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

ISED Canada Compliance Statement

This device complies with ISED Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'ISDE Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Disposal

This product contains a battery. At the end of product life, waste batteries should either be recycled or taken to a hazardous waste collection point.