

Description

The Radar Level Sensor (RLS) from Anova is a compact, versatile level sensor suitable for measuring the level of liquids in unpressurized tanks. The RLS uses a time-of-flight radar sensor to accurately measure the distance between the sensor face and the liquid surface. After the RLS is commissioned, it will internally convert the measured distance to the liquid surface to the tank percentage full, based on 0% full and 100% full parameters. The RLS interconnect cable must be connected to Anova's Universal Tank Monitor (UTM) to operate. The RLS is not certified for use in hazardous locations. The RLS contains no batteries or user-serviceable parts.

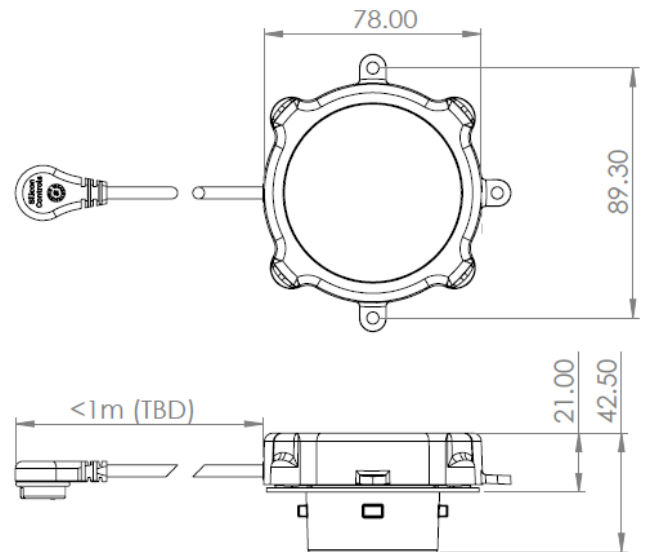
Specifications

Operating temperature range: -40 C to 60 C (-40 to 140 F)
Distance detection range: 100 mm to 3 m (4 in to 10 ft)
Detection accuracy: +/- 5 mm (+/- 0.2 in)
Power supply voltage: 3.0 Vdc to 5.0 Vdc
Current consumption: < 0.1 A
Water Resistance: IEC 60527 IP66/67
Weight: 125 g

Installation

The RLS must be installed within +/-5 deg of horizontal for proper operation. Select one of the following 3 mounting options:

1. 2" Bung Opening – Install the RLS tank adapter fitting and seal ring into the bung opening, tightening to the tank manufacturer's specification. Assemble the flat gasket to the RLS between the housing body and the 4 bayonet lugs. Make sure there is no water or other fluid inside the adapter cavity or on the RLS surface. Assemble the RLS into the tank adapter fitting by inserting the 4 lugs into the slots, pressing down firmly, and turning the RLS clockwise about 1/8 turn until the bayonet lugs are fully seated in the mating adapter slots. The RLS is fully seated when the tamper-evidence lugs on the RLS are aligned with the lugs on the adapter. Connect the RLS interconnect cable to the socket marked 'A' on the UTM.
2. Adhesive Mounting – On plastic tanks and intermediate bulk containers (IBCs) the RLS may be mounted directly to the tank top surface using double sided adhesive. The RLS can detect the liquid surface through the tank wall. Select a mounting location that is flat and horizontal. Clean and dry the tank surface in the mounting area. Make sure the mounting surface on the RLS is clean and dry. Remove one side of backing paper from the adhesive disk and apply to the RLS, applying firm pressure for 30 s. Remove the remaining backing paper from the adhesive disk and mount the RLS to the tank surface, applying firm pressure for 30 s. Connect the RLS interconnect cable to the socket marked 'A' on the UTM.
3. Mounting Bracket – For plastic tanks and intermediate bulk containers (IBCs), the RLS can be installed as a complete assembly with the UTM on a mounting bracket. Select a mounting location that is flat and horizontal. Clean and dry the tank surface in the mounting area. Remove the backing paper from the adhesive panels on the mounting bracket and mount the assembly to the tank surface, applying firm pressure for 30 s. The RLS is pre-



connected to the UTM on the mounting bracket assembly.

Set Up and Commissioning

The size and type of tank and the tank fill level at time of installation must be configured on Anova's servers. The installer must provide the tank information, location, and UTM ID number to Anova's Customer Success team to complete the commissioning process. Hold a magnet near the 2 LED windows on the UTM until the green LED begins flashing (5-10 s). The UTM will power the RLS, make a level measurement, connect to Anova's server, communicate the measurement result, and then go to sleep until the next scheduled measurement.

Normal Operation

Once every 30 minutes, the UTM powers the RLS over the cable connection to the socket marked 'A'. The RLS is triggered to measure the distance from the RLS to the liquid level. The RLS converts the measured distance into tank level in per mil (‰) based on the tank 0% full and 100% full parameters set during commissioning. The tank level data and error status are read out by the UTM as serial data over the interconnect cable. After the measurement is recorded the RLS is unpowered. The UTM communicates the results to Anova's server once per day. The results of measurements and additional tank information are available to authorized users on Anova's Unify server platform. A user can initiate a measurement and call to the server by manually activating the UTM. Upon user request, Anova can alternatively configure the RLS output to report distance in mm.

Federal Communications Commission (FCC) Part 15 Information to the User

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.

WARNING: Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Radio Frequency Radiation Exposure Information

This equipment complies with FCC and IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.