Radar Level Recorder RLR-0003

Overview

The Radar Level Recorder (aka RLR) allows users to precisely measure stage (water level) without direct contact with the water's surface. With its integrated antenna, this unit is ideal for monitoring rivers, streams, reservoirs, tidal areas & industrial areas. Using a pulse-echo measurement technique, the radar has an accuracy of 0.01 feet & a range of 60 ft.

Sutron's Radar Level Recorder model RLR-0003-1 is FCC (Federal Communications Commission) Certified and NTIA (National Telecommunications & Information Administration) approved for appropriate applications.

The FCC-approved RLR model is available for any commercial or government agency in need of the device. This version has an FCC ID and is available for installation anywhere as an FCC part 15 device.

The NTIA versions are available only to US government agencies and for use outside the US. US government agencies who need to use the NTIA version must have it approved for operation by their own frequency coordinators. Both radars offer similar performance; however, the NTIA version does have increased signal to noise for quicker measurements and better performance with rough water.

The RLR-0003 is an integrated, hardened unit without display. The enclosure is rugged and can be installed outdoors without additional protection. All the electronics for the radar are housed in the antenna enclosure. A 25 foot long cable provides both RS232 and SDI-12 interfaces to the radar.

Features

- Special pulse-echo technique with 0.001 ft resolution & 0.01 ft accuracy
- Not affected by air temperature & humidity
- Internal memory of 32 MB (>300,000 readings)
- SDI-12 & RS232 interfaces
- Powerful data processing modes including averaging & NOAA DQAP
- Diagnostic tools include recording of signal strength & standard deviation.
- Integrated antenna
- Operates as stand-alone station or integrates with other DCPs
- Connects to a SatLink2 Transmitter/Logger & IridiumLink for satellite communications & GPRSLink & CDMALink for cell modem communications.

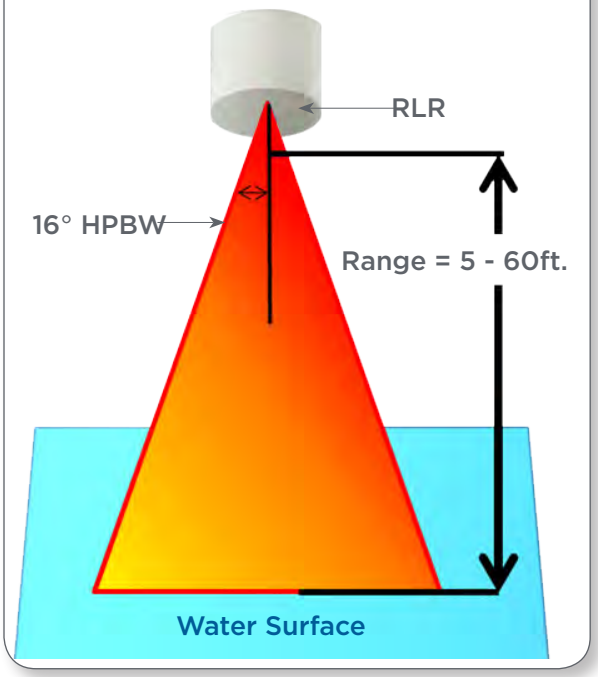
Applications

- Tides, Oceans, Coastal
- Surface Water
- Lock Monitoring
- Flood Monitoring, Warning
- Canals
- Bridge Mounted Monitoring
- Rapid Deployment Gauge Replacement
- Bubbler System Alternative
- Shaft Encoder with Stilling Well Alternative

SPECIFICATIONS *Specifications subject to change without notice*	
Measurements	Stage/Level measurements, Battery.
Automeasure Interval	1 second to 24 hours
Measurement Technique	Pulse-echo technique operating about 6GHz with beamwidth of +/- 16 degrees
Log/Averaging Intervals	User selectable
Radar Type (NTIA)	6.2 GHz pulse echo
Radar Type (FCC)	6.6 GHz pulse echo FCC ID HDBRLR-0003-1 FCC Standard: Part 15.250
Beamwidth	±16° HPBW
Stage/Level Accuracy	0.05% reading, 0.01 ft (3mm) minimum 0.05% above 20 ft
Stage/Level Range	60 feet (18.3 meters)
Calculations	Discharge can be calculated using Parshall Flume & Broad Crested Weir equations or general purpose equation with user entered constants. Calculation of daily volume and daily average stage.
Enclosure	NEMA 4X, IP66, IP67 Resists dripping water and spray RLR-0001-1 is not suitable for outdoor installation without appropriate enclosure.
Communication Ports	SDI-12, RS232
Operating Temperature	-40˚C to +60˚C
Sampling Rate	10 Hz
Memory	
Built-In Flash	>300,000 readings
SD/MMC Card	no
USB	no
Ethernet	no
Clock Accuracy	2 minutes per month (at 0C – 40°C)
Power Requirements	5.5 to 16 VDC
Current Drain	<1mA @12 VDC standby
	<0.90 mA @ 12 VDC standby, RS232 disconnected <12 mA @ 12 VDC standby, RS232 connected <36-40 mA @ 12 VDC active measurement
Communication Protocols	MODBUS, SDI-12
Programming	via RS232, SDI-12
Device Dimensions	
Height	12.5 in. (31.8 cm)
Diameter	7 in. (17.8 cm)
Weight	7 lbs. (3.2 Kg)

ORDERING	
Part #	**Description**
RLR-0003-1 REVF	RLR, FCC, no display, 25 foot removable cable
RLR-0003-1 REVN	RLR, NTIA, no display, 25 foot removable cable
SHIPPING	
Shipping Height	14 in. (35.6 cm)
Shipping Length	14 in. (35.6 cm)
Shipping Width	9 in. (22.9 cm)
Shipping Weight	12 lbs. (5.5 Kg)

RLR BEAMWIDTH



- 0.05% accuracy (±0.01 ft. at less than 20ft.)
- 6.2 GHz pulse echo (NTIA)
- 6.6 GHz pulse echo (FCC -15.250)
- 16° Half-Power Beam Width (HPBW)

Distance to Water	Beamwidth (Radius in Feet)
10	3
20	6
30	9
40	12
50	15
60	18