

Lawrence Livermore National Laboratory

Radar Rangefinder Demo Unit Model RF58-01 Rangefinder Radar

Operation/Installation Instructions

Description

The RF58-01 rangefinder radar is a low-power, high-resolution, pulse-echo radar operating at 5.8GHz. Its intended purpose is to very accurately measure relative changes in liquid level height. The unit is housed in plastic NEMA case, which is about 8-inches by 11-inches by 6-inches deep and uses 12VDC (batteries) for self-contained operation.

Installation

Proper operation of the RF58-01 rangefinder is dependent upon installation in a suitable environment and use of sound installation practices. This radar-based rangefinder must have an unobstructed view of the liquid surface to which ranging is required.

Mounting and Location: Keep the front surface of the RF58-01 radar pointing at and parallel to the liquid surface. Mount the NEMA case 3ft away from the closest approach of the liquid surface. Use the following guidelines for selecting the best location to install the RF58-01:

DO NOT mount the radar within 2 feet of any metal objects.
DO NOT place any objects in front of the radar that may prevent a clear line of sight.

Wiring Connections: The RF58-01 is battery operated with an ON-OFF switch next to the

external connectors on the backside of the NEMA case. The VIDEO OUT connector is for trouble shooting the unit when connected to and appropriate oscilloscope. The RANGE PWM OUT is attached to an appropriate remote data-logger (user defined) for recording range.

Specifications

Input Voltage	12VDC
Typical Current	200mA
Maximum Range	60 feet
Minimum Range	2 feet
Operating Temperature	-10F to +165F
RF Frequency	5.8 GHz
Range accuracy	±0.1% of Full Scale
Range Resolution	Less than 0.07 inches
Output	Pulse Width
Modulation (PWM)	PWM scale factor in ms/ft
Video Out	0 to +4 volts
Packaging	Standard NEMA case

FCC Compliance

FCC ID: OXBRF58-01

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.