

WaveRadar REX² – Frequently Asked Questions

Specification – Description - Capabilities:

What are the power requirements for the WaveRadar REX²?

The WaveRadar REX² is DC powered with a voltage input range of 9-36V. Average power consumption is 0.4W, with a peak draw of 1W at start up.

What's the data comms specification for the WaveRadar REX²?

The WaveRadar REX² has one digital output only. This output is MODBUS over RS485 at 9600 baud. Converters from RS485 to Ethernet or USB are available from RS Aqua. The serial message format from the WaveRadar REX² is identical to the legacy WaveRadar REX sensor. The only subtle differences are the status message has changed from 8070 to 8000 and the addition of two “dribble” bites. These are two empty bytes at the end of the message to ensure the last useful byte is transmitted correctly.

Can I change the sensor's configuration?

Yes. Unlike the legacy sensor, the WaveRadar REX² will be supplied with a piece of configuration software – WaveConfigurator. The WaveRadar REX² will ship from RS Aqua in a standard configuration, users can then alter data output rates, range and hold off distances as required.

I want to integrate the WaveRadar REX² to a metocean monitoring system. Can I do that?

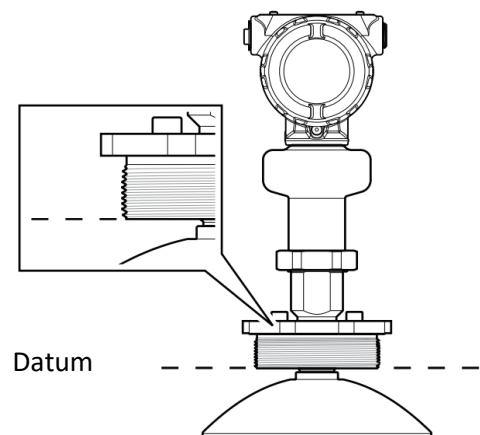
Yes. The digital output is easily integrated into third party systems. Please note that the data output by the WaveRadar REX² is a distance measurement and will therefore need to be processed to produce statistical wave parameters. RS Aqua's WaveView Connect software is available to provide this functionality as a Windows service.

Where is the datum point for the distance measurement?

The sensor's datum point is the lower edge of the threaded ring to which the mounting flange as per the figure to the right. The WaveRadar REX² manual has instructions to move the datum to match a legacy WaveRadar REX sensor for an easy replacement.

Does the WaveRadar REX² sample differently to the legacy sensor?

There are two major differences in sampling between the legacy REX and the REX². The first is the operating frequency of the radar. The REX² operates at 26GHz whereas the legacy sensor operates at 10GHz. There are less export restrictions associated with the 26GHz frequency. The second difference is the burst sampling technique used by the WaveRadar REX². This sampling method reduces the lag time between a measurement being made and a data value being output, providing a truer immediate measurement of the observed wave profile.



What hazardous zone certifications are available?

- ATEX (FM15ATEX0055X) - Europe
- FM-US (FM16US0010X) – USA
- FM-C (FM16CA0011X) – Canada
- IECEX (FMG15.0033X) - International

Is there any local visual indication available to monitor the WaveRadar REX 2 operation?

Yes. The WaveRadar REX² has a built LCD screen. This screen is updating every 2 seconds with the device status and the most recent distance measurement.

How portable is WaveRadar Rex?

The WaveRadar REX² sensor weighs 9kg and is only 25x25x37cm making it a one-person lift and therefore very portable. When packed in its transit case, the WaveRadar REX² weighs 15kg.

Installation – Commissioning:**How do we install the WaveRadar REX²?**

As per previous versions of the WaveRadar REX, the REX² is installed by extending the sensor over the side of a platform, structure or vessel. The sensor requires an unimpeded view of the sea surface to ensure high quality measurements. For vessel installations and floating platforms, we would recommend using applying motion compensation to the measurement data – this feature is available in WaveView Connect. Mounting frames for this purpose are available from RS Aqua. Further installation details can be found in the manual.

What cable glands are required?

The WaveRadar REX² is supplied without cable glands. The thread specification for these is either ½ -14 NPT or M20 x 1.5 (selectable at order). A total of two cable glands are required for each WaveRadar REX² sensor.

What cables should be used for a WaveRadar REX² installation?

For the RS-485 serial communications cable, we recommend a cable consisting of two twisted pairs with a characteristic impedance of 120 Ω (typically 24 AWG). Two twisted pairs are required for three wire RS-485 coms. A cable consisting of a single twisted pair can be used for two wire RS-485 coms if necessary. Details of this can be found in the manual.

For the power supply, use 24-14 AWG wire. Twisted pairs and shielded wiring are recommended for environments with high EMI (electromagnetic interference).

Is the WaveRadar REX² attitude sensitive?

Yes, but common sense will obviate any problems. There is no tilt sensor in the radar unit. The Rex should be assembled and checked to a vertical alignment at installation. The vertical accuracy of the mounting or frame should be to within +/3 degrees.