A stable and proven system for reliable measurement of waves, sea level and air gap in offshore, maritime and coastal environments.

**WaveRadar REX**
Wave, Sea Level, and Air Gap Sensor

WaveRadar REX is the leading Wave Radar sensor used globally. Reliable and repeatable sea surface measurement has been delivered from over 700 installations to date.

Microwave radar is the perfect medium for wave measurement in harsh environments with no moving parts and no surface contact required. High frequency sampling combined with internal quality control and automatic self-calibration provides exceptionally stable and accurate measurements of sea surface profile. The excellent measurement accuracy and repeatability make WaveRadar REX the ideal tool for Sea Level, Air-Gap and Wave data acquisition.

Complete Wave Radar REX systems can be supplied to suit almost any requirement. This includes optional power and telemetry systems (IP, satellite or cellular telemetry), flexible software solutions (local PC, server or cloud based), vessel motion-compensation software (utilising MRU or gyrocompass data), mounting frames and more.

WaveRadar REX are built to order by RS Aqua (UK) in exclusive partnership with Emerson (Sweden). Installation and integration support, as well as repair and maintenance services are available from RS Aqua in the UK, and globally via our network of partner companies.

[www.rsaqua.co.uk](http://www.rsaqua.co.uk)
Applications

- Safety status monitoring
- Structural monitoring
- Weather forecasting
- Water level observations
- Air gap studies
- Motion-compensated wave & draft measurement from ships

The perfect medium for the extreme demands of the harsh offshore environment.

» Stable in all weather conditions
» Used for permanent and temporary installations
» BASEEFA03ATEX, UL and IECEx Ex certified
» Accurate to mm precision
» No recalibration required
» Optional remote display (RDU40)
» Non-contact sensor
» Small size and weight
» Auto starting
» Analogue & digital outputs
» AC and DC power options
» The market-leading wave radar
» Optional WaveView Connect software
» ISO 9000, DNV and CE
» Optional mounting frames, remote display, power and telemetry systems

WaveView Connect Software

Real-time processing of raw wave data from one or more REX sensors, producing a full suite of deterministic, spectral and tidal sea state parameters.

WaveView Connect combines a modern user interface, highly configurable features, motion-compensation options and setup wizard, making it the perfect choice for both end users and system integrators.

Mechanical Features

WaveRadar REX is a sensor with maximum tolerance to encrustation by salt, chemicals and other waste deposits. Experience has proven it to be reliable and troublefree in operation, with minimal maintenance and very low total cost of ownership.

The transmitter head consists of a flame proof anodised cast aluminium alloy enclosure with an integral junction box. A weather protection cover is fitted to provide protection from direct solar heating in extreme conditions.

WaveRadar REX is manufactured by Emerson, Sweden, modified and distributed worldwide by RS Aqua Ltd.
Mounting Frames for WaveRadar REX

Guardrail or Deck/Platform mounted
Both systems are articulated to allow quick and easy recovery of WaveRadar REX for the purposes of servicing and maintenance of the unit in situ. Frames rotate at 90 degrees towards the operator for ease of access.

Guardrail Mounted
STAINLESS STEEL FRAME

The de-acidified stainless steel (A4-316) guardrail frame can be fixed to 48mm diameter standard safety rails, 350mm between centre of rails (see image 1). The clamp fixings can be adjusted to alternative guardrail dimensions on request. A rubber isolation strip is supplied for installation between the frame clamps and the guardrail.

This mounting frame design is situated entirely to the external side of the guardrail, and does not encroach on the limited space to the nearside of the guardrail.

Deck or Platform Mounted
GALVANISED STEEL FRAME

The hot-dipped galvanised steel frame is designed to be deck-mounted at a break in the guard rail. When installed in this way, the frame blocks the gap in the guardrail when deployed.

When the frame is rotated to the servicing position, the WaveRadar REX is fully accessible at all angles, but the gap in the guard rail is exposed.

Image 2 shows a deck-mounted frame fixed to an elevated steel assembly, external to the guardrail.
Technical Specifications

PERFORMANCE
- Measuring range: 3-65 metres to surface
- Accuracy: Range <50m = +/-6mm, Range >50m = +/-12mm
- Maximum deviation: Range <50m = +/-1mm
- Beam Width: 10 degrees included angle

RADAR TRANSMISSION
- Transmitter frequency: 9.7 to 10.3GHz (linear sweep)
- Effective radiated power: <0.5mW
- Antenna type: Parabolic reflector

RADAR MEASUREMENT
- Measuring frequency: 10Hz

DATA OUTPUT
- Data bus: Digital two wire FSK field bus binary data output
- Connector cabling: Eex "e" (non intrinsically safe)
- Output data rate: 2 to 10Hz (4Hz default), Factory selectable
- Digital from FBM: Type RS232 at 4800 baud, 8 data bits, no parity, one stop bit
- Analogue output: 1 x current loop
- Range: 4-20mA
- Resolution: 16 bits
- Refreshing Rate: 4Hz (default)
- Connector Cabling: Eex "e" (non intrinsically safe)

POWER SUPPLY
Mains Version (M)
- Voltage: 100 to 240V AC, max 50-60Hz
- Radar power rating: 80 watts maximum
- Current consumption: 2A max: operating <1A

DC Version (D)
- Voltage: 20 to 28V DC
- Radar power rating: 30 watts maximum
- Current consumption: 1.25A max: operating <650mA

MECHANICAL
- Overall dimensions: 635(h) x 440(w) x 440(d)mm
- Weight: 26kg
- Measurement datum: Upper surface of TRL/2 adapter
- Materials (external): Stainless steel 316 grade, Anodised aluminium alloy ss4253, PTFE (teflon)

ENVIRONMENTAL
- Operating and storage temp.: 40°C to +70°C
- Environmental sealing: IP67

CE CONFORMITY
- Approval number: 0575
- Certification no.: BASEEFA03ATEX0071X
- Code: EX II 1/2G
- Underwriters Laboratory (optional): Th2015RTG3930
- UL listed: 939U
- FCC ID: KBCREXX
- Hazardous location: Class 1, Division 1, Group C or D, Class 1, Zone 1, Group IIB, Ex d[ia] IIB T6 (T_{ma} = 40°C to +70°C)

BASEEFA03ATEX (standard)
- Code: EX II 1/2G
- Underwriters Laboratory (optional): Th2015RTG3930
- UL listed: 939U
- FCC ID: KBCREXX
- Hazardous location: Class 1, Division 1, Group C or D, Class 1, Zone 1, Group IIB, Ex d[ia] IIB T6 (T_{ma} = 40°C to +70°C)

Base of Mounting Frame
- Code: EX ia IIC
- Underwriters Laboratory (optional): Th2015RTG3930
- Certification no.: IECEx BAS 04.0032X
- Code: EX ia IIC
- Hazardous location: Class 1, Division 1, Group C or D, Class 1, Zone 1, Group IIB, Ex d[ia] IIB T6 (40°C < T_a < +60°C)

Hazardous Zone Certification
- Approval number: 0071X
- Code: EX ia IIC
- Underwriters Laboratory (optional): Th2015RTG3930
- Certification no.: IECEx BAS 04.0032X
- Code: EX ia IIC

International Electrochemical Commission (IECEX) (optional)

Shipping
- WaveRadar REX
  Wooden Transit Case (ISPM -15)
  Dimensions: 800 x 600 x 600mm
  Gross Weight: 45kg standard supply

Mounting Frame
- Wooden Transit Case (ISPM -15)
  Dimensions: 1500 x 750 x 600mm
  Gross Weight: 66kg GR-1
  Gross Weight: 88kg DS-1