

RHRS-2024

Radio Holland River Radar

For decades, the river radar of Radio Holland, with its characteristic blue scanner bar, has been well-known in inland shipping. The RHRS2024 has been developed in collaboration with Furuno and meets the latest requirements for river radars.

Further information about the many characteristic features of the RHRS2024 River Radar is provided in this brochure.

WAVE REDUCTION

The RHRS2024 radar has a function for filtering echoes from a high swell on open water, for instance. The radar can be set to three levels to filter these echoes, depending on the weather conditions. With the use of this function, the clarity of the waves is reduced to prevent any unnecessary waves from being shown. This function requires a suitable satellite compass that should be connected to the radar.

See the 'Options' chapter for further information.



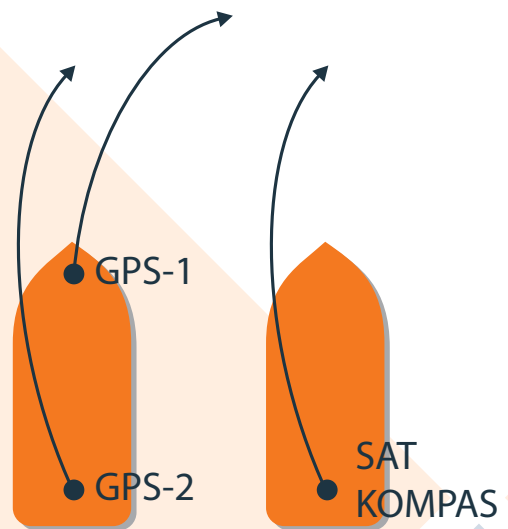
RADAR OVERLAY

The RHRS2024 supports the radar overlay function of your Periskal, Tresco or RadarPilot 720 chart system. With the help of this function you can combine the river chart with the radar image and AIS. All of this information is presented together on a monitor so that you can analyze all relevant information at a glance.

Course prediction

If two GPS sensors or a satellite compass are connected to the radar, you can use the course prediction function. With the help of this function you can predict the course and position within a certain time frame. The prediction can be set to a period from 30 seconds up to six minutes.

The use of course prediction allows you to gain insight into how the vessel exits a bend with the current speed and course change, so that you can modify the rudder position and/or speed of the vessel in a timely manner.



Docking mode

To make docking your vessel easier, you can use the docking mode. When this function is activated, relevant data is displayed on the radar screen to support you.

- Depth under the bow and stern
- Speed and movement at the bow, mid-section and stern of the vessel
- Wind speed and wind direction

Blackbox

The RHRS2024 radar has an image recording function by which your radar image is saved on an SD chart. The radar image can be saved manually or automatically at certain increments. With the latter option, the radar images are overwritten after 24 hours. This function comes in handy in the case of a collision, for instance.

Look and feel

The display and control panel of the RHRS2024 radar have the same look and feel as the instruments and control panel of Radio Zeeland. If you combine the RHRS2024 with the THOR line of Radio Zeeland, for instance, you have a complete line on board with the same look.





Options

Depending on the space on board and the preferred radar performance, you can choose between a 7-foot and an 8-foot scanner. There is also a choice between a 26 RPM and a 48 RPM antenna motor, of which the 48 RPM antenna motor is suitable for high-speed vessels.

If you want to use the wave reduction and course prediction functions, you will need a satellite compass. It comes in multiple types, including those with and those without type approval for sailing in Zone-2 navigation areas.



Furuno SC-70 Zone 2 approved Satellite Compass



Furuno SCX-21 Satellite Compass

The RHRS2024 cannot only be controlled with the supplied control panel, but it is the only river radar that can also be controlled with the optional RCU-030 trackball mouse. To be within easy reach, it can be mounted at any spot you want.



Furuno RCU-030 Trackball

TECHNICAL SPECIFICATIONS

ANTENNA UNIT

| | |
|-----------------------|---|
| Radiator type | Slotted waveguide array |
| Rotation speed | 26RPM (Antenne unit RSB-120A) of 48RPM (Antenne unit RSB-121A) nominal |
| Radiator length | XN24AR 255cm (8 foot), XNR21AR 216cm (7 foot) |
| Horizontal beam width | -3dB: 0.95° (XN24AR), 1.12° (XN21AR) -20dB: 2.5° (XN24AR), 2.84° (XN21AR) |
| Vertical beam width | -3dB: 25° |
| Sidelobe attenuation | Within ±10° of main-lobe: less than -26 dB Outside ±10° of main-lobe: less than -32 dB |
| Antenna gain | 31.0 dB (XN24AR), 30.0 dB (XN21AR) |
| Wind load | 100 km/h relative |

RF TRANSCEIVER

| | |
|--------------------|---|
| Frequency | 9410 MHz ±30 MHz (X band) |
| Modulation | PON |
| Peak output power | 4 kW nominal |
| Modulator | FET switching |
| Intermediate | Frequency 60 MHz, Logarithmic amplifier |
| Tuning | Manual/Automatic |
| Receiver front end | MMIC |
| Duplexer | Ferrite circulator with diode limiter |

PROCESSOR UNIT

| | |
|----------------------|---|
| Orientation mode | River mode: Head-up or Stern-up, relative motion Sea mode: Head-up, Head-up TB or Stern-up (relative motion), North-up or Course-up (relative/true motion) |
| Minimum range | 15 m |
| Range discrimination | 15 m |
| Range accuracy | 1.5% of range or 5 m, whichever is the greater |
| Bearing accuracy | ±0.5° |
| Echo trail | River mode: 2-scan: Off/1.25/2.5/5 sec. (relative/true*) Sea mode: Off/5/15/30 sec., 1/3/6 min. (relative/true*) |
| Off-center | 0/20/40/60 % |
| Radar map* | Available (mark: 5,000 points) |
| Target tracking** | (TT) 100 targets |
| AIS | 300 targets |

*: compass and L/L data required. **: compass and speed data required.

MONITOR UNIT

| | |
|----------------|-----------------------------------|
| Screen type | 19-inch color LCD (portrait type) |
| Effective area | 376.3 x 301.1 mm |
| Resolution | 1280 x 1024 (SXGA) |
| View distance | 1.05 m |

INTERFACE

| | |
|---------------------|---|
| Data format | IEC61162-1/2 Ver.1.5/2.0/3.0/4.0: 2 ports (heading, AIS) IEC61162-1 Ver.1.5/2.0/3.0/4.0: 4 ports (speed, L/L, others) |
| Data sentences | Input ALR, DBS, DBT, DPT, DTM, GBS, GGA, GLL, GNS, HDT, HTD, MWV, RMC, ROT, RSA, THS, VDM, VDO, VHW, VTG, VWR, VWT, ZDA Output OSD, RSD, TTM |
| Radar signal output | 1 port |
| Ethernet | 100Base-TX, UTP (CAT5e) |
| USB port | 2 ports for control |
| Picture data output | DVI-D, RGB |
| SD card slot | 2 slots, SD/SDHC |

POWER SUPPLY

| | |
|--------------------------------|--|
| Processor unit | 24 VDC: 3.9 A (26 RPM), 4.8 A (48 RPM) |
| Monitor unit | 9-36 VDC: 2.5 A |
| Rectifier (RU-1746B-2, option) | 100-115/220-230 VAC, 1 phase, 50/60Hz |

ENVIRONMENTAL CONDITIONS

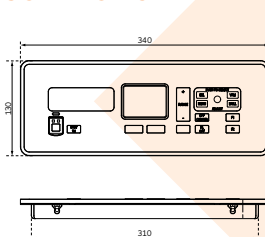
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|----------------------|--|
| Ambient temperature | Antenna unit -25°C to +55°C (storage: -25°C to +70°C) Processor/Monitor unit -15°C to +55°C |
| Relative humidity | 93% or less at +40°C |
| Degree of protection | Antenna unit IP46 Processor unit IP20 Control unit IP22 Monitor unit IP2x Vibration IEC 60945 Ed.4 |

OPTIONS

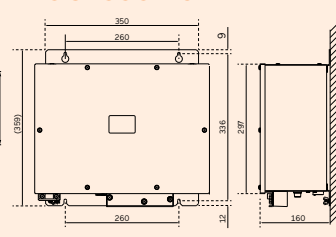
- Rectifier PR850 for 115/230VAC
- Transformer RU1803 for 440VAC
- Radiator XN22AF
- Course sensor PG1000
- Extension for controlpanel (max 5m), 26RPM RSB120A or 48RPM RSB121A
- Furuno SCX-21 Satellite Compass
- Furuno SC-70 Zone 2 approved Satellite Compass
- Furuno RCU-030 Trackball

DIMENSIONS

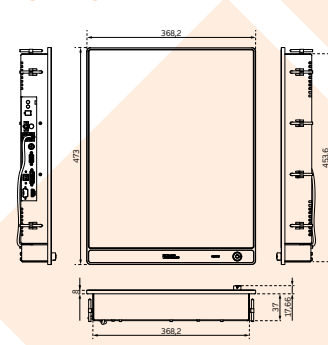
CONTROL UNIT



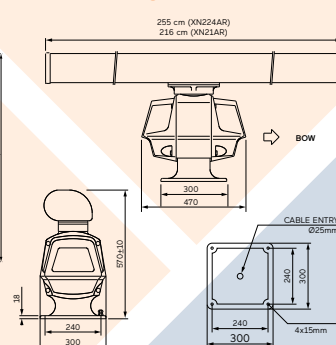
PROCESSOR UNIT



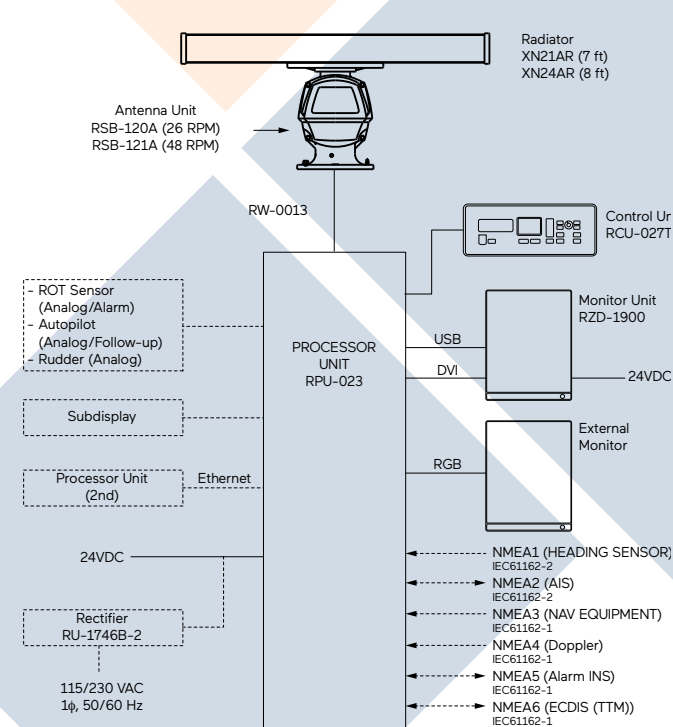
MONITOR



ANTENNA UNIT

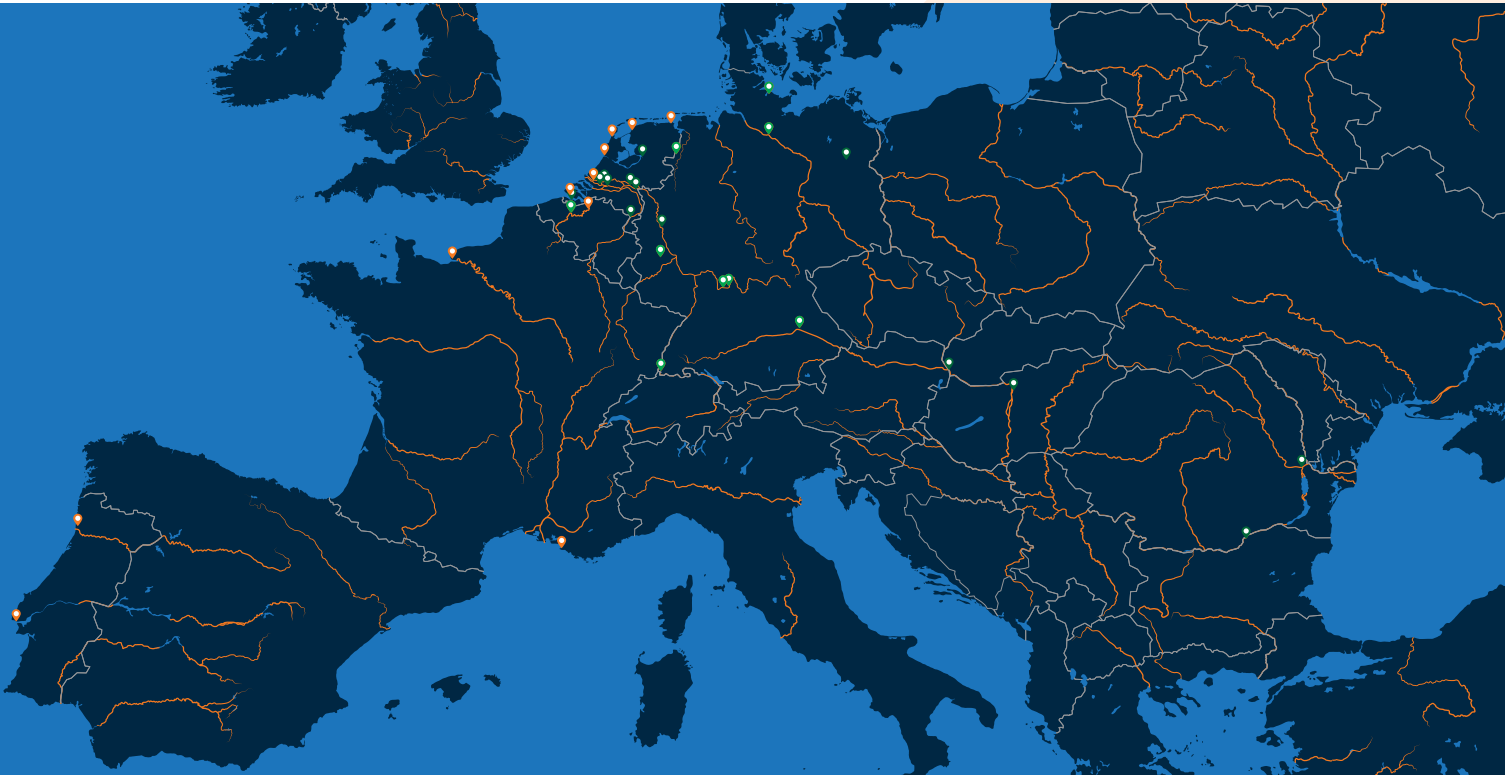


SYSTEM DIAGRAM



DEALER NETWORK

Radio Holland offers inland shipping entrepreneurs and shipping companies quick and efficient support, service and maintenance. Wherever you are, a professional technical team is at your service 24/7 to solve any problems fast. Besides, our extensive dealer network is always at your disposal, wherever you are, from any berth in the Netherlands to all European inland waterways.



Netherlands: Radio Holland Netherlands (Rotterdam, Flushing, IJmuiden, Den Helder, Harlingen & Delfzijl) | Werkina Werkendam (Werkendam) | Van Tiem (Wamel) | Gebofa Maritiem (Meppel) | Leeuwenstein Scheepsinstallaties (Dordrecht) | Vissers en van Dijk (Maasbracht) | Novio Nautic (Nijmegen) | DMT (Hardinxveld-Giessendam) | Navimar (Terneuzen). **Germany:** Kadlec & Brödlin (Duisburg) | E&M Engel & Meier (Berlijn) | Tech.Serv. T Schwerdtfeger (Nachtsheim) | Krebs Elektrotechnik (Efringen-Kirchen) | Thitronik Marine (Kiel) G & M Tiedemann (Börnsen) | MSG (Dorfprozelten) | EnBaj (Marktheidenfeld) | Schaffberger Funktechnik (Pielenhofen). **Belgium:** Van Stappen & Cada (Antwerpen) | De Backer Scheepselectro (Mariakerke) | Bart Desmidt (Mariakerke). **France:** Radio Holland France (Le Havre, Marseille). **Austria:** Öswag Werft (Linz). **Portugal:** Radio Holland Portugal (Lisbon, Gafanha da Nazaré, Matosinhos). **Slovakia:** Metalcon s.r.o. (Bratislava). **Bulgaria:** Int.Marine Technologies Ltd (Rousse). **Hungary:** Adria-Duna Trade (Budapest) **Romania:** SC Marine Tech Solutions SRL (Galati).

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