WM-RBIII Dual Band Frequency Agile MARINE RADAR BEACON (RACON)

RACONS are receiver/transmitter devices operating in the maritime radar frequency bands (9 and 3 GHz) that enhance the detection and identification of certain radar targets. The WM-RBIII is a third generation racon, using all solid-state electronics and advanced designed to meet with the recommendation and guidelines from IALA/IMO. The WM-RBIII is a frequency-agile racon and hence responds on the frequency on which they are interrogated. Upon receiving a pulse signal from a ship-borne radar, the WM-RBIII transmits back a Morse-coded signal whose frequency is identical with that of the ship-borne radar, and leaves a clear signal on the ship’s radar display indicating its own position with precision. WMRBII’s dual-token side lobe suppression feature ensures that the radar display is not distracted from multiple responses generated by side-lobes. WMRBII’s Proportional Scaling feature prevents the response from displaying too much on the radar screen on short-range scales and too small on longrange scales. WM-RBIII’s latest developed, highly intelligent control system is capable of self-test, self-calibration and power management in reaction to different operating environmental conditions.

The WM-RBIII is an extremely compact, lightweight and low power racon within the navaids industry, primarily designed for:-

- ranging and identification of locations on inconspicuous coastlines
- identification of aids to navigation, both seaborne and land based
- landfall identification
- indicating centre and turning point in precautionary areas
- marking hazards
- indicating navigable spans under bridges
- as a leading line

One of the many useful features of WM-RBIII racon is the ability to program the various settings like the Response Code (Morse code), Service Period and Sensitivity, without the need to access the internal electronics. The external programming can be easily done using a desktop or laptop computer, via a RS485 or RS232 serial interface.

The third generation WM-RBIII racon has a compact machine-cast base (stainless steel) with a handle for easy handling. The racon housing that housed the internal electronics is sealed to IP68. The antennas are protected by an UV-stabilised, specially toughened polyethylene (PE) cover with optimum signal transmission performance.

Standard WM-RBIII supply package include the racon unit, power and communication (RS485/RS232) cables fitted with connector, CD-ROM for programming software setup, stainless steel mounting hardware and operational manual. Other optional items are also available, based on user’s requirements.

For inquiries please write to marinesales@hansbuch.dk
TECHNICAL SPECIFICATIONS

Input Voltage range : 9-36 volts DC.
Quiescent Consumption : less than 0.3 Watts (average @ 12Vdc input).
Operational Consumption :
≈25mA (SLEEP); ≈220mA (STANDBY);
≈280mA (ACTIVE, X-Band only);
≈380mA (ACTIVE, Dual-Band), maximum average
Output Pulse Power : 1.0 watt
Response Code : Programmable – Recommended Morse Code Letters
Operational Frequencies :
X-Band 9300-9500 Mhz
S-Band 2900-3100 Mhz
Frequency Accuracy :
± 2 MHZ (<200ns radar pulse X-band and S-band)
± 1 MHZ (>200ns radar pulse X-band and S-band)
Communication :
RS485 / RS232 for external programming
Diagnostic checks and alarm condition
Alarm :
External tap-off from racon (volts-free / digital)*
Response time :
500 ns (X and S-band)
Sensitivity :
-50 dBm (X-band), -50 dBm (S-band)
Polarization :
Horizontal (X-band)
Horizontal/Vertical (S-band)
Horizontal Response :
360° (X and S-band)
Horizontal / Vertical :
± 12° (X-band) and ± 16° (S-band)
Sidelobe Suppression :
Dual token SLS (advanced) for X & S-band
Operating Temperature :
-40°C to + 70°C.
Protection :
IP 68 (do not require pressurization)
Impact/Vibration testing :
MIL STD 810D (or equivalent)
Dimensions :
Height: 460mm
Diameter: 240mm (Stainless Steel base with handle)
Base: 240mm
Weight: 6 Kg (NET); 8Kg (GROSS, with packing)
Mounting :
Four(4) each dia.16mm holes on 200 PCD
Standard Accessories :
One(1) length of Power cable (via cable connector)
One(1) length of Communication cable (RS232)
One(1) CDROM (programming software)

* optional feature, requires external connection

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Typical GA layout of Wealth Marine’s third generation WM-RBIII Radar Beacon

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