

**SPECIFICATIONS OF MARINE RADAR
FR-8065**

1 GENERAL

1.1 Range, Pulse length (PL) and Pulse repetition rate (PRR)

Range (NM)	PL (μs)	PRR (Hz)
0.0625 to 1.6	0.08	2100
1.5 to 3.2	0.3	1200
3 to 72	0.8	800

- 1.2 Maximum range 72 NM
- 1.3 Range resolution 20 m
- 1.4 Bearing resolution 1.9° (XN12A), 1.2° (XN13A)
- 1.5 Minimum range 25 m
- 1.6 Bearing accuracy Within ±1.0°
- 1.7 Range ring accuracy 0.9 % of range or 8 m, which is the greater

2 ANTENNA UNIT

- 2.1 Radiator Slotted wave-guide array
- 2.2 Polarization Horizontal
- 2.3 Rotation speed 24 rpm (RSB-0070), 48 rpm (RSB-0073)
- 2.4 Radiator length 4 ft (XN12A), 6 ft (XN13A)
- 2.5 Horizontal beamwidth 1.9° (XN12A), 1.35° (XN13A)
- 2.6 Vertical beamwidth 22°
- 2.7 Sidelobe
 - XN12A -24 dB or less (within ±10% of main-lobe)
-30 dB or less (outside ±10% of main-lobe)
 - XN13A -28 dB or less (within ±10% of main-lobe)
-35 dB or less (outside ±10% of main-lobe)

3 TRANSCEIVER MODULE

- 3.1 Frequency and modulation 9410 MHz ±30MHz (X-band), P0N
- 3.2 Peak output (nominal) 6 kW
- 3.3 Range scale, Ring interval (RI) and Number of rings

Range (NM)	0.125	0.25	0.5	0.75	1	1.5	2	3	4	6	8	12	16
RI (NM)	0.025	0.05	0.1	0.25	0.2	0.25	0.5	0.5	1	1	2	3	4
Rings	5	5	5	3	5	6	4	6	4	6	4	4	4

24	36	48	64	72
6	6	8	16	12
4	6	6	4	6

- 3.4 Modulation FET switching method
- 3.5 IF amplifier 60 MHz
- 3.6 Tuning Automatic or manual
- 3.7 Warm-up time 90 s approx.

4 DISPLAY UNIT

- 4.1 Indication system 12.1 inch TFT color LCD, 800 x 600 dots (SVGA)
- 4.2 Radar indication pixel 300 dots in radius

- 4.3 Effective radar diameter 184 mm
- 4.4 Brilliance 400 cd/m² typical
- 4.5 Marks Heading line, Bearing scale, Range ring, Tuning indicator, Cursor, North mark, Variable range marker (VRM), Electric Bearing Line (EBL), Target alarm zone, Zoom window, Waypoint mark, Origin mark
- 4.6 Alphanumeric indication Range, Range ring interval, Pulse length, Display mode, Off-center, Heading data*, Target trail, Tuning indicator, Target alarm, Echo stretch (ES), Echo average (EAV), EBL, Vector time*, Range and bearing to cursor or cursor position*, Interference rejecter (IR), Auto anti-clutter (A/C auto), VRM, Navigation data* (position, speed, course), ARPA/ATA/AIS data*
*: external data required
- 4.7 Audio alarm volume 74 dB (A)

5 INTERFACE

- 5.1 Number of port
 - Serial 2 ports: IEC61162-1/2 (NMEA0183 V1.5/2.0/3.0/4.0)
 - Heading sensor 1 port: AD-10 or NMEA format
 - USB 1 port: USB2.0 for maintenance
 - Contact closure 1 port for buzzer, 12 mA max.
 - Video output 1 port for sub monitor
- 5.2 I/O sentences
 - Input BWC, BWR, DBT, DPT, GGA, GLL, GNS, HDG, HDM, HDT, MTW, MWV, RMB, RMC, THS, TTM (for radiotelephone only), VHW, VTG, VWR, VWT, XTE, ZDA
 - Output RSD, TLL, TTM (ARP-11 required)
- 5.3 Output proprietary sentence pidat

6 POWER SUPPLY

24 VDC: 3.6 A (24 rpm), 3.9 A (48 rpm)

7 ENVIRONMENTAL CONDITIONS

- 7.1 Ambient temperature
 - Antenna unit -25°C to +55°C
 - Display unit -15°C to +55°C
- 7.2 Relative humidity 93% or less at +40°C
- 7.3 Degree of protection
 - Antenna unit IP26
 - Display unit IP25 (panel), IP22 (chassis)
- 7.4 Vibration IEC 60945 Ed.4

8 UNIT COLOR

- 8.1 Antenna unit N9.5
- 8.2 Display unit N2.5