

4 Technical Specification

4.1 S-Band Scanner Unit

Operating frequency: 3050 MHz \pm 10 MHz

Specification	Aperture Size	
	2.7 m (9 ft)*	3.7 m (12 ft)
Horizontal Beam Width, -3 dB (maximum)	2.8°	2.0°
Vertical Beam Width, -3 dB (nominal)	30°	30°
Sidelobes within 10° of Beam (minimum)	-	-23 dB
Sidelobes within 15° of Beam (minimum)	-23 dB	-
Sidelobes outside 10° of Beam (minimum)	-	-30 dB
Sidelobes outside 15° of Beam (minimum)	-28 dB	-
Gain (nominal)	25 dB	26 dB
Polarisation	Horizontal	Horizontal
Limiting Relative Wind Speed	100 kt	100 kt

* The 2.7 m (9 ft) antenna may only be used with Type Approved Systems to IEC 60936 -2: 1998 (High speed craft).

The rotational speeds given below apply to all sizes of S-Band antenna.

Mains Supply Frequency -	50 Hz	60 Hz
Rotation Speed (standard)	25 rpm	30 rpm
Rotation Speed (high)	45 rpm	45 rpm

4.2 Transceiver Specification

4.2.1 Mounting Arrangements

Option	S-Band
Masthead	Aloft within Turning Unit
Bulkhead	Co-axial feed to Turning Unit

4.2.2 Transmitter

Parameter	S-Band
Magnetron Frequency	3050 MHz \pm 10 MHz
Magnetron Peak Power	30 kW nominal
Pulse Length/PRF	0.05 μ s/1800 Hz nominal (Short Pulse) 0.25 μ s/1800 Hz nominal (Medium Pulse) 0.75 μ s/785 Hz nominal (Long Pulse)
Pulse Generator	Solid-state with pulse forming network driving the magnetron.

4.2.3 Receiver

Parameter	Detail
Type	Logarithmic, with Low Noise Front End (LNFE)
Tuning	AFC/Manual
IF (Intermediate Frequency)	Centred at 60 MHz
IF Bandwidth	20 MHz on short and medium pulses (nominal) 3 MHz on long pulse (nominal)
Noise Factor	5.0 dB nominal
Dynamic Range	80 dB nominal

4.3 Performance Monitor (optional with non Type Approved systems)

Parameter	Detail
Performance Monitored	Separate monitors for Radar System and Radar Receiver
Type	Transponder
Presentation	Four concentric arcs on Display Unit. Arcs are of reducing brightness outwards, showing degradation in performance (including antenna) in 5 dB increments relative to inner arc.

4.4 Power Supply (AC)

Parameter	Detail	
Input voltage range	92 - 276V RMS	
Input voltage frequency range	47 to 64 Hz.	
Maximum Input Power	S-Band Transceiver	120 VA
	S-Band Motor	1 Phase 3 Phase
	Standard Speed Unit (Per phase)	750 VA 500 VA
	High Speed Unit (Per phase)	750 VA 600 VA
Transient protection	Overvoltage transient of up to 40 % above nominal input voltage with maximum duration of one second. Pulse transient of up to ± 1200 V peak, with a rise time of 2 to 10 μ s and duration up to 20 μ s.	
Protection facilities	Output short circuit. High and low input voltage. Output overvoltage. Slow start.	
High voltage multiphase operation	Via a suitable transformer.	

4.5 Mechanical Specification

4.5.1 Weights and Dimensions

Component	Height (mm)	Depth (mm)	Width (mm)	Weight (kg)
S-Band Scanner Unit with 2.7 m Antenna with integral Transceiver	801	627	2800*	150
S-Band Scanner Unit with 2.7 m Antenna without integral Transceiver	801	727	2800*	137
S-Band Scanner Unit with 3.7 m Antenna with integral Transceiver	801	727	3700*	163
S-Band Scanner Unit with 3.7 m Antenna without integral Transceiver	801	675	3700*	150
S-Band Bulkhead Transceiver Unit	515	318	402	25

*Antenna Turning Circle

4.6 Compass Safe Distances

Component	Type No.	Standard	Steering
S-Band Scanner Unit 30 kW	65830M	4.1 m	2.4 m
S-Band Scanner Unit (without Transceiver)	65830B	0.8 m	0.5 m
S-Band Bulkhead Transceiver 30 kW	65831A	4.3 m	2.6 m

4.7 Environmental Specification

To the requirements of the International Standard for Marine Navigational Equipment CEI/IEC 945 (1988) and Amendment 1 (1992).