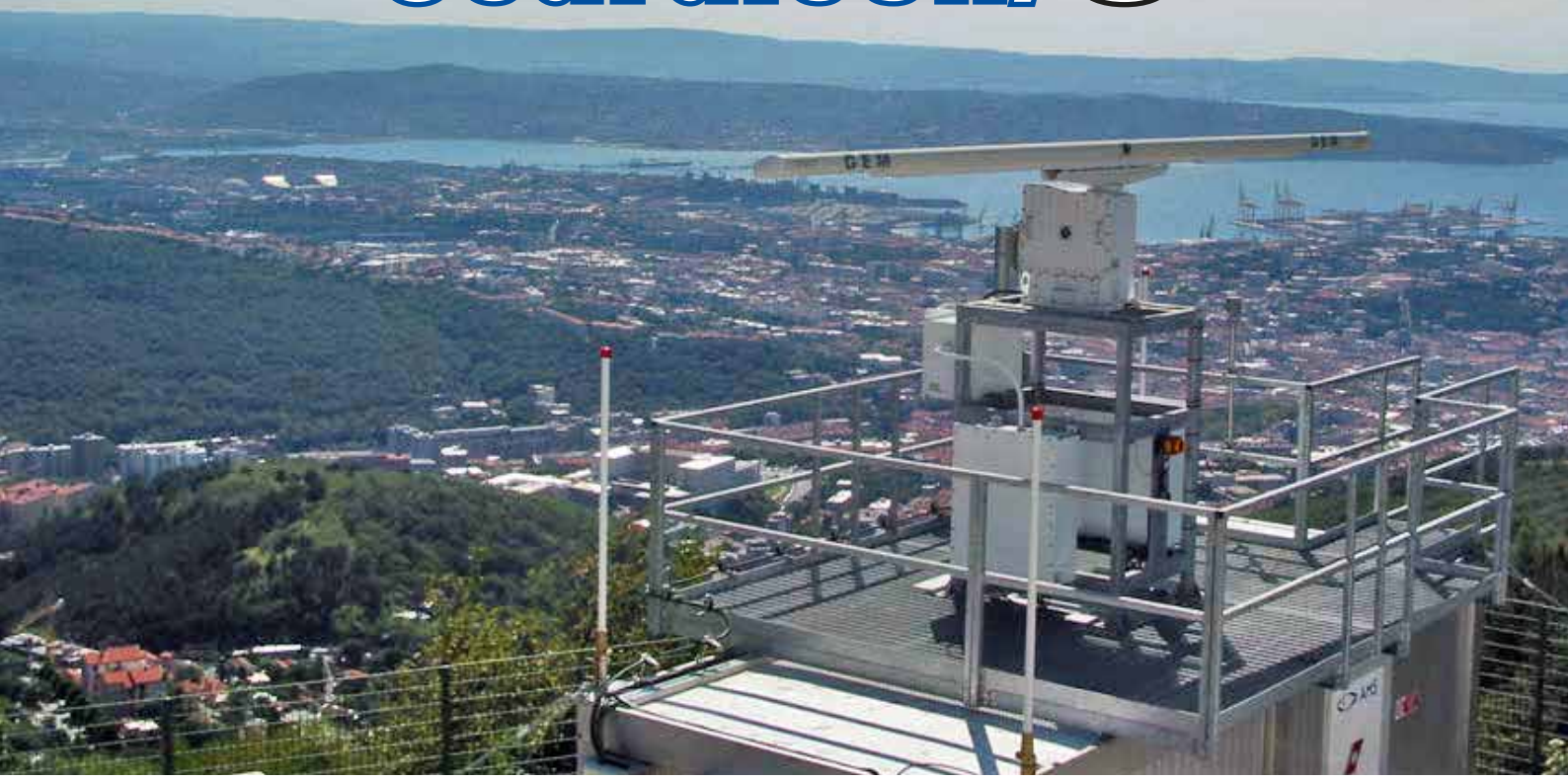
Surveillance & Security

GEM elettronica

SeaFalcon/S



GENERAL DESCRIPTION

Designed to offer a huge choice of fully-remotely driven radar sensor configurations for shore-based applications, the SEAFALCON/S series matches requirements of Shore-Based short to long range radar detection from IALA Guideline 1111 (2015).
SEAFALCON/S sums up all experience and design skills of GEM elettronica in the radar technologies and it is suitably referenced by a number of installations running throughout the world.
On board STC and other radar prefiltering techniques are remotely available to the operator together with the complete set of commands and controls to set the radar against virtually any local environmental and sea conditions.

FEATURES

- □ High azimuth and range discrimination
- □ Single, dual redundant and Frequency Diversity options
- □ Compliant to IALA Guideline 1111 (2015)
- □ Functionality 24 h for all-weather conditions.
- □ Can be remotely driven
- □ LAN interface
- □ Can be installed outdoors to reduce RF losses
- □ Wide choice of configurations

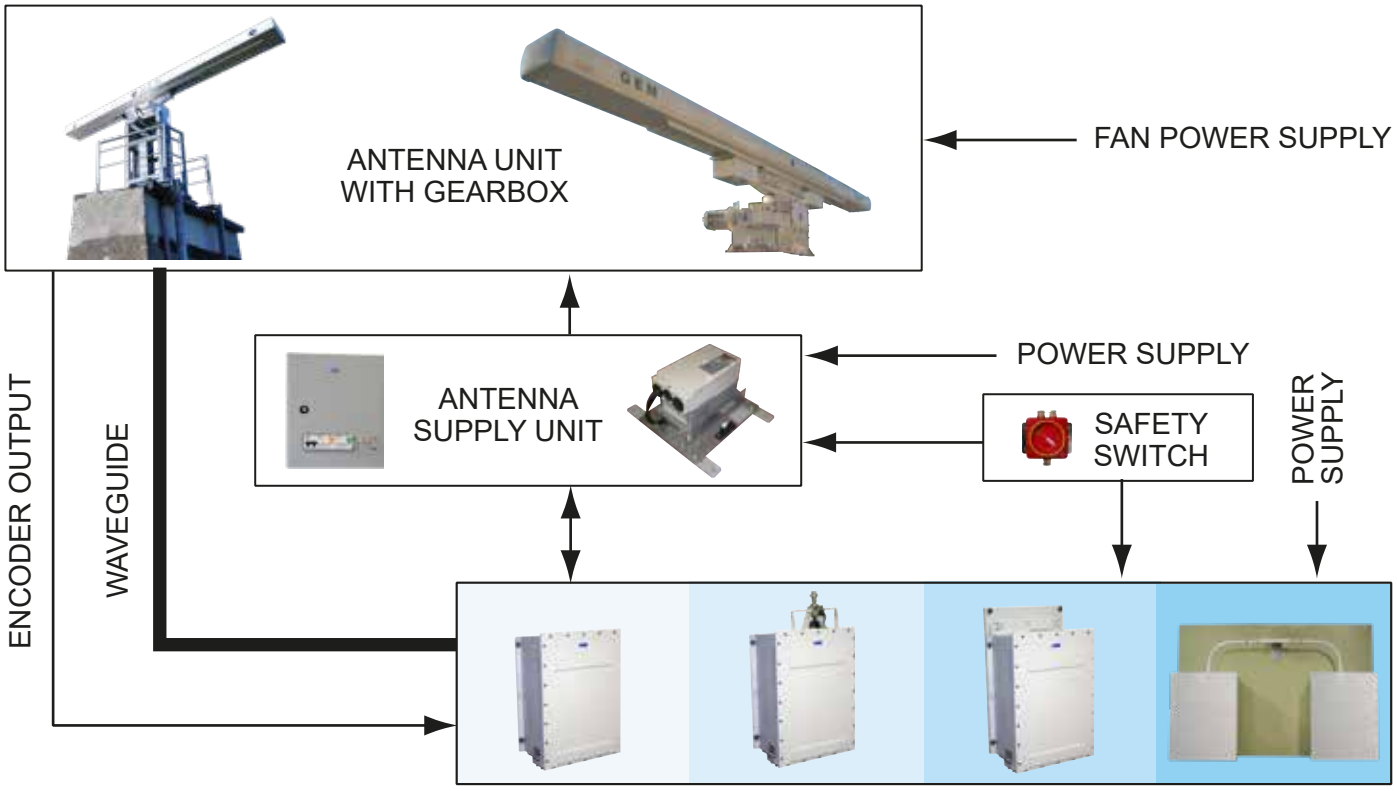
APPLICATIONS

Targeted to top-ranked applications, such as:

- □ Vessel Traffic System (VTS), Vessel Traffic Management & Information Systems (VTMIS)
- □ Coastal Surveillance & Security
- □ Surface Movement Guidance Control System (SMGCS)
- □ Homeland Security

SERIES SEAFALCON/S

GENERAL DIAGRAM OF CONNECTION



		RADAR TRANSCEIVER ORDER CODE			
		RT03-25	**RT03-25/D**	**RT03-25/FD**	**RT03-50/FD**
ANTENNA CODE *(see relevant data sheets)*	**ASX-2101/FD**	n.a.	n.a.	●	●
	ASX1901/FD			●	●
	ASX-2101/HVC	●	●	●	●
	ASX1901/HVC	●	●	●	●
	ASX-2101	●	●	n.a.	n.a.
	ASX1901*	●	●		

* : ASX-1901G, ASX-1901G/C excluded

: exceeds IALA Guideline 1111 Standard level of detection

: exceeds IALA Guideline 1111 Advanced level of detection

ORDER CODE: ***SEAFALCON/S [ANTENNA CODE]_[TRANSCEIVER CODE]***

SUPPLY COMPOSITION

- Antenna system including gearbox and antenna unit
- Tilt Unit
- Antenna Supply Unit (ASU)
- Safety switch Unit (SSA)
- Radar transceiver
- Installation kit including low-loss (0.1dB/m) elliptical waveguide (20mt standard length), flanges, grounding and lining clamps with terminating tool, dehydrating kit, power/signals cables (standard length 20mt))
- Windows™-based Software package for local control and presentation
- Connecting cables kit (standard lengths: 10 mt)
- Use and installation manuals in English language
- Certificate of conformance
- Packing list

OPTIONS

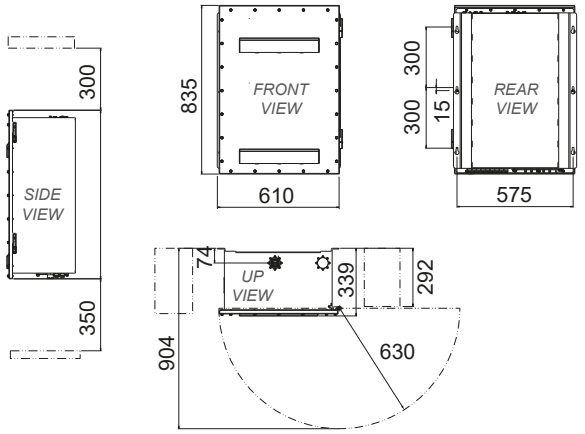
- IALA Guideline 1111 Advanced level fully compliant Tracker module embedded
- Fully outdoors 25kW radar transceivers available
- depending on installation requirements, cable lengths are delivered in accordance with Buyer's instructions
- dual-redundant 25 kW Frequency Diversity transceiver available on request

SERIES SEAFALCON/S

BASIC PERFORMANCE DATA		RT03-25	RT03-25/D	RT03-25/FD	RT03-50/FD
TRANSMITTER	Type	Solid-state, except magnetron and STC limiter			
	Peak Power (nominal)	25 kW			50 kW
	Transmit frequency	9375 MHz ± 30 MHz		9225 MHz ± 30 MHz	9230 MHz ± 30 MHz
				9437 MHz ± 30 MHz	9470 MHz ± 30 MHz
	Tx modes	1	2	3	4
	Pulse width (nominal)	50÷190 ns	200÷490 ns	500÷990 ns	1000÷1200 ns
	Pulse repetition frequency (PRF)	3120÷4000 Hz	1475÷3008 Hz	785÷1450 Hz	650÷778 Hz
	Programmability	Remote or local PW and PRF programming			
	PRF staggering	± 6 % around the PRF			
	Sector blanking	Ten individual sectors, settable in azimuth width from 1° to 359°, in one-degree increments, and in position relative to the 360° azimuth circle from 0° to 359°, in one-degree increments relative to Antenna Reset Pulse (ARP).			
RECEIVER	Type	Logarithmic, fully solid-state with low-noise front end			
	Dynamic range	> 100 dB		> 125 dB with STC limiter	
	Intermediate frequency	60 MHz			
	Overall noise figure	≤ 3.5 dB			≤ 4.5 dB
	IF bandwidth versus corresponding pulse widths	Tx Mode		I.F. Bandwidth (MHz)	
		1		20	
		2		5	
		3		2	
		4		2	
	Tuning	Automatic frequency tuning (AFC) and manual			
WAVEGUIDE COMPONENTS EMPLOYED	Circulator	Circulators network to increase system stability against tuning, V.S.W.R. and magnetron pulling influences			
	Front-end	Low noise, fully solid state integrated assembly			
INTERFACES	Azimuth inputs	Dual encoder interface with ARP=2048/4096/8192/16384 p.p.r. (selectable) on RS-422 differential communications links			
	Antenna motor control	Up to 4 contact closures to remotely control an external antenna supply unit			
	Polarization control (HVC antennas)	Up to 2 discrete output signals to remotely control an external antenna polarization network plus 1 status input (open collector)			
	Auxiliary contacts	4 contact closure outputs, 2 discrete inputs			
	Interface to external processor	*Standard analog format:* n. 2 separately adjustable video outputs (0÷5 V @ 75 Ω) n. 2 trigger outputs (+8 V @ 75 Ω) n. 3 ACP outputs (RS422, 4096 p.p.r., 130 Ω) n. 3 ARP outputs (RS422, 1 p.p.r., 130 Ω) *Standard serial I/O:* n. 2 bidirectional serial channels, RS422, 9600 baud rate		*Standard digital format:* n. 2 Ethernet links RJ45 10/100 Mb (FDDI also available) for control, status and pre-processed digitalized video outputs	
	External safety switch	RF transmission disabling switch located on the antenna assembly			
ELECTRICAL POWER	Required supply	Self-switching 115 or 220Vac ± 10 % @ 50-60 Hz ± 5 %, single phase			
	Absorbation	≤ 600 VA (nominal)			≤ 850 VA (nominal)
PERFORMANCE	Redundancy	n.a.	Dual-redundant radar transceiver (hot/st.by)	Dual-redundant radar transceiver (hot/st.by) when set to single frequency mode	
	Diagnostics	Comprehensive built-in test equipment (BITE)			
	Antenna rotation speed	Acceptable rotation speeds of the antenna are from 10 to 60 r.p.m., inclusive			
ENVIRONMENT	Operating temperature range	AS per IEC-60945, ed. 4, protected			
	Operating relative humidity				
	Salinity				
	Vibration/Shock				
	Drip proof				
	EMI/EMC				
	Safety				

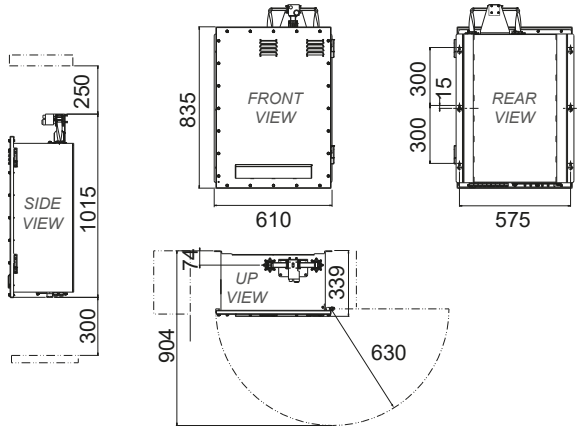
OUTLINE DRAWING (dimensions in mm)

RT03-25



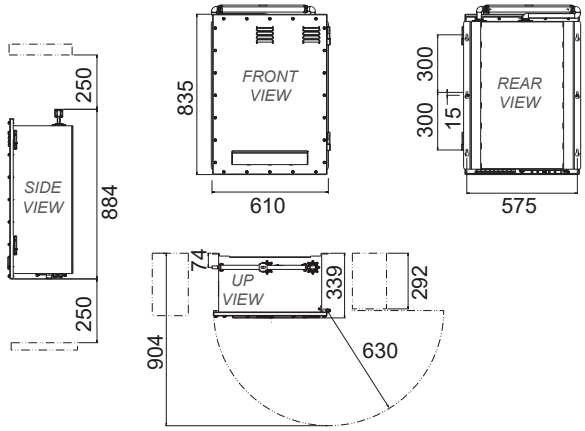
Weight: 55 Kg

RT03-25/D



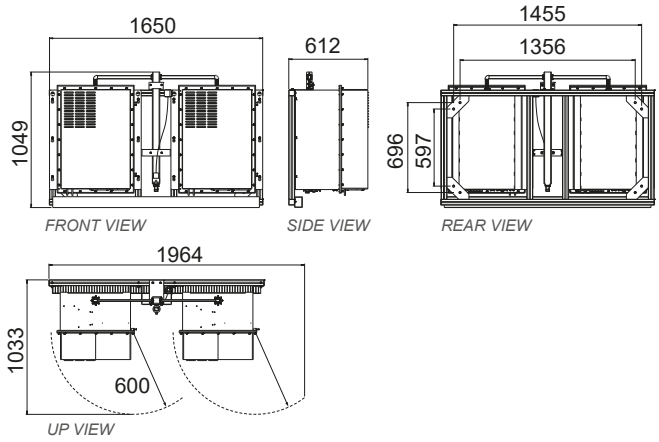
Weight: 65 Kg

RT03-25/FD



Weight: 65 Kg

RT03-50/FD



Weight: 150 Kg

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Member of CISQ Federation
CERTIFIED MANAGEMENT SYSTEM
ISO 9001