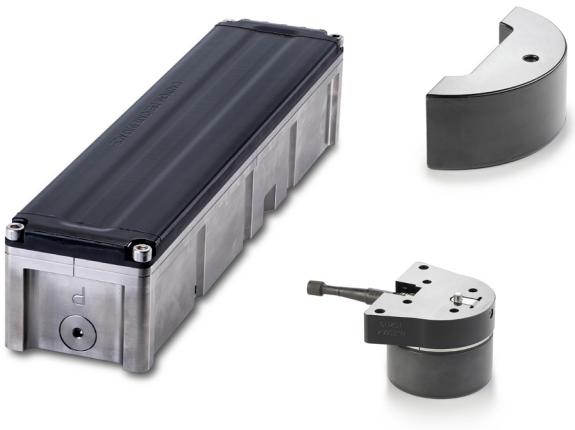
SeaBat® F50

High Resolution Forward-looking Multibeam Sonar



The SeaBat F50 is a high-resolution forward-looking sonar system operating at 200kHz or 400kHz that illuminates a wide 140° horizontal sector ahead of the sonar head assembly. The SeaBat F50 may be mounted on a surface vessel, submarine, AUV or ROV and is available in depth ratings up to 6000 meters.

The SeaBat F50 focused beams, high ping rate and bandwidth combine to provide the user with superior resolution and image quality. The use of multibeam sonar technology allows for nearly instantaneous update of the sonar image, which provides information to the user faster than mechanically scanning sonars.

The SeaBat F50 makes full use of Commercial-off-the-Shelf (COTS) hardware and software to increase cost-effectiveness with a well defined path for future upgrades and expansion.

Systems standard configurations:

- SeaBat F50-R - for Surface Vessel use
- SeaBat F50-S Shallow - up to 400m depth
- SeaBat F50-S Deep - up to 6,000m depth

The SeaBat F50 is the successor to the well-known SeaBat 7128 providing a similar form, fit and function while further enhancing data quality and providing highly consistent low noise sonar data.

PRODUCT BENEFITS

- Unique combination of wide sector coverage and narrow beamwidth to support applications including MCM, classification of underwater intruders or support of offshore construction - flexibility of use ensures you get the most from your investment
- Robust COTS hardware for demanding offshore or naval operations and high uptime
- Access to full beam data via standard sonar records allows advanced users to develop new applications quickly

FEATURES

RESOLUTION
- Unparalleled resolution and installation flexibility

FREQUENCY
- 200kHz or 400kHz

HIGH SPEED
- 256 focused receive beams

BEAM WIDTH
- 0.5° beam width

UPDATE RATE
- Up to 50Hz update rate (range selection dependent)

RANGE
- Up to 600m using 200kHz

DEPTH RATING
- Surface Vessel: 50m
- AUV/ROV: 400m or 6000m

OPTIONS
- Rack Mount Sonar Processor 19" (RSP) OR Subsea Sonar Processor, 6000m (SSP)
- Sound Velocity Sensor
- Standard Service Level Agreements (SLA)

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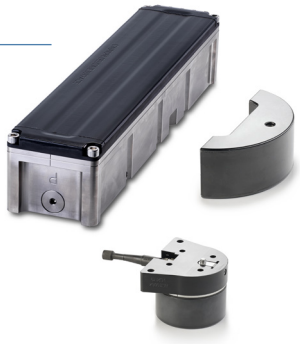


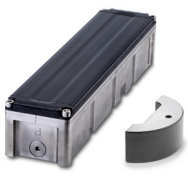
SEABAT F50 SYSTEM SPECIFICATIONS

Frequency	**200 kHz**	**400kHz**
Range (up to)	600m	300m
Sector coverage	140°	140°
Number of horizontal beams	256 Equi-angular	256 Equi-angular
Horizontal beamwidth: transmit, receive	> 128°, 1° (center)	> 128°, 0.5 (center)
Vertical transmit	Shallow: TC2179 24° ± 3°	TC2179: 24° ± 2°
	Deep: TC2162 27° ± 3°;	TC2162: 31.5° ± 4°;
Max update rate	50Hz	50Hz
Pulse length (range resolution)	CW: 30 to 300 µS (up to 2.5cm)	CW: 30 to 300 µS (up to 2.5cm)
	FM: 300 µS to 10 mS	FM: 300 µS to 10 mS
System depth rating:	R: 50m, S: 400m or 6000m	R: 50m, S: 400m or 6000m

System control	F50 Sonar Processor Unit (SPU)
Power requirements	48V DC, approx. 60W (processor), 110/220V AC 50/60Hz, 300W
Data transfer	Ethernet, 1Gbit

SONAR PROCESSORS: The user can select either the Rack Mount Processor (RSP) for surface vessel use or the Subsea Sonar Processor (SSP) for underwater vehicles use	**Rack Mount Processor**	**Subsea Sonar Processor**
Power	100-230VAC 50/60Hz50/60Hz, 300W	22- 60V DC; 110W (CW short range settings) / 300W (X-Range with 10ms pulse)
Temperature Range (operational/storage)	-5°C to +45°C / -30°C to +70°C	-2°C to +36°C / -30°C to +70°C
Dimensions	88mm (2U) x 478mm* x 462mm (19" rack mount)	538mm x 174mm
Weight (air/water)	Approx. 13kg	24.4kg / 12.0kg

SONAR ARRAYS:	**Receiver (EM7218 Shallow/EM7218-1 Deep)**	**TC2179 (Shallow)**	**TC2162 (Deep)**
Depth rating ower	400m / 6,000m	400m	6,000m
Dimensions	102.0mm x 460.0mm x 90.7mm	122.2 x 81.5 x 99.8	240 x 86 x99
Weight (air/water)	8.2kg / 3.9kg	1.3 kg / 0.3 kg	3.5kg /1.7 kg
Temperature range	Operation: -2°C to +36°C / Storage: -30°C to +70°C		



SeaBat F50 with deep water TC2162

SeaBat F50 with shallow water TC2179

Rack Mount Sonar Processor (RSP)

Subsea Sonar Processor (SSP)

For relevant tolerances for dimensions above and detailed outlined drawings see Product Description
*Supplied Sonar User Interface Software runs on user supplied PC or laptop (subject to minimum processing requirements)

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RESON
Everywhereyoulook™
www.teledynemarine.com/reson
Tel. +45 4738 0022 (Europe) • Tel: +1 805 964 6260 (USA)
Email: reson@teledyne.com