MiniUAC-1203

Multibeam Forward-looking Sonar

Overview

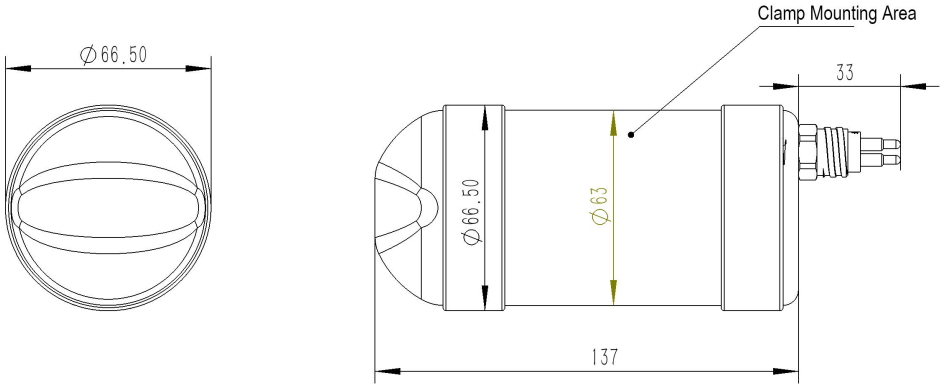
MiniUAC-1216 Micro Forward-Looking Sonar is a low-cost, maintenance-free 2D forward-looking multibeam imaging sonar. It provides forward-looking acoustic vision in both clear and turbid waters, enabling target detection and identification, collision avoidance, and obstacle detection. Key features include low cost, compact size, light weight, and low power consumption.

MiniUAC-1216 adopts a single-frequency design and is available in multiple frequency bands, including **700 kHz, 900 kHz, and 1.2 MHz**. Other frequencies can be customized upon request. Thanks to its specialized design and manufacturing processes, this sonar is priced significantly lower than other 2D multibeam sonars from our company, as well as the majority of comparable products on the market. In addition, the sonar housing is made entirely of corrosion-resistant materials with very low water permeability, allowing continuous operation in seawater for several weeks without cleaning.

The **MiniUAC-1216A** features a **316 stainless steel** housing, while the **MiniUAC-1216B** is equipped with a **carbon-fiber** housing. The carbon-fiber version is lighter and can achieve neutral or slightly negative buoyancy in water. All other specifications are identical.

The maximum operating depth of both **MiniUAC-1216A/B** models is **100 m**.

Structural Dimensions



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Technical Specifications

Specification	A/B-0700	A/B-0900	A/B-0900C Collision Avoidance	A/B-1200★
Frequency	700 kHz	900 kHz	900 kHz	1.2 MHz
Horizontal Central Beamwidth(1)	2.6°	2.0°	2.0°	1.5°
Minimum Horizontal FOV (2)	100°	100°	100°	100°
Minimum Vertical FOV (2)	20°	20°	12°	20°
Maximum Detection Range (3)	80 m	60 m	65 m	50 m
Range Resolution	5 mm			
Operating Range	2–80 m, continuously adjustable			
Refresh Rate	Up to 25 Hz (for ranges ≤ 15 m)			
Number of Beams	256			
Transmit Signal	CW or CHIRP, automatic or manual selection			
Maximum Operating Depth	100 m			
Maximum Operating Speed	6 kn (Operation above this speed is possible but may reduce detection range; design specification)			
Near-Field Blind Zone	≤ 0.3 m			
Power Consumption	18 – 50 VDC; approx. 6 W average, < 15 W peak			
Communication Interfaces	1 × 100 Mbps Ethernet (sonar data and control)			
Dimensions (WHD)	Approx. Ø66.5 (±1) × 137 (±3) mm; Excluding connector and cable			
Weight (air / water)	SV1216A: 700 g / 300 g; SV1216B: 430 g / near-neutral buoyancy; (Excluding cable)			
Housing Material	Carbon fiber or 316 stainless steel, silicone rubber, composite materials			

Notes:

(1) Refers to the horizontal −3 dB beamwidth of a point target located at the central horizontal and vertical axis of the sonar image. A tolerance of +10% / −30% is allowed.

(2) Field of View (FOV). Large targets within this angular range can be detected; however, resolution, image clarity, and detection range near the edges may be lower than at the center.

(3) Detection range in seawater under favorable hydrological conditions for high-reflectivity objects such as embankments and bridge piers. In freshwater under similar conditions, the maximum detection range is approximately 1–2 times that in seawater.

★ Preferred frequency, typically available from stock.

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