

Datasheet

Wideband Sub-Mini 6+ (WSM 6+) transponder/responder



The Wideband® Sub-Mini 6+ (WSM 6+) is Sonardyne's latest generation of versatile ultra-short baseline (USBL) transponders/responders that support Wideband 2 signals. The WSM 6+ is designed for positioning remotely operated vehicles (ROVs), towfish and other mobile targets in water depths up to 4,000 m.

The compact and rugged design is based on the field proven WSM mechanics and is available in medium frequency (MF) directional and MF omni-directional versions. The latest Sonardyne Wideband 2 signal technology has been incorporated, which offers superior ranging accuracy and fast USBL position updates.

The WSM 6+ improves on its predecessors by offering full two-way wideband support – interrogation and reply signals. All Wideband 2 and Wideband 2+ signals are supported. Legacy support is also available for Wideband 1 and HPR 400. The configuration is programmable using supplied software and a serial link or it can be configured acoustically via iWAND.

This allows the WSM 6+ to be configured for use with all of the popular MF frequency acoustic navigation systems.

The Type 8370-1111 WSM 6+ is equipped with an omni-directional transducer and is depth rated to 1,000 m making it suitable for a wide range of general USBL tracking applications.

The Type 8370-4112 WSM 6+ is a 4,000 m rated unit and features a higher power directional transducer.

The Type 8370-4111 WSM 6+ is a 4,000 m rated unit but with an omni-directional transducer.

All the variants have a depth sensor fitted as standard to aid USBL positioning accuracy and an external on/off switch to save the battery when not in use.

WSM 6+ variants are available with acoustically controlled output lines suitable for external motor drive, burnwire or contact closure releases.

Typical applications

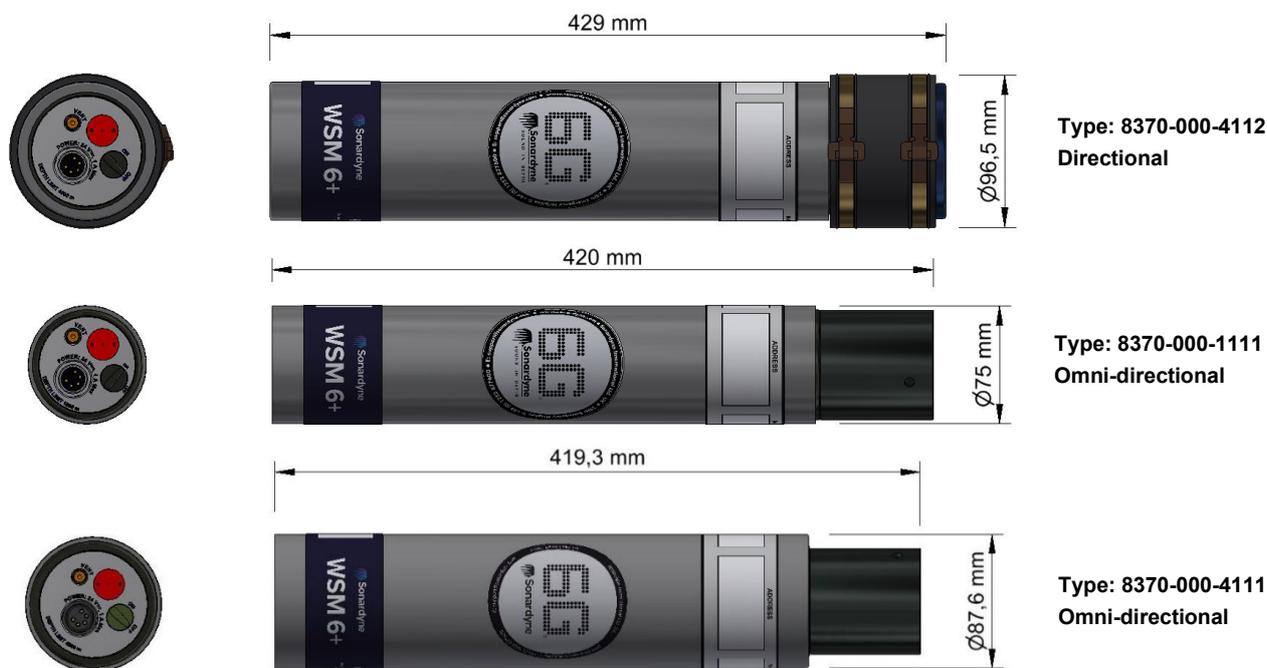
- Subsea vehicle tracking – ROV/towfish/crane wire
- Tether management systems (TMS)

Key features

- Full two-way Sonardyne Wideband 2 interrogation and reply – mitigates interference and multi-path issues
- More than 500 unique Sonardyne Wideband 1 and 2 addresses
- Sonardyne Wideband 1 and HPR 400 navigation compatible
- Choice of 1,000 or 4,000 m depth rating
- Choice of omni-directional or directional beam-shape
- Transponder or responder operating modes
- Depth sensor for improved USBL positioning performance
- Rechargeable NiMH battery
- External on/off switch for saving battery when not in use
- Compact and rugged design

Specifications

Wideband Sub-Mini 6+ (WSM 6+) transponder/ responder



Feature	Type 8370-1111	Type 8370-4112	Type 8370-4111
Depth rating	1,000 m	4,000 m	4,000 m
Operational frequency	MF (20–34 kHz)	MF (20–34 kHz)	MF (20–34 kHz)
Transceiver beam shape	Omni-directional	Directional	Omni-directional
Transmit source level (dB re. 1 µPa @ 1 m)	External power	187 dB	187 dB
	Battery	184 dB	184 dB
Tone equivalent energy (TEE) ¹ (external power)	202 dB	193 dB	202 dB
Receive sensitivity (dB re 1 µPa)	<80 dB	<85 dB	<80 dB
Power supply	Rechargeable NiMH battery or external. 24 V via ROV umbilical		
Operating channels	All Sonardyne wideband HPR 400 channels		
Depth sensor	±0.5% full scale (100 bar)	±0.5% full scale (400 bar)	
Operating life (1s update rate, max. power, Wideband 2)	>6 days	>3 days	>6 days
Update rate (maximum)	>2 Hz		
Quiescent life (battery)	>35 days		
Connector (5-way standard)	Subconn MCBH5M		
Operating temperature	-5 to 40°C		
Storage temperature	-20 to 55°C		
Mechanical construction	Anodised aluminium alloy		
Dimensions (length x diameter)	420 x 75 mm	429 x 96.5 mm	419.3 x 87.6 mm
Weight in air/water	3.2/1.3 kg	5.5/3.2 kg	4.6/2.3 kg
Battery charger	8390-100-01	8390-100-01	8390-100-01

¹ WBv2 & WBv1 signals are 2x the duration of Sonardyne tone signals, therefore the TEE figure gives the user an idea of the operational performance when comparing wideband and tone systems.