

# Datasheet

## Wideband Sub-Mini 6 Plus (WSM 6+) Transponder/Responder



8370-1111 Omni-Directional



8370-4112 Directional

### Description

The Wideband Sub-Mini 6 Plus (WSM 6+) is Sonardyne's latest generation of versatile USBL transponders/responders that support WBv2 signals. The WSM 6+ is designed for positioning ROVs, towfish and other mobile targets in water depths up to 4,000 metres.

The compact and rugged design is based on the field proven WSM mechanics and is available in MF Directional and MF Omni-Directional versions. The latest Sonardyne Wideband<sup>®</sup>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 V2 and V2+ signals are supported. Legacy support is also available for WBV1 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 metres making it suitable for a wide range of general USBL tracking applications.

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

Both types of WSM 6+ 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

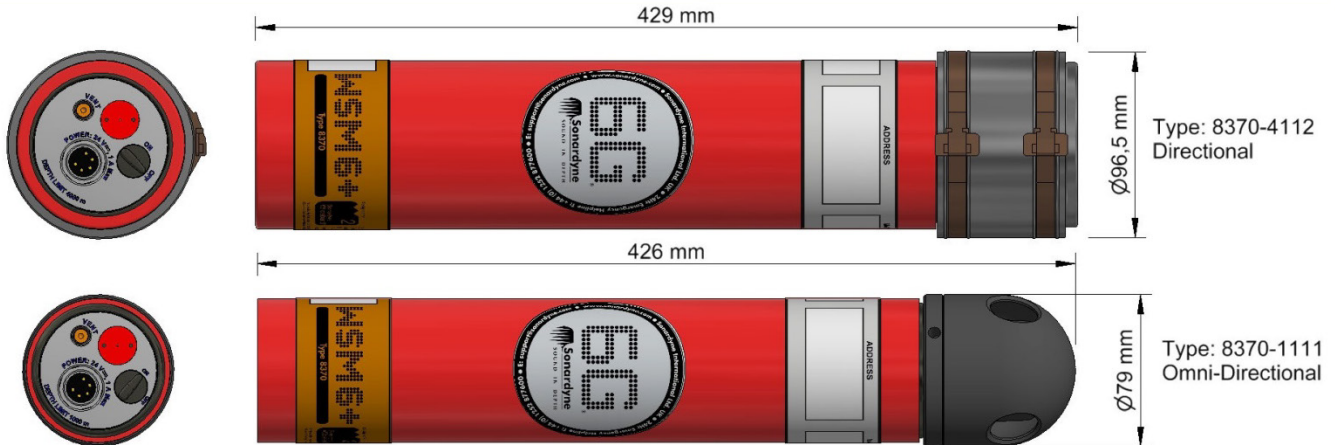
- Subsea vehicle tracking – ROV/towfish/crane wire
- Tether Management Systems (TMS)

### 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 m 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
- Release variants available

# Specifications

## Wideband Sub-Mini 6 Plus (WSM 6+) Transponder/Responder



Feature	Type 8370-1111	Type 8370-4112
Depth Rating	1,000 Metres	4,000 Metres
Operational Frequency	MF (19–34 kHz)	MF (19–34 kHz)
Transceiver Beamshape	Omni-Directional	Directional
Transmit Source Level (19–34 kHz) (External Power)	187 dB	196 dB
(re. 1 µPa @ 1 m) (Battery)	184 dB	193 dB
Tone Equivalent Energy (TEE*) (External Power)	193 dB	202 dB
Receive Sensitivity (dB re 1 µPa)	<85 dB	<80 dB
Power Supply	Rechargeable NiMH battery or ext. 24 V via ROV umbilical	Rechargeable NiMH battery or ext. 24 V via ROV umbilical
Operating Channels	All Sonardyne Wideband HPR 400 Channels	All Sonardyne Wideband HPR 400 Channels
Depth Sensor	±0.5% Full Scale (100 Bar)	±0.5% Full Scale (400 Bar)
Operating life ( 1 s update rate, max. power, WB2 )	>6 days	>3 days
Maximum Update Rate	>2 Hz	>2 Hz
Quiescent Life (Battery)	>35 Days	>35 Days
Connector		
5-Way (Standard)	Subconn MCBH5M	Subconn MCBH5M
8-Way (Burnwire/Motor Release )	Subconn MCBH8F	Subconn MCBH8F
Operating Temperature	-5 to 40°C	-5 to 40°C
Storage Temperature	-20 to 55°C	-20 to 55°C
Mechanical Construction	Aluminium Alloy, Anodised	Aluminium Alloy, Anodised
Dimensions (Length x Diameter)	429 x 97 mm	426 x 79 mm
Weight in Air/Water	3.2 kg/1.3 Kg	5.5 Kg/3.2Kg
Battery Charger	8370-011-01	8370-011-01

\*TEE – 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.