

Datasheet

Wideband Mini Transponder (WMT)



Sonardyne's existing Wideband® Sub-Mini transponder (WSM) is typically interrogated by a responder trigger sent down the ROVs' umbilical or a narrow band tone signal. In some situations, reverberation or multipath of the tone interrogation can cause interference problems.

The WMT is Sonardyne's first mini-sized transponder. It is slightly larger than the WSM and provides full two-way Wideband interrogation and reply which completely mitigates interference from and to other users.

For use on ROVs, the WMT includes responder trigger, an integrated rechargeable Li-ion battery pack that is charged from the ROV's power supply and full RS232 communications enabling channel set up, power and gain etc. to be changed from the surface.

The WMT is available in two depth versions: 3,000 and 7,000 m. The 7,000 m version has a higher acoustic output power level for improved long range operation.

An on/off switch (3,000 m only) helps to ensure that the internal battery is not discharged when not in use. If an umbilical trigger is not available, then the full Wideband transponder mode provides

excellent Ultra-Short Baseline (USBL) performance from a small, lightweight package.

Remote omni or directional transducers are available for both the WMT and existing WSM range. These make installation on an ROV easier as the remote transducer can be installed where there is good line-of-sight and is easily replaced if damaged.

The main body of the transponder can be installed within the ROV frame where it is well protected from damage.

Note: The remote transducer option is not available for the 7,000 m version.

Key features

- Full two-way Sonardyne Wideband 2 interrogation and reply – mitigates any interference and multi-path issues
- Mini size – lightweight and small
- Responder mode
- Li-ion rechargeable battery pack
- Optional remote transducer (3,000 m only)
- Pressure sensor fitted as standard.
- Full RS232 control from the surface
- External on/off switch (3,000 m only)
- Field proven

Specifications

Wideband Mini Transponder (WMT)



| Feature | | Type 8190-3111 | Type 8190-3112 | Type 8190-7212 |
|--|---------------------------------------|---|----------------------------|----------------------------|
| Depth rating | | 3,000 m | 3,000 m | 7,000 m |
| Operating frequency | | MF (20–34 kHz) | MF (20–34 kHz) | MF (20–34 kHz) |
| Transducer beam shape | | Omni-directional | Directional | Directional |
| Source level (re 1 μ Pa @ 1 m) | High power | 187 dB | 193 dB | 199 dB |
| | Low power | 181 dB | 187 dB | 193 dB |
| Tone equivalent energy (TEE) ¹ WBv2+ | High power | 193 dB | 199 dB | 205 dB |
| | Low power | 187 dB | 193 dB | 199 dB |
| Range precision | | Better than 15 mm | Better than 15 mm | Better than 15 mm |
| Depth sensor | | \pm 0.5% full scale | \pm 0.5% full scale | \pm 0.5% full scale |
| Communications interface | | RS232 (9,600–115,200 baud) | | |
| External supply voltage | | 24 or 48 V dc (\pm 10%) | 24 or 48 V dc (\pm 10%) | 24 or 48 V dc (\pm 10%) |
| External power | Sleep | \sim 650 mW | \sim 650 mW | \sim 650 mW |
| | Wideband listening | \sim 1 W | \sim 1 W | \sim 1 W |
| | Battery charging | 6 W | 6 W | 6 W |
| | Peak (during transmission) | <50 W | <50 W | <50 W |
| External power switch | | Yes | Yes | No |
| Battery life (Li-ion 15 V) | Listening | 30 days | 30 days | 30 days |
| | Continuous 5 seconds interrogation | Approx. 6 days at low power | | |
| Mechanical construction | | Anodised aluminium alloy and plastics | | |
| Operating temperature | | -5 to 40°C | -5 to 40°C | -5 to 40°C |
| Storage temperature | | -20 to 55°C | -20 to 55°C | -20 to 55°C |
| Dimensions (diameter x length) | | 94 x 501 mm | 94 x 513 mm | 98 x 513 mm |
| Weights in air/water ² | | 5.1/2.2 kg | 7.0/3.5 kg | 7.0/3.5 kg |
| Options | | Remote, cable connected transducer (see separate datasheet). | | None |

¹ WBv2+ signals are 4x the duration of Sonardyne tone signals (WBv1 & WBv2 are 2x). The TEE figure shows the operational performance when comparing Wideband and tone systems.

² Estimated weights.