

Datasheet

Compatt 6 – USBL/LBL Transponder



The Compatt 6 transponder is fully compatible with all 6G[®] equipment and Sonardyne's latest 6G Long BaseLine (LBL) and Ultra-Short BaseLine (USBL) systems.

Compatt 6 offers significant time saving using faster and more robust Sonardyne Wideband[®]2 acoustic ranging and telemetry protocols. This makes any system operating with Compatt 6 significantly easier to operate therefore de-risking operations, reducing vessel time and reducing training requirements for offshore personnel.

Sonardyne Wideband 2 advanced signal processing offers improved acoustic performance in challenging conditions, longer range, improved multipath rejection around structures and real-time range diagnostics for quality control. Sonardyne Wideband 2 also reduces the interference to and from adjacent Sonardyne and other acoustic positioning systems.

The integrated communications and navigation technology allows the transponder to be used as a multi-purpose modem, autonomous data logger and navigation reference transponder.

The Type 8300 Compatt 6 is the standard-length version and is based on the field proven mechanics of Compatt 5 with improvements to the endcap closure mechanisms. The design offers the perfect balance between size, acoustic output and battery life. Several depth ratings are available: 3,000, 5,000 and 7,000 m, all hard-anodised aluminium alloy with protective polyurethane sleeve.

Typical applications

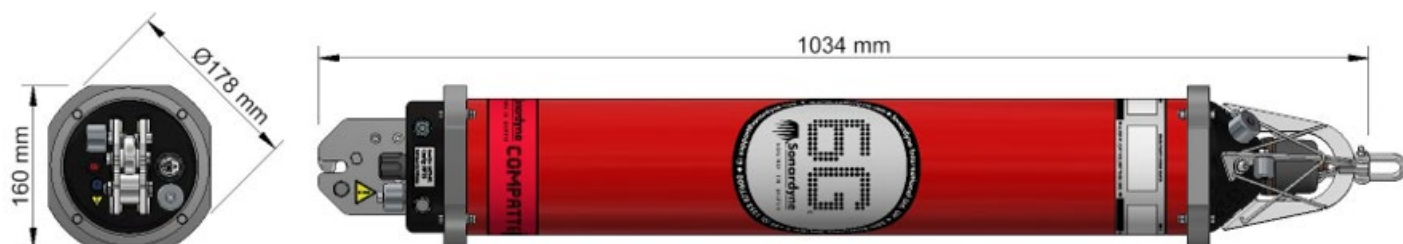
- Long baseline positioning
- Spool piece metrology
- Pipeline lay-down
- Subsea structure placement

Key features

- MF/LMF frequency band utilising Sonardyne Wideband 2 ranging and telemetry protocols
- Dramatically faster and easier to set-up, calibrate and operate
- More robust performance in shallow water and reverberant environments around structures etc.
- Real time diagnostics available on ranges to enable quality control
- Reduced mutual interference to further improve simultaneous ops
- Advanced multi-user/multi-vessel capability
- More than 500 unique Sonardyne Wideband 1 and 2 addresses
- Sonardyne Wideband 1 and HPR 400 navigation compatible
- Automatic power-down if not used for a programmable period
- Integrated modem mode with data rates ranging from 100 to 9,000 bits per second in multiple frequency bands
- Highly reliable release mechanism
- Omni or directional transducer
- Standard sensors – temperature, pressure and MEMS inclinometer
- Optional sensors – Paroscientific DigiQuartz pressure sensor, inclinometer and sound velocity
- Battery disconnect fob allows quick battery disconnection.
- Field proven.

Specifications

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3,000 Depth Rated MF Omni Version Shown (8300-3111)

| Feature | Type 8300-3111 | Type 8300-3113 | Type 8300-5213 | Type-8300-7216 |
|---|-----------------------|-----------------------|-----------------------|-----------------------|
| Depth rating | 3,000 m | 3,000 m | 5,000 m | 7,000 m |
| Operating frequency | MF (20–34 kHz) | MF (20–34 kHz) | MF (20–34 kHz) | LMF (14–19 kHz) |
| Transducer beam shape | Omni-directional | Directional | Directional | Directional |
| Transmit source level (dB re 1 μ Pa @ 1 m) | 187–196 dB (4 levels) | 190–202 dB (4 levels) | 190–202 dB (4 levels) | 187–202 dB (4 levels) |
| Tone equivalent energy (TEE) ¹ | 193–202 dB | 196–208 dB | 196–208 dB | 193–208 dB |
| Receive sensitivity (dB re 1 μ Pa) | 90–120 dB (7 levels) | 80–120 dB (7 levels) | 80–120 dB (7 levels) | 80–120 dB (7 levels) |
| Ranging precision | Better than 15 mm | Better than 15 mm | Better than 15 mm | Better than 15 mm |
| Number of unique addresses | >500 | >500 | >500 | >500 |
| Wideband 1 & 2 | | | | |
| Battery life (listening) | Alkaline | 833 days | 833 days | 833 days |
| | Lithium | 1,390 days | 1,390 days | 1,390 days |
| External power supply | 24 V | 24 V | 24 V | 24 V |
| Safe working load (4:1) | 250 kg | 250 kg | 250 kg | 250 kg |
| Operating temperature | -5 to 40°C | -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 | -20 to 55°C |
| Dimensions (maximum) (length x dia) | With sensor guard | 1,034 x 200 mm | 1,018 x 200 mm | 1,018 x 200 mm |
| | Without sensor guard | 1,034 x 178 mm | n/a | n/a |
| Weight in air/water ² | 23.8/11.8 kg | 27.0/14.0 kg | 29.0/15.0 kg | 33.3/18.8 kg |
| Endcap sensors and options | | | | |
| Temperature ($\pm 0.1^\circ\text{C}$) | Standard | Standard | Standard | Standard |
| Tilt switch ($\pm 30\text{--}45^\circ$) | Standard | Standard | Standard | Standard |
| Strain gauge pressure sensor ($\pm 0.1\%$) | Standard | Standard | Standard | Standard |
| High precision strain gauge ($\pm 0.01\%$) Presens or Keller | Optional | Optional | Optional | Optional |
| Paroscientific DigiQuartz pressure sensor 1,350 m, 2,000 m, 4,130 m, 6,800 m ($\pm 0.01\%$) | Optional | Optional | Optional | Optional |
| Inclinometer (tilt sensor) range $\pm 90^\circ$, accuracy: $\pm 1^\circ$ | Standard | Standard | Standard | Standard |
| High accuracy inclinometer range: $\pm 90^\circ$, accuracy: $\pm 0.05^\circ$ over 0 - $\pm 15^\circ$; $\pm 0.2^\circ$ over 0 - $\pm 45^\circ$ | Optional | Optional | Optional | Optional |
| Sound velocity sensor ± 0.02 m/s accuracy under calibration conditions | Optional | Optional | Optional | Optional |
| Release mechanism | Standard | Standard | Standard | Standard |
| Power for external sensors | Standard | Standard | Standard | Standard |
| Gyro input | Standard | Standard | Standard | Standard |

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.