Datasheet

Compatt 6 – USBL/LBL Transponder and Modem

Description
The Compatt 6 transponder is fully compatible with all 6G® equipment and Sonardyne’s latest 6G LBL and 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 end cap closure mechanisms. The design offers the perfect balance between size, acoustic output and battery life. Several depth ratings are available: 3000 m, 5000 m and 7000 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 9000 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

**Compat 6 – USBL/LBL Transponder and Modem**

![Diagram of the transponder](image)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Type 8300-3111</th>
<th>Type 8300-3113</th>
<th>Type 8300-5213</th>
<th>Type 8300-7216</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth Rating</td>
<td>3,000 metres</td>
<td>3,000 metres</td>
<td>5,000 metres</td>
<td>7,000 metres</td>
</tr>
<tr>
<td>Operating Frequency</td>
<td>MF (19–34 kHz)</td>
<td>MF (19–34 kHz)</td>
<td>MF (19–34 kHz)</td>
<td>LF (14.19 kHz)</td>
</tr>
<tr>
<td>Transducer Beam Shape</td>
<td>Omni-directional</td>
<td>Directional</td>
<td>Directional</td>
<td>Directional</td>
</tr>
<tr>
<td>Transmit Source Level (dB re 1 µPa @ 1 m)</td>
<td>187-196 dB (4 levels)</td>
<td>190-202 dB (4 levels)</td>
<td>190-202 dB (4 levels)</td>
<td>187-202 dB (4 levels)</td>
</tr>
<tr>
<td>Receive Sensitivity (dB re 1 µPa)</td>
<td>90-120 dB (7 Levels)</td>
<td>80-120 dB (7 Levels)</td>
<td>80-120 dB (7 Levels)</td>
<td>80-120 dB (7 Levels)</td>
</tr>
<tr>
<td>Ranging Precision</td>
<td>Better than 15 mm</td>
<td>Better than 15 mm</td>
<td>Better than 15 mm</td>
<td>Better than 15 mm</td>
</tr>
<tr>
<td>Number of Unique Addresses Wideband 1 &amp; 2</td>
<td>&gt;500</td>
<td>&gt;500</td>
<td>&gt;500</td>
<td>&gt;500</td>
</tr>
<tr>
<td>Battery Life (Listening)</td>
<td>Alkaline 833 Days</td>
<td>Lithium 1390 Days</td>
<td>833 Days</td>
<td>1390 Days</td>
</tr>
<tr>
<td>External Power Supply</td>
<td>24 V</td>
<td>24 V</td>
<td>24 V</td>
<td>24 V</td>
</tr>
<tr>
<td>Safe Working Load (4:1)</td>
<td>250 kg</td>
<td>250 kg</td>
<td>250 kg</td>
<td>250 kg</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-5 to 40°C</td>
<td>-5 to 40°C</td>
<td>-5 to 40°C</td>
<td>-5 to 40°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-20 to 55°C</td>
<td>-20 to 55°C</td>
<td>-20 to 55°C</td>
<td>-20 to 55°C</td>
</tr>
<tr>
<td>Length x Diameter With Sensor Guard</td>
<td>1034 x 200 mm</td>
<td>1018 x 200 mm</td>
<td>1018 x 200 mm</td>
<td>1108 x 200 mm</td>
</tr>
<tr>
<td>Maximum Dimensions Without Sensor Guard</td>
<td>1034 x 178 mm</td>
<td>1018 x 200 mm</td>
<td>1018 x 200 mm</td>
<td>1108 x 200 mm</td>
</tr>
<tr>
<td>Weight in Air/Water**</td>
<td>23.8/11.8 kg</td>
<td>27.0/14.0 kg</td>
<td>29.0/15.0 kg</td>
<td>33.3/18.8 kg</td>
</tr>
</tbody>
</table>

#### End Cap Sensors and Options

- **Temperature (±0.1°C)**: Standard
- **Tilt Switch (±30-45°)**: Standard
- **Strain Gauge Pressure Sensor (±0.1%)**: Standard
- **High Precision Strain Gauge (±0.01%)**: Optional
- **Presens or Keller**
- **Paroscientific DigiQuartz Pressure Sensor (1350 m, 2000 m, 4130 m, 6800 m ±0.01%)**: Optional
- **Inclinometer (Tilt sensor)**: Standard
- **High Accuracy Inclinometer**
- **Sound Velocity Sensor ±0.02 m/s accuracy under calibration conditions**: Optional
- **Release Mechanism**: Standard
- **Power for External Sensors**: Standard
- **Gyro Input**: Standard

*TEE – 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.

*Estimated Weights.