

Datasheet

Dynamic Positioning Transponder 6 with inclinometer (DPTi 6)



The Type 8301 Dynamic Positioning Transponder with dual-axis inclinometers (DPTi) is designed to monitor the angle of the riser flex joint on a drilling vessel.

The DPTi 6 supports Sonardyne's latest Wideband[®]2 acoustic ranging and telemetry providing high accuracy positioning, robust performance in noisy and multipath conditions and easy set-up and use. With hundreds of channels, less interference to and from other acoustic systems and multi-user capability, Wideband 2 enables easier SIMOPS vessel capability. These features of the DPTi 6 help de-risk subsea operations and save vessel time and cost.

The Type 8301 DPTi 6 is the standard-length version and is based on the field proven mechanics of the previous version but with improvements to the endcap closure mechanisms. The design offers the perfect balance between size, acoustic output and battery life.

The DPTi 6 is fitted with internal inclinometers to accurately monitor riser angles. The unit can also be used with an external inclinometer unit to monitor BOP and flex joint angles.

DPTi 6 is fully compatible with all of Sonardyne's latest 6G[®] equipment including Sonardyne's Marksman LUSBL and Ranger 2 USBL systems.

Typical applications

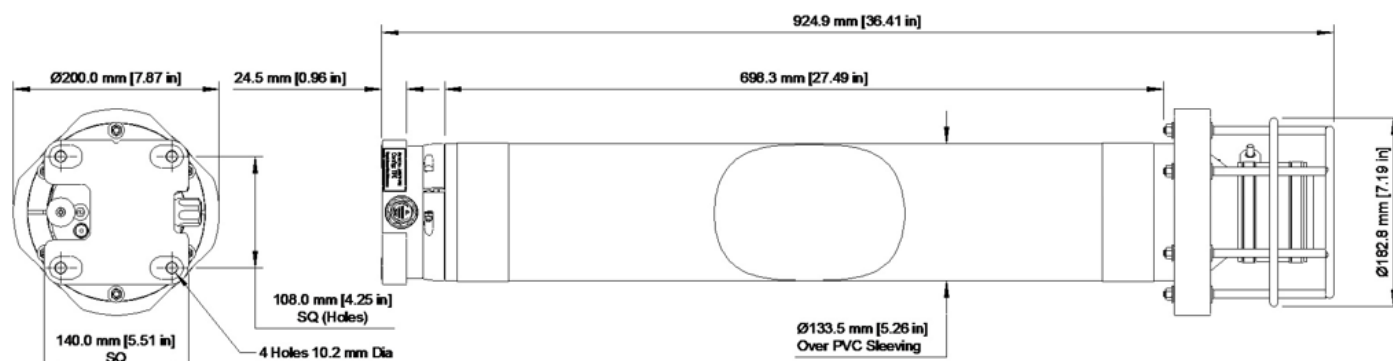
- Riser angle monitoring

Key features

- Medium frequency (MF) band utilising Sonardyne's latest Wideband 2 ranging and telemetry protocols
- Dramatically faster and easier to set-up and operate
- Real-time diagnostics available on ranges to enable quality control
- Reduced mutual interference to further improve simultaneous ops
- More than 500 unique Sonardyne Wideband 1 and 2 channels
- Sonardyne Wideband 1 and HPR400 USBL mode compatible
- Automatic power-down if not used for a programmable period
- Standard sensors: temperature, pressure and high accuracy inclinometer
- Real time diagnostics available on ranges to enable quality control
- Field proven

Specifications

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3 km Depth Rated MF Directional version shown (8301-3113)

| DPT 6 Feature | Type 8301-3111 | Type 8301-3113 | Type 8301-5213 |
|---|-----------------------|-----------------------|-----------------------|
| Depth rating | 3,000 m | 3,000 m | 5,000 m |
| Operating frequency | MF (20–34kHz) | MF (20–34kHz) | MF (20–34kHz) |
| Transducer beam shape | Omni-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) |
| Tone equivalent energy (TEE) ¹ | 193–202 dB | 196–208 dB | 196–208 dB |
| Receive sensitivity (dB re 1 μ Pa) | 90–120 dB (7 levels) | 80–120 dB (7 levels) | 80–120 dB (7 levels) |
| Ranging precision | Better than 15mm | Better than 15mm | Better than 15mm |
| Number of unique addresses (Wideband 1 & 2) | >500 | >500 | >500 |
| Battery life (listening, disabled) | Alkaline | 833 days | 833 days |
| | Lithium | 1,390 days | 1,390 days |
| External power supply | 24 V | 24 V | 24 V |
| Safe working load (4:1) | 250 kg | 250 kg | 250 kg |
| Dimensions (length x diameter) | 924.9 x 134 mm | 924.9 x 182.8mm | 924.9 x 182.8mm |
| Weight in air/water ² | 22.5/11 kg | 24.5/12 kg | 25/12.5 kg |
| Endcap Sensors and Options | | | |
| Temperature ($\pm 0.1^\circ\text{C}$) | Standard | Standard | Standard |
| Tilt switch ($\pm 30\text{--}45^\circ$) | Standard | Standard | Standard |
| Strain gauge pressure sensor ($\pm 0.1\%$) | Standard | Standard | Standard |
| High precision strain gauge ($\pm 0.01\%$) Presens or Keller | Optional | Optional | Optional |
| High accuracy inclinometer range: $\pm 90^\circ$, accuracy: $\pm 0.05^\circ$ over $0 - \pm 15^\circ$, ± 0.2 over $0 - \pm 45^\circ$ | Standard | Standard | Standard |
| Power for external sensors | Standard | Standard | Standard |
| Gyro input | Standard | Standard | Standard |

¹ WBv2+ signals are 4x the duration of (WBv1 & WBv2 are twice) Sonardyne tone signals, therefore the TEE figure is to give the user an idea of the operational performance when comparing Wideband and Tone systems.

² Estimated weights.