

Datasheet

Dynamic Positioning Transponder 6 (DPT 6)



DPT 6 is designed to be used as a seabed reference transponder by Ultra-Short BaseLine (USBL) and Long and Ultra-Short BaseLine (LUSBL) acoustic positioning systems, installed on many Dynamically Positioned (DP) vessels.

The DPT 6 supports Sonardyne 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, Sonardyne Wideband 2 enables easier SIMOPS vessel capability. These features of the DPT 6 help de-risk subsea operations and save vessel time and cost.

The Type 8301 DPT 6 is the standard-length version and is based on the field proven mechanics of the previous version but 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: 3,000, 5,000 and 7,000 m, all hard anodised aluminium alloy with protective polyurethane sleeve. Midi (shorter) and Maxi (long endurance) options are also available. The DPT is fitted as standard with a highly reliable release mechanism to enable the unit to be deployed in a flotation collar and recovered to the surface without ROV intervention.

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

Typical applications

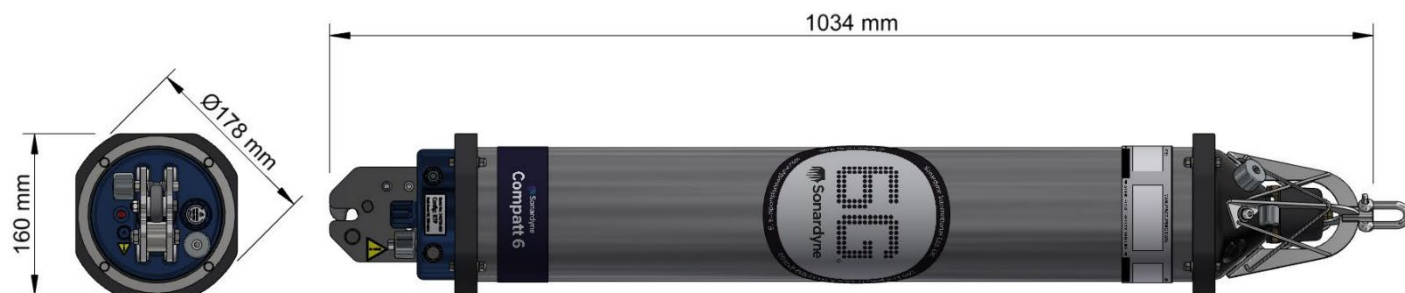
- DP vessel positioning
- Rig positioning
- Drill string monitoring

Key features

- Medium frequency (MF) band utilising Sonardyne Wideband 2 ranging and telemetry protocols
- Dramatically faster and easier to set-up and operate
- Robust acoustic performance in noise and multipath conditions
- 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 channels
- Sonardyne Wideband 1 and HPR400 USBL mode compatible
- Automatic power-down if not used for a programmable period
- 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
- Real time diagnostics available on ranges to enable quality control
- Field proven

Specifications

Dynamic Positioning Transponder 6 (DPT 6)



Type 8301-3111 shown above

Feature	Type 8301-3111	Type 8301-3113	Type 8301-5213	Type 8301-7213
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)	MF (20–34 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)	190–202 dB (4 levels)
Tone equivalent energy (TEE) ¹	193–202 dB	196–208 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)	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 Wideband 1 & 2	>500	>500	>500	>500
Battery life (listening)	Alkaline	833 days	833 days	833 days
	Lithium	1,390 days	1,390 days	1,390 days
Safe working load (4:1) (release mechanism)	250 kg	250 kg	250 kg	250 kg
Dimensions (maximum) (length x diameter)	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, 6800 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

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.