Datasheet

Compatt 6 – USBL/LBL transponder and modem

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 µPa @ 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 µPa)		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	833 days
	Lithium	1,390 days	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	1,018 x 200 mm
	Without sensor guard	1,034 x 178 mm	n/a	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 (±0.1°C)		Standard	Standard	Standard	Standard
Tilt switch (±30-45°)		Standard	Standard	Standard	Standard
Strain gauge pressure sensor (±0.1%)		Standard	Standard	Standard	Standard
High precision strain gauge (±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 (±0.01%)		Optional	Optional	Optional	Optional
Inclinometer (tilt sensor) range ±90°, accuracy: ±1°		Standard	Standard	Standard	Standard
High accuracy inclinometer range: ±90°, accuracy: ±0.05° over 0 - ±15°; ±0.2° over 0 - ±45°		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.