Sonardyne Global Headquarters
T. +44 (0) 1252 872288
F. +44 (0) 1252 876100
E. sales@sonardyne.com
www.sonardyne.com

Datasheet

Autonomous Monitoring Transponder (AMT)

Description

The Type 8305 AMT is a long-endurance Compatt 6 based transponder extensively used for subsea survey tasks, and is capable of autonomously acquiring acoustic ranges and sensor data without surface control. The data is time-stamped and logged internally for recovery via the integrated high-speed acoustic telemetry modem. This autonomy allows measurements to be made over a long period of time without requiring a surface vessel or ROV to command the process. This enables new applications that save vessel and survey time so reducing cost and risk.

Precision pressure, temperature, sound velocity and dual-axis inclinometer sensors are integrated and are intelligently powered up at the requested time and sampling period, providing an ultra-low power platform for up to five years deployment. Sampling regimes can be re-programmed and recovery of all data can be achieved via the acoustic telemetry link.

The AMT has many of the same acoustic functions as Compatt 6. It operates in the Medium Frequency (MF) band and is fully Sonardyne Wideband®2 compatible.

The AMT is available with a range of Omni and Directional transducers, depth ratings and pressure housings dependent on deployment duration and application. Additional external sensors can be easily integrated via the power and communications port.

Typical Applications

- Metocean platform: Subsea acquisition of current profile, temperature, sound velocity and tidal height record
- AUV survey and metrology reference, acoustic position reference, SV and tidal height correction station
- PLET and pipeline buckle arrestor monitoring
- Structure settlement monitoring

Key Features

- Autonomous operation: acquires acoustic ranges & sensor data without surface command
- Integrated precision sensors: pressure, temperature, sound velocity and inclinometers
- Options for external sensors: current meters, turbidity etc.
- Easy to set-up with configuration and sampling period programmable via telemetry link
- Integrated modem with data rates ranging from 100 to 9000 bits per second in multiple frequency bands
- 5-year deployment battery-life possible with Maxi version
- Alkaline and Lithium battery options
- Sonardyne Wideband®1 and HPR400 USBL mode compatible
- Corrosion resistant aluminium-bronze or hard-anodised aluminium housing options
- Highly reliable release mechanism
- Real time diagnostics available on ranges to enable quality
- Field proven

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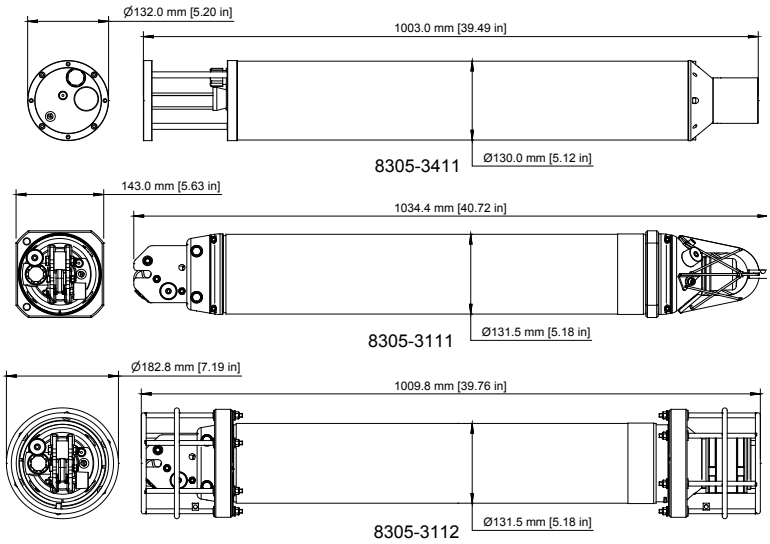
Specifications

Autonomous Monitoring Transponder (AMT)



Feature		Type 8305-3411	Type 8305-3111	Type 8305-3112
Depth Rating		3,000 Metres	3,000 Metres	3,000 Metres
Operating Frequency		MF (19–34 kHz)	MF (19–34 kHz)	MF (19–34 kHz)
Transducer Beamshape		Omni-Directional	Omni-Directional	Directional
Transmit Source Level (dB re 1 µPa @ 1 m)		187-196 dB (4 Levels)	187-196 dB (4 Levels)	190-202 dB (4 Levels)
Tone Equivalent Energy (TEE)*		193-202 dB	193-202 dB	196-208 dB
Receive Sensitivity (dB re 1 µPa)		90-120 dB (7 levels)	90-120 dB (7 levels)	80-120 dB (7 levels)
Ranging Precision		Better Than 15 mm	Better Than 15 mm	Better Than 15 mm
Number of Unique Addresses Wideband 1 & 2		>500	>500	>500
Battery Life (Listening, Disabled)	Alkaline	833 Days	833 Days	833 Days
	Lithium	1390 Days	1390 Days	1390 Days
Safe Working Load (4:1)		N/A	250 kg	250 kg
Mechanical Construction		Aluminium-Bronze	Aluminium	Aluminium
Dimensions; Length x Diameter		1003 mm x 130 mm	1035 mm x 131 mm	1010 mm x 131 mm
Weight in Air (Water)**		35 kg (24.5 kg)	23 kg (11.6 kg)	26 kg (13.6 kg)
End Cap Sensors and Options				
Temperature (±0.1°C)		Standard	Standard	Standard
Tilt Switch (±30-45°)		Standard	Standard	Standard
Strain Gauge Pressure Sensor (±0.1%)		Standard	Standard	Standard
High Precision Strain Gauge (±0.01%) Presens or Keller		Optional	Optional	Optional
Paroscientific DigiQuartz Pressure Sensor 1350 m, 2000 m, 4130 m, 6800 m (±0.01%)		Optional	Optional	Optional
High Accuracy Inclinometer Range: ±90°, Accuracy: ±0.05° over 0 - ±15°; ±0.2° over 0 - ±45°		Optional	Optional	Optional
Sound Velocity 100 mm (±0.017 m/s) Sound Velocity 50 mm (±0.03 m/s)		Optional	Optional	Optional
Release Mechanism		Not Available	Standard	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.