

Datasheet

Riser Profiling System



Sonardyne's Riser Profiling System provides operators with a wireless real-time vertical profile of current speed and direction, temperature and inclination of risers deployed from drilling or production vessels. The system can be used stand alone or integrated within Sonardyne's Marksman acoustic positioning system which is used as a Dynamic Positioning (DP) reference.

Riser sensor data is measured by Sonardyne's latest 6th Generation (6G[®]) DPTi transponders clamped onto the riser during deployment or installed via ROV. The information is transmitted wirelessly using proven acoustic telemetry up to a transceiver on the vessel, eliminating the need for expensive umbilical cables to fitted up each riser.

Up to 10 DPTi transponders are deployed up the riser. Each transponder is fitted with the following sensors:

- High-resolution dual axis inclinometer
- Water temperature
- Pressure and depth
- Optional single point doppler current meter (speed, direction)

At a user-defined update rate, inclination, current speed and direction, pressure, temperature measurements are requested from each transponder. The transponders reply using Sonardyne's Wideband^{®2} acoustic signals to the vessel's acoustic transceiver. All data is processed, logged and displayed graphically and numerically on the topside computer software for instant analysis by the operator. The operator can also set an alarm to activate when the calculated riser angle exceeds a predefined limit.

The Riser Profiling System supports Sonardyne's 6G product family, Sonardyne Wideband 2 acoustic signal technology and previous generation positioning components.

Also available from Sonardyne is a Marine Riser Angle Monitoring System (MRAMS). This uses a pair of DPTi transponders fitted to a BOP and riser lower flex joint to prevent critical bending.

Key Features

- Wireless riser profile data
- Fully automated setup and tracking with Sonardyne 6G instruments
- Riser tilt angle display
- Riser current profile display
- Water temperature display
- User configurable data collection
- Auto and manual modes
- Easy to use, modern user interface
- Remote user interface option

Specifications

Riser Profiling System



Beacon	Depth (m)	* Heading Offset*	Pitch (°)	Roll (°)	Tilt*	Temp °C	Current (m/s)	Current (kg)	Age (m:sec:ss)
101	200.2	0.0	0.21	0.31	0.37	15.1	400.0	180.2	00:23:50
102	400.1	0.0	0.50	0.41	0.65	15.1			00:24:06
103	600.3	0.0	0.71	0.61	0.94	15.0	401.0	119.9	00:23:52
104	800.0	0.0	-0.28	0.41	0.50	15.1			00:24:11
105	1000.2	0.0	0.41	0.20	0.46	15.2	401.0	359.9	00:23:54
106	1200.2	0.0	0.41	-0.18	0.46	15.0			00:24:16
107	1400.3	0.0	0.41	-0.48	0.83	15.1	401.0	0.1	00:23:57
108	1600.1	0.0	-0.49	-0.28	0.56	15.2			00:24:23
109	1800.2	0.0	-0.38	-0.08	0.39	15.2	398.0	300.0	00:24:00
110	2000.2	0.0	0.40	-0.58	0.70	15.2			00:24:31



General		Beacons					Advanced	
Beacon	Use As	Manual Depth	Depth (m)	* Heading Offset*	Pitch Offset*	Roll Offset*		
101	Riser	<input checked="" type="checkbox"/>	200.2	0.0	0.0	0.0		
102	Riser	<input checked="" type="checkbox"/>	400.1	0.0	0.0	0.0		
103	Riser	<input checked="" type="checkbox"/>	600.3	0.0	0.0	0.0		
104	Riser	<input checked="" type="checkbox"/>	800.0	0.0	0.0	0.0		
105	Riser	<input checked="" type="checkbox"/>	1000.2	0.0	0.0	0.0		
106	Riser	<input checked="" type="checkbox"/>	1200.2	0.0	0.0	0.0		
107	Riser	<input checked="" type="checkbox"/>	1400.3	0.0	0.0	0.0		
108	Riser	<input checked="" type="checkbox"/>	1600.1	0.0	0.0	0.0		
109	Riser	<input checked="" type="checkbox"/>	1800.2	0.0	0.0	0.0		
110	Riser	<input checked="" type="checkbox"/>	2000.2	0.0	0.0	0.0		

Riser Profiling System		Equipment Required
Topside Computer Hardware		Sonardyne Type 8026 Navigation PC (marine approved)
Operating System		Windows®10
Acoustic Sensor Interfacing and Time Sync		Sonardyne Type 8098 Navigation Sensor Hub (NSH)
Vessel Transceiver		Sonardyne Type 8142 HPT (LMF band)
Riser Transponders		Sonardyne Type 8300 DPTi 6 (LMF band)
Sensor Accuracies	Temperature (PRT)	±0.1°C
	Pressure/Depth (Strain Gauge)	±0.01%
	Dual Axis Inclinometer (Pitch/Roll)	±0.05° over 0 - ±15°; ±0.2° over 0 - ±45°
	Current/Water Velocity (Single Point Doppler)	1% of measured value ± 0.5 cm/s ¹

¹ Current / water velocity accuracy can at times be affected by turbulent flow around the riser. Current/water direction accuracy is dependent on the alignment with the riser.