

Pipe & Cable Survey

Subsea Detection & Tracking Systems

Industry standard subsea pipe and cable detection

There are thousands of miles of pipes and cables beneath our oceans. Commercial, legal, operational and environmental considerations, demand that these remain in good order. This requirement creates a constant need to verify location, condition, and burial status - operations that are complicated by the ever-changing seabed topography.

TSS is the world leader in developing and supplying technologies to meet these demands. Having developed the world's first commercial pulse induction pipe and cable survey system (TSS 340) in 1991, followed by the release of the TSS 350 AC tone cable survey system, TSS has gone from strength to strength and become the industry standard.



PRODUCT FEATURES

- Suitable for pipe and cable tracking, burial and survey requirements
- Excellent detection and tracking performance
- Pulse induction technology allows autonomous operation
- AC tone detection mode for measurement at increased burial depths
- System design facilitates quick and easy mobilisation
- Forward search mode for target location



TELEDYNE TSS
Everywhereyoulook™

440

Subsea Pipe Tracking System

TSS technologies are proven in operation in some of the most exacting environments worldwide, and its equipment is established as the most accurate means of obtaining pipe and cable burial data.

The TSS 440 pipe detection system has been established for a number of years as the industry standard, providing accurate and reliable survey data, which provides the position of these pipes on or beneath the seabed. The system is flexible in its range of uses and can be installed on a variety of vehicles for undertaking survey work.

Dualtrack, the combined system that can detect and track both pipes and cables incorporates both the 440 and the 350 into one product, combining the capabilities of both, to provide one ultimate survey tool, mountable to workclass ROVs.



	440	350	Dualtrack
Surface Display Console	✓	✓	✓
440 Subsea Electronics Pod	✓	✗	✓
350 Subsea Electronics Pod	✗	✓	✓
Power Supply Pod	✓	✗	✓
DeepView Software	✓	✓	✓
ALT250 Altimeter	✓	✓	✓
3-Axis Coil Cable Assy	✗	✓	✓
Pod to ROV Cable	✓	✓	✓
350 Coil Assy x2	✗	✓	✓
Coil Mounting Frame	✓	✓	✓
Spare 350 Coil	✗	✓	✓
440 Coil Assy x 4	✓	✗	✓
Transit Cases	✓	✓	✓
System Manuals	✓	✓	✓
Field Service Kit	✓	✓	✓

PRODUCT FEATURES AND BENEFITS

- Pulse induction technology allows accurate survey information regardless of vehicle heading
- Windows™ based display and control software
- DSP techniques give quality control information
- Long range detection of buried subsea targets
- No time-consuming vehicle calibrations required
- Easy to operate
- Simple to install and service
- Fully integrated system with altimeter, spares and manual

350

Subsea Cable Tracking System

With modern subsea cable systems becoming increasingly sophisticated and their deployment, recovery and repair a more exacting science, there is a need for accurate subsea cable location. The TSS 350 cable survey system has been developed to meet this requirement in a compact modular system that provides proven features whilst remaining easy to use.

The 350 system is designed specifically for the detection and survey of tone-carrying cables. Featuring a comprehensive software display and menu structure, real-time information is presented in a clear graphical format and provided as a digital output for storage and subsequent processing.

This fully integrated system provides accurate survey data, verifying location and burial status of a cable as well as providing operators with fault location, vehicle skew angle and look-ahead information.

The TSS 350 provides today's specialist operating companies with a system that will significantly improve their subsea operations, allowing cable detection at greater burial depths for a variety of applications.



PRODUCT FEATURES AND BENEFITS

- Cable location data and depth of burial data
- Cable fault location
- Vehicle skew angle data
- Look-ahead information
- Tone discrimination
- Combination of advanced DSP technology and proven tone detection techniques
- Accurate and reliable survey data with quality control envelope
- Tone frequency discrimination

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TECHNICAL SPECIFICATIONS

		350	440
System Performance	Detection range (in a low noise environment)	Cable detected at vertical range up to 10m and within a total horizontal swath width of 20m centered on the coil array	2.5cm armoured cable depth and tracking at 1.2m 1cm unarmoured cable depth and tracking at 0.6m 15cm armoured cable depth and tracking at 1.8m 10" pipeline depth and tacking at 3.0m 4" pipeline depth and tracking at 2.2m 4" umbilical depth and tracking at 2.2m
	Vertical measurement accuracy (in a low noise environment)	The greater of 5cm or 5% slant range. Stated accuracy applies within the quality envelope of 4m. (Results measured on a cable carrying 25Hz tone frequency at 30mA current)	The greater of 5cm or 5% slant range
Subsea Electronics Pod	Applied AC Tone	1 - 200Hz in 1Hz steps	N/A
	Dimensions	140mm (d) x 460mm (h)	
	Weight	10kg in air; 2kg in water	
	SDC Communication	RS232 2-wire 20mA digital current loop 4-wire 20mA digital current loop	
Surface Display Computer	Power input	110 - 240VAC (internally switched)	110 or 240VAC (option upon order)
	Hardware	19" ruggedised grade touch screen panel PC Rear mounted comms endorse for all external interfaces	
	Display resolution	1280 x 1080	
	Dimensions	599mm x 480mm x 345mm (including transit case)	
	Power consumption	250W (max)	
	Shock resistance	Operating: better than 5g for <10ms; Non-operating: better than 40g for <10ms	
Altimeter	Dimensions	140mm (d) x 290mm (h)	
	Frequency	200kHz	
	Range	30cm to 30m	
	Connection cable	3m length (other lengths available to order)	
	Connection to	Subsea electronics pod	
Depth Rating	All subsea components are depth rated to 3000m as standard (6000m option)		
Field Support Kit	Supplied as part of the recommended system		
Warranty	12 months international warranty including parts and labour		

COMPANY WITH
MANAGEMENT SYSTEMS
CERTIFIED BY DNV
= ISO 9001 =
= ISO 14001 =
= OHSAS 18001 =

*This is an artistic representation of the proposed appearance
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