MicronNav 200

USBL Tracking System



Applications

- ROV navigation
- Diver tracking system
- AUV tracking
- ROV location beacon

The MicronNav 200 system is the latest generation of UltraShort Base Line (USBL) positioning system from Tritech. Designed for small vehicles and diver supporting applications, the system benefits from a number of new features including data transfer interleaved with USBL positioning, software integration into Google Maps™, smaller, more accurate USBL head and compatibility with the new MicronBattery Modem.

Benefits

- Quick and easy to mobilise
- Integration into Google Maps™
- More robust MicronNav 200 hub
- Seamless integration into Genesis software
- Easy to calibrate

Features

- Integrated motion sensor
- 1° improved magnetic compass
- Connect via sonar Aux port
- Low power consumption
- Compact and easy to install

The system comprises a subsea MicronModem or Battery MicronModem, a surface USBL transducer with integral magnetic compass and pitch/roll sensors, a surface MicronNav 200 interface hub and bespoke operating software under control of a topside PC/laptop.

The MicronNav 200 uses spread spectrum acoustic technology. This provides a robust method for communication between the dunking transducers and the vehicle MicronModem/MicronBattery Modem. The USBL transducer can provide 180 degree hemispherical coverage below the transducer, which allows vehicle tracking in very shallow water. Omni-directional coverage is provided by the MicronModem and MicronBattery Modem.

The MicronModem is a stand-alone device which either responds to acoustic interrogation from the USBL head (transponder mode), or is triggered by RS232 / RS485 (responder mode) through the main port. The responder trigger can come either from the auxiliary port on a Tritech MicronSonar, or directly from the MicronNav 200 interface hub.

Key Specification	
Positioning Technology	Ultra Short Baseline (USBL)
Tracking range	500 m Horizontal, 150 m Vertical
Targets tracked	1 Responder or up to 254 Transponders
Range accuracy	±0.2 m
Hub power requirement	90-264 VAC (47-63 Hz) or 15-36 VDC
Modem depth rating	750 m

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System	
Positioning technology	Ultra Short Baseline (USBL)
Frequency band	20 – 28 kHz
Data rate	40 bits/s or 100 bits/s (spread spectrum)
Tracking range*1	500 m Horizontal, 150 m Vertical
Range accuracy*2	±0.2 m
Bearing accuracy	1˚ RMS (determined by USBL integrated heading sensor)
Pitch & Roll accuracy	0.2˚ Static / 0.5˚ Dynamic (typical)
Targets tracked	1 Responder or up to 254 Transponders
Doppler tolerance	±5 m/s

MicronNav 200 Surface Hub	
Power requirement (AC or DC)	90-264 VAC (47-63 Hz) or 15-36 VDC
Power consumption	8.5 W from either source (with no external load)
Output voltage	33 V (when on AC Supply), 31.5 V (when on DC supply)
Dimensions	232 x 185 x 52 mm (width, depth, height)
Weight	1.4 kg
Material	Stainless Steel housing with Anodised Aluminium front fascia
Temperature rating	5 ˚C to 35 ˚C (operational), -20 ˚C to 50 ˚C (storage)

USBL Transducer	
Transmit source level	173 dB re. 1 µPa at 1 m
Deck cable length	10 m standard (20 m, 50 m options)
Depth rating	30 m
Dimensions	75 x 250 mm (diameter, length)
Weight in air	1.0 kg
Weight in water	0.1 kg
Temperature rating	-10 ˚C to 35 ˚C (operational), -20 ˚C to 50 ˚C (storage)

Modem/Transponder/Responder	MicronModem	MicronBattery Modem
Supply voltage	12 - 48 VDC	
Beam pattern	+/-90 ˚, Omni-directional	
Transmitter source	169 dB re 1 µPa at 1 m	
Communications protocol	RS232 or RS485 (internally set)	
Depth rating	750 m	
Power consumption	3.5 W transmitting 0.28 W receiving	3.5 W transmitting 0.05 W receiving
Dimensions	56 x 77 mm (depth, height)	56 x 206 mm (depth, height)
Weight in air	0.24 kg	0.89 kg
Weight in water	0.08 kg	0.45 kg
AC Charger	N/A	90 -264 VAC 47- 63 Hz , 18 W charging
Temperature rating*3	-10 ˚C to 35 ˚C (operational), -20 ˚C to 50 ˚C (storage)	

Specification subject to change in line with Tritech's policy of continual product development

*1 Range is dependent on operating conditions.
*2 ±2 % of 10 m slant, ±0.2 % of 100 m slant, ±0.04 % of 500 m slant - assumes correct speed of sound.
*3 Battery Modem operational temperature limited to no less than 10 ˚C during charging or while on external power.

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