



PHINS 6000

INERTIAL NAVIGATION SYSTEM

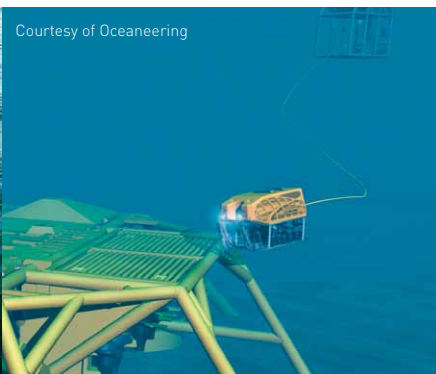
PHINS 6000 is a subsea inertial navigation system providing position, true heading, attitude, speed and heave. Its high-accuracy inertial measurement unit is coupled with an embedded digital signal processor that runs an advanced Kalman filter. PHINS DVL Ready is a pre-assembled and pre-calibrated with a Doppler Velocity Log version making the system easy to install and ready to use for more precise navigation.

FEATURES

- All-in-one 3D positioning with heading, roll and pitch
- Fiber Optic Gyroscope (FOG), unique strap-down technology
- Multiple aiding options (DVL, USBL, LBL, RAMSES, GPS, depth sensor)
- DVL Ready option available
- RAMSES option available (tight coupled acoustic aiding)

BENEFITS

- Accurate and georeferenced position + attitude at high frequency
- No spinning element hence maintenance free
- Flexible & scalable configuration for all deployment scenarios
- Immediate availability and performance for all vehicles
- Ultimate sub-metric performance using sparse array transponders and on-the-fly calibration



APPLICATIONS • ROV and AUV navigation • Towfish navigation • Metrology • Precise positioning
• Out of straightness survey

PHINS 6000

TECHNICAL SPECIFICATIONS

PERFORMANCE

Position accuracy ⁽¹⁾	
With USBL/LBL	Three times better than USBL/LBL accuracy
With DVL	0.1% of travelled distance
No aiding for 1 min/2 min	0.8 m/ 3.2 m
Heading accuracy ⁽²⁾⁽³⁾	
With GPS	0.01 deg secant latitude
With DVL/USBL/LBL	0.02 deg secant latitude
Roll and Pitch accuracy ⁽²⁾	0.01 deg
Heave accuracy	5cm or 5% (Whichever is greater)

OPERATING RANGE / ENVIRONMENT

Operating / Storage Temperature	-20 to 55 °C / -40 to 80 °C
Rotation rate dynamic range	Up to 750 deg/s
Acceleration dynamic range	± 15 g
Heading / Roll / Pitch	0 to +360 deg / ±180 deg / ±90 deg
MTBF (computed/observed)	40,000/80,000 hours
No warm-up effects	
Shock and Vibration proof	

PHYSICAL CHARACTERISTICS

Depth rating (m)	Material	Weight in air/water [kg]	Housing dimensions (Ø x H mm)	Connector	Mounting
6000	Titanium	24/14.1	255 x 227	1 x 21 pin 4 x 13 pin BURTON	6 Ø 6.6 holes
6000 «DVL Ready»	Titanium	55/48.5(WHN300K6,WHN600K6) 52.9/47 (WHN1200K6)	255 x 595	1 x 21 pin 4 x 13 pin BURTON	6 Ø 11 holes

INTERFACES

RS 232/ RS 422	6 inputs / 6 outputs / 1 configuration port
Pulse port ⁽⁴⁾	2 inputs
Sensors supported	GPS, USBL, RAMSES, LBL, DVL, DEPTH, CTD/SVP
Input/Output formats	Industry standards: NMEA0183, ASCII, BINARY
Baud rates	600 bauds to 115.2 kbaud
Data output rate	0.1 Hz to 100 Hz
Power supply	24 V DC
Power consumption	12 W

(1) CEP: 50 % circular Error Probability. DVL aiding position accuracy is dependent on DVL performances.

(2) RMS values

(3) Secant latitude = 1 / cosine latitude

(4) Input GPS PPS pulse for accurate time synchronization of PHINS6000

Specifications subject to change without notice