



PHINS

HIGH-PERFORMANCE INERTIAL NAVIGATION SYSTEM

PHINS, Photonic Inertial Navigation System outputs position, heading, attitude, depth, speed, and heave. Its high accuracy inertial measurement unit is based on **iXBlue**'s FOG technology coupled with an embedded digital signal processor that runs an advanced Kalman filter.

FEATURES

- All-in-one high-accuracy 3D positioning with heading, roll and pitch
- Fiber Optic Gyroscope (FOG), unique strap-down technology
- Multiple interfaces (DVL, EM log, GPS and depth sensor)
- Compact, lean and reliable
- Ethernet, Web-based Man-Machine Interface (MMI)

BENEFITS

- Complete navigation unit
- No spinning element hence maintenance free
- Versatile
- Appropriate for all underwater vehicles

APPLICATIONS • Surface navigation for frigates, MCMV and fast patrol boats
• AUV • ROV • HOV • SDV



PHINS

TECHNICAL SPECIFICATIONS



IMO Certified
N° 19110/A1 EC
N° 19183/A1 EC

PERFORMANCE

Position accuracy ⁽¹⁾

With GPS

Three times better than GPS accuracy

With USBL/LBL (Subsea Applications)

Three times better than USBL/LBL accuracy

With DVL

0.1% of travelled distance

No aiding for 2 minutes

3 m

No aiding for 5 minutes

20 m

Pure inertial mode

0.6 Nm/hr

Heading accuracy ⁽²⁾⁽³⁾

With GPS

0.01 deg secant latitude

With USBL/LBL/ DVL (Subsea Applications)

0.02 deg secant latitude

Roll and Pitch dynamic accuracy ⁽²⁾

0.01 deg

Heave accuracy

5 cm 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 hours / 80,000 hours

No warm-up effects

Shock and Vibration proof

PHYSICAL CHARACTERISTICS

Dimensions (L x W x H)

180 x 180 x 162 mm

Weight in air

4.5 kg

Water proof

IP66

Material

Aluminium

INTERFACES

Serial RS232/RS422 port

5 inputs / 5 outputs / 1 configuration port

Ethernet port ⁽⁴⁾

UDP / TCP Client / TCP server

Pulse port ⁽⁵⁾

4 inputs and 2 outputs

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 200 Hz

Power supply

24 VDC

Power consumption

< 20 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) All input /output serial ports are available and can be duplicated on Ethernet ports

(5) Use GPS PPS pulse for accurate time synchronization of PHINS

Specifications subject to change without notice