

Rovins

FOG-based high-performance inertial navigation system for subsea vehicles

Rovins is a combined survey-grade full featured inertial navigation system for water depths up to 3,000 m. Designed specifically for offshore survey and construction works, Rovins, thanks to its advanced Kalman filter, improves the efficiency of all operations where accurate position, heading and attitude are key benefits. Rovins is offered in stand alone or «DVL ready».



FEATURES

- All-in-one high-accuracy 3D positioning with heading, roll and pitch, ROT and 3D speeds
- Unique FOG strap-down technology
- Multiple interfaces (DVL, USBL, LBL, Ramses, GPS, depth sensor)
- Solution DVL Ready
- Octans footprint compatible
- Post-processing software option
- OEM version available (C5, see Phins Compact Serie)

BENEFITS

- Accurate georeferenced position and attitude at high frequency
- High reliability and low maintenance
- Flexible and scalable configuration for all deployment scenarios and mission sequences
- Immediate availability for all vehicles
- Ultimate sub-metric performance using sparse array
- Outstanding image georeferencing

APPLICATIONS

- ROV positioning
- Multibeam sonar
- Out-of-straightness
- Subsea construction

TECHNICAL SPECIFICATIONS

Performance / Characteristics

Position accuracy⁽¹⁾

With USBL / LBL	Three times better than USBL / LBL accuracy
With DVL	0.1% of traveled distance
No aiding for 60s / 12 min	1.5 m / 6 m

Heading accuracy⁽²⁾⁽³⁾

With GPS / USBL / LBL / DVL	0.05 deg secant latitude
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Roll & Pitch dynamic accuracy ⁽²⁾	0.01 deg
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Heading accuracy ⁽⁴⁾	2.5 cm or 2.5% (whichever is greater)
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Operating range / Environment

Operating / storage temperature	-20 to 55°C/-40 to 80°C
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Rotation rate dynamic range	Up to 750° /Sec
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Acceleration dynamic range	+/-15 g
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Heading /roll/ pitch ranges	0 to +360 deg / ±180 deg / ±90 deg
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MTBF (computed / observed)	40,000 hours / 80,000 hours
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No warm-up effects

Robust to harsh environment, shock and vibration proof

Physical Characteristics

	Stand alone	«DVL ready»
Depth rating	3,000 m	3,000 m
Dimensions (φ x H)	Titanium	Titanium
Weight in air /water	15 / 6,2 kg	29.2-32.6 / 13.6-16.3 kg
Material	Ø 213 x 375 mm	Ø 225-298 x 629 mm
Connectors	5 x SEACON	5 x SEACON

Interfaces

Serial RS232 / RS422 port	5 inputs / 5 outputs / 1 configuration port
Ethernet port	100 Mbits, UDP / TCP client / TCP server / web server (GUI)
Pulse port (PPS, Trigger) ⁽⁵⁾	3 inputs / 2 outputs
Sensors supported	GPS, USBL, RAMSES, LBL, DVL, DEPTH, CTD/SVP
Input / output formats	Industry standards: NMEA0183, ASCII, BINARY
Data output rate	0.1 Hz to 200 Hz
Power supply / consumption	24 VDC (20 - 32V) / < 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) Smart Heave™ - (5) Input of GPS PPS pulse for accurate time synchronization of ROVINS