

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

APPLICATION

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

TECHNICAL SPECIFICATIONS

Performance

Position accuracy ⁽¹⁾	
With GNSS/USBL/LBL	Three times better than GNSS/USBL/LBL
DVL-Aided straight line performance	0.1 %TD (CEP 50)
DVL-aided optimal performances in typical conditions	0.02 %TD (CEP 50)
No aiding for 60s / 120s	0.2 m/0.6 m (CEP50)
Heading accuracy ⁽²⁾⁽³⁾	
With GNSS (or USBL/LBL) & DVL	0.04 deg secant latitude RMS
With GNSS or DVL or USBL/LBL	0.07 deg secant latitude RMS
Roll and pitch dynamic accuracy (no aiding)	0.01 deg RMS

Operating range/Environment

Operating/Storage temperature	-20 to 55 °C / -40 to 80 °C
Rotation rate dynamic range	Up to 750 °/sec
Acceleration dynamic range	+/-30 g
Heading/Roll/Pitch ranges	0 to +360 deg / ±180 deg / ±90 deg
MTBF	150,000 hours (System observed) 500,000 hours (FOG + accelerometers)
Robust to harsh environment, shock and vibration proof	Robust to harsh environment, shock and vibration proof
Depth rating	3,000 m

Physical characteristics

	Stand alone	«DVL ready»
Material	Titanium	Titanium*
Weight in air/water	15/6.2 kg	29.2-32.6 / 13.6-16.3 kg
Mounting (Ø in mm)	6 Ø 6.5 holes	
Dimensions (Ø x H in mm)	Ø 213 x 375 mm	Ø 225-298 x 629 mm
Connector	3 x 12 pins, 1 x 19 pins, 1 x 26 pins SEACON	5 x SEACON

Interfaces

Sensors	GNSS/USBL/LBL/DVL/EMLOG/DEPTH/CTD/SVP
Serial	5 ports : RS422 or RS232
Ethernet	10/100 Mbits, UDP/TCP (client / server)/web server (GUI)
Pulse	3 inputs / 2 outputs
Input/Output	Configurable 7i / 5o, Industry standards: NMEA, ASCII, EXAIL STD BIN etc... more than 130 output protocols
Baud rate	Up to 460 kbaud
Data output rate	0.1 Hz to 200 Hz
Power supply/consumption	24 VDC

* Estimated weight based on selected DVL (Exail INS are compatible with Teledyne RDI and Nortek DVLs)

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

(2) RMS values

(3) Secant latitude = 1/cosine latitude