

ROVINS



ROVINS is a combined survey-grade full-featured Inertial Navigation System (INS) for water depths up to 3,000m. Designed specifically for offshore survey and construction works, ROVINS improves the efficiency of all operations where accurate position, heading, 3D speeds, and attitude are key benefits.

Specifications

Product	ROVINS
Country of origin	France
Manufacturer	Exail Technologies SA

Features

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

Benefits

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

Applications

- ROV / AUV positioning
- Multibeam sonar motion reference
- Subsea construction

Position accuracy

With USBL/LBL	Three times better than USBL/LBL accuracy
With DVL	0.2% of traveled distance
No aiding for 1 min/2 min	1.5 m / 6 m

Operating Range/Environment

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

Heading accuracy

With GPS DVL/USBL/LBL^{2 3}	0.01 deg secant latitude
Roll and Pitch accuracy²	0.01°
Heave accuracy⁴	0.01 deg

Physical characteristics

Depth rating (m)	Material	Weight in air/water kg	Housing dimensions (Ø x H mm)	Connector	Mounting
3000	Titanium	15 / 6.2	213 x 375	5 x SEACON MI-CON	6 Ø 6.6 mm holes
3000 "DVL Ready"	Titanium	55/48.5(WHN300K6,WHN600K6) 52.9/47 (WHN1200K6)	32.6 / 16.WHN300K3, WHN600K3) 29.2 / 13.6 (WHN1200K3)	5 x SEACON MI-CON	6 Ø 11 mm holes

Interfaces

Serial RS232/RS422 Ports	5 inputs / 5 outputs / 1 configuration port
Ethernet Port ⁽⁵⁾	UDP / TCP Client / TCP Server
Pulse Port ⁽⁶⁾	3 inputs / 2 outputs
Sensors Supported	GPS, USBL, RAMSES, LBL, DVL, Depth, CTD/SVP
Input / Output Formats	Industry standards: NMEA0183, ASCII, BINARY
Baud Rates	600 baud to 115.2 kbaud
Data Output Rate	0.1 Hz to 200 Hz
Power Supply	24 VDC
Power Consumption	< 20 W

Notes

- (1) CEP: 50% Circular Error Probability. DVL aiding position accuracy depends on DVL performance
- (2) RMS values
- (3) Secant latitude = $1 / \cos(\text{latitude})$
- (4) Smart Heave™
- (5) All input/output serial ports are available and can be duplicated on Ethernet ports
- (6) Input of GPS PPS pulse for accurate time synchronization of ROVINS