

Rovins Nano

Compact and cost effective inertial navigation system for ROV navigation

Rovins Nano merges the established high-grade Exail Inertial Navigation System (INS) with our competitive Inertial Measurement Unit (IMU). It is built on Exail's renowned Fiber-Optic Gyroscope (FOG) solid state technology and offshore instrumentation expertise. Rovins Nano offers the unbeatable stability and accuracy of the inertial position while simplifying the operation with its autonomous external sensor management. Rovins Nano is the navigation solution you can rely on, bringing an additional level of safety in case of deficient aiding sensors.



FEATURES

- True north, roll & pitch, rotation rates
- DVL & depth sensor available as options
- Optimized interface with ramses for extending operations
- Web GUI and legacy serial control commands
- Stand-alone, small and lightweight

BENEFITS

- Inertial position & velocity, available with and without DVL
- Open architecture; for all 3rd party sensors brands: DVL, USBL, LBL, depth sensor ...
- Sparse array enhancement to your existing LBL network
- Identical interfacing to Rovins, Phins, Octans INS
- ITAR-free, fast export under O&G regulations
- Cost effective: better ROI, lower TCO

APPLICATIONS

- ROV OP & Navigation
- IRM
- MWSK
- Survey
- Dredging

TECHNICAL SPECIFICATIONS

Performance/Characteristics

Position accuracy ⁽¹⁾	
With GNSS/USBL/LBL	Three times better than GNSS/USBL/LBL
DVL-aided straight line performance	0.20 %TD (CEP 50)
DVL-aided optimal performances in typical conditions	0.04 %TD (CEP 50)
No aiding for 60 s / 120 s	0.6 m / 2.2 m (CEP50)
Heading accuracy ⁽²⁾⁽³⁾	
With GNSS (or USBL/LBL) & DVL	0.10 deg secant latitude RMS
With GNSS or DVL or USBL/LBL	0.15 deg secant latitude RMS
Roll and pitch dynamic accuracy (no aiding)	0.05 deg RMS

Operating range/Environment

Operating/storage temperature	-20 to 55 °C / -40 to 80 °C
Rotation rate dynamic range	Up to 250 ° /Sec
Acceleration dynamic range	±5 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	6,000 m

Physical Characteristics

Material	Titanium
Weight in air/water	11.2 kg / 6.5 kg
Mounting (Ø in mm)	8 Ø 6.5 holes
Dimensions (Ø x H in mm)	Ø178 x 266 mm
Connector	3 x 12 pins, 1 x 26 pins 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	1 input for PPS
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 ⁽⁵⁾	24 VDC (20 - 32 V) / < 14 W

(1) CEP, 50 % Circular Error Probability.

(2) Typical performances, dependent on external sensor characteristics.

(3) RMS Values.

(4) Secant Latitude = 1 / Cosine Latitude.

(5) Rovins' own power consumption, not taking into account external sensors consumption, typical value @ 24 V and ambient temperature.