Pharos G3 North Finder

DESCRIPTION

The PHAROS G3 north-finding device, using advanced inertial measurement technology and a Fiber Optic Gyroscope (FOG), determines true north with an accuracy of 0.35°sec(lat) in 4 minutes and 0.5°sec(lat) in 3 minutes. This level of precision remains consistent even in environments with severe magnetic interference or where GNSS signals are unavailable.

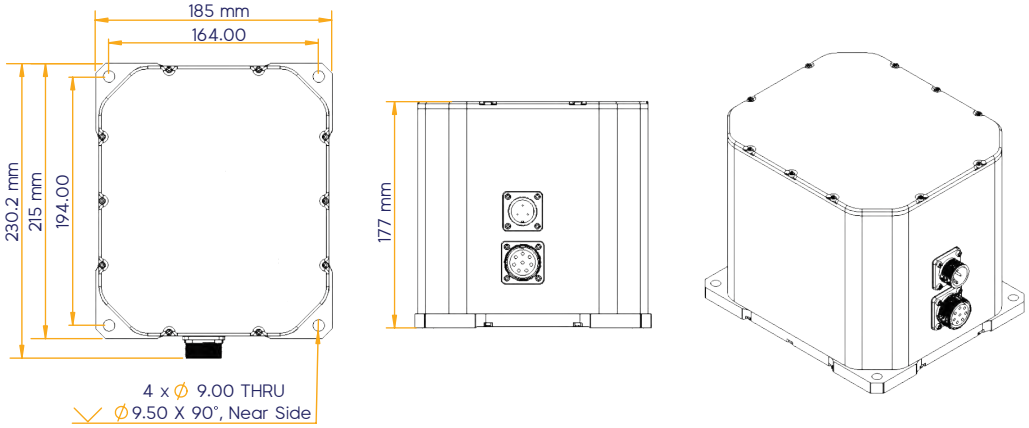
A key advantage of the PHAROS G3 over similar systems is its ability to deliver fast, accurate, and stable navigation performance in vibrating and challenging environments—conditions in which many other devices experience performance degradation.

This makes the PHAROS G3 an excellent choice for sensitive applications and harsh operational conditions.

FEATURES

- Fiber Optic Gyroscope (FOG) technology
- North-finding accuracy 0.08°sec(lat)(1σ)
- North-finding time: 3 and 4 minutes
- Capability to display pitch and roll angles of the system within ±10°
- North-finding capability on inclined platforms up to ±5°
- Azimuth transfer capability from the base platform to the sighting platform up to 80°(Considering the additional inclinometer and the transfer process)
- Maintenance north-finding accuracy in vibrating environments (for example, vibration caused by generators)
- Can be equipped with a module for transmitting and receiving data from external GNSS modules
- Functional fault detection and alerting capability
- Supports NMEA and isolated RS422, RS232, Ethernet, and CAN protocols
- Immunity to EMI and compatibility with EMC
- IP67 protection

Dimension Specifications:



Technical SPEC

Parameter	Value	
North Finder Type	Rotary North Finder based on FOG	
North seeking time	4 min	3 min
North finding accuracy	Less than 0.35° x sec(lat)(1σ)	Less than 0.5°x sec(lat)(1σ)
Heading Accuracy	Less than 0.01° RMS or Less than 0.03° MAX	
Leveling Rang	± 10°(roll & pitch)	
Platform level range	± 5° (roll & pitch)	
Max elevation	80° (Considering the additional inclinometer and the transfer process)	
Warm-up time	3 min	
Vibration error (deg) (f ≥ 5 Hz)	$A=\begin{cases}0.216\ for\ 3\ \text{min}\ north\ seeking\\0.131\ for\ 4\ \text{min}\ north\ seeking\end{cases}$ $E=\omega\,(Ae^{-0.42f}+Be^{-0.08f})$ $B=\begin{cases}0.012\ for\ 3\ \text{min}\ north\ seeking\\0.007\ for\ 4\ \text{min}\ north\ seeking\end{cases}$ * f is the vibration frequency in Hz * ω is the angular velocity of the vibrat ion in °/sec	

Electronic SPEC

Parameter	Value	Unit
External Power Supply	12 ~ 29.4	V (DC)
Current Consumption	Max: 1.5 @ 24 V Typical: 0.4 @ 24 V	A
Digital Output	2xRS422 , RS232 , CAN , LAN	
Frame Data Structure	Serial / NMEA 0183 / Modbus	
Output Data Rate	9600 ~ 1,000,000 bit/sec	
Cable Specifications	Shielded Awg 24 , Shielded Awg 22	
Connector	Military grade	

Mechanical & Environmental SPEC

Parameter	Value	Unit
Dimension	215x185x177	mm
Weight	7500	gr
Material	Hard Anodized Aluminum	-
Installation Method	Nut and Bolt	-
Operational Temperature	-10 ~ +50	°C
Storage Temperature	-20 ~ +60	°C
Protection	IP67	
Vibration	According to IDS841 Sweep 2Hz - 13.2Hz at ±5 mm, 13.2Hz - 100Hz at 7 m/s 2 and for 2 hours on each resonance, otherwise 2 hours at 30Hz in all three axes	
Shock resistance	According to IDS841 Operating: 20g , 6 ms	

APPLICATIONS

- Satellite-independent north finding
- Surveying and navigation
- Geophysical and scientific research
- Industrial and commercial applications
- Marine and aviation applications