星天海洋
STARTEST MARINE



Fibre-based luminous conductor multi-sourced integration inside the cylindrical module

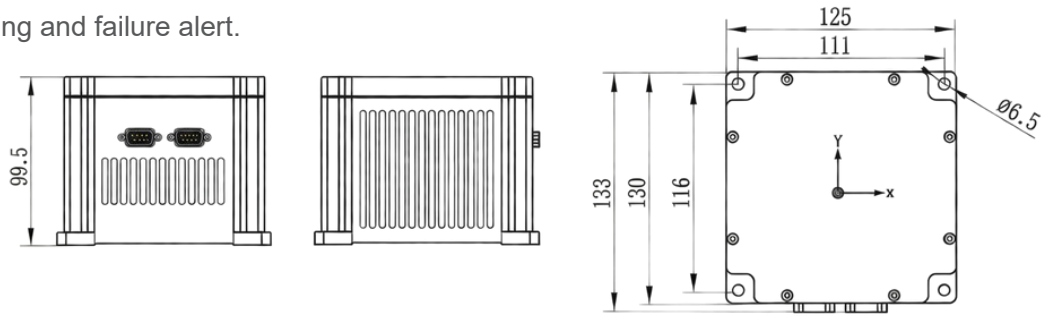
GeoSINS-D

Optical gyro combination navigation system

Product Overview

The GeoSINS-D fibre-optic gyro combination navigation system is centred on three-axis fibre-optic gyroscopes and accelerometers, which interprets information on the attitude, direction, location and velocity of the real-time output carrier through navigation. The system integrates external assistive equipment data such as DVD, GNSS, USBL and Depthometers, supports pure inertia, GNSS combinations, DVD combinations and USBL combinations of four navigational modes to inform navigation and control of submersibles / UUVs. Equipment in the form of in-class installation, non-hydrate, supporting NMEA0183 output, with self-inspection, self-inspection of equipment

Status monitoring and failure alert.



GeoSINS-D Wireless Gyro-Synthetic Navigation System

[System Features]

Fibre-commodity guide Multi-source integration

Fibre inertia measurement: with three-axis fibre gyroscopes and accelerometers at its core, real-time output of attitude, direction, location and velocity. Multisource assistive integration: Support data integration with external assistive devices such as DVD, GNSS, USBL and depth meters. Four modes of navigation: support Pure inertia, GNSS combination, DVD combination and USBL combination navigation.

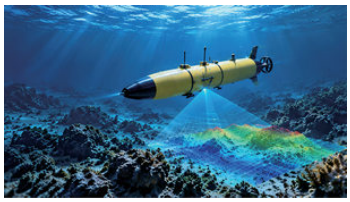
Accurate measurement, flexible alignment.

Attitude and direction: Attitude accuracy 0.01° (one qu) and direction accuracy 0.1° sec (one qu) DVD combination positioning: Combined positioning accuracy (CEP) < 0.4%D, with applicable conditions specified in the product parameters. Multiple alignments: support for sea-based alignment, underwater static alignment and rapid static alignment, marine mobile targeting with GNSS

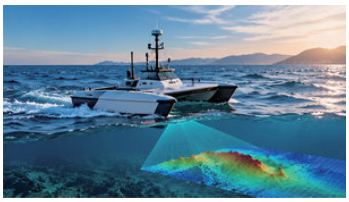
Status monitoring, flexible output.

Equipment status monitoring: equipment self-inspection, status monitoring and failure alarm capability. Configure data output: Update rate 1-200 Hz is configured to support NMEA0183 format with at least one output export. Multi-interface access: provide 1 network portal, 3 RS232/RS422 configured interfaces and 1 RS232 debugging port.

[Applications]



Submersible / UUV Navigation



Maritime mobility alignment



DVD Group Navigator



USBL Group Navigator

[Specifications]

Performance Specifications			
Parameters	Indicators	Parameters	Indicators
Direction accuracy (1 x)	0.1°secφ	Attitude accuracy (1 x 1)	0.01°
Target the time.	≤10min	Workspace	70°（N/S）、180°（E/W）
DVL Group Positioning Precision (CEP)	< 0.4%D	Angular velocity measure range	±300°/s
Speed scale range.	±10g	Data update rate	1–200Hz configurable
Navigation Mode	Pure inertia / GNSS / DVD / USBL	The way you're pointing.	Sea / underwater static / fast static

Note: D is a voyage, the speed measurement accuracy of DVL is better than ±0.4% ±5 mm/s, and the location accuracy of the DVL combination follows the overall validation. Note: The rate of update can be configured to at least one lost export, the accuracy of the course is 0.1 °sec1 (one Quantified) is retained in the form of the technical specifications.

Physical Specifications			
Item	Parameter Value	Item	Parameter Value
Product Model	GeoSINS-D	External power supply	24V (interface label)
Weight	2.8kg ±0.2kg	Dimensions	130 × 125 × 100 mm
Operating Temp.	-40℃ ~ 60℃	Storage temperature	-45℃ ~ 70℃
Water-classified requirements	Indoor equipment, non-hydrate	Size differential	± 1 mm (excluding relay plugins)
Impact	30 g in 6 ms (design assurance)	Vibration	2 g si Hz) (Design assurance)
Web portals	1	Serial and debugging ports	3 RS232/RS422 (compatible) 1 RS232 (debug)

Communication and output description:

1 Data interface: 1 web portal, 3 RS232/RS422 (compatible) interface, 1 RS232 debug. Prot rate 9.6K ~921.6 Kbps can be configured, output 1 ~200Hz can be configured, power up. 3. NMEA0183 Output: Course, vertical, rolling, three-axis angle velocity, line acceleration, position and state of equipment, etc.

星天海洋
STARTEST MARINE

www.startest.cn
market@startest.net
+86-15711204676

Beijing StarTest Technology Co., Ltd.
Dongsheng Science & Technology Park, Haidian, Beijing
7F, Bldg. 4, Courtyard 6

Zhejiang StarTest Marine Science & Technology Co., Ltd.
Xiuzhou District, Jiaxing, Zhejiang
Room 01-2, 11F, Bldg. 3, Huayu Center, Xincheng

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