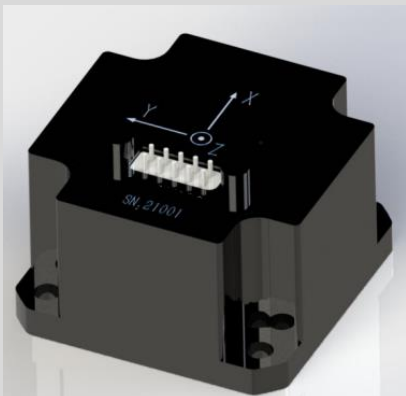


BS-NF300-M-D6EC MEMS North Finder

Table 1 BS-NF300-M-D6EC Inertial Measurement Unit



Main features

- Full temperature compensation
- High performance and small volume
- Low weight and low power consumption
- -45 °C to + 80 °C full temperature calibration compensation
- 4KHz high speed sampling
- Resistant to adverse mechanical environment
- With software online upgrade function

Field of application

- North Finder
- Navigation and control
- Attitude Reference System
- Guidance
- Vehicle and ship attitude measurement
- Inertial/satellite integrated navigation system
- Drilling and production system
- Mobile Mapping System
- Communication in motion
- Stable

Technical features

Product precision can be customized, wide range of applications

BS-NF300-M-D6EC north finder is a highly reliable and cost-effective six-axis MEMS inertial sensor combination, which can be widely used in navigation, control and measurement fields represented by inertial navigation and attitude stabilization. BS-NF300-M-D6EC can be configured with different software and hardware according to the needs of users, so as to meet the needs of different users to the greatest extent.

Advanced process and technology

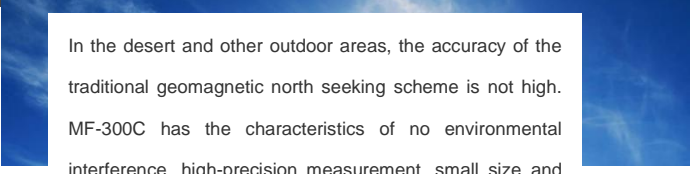
The BS-NF300-M-D6EC integrates high-performance MEMS gyroscopes and accelerometers in an independent structure. The gyroscopes and accelerometers selected for the module represent the leading level of inertial devices in MEMS technology. The angular motion of the sensitive carrier of the three-axis MEMS gyroscope, the linear acceleration of the sensitive carrier of the three-axis MEMS accelerometer, The compensation of zero position, scale factor, non-orthogonal error and terms related to acceleration for all temperature parameters is carried out in the module, which can maintain high measurement accuracy for a long time. At the same time, the module adopts measures such as overall vibration reduction and sealing design to ensure that the product can accurately measure the angular and linear motion parameters of the carrier in harsh environment. Thereby providing a low-cost and high-reliability solution for users.

High Precision Device Manufacturing and System Calibration Compensation Technology

The company has accumulated a series of key technologies in the research and development process of this project to ensure the high performance of products. At the same time, the system uses high-speed sampling, static error compensation (zero, scale factor, installation error, etc.), dynamic error compensation and other technologies to ensure the best performance of the product in the user's use process.

High quality and reliability

Through the comprehensive control of upstream and downstream processes and technologies, the company can effectively improve product quality and reduce system costs. At the same time, the company implements ISO9001 and GJB quality system, and adopts strict technology to ensure the reliability and consistency of product performance.



In the desert and other outdoor areas, the accuracy of the traditional geomagnetic north seeking scheme is not high. MF-300C has the characteristics of no environmental interference, high-precision measurement, small size and

Performance Parameters

MEMS gyroscope	
Range (/s)	100
Bias((/H, 1 σ)	0.1
Bias stability ((/H, Allan)	0.02
Bias repeatability (/H)	0.1
Scale Factor Nonlinearity (ppm)	300
Bandwidth (Hz)	50
MEMS accelerometer	
Range (G)	2
Bias (mg)	0.5
Bias stability (μ g)	20
Biasrepeatability (μ g)	100
Scale Factor Nonlinearity (ppm)	300
Bandwidth (Hz)	50
System	
Power (V)	5~12
Power (W)	2
Start Time (s)	2
Communication interface	RS-422
Update Rate (Hz)	200
North seeking accuracy ($^{\circ}$, 5min, 1 σ)	0.5sec (L) (L stands for latitude)
Dimensions (mm \times mm \times mm)	Φ 56mm \times 38.5mm
Weight, G	200
Use environment	
Operating temperature ($^{\circ}$ C)	-40~60
Storage temperature ($^{\circ}$ C)	-55~85
Reliability	
MTBF (h)	200000

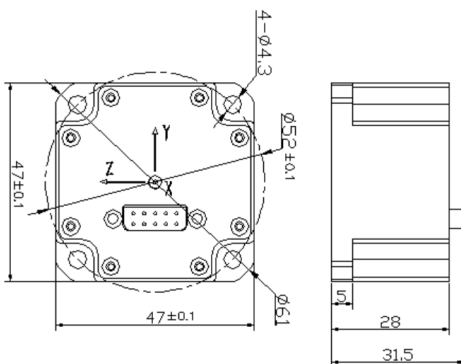


Fig. 1 Outline Structure Dimension Drawing

Number	definition	Remark
1	VSUP	Power supply positive, + 5V
2	COM1_Rx+	RS422-1 receiving positive
3	COM1_Tx+	RS422-1 sending positive
4	COM2_Rx+	RS422-2 receiving positive
5	COM2_Tx+	RS422-2 sending positive /Sync signal output +
6	GND	Power ground
7	COM1_Rx-	RS422-1 receiving negative
8	COM1_Tx-	RS422-1 sending negative
9	COM2_Rx-	RS422-2 receiving negative
10	COM2_Tx-	RS422-2 sending negative /Sync signal output-