SenNav

We make sensor, and make you happy

Precision sensor Professional navigation technology

Quartz accelerometer I Fiber optic gyroscope

COMPANY PROFILE

About Us

Xi'an SenNav Electronic Technology Co., Ltd. Was established in Xi'an, China in 2008, is a high-tech enterprise that specializing in navigation technology and inertial sensing technology. We are developer and manufacturer for QUARTZ ACCELEROMETER, GYROSCOPE, MWD, superior quality and excellent custom service are our major focus.

Product Line

We currently have 2 kinds of sensor with more than 20 models(MOQ 1pcs)

- Quartz accelerometer
- Fiber optic gyroscope
- MWD

Service

We have totally 130 staff members, 25 professional navigation technicians, 10 mechanical engineers, 15 sales people. Customization & designing, technical solution and suggestion make us more professional. Our R&D team and Technical team are always ready to meet your requests.

Shipping

- By air
- By sea
- By express(including DHL, FedEx, TNT, EMS etc, arriving at your place within an average 4-7days)

Our Values

In SenNav, we stress shared three core values:

- Professionalism
- Customers' satisfaction
- Good and prompt after-sales service

Inertial grade and Navigation grade fiber optic gyroscope

Inertial grade and navigation grade high-performance interferometric closed-loop fiber optic gyroscope (FOG), as an all-digital all-solid-state gyroscope, it inherits the design idea of classical fiber optic gyroscope, innovative optical fiber ring anti-temperature variation design and diamagnetic design.

Features:

- High precision, High resolution
- Large working bandwidth
- Small zero drift
- Short start-up time
- Shock resistance, Vibration resistance
- Long life(MTBF>20000h)

Application:

- Inertial grade navigation equipment
- Navigation grade navigation and control system
- High precision positioning and orientation system
- Strapdown gyrocompass
- Antenna, optical stabilization platform

Classify	Index	SNF-120	SNF-098
Performance index	Bias stability(°/h,10s)	0.01	0.06
	Bias repeatability(°/h ,1σ)	0.01	0.05
	Random walk coefficient(°/$h^{1/2}$)	0.001	0.003
	Scale factor(LSB/(°/s))	1.8×10^5	1×10^5
	Measuring range (°/s)	±300	±300
Mechanical/electrical interface	Volume(mm)	Φ120×39	Φ98×30
	Weight(g)	<650	<350
	Steady state power consumption (w)	<4	<4
	Communication interface	RS422[1]	RS422[1]

Tactical grade fiber optic gyroscope

The miniaturization single-axis closed-loop fiber optic gyroscope, breaks through the classical design scheme of traditional fiber optic gyroscope, optimizes the structure and circuit. it has a high performance-price ratio. It is the ideal choice of angular rate sensor in the control field. Also widely used in various inertial measurement and control field.

Features:

- Small volume, Light weight
- High bandwidth
- Low power consumption
- Fast starting
- Simple interface

Application:

- UAV flight control
- Inertial measurement unit
- Surveying and mapping, track inertial traverse detection
- Photoelectric pod
- Platform stabilizer

Classify	Index	SNF-910	SNF-070
Performance index	Bias stability(°/h,10s)	0.3	0.3
	Bias repeatability(°/h ,1σ)	0.2	0.2
	Random walk coefficient(°/$h^{1/2}$)	0.02	0.02
	Scale factor(LSB/(°/s))	2×10^4	1.7×10^4
	Measuring range (°/s)	±1000	±1000
Mechanical/electrical interface	Volume(mm)	Φ82×26	Φ70×29
	Weight(g)	<350	<200
	Steady state power consumption (w)	<4	<4
	Communication interface	RS422[1]/RS232	RS422[1]

Control grade fiber optic gyroscope

The miniaturization single-axis closed-loop fiber optic gyroscope, breaks through the classical design scheme of traditional fiber optic gyroscope, optimizes the structure and circuit. it has a high performance-price ratio. It is ideal choice for low precision angular rate sensors in control field. Also widely used in various inertial measurement and control field.

Features:

- Small volume, Light weight
- High bandwidth
- Fast starting
- Simple interface
- Easy to use

Application:

- Photoelectric pod / flight control platform
- Inertial measurement unit
- Optical / photographic platform
- Light UAV
- Platform stabilizer

Classify	Index	SNF-050	SNF-050R
Performance index	Bias stability(°/h,10s)	1	0.5
	Bias repeatability(°/h ,1σ)	0.6	0.5
	Random walk coefficient(°/$h^{1/2}$)	0.08	0.01
	Scale factor(LSB/(°/s))	2×10^4	2×10^4
	Measuring range (°/s)	±2000	±1000
Mechanical/electrical interface	Volume(mm)	Φ52×39	Φ52×39
	Weight(g)	<160	<160
	Steady state power consumption (w)	<4	<4
	Communication interface	RS422[1]	RS422[1]

Quartz flexible accelerometer

High range with high accuracy accelerometer, with long term repeatability and excellent reliability makes SNQ1, SNQ2, SNQ3 to be the most cost-effective inertial grade accelerometer. It is ideal, ITAR-Free choice for aerospace, defence, industrial, transport, and civil engineering applications.

The output current and force are linearly outputted. The user can calculate, select the appropriate sampling resistance, and achieve the highest precision output. At the same time, the temperature sensor is built in, and the user can compensate Bias and Scale factor, reduce the effect of temperature.

Features:

- Excellent starting repeatability
- Good environmental performance
- Analog output
- Adjustable output range
- Built-in temperature sensor, output current linearly transformed with temperature (optional)

Application:

Accelerometers are mainly used in inertial navigation systems, in the fields of aviation, aerospace, ships, weapons, etc. It can be used for both static and dynamic testing, also it is a standard vibration sensor.

Parameters specification:

No.	Parameters	SNQ1	SNQ2	SNQ3
1	Range(g)	±50	±70	±60
2	Threshold /Resolution(μg)	5	5	10
3	Bias k0/k1(mg)	≤±3	≤±3	≤±5
4	Scale factor k1(mA/g)	1.3±0.2	1.0±0.2	1.0±0.2
5	Class II nonlinearity Coefficient k2/k1(μg /g2)	≤±20	≤±20	≤±20
6	0g 4 hours short time stability(μg)	≤10	≤10	≤10
7	1g 4 hours short time stability(ppm)	≤10	≤10	≤10
8	Bias drift repeatability σ k0(1σ, one month)(μg)	≤10	≤10	≤30
9	Scale factor repeatability σ k1/k1(1σ, one month)(ppm)	≤15	≤20	≤50
10	Class II nonlinearity Coefficient repeatability σ k2/k1(1σ, one month)(μg /g^2)	≤±10	≤±10	≤±20
11	Bias thermal coefficient(μg /℃)	≤±10	≤±20	≤±30
12	Scale factor thermal coefficient(ppm/℃)	≤±20	≤±30	≤±50
13	Noise (sample resistance 840Ω)(mv)	≤5	≤5	≤4
14	Natural Frequency(Hz)	400~800	400~800	350~800
15	Bandwidth(Hz)	800~2500	800~2500	800~2500
16	Vibration	6g(20~2000Hz)		10g(20~2000Hz)
17	Shock	100g,5ms,1/2sin		150g,0.5ms,1/2sin
18	Operating temperature range (℃)	-40~+85	-40~+85	-40~+85
19	Storage temperature range (℃)	-60~+120	-60~+120	-60~+120
20	Voltage(V)	±12~±15	±12~±15	±12~±15
21	Consume current(mA)	≤±20	≤±20	±20
22	Temperature sensor	Yes or No	Yes or No	Yes or No
		2	2	2
23	Size(mm)	Φ25.4X30	Φ25.4X30	Φ18.2X23
24	Weight(gram)	≤80	≤80	≤30

Quartz flexible accelerometer

SNQ7 and SNQ8 with high accuracy accelerometer, with long term repeatability and excellent reliability.

Its output current and force are linearly outputted. Users can calculate, select the appropriate sampling resistance, and achieve the highest precision output. At the same time, the temperature sensor is built in, and the user can compensate Bias and Scale factor, reduce the effect of temperature.

Features:

- New design
- Analog output
- Adjustable output range
- Built-in temperature sensor, output current linearly transformed with temperature (optional)

Application:

Accelerometers are mainly used in inertial navigation systems, in the fields of aviation, aerospace, ships, weapons, etc. It also can be used in carrier's microgravity measuring system, static angle measurement system, with high precision. It can be used for both static and dynamic testing, also it is a standard vibration sensor.

Parameters specification:

No.	Parameters	SNQ7	SNQ8
1	Range(g)	±30	±30
2	Threshold /Resolution(μg)	1	1
3	Bias k0/k1(mg)	≤±5	≤±3
4	Scale factor k1(mA/g)	2.3±0.5	2.0±0.3
5	Class II nonlinearity Coefficient k2/k1(μg /g2)	≤±20	≤±20
6	0g 4 hours short time stability(μg)	≤10	≤5
7	1g 4 hours short time stability(ppm)	≤10	≤5
8	Bias drift repeatability σ k0(1σ, one month)(μg)	≤10	≤5
9	Scale factor repeatability σ k1/k1(1σ, one month)(ppm)	≤20	≤10
10	Class II nonlinearity Coefficient repeatability σ k2/k1(1σ, one month)(μg /g^2)	≤±10	≤±10
11	Bias thermal coefficient(μg /℃)	≤±10	≤±10
12	Scale factor thermal coefficient(ppm/℃)	≤±30	≤±20
13	Noise (sample resistance 840Ω)(mv)	≤8.4	≤2
14	Natural Frequency(Hz)	350~800	350~450
15	Bandwidth(Hz)	800~2500	800~1200
16	Vibration	5g(20~2000Hz)	5g(20~2000Hz)
17	Shock	100g,0.5ms,1/2sin	50g,11ms,1/2sin
18	Operating temperature range (℃)	-40~+80	-40~+70
19	Storage temperature range (℃)	-60~+100	-55~+100
20	Voltage(V)	±12~±15	±15
21	Consume current(mA)	≤±20	±20
22	Temperature sensor	Yes or No	Yes or No
		2	2
23	Size(mm)	Φ30X32	Φ34.3X30
24	Weight(gram)	≤100	≤100

Quartz flexible accelerometer

SNQ6 with long term repeatability and excellent reliability, small dimension, can be used in 180 ℃ high temperature environment with stable performance. It is an ideal choice for drilling and surveying tools.

It adopts high temperature resistance circuit, output current and force are linearly outputted, provide static and dynamic acceleration measurement. Users can calculate, select the appropriate sampling resistance, and achieve the highest precision output. At the same time, the temperature sensor is built in, and the user can compensate Bias and Scale factor, reduce the effect of temperature.

Features:

- New design, small dimension
- Analog output
- Adjustable output range
- High temperature ability
- Square or circle flange mount
- Built-in temperature sensor, output current linearly transformed with temperature (optional)

Application:

Accelerometers are mainly used in oil well logging, also can be used in measurement while drilling tool and logging while drilling tool. It can be used for both static and dynamic testing, and it is a standard vibration sensor.

Parameters specification:

No.	Parameters	SNQ6-01	SNQ6-02
1	Range(g)	±30	±30
2	Threshold /Resolution(μg)	30	30
3	Bias k0/k1(mg)	≤±20	≤±20
4	Scale factor k1(mA/g)	2.1±0.3	2.1±0.3
5	Class II nonlinearity Coefficient k2/k1(μg /g2)	≤±20	≤±50
6	0g 4 hours short time stability(μg)	≤30	≤40
7	1g 4 hours short time stability(ppm)	≤30	≤40
8	Bias drift repeatability σ k0(1σ, one month)(μg)	≤150	≤220
9	Scale factor repeatability σ k1/k1(1σ, one month)(ppm)	≤150	≤220
10	Class II nonlinearity Coefficient repeatability σ k2/k1(1σ, one month)(μg /g^2)	≤±40	≤±50
11	Bias thermal coefficient(μg /℃)	≤±80	≤±150
12	Scale factor thermal coefficient(ppm/℃)	≤±80	≤±200
13	Noise (sample resistance 840Ω)(mv)	≤8	≤8.4
14	Natural Frequency(Hz)	350~800	350~800
15	Bandwidth(Hz)	800~2500	800~2500
16	Vibration	25g(20~2000Hz)	25g(20~2000Hz)
17	Shock	1000g,0.5ms, 1/2sin	1000g,0.5ms, 1/2sin
18	Operating temperature range (℃)	-40~+120	-40~+180
19	Storage temperature range (℃)	-60~+125℃	-60~+185℃
20	Voltage(V)	±12~±15	±12~±15
21	Consume current(mA)	±20	±20
22	Temperature sensor	Yes or No	Yes or No
		2	2
23	Size(mm)	Φ18.2X16	Φ18.2X16
24	Weight(gram)	≤25	≤25

Quartz flexible accelerometer

SNQ4 is mainly used in the drilling and tracking system of oil drilling and continuous surveying system. Usually use it in measurement while drilling tool with heat shield, MWD/LWD can reach 175℃.

It adopts high temperature resistance circuit, output current and force are linearly outputted, provide static and dynamic acceleration measurement. Users can calculate, select the appropriate sampling resistance, and achieve the highest precision output. At the same time, the temperature sensor is built in, and the user can compensate Bias and Scale factor, reduce the effect of temperature.

Features:

- Analog output
- Adjustable output range
- High temperature ability
- Square or circle flange mount
- Built-in temperature sensor, output current linearly transformed with temperature (optional)

Application:

It mainly used in the drilling and tracking system of oil drilling and continuous surveying system, also can be used in measurement while drilling tool and logging while drilling tool. It can be used for both static and dynamic testing, and it is a standard vibration sensor.

Parameters specification:

No.	Parameters	SNQ4-01	SNQ4-02	SNQ4-03
1	Range(g)	±15	±15	±15
2	Threshold /Resolution(μg)	50	50	50
3	Bias k0/k1(mg)	≤±6	≤±10	≤±15
4	Scale factor k1(mA/g)	2.9±0.5	2.9±0.5	2.9±0.5
5	0g 2 hours short time stability(μg)	≤50	≤90	≤150
6	1g 2 hours short time stability(ppm)	≤50	≤90	≤150
7	Bias thermal coefficient(μg /℃)	≤±50	≤±90	≤±150
8	Scale factor thermal coefficient(ppm/℃)	≤±50	≤±90	≤±150
9	Noise (sample resistance 840Ω)(mv)	≤10	≤10	≤10
10	Vibration	20g(20-2000Hz)		
11	Shock	1000g,0.5ms, 1/2sin		
12	Operating temperature range (℃)	-40~+120	-40~+120	-40~+120
13	Storage temperature range (℃)	-50~+125	-50~+125	-50~+125
14	Voltage(V)	±12~±15	±12~±15	±12~±15
15	Consume current(mA)	±20	±20	±20
16	Temperature sensor	Yes or No	Yes or No	Yes or No
		2	2	2
17	Size(mm)	Φ25.4X23	Φ25.4X23	Φ25.4X23
18	Weight(gram)	≤70	≤70	≤70

Reliable Quality · Reasonable Price · Professional Service

Contact Us Today!

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