INERTIAL SENSOR CATALOG

2025 Version

麦新敏微

Micro-Magic

Attitude and Positioning Be Everywhere!

让姿态与定位的感触无处不在

LET THE FEELING OF POSTURE AND POSITIONING BE EVERYWHERE

Dear Value Customers,

Micro-Magic Inc is a national high-tech enterprise, a leading developer and manufacturer of high-tech sensors. We utilize inertial navigation and information fusion technologies to address the accuracy and real-time requirements of various types of motion objects for navigation information such as position, attitude, speed, and distance.

Our products focus on industrial/automotive/military inertial navigation devices and module products, which are mainly used in unmanned systems such as autopilots (including automotive autopilots/drones/unmanned ships), satellite tracking, robotics, intelligent pursuit, high-speed rail/bridge/dam surveying and mapping, and other fields. Our products are benchmarked against international first-class companies and are the preferred substitute for domestic products.

At present, we have cooperated with multiple well-known clients both domestically and internationally, including in-depth cooperation with clients in the fields of autonomous driving, robotics, and drones. The company's headquarters is located by the beautiful West Lake, Hangzhou City.

You can log in to our official website to learn more information: www.memsmag.com. You are also welcome to follow our WeChat official account and learn about our trends in real time. Thank you for your attention !

Best,

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CEO and President

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CONTENTS

ACM-100: MEMS DIGITAL OUTPUT TRI-AXIS ACCELEROMETER

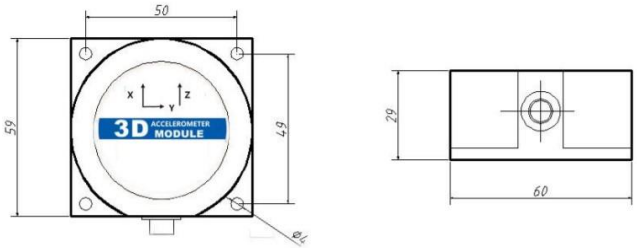
PRODUCT DESCRIPTION

The ACM-100 tri-axis accelerometer is a widely used acceleration sensor series product produced by MXMW Hi-Tech Company with Swiss patented technology, which can be used in various fields such as vibration testing and impact testing. The product adopts digital interface output, with RS232, RS485, TTL, Modbus protocol, and RS422 optional. Different address codes can be set, and multiple sensors can be connected in series for long-distance measurement and data analysis at multiple points. ACM-100 is a single crystal silicon capacitive sensor, consisting of a silicon chip that has undergone micro mechanical processing, a low-power ASIC for signal adjustment, a microprocessor for storing compensation values, and a temperature sensor.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	ACM-I00-2	ACM-I00-8	ACM-I00-40	Unit
Measuring range		±2	±8	±40	g
Bias calibration		<2	<5	<10	mg
Measuring axis	axis	X, Y, Z	X, Y, Z	X, Y, Z	
Zero bias stability (yearly)		1.5(<5)	7.5(<25)	22(<75)	mg
Resolution threshold	@Hz	<1	<5	<15	mg
Bias temperature coefficient	-55 ~ 100°	0.1	0.5	1.5	mg/℃
Bandwidth		0~≥400	0~≥400	0~≥400	Hz
Resonance frequency		1.6	6.7	6.7	KHz
Output rate	5Hz, 15Hz, 35Hz, 50Hz can be set (RS485 does not have this function)				
Output signal	RS232/RS485/RS422/TTL optional				
Reliability	MIL-HDBK-217, Level 2				
Impact resistance	20000g, 2ms, 1/2sine				
Anti-vibration	10grms、10 ~ 1000Hz				
Waterproof level	IP67				
Cable	Standard 1.5m length, wear-resistant, oil-proof, wide temperature, shielded cable 5*0.2mm2				
Weight	180g (excluding packaging box)				
Connector	6-pin aviation plug				
Capacitive loading	1000				

PRODUCT DIMENSION



SIZE: L60*W59*H29MM

PRODUCT APPLICATION

- Unmanned aerial vehicles
- Ship navigation attitude measurement
- Crash records, fatigue monitoring and prediction
- Satellite solar antenna positioning
- Transportation system monitoring
- Roadbed analysis and high-speed railway fault detection

ACM-200: MEMS Current Output Type Tri-Axis Accelerometer

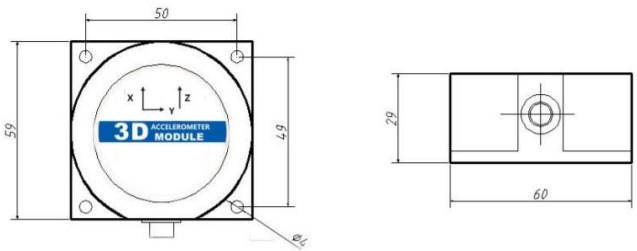
PRODUCT DESCRIPTION

The ACM-200 tri-axis accelerometer is a widely used acceleration sensor series product produced by MXMW Hi-Tech Company with Swiss patented technology, which can be used in various fields such as vibration testing and impact testing. The product adopts output interface with 4~20mA and 0~20mA. Different address codes can be set, and multiple sensors can be connected in series for long-distance measurement and data analysis at multiple points. ACM-200 is a single crystal silicon capacitive sensor, consisting of a silicon chip that has undergone micro mechanical processing, a low-power ASIC for signal adjustment, a microprocessor for storing compensation values, and a temperature sensor.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	ACM-200-2	ACM-200-8	ACM-200-40	Unit
Measuring range		±2	±8	±40	g
Bias calibration		<10	<50	<150	mg
Measuring axis	axis	X, Y, Z	X, Y, Z	X, Y, Z	
Zero bias stability (yearly)		1.5(<5)	7.5(<25)	22(<75)	mg
Resolution threshold	@Hz	<1	<5	<15	mg
Bias temperature coefficient	-55 ~ 100°	0.1	0.5	1.5	mg/℃
Bandwidth		0~≥400	0~≥400	0~≥400	Hz
Resonance frequency		1.6	6.7	6.7	KHz
Scale factor temperature coefficient		100	100	100	ppm/℃
		-50/250	-50/250	-50/250	max/min
Output signal	4~20mA, 0~20mA optional				
Reliability	MIL-HDBK-217, Level 2				
Impact resistance	20000g, 2ms, 1/2sine				
Anti-vibration	10grms、10 ~ 1000Hz				
Waterproof level	IP67				
Cable	Standard 1.5m length, wear-resistant, oil-proof, wide temperature, shielded cable 6*0.3mm2				
Weight	180g (excluding packaging box)				
Connector	6-pin aviation plug				
Capacitive loading	1000				

PRODUCT DIMENSION



SIZE: L60*W59*H29MM

PRODUCT APPLICATION

- Unmanned aerial vehicles
- Ship navigation attitude measurement
- Crash records, fatigue monitoring and prediction
- Satellite solar antenna positioning
- Transportation system monitoring
- Roadbed analysis and high-speed railway fault detection

ACM-300: MEMS VOLTAGE OUTPUT TYPE TRI-AXIS ACCELEROMETER

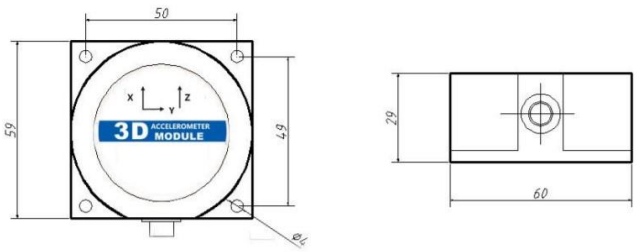
PRODUCT DESCRIPTION

The ACM-300 tri-axis accelerometer is a widely used acceleration sensor series product produced by MXMW Hi-Tech Company with Swiss patented technology, which can be used in various fields such as vibration testing and impact testing. The product adopts output interface with 0~5V and 0~10V. Different address codes can be set, and multiple sensors can be connected in series for long-distance measurement and data analysis at multiple points. ACM-300 is a single crystal silicon capacitive sensor, consisting of a silicon chip that has undergone micro mechanical processing, a low-power ASIC for signal adjustment, a microprocessor for storing compensation values, and a temperature sensor.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	ACM-300-2	ACM-300-8	ACM-300-40	Unit
Measuring range		±2	±8	±40	g
Bias calibration		<10	<50	<150	mg
Measuring axis	axis	X, Y, Z	X, Y, Z	X, Y, Z	
Zero bias stability (yearly)		1.5(<5)	7.5(<25)	22(<75)	mg
Resolution threshold	@Hz	<1	<5	<15	mg
Bias temperature coefficient	-55 ~ 100°	0.1	0.5	1.5	mg/℃
Bandwidth		0~≥400	0~≥400	0~≥400	Hz
Resonance frequency		1.6	6.7	6.7	KHz
Scale factor temperature coefficient		100	100	100	ppm/℃
		-50/250	-50/250	-50/250	max/min
Output signal	0~5V, 0~10V optional				
Reliability	MIL-HDBK-217, Level 2				
Impact resistance	20000g, 2ms, 1/2sine				
Anti-vibration	10grms、10 ~ 1000Hz				
Waterproof level	IP67				
Cable	Standard 1.5m length, wear-resistant, oil-proof, wide temperature, shielded cable 6*0.3mm2				
Weight	180g (excluding packaging box)				
Connector	6-pin aviation plug				
Capacitive loading	1000				

PRODUCT DIMENSION

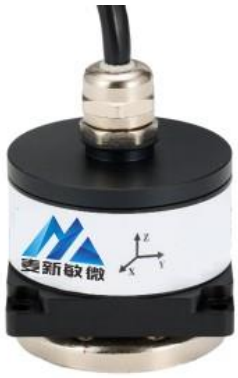


SIZE: L60*W59*H29MM

PRODUCT APPLICATION

- Unmanned aerial vehicles
- Ship navigation attitude measurement
- Crash records, fatigue monitoring and prediction
- Satellite solar antenna positioning
- Transportation system monitoring
- Roadbed analysis and high-speed railway fault detection

ACM-1000: MEMS DIGITAL OUTPUT VIBRATION SENSOR



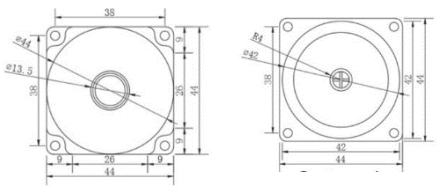
PRODUCT DESCRIPTION

The ACM-1000 vibration sensor is independently developed and produced by MXMW Hi-Tech Company, using digital filtering technology to effectively reduce measurement noise and improve measurement accuracy. It can be applied to multiple fields such as vibration testing, impact testing, and impact testing. The product consists of a monocrystalline silicon capacitive sensor, a temperature sensor, and a solid-state power supply (overvoltage protection); The design features sturdy structure, low power consumption, and excellent deviation stability, ensuring output reliability.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	ACM-I000
Measuring Axis		X, Y, Z (optional)
Accuracy	Vibration velocity	1mm/s
	Vibration angle	0.001°/s
	Vibration amplitude	0.001mm
	Vibration frequency	1HZ
Temperature calibration	-40-85℃	
Measurement range	Vibration velocity (0-50mm/s), Vibration angle (0-180 °), Vibration amplitude (displacement 30mm), Vibration frequency (1-100Hz)	
Resonance frequency	2.4K HZ	
Bandwidth (3DB)	500HZ	
Detection cycle	<100HZ	
Cut-off frequency	<100HZ	
Output rate	5Hz, 15Hz, 35Hz, 50Hz can be set (RS485 does not have this function)	
Output signal	RS232/RS485/RS422/TTL optional	
MTBF	⩾ 45000 hours/time	
Impact resistance	20000g, 2ms, 1/2sine	
Anti-vibration	10grms、10 ~ 1000Hz	
Waterproof level	IP67	
Cable	Standard 1.5m length, wear-resistant, oil-proof, wide temperature, shielded cable 5*0.2mm2	
Weight	65g (excluding packaging box)	

PRODUCT DIMENSION

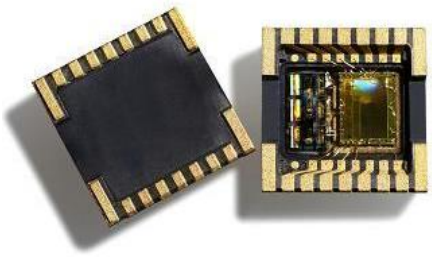


SIZE: L44*W44*H33MM

PRODUCT APPLICATION

- Vibration measurement of mechanical bearings
- Bridge and building vibration measurement
- Free fall
- Roller
- Fans and generators
- Railway track monitoring
- Roadbed analysis and high-speed railway fault detection

ACM-1900: HIGH PRECISION MEMS ACCELERATER CHIP SENSOR



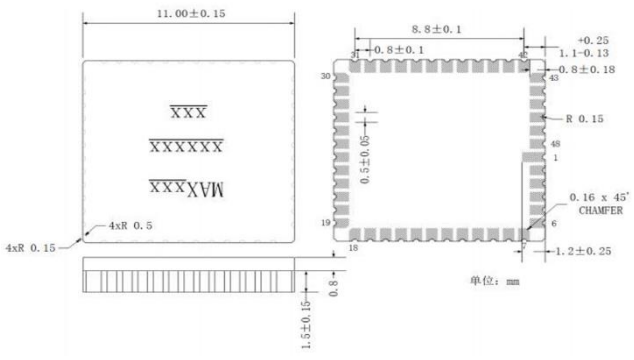
■ PRODUCT DESCRIPTION

The ACM-1900 silicon-based MEMS accelerometer adopts a small volume ceramic package, which has the characteristics of high precision, wide range, resistance to large impact, wide temperature range, and fully digital output. This accelerometer integrates temperature compensation function internally and uses SPI Bus to read and write data.

■ PRODUCT MAIN SPECIFICATION

Parameters		Unit	A	B	C	D	E
Measurement range		g	5g	10g	15g	30g	50g
Zero bias stability	H level	mg	<0.06	<0.08	<0.08	<0.1	<0.2
	M level	mg	<0.15	<0.15	<0.15	<0.2	<0.3
	L level	mg	<0.2	<0.3	<0.3	<0.6	<1
Zero bias repeatability		mg	0.15	0.20	0.30	0.40	0.60
Bias temperature coefficient		mg/°C	0.05	0.1	0.1	0.2	0.3
Full temperature zero bias stability	H level	mg	<1	<1.5	<1.5	<2	<3
	M level	mg	<3.5	<5	<5	<6	<8
	L level	mg	<10	<15	<15	<20	<25
Threshold/Resolution		mg	0.02	0.03	0.05	0.1	0.2
Scale factor nonlinearity		% of FS	0.3	0.3	0.3	0.3	0.3
Scale factor repeatability		ppm	50	100	150	200	250
Scale factor temperature coefficient		ppm/°C	2	3	5	10	15
Starting time		s	0.1				
Sampling rate		Samples/s	1000				
Bandwidth		Hz	100Hz				
Power consumption		mW	< 40				
Power voltage		V	3.3 VDC				
Data output			Digital output（SPI）				
Encapsulation			LCC Ceramics				
Working temperature		°C	-40~+85				
Random vibration			6g,（20~2KHz）				
Shocking		g	10000				
Dimension size			10mmx10mmx3.5mm				
Weight		g	1				

■ PRODUCT DIMENSION



■ PRODUCT APPLICATION

- High precision IMU
- Ship navigation and attitude measurement
- Crash records, fatigue monitoring and prediction
- Satellite solar antenna positioning
- Transportation system monitoring
- Roadbed analysis and high-speed railway fault detection

AC-1: HIGH PRECISION QUARTZ ACCELEROMETER

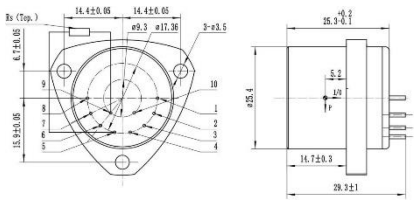
■ PRODUCT DESCRIPTION

AC-1 quartz flexible accelerometer series is a high-precision military inertial navigation class accelerometer with excellent long-term stability, repeatability, start-up performance, environmental adaptability and high reliability. It can be used for both static and dynamic testing, and it is also a standard vibration sensor and inclination sensor. The output current of the product has a linear relationship with the force or acceleration received. Users can select the appropriate sampling resistance through calculation to achieve high precision output. And according to user needs built-in temperature sensor, used to offset value and scale factor compensation, reduce the impact of environmental temperature.

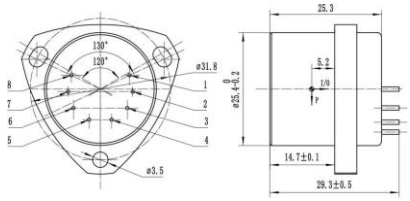
■ PRODUCT MAIN SPECIFICATION

Parameters	AC-1A	AC-1B	AC-1C	Unit
Range		±50 （10Ω）		g
Threshold /Resolution	1	2	3	μg
Bias k0/k1	≤±1	≤±3	≤±5	mg
Scale factor kl		1.05~1.30		mA/g
Class II nonlinearity coefficient k2/k1	≤±10	≤±15	≤±20	μg /g2
0g 4 hours short time stability	≤10	≤10	≤15	μg
1g 4 hours short time stability	≤10	≤10	≤15	ppm
Bias drift Sigma k0(1σ，one month)	≤10	≤20	≤30	μg
Repeatability of scale factor Sigma kl/kl（1σ, one month)	≤15	≤30	≤50	ppm
Class II nonlinearity Coefficient repeatability k2/k1 (1σ, one month)	≤±10	≤±20	≤±30	μg /g2
Bias thermal coefficient	≤±10	≤±30	≤±50	μg /℃
Scale factor thermal coefficient	≤±10	≤±30	≤±50	ppm /℃
Noise (sample resistance 840Ω)	≤5	≤8.4	≤8.4	mv
Natural Frequency		400~800		Hz
Bandwidth		800~2500		Hz
Vibration		6g		Hz
Shock		100g		8ms, 1/2s in
Temperature range (Operating)		-55~+85		℃
Temperature range (saved)		-60~+120		℃
Power		±12~±15		V
Consume current		≤±20		mA
Temp. sensor		PT1000/AD590		Optional
Size		Φ25.4X30		mm
Weight		≤80		g

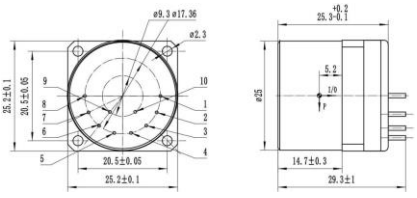
■ PRODUCT DIMENSION



Install hole is U type



Install hole is U type, 8 pin



Install hole is square

■ PRODUCT APPLICATION

- Inertial measurement of military high-precision inertial navigation system and vibration isolation test of precision instruments and equipment in aerospace, aviation, ships, weapons and other fields

AC-2: HIGH PRECISION QUARTZ ACCELEROMETER

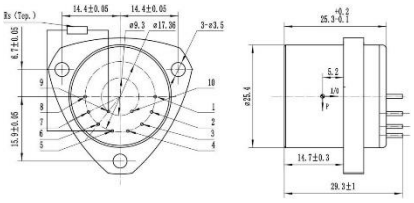
PRODUCT DESCRIPTION

AC-2 quartz flexible accelerometer series is a high-precision military inertial navigation class accelerometer with excellent long-term stability, repeatability, start-up performance, environmental adaptability and high reliability. It can be used for both static and dynamic testing, and it is also a standard vibration sensor and inclination sensor. The output current of the product has a linear relationship with the force or acceleration received. Users can select the appropriate sampling resistance through calculation to achieve high precision output. And according to user needs built-in temperature sensor, used to offset value and scale factor compensation, reduce the impact of environmental temperature.

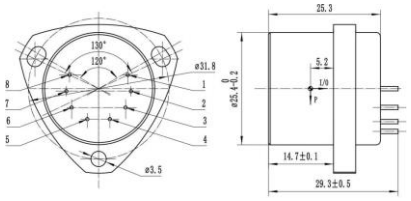
PRODUCT MAIN SPECIFICATION

Parameters	AC-2A	AC-2B	AC-2C	Unit
Range (40ohms)		±70		g
Threshold /Resolution	2	3	4	μg
Bias k0/k1	≤±3	≤±3	≤±5	mg
Scale factor kl		0.8 ~ 1.20		mA/g
Class II nonlinearity coefficient k2/k1	≤±10	≤±15	≤±20	μg /g2
0g 4 hours short time stability	≤10	≤15	≤20	μg
1g 4 hours short time stability	≤10	≤15	≤20	ppm
Bias drift Sigma k0(1σ， one month)	≤10	≤20	≤30	μg
Repeatability of scale factor Sigma kl/kl（1σ, one month)	≤15	≤30	≤50	ppm
Class II nonlinearity Coefficient repeatability k2/k1 (1σ, one month)	≤±10	≤±20	≤±30	μg /g2
Bias thermal coefficient	≤±10	≤±30	≤±50	μg /℃
Scale factor thermal coefficient	≤±20	≤±30	≤±50	ppm /℃
Noise (sample resistance 840Ω)		≤5		mv
Natural Frequency		400~800		Hz
Bandwidth		800~2500		Hz
Vibration		6g		20~2000Hz
Shock		100g		8ms, 1/2s in
Temperature range (Operating)		-55~+85		℃
Temperature range (saved)		-60~+120		℃
Power		±12~±15		V
Consume current		≤±20		mA
Temp. sensor		Optional		
Size		Φ25.4X30		mm
Weight		≤80		g

PRODUCT DIMENSION



Install hole is U type



Install hole is U type, 8 pin

PRODUCT APPLICATION

- Inertial measurement of military high-precision inertial navigation system and vibration isolation test of precision instruments and equipment in aerospace, aviation, ships, weapons and other fields

AC-3: HIGH PRECISION QUARTZ ACCELEROMETER

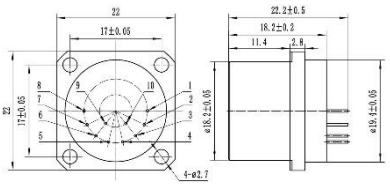
PRODUCT DESCRIPTION

AC-3 quartz flexible accelerometer series is a high-precision military inertial navigation class accelerometer with excellent long-term stability, repeatability, start-up performance, environmental adaptability and high reliability. It can be used for both static and dynamic testing, and it is also a standard vibration sensor and inclination sensor. The output current of the product has a linear relationship with the force or acceleration received. Users can select the appropriate sampling resistance through calculation to achieve high precision output. And according to user needs built-in temperature sensor, used to offset value and scale factor compensation, reduce the impact of environmental temperature.

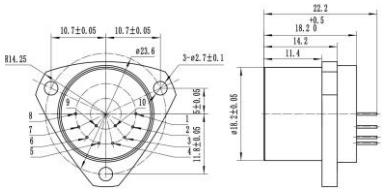
PRODUCT MAIN SPECIFICATION

Parameters	AC-3A	AC-3B	AC-3C	Unit
Range		±60		g
Threshold /Resolution	5	5	5	μg
Bias k0/k1	≤±5	≤±5	≤±5	mg
Scale factor kl	1.0±0.2	1.0±0.2	0.6±0.2	mA/g
Class II nonlinearity coefficient k2/k1	≤±10	≤±15	≤±20	μg /g2
0g 4 hours short time stability	≤10	≤20	≤20	μg
1g 4 hours short time stability	≤10	≤20	≤20	ppm
Bias drift Sigma k0(1σ， one month)	≤15	≤50	≤50	μg
Repeatability of scale factor Sigma kl/kl（1σ, one month)	≤15	≤50	≤50	ppm
Class II nonlinearity Coefficient repeatability k2/k1 (1σ, one month)	≤±20	≤±30	≤±30	μg /g2
Bias thermal coefficient	≤±15	≤±50	≤±50	μg /℃
Scale factor thermal coefficient	≤±15	≤±80	≤±50	ppm /℃
Noise (sample resistance 840Ω)	≤5	≤8.4	≤8.4	mv
Natural Frequency		350~800		Hz
Bandwidth		800~2500		Hz
Vibration		10g		20~2000Hz
Shock	150g,4.5ms	150g,4.5ms	150g,0.5ms	1/2sin
Temperature range (Operating)		-55~+85		℃
Temperature range (saved)		-60~+120		℃
Power		±12~±15		V
Consume current		≤±20		mA
Temp. sensor		Optional		
Size		Φ18.2X23		mm
Weight		≤30		g

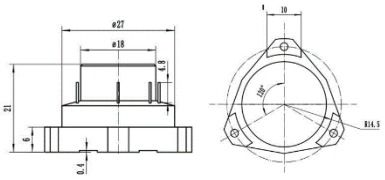
PRODUCT DIMENSION



Outline 1 for square



Outline 2 for triangle



Outline 3 for inverted triangle

PRODUCT APPLICATION

- Inertial measurement of military high-precision inertial navigation system and vibration isolation test of precision instruments and equipment in aerospace, aviation, ships, weapons and other fields

AC-4: HIGH PRECISION QUARTZ ACCELEROMETER

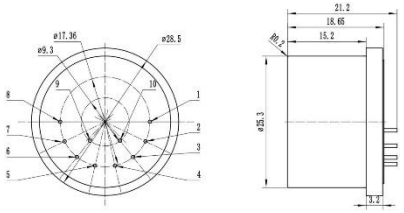
PRODUCT DESCRIPTION

AC-4 quartz flexible accelerometer series is a high temperature and anti-vibration accelerometer, the product has excellent repeatability, starting performance, high temperature and high reliability characteristics, it can be used for static testing and dynamic testing, it is also a standard vibration sensor. Products adopt unique high temperature design, packaging process and special circuit, product output current is proportional to the measured acceleration, the user can calculate the appropriate sampling resistance, achieve high precision output, and according to the user demand built-in temperature sensor, used for the partial value and scale factor compensation, reduce the influence of environmental temperature. QA 650, T185, T160, JAE series products can be replaced in situ, but we adopt double torque structure, it is different from other company products.

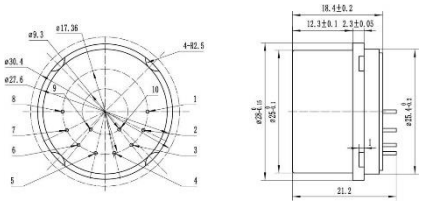
PRODUCT MAIN SPECIFICATION

Parameters	AC-4A	AC-4B	AC-4C	Unit
Range		±30		g
Bias k0/k1	<10	<15	<15	mg
One month composite repeatability	<50	<200	<200	μg
Temperature sensitivity	<50	<100	<100	μg /℃
Scale factor	1.1 ~ 1.3	1.1 ~ 1.3	1.1 ~ 1.3	mA/g
One month composite repeatability	<80	<150	<150	ppm
Temperature sensitivity	<100	<200	<200	ppm
Axis misalignment	<1500	<1500	<1500	μrad
Vibration rectification (@50~500Hz)	<30	<100	<100	μg /g2rms
Intrinsic noise (@0~10000Hz)	<3000	<3000	<3000	μg /g2rms
Temperature range (Operating)	-55 ~ 96	-55 ~ 155	-55 ~ 180	℃
Shock	500g	1000g	1000g	0.5ms
Vibration peak sin (@30~500Hz)	25	25	25	g
Threshold /Resolution	<10	<10	<10	μg
Bandwidth	>300	>300	>300	Hz
Quiescent current per supply	<20	<20	<20	mA
Quiescent power (@±15VDC)	<480	<480	<480	mW
Input Voltage	±13 ~ ±18	±13 ~ ±18	±13 ~ ±18	V
Weight	<55	<55	<55	g
Diameter below mounting surface	Φ25	Φ25	Φ25	mm
Height-bottom to mounting surface	<21.5	<21.5	<21.5	mm
Case material	300 series stainless steel			

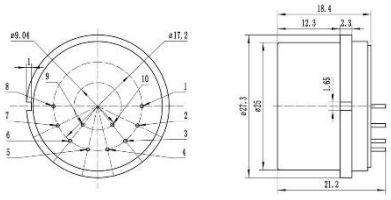
PRODUCT DIMENSION



Outline for AC-4A



Outline for AC-4B/AC-4C (Option I)



Outline for AC-4B/AC-4C (Option II)

PRODUCT APPLICATION

- inclination test of bridge, dam, oil well, coal mine, etc., high-speed railway control, ship stability control, etc

AC-5: HIGH PRECISION QUARTZ ACCELEROMETER

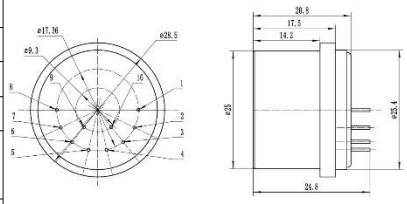
PRODUCT DESCRIPTION

AC-5 quartz flexible accelerometer series is a middle grade precision accelerometer with unique structural size (short) design. The product has excellent long-term stability, repeatability, dynamic response performance, good vibration and impact resistance and high reliability. It can be used for static and dynamic testing, and is also a standard vibration sensor and inclination sensor. The product adopts a unique structural design and special circuit, the product output current and the force or acceleration is linear relationship, users can choose the appropriate sampling resistance through calculation, to achieve high precision output. And according to user needs built-in temperature sensor, used to offset value and scale factor compensation, reduce the impact of environmental temperature.

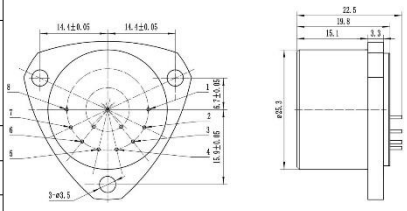
PRODUCT MAIN SPECIFICATION

Parameters	AC-5A	AC-5B	AC-5C	Unit
Range		±50		g
Threshold /Resolution	<5	<5	<5	μg
Bias k0/k1	<5	<7	<10	mg
Scale factor kl		1.1~1.3		mA/g
Class II nonlinearity coefficient k2/k1	≤±20	≤±20	≤±20	μg /g2
Bias drift Sigma k0 (1σ， one month)	≤30	≤50	≤80	μg
Repeatability of scale factor Sigma kl/kl（1σ, one month)	≤50	≤80	≤100	ppm
Class II nonlinearity Coefficient repeatability k2/k1 (1σ, one month)	≤±20	≤±20	≤±20	μg /g2
Bias thermal coefficient	<±20	<±30	<±40	μg /℃
Scale factor thermal coefficient	<40	<50	<80	ppm /℃
Noise (sample resistance 840Ω)	≤5	≤5	≤5	mv
Bandwidth		>300		Hz
Vibration rectification (@50~500Hz)		<30		μg/g2rms
Vibration (@20~2000Hz)		20		g
Shock		250g		4.5ms, 1/2s in
Install error		<1500		μrad
Temperature range (Operating)		-55~+96		℃
Power		±13~±18		V
Consume current		<20		mA
Temp. sensor		Optional		
Size	Φ25X25	Φ25.3X23	Φ25X24	mm
Weight		≤55		g

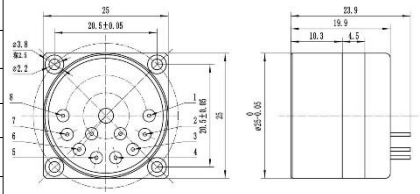
PRODUCT DIMENSION



Outline for AC-5A



Outline for AC-5B



Outline for AC-5C

PRODUCT APPLICATION

- bridge, dam, oil well, coal mine dip test, high-speed railway control, ship stability control

AC-6: HIGH PRECISION QUARTZ ACCELEROMETER

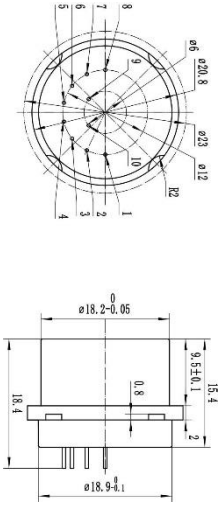
PRODUCT DESCRIPTION

AC-6 quartz flexible accelerometer series is a small, high temperature resistant seismic type accelerometer. The product has excellent repeatability, starting performance, high temperature seismic resistance and high reliability characteristics, which can be used for both static testing and dynamic testing, and is also a standard vibration sensor. The product adopts unique miniaturization, high temperature resistant seismic design, advanced packaging process and special circuit, the output current of the product is proportional to the input acceleration, the user can select the appropriate sampling resistance through calculation, to achieve high precision output. And according to the user requirements of the built-in temperature sensor, can be used to compensate for the partial value and scale factor, to reduce the impact of environmental temperature. Since the launch of this product was launched in 2012, the number of deliveries has reached thousands. After years of application, it has become a mature product.

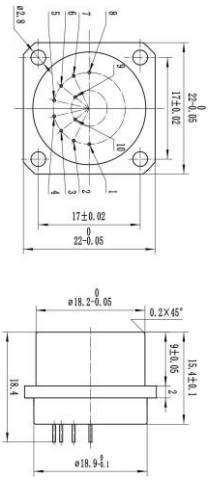
PRODUCT MAIN SPECIFICATION

Parameters	AC-6A	AC-6B	Unit
Range	±30	±30	G
Threshold /Resolution	30	30	μg
Bias k0/k1	≤±20	≤±20	mg
Scale factor kl	1.9~2.1	1.9~2.1	mA/g
Class II nonlinearity coefficient k2/k1	≤±20	≤±50	μg /g2
Bias drift Sigma k0 (1σ， one month)	≤150	≤220	μg
Stability of scale factor Sigma kl/kl（1σ, one month)	≤150	≤220	ppm
Class II nonlinearity Coefficient stability k2/k1 (1σ, one month)	≤±40	≤±50	μg /g2
Bias thermal coefficient	≤±80	≤±150	μg /℃
Scale factor thermal coefficient	≤100	≤200	ppm /℃
Noise (sample resistance 840Ω)	≤8	≤8.4	mv
Natural frequency	350~800	350~800	Hz
Bandwidth	800~2500	800~2500	Hz
Vibration (@20~2000Hz)	25	25	G
Shock	1000g	1000g	0.5ms, 1/2sin
Temperature range (Operating)	-40~+150	-40~+150	℃
Temperature range (Saved)	-60~+180	-60~+180	℃
Power	±12~±15	±12~±15	V
Consume current	±20	±20	mA
Size	Φ18.2X16	Φ18.2X16	Mm
Weight	25	25	G

PRODUCT DIMENSION



Outline for AC-6A (Round)



Outline for AC-6B (Square)

PRODUCT APPLICATION

- oil and gas drilling, earth exploration

AC-7: HIGH PRECISION QUARTZ ACCELEROMETER

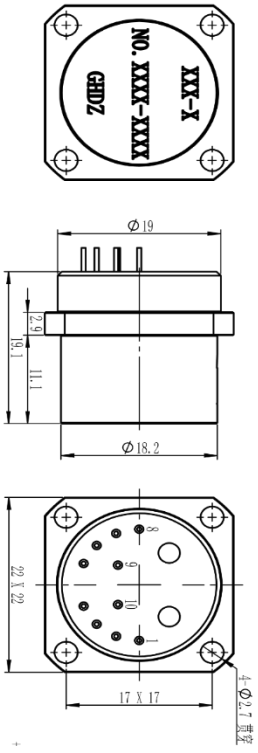
PRODUCT DESCRIPTION

AC-7 quartz flexible accelerometer series is a small, high temperature resistant seismic type accelerometer. The product has excellent repeatability, starting performance, high temperature seismic resistance and high reliability characteristics, which can be used for both static testing and dynamic testing, and is also a standard vibration sensor. The product adopts unique miniaturization, high temperature resistant seismic design, advanced packaging process and special circuit, the output current of the product is proportional to the input acceleration, the user can select the appropriate sampling resistance through calculation, to achieve high precision output. And according to the user requirements of the built-in temperature sensor, can be used to compensate for the partial value and scale factor, to reduce the impact of environmental temperature.

PRODUCT MAIN SPECIFICATION

Parameters	AC-7A	AC-7B	AC-7C	Unit
Range	±60	±60	±60	g
Threshold value	10	10	10	μg
Deviation k0/k1	≤±10	≤±10	≤±10	mg
Scale factor kl	1.2±0.2	1.2±0.25	1.2±0.25	mA/g
Class II nonlinearity coefficient k2	≤±20	≤±20	≤±20	μg /g2
0g 4 hours short time stability		≤20		μg
1g 4 hours short time stability		≤20		ppm
Deviation value comprehensive repeatability σk0 (1σ, one month)	≤40	≤40	≤40	μg
Repeatability of scale factor σkl/kl（1σ, one month)	≤50	≤50	≤50	ppm
Nonlinearity coefficient comprehensive repeatability k2/k1 (1σ, one month)	≤±20	≤±20	≤±20	μg /g2
Deviation value temperature coefficient	≤±30	≤±30	≤±30	μg /℃
Scale factor temperature coefficient	≤±50	≤±50	≤±50	ppm /℃
Noise (sample resistance 840Ω)	≤4	≤5	≤5	mv
Natural frequency		350~800		Hz
Bandwidth	800~2500	≥350	≥350	Hz
Vibration	5g	5g	5g	20~2000Hz
Shock	150g (0.5ms)	150g (5ms)	150g (5ms)	1/2sin
Temperature range (Operating)	-40~+85	-40~+85	-40~+85	℃
Temperature range (saved)	-60~+120	-60~+120	-60~+120	℃
Power supply	±12~±15	±15(±0.5)	±12~±18	V
Consume current (under static condition)	≤±20	≤±100	≤±16	mA
Size	Φ18.2X23	Φ18.2X23	Φ18.2X20.6	mm
Weight	≤30	≤30	≤30	g

PRODUCT DIMENSION



Outline for AC-7 Series

PRODUCT APPLICATION

- oil and gas drilling, earth exploration

AVI-B: HIGH OUTPUT FREQUENCY V/F CONVERSION CIRCUIT

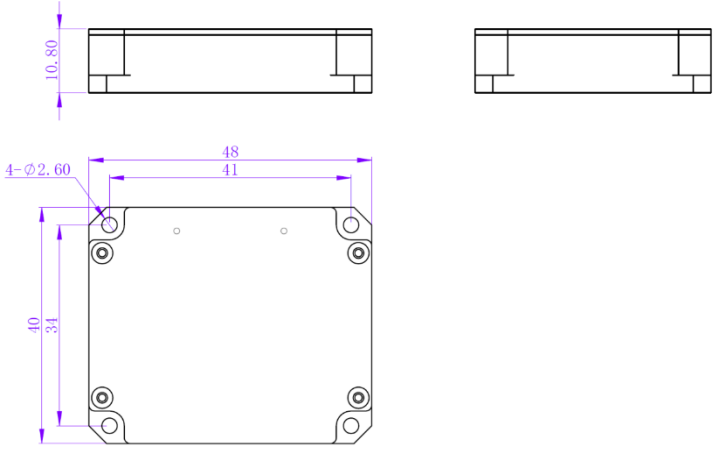
PRODUCT DESCRIPTION

AVI-B-series current/frequency conversion module adopts a charge integration method and can continuously convert the current signals of three accelerometers simultaneously. The three accelerometers work independently without affecting each other. The range and scale factor of this series of products are adjustable, with a maximum range of ±80mA. It has the characteristics of small volume, small zero position, and low temperature coefficient.

PRODUCT MAIN SPECIFICATION

Specification	Test conditions	Minimum	Typical	Maximum	Unit
Maximum output frequency	Full temperature	-	-	512	kHz
Zero position F_0	Full temperature	0	60	100	nA
Zero stability	Constant temperature test		10	20	ppm
Scale factor temperature coefficient	Full temperature range	-	1	2	ppm/℃
Scale factor asymmetry	I=±1mA，T_C =25℃	0		30	ppm
Scale factor comprehensive nonlinearity	Full temperature range 1mA ≤ | I | ≤ FS	-	30	50	ppm
Stability during one power on	I=±1mA，T_C =25℃		10	20	ppm
Repeatability of successive power on	I=±1mA，T_C =25℃		10	20	ppm
Working temperature range T_c		-45		85	℃
Product dimension	48*40*11				mm
Interface form	J30JZ/LN21ZKWA000				

PRODUCT DIMENSION



Size: 48*40*10.8mm

AVI-C: HIGH OUTPUT FREQUENCY V/F CONVERSION CIRCUIT

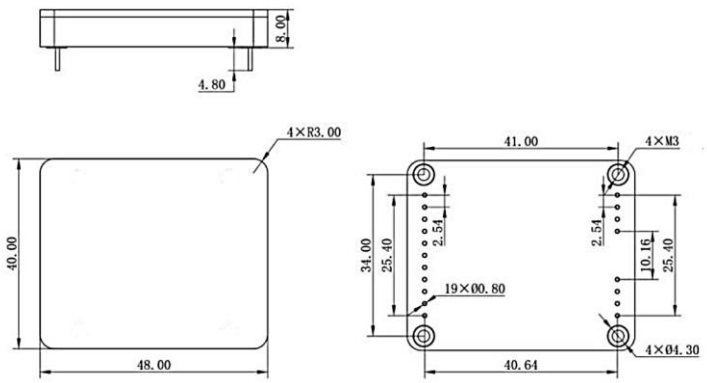
PRODUCT DESCRIPTION

The AVI-C-series V/F conversion module is a high-precision voltage/frequency converter that uses charge integration to continuously convert the current signals of three accelerometers simultaneously. The components used in this series of products are all 100% domestically produced, with a range of up to ±80mA. It has the characteristics of small size, low power consumption, low temperature, and autonomous controllability.

PRODUCT MAIN SPECIFICATION

Specification	Test conditions	Minimum	Typical	Maximum	Unit
Maximum output frequency	Full temperature	-	-	512	kHz
Zero position F_0	Full temperature	0	60	100	nA
Zero stability	Constant temperature test		10	20	ppm
Scale factor temperature coefficient	Full temperature range	-	1	2	ppm/℃
Scale factor asymmetry	I=±1mA，T_C =25℃	0		30	ppm
Scale factor comprehensive nonlinearity	Full temperature range 1mA ≤ | I | ≤ FS	-	30	50	ppm
Small signal error	0.01uA≤|I|≤1mA			0.5	Hz
Stability during one power on	I=±1mA，T_C =25℃		10	20	ppm
Repeatability of successive power on	I=±1mA，T_C =25℃		10	20	ppm
Working temperature range T_c		-45		85	℃
Product dimension	48*40*8				mm
Interface form	Dual in-line plug lead out				

PRODUCT DIMENSION



Size: 48*40*8mm

AVI-E: HIGH PRECISION OUTPUT I/F CONVERSION CIRCUIT

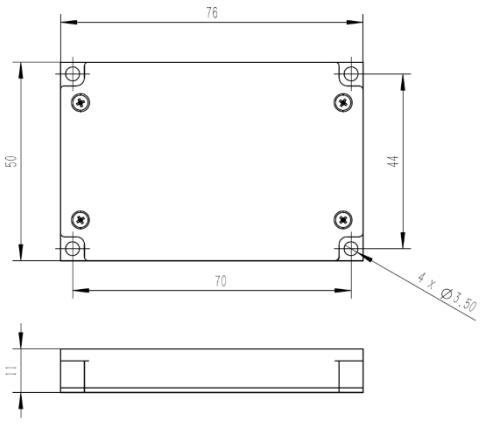
PRODUCT DESCRIPTION

The AVI-E-series I/F conversion module is a high-precision current/frequency converter that uses charge integration to continuously convert the current signals of three accelerometers simultaneously. The components used in this series of products are all 100% domestically produced, with a range of ±20mA and adjustable scaling factor. It has the characteristics of small zero position, low power consumption, low temperature, and autonomous controllability.

PRODUCT MAIN SPECIFICATION

Specification	Test conditions	Minimum	Typical	Maximum	Unit
Maximum output frequency	Full temperature	-	-	512	kHz
Zero position F_0	Full temperature	0	-	20	nA
Zero stability	Full temperature	-	5	10	ppm
Scale factor temperature coefficient	Full temperature	-	0.5	1	ppm/℃
Scale factor asymmetry	I=±1mA，T_C =25℃	0	-	30	ppm
Scale factor comprehensive nonlinearity	Full temperature range 1mA ≤ | I | ≤ FS	-	-	30	ppm
Small signal error	0.01uA≤|I|≤1mA	-	-	0.5	Hz
Stability during one power on	I=±1mA，T_C =25℃	-	7	15	ppm
Repeatability of successive power on	I=±1mA，T_C =25℃	-	7	15	ppm
Working temperature range T_c		-45		70	℃
Product dimension	76*50*11				mm
Interface form	J30JZ/LN25ZKWA000				

PRODUCT DIMENSION



Size: 76*50*11mm

AVI-F: HIGH PRECISION OUTPUT I/F CONVERSION CIRCUIT

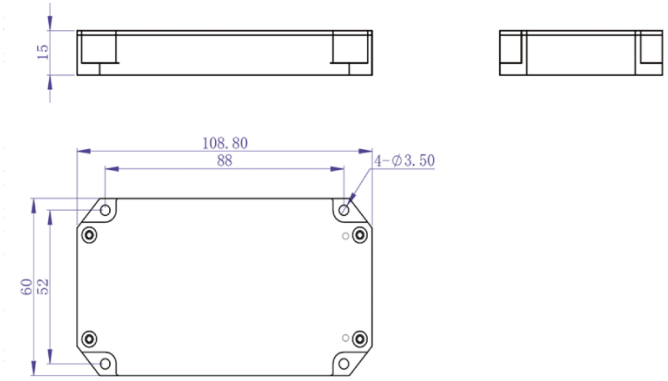
PRODUCT DESCRIPTION

The AVI-F-series I/F conversion module is a temperature compensated high-precision current/frequency converter, which adopts a charge integration method and can continuously convert the current signals of three accelerometers simultaneously. The output of the I/F converter includes a pulse output mode, and also adds the function of timing the serial port 422 to send the accumulated number of pulses. The components used in this series of products are all 100% domestically produced, with a range of up to ±42mA.

PRODUCT MAIN SPECIFICATION

Specification	Test conditions	Minimum	Typical	Maximum	Unit
Maximum output frequency	Full temperature	-	-	256	kHz
Zero position F_0	Full temperature	0	-	10	nA
Zero stability	Full temperature	-	-	5	ppm
Scale factor temperature coefficient	Full temperature	-	-	1	ppm/℃
Scale factor asymmetry	I=±1mA，T_C =25℃	0	10	20	ppm
Scale factor comprehensive nonlinearity	Full temperature range 1mA ≤ | I | ≤ FS	-	15	20	ppm
Small signal error	0.01uA≤|I|≤1mA	-	-	0.2	Hz
Stability during one power on	I=±1mA，T_C =25℃	-	3	5	ppm
Repeatability of successive power on	I=±1mA，T_C =25℃	-	5	7	ppm
Working temperature range T_c		-45		70	℃
Product dimension	108*60*15				mm
Interface form	J30JZ/LN51ZKWA000				

PRODUCT DIMENSION



Size: 108.8*60*15mm

A5000: DIGITAL OUTPUT HIGH PRECISION MEMS AHRS ATTITUDE SENSOR

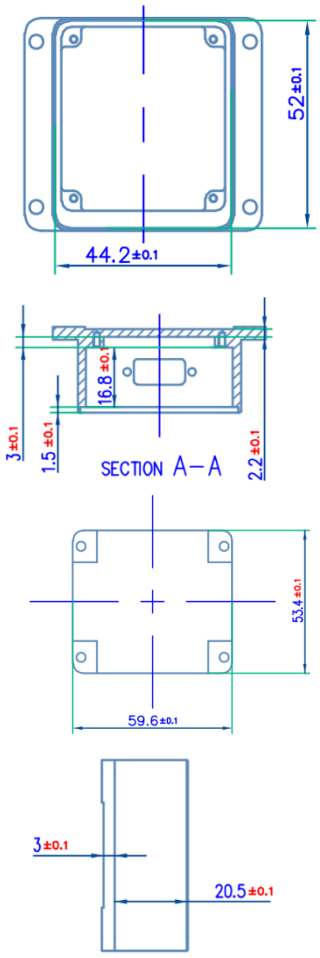
PRODUCT DESCRIPTION

The A5000 sensor, launched by MXMW HIGH-TECH Company, is a high-precision strapdown Attitude Heading Reference System (AHRS), with built-in high-precision accelerometers, gyroscopes, and magnetometers. Through multi-sensor fusion algorithms, it provides reliable heading angle, roll angle, pitch angle, angular velocity, acceleration, and other information for the motion carrier. The attitude data deviation is estimated through a 6-state Kalman filter with appropriate gain, which is suitable for navigation, positioning, and dynamic attitude measurement of unmanned vehicles.

PRODUCT MAIN SPECIFICATION

Main parameter	Indication	Unit
Attitude angles		
Heading angle	0.2	° RMS
Pitch/Roll angle	0,2	° RMS
Attitude ranges		
Pitch	±180	° RMS
Roll	±90	° RMS
Gyroscope		
Measurement range (can be customized)	±100	°/s
Angle random walk	0.09	°/ √ h
Linear scale factor	0.08	%FS
Zero bias stability (In-Run)	3	°/h (Allan)
Zero bias repeatability (In-Run)	3	°/h(Allan)
Accelerometer		
Measurement range (can be customized)	±10/±20/±40	g
Angle random walk	0.03	(m/s)/ √ h
Linear scale factor	0.1	%FS
Zero bias stability (In-Run)	0.03	mg
Zero bias repeatability (In-Run)	0.08	mg
Magnetometer		
Measurement range (can be customized)	±8	Gauss
Electrical indicators		
Data output interface	RS422	
Data update frequency	100	Hz
Voltage	DC 5±0.3	V
Power consumption	<0.6	W
Environment		
Operating temperature	-20～+85	℃
Storage temperature	-40～+85	℃
Anti-vibration	10	g
Impact resistance	150	g@15ms
Mechanical properties		
Waterproof level	IP67	
Dimension	59.6*59*23.5mm	
Weight	120g (excluding packaging box)	

PRODUCT DIMENSION



SIZE: L59.6*W59*H23.5MM

PRODUCT APPLICATION

- Autonomous mining or coal vehicles or machines
- Industry automation
- Robotics
- Autonomous agriculture vehicle or machines
- Communication in moving system
- Automated guided vehicle (AGV)
- Unmanned aerial vehicles (UAV)
- Unmanned surface vehicle (USV)
- Engineering dump trucks

A5500: HIGH PERFORMANCE MEMS IMU SENSOR

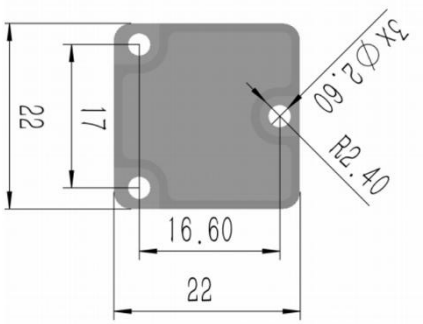
PRODUCT DESCRIPTION

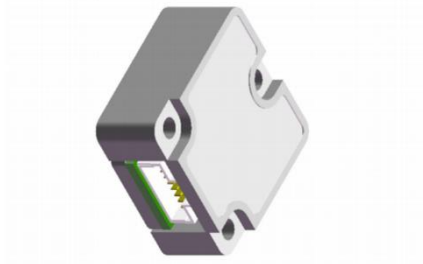
A5500 series is an IMU/VRU/AHRS sensor composed of high-performance MEMS-IMU, magnetometer, and enhanced single axis gyroscope. It is equipped with self-developed adaptive extended Kalman filter, IMU noise dynamic analysis algorithm, and carrier motion state analysis algorithm, which can meet the accuracy of attitude angle under high dynamic conditions and reduce heading angle drift. Every sensor undergoes fine compensation including temperature, zero bias, scaling factor, and cross axis before leaving the factory.

PRODUCT MAIN SPECIFICATION

Parameter	A5500			Unit
Attitude Precision				
Pitch (±90°)	0.1(normal), 0.2(max)			°
Roll (±180°)	0.1(normal), 0.2(max)			°
Yaw (±180°) Static drift 2hrs (6DOF) ①	0.1(normal), 0.2(max)			°
Dynamic drift (6DOF) ②	5			°
Magnetic assist (AHRS) ③	2(normal), 3(max)			°
Rotation error (6DOF) ④	<1(normal), <1.3(max)			°
Resolution	0.01			°
3-Axis Gyroscope				
Measurement range	±400			°/s
Full temperature zero bias stability (10s, 1σ)	Z axis: 0.015~0.035 Y axis: 0.05~0.18 X axis: 0.03~0.08			°/s
Scale factor nonlinearity	<40			ppm
Zero bias instability (Allan)	5.1			°/h
Zero bias instability (10s, 1σ)	3.06			°/h
Zero bias repeatability (Allan)	0.09			°/s
Zero bias repeatability (10s, 1σ)	0.054			°/s
Angle random walk (Allan)	0.6			°/ √ h
Angle random walk (10s, 1σ)	0.36			°/ √ h
3dB Bandwidth	116			Hz
Sampling	1000			Hz
Resolution	16bit			
Accelerometer sensitivity (All 3 axis)	0.1			°/s/g
3-Axis Accelerometer				
Measurement range	±12/±16/±24 (can be customized)			g
Full temperature zero bias stability (10s, 1σ)@ -40-85℃	1			mg
Zero bias stability (10s, 1σ)?	10			mg
Zero bias instability (Allan)	60			μg
Zero bias repeatability (Allan)	2.52			mg
Angle random walk (Allan)	0.08			m/s/ √ h
Scale factor nonlinearity	0.5			%FS
3dB Bandwidth	145			Hz
Sampling	1600			Hz
Resolution	16bit			
Magnetometer				
Range	±8			Gauss
Resolution (Fs=2G)	2			mGauss
Sampling	200			Hz
Linearity (Best fitting straight line Fs=2G)	0.1			Fs%
Temperature sensor	**Min**	**Normal**	**Max**	
Range	-104		150	℃
Offset error		±1		K

PRODUCT DIMENSION





SIZE: L22*W22*H10MM

PRODUCT APPLICATION

- Autonomous mining or coal vehicles or machines
- Industry automation
- Robotics
- Autonomous agriculture vehicle or machines
- Communication in moving system
- Automated guided vehicle (AGV)
- Unmanned aerial vehicles (UAV)
- Unmanned surface vehicle (USV)
- Engineering dump trucks

A7000: HIGH PRECISION MEMS AHRS SENSOR

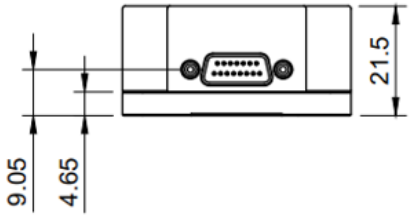
PRODUCT DESCRIPTION

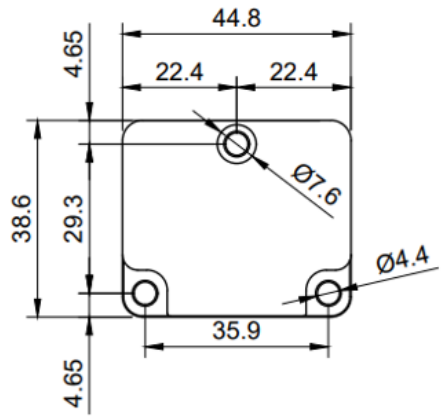
A7000 is a high-precision Attitude Heading and Reference System. The product adopts pure domestic device design, embedded with extended Kalman filter algorithm, providing accurate heading, attitude and other angle information, as well as calibrated sensor information. The product can be applied in fields such as drones, underwater vehicle, small ships, platform stability control, and vehicle engineering.

PRODUCT MAIN SPECIFICATION

Parameter	Index	Unit
Attitude and Heading		
Range of elevation angle measurement	-90~+90	°
Range of roll angle measurement	-180~+180	°
resolving power	0.005	°
Range of heading angle measurement	0~360	°
Static accuracy of attitude angle	0.05	°
Dynamic accuracy of attitude angle	0.1	°
Gyroscope		
Range	-300~+300	°/s
Zero bias stability	＜1	°/h
Zero bias repeatability	＜1	°/h
Scale factor repeatability	＜10	ppm
Scale factor nonlinearity	＜150	ppm
Accelerometer		
Range	-50~+50	g
Zero bias stability	＜0.1	mg
Zero bias repeatability	＜0.06	mg
Scale factor linearity	＜0.03	%FS
Scale factor repeatability	＜300	ppm
Others		
Voltage	9~36	V
Power waste	＜1.8	w
Communication interface	RS422	
Electrical interface	J30J-15	
Working temperature	-50~+85	℃
Storage temperature	-55~+105	℃
Shock vibration	2000	g
Weight	＜100	g

PRODUCT DIMENSION





SIZE: 44.8*38.5*21.5MM

PRODUCT APPLICATION

- Autonomous mining or coal vehicles or machines
- Industry automation
- Robotics
- Autonomous agriculture vehicle or machines
- Communication in moving system
- Automated guided vehicle (AGV)
- Unmanned aerial vehicles (UAV)
- Unmanned surface vehicle (USV)
- Engineering dump trucks

C9-A: 40° TILT ANGLE COMPENSATION DIGITA OUTPUT 3D ELETRONIC COMPASS

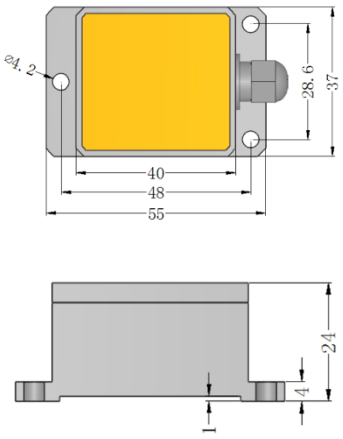
PRODUCT DESCRIPTION

C9-A is a high-precision 3D electronic compass launched by MXMW Hi-Tech Company, which introduces advanced 3D compensation patent technology from the United States, allowing accurate heading data to be provided even at a product tilt angle of ± 40 °. The product has a small size, low power consumption, and can be applied in many fields such as antenna stability, vehicles, and system integration. Its high seismic resistance and reliability also enable the compass to work normally in extremely harsh environments, making it more suitable for today's miniaturized high-precision measurement and integrated control systems.

PRODUCT MAIN SPECIFICATION

Parameter		C9-A
Compass heading parameters	Heading accuracy	1° (RMS, pitch<45°)
	Resolution	0.1°
	Repeatability	0.3°
	Measurement range	0~360°
	Tilting range	±40°
Compass inclination parameters	Pitch accuracy	0.15°
	Roll accuracy	0.15°
	Inclination angle resolution	0.01°
	Inclination range	Pitch±90°; Roll±180°
Calibration	Hard iron calibration	Yes
	Soft iron calibration	Yes
	Tilt calibration	Yes
Physical properties	Size	L55*W37*H24 (mm)
	Weight	75g
	RS-232/RS485 interface connector	5-pin aviation connector
Interface features	Startup delay	<50ms
	Maximum sampling rate	50 times/second
	RS-232 communication rate	2400~19200 baud rate
	RS-485 communication	optional
	TTL communication	optional
	Output format	hexadecimal
Power supply	Support voltage	DC+5V(9~36V)
	Current (max)	40mA
	Working mode	35mA
Environment	Storage range	-40℃--+125℃
	Working temperature	-40℃--+85℃
	Vibration resistance	2600g

PRODUCT DIMENSION



SIZE: L55*W37*H24MM

PRODUCT APPLICATION

- Individual combat equipment
- Petroleum geological logging
- Underwater navigation
- Navigation GPS
- Marine survey
- Ship navigation attitude measurement
- Accurate laser platform equipment
- Unmanned aerial vehicles (UAV)
- Based on inclination monitoring

C9-B: HIGH PRECISION DIGITA OUTPUT 2D ELETRONIC COMPASS

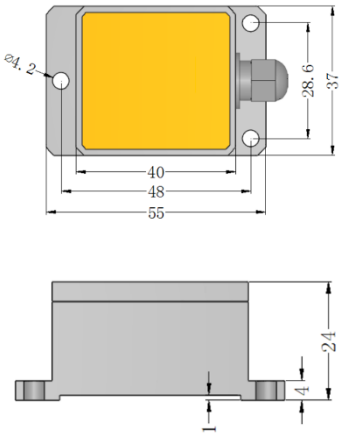
■ PRODUCT DESCRIPTION

C9-B is a high-precision two-dimensional (2D) electronic compass launched by MXMW Hi-Tech Company, which measures azimuth angles from 0 to 360 °. It is equipped with American patented technology, an industrial grade microcontroller with high reliability and strong anti-interference ability, and a high-precision magnetic sensor and driver chip. It integrates hard magnetic interference and soft magnetic interference compensation technology. It can be customized according to customer needs and can easily and quickly integrate electronic compass functions into various products.

■ PRODUCT MAIN SPECIFICATION

Parameter		C9-B
Compass heading parameters	Heading accuracy	1°
	Resolution	0.1°
	Repeatability	0.3°
Compass inclination parameters	Navigation tilt angle range	±5°
	Heading angle measurement range	0~360°
Calibration	Hard iron calibration	Yes
	Soft iron calibration	Yes
	Magnetic field interference calibration	Rotate the plane once (2D calibration)
Physical properties	Size	L55*W37*H24 (mm)
	Weight	75g
	RS-232/RS485 interface connector	5-pin aviation connector
Interface features	Startup delay	<50ms
	Maximum sampling rate	50 times/second
	RS-232 communication rate	2400~19200 baud rate
	RS-485 communication	optional
	TTL communication	optional
	Output format	hexadecimal
Power supply	Support voltage	DC+5V(9~36V)
	Current (max)	40mA
	Working mode	30mA
Environment	Storage range	-40℃--+125℃
	Working temperature	-40℃--+70℃
	Vibration resistance	2500g

■ PRODUCT DIMENSION

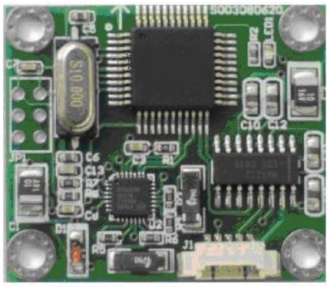


SIZE: L55*W37*H24MM

■ PRODUCT APPLICATION

- Individual combat equipment
- Petroleum geological logging
- Underwater navigation
- Navigation GPS
- Marine survey
- Ship navigation attitude measurement
- Accurate laser platform equipment
- Unmanned aerial vehicles (UAV)
- Based on inclination monitoring

C9-C: HIGH PRECISION DIGITA OUTPUT 2D ELETRONIC COMPASS SINGLE BOARD



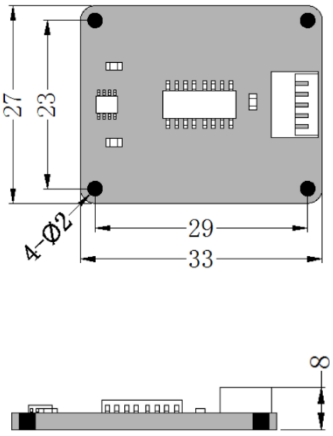
PRODUCT DESCRIPTION

C9-C is a high-precision two-dimensional electronic compass launched by MXMW Hi-Tech Company, which measures azimuth angles from 0 to 360 °. It is equipped with American patented technology, an industrial grade microcontroller with high reliability and strong anti-interference ability, and a high-precision magnetic sensor and driver chip. It integrates hard magnetic interference and soft magnetic interference compensation technology. It can be customized according to customer needs and can easily and quickly integrate electronic compass functions into various products.

PRODUCT MAIN SPECIFICATION

Parameter		C9-C
Compass heading parameters	Heading accuracy	1°
	Resolution	0.1°
	Repeatability	0.3°
Compass inclination parameters	Navigation tilt angle range	±5°
	Heading angle measurement range	0~360°
Calibration	Hard iron calibration	Yes
	Soft iron calibration	Yes
	Magnetic field interference calibration	Rotate the plane once (2D calibration)
Physical properties	Size	L33*W27*H8 (mm)
	Weight	5g
	RS-232/RS485 interface connector	5-pin aviation connector
Interface features	Startup delay	<50ms
	Maximum sampling rate	50 times/second
	RS-232 communication rate	2400~19200 baud rate
	RS-485 communication	optional
	TTL communication	optional
	Output format	hexadecimal
Power supply	Support voltage	DC+5V(9~36V)
	Current (max)	40mA
	Working mode	30mA
Environment	Storage range	-40℃--+125℃
	Working temperature	-40℃--+70℃
	Vibration resistance	2500g

PRODUCT DIMENSION



SIZE: L33*W27*H8MM

PRODUCT APPLICATION

- Individual combat equipment
- Petroleum geological logging
- Underwater navigation
- Navigation GPS
- Marine survey
- Ship navigation attitude measurement
- Accurate laser platform equipment
- Unmanned aerial vehicles (UAV)
- Based on inclination monitoring

C9-D: INCLINATION COMPENSATION 3-D ELECTRONIC COMPASS SINGLE BOARD

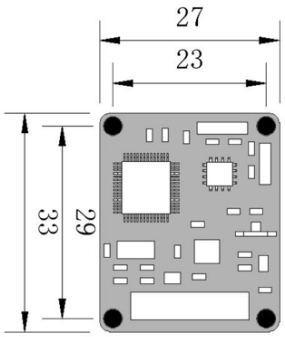
PRODUCT DESCRIPTION

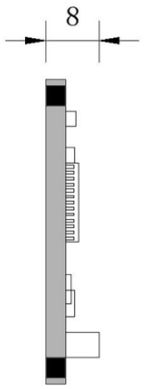
C9-D is a high-precision three-dimensional electronic compass. It has self-developed core 3D compensation algorithm technology, so that it can still provide accurate heading data even when the product is tilted at an angle of ±40° . The product is small in size and has low power consumption. It can be used in many fields such as antenna stabilization, vehicles, and system integration. Its high shock resistance and high reliability also allow the compass to work normally in extremely harsh environments, making it more suitable for today's miniaturized and high-voltage applications. Accurate measurement integrated control system.

PRODUCT MAIN SPECIFICATION

Product performance indicators		C9-D
Compass heading parameters	Heading accuracy	1° (RMS, pitch<45°)
	Resolution	0.1°
	Repeatability	0.3°
	Measuring range	0-360°
	Tilt range	±40°
Compass tilt parameters	Pitch accuracy	0.15°
	Roll accuracy	0.15°
	Tilt resolution	0.01°
	Measuring range	Pitch ±90°; Roll ±180°
Calibration	Hard iron calibration	have
	Soft iron calibration	have
	Tilt calibration	have
Physical properties	Size	L33 x W27 x H8(mm)
	Weight	8g
	RS-232/RS485 interface connector	5 pins
Interface features	Startup delay	<50ms
	Maximum sampling rate	50 times/second
	RS-232 communication rate	2400~19200 baud rate
	RS-485 communication	Optional
	TTL communication	Optional
	Output format	Hexadecimal high-performance protocol
Power supply	Support voltage	DC+5V (9~36V can be customized)
	Current (maximum)	40mA
	Operating mode	30mA
Environment	Storage range	-40℃--+125℃
	Operating temperature	-40℃--+85℃
	Anti-vibration performance	2600g

PRODUCT DIMENSION





SIZE: L33*W27*H8MM

PRODUCT APPLICATION

- Communication equipment on the move
- Petroleum Geology Logging
- underwater navigation
- Marine survey
- AGV vehicle patrol
- Based on tilt monitoring
- Satellite solar antenna positioning
- Unmanned flight control
- GPS and Beidou navigation
- Ship navigation attitude measurement

C90-A: 65° TILT ANGLE COMPENSATION DIGITA OUTPUT 3D ELETRONIC COMPASS

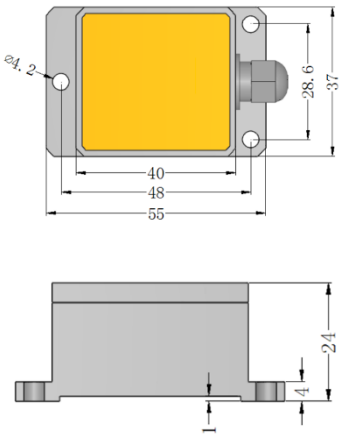
PRODUCT DESCRIPTION

C90-A is a high-precision 3D electronic compass using advanced hard and soft iron calibration algorithms to provide high-precision heading information within a 65 ° angle range. It has the characteristics of small size and low power consumption, making it more suitable for power volume sensitive measurement systems. This product comes with hard magnetic, soft magnetic, and tilt compensation, and the compass outputs high-precision measurement values after calibration. The three-axis fluxgate integrated with patented technology calculates the heading in real-time through the central processor, and uses a three-axis accelerometer to compensate for the tilt angle, enabling it to provide accurate heading data even in extremely harsh environments.

PRODUCT MAIN SPECIFICATION

Parameter		C90-A
Compass heading parameters	Heading accuracy	0.5° (RMS, pitch<40°) 0.7° (RMS, pitch<55°) 1° (RMS, pitch<65°)
	Resolution	0.01°
	Repeatability	0.1°
Compass inclination parameters	Pitch accuracy	0.1°
	Roll accuracy	0.1° (pitch<65°)
	Inclination angle resolution	0.01°
	Inclination range	±65°
Calibration	Hard iron calibration	Yes
	Soft iron calibration	Yes
	Tilt calibration	Yes
Physical properties	Size	L55*W37*H24 (mm)
	Weight	75g
	RS-232/RS485 interface connector	5-pin aviation connector
Interface features	Startup delay	<50ms
	Maximum sampling rate	50 times/second
	RS-232 communication rate	2400~19200 baud rate
	RS-485 communication	optional
	TTL communication	optional
	Output format	Binary high performance protocol
Power supply	Support voltage	DC+5V
	Current (max)	40mA
	Working mode	35mA
Environment	Storage range	-40℃--+125℃
	Working temperature	-40℃--+85℃
	Vibration resistance	3000g

PRODUCT DIMENSION



SIZE: L55*W37*H24MM

PRODUCT APPLICATION

- Individual combat equipment
- Petroleum geological logging
- Underwater navigation
- Navigation GPS
- Marine survey
- Ship navigation attitude measurement
- Accurate laser platform equipment
- Unmanned aerial vehicles (UAV)
- Based on inclination monitoring

C90-B: FULL ATTITUDE DIGITA OUTPUT 3D ELETRONIC COMPASS

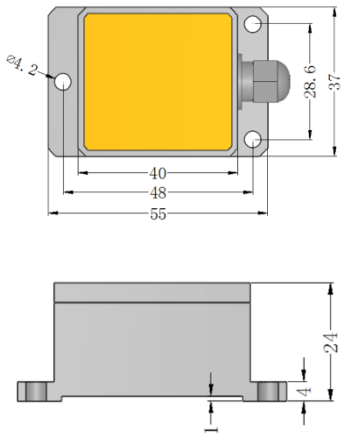
PRODUCT DESCRIPTION

C90-B is a high-precision all attitude 3D electronic compass using advanced hard and soft iron calibration algorithms to provide high-precision heading information within a range of 360 ° roll and+/-90 ° full tilt angle. It has the characteristics of small size and low power consumption, making it more suitable for power volume sensitive measurement systems. This product comes with hard magnetic, soft magnetic, and tilt compensation, and the compass outputs high-precision measurement values after calibration. The three-axis fluxgate integrated with patented technology calculates the heading in real-time through the central processor, and uses a three-axis accelerometer to compensate for the tilt angle, enabling it to provide accurate heading data even in extremely harsh environments.

PRODUCT MAIN SPECIFICATION

Parameter		C90-B
Compass heading parameters	Heading accuracy	0.3~0.5° (RMS, pitch<85°)
	Resolution	0.1°
	Repeatability	0.05°
Compass inclination parameters	Pitch accuracy	0.1°
	Roll accuracy	0.1° (pitch<65°) 0.2° (pitch<80°) 0.5° (pitch<86°)
	Inclination angle resolution	0.01°
	Inclination range	Pitch: ±90°; Roll: 360°
Calibration	Hard iron calibration	Yes
	Soft iron calibration	Yes
	Tilt calibration	Yes
Physical properties	Size	L55*W37*H24 (mm)
	Weight	75g
	RS-232/RS485 interface connector	direct outgoing line
Interface features	Startup delay	<50ms
	Maximum sampling rate	50 times/second
	RS-232 communication rate	2400~19200 baud rate
	RS-485 communication	optional
	TTL communication	optional
	Output format	hexadecimal
Power supply	Support voltage	DC+5V(9~36V)
	Current (max)	40mA
	Working mode	30mA
Environment	Storage range	-40℃--+125℃
	Working temperature	-40℃--+85℃
	Vibration resistance	2600g

PRODUCT DIMENSION

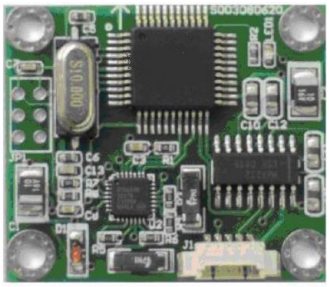


SIZE: L55*W37*H24MM

PRODUCT APPLICATION

- Individual combat equipment
- Petroleum geological logging
- Underwater navigation
- Navigation GPS
- Marine survey
- Ship navigation attitude measurement
- Accurate laser platform equipment
- Unmanned aerial vehicles (UAV)
- Based on inclination monitoring

C90-C: FULL ATTITUDE DIGITA OUTPUT 3D ELETRONIC COMPASS SINGLE BOARD



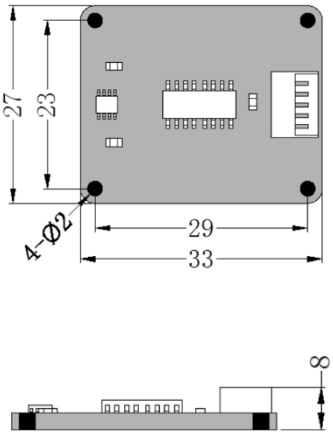
PRODUCT DESCRIPTION

C90-C is a high-precision all attitude 3D electronic compass, using advanced hard and soft iron calibration algorithms to provide high-precision heading information within a range of 360 ° roll and+/-90 ° full tilt angle. It has the characteristics of small size and low power consumption, making it more suitable for power volume sensitive measurement systems. The precise attitude of the product output carrier can be used in systems with full attitude rotation. This product comes with hard magnetic, soft magnetic, and tilt compensation, and the compass outputs high-precision measurement values after calibration

PRODUCT MAIN SPECIFICATION

Parameter		C90-C
Compass heading parameters	Heading accuracy	0.3~0.5° (RMS, pitch<85°)
	Resolution	0.1°
	Repeatability	0.05°
Compass inclination parameters	Pitch accuracy	0.1°
	Roll accuracy	0.1° (pitch<65°) 0.2° (pitch<80°) 0.5° (pitch<86°)
	Inclination angle resolution	0.01°
	Inclination range	Pitch: ±90°; Roll: 360°
Calibration	Hard iron calibration	Yes
	Soft iron calibration	Yes
	Tilt calibration	Yes
Physical properties	Size	L33*W27*H8 (mm)
	Weight	10g
	RS-232/RS485 interface connector	direct outgoing line
Interface features	Startup delay	<50ms
	Maximum sampling rate	50 times/second
	RS-232 communication rate	2400~19200 baud rate
	RS-485 communication	optional
	TTL communication	optional
	Output format	hexadecimal
Power supply	Support voltage	DC+5V(9~36V)
	Current (max)	40mA
	Working mode	30mA
Environment	Storage range	-40℃--+125℃
	Working temperature	-40℃--+85℃
	Vibration resistance	2600g

PRODUCT DIMENSION



SIZE: L33*W27*H8MM

PRODUCT APPLICATION

- Individual combat equipment
- Petroleum geological logging
- Underwater navigation
- Navigation GPS
- Marine survey
- Ship navigation attitude measurement
- Accurate laser platform equipment
- Unmanned aerial vehicles (UAV)
- Based on inclination monitoring

C900-A: 80° TILT ANGLE COMPENSATION DIGITA OUTPUT 3D ELETRONIC COMPASS

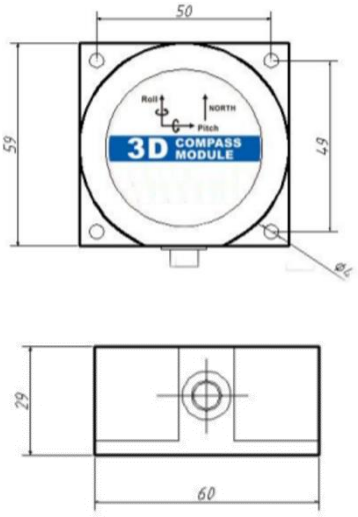
PRODUCT DESCRIPTION

C900-A is a high-precision 3D electronic compass using advanced hard and soft iron calibration algorithms to provide high-precision heading information within 80 ° angle range. It has the characteristics of small size and low power consumption, making it more suitable for power volume sensitive measurement systems. This product comes with hard magnetic, soft magnetic, and tilt compensation, and the compass outputs high-precision measurement values after calibration. The three-axis fluxgate integrated with patented technology calculates the heading in real-time through the central processor, and uses a three-axis accelerometer to compensate for the tilt angle, enabling it to provide accurate heading data even in extremely harsh environments.

PRODUCT MAIN SPECIFICATION

Parameter		C900-A
Compass heading parameters	Heading accuracy	0.5° (RMS, pitch<40°) 0.7° (RMS, pitch<60°) 1° (RMS, pitch<80°)
	Resolution	0.01°
	Repeatability	0.1°
Compass inclination parameters	Pitch accuracy	0.1°
	Roll accuracy	0.1° (pitch<80°)
	Inclination angle resolution	0.01°
	Inclination range	±80°
Calibration	Hard iron calibration	Yes
	Soft iron calibration	Yes
	Tilt calibration	Yes
Physical properties	Size	L60*W59*H29 (mm)
	Weight	180g
	RS-232/RS485 interface connector	6-pin aviation connector
Interface features	Startup delay	<50ms
	Maximum sampling rate	50 times/second
	RS-232 communication rate	2400~19200 baud rate
	RS-485 communication	optional
	TTL communication	optional
	Output format	Binary high performance protocol
Power supply	Support voltage	DC+5V
	Current (max)	40mA
	Working mode	35mA
Environment	Storage range	-40℃--+125℃
	Working temperature	-40℃--+85℃
	Vibration resistance	3000g

PRODUCT DIMENSION



SIZE: L60*W59*H29MM

PRODUCT APPLICATION

- Individual combat equipment
- Petroleum geological logging
- Underwater navigation
- Navigation GPS
- Marine survey
- Ship navigation attitude measurement
- Accurate laser platform equipment
- Unmanned aerial vehicles (UAV)
- Based on inclination monitoring

C900-B: 80° TILT ANGLE COMPENSATION DIGITA OUTPUT 3D ELETRONIC COMPASS SINGLE BOARD

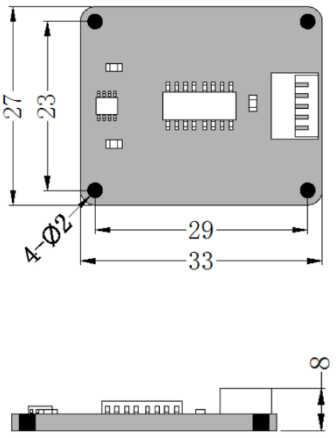
PRODUCT DESCRIPTION

C900-B is a high-precision 3D electronic compass using advanced hard and soft iron calibration algorithms to provide high-precision heading information within 80 ° angle range. It has the characteristics of small size and low power consumption, making it more suitable for power volume sensitive measurement systems. This product comes with hard magnetic, soft magnetic, and tilt compensation, and the compass outputs high-precision measurement values after calibration. The three-axis fluxgate integrated with patented technology calculates the heading in real-time through the central processor, and uses a three-axis accelerometer to compensate for the tilt angle, enabling it to provide accurate heading data even in extremely harsh environments.

PRODUCT MAIN SPECIFICATION

Parameter		C900-B
Compass heading parameters	Heading accuracy	0.5° (RMS, pitch<40°) 0.7° (RMS, pitch<60°) 1° (RMS, pitch<80°)
	Resolution	0.01°
	Repeatability	0.1°
Compass inclination parameters	Pitch accuracy	0.1°
	Roll accuracy	0.1° (pitch<80°)
	Inclination angle resolution	0.01°
	Inclination range	±80°
Calibration	Hard iron calibration	Yes
	Soft iron calibration	Yes
	Tilt calibration	Yes
Physical properties	Size	L33*W27*H8 (mm)
	Weight	10g
	RS-232/RS485 interface connector	5-pin aviation connector
Interface features	Startup delay	<50ms
	Maximum sampling rate	50 times/second
	RS-232 communication rate	2400~19200 baud rate
	RS-485 communication	optional
	TTL communication	optional
	Output format	Binary high performance protocol
Power supply	Support voltage	DC+5V
	Current (max)	40mA
	Working mode	35mA
Environment	Storage range	-40℃--+125℃
	Working temperature	-40℃--+85℃
	Vibration resistance	3000g

PRODUCT DIMENSION



SIZE: L33*W27*H8MM

PRODUCT APPLICATION

- Individual combat equipment
- Petroleum geological logging
- Underwater navigation
- Navigation GPS
- Marine survey
- Ship navigation attitude measurement
- Accurate laser platform equipment
- Unmanned aerial vehicles (UAV)
- Based on inclination monitoring

C9000-A: HIGH PRECISION SIX-AXIS FULL ATTITUDE ELETRONIC COMPASS

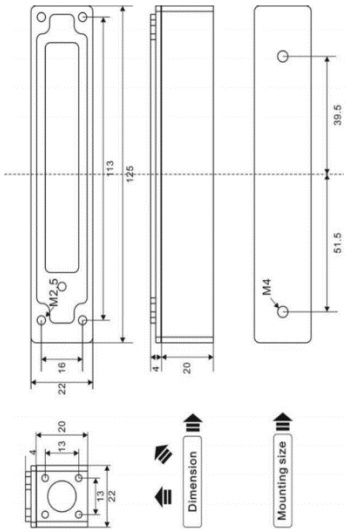
■ PRODUCT DESCRIPTION

C9000-A is a high-precision 6-axis full attitude electronic compass launched by MXMW Hi-Tech Company. It is cylindrical and consists of an industrial grade microcontroller with high reliability and strong anti-interference ability, as well as high-precision inclination sensors, magnetic sensors, and driving chips. The independently developed hard and soft magnetic calibration algorithms enable the compass to eliminate the influence of magnetic fields even in environments with magnetic field interference through calibration algorithms; The patented inclination compensation algorithm compensates for the heading of a large range of inclination angles.

■ PRODUCT MAIN SPECIFICATION

Parameter		C9000-A
Compass heading parameters	Heading accuracy	0.3~0.5° (RMS, pitch<85°)
	Resolution	0.1°
	Repeatability	0.05°
Compass inclination parameters	Pitch accuracy	0.1°
	Roll accuracy	0.01° (pitch<15°) 0.02° (pitch<50°) 0.05° (pitch<80°)
	Inclination angle resolution	0.005°
	Inclination range	Pitch ±90°; Roll 360°
Calibration	Hard iron calibration	Yes
	Soft iron calibration	Yes
	Tilt calibration	Yes
Physical properties	Size	L125*W22*H24 (mm)
	Weight	110g
	RS-232/RS485 interface connector	5-pin aviation connector
Interface features	Startup delay	<50ms
	Maximum sampling rate	50 times/second
	RS-232 communication rate	2400~19200 baud rate
	RS-485 communication	optional
	TTL communication	optional
	Output format	hexadecimal
Power supply	Support voltage	DC+5V (9~36V)
	Current (max)	40mA
	Working mode	30mA
Environment	Storage range	-40℃--+125℃
	Working temperature	-40℃--+85℃
	Vibration resistance	3000g

■ PRODUCT DIMENSION

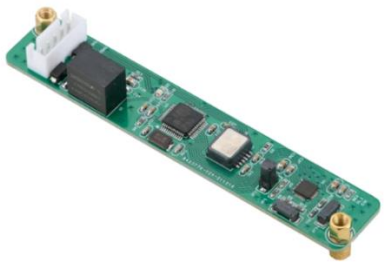


SIZE: L125*W22*H24MM

■ PRODUCT APPLICATION

- Individual combat equipment
- Petroleum geological logging
- Underwater navigation
- Navigation GPS
- Marine survey
- Ship navigation attitude measurement
- Accurate laser platform equipment
- Unmanned aerial vehicles (UAV)
- Based on inclination monitoring

C9000-B: HIGH PRECISION SIX-AXIS FULL ATTITUDE ELETRONIC COMPASS SINGLE BOARD



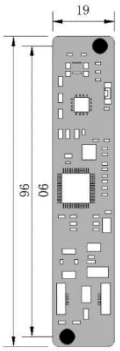
PRODUCT DESCRIPTION

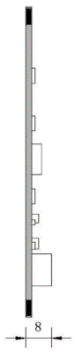
C9000-B is a high-precision 6-axis full attitude electronic compass launched by MXMW Hi-Tech Company. It is a rectangular shape with a width of only 1.9cm and consists of an industrial grade microcontroller with high reliability and strong anti-interference ability, as well as high-precision inclination sensors, magnetic sensors, and driving chips. The independently developed hard and soft magnetic calibration algorithms enable the compass to eliminate the influence of magnetic fields even in environments with magnetic field interference through calibration algorithms; The patented inclination compensation algorithm compensates for the heading of a large range of inclination angles.

PRODUCT MAIN SPECIFICATION

Parameter		C9000-B
Compass heading parameters	Heading accuracy	0.3~0.5° (RMS, pitch<85°)
	Resolution	0.1°
	Repeatability	0.05°
Compass inclination parameters	Pitch accuracy	0.1°
	Roll accuracy	0.01° (pitch<15°) 0.02° (pitch<50°) 0.05° (pitch<80°)
	Inclination angle resolution	0.005°
	Inclination range	Pitch ±90°; Roll 360°
Calibration	Hard iron calibration	Yes
	Soft iron calibration	Yes
	Tilt calibration	Yes
Physical properties	Size	L96*W19*H8 (mm)
	Weight	10g
	RS-232/RS485 interface connector	5-pin aviation connector
Interface features	Startup delay	<50ms
	Maximum sampling rate	50 times/second
	RS-232 communication rate	2400~19200 baud rate
	RS-485 communication	optional
	TTL communication	optional
	Output format	hexadecimal
Power supply	Support voltage	DC+5V (9~36V)
	Current (max)	40mA
	Working mode	30mA
Environment	Storage range	-40℃--+125℃
	Working temperature	-40℃--+85℃
	Vibration resistance	3000g

PRODUCT DIMENSION





SIZE: L96*W19*H8MM

PRODUCT APPLICATION

- Individual combat equipment
- Petroleum geological logging
- Underwater navigation
- Navigation GPS
- Marine survey
- Ship navigation attitude measurement
- Accurate laser platform equipment
- Unmanned aerial vehicles (UAV)
- Based on inclination monitoring

C9000-CD: HIGH PRECISION SIX-AXIS FULL ATTITUDE ELETRONIC COMPASS

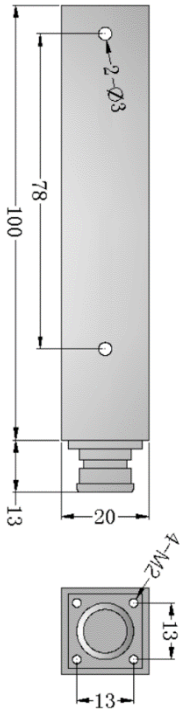
PRODUCT DESCRIPTION

C9000-CD is a high-precision all attitude 3D electronic compass using advanced hard and soft iron calibration algorithms to provide high-precision heading information within a range of 360 ° roll and+/-90 ° full tilt angle. It has the characteristics of small size and low power consumption, making it more suitable for power volume sensitive measurement systems. The product comes with hard magnetic, soft magnetic, and tilt compensation, and the compass outputs high-precision measurement values after calibration. The three-axis fluxgate integrated with patented technology calculates the heading in real-time through the central processor, and uses a three-axis accelerometer to compensate for the tilt angle, enabling it to provide accurate heading data even in extremely harsh environments.

PRODUCT MAIN SPECIFICATION

Parameter		C9000-CD
Compass heading parameters	Heading accuracy	0.3~0.5° (RMS, pitch<85°)
	Resolution	0.1°
	Repeatability	0.05°
Compass inclination parameters	Pitch accuracy	0.1°
	Roll accuracy	0.1° (pitch<65°) 0.2° (pitch<80°) 0.5° (pitch<86°)
	Inclination angle resolution	0.01°
	Inclination range	Pitch ±90°; Roll 360°
Calibration	Hard iron calibration	Yes
	Soft iron calibration	Yes
	Tilt calibration	Yes
Physical properties	Size	L113*W20*H20 (mm)
	Weight	110g
	RS-232/RS485 interface connector	5-pin aviation connector
Interface features	Startup delay	<50ms
	Maximum sampling rate	50 times/second
	RS-232 communication rate	2400~19200 baud rate
	RS-485 communication	optional
	TTL communication	optional
	Output format	hexadecimal
Power supply	Support voltage	DC +5V(9~36V)
	Current (max)	40mA
	Working mode	30mA
Environment	Storage range	-40℃--+125℃
	Working temperature	-40℃--+85℃
	Vibration resistance	3000g

PRODUCT DIMENSION



SIZE: L113*W20*H20MM

PRODUCT APPLICATION

- Individual combat equipment
- Petroleum geological logging
- Underwater navigation
- Navigation GPS
- Marine survey
- Ship navigation attitude measurement
- Accurate laser platform equipment
- Unmanned aerial vehicles (UAV)
- Based on inclination monitoring

C9000-CV: HIGH PRECISION SIX-AXIS FULL ATTITUDE ELETRONIC COMPASS

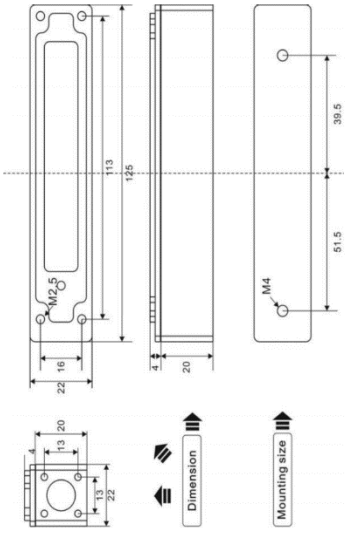
PRODUCT DESCRIPTION

C9000-CV is a high-precision all attitude 3D electronic compass launched by MXMW Hi-Tech Company, integrating digital signal RS232 output and analog 4-20mA, 0-5V output, IP67 waterproof level. It uses advanced hard and soft iron calibration algorithms to provide high-precision heading information within the range of 360 ° roll and+/-90 ° full tilt angle. C9000-CV has been specially optimized for applications in the petroleum inclinometer field, making it very suitable for inclinometer systems. It can manually or automatically output tilt angle, azimuth angle, and tool surface angle information, and can also output the current magnetic field component size. Users only need to connect C9000-CV to the data transmission circuit to form a high-precision inclinometer.

PRODUCT MAIN SPECIFICATION

Parameter		C9000-CV
Compass heading parameters	Heading accuracy	0.3~0.5° (RMS, pitch<85°)
	Resolution	0.1°
	Repeatability	0.05°
Compass inclination parameters	Pitch accuracy	0.1°
	Roll accuracy	0.1° (pitch<65°) 0.2° (pitch<80°) 0.5° (pitch<86°)
	Inclination angle resolution	0.01°
	Inclination range	Pitch ±90°; Roll 360°
Calibration	Hard iron calibration	Yes
	Soft iron calibration	Yes
	Tilt calibration	Yes
Physical properties	Size	L125*W22*H24 (mm)
	Weight	135g
	RS-232/RS485 interface connector	6-pin aviation connector
Interface features	Startup delay	<50ms
	Maximum sampling rate	50 times/second
	RS-232 communication rate	2400~19200 baud rate
	RS-485 communication	optional
	TTL communication	optional
	Output format	hexadecimal
	Analog output	4-20mA, 0-20mA, 0-5V, 0-10V (only providing heading angle direction)
Power supply	Support voltage	DC 9~36V
	Current (max)	40mA
	Working mode	30mA
Environment	Storage range	-40℃--+125℃
	Working temperature	-40℃--+85℃
	Vibration resistance	3000g

PRODUCT DIMENSION

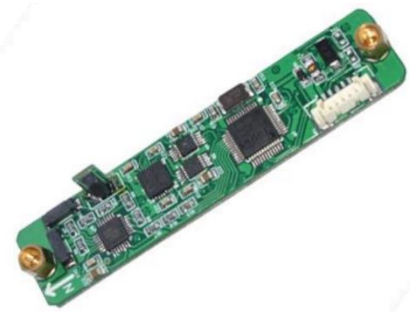


SIZE: L125*W22*H24MM

PRODUCT APPLICATION

- Individual combat equipment
- Petroleum geological logging
- Underwater navigation
- Navigation GPS
- Marine survey
- Ship navigation attitude measurement
- Accurate laser platform equipment
- Unmanned aerial vehicles (UAV)
- Based on inclination monitoring

C9000-D: HIGH PRECISION DIGITAL/ANALOG OUTPUT FULL ATTITUDE ELETRONIC COMPASS SINGLE BOARD



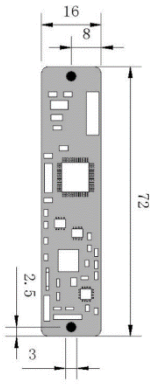
PRODUCT DESCRIPTION

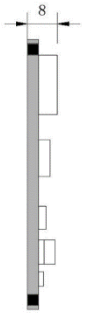
C9000-D is a high-precision all attitude 3D electronic compass launched by MXMW Hi-Tech Company, integrating digital signal RS232 output and analog 4-20mA, 0-5V output, IP67 waterproof level. It uses advanced hard and soft iron calibration algorithms to provide high-precision heading information within the range of 360 ° roll and+/-90 ° full tilt angle. C9000-D has been specially optimized for applications in the petroleum inclinometer field, making it very suitable for inclinometer systems. It can manually or automatically output tilt angle, azimuth angle, and tool surface angle information, and can also output the current magnetic field component size. Users only need to connect C9000-D to the data transmission circuit to form a high-precision inclinometer.

PRODUCT MAIN SPECIFICATION

Parameter		C9000-D
Compass heading parameters	Heading accuracy	0.3~0.5° (RMS, pitch<85°)
	Resolution	0.1°
	Repeatability	0.05°
Compass inclination parameters	Pitch accuracy	0.1°
	Roll accuracy	0.1° (pitch<65°) 0.2° (pitch<80°) 0.5° (pitch<86°)
	Inclination angle resolution	0.01°
	Inclination range	Pitch ±90°; Roll 360°
Calibration	Hard iron calibration	Yes
	Soft iron calibration	Yes
	Tilt calibration	Yes
Physical properties	Size	L72*W16*H8 (mm)
	Weight	6g
	RS-232/RS485 interface connector	5-pin aviation connector
Interface features	Startup delay	<50ms
	Maximum sampling rate	50 times/second
	RS-232 communication rate	2400~19200 baud rate
	RS-485 communication	optional
	TTL communication	optional
	Output format	hexadecimal
Power supply	Support voltage	DC +5V(9~36V)
	Current (max)	40mA
	Working mode	30mA
Environment	Storage range	-40℃--+125℃
	Working temperature	-40℃--+85℃
	Vibration resistance	3000g

PRODUCT DIMENSION



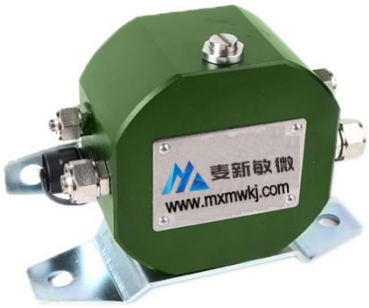


SIZE: L96*W19*H8MM

PRODUCT APPLICATION

- Individual combat equipment
- Petroleum geological logging
- Underwater navigation
- Navigation GPS
- Marine survey
- Ship navigation attitude measurement
- Accurate laser platform equipment
- Unmanned aerial vehicles (UAV)
- Based on inclination monitoring

ET100: HIGH PRECIION HYDRAULIC STATIC LEVEL



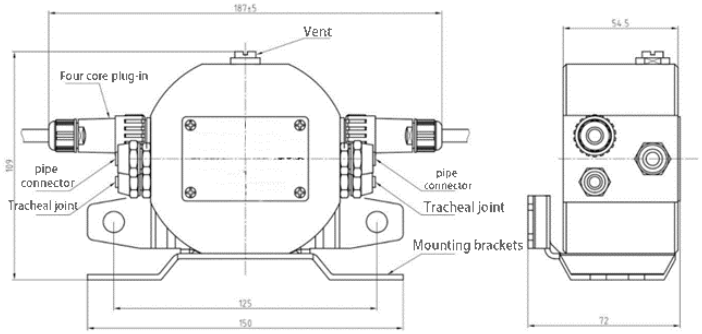
PRODUCT DESCRIPTION

The ET-100 crystalline silicon static level is composed of a liquid reservoir, an imported high-precision core, a special customized circuit module, a protective cover and other components. It is suitable for measuring the settlement, displacement and height difference of objects requiring large range and high precision.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	ET-100				Unit
Range		50	100	200	1000	mmH2O
Sensitivity		0.01	0.01	0.01	0.01	mmH2O
Temperature influence	-40～85°	±0.3	±0.6	±0.8	±1	mmH2O
Frequency response	DC response	100	100	100	100	Hz
Resolution		0.01	0.01	0.01	0.01	mmH2O
Accuracy	-40～85°	0.2	0.3	0.5	1	mmH2O
Long term stability	-40～85°	<0.023	<0.32	<0.51	<0.15	mmH2O
Power on starting-time		0.2	0.2	0.2	0.2	s
Response time		0.01	0.01	0.01	0.01	s
Rate	5Hz output, 15Hz, 35Hz, 50Hz can be set (RS485 does not have this function)					
Output signal	RS485 and MODBUS can be ordered					
Average working time	⩾ 45000 hours/time					
Non-destructive overvoltage	1.5 times full scale					
Insulation resistance	⩾100M Ω					
Waterproof level	IP67					
Wire	Standard 1.5 meter long, wear-resistant, oil resistant, wide temperature, shielded cable 4*0.2mm2					
Weight	1000g (net sensor weight)					

PRODUCT DIMENSION



PRODUCT APPLICATION

- Building (housing) settlement
- Large liquid storage tank
- Water conservancy project
- Dam monitoring
- Comprehensive pipe gallery
- Subway foundation pit tunnel

G800-B: CURRENT OUTPUT ANGLE SENSOR (ABSOLUTE VALUE ENCODER, ANGULAR DISPLACEMENT SENSOR)

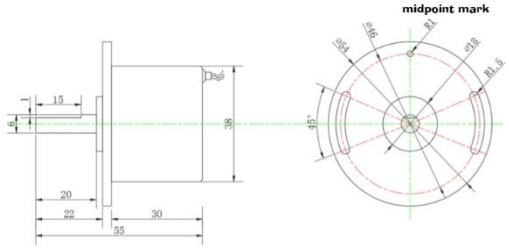
PRODUCT DESCRIPTION

G800-B series angle sensor adopts MEMS technology and magnetoelectric induction technology. It uses differential array magnetic sensitive elements and non-contact measurement of the rotating shaft. It senses the parallel magnetic field intensity of the permanent magnet installed at one end of the rotating shaft and performs linearity correction through MCU processing, temperature compensation, output signal standardized digital filtering, zero point setting, programmable intelligent control of multiple different slope settings, to achieve the absolute angular position of the output sensor within the range of 0 ~ 360°. Accuracy 0.2°, output RS232, RS485, CAN, 0-5V, 0.5-4.5V, 0-10V, 4-20mA, 0-20mA optional.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	G800-B-90	G800-B-180	G800-B-270	G800-B-360	Unit
Measuring range[1]		0~90	0~180	0~270	0~360	°
Measuring axis		X, Y	X, Y	X, Y	X, Y	
Zero temperature drift[2]	-40 ~ 85°	±0.003	±0.003	±0.003	±0.003	°/℃
Resolution[3]		0.02	0.02	0.02	0.02	°
Accuracy[4]	-40 ~ 85℃	0.2	0.3	0.4	0.6	°
Linearity		0.15	0.15	0.15	0.15	%FS
Power-on start time		0.2				s
Response time	Slow/Fast	500/200μS				
Output signal[5] [6]	Rload=240 Ω	0~20mA, 4~20mA optional				
Noise		3mV				
Midpoint offset	midpoint output (Approach left and right)	4-20mA output 12mA 0-20mA output 10mA				
Average working hours	⩾55000 hours/time					
Impact resistance	2500g, 0.5ms, 3 times/axis					
Anti-Vibration	10grms、2 ~ 2000Hz					
Operating temperature	-40 ~ 85℃					
Waterproof level	IP66 (can be customized IP67)					
Cable	Standard 1.5 meter length, wear-resistant, oil-proof, wide temperature, shielded cable 3*0.3mm2					
Weight	120g (excluding packaging box)					

PRODUCT DIMENSION



PRODUCT APPLICATION

- Measurement of inclination platform
- Wireless base station attitude monitoring
- Based on tilt detection
- Instrument calibration and calibration
- Monitoring of bridges and dams
- Geological equipment inclination monitoring
- Angle control of various construction machinery

G801-B: CURRENT OUTPUT ANGLE SENSOR (ABSOLUTE VALUE ENCODER, ANGULAR DISPLACEMENT SENSOR)

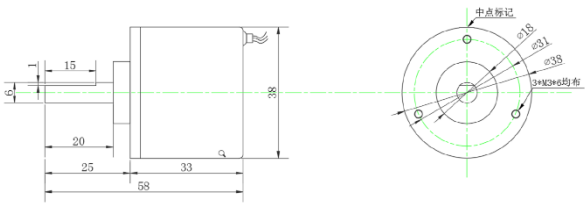
PRODUCT DESCRIPTION

The G801-B series angle sensor adopts MEMS technology and magnetoelectric induction technology. It uses differential array magnetic sensitive elements and non-contact measurement of the rotating shaft. It senses the parallel magnetic field intensity of the permanent magnet installed at one end of the rotating shaft and performs linearity correction through MCU processing, temperature compensation, output signal standardized digital filtering, zero point setting, programmable intelligent control of multiple different slope settings, to achieve the absolute angular position of the output sensor within the range of 0 ~ 360° . Accuracy 0.2° , output RS232, RS485, CAN,0-5V/0.5-4.5V/0-10V, 4-20mA/0-20mA optional.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	G801-B-90	G801-B-180	G801-B-270	G801-B-360	Unit
Measuring range[1]		0~90	0~180	0~270	0~360	°
Measuring axis		X, Y	X, Y	X, Y	X, Y	
Zero temperature drift[2]	-40 ~ 85°	±0.003	±0.003	±0.003	±0.003	°/℃
Resolution[3]		0.02	0.02	0.02	0.02	°
Accuracy[4]	-40 ~ 85℃	0.2	0.3	0.4	0.6	°
Linearity		0.15	0.15	0.15	0.15	%FS
Power-on start time		0.2				s
Response time	Slow/Fast	500/200μS				
Output signal[5] [6]	Rload=240 Ω	0~20mA, 4~20mA optional				
Noise		3mV				
Midpoint offset	midpoint output (Approach left and right)	4-20mA output 12mA 0-20mA output 10mA				
Average working hours	⩾55000 hours/time					
Impact resistance	20000g, 0.5ms, 3 times/axis					
Anti-Vibration	10grms、2 ~ 2000Hz					
Operating temperature	-40 ~ 85℃					
Waterproof level	IP66 (can be customized IP67)					
Cable	Standard 1.5 meter length, wear-resistant, oil-proof, wide temperature, shielded cable 3*0.3mm2					
Weight	120g (excluding packaging box)					

PRODUCT DIMENSION



PRODUCT APPLICATION

- Measurement of inclination platform
- Wireless base station attitude monitoring
- Based on tilt detection
- Instrument calibration and calibration
- Monitoring of bridges and dams
- Geological equipment inclination monitoring
- Angle control of various construction machinery

G802: LOW COST CURRENT OUTPUT ANGLE SENSOR (ABSOLUTE VALUE ENCODER, ANGULAR DISPLACEMENT SENSOR)

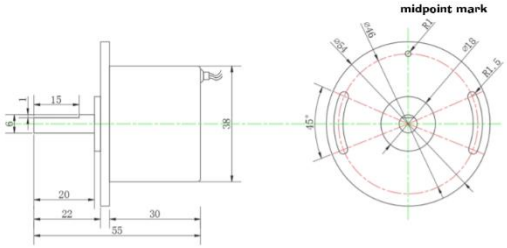
PRODUCT DESCRIPTION

G802 series magnetic angle sensor uses MEMS technology to integrate the nanomagnetic beam thin film material and the differential array magnetic sensitive element to non-contact sense changes in the magnetic field. The system integrates (microcomputer) with the current market and various protection circuits. Through DSP processing, it realizes simple intelligent control of linearity correction, temperature compensation, standardization of output signals according to the range, digital simulation, zero point setting, and multi-stage different slope settings. 0 In the 360° range, the user sets the angle to output absolute position measurement.

PRODUCT MAIN SPECIFICATION

Parameter	Condition	G802-90	G802-180	G802-270	G802-360	unit
Measuring range		0~90	0~180	0~270	0~36 0	°
Temperature drift	-40~85°	0.02	0.02	0.02	0.02	°/°C
Resolution		0.05	0.05	0.05	0.05	°
Accuracy	-40~85°C	0.3	0.5	0.6	1	°
Long term stability	-40~85°C	0.32	0.53	0.65	1.1	°
Response time	slow/fast	600/200 μS				
Power-on start time		0.2s				
Output signal	Rload=240Ω	0~20mA, 4 20mA optional				
Noise		3mV				
Midpoint offset	midpoint output (Approach left and right)	4~20mA output 12mA 0~20mA output 10mA				
Average working hours	⩾55000 hours/time					
Impact resistance	20000g, 0.5ms, 3rd axis					
Anti-vibration	10grms、2 ~ 2000Hz					
Operating temperature	-40~85°C					
Waterproof level	IP66 (can be customized IP67)					
Cable	Standard 1.5 meter length, wear-resistant, oil-proof, wide temperature, shielded cable 3 * 3 mm2					
Weight	120g (excluding packaging box)					

PRODUCT DIMENSION



PRODUCT APPLICATION

- Measurement of inclination platform
- Wireless base station attitude monitoring
- Based on tilt detection
- Instrument calibration and calibration
- Monitoring of bridges and dams
- Car safety control: steering wheel
- Geological equipment inclination monitoring
- Angle control of various construction machinery

G803: LOW COST CURRENT OUTPUT ANGLE SENSOR (ABSOLUTE VALUE ENCODER, ANGULAR DISPLACEMENT SENSOR)

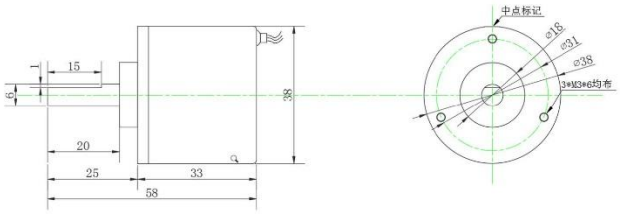
PRODUCT DESCRIPTION

G803 low-cost series magnetic angle sensor uses MEMS technology to integrate the nanomagnetic focusing film material and the differential array magnetic sensitive element to non-contact sense changes in the rotating magnetic field. The system integrates a microprocessor (micro-computer), a current transmitter and a variety of protection circuits. Through DSP processing, it can perform linearity correction, temperature compensation, standardization of output signals according to the range, digital filtering, zero point setting, and multi-segment different slope settings. Programmed intelligent control enables measurement of absolute position output at user-set angles within the range of 0 to 360°.

PRODUCT MAIN SPECIFICATION

Parameter	Condition	G803-90	G803-180	G803-270	G803-360	unit
Measuring range		0~90	0~180	0~270	0~360	°
Temperature drift	-40~85°	0.02	0.02	0.02	0.02	°/°C
Resolution		0.05	0.05	0.05	0.05	°
Accuracy	-40~85°C	0.3	0.5	0.6	1	°
Long term stability	-40~85°C	0.32	0.53	0.65	1.1	°
Response time	slow/fast	600/200 μS				
Power-on start time		0.2 s				
Output signal	Rload=240Ω	0~20mA, 4 20mA optional				
Noise		3mV				
Midpoint offset	midpoint output (Approach left and right)	4~20mA output 12mA 0~20mA output 10mA				
Average working hours	⩾55000 hours/time					
Impact resistance	200 00g, 0.5ms, 3rd/axis					
Anti-vibration	10grms、2 ~ 2000Hz					
Operating temperature	-40~85°C					
Waterproof level	IP66 (can be customized IP67)					
Cable	Standard 1.5 meter length, wear-resistant, oil-proof, wide temperature, shielded cable 3 * 0.3 mm2					
Weight	120g (excluding box)					

PRODUCT DIMENSION



PRODUCT APPLICATION

- Motor control: servo system, corner position
- Valve: angle actuator
- Ship industry: ship rudder position and hatch door position
- Car safety control: steering wheel
- Coal mining machinery: coal washing machine, mineral concentrator, shield machine
- Textile machinery: tension control, shuttle wire diameter
- Engineering equipment such as cranes, cranes, and excavators
- Robot: attitude control, boom rotation

G810: HIGH PRECISION CURRENT OUTPUT ANGLE SENSOR (ABSOLUTE VALUE ENCODER, ANGULAR DISPLACEMENT SENSOR)

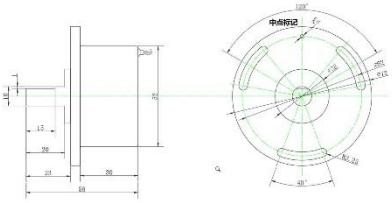
PRODUCT DESCRIPTION

G810 series angle sensor embedded microprocessor is combined with a CNC arc-second level calibration device, programmed calibration and conversion, 0.1° high-precision measurement, multiple outputs RS232, TTL, RS485, RS422, CAN, 0-5V, 0.5-4.5V, 0-10V, 4-20mA, 0-20mA optional. The magnetic angle sensor uses MEMS technology to integrate the nanomagnetic focusing thin film material and the differential array magnetic sensitive element to non-contact sense changes in the rotating magnetic field. The system integrates micro-computer, voltage and current transmitters and various protection circuits. Through DSP processing, it performs linearity correction, temperature compensation, standardization of output signals according to the range, digital filtering, zero point setting, and multi-segment different slope settings. programmable intelligent control.

PRODUCT MAIN SPECIFICATION

Parameter	Condition	G810-90	G810-180	G810-270	G810-360	unit
Measuring range		0~90	0~180	0~270	0~360	°
Temperature drift	-40~85°	±0.01	±0.01	±0.01	±0.01	°/°C
Resolution		0.01	0.01	0.01	0.01	°
Accuracy	-40~85°C	0.1	0.2	0.3	0.5	°
Long term stability	-40~85°C	0.12	0.21	0.35	0.55	°
Response time	slow/fast	600/200 μS				
Power-on start time		0.2 s				
Output signal	Rload=240Ω	0~20mA, 4~20mA optional				
Noise		5mV				
Midpoint offset	midpoint output (Approach left and right)	4~20mA output 12mA 0~20mA output 10mA				
Average working hours	⩾55000 hours/time					
Impact resistance	20000g, 0.5ms, 3rd/axis					
Anti-vibration	10grms、2 ~ 2000Hz					
Operating temperature	-40~85°C					
Waterproof level	IP66 (can be customized IP67)					
Cable	Standard 1.5 meter length, wear-resistant, oil-proof, wide temperature, shielded cable 3 * 0.3 mm2					
Weight	180g (excluding box)					

PRODUCT DIMENSION



PRODUCT APPLICATION

- Motor control: servo system, corner position
- Valve: angle actuator
- Ship industry: ship rudder position and hatch door position
- Car safety control: steering wheel
- Coal mining machinery: coal washing machine, mineral concentrator, shield machine
- Textile machinery: tension control, shuttle wire diameter
- Engineering equipment such as cranes, cranes, and excavators
- Robot: attitude control, boom rotation

G820: HIGH PRECISION CURRENT OUTPUT ANGLE SENSOR (ABSOLUTE VALUE ENCODER, ANGULAR DISPLACEMENT SENSOR)

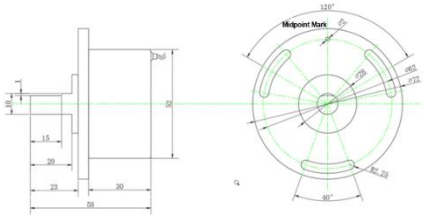
PRODUCT DESCRIPTION

The G820 series high-precision angle sensor is integrated with MEMS technology, low power consumption; By using magneto electric induction technology, precision bearings, differential array magnetic sensing elements, and non-contact measurement of the shaft, the parallel magnetic field strength of a permanent magnet installed at one end of the shaft is sensed and processed by MCU to achieve programmable intelligent control of linearity correction, temperature compensation, N-order digital filtering algorithm, zero point setting, and multiple different slope settings. The absolute angular position of the output sensor is achieved within the range of 0-360 ° . Accuracy of 0.05 ° , output RS232, TTL, RS485, CAN, 0-5V, 0.5, 4.5V, 0-10V, 4-20mA, 0-20mA optional.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	G820-90	G820-180	G820-270	G820-360	Unit
Measuring range(1)		0~90	0~180	0~270	0~360	°
Zero temperature drift(2)	-40 ~ 85°	±0.002	±0.002	±0.002	±0.002	°/℃
Resolution(3)		0.01	0.01	0.01	0.01	°
Accuracy(4)	-40 ~ 85℃	0.05	0.1	0.2	0.3	°
Linearity		0.085	0.085	0.085	0.085	%FS
Power-on start time		0.2				s
Response time	Slow/Fast	500/200μS				
Output signal(5) (6)	Rload=240 Ω	0~20mA, 4~20mA optional				
Noise		5mV				
Midpoint offset	midpoint output (Approach left and right)	4-20mA output 12mA 0-20mA output 10mA				
Average working hours	⩾55000 hours/time					
Impact resistance	20000g, 0.5ms, 3 times/axis					
Anti-Vibration	10grms, 2 ~ 2000Hz					
Operating temperature	-40 ~ 85℃					
Waterproof level	IP66 (can be customized IP67)					
Cable	Standard 1.5 meter length, wear-resistant, oil-proof, wide temperature, shielded cable 3*0.3mm2					
Weight	180g (excluding packaging box)					

PRODUCT DIMENSION



PRODUCT APPLICATION

- Motor control: servo system, corner position
- Valve: angle actuator
- Ship industry: ship rudder position and hatch door position
- Car safety control: steering wheel
- Coal mining machinery: coal washing machine, mineral concentrator, shield machine
- Textile machinery: tension control, shuttle wire diameter
- Engineering equipment such as cranes, cranes, and excavators
- Robot: attitude control, boom rotation

G830: HIGH PRECISION CURRENT OUTPUT ANGLE SENSOR (ABSOLUTE VALUE ENCODER, ANGULAR DISPLACEMENT SENSOR)

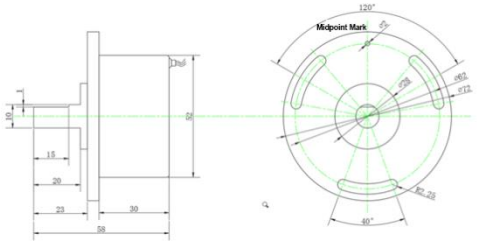
PRODUCT DESCRIPTION

The G830 series is high precision angle sensor, with an accuracy of 0.02° , supporting setting range and adopting integrated MEMS technology, low power consumption, built-in high-precision 16 bit A/D converter, multiple outputs RS232, TTL, RS485, RS422, CAN, 0-5V, 0-10V, 4-20mA, 0-20mA and 0-24mA are optional. By utilizing magneto electric induction technology, precision bearings, differential array magnetic sensitive components, and non-contact measurement of the shaft, the parallel magnetic field strength of a permanent magnet installed at one end of the shaft is sensed and processed by MCU. Linear correction, temperature compensation, self-developed filtering algorithm, and programmable intelligent control with multiple different slope settings are implemented to improve measurement accuracy.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	G830-90	G830-180	G830-270	G830-360	Unit
Measuring range(1)		0~90	0~180	0~270	0~360	°
Zero temperature drift(2)	-40 ~ 85°	0.002	0.002	0.002	0.002	°/℃
Resolution(3)		0.01	0.01	0.01	0.01	°
Accuracy(4)	-40 ~ 85℃	0.02	0.03	0.04	0.05	°
Linearity		0.035	0.035	0.035	0.035	%FS
Power-on start time		0.2				s
Response time	Slow/Fast	500/200μS				
Output signal(5) (6)	Rload=240 Ω	0~20mA, 4~20mA optional				
Noise		5mV				
Midpoint offset	midpoint output (Approach left and right)	4-20mA output 12mA 0-20mA output 10mA 0-24mA output 12mA				
Average working hours	⩾55000 hours/time					
Impact resistance	20000g, 0.5ms, 3 times/axis					
Anti-Vibration	10grms, 2 ~ 2000Hz					
Operating temperature	-40 ~ 85℃					
Waterproof level	IP66 (can be customized IP67)					
Cable	Standard 1.5 meter length, wear-resistant, oil-proof, wide temperature, shielded cable 3*0.3mm2					
Weight	180g (excluding packaging box)					

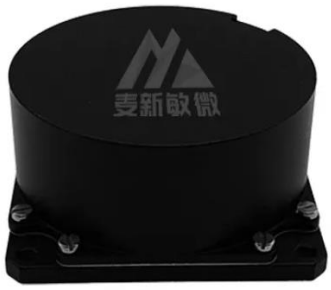
PRODUCT DIMENSION



PRODUCT APPLICATION

- Motor control: servo system, corner position
- Valve: angle actuator
- Ship industry: ship rudder position and hatch door position
- Car safety control: steering wheel
- Coal mining machinery: coal washing machine, mineral concentrator, shield machine
- Textile machinery: tension control, shuttle wire diameter
- Engineering equipment such as cranes, cranes, and excavators
- Robot: attitude control, boom rotation

G-F50: MEDIUM AND LOW PRECISION FIBER OPTIC GYROSCOPE



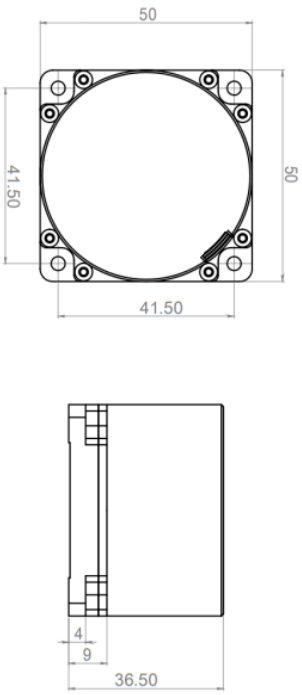
PRODUCT DESCRIPTION

As a new type of all-solid state gyro, fiber optic gyroscope has the advantages of fast start, wide measurement range and high reliability. G-F50 uniaxial medium and low precision fiber optic gyroscope can be applied to the application requirements of high precision inertial navigation system, such as land positioning orientation, vehicle north finding instrument, airborne navigation posture and Marine gyro. The specification is only applicable to G-F50 type products, including performance indicators, technical conditions, external dimensions and installation and use. Among them, the technical conditions include the environmental range, electrical performance and physical characteristics of the product.

PRODUCT MAIN SPECIFICATION

	G-F50-A	G-F50-B	G-F50-C	Unit
Zero bias stability	≤0.30	≤0.20	≤0.10	°/hr(1σ,10s)
Stabilization time	＜10	＜10	＜10	s
Zero bias repeatability	≤0.30	≤0.20	≤0.10	° /hr(1σ)
Full-temperature zero-bias repeatability	≤1	≤0.5	≤0.3	°/hr
Random walk coefficient	≤0.02	≤0.02	≤0.01	$°/\sqrt{hr}$
The Scale factor of Nonlinearity	≤100	≤50	≤50	ppm (1σ)
The Scale factor of Repeatability	≤100	≤50	≤50	ppm (1σ)
Dynamic range	±500			°/s
Magnetic field sensitivity	≤0.10			°/hr/Gs
Working temperature	-40～+70			℃
Storage temperature	-50～+70			℃
Vibration conditions	4.2g, 20～2000			Hz

PRODUCT DIMENSION

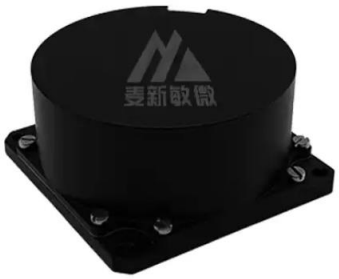


SIZE: Φ50*36.5MM

PRODUCT APPLICATION

- Fiber optic gyroscope system
- Petroleum geological logging
- Underwater navigation
- North finding instrument
- Navigation GPS
- Marine survey
- Ship navigation attitude measurement
- Angle control of various construction machinery
- Stabilization platform equipment
- Unmanned aerial vehicles (UAV)
- Satellite solar antenna positioning

G-F60: MEDIUM AND LOW PRECISION FIBER OPTIC GYROSCOPE



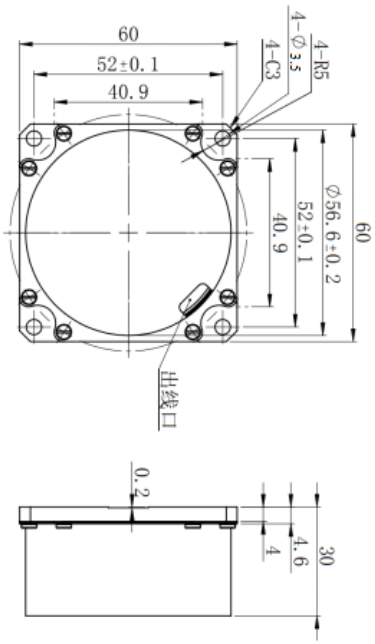
PRODUCT DESCRIPTION

As a new type of all-solid state gyro, fiber optic gyroscope has the advantages of fast start, wide measurement range and high reliability. G-F60 uniaxial medium and low precision fiber optic gyroscope can be applied to the application requirements of high precision inertial navigation system, such as land positioning orientation, vehicle north finding instrument, airborne navigation posture and Marine gyro. The specification is only applicable to G-F60 type products, including performance indicators, technical conditions, external dimensions and installation and use. Among them, the technical conditions include the environmental range, electrical performance and physical characteristics of the product.

PRODUCT MAIN SPECIFICATION

	G-F60-A	G-F60-B	G-F60-C	Unit
Zero bias stability	≤0.20	≤0.10	≤0.05	°/hr (1σ,10s)
Stabilization time	＜5	＜5	＜5	s
Zero bias repeatability	≤0.20	≤0.10	≤0.05	°/hr (1σ)
Full-temperature zero-bias repeatability	≤1	≤0.5	≤0.3	°/hr
Random walk coefficient	≤0.02	≤0.01	≤0.005	$°/\sqrt{hr}$
The Scale factor of Nonlinearity	≤100	≤50	≤50	ppm (1σ)
The Scale factor of Repeatability	≤100	≤50	≤50	ppm (1σ)
Dynamic range	±500			°/s
Magnetic field sensitivity	≤0.10			°/hr/Gs
Working temperature	-40～+70			℃
Storage temperature	-50～+70			℃
Vibration conditions	4.2g, 20～2000			Hz

PRODUCT DIMENSION

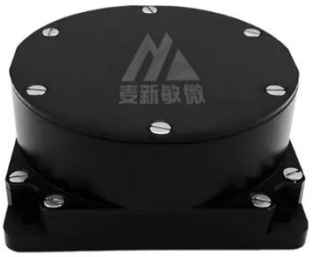


SIZE: Φ60*30MM

PRODUCT APPLICATION

- Fiber optic gyroscope system
- Petroleum geological logging
- Underwater navigation
- North finding instrument
- Navigation GPS
- Marine survey
- Ship navigation attitude measurement
- Angle control of various construction machinery
- Stabilization platform equipment
- Unmanned aerial vehicles (UAV)
- Satellite solar antenna positioning

G-F70HB: MEDIUM AND HIGH PRECISION FIBER OPTIC GYROSCOPE



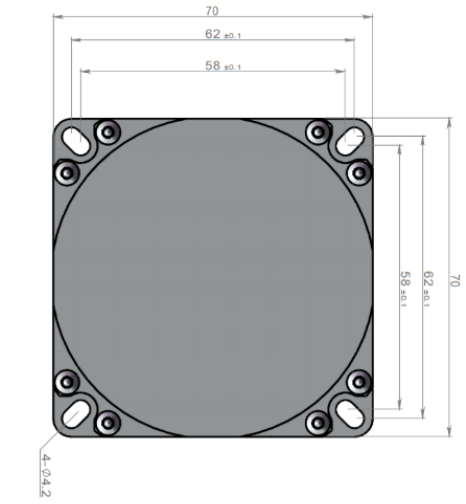
PRODUCT DESCRIPTION

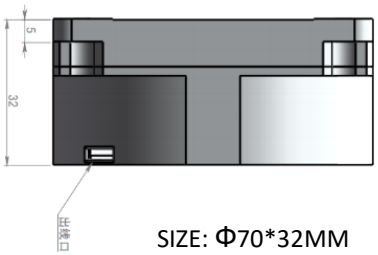
As a new type of all-solid state gyro, fiber optic gyroscope has the advantages of fast start, wide measurement range and high reliability. G-F70HB uniaxial medium and high precision fiber optic gyroscope can be applied to the application requirements of high precision inertial navigation system, such as land positioning orientation, vehicle north finding instrument, airborne navigation posture and Marine gyro. The specification is only applicable to G-F70HB type products, including performance indicators, technical conditions, external dimensions and installation and use. Among them, the technical conditions include the environmental range, electrical performance and physical characteristics of the product.

PRODUCT MAIN SPECIFICATION

	G-F70HB -1310	G-F70HB -1550	
Zero bias stability ***°/hr (1σ,10s)***	≤0.02	≤0.02	2h continuous testing, 10s smooth results
Zero bias stability ***°/hr (1σ,100s)***	≤0.01	≤0.01	2h continuous testing, 100s smooth results
Stabilization time ***s***	＜10	＜10	
Zero bias repeatability ***°/hr (1σ)***	≤0.02	≤0.02	6 test data calculation results
Full-temperature zero-bias repeatability ***°/hr***	≤0.08	≤0.05	
Random walk coefficient ***°/*** $\sqrt{hr}$	≤0.005	≤0.005	
The Scale factor of Nonlinearity ***ppm (1σ)***	≤10	≤10	normal atmospheric temperature
The Scale factor of Repeatability ***ppm (1σ)***	≤10	≤10	normal atmospheric temperature
Full-temperature scale factor repeatability ***ppm (1σ)***	≤200	≤60	-40℃～+60℃
Dynamic range ***°/s***	±500		
Magnetic field sensitivity ***°/hr/Gs***	≤0.02		
Working temperature ℃	-40～+70		
Storage temperature ℃	-50～+70		
Vibration conditions ***Hz***	4.2*g*, 20～2000		Sweep frequency vibration has no resonance

PRODUCT DIMENSION



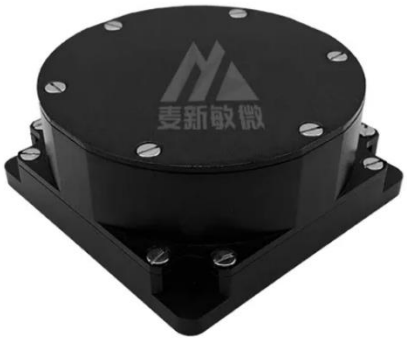


SIZE: Φ70*32MM

PRODUCT APPLICATION

- Fiber optic gyroscope system
- Petroleum geological logging
- Underwater navigation
- North finding instrument
- Navigation GPS
- Marine survey
- Ship navigation attitude measurement
- Angle control of various construction machinery
- Stabilization platform equipment
- Unmanned aerial vehicles (UAV)
- Satellite solar antenna positioning

G-F70ZK: MEDIUM AND HIGH PRECISION FIBER OPTIC GYROSCOPE



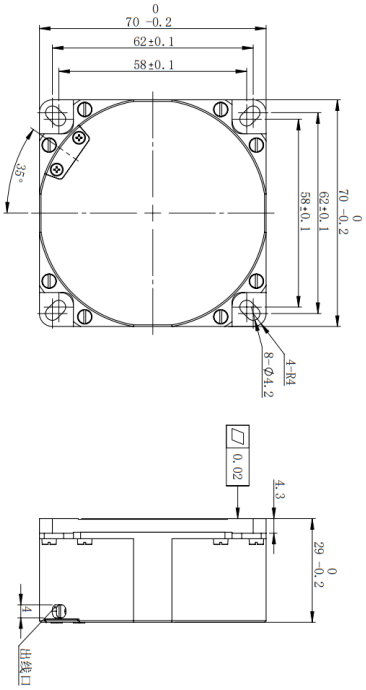
PRODUCT DESCRIPTION

As a new type of all-solid state gyro, fiber optic gyroscope has the advantages of fast start, wide measurement range and high reliability. G-F70ZK uniaxial medium and high precision fiber optic gyroscope can be applied to the application requirements of high precision inertial navigation system, such as land positioning orientation, vehicle north finding instrument, airborne navigation posture and Marine gyro. The specification is only applicable to G-F70ZK type products, including performance indicators, technical conditions, external dimensions and installation and use. Among them, the technical conditions include the environmental range, electrical performance and physical characteristics of the product.

PRODUCT MAIN SPECIFICATION

	G-F70ZK-A	G-F70ZK-B	
Zero bias stability ***°/hr (1σ,10s)***	≤0.05	≤0.03	2h continuous testing, 10s smooth results
Zero bias repeatability ***°/hr (1σ)***	≤0.02	≤0.02	6 test data calculation results
Random walk coefficient ***°/*** $\sqrt{hr}$	≤0.005	≤0.003	
The Scale factor of Nonlinearity ***ppm (1σ)***	≤10	≤10	normal atmospheric temperature
The Scale factor of Repeatability ***ppm (1σ)***	≤20	≤10	normal atmospheric temperature
Full-temperature scale factor repeatability ***ppm (1σ)***	≤300	≤200	-40℃～+60℃
Dynamic range ***°/s***	±500		
Magnetic field sensitivity ***°/hr/Gs***	≤0.02		
Working temperature ℃	-40～+70		
Storage temperature ℃	-50～+70		
Vibration conditions ***Hz***	4.2*g*, 20～2000		Sweep frequency vibration has no resonance

PRODUCT DIMENSION

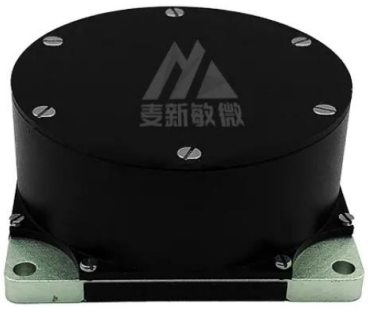


SIZE: Φ70*29MM

PRODUCT APPLICATION

- Fiber optic gyroscope system
- Petroleum geological logging
- Underwater navigation
- North finding instrument
- Navigation GPS
- Marine survey
- Ship navigation attitude measurement
- Angle control of various construction machinery
- Stabilization platform equipment
- Unmanned aerial vehicles (UAV)
- Satellite solar antenna positioning

G-F70ZKH: MEDIUM AND HIGH PRECISION FIBER OPTIC GYROSCOPE



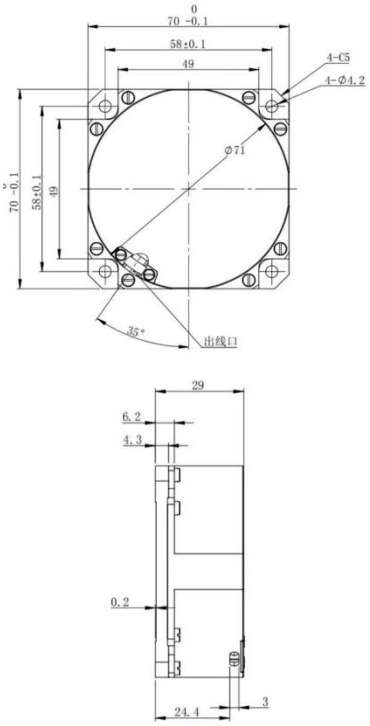
■ PRODUCT DESCRIPTION

As a new type of all-solid state gyro, fiber optic gyroscope has the advantages of fast start, wide measurement range and high reliability. G-F70ZKH uniaxial medium and high precision fiber optic gyroscope can be applied to the application requirements of high precision inertial navigation system, such as land positioning orientation, vehicle north finding instrument, airborne navigation posture and Marine gyro. The specification is only applicable to G-F70ZKH type products, including performance indicators, technical conditions, external dimensions and installation and use. Among them, the technical conditions include the environmental range, electrical performance and physical characteristics of the product.

■ PRODUCT MAIN SPECIFICATION

Zero bias stability	≤0.05 °/*hr (1σ,10s)*	2h continuous testing, 10s smooth results
Stabilization time	＜100 *s*	
Zero bias repeatability	≤0.05 °/*hr* (1σ)	6 test data calculation results
Random walk coefficient	≤0.005 °/$\sqrt{hr}$	
The Scale factor of Nonlinearity	≤20 *ppm* (1σ)	normal atmospheric temperature
The Scale factor of Repeatability	≤20 *ppm* (1σ)	normal atmospheric temperature
Full-temperature scale factor repeatability	≤300 *ppm* (1σ)	-40℃～+60℃
Dynamic range	±500°/*s*	
Magnetic field sensitivity	≤0.05 °/*hr/Gs*	
Working temperature	-40℃～+70℃	
Storage temperature	-50℃～+70℃	
Vibration conditions	4.2*g*,20*Hz*～2000*Hz*	Sweep frequency vibration has no resonance

■ PRODUCT DIMENSION



SIZE: Φ70*29MM

■ PRODUCT APPLICATION

- Fiber optic gyroscope system
- Petroleum geological logging
- Underwater navigation
- North finding instrument
- Navigation GPS
- Marine survey
- Ship navigation attitude measurement
- Angle control of various construction machinery
- Stabilization platform equipment
- Unmanned aerial vehicles (UAV)
- Satellite solar antenna positioning

G-F80: MEDIUM AND HIGH PRECISION FIBER OPTIC GYROSCOPE

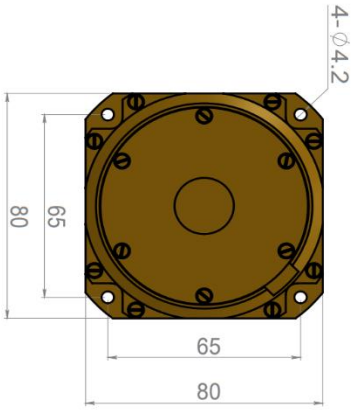
PRODUCT DESCRIPTION

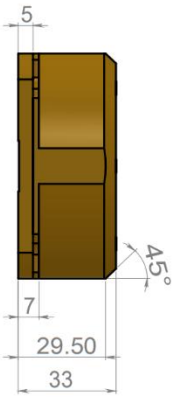
As a new type of all-solid state optical gyroscope, using 1310 scheme, has the advantages of fast start, wide measurement range and high reliability. The G-F80 series of single-axis medium and high-precision fiber optic gyroscopes can be applied to the application requirements of medium-to-high-precision inertial navigation systems such as land positioning and orientation, vehicle-mounted north seekers, airborne heading attitude, and marine gyrocompasses. The specification is only applicable to G-F80 type products, including performance indicators, technical conditions, external dimensions and installation and use. Among them, the technical conditions include the environmental range, electrical performance and physical characteristics of the product.

PRODUCT MAIN SPECIFICATION

	G-F80-A	G-F80-B	
Zero bias stability ***°/hr (1σ,10s)***	≤0.02	≤0.01	2h continuous testing, 10s smooth results
Zero bias stability ***°/hr (1σ,100s)***	≤0.01	≤0.05	2h continuous testing, 100s smooth results
Stabilization times ***s***	<10	<10	
Zero bias repeatability ***°/hr (1σ)***	≤0.02	≤0.01	6 test data calculation results
Full-temperature zero-bias repeatability ***°/hr***	≤0.05	≤0.05	
Random walk coefficient ***°/*** $\sqrt{hr}$	≤0.005	≤0.005	
The Scale factor of Nonlinearity ***ppm (1σ)***	≤10	≤10	normal atmospheric temperature
The Scale factor of Repeatability ***ppm (1σ)***	≤20	≤10	normal atmospheric temperature
Full-temperature scale factor repeatability ***ppm (1σ)***	≤150	≤100	-40℃～+60℃
Dynamic range ***°/s***	±500		
Magnetic field sensitivity ***°/hr/Gs***	≤0.02		
Working temperature ℃	-40～+70		
Storage temperature ℃	-50～+70		
Vibration conditions ***Hz***	4.2*g*, 20～2000		Sweep frequency vibration has no resonance

PRODUCT DIMENSION





SIZE: Φ80*29.5MM

PRODUCT APPLICATION

- Fiber optic gyroscope system
- Petroleum geological logging
- Underwater navigation
- North finding instrument
- Navigation GPS
- Marine survey
- Ship navigation attitude measurement
- Angle control of various construction machinery
- Stabilization platform equipment
- Unmanned aerial vehicles (UAV)
- Satellite solar antenna positioning

G-F98H: MEDIUM AND HIGH PRECISION FIBER OPTIC GYROSCOPE

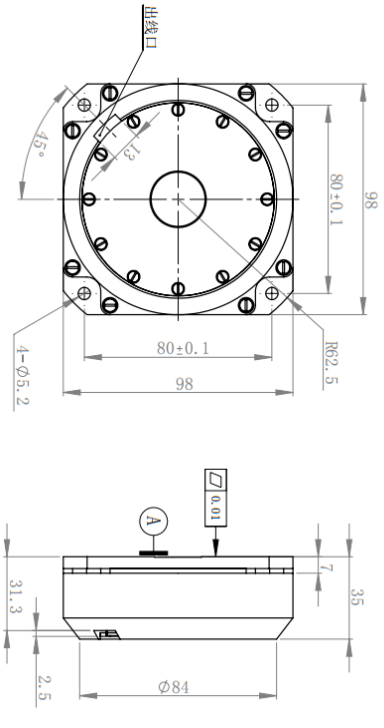
PRODUCT DESCRIPTION

As a new type of all-solid state gyro, fiber optic gyroscope has the advantages of fast start, wide measurement range and high reliability. G-F98H uniaxial medium and high precision fiber optic gyroscope can be applied to the application requirements of high precision inertial navigation system, such as land positioning orientation, vehicle north finding instrument, airborne navigation posture and Marine gyro. The specification is only applicable to G-F98H type products, including performance indicators, technical conditions, external dimensions and installation and use. Among them, the technical conditions include the environmental range, electrical performance and physical characteristics of the product.

PRODUCT MAIN SPECIFICATION

	G-F98H-A	G-F98H-B	G-F98H-C	Unit
Zero bias stability	≤0.015	≤0.015	≤0.010	°/hr(1σ,10s)
Stabilization time	＜10	＜10	＜10	s
Zero bias repeatability	≤0.015	≤0.015	≤0.010	°/hr(1σ)
Full-temperature zero-bias repeatability	≤0.05	≤0.05	≤0.03	°/hr
Random walk coefficient	≤0.002	≤0.001	≤0.001	$°/\sqrt{hr}$
The Scale factor of Nonlinearity	≤10	≤10	≤10	ppm (1σ)
The Scale factor of Repeatability	≤20	≤10	≤10	ppm (1σ)
Full-temperature scale factor repeatability	≤200	≤50	≤50	ppm
Dynamic range	±500			°/s
Magnetic field sensitivity	≤0.02			°/hr/Gs
Working temperature	-40～+70			℃
Storage temperature	-50～+70			℃

PRODUCT DIMENSION



SIZE: Φ98*37.5MM

PRODUCT APPLICATION

- Fiber optic gyroscope system
- Petroleum geological logging
- Underwater navigation
- North finding instrument
- Navigation GPS
- Marine survey
- Ship navigation attitude measurement
- Angle control of various construction machinery
- Stabilization platform equipment
- Unmanned aerial vehicles (UAV)
- Satellite solar antenna positioning

G-F98HA: MEDIUM AND HIGH PRECISION FIBER OPTIC GYROSCOPE

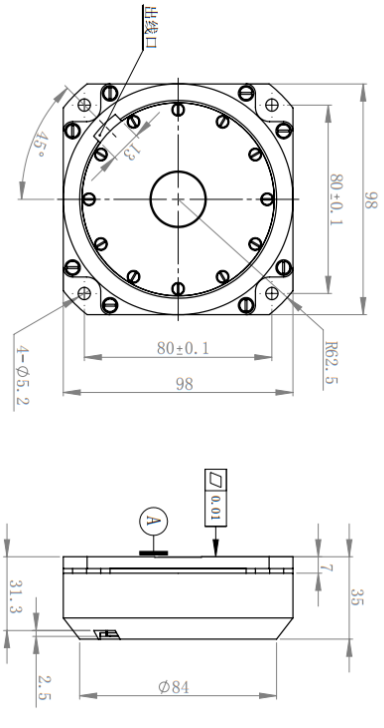
PRODUCT DESCRIPTION

As a new type of all-solid state gyro, fiber optic gyroscope has the advantages of fast start, wide measurement range and high reliability. G-F98HA uniaxial medium and high precision fiber optic gyroscope can be applied to the application requirements of high precision inertial navigation system, such as land positioning orientation, vehicle north finding instrument, airborne navigation posture and Marine gyro. The specification is only applicable to G-F98HA type products, including performance indicators, technical conditions, external dimensions and installation and use. Among them, the technical conditions include the environmental range, electrical performance and physical characteristics of the product.

PRODUCT MAIN SPECIFICATION

	G-F98HA-A	G-F98HA-B	G-F98HA-C	Unit
Zero bias stability	≤0.015	≤0.015	≤0.010	°/hr (1σ,10s)
Stabilization times *s*	<10	<10	<10	
Zero bias repeatability	≤0.015	≤0.015	≤0.010	°/hr (1σ)
Full-temperature zero-bias repeatability	≤0.10	≤0.05	≤0.05	°/hr
Random walk coefficient	≤0.002	≤0.001	≤0.001	$°/\sqrt{hr}$
The Scale factor of Nonlinearity	≤10	≤10	≤10	ppm (1σ)
The Scale factor of Repeatability	≤20	≤10	≤10	ppm (1σ)
Full-temperature scale factor repeatability	≤200	≤100	≤80	ppm
Dynamic range	±500			°/s
Magnetic field sensitivity	≤0.02			°/hr/Gs
Working temperature	-40～+70			℃
Storage temperature	-50～+70			℃

PRODUCT DIMENSION



SIZE: Φ98*37.5MM

PRODUCT APPLICATION

- Fiber optic gyroscope system
- Petroleum geological logging
- Underwater navigation
- North finding instrument
- Navigation GPS
- Marine survey
- Ship navigation attitude measurement
- Angle control of various construction machinery
- Stabilization platform equipment
- Unmanned aerial vehicles (UAV)
- Satellite solar antenna positioning

G-F120: HIGH PRECISION FIBER OPTIC GYROSCOPE

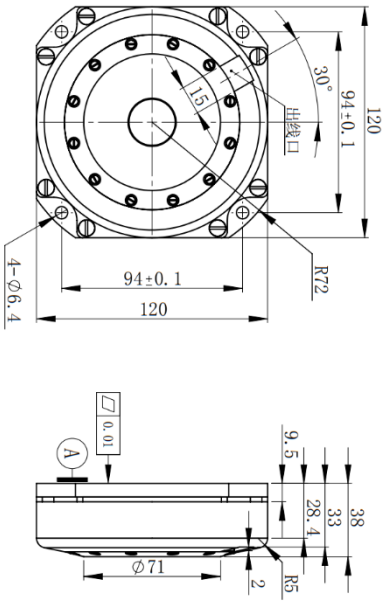
PRODUCT DESCRIPTION

As a new type of all-solid state gyro, fiber optic gyroscope has the advantages of fast start, wide measurement range and high reliability. G-F120 uniaxial precision fiber optic gyroscope can be applied to the application requirements of high precision inertial navigation system, such as land positioning orientation, vehicle north finding instrument, airborne navigation posture and Marine gyro. The specification is only applicable to G-F120 type products, including performance indicators, technical conditions, external dimensions and installation and use. Among them, the technical conditions include the environmental range, electrical performance and physical characteristics of the product.

PRODUCT MAIN SPECIFICATION

	G-F120H-A	G-F120H-B	G-F120H-C	Unit
Zero bias stability	≤0.01	≤0.007	≤0.006	°/hr (1σ,10s)
Zero bias stability	≤0.004	≤0.003	≤0.002	°/hr (1σ,100s)
Stabilization times s	<10	<10	<10	
Zero bias repeatability	≤0.01	≤0.007	≤0.006	°/hr (1σ)
Full-temperature zero-bias repeatability	≤0.10	≤0.08	≤0.05	°/hr
Random walk coefficient	≤0.002	≤0.001	≤0.001	$°/\sqrt{hr}$
The Scale factor of Nonlinearity	≤10	≤10	≤10	ppm (1σ)
The Scale factor of Repeatability	≤10	≤10	≤10	ppm (1σ)
Full-temperature scale factor repeatability	≤100	≤50	≤50	ppm
Dynamic range	±500			°/s
Magnetic field sensitivity	≤0.02			°/hr/Gs
Working temperature	-40～+65			℃
Storage temperature	-50～+70			℃

PRODUCT DIMENSION



SIZE: Φ120*38MM

PRODUCT APPLICATION

- Fiber optic gyroscope system
- Petroleum geological logging
- Underwater navigation
- North finding instrument
- Navigation GPS
- Marine survey
- Ship navigation attitude measurement
- Angle control of various construction machinery
- Stabilization platform equipment
- Unmanned aerial vehicles (UAV)
- Satellite solar antenna positioning

G-F2X64: DUAL-AXIS LOW PRECISION FIBER OPTIC GYROSCOPE

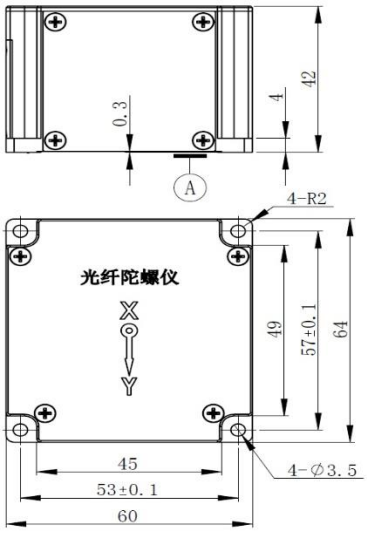
■ PRODUCT DESCRIPTION

As a new type of all-solid state gyro, fiber optic gyroscope has the advantages of fast start, wide measurement range and high reliability. G-F2X64 dual-axial low precision fiber optic gyroscope can be applied to the on-board stability platform, guide head, crane bin and other fields. The specification is only applicable to G-F2X64 type products, including performance indicators, technical conditions, external dimensions and installation and use. Among them, the technical conditions include the environmental range, electrical performance and physical characteristics of the product.

■ PRODUCT MAIN SPECIFICATION

	G-F2X64-A	G-F2X64-B	Unit
Zero bias stability	≤0.50	≤1.0	*°/hr(1σ,10s)*
Stabilization time	＜10	＜10	*s*
Zero bias repeatability	≤0.50	≤1.0	*° /hr(1σ)*
Full-temperature zero-bias repeatability	≤0.50	≤1.0	*°/hr*
The Scale factor of Nonlinearity	≤30	≤50	*ppm (1σ)*
The Scale factor of Repeatability	≤50	≤100	*ppm* (1σ)
Dynamic range	±400		*°/s*
Bandwidth	⩾100		*Hz*
Working temperature	-40～+65		℃
Storage temperature	-50～+70		℃
Vibration conditions	4.2*g*, 20～2000		*Hz*

■ PRODUCT DIMENSION



SIZE: 60*64*42MM

■ PRODUCT APPLICATION

- Crane bin and guide head
- Petroleum geological logging
- Underwater navigation
- North finding instrument
- Navigation GPS
- Marine survey
- Ship navigation attitude measurement
- Angle control of various construction machinery
- Stabilization platform equipment
- Unmanned aerial vehicles (UAV)
- Satellite solar antenna positioning

G-F2X70: DUAL-AXIS MEDIUM PRECISION FIBER OPTIC GYROSCOPE

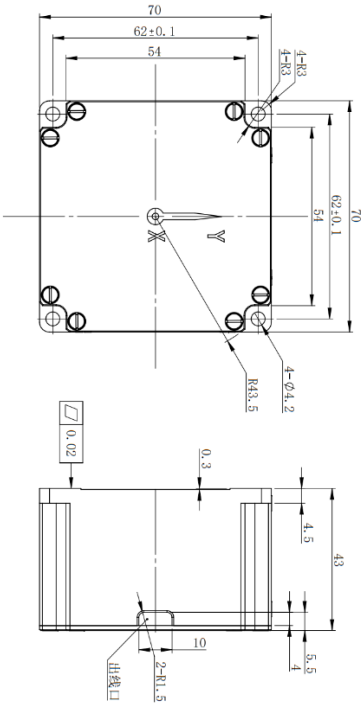
PRODUCT DESCRIPTION

As a new type of all-solid state gyro, fiber optic gyroscope has the advantages of fast start, wide measurement range and high reliability. G-F2X70 dual-axial medium precision fiber optic gyroscope can be applied to the on-board stability platform, guide head, crane bin and other fields. The specification is only applicable to G-F2X70 type products, including performance indicators, technical conditions, external dimensions and installation and use. Among them, the technical conditions include the environmental range, electrical performance and physical characteristics of the product.

PRODUCT MAIN SPECIFICATION

Zero bias stability	≤0.20	*°/hr(1σ,10s) 2h continuous testing, 10s smooth results*
Stabilization time	＜100	*s*
Zero bias repeatability	≤0.20	*° /hr(1σ) Results of 3 testing data*
Resolution	≤0.20	*°/hr(1σ)*
Random walk coefficient	≤0.02	*°/$\sqrt{hr}$*
Full-temperature zero-bias Repeatability	≤0.50	*°/hr*
The Scale factor of Nonlinearity (Under normal temperature)	≤20	*ppm (1σ)*
The Scale factor of Repeatability (Under normal temperature)	≤50	*ppm (1σ)*
Dynamic range	±400	*°/s*
Bandwidth	⩾500	*Hz*
Working temperature	-40～+65	℃
Storage temperature	-50～+70	℃
Vibration conditions	4.2*g*, 20～2000	*Hz*

PRODUCT DIMENSION



SIZE: 70*70*43MM

PRODUCT APPLICATION

- Crane bin and guide head
- Petroleum geological logging
- Underwater navigation
- North finding instrument
- Navigation GPS
- Marine survey
- Ship navigation attitude measurement
- Angle control of various construction machinery
- Stabilization platform equipment
- Unmanned aerial vehicles (UAV)
- Satellite solar antenna positioning

G-F3G90: TRI-AXIS FIBER OPTIC GYROSCOPE

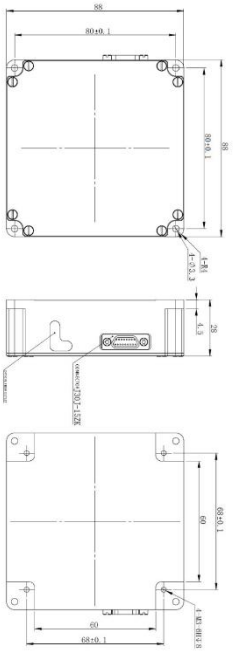
PRODUCT DESCRIPTION

Fiber optic gyroscope, as a new type of all solid state gyroscope, has the advantages of fast start-up, wide measurement range, and high reliability. Among them, the G-F3G90 fiber optic gyroscope inertial unit is designed for the needs of medium and high precision application backgrounds, using three-axis shared technology, with low cost and stable performance; Structurally, it adopts integrated packaging of light path and circuit, with a simple structure and convenient installation. It can be applied to navigation guidance, attitude measurement and control systems of small missiles and guided bombs.

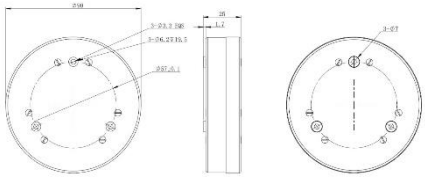
PRODUCT MAIN SPECIFICATION

	U-F3G90-A	U-F3G90-B	U-F3G90-C	Unit
Startup time	5	5	5	*s*
Zero position	≤0.30	≤0.30	≤0.30	*° /hr*
Zero bias stability (Under certain temperature)	≤0.015 (10s) ≤0.008 (100s)	≤0.01 (10s) ≤0.005(100s)	≤0.005 (10s) ≤0.003(100s)	*° /hr*
Zero bias stability (Under changed temperature)	≤0.06	≤0.05	≤0.04	*° /hr (1 ℃/min,100s)*
Zero bias repeatability	≤0.003	≤0.003	≤0.003	*° /hr*
Random walk coefficient	≤0.002	≤0.001	≤0.0005	*° /hr ✓*
Zero bias magnetic sensitivity	≤0.005			*° /hr/Gs*
The Scale factor of nonlinearity	≤10			*ppm*
The Scale factor of asymmetry	≤10			*ppm*
The Scale factor of repeatability	≤10			
Threshold	≤0.01			*° /hr*
Bandwidth	≥200			*Hz*
Operating temperature	-45 ～ +65			*℃*
Storage temperature	-55 ～ +80			*℃*
Dynamic range	±300			*° /s*
Supply of voltage	±5			*V*
Power consumption (steady state)	≤5.5			*W*
Power consumption (Full temperature steady state)	≤10			*W*
Starting instantaneous current	<2			*A*
Net weight of product	<1300			*g*

PRODUCT DIMENSION



CIRCUIT BOX SIZE: 88*88*28MM



SENSING HEAD SIZE: Φ90MM

PRODUCT APPLICATION

- Crane bin and guide head
- Petroleum geological logging
- Underwater navigation
- North finding instrument
- Navigation GPS
- Marine survey
- Ship navigation attitude measurement
- Angle control of various construction machinery
- Stabilization platform equipment
- Unmanned aerial vehicles (UAV)
- Satellite solar antenna positioning

G-F3X112: TRI-AXIS FIBER OPTIC GYROSCOPE

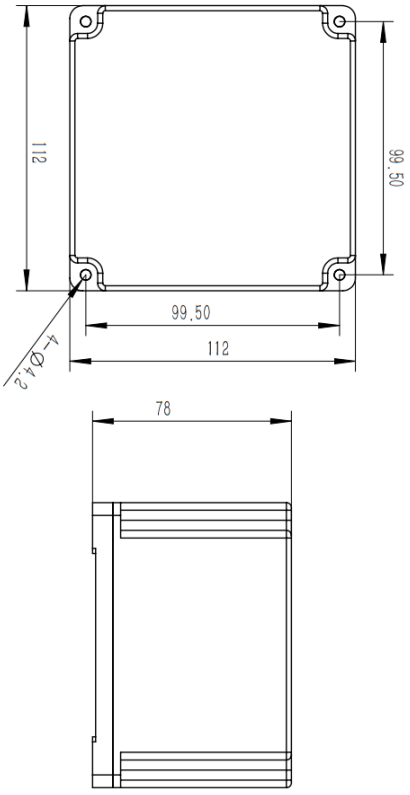
PRODUCT DESCRIPTION

Fiber optic gyroscope, as a new type of all solid state gyroscope, has the advantages of fast start-up, wide measurement range, and high reliability. Among them, the G-F3X112 fiber optic gyroscope inertial unit is designed for the needs of medium and high precision application backgrounds, using three-axis shared technology, with low cost and stable performance; Structurally, it adopts integrated packaging of light path and circuit, with a simple structure and convenient installation. It can be applied to navigation guidance, attitude measurement and control systems of small missiles and guided bombs.

PRODUCT MAIN SPECIFICATION

	G-F3X112-A	G-F3X112-B	G-F3X112-C	Unit
Startup time	5	5	5	*s*
Zero bias stability (sequential/daily, certain temp)	≤0.20 (10s)	≤0.10 (10s)	≤0.05 (10s)	°/*hr*
Zero bias repeatability (sequential/daily, certain temp)	≤0.20 (10s)	≤0.10 (10s)	≤0.05 (10s)	°/*hr*
Random walk coefficient	≤0.020	≤0.010	≤0.005	$°/\sqrt{hr}$
The Scale factor of repeatability	≤50	≤30	≤20	*ppm*
The Scale factor of asymmetry	≤50	≤30	≤20	*ppm*
The Scale factor of nonlinearity	≤50	≤30	≤20	*ppm*
Threshold	≤0.5			°/*hr*
Dynamic range	±500			°/*s*
Bandwidth	≥200			*Hz*
Data refresh rate	can be customized according to requirement			*Hz*
Output method	Rs422			
Operating temperature	-45 ～ +65			℃
Storage temperature	-55 ～ +80			℃
Product Dimension	112*112*78			*mm*
Supply of voltage	±18~36 (can be customized)			*V*
Power consumption (steady state)	≤8			*W*
Power consumption (Full temperature steady state)	≤15			*W*
Starting instantaneous current	1			*A*
Net weight of product	450±50			*g*
Socket connector	J30-15ZKP			

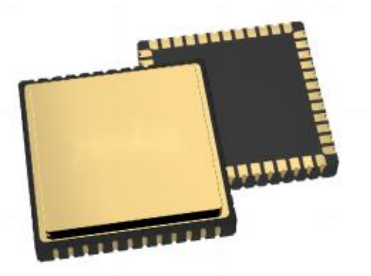
PRODUCT DIMENSION



DIMENSION: 112*112*78MM

- Crane bin and guide head
- Petroleum geological logging
- Underwater navigation
- North finding instrument
- Navigation GPS
- Marine survey
- Ship navigation attitude measurement
- Angle control of various construction machinery
- Stabilization platform equipment
- Unmanned aerial vehicles (UAV)
- Satellite solar antenna positioning

MG-502: HIGH PRECISION MEMS SINGLE AXIS GYROSCOPE



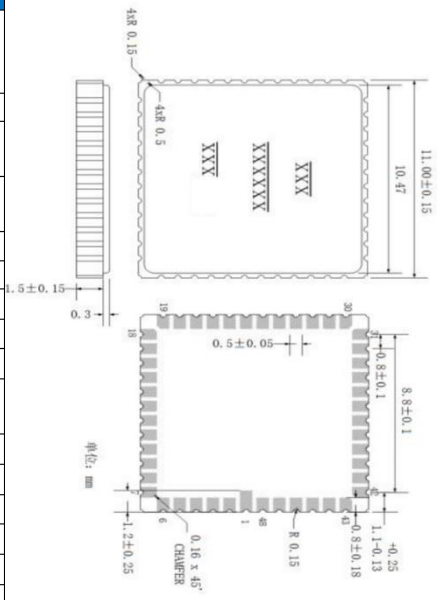
PRODUCT DESCRIPTION

MG-502 single axis gyroscope is a high-precision MEMS single axis gyroscope product launched by MXMW company. Adopting small volume ceramic packaging, it has the characteristics of high precision, wide range, resistance to large impact, wide temperature range, and fully digital output. Mainly used in inertial navigation, integrated navigation, attitude reference system (AHRS), platform stabilization system, unmanned aerial vehicle flight control, etc.

PRODUCT MAIN SPECIFICATION

Parameters	Unit	MG502	Note
Range	°/s	±500	Clockwise rotation is positive output, Clamped at ±105% FS during over-range
Resolution	bit	24	
Data output rate	Hz	12K	Refresh rate of the output data at room temperature
Group delay	ms	<1.5	Time delay between the physical input and the output signal
Phase delay	deg	≤90	@3DB
Bandwidth (-3dB)	Hz	200	
Scale factor@25° C	lsb/deg/s	16000	Factory default
Scale Factor Repeatability (1σ)	Ppm	<10	day by day at setting Temp (1σ)
Scale Factor VS Temperature (1σ)	ppm	<50	Over temperature range (1σ)
Scale Factor Non-Linearity）(1σ)	ppm	<150	Percentage of dynamic range using a best straight line fit
Bias instability	deg/hr	<0.5	Allan Variance @25° C
Bias stability (1σ,10s)	deg/hr	<5	
Bias stability (1σ,1s)	deg/hr	<15	
Angular random walk	°/√h	<0.25	Allan Variance @25° C
Bias error over temperature (1σ)	deg/hr	<15	Over temperature range (1σ)
Bias temperature variations, calibrated (1σ)	deg/hr	<5	Over temperature range (1σ)
Bias Run-to-Run (1σ)	deg/hr	<5	day by day at setting Temp (1σ)
G sensitivity	°/hr/g	<3	Any axis, Tested over±1g
VRE (Vibration rectification error)	°/hr/g(rms)	<3	(12gRMS, 20-2000)
Startup time	s	1	Time to operational output
Sensor Resonant Frequency	Hz	10.5~13.5K	Gyroscope resonance frequency
Shock (operating) @1ms	g	500	
Shock (survival)@10ms	g	10000	
Vibration operating		18grms, (Screening spectrum)	
Operating temperature	° C	-40 ~ +85	
Storage temperature	° C	-55 ~ +125	
Supply voltage	V	5±0.25	
Current consumption	mA	40	

PRODUCT DIMENSION



PRODUCT APPLICATION

- Inertial navigation system
- Integrated navigation system
- Platform stabilization
- AHRS and IMU
- Unmanned aerial vehicles (UAV)
- Satellite solar antenna positioning

I3500: HIGH PERFORMANCE MEMS INS+GNSS SENSOR

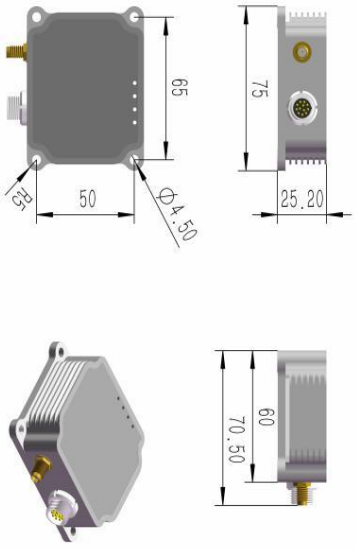
■ PRODUCT DESCRIPTION

I3500 is an integrated navigation system (GNSS/INS) composed of high-performance MEMS sensors, high-precision GNSS systems and high-performance microprocessors. The built-in self-developed high-reliability integrated navigation algorithm can output the speed, position, attitude and other information of the measured carrier in real time. Users can also externally connect RTCM differential correction data to achieve high-precision RTK positioning. The IP68 waterproof shell-type package can be easily integrated into the user's system.

■ PRODUCT MAIN SPECIFICATION

Parameters		Unit	Indicators		
IMU+GNSS accuracy	Loss of lock time	s	3	10	60
	Position accuracy	cm	1	100	600
	Velocity accuracy	m/s	0.03	0.1	0.1
	Roll/Pitch accuracy	°	0.1	0.1	0.2
	Heading accuracy	°	0.2	0.2	0.35
Gyroscope	Range	° / s	±500		
	Resolution	° / s	0.001		
	Zero bias stability (Allan Curve, 1σ)	° / h	2.5		
	Random walk	°/√ hr	0.3		
	Bandwidth	Hz	120		
Accelerometer	Range	g	±6		
	Resolution	g	0.001		
	Zero bias stability (Allan Curve, 1σ)	ug	30		
	Random walk	m/s√h	0.028		
	Bandwidth	Hz	150		
Data input/output	Data input		NMEA/RTCM/Novtel SPAN Binary Protocol		
	Data content		Speed, position, acceleration, angular velocity		
	Fusion algorithm		EKF		
	External sensor support		Odometer, GNSS, DTU etc		
Interface resource	COM1		Sensor data input and output interface, connected to user host		
	COM2		Differential data input interface output GPGGA		
	RS-422		Sensor data input and output interface, connected to user host		
	CAN1		Sensor data input and output, odometer data input		
	CAN2		Retain		
	PPS		Timing signal PPS duty cycle 50%		
	SYNC		Synchronous input and output pins		
	Hardware interface		12 pin aviation plug		
	Data update		Maximum 100Hz (IMU), 100Hz (GNSS/INS)		
Mechanical properties	Size	mm	75 × 60 × 25		
	Weight	g	180		
	IP level	—	IP68		
Electrical environment	Working temperature	℃	-40~+85		
	Working voltage	V	6 ~ 36 DC		
	Power consumption	W	< 1.8		
	Certificate		CE, ROHS		

■ PRODUCT DIMENSION



■ PRODUCT APPLICATION

- Drone and UAV
- Robotics navigation
- ROV and unmanned ship
-
- Autonomous vehicles
- Unmanned agricultural machinery

I3700: HIGH PERFORMANCE MEMS INS+GNSS SENSOR

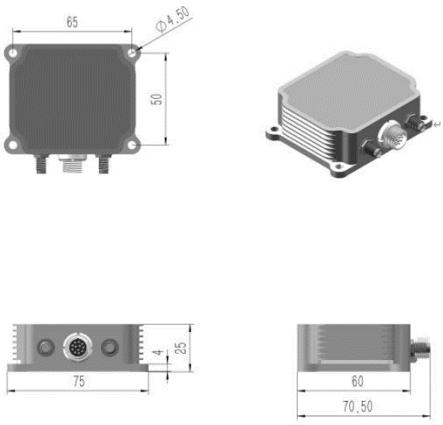
■ PRODUCT DESCRIPTION

I3700 is a combined navigation system (GNSS/INS) that utilizes high-performance MEMS sensors, high-precision GNSS systems, and high-performance microprocessors. Equipped with a self-developed high reliability integrated navigation algorithm, it can output real-time information such as the speed, position, and attitude of the tested carrier. Users can also connect RTCM differential correction data externally to achieve high-precision RTK positioning. The IP68 waterproof shell packaging can be easily integrated into the user's system.

■ PRODUCT MAIN SPECIFICATION

Parameters		Unit	Indicators		
IMU+GNSS accuracy	Loss of lock time	s	3	10	60
	Position accuracy	cm	1	100	600
	Velocity accuracy	m/s	0.03	0.1	0.1
	Roll/Pitch accuracy	°	0.1	0.1	0.2
	Heading accuracy	°	0.2	0.2	0.35
Gyroscope	Range	° / s	±500		
	Resolution	° / s	0.001		
	Zero bias stability (Allan Curve，1σ)	° / h	2.5		
	Random walk	°/√ hr	0.3		
	Bandwidth	Hz	120		
Accelerometer	Range	g	±6		
	Resolution	g	0.001		
	Zero bias stability (Allan Curve，1σ)	ug	30		
	Random walk	m/s√h	0.028		
	Bandwidth	Hz	150		
Data input/output	Data input		NMEA/RTCM/Novtel SPAN Binary Protocol		
	Data content		Speed, position, acceleration, angular velocity		
	Fusion algorithm		EKF		
	External sensor support		Odometer, GNSS, DTU etc		
Interface resource	COM1		Sensor data input and output interface, connected to user host		
	COM2		Differential data input interface output GPGGA		
	RS-422		Sensor data input and output interface, connected to user host		
	CAN1		Sensor data input and output, odometer data input		
	CAN2		Retain		
	PPS		Timing signal PPS duty cycle 50%		
	SYNC		Synchronous input and output pins		
	Hardware interface		12 pin aviation plug		
	Data update		Maximum 100Hz (IMU), 100Hz (GNSS/INS)		
Mechanical properties	Size	mm	75 × 60 × 25		
	Weight	g	180		
	IP level	—	IP68		
Electrical environment	Working temperature	℃	-40~+85		
	Working voltage	V	6 ~ 36 DC		
	Power consumption	W	< 1.8		
	Certificate		CE, ROHS		

■ PRODUCT DIMENSION



■ PRODUCT APPLICATION

- Drone and UAV
- Robotics navigation
- ROV and unmanned ship
-
- Autonomous vehicles
- Unmanned agricultural machinery

I6700: HIGH PRECISION MEMS INS SENSOR

PRODUCT DESCRIPTION

I6700 SERIES is MEMS integrated navigation system uses high-precision gyroscopes, accelerometers, magnetic sensors, temperature sensors, barometers, satellite receivers, and other sensors, which can replace advanced products with similar performance in Europe and America, as well as fiber optic integrated navigation products with equivalent accuracy. Customized services can be provided according to user needs. At the same time, it can receive satellite differential system reference station information and use high-performance navigation algorithms to fuse multi-sensor information. It can output high-precision navigation information such as pitch, roll, heading, speed, position, etc. of the carrier, suitable for vehicles, aircraft, robots, surface vehicles and other carriers. In the most challenging environment, it can provide very superior attitude and navigation data.

PRODUCT MAIN SPECIFICATION

Parameters		Unit	I6700-A	I6700-B	I6700-C
Measurement accuracy	Pitch, Roll	°	≤0.05		
	Heading	°	< 0.1 (>2m baseline)		
	Single point positioning accuracy	m	Horizontal: 2 Elevation: 3		
	Differential positioning accuracy	—	Horizontal: 0.01m + 1ppm (RTK differential) Elevation: 0.0 1 5m + 1ppm (RTK differential)		
	Heave	—	Real time heave: 5cm Heave cycle: 0 ~ 15s		
Gyroscope	Range	° / s	500 (can be customized)		
	Zero bias stability (Allan Curve, 1σ)	° / h	≤0.5	≤0.5	≤0.05
	Zero bias stability (10s smoothing)	°/ h	≤3	≤2	≤0.3
Accelerometer	Range	g	10/20/40 (can be customized)		
	Zero bias stability (10s smoothing)	ug	100	30	30
Interface	Auxiliary sensors	—	GNSS, RT CM, Odometer		
	Output frequency	Hz	1 ~ 2 0 0		
	Communication interface	—	RS232 / RS422 / CAN		
Mechanical properties	Size	mm	87 × 64 × 34	87 × 64 × 34	87 × 64 × 44
	Weight	g	<190	<190	<230
	IP level	—	IP 6 7		
Electrical environment	Working temperature	℃	- 4 0 ~ + 8 5		
	Working voltage	V	5 ~ 3 6		
	Power consumption	W	< 5		
	Impact limit	g	2000		
	Vibration	—	8g, RMS (20Hz - 2000Hz)		
	MTBF	h	50,000 hrs		

PRODUCT FEATURES

- Excellent performance indicator
- Under the condition of satellite loss of lock, navigation accuracy can be maintained for a long time

■Wide application range: Adopting GPS/BD2/GLONASS/GALILEO four mode satellite navigation system with high tracking sensitivity, it is not only suitable for positioning and navigation in open areas, but also for complex

PRODUCT APPLICATION

- Drones and airships
- Underground mining, construction equipment and other carriers
- Ships, unmanned surface vehicles, buoys, oil platforms and other water-based carriers
- Autonomous vehicles, special vehicles, robots and other carriers

IF3000: HIGH PERFORMANCE FOG INS+GNSS SENSOR

PRODUCT DESCRIPTION

IF3000 is consists of a three-axis integrated fiber optic gyroscope, quartz accelerometer, and a full system multi frequency satellite module that supports Beidou function. This product is equipped with excellent navigation fusion algorithms, which can continuously output stable and reliable navigation information even in the event of satellite loss of lock. After temperature compensation and calibration, the system accuracy is ensured throughout the entire temperature range. This product has rich interfaces and can be connected to sensors such as odometry and DVL. It has good scalability and can customize various statement protocols.

PRODUCT MAIN SPECIFICATION

System accuracy	Heading	≤0.05°	(RMS, single antenna dynamic alignment)
		≤0.1°	(RMS, dual antenna 2-meter baseline heading)
		≤0.3°×secφ	(RMS, pure inertia north seeking D02)
	Attitude	≤0.05°	（RMS）&0.02°（D02）
Position accuracy	Single point positioning	≤1.2m	（INS+GNSS，RMS）
	Odometer/DVL combination	1%×D（D is the mileage, depending on the odometer accuracy）	
Velocity accuracy	0.02m/s（INS+GNSS，RMS）		
Starting time	≤5s		
Time alignment	≤1~2min（Dual antenna satellite assistance）		
Data update rate	200Hz（configurable）		
Main device indicators			
Gyroscope	Range	± 500	°/s
	Bias stability	≤ 0.5	°/h（GJB，1σ）
Accelerometer	Range	±50	g
	Bias stability	≤ 30	μg（GJB，1σ）
Physical property			
Voltage	12~36V	Power consumption	≤ 10W
Working temperature	-40°C~+60°C	IP grade	IP65
Dimension	100×79×70mm	Net weight	≤ 08kg
Vibration	Meet the vibration requirements of GJB150.16A-2009 and propeller aircraft equipment		
Shock	30g,11ms, half sine		
Interface Characteristics			
Interface type	Channel 1: RS232; Channel 4: RS422; Channel 1: PPS output		
Transmission speed	9600~921600bps (configurable)		

PRODUCT APPLICATION

- Drone
- ROV and unmanned ship
- ROV/ AUV navigation
- High precision Robotics

IF3500: HIGH PERFORMANCE FOG INS+GNSS SENSOR

PRODUCT DESCRIPTION

IF3500 is a self-developed fiber optic inertial navigation system with small size and high accuracy, which can achieve self north finding at 0.1° . The system consists of a fiber optic gyroscope with zero bias stability of 0.015 ° /h, a high-precision quartz accelerometer, and a full system multi frequency satellite module supporting Beidou function. This product can independently search for north navigation and also supports single and dual antenna combinations. Equipped with excellent navigation fusion algorithms, optimized for satellite occlusion, multipath interference, and other situations.

PRODUCT MAIN SPECIFICATION

System accuracy	Pure inertia seeking north	≤0.1°×secφ	(RMS)
	Satellite integrated navigation	≤0.05°	(RMS, Single antenna dynamic alignment)
	Pure inertial attitude	≤0.02°×secφ	(RMS)
	Combined attitude	≤0.01°	（RMS）
Position accuracy	Single point positioning	≤1.2m	（INS+GNSS，RMS）
	Odometer/DVL combination	1%×D（D is the mileage, depending on the odometer accuracy）	
	Pure INS	≤1.2nm/h（CEP）	
Velocity accuracy	0.02m/s（INS+GNSS，RMS）		
Heave accuracy	5cm& 1%		
Starting time	≤ 5s		
Time alignment	≤ 1 minute (satellite assisted); ≤ 5-minute (pure INS)		
Data update rate	200Hz（configurable）		
Main device indicators			
Gyroscope	Range	± 500	°/s
	Bias stability	≤ 0.01	°/h（GJB，1σ）
Accelerometer	Range	±30	g
	Bias stability	≤ 20	μg（GJB，1σ）
Physical property			
Voltage	12~36V	Power consumption	≤ 20W
Working temperature	-40°C~+60°C	IP grade	IP65
Dimension	150×130×135mm	Net weight	≤ 3kg
Vibration	Meet the vibration requirements of GJB150.16A-2009 and propeller aircraft equipment		
Shock	30g,11ms, half sine		
Interface Characteristics			
Interface type	Channel 1: RS232; Channel 2: RS422; Channel 2: CAN; Channel 1: Ethernet; Channel 1: PPS		
Transmission speed	9600~921600bps (configurable)		

PRODUCT APPLICATION

- Drone
- ROV and unmanned ship
- ROV/ AUV navigation
- Aerospace utilization

IF3700: HIGH PRECISION FOG INS+GNSS SENSOR

■ PRODUCT DESCRIPTION

IF3700 adopts a high-precision closed-loop fiber optic gyroscope with a full temperature of 0.01° /h and a 20 μg high-precision quartz accelerometer, which can achieve high-precision pure inertial orientation measurement. It has autonomous compass function and can maintain attitude and heading accuracy for a long time without external assistance. It can be used as the main navigation equipment for large unmanned aerial vehicles, unmanned ships, and unmanned submarines, and is widely used in related fields such as aviation, aerospace, and navigation.

■ PRODUCT MAIN SPECIFICATION

System accuracy			
Pure inertial alignment accuracy	North finding accuracy	≤0.05°×secφ	（RMS）
	Attitude accuracy	≤0.003°	（RMS）
Pure inertia retention accuracy	Heanding angle	≤0.01°	（RMS，1h）
	Attitude angle	≤0.005°	（RMS，1h）
	Position	≤1nmile/h	（CEP50%）
	Velocity	≤0.5m/s	（RMS,1h）
INS+GNSS integrated accuracy	Heading	≤0.02°	（RMS）
	Attitude	≤0.005°	（RMS）
	Position	Single point positioning: ≤1.2m（RMS） RTK:≤2cm+1ppm（RMS）	
	Velocity	≤0.02m/s	（RMS）
Inertia/ODO/DVL integrated accuracy		≤0.5%×D（D is the mileage, depending on the DVL accuracy）	
Main device indicators			
Gyroscope	Range	±300	°/s
	Bias stability	≤0.01	°/h（GJB，1σ）
Accelerometer	Range	±30	g
	Bias stability	≤20	μg（GJB，1σ）
Physical property			
Voltage	28V	Power consumption	≤35W
Working temperature	-40℃~+60℃	IP grade	IP65
Dimension	190×190×166mm	Net weight	≤7kg
Vibration	Meet the vibration requirements of GJB150.16A-2009 and propeller aircraft equipment		
Shock	30g,11ms, half sine		
Interface Characteristics			
Interface type	Channel 1: RS232; Channel 4: RS422; Channel 1: CAN; Channel 1: Ethernet; Channel 1: USB		
Data update rate	Integrated navigation data: 1~800Hz (adjustable); GNSS data: 1-5 Hz		
Transmission speed	9600~921600bps (configurable)		

■ PRODUCT APPLICATION

- Airplane
- Ship navigation
- ROV and unmanned ship
- Aerospace

NF1000: HIGH PRECISON MEMS NORTH SEEKER SENSOR

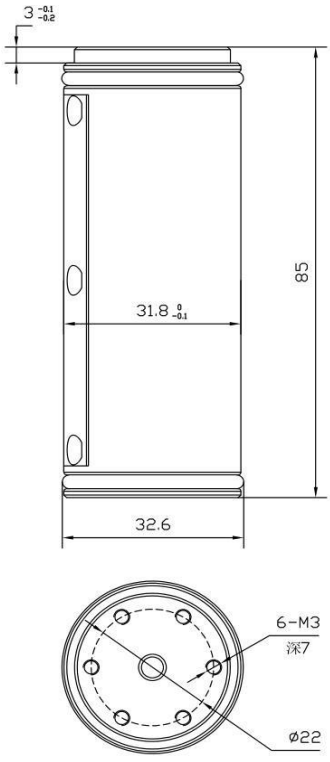
PRODUCT DESCRIPTION

The NF1000 MEMS inertial north finder is a strapdown north finding solution composed of high-performance MEMS gyroscope and MEMS accelerometer, which can directly measure wellbore inclination angle and tool face angle. The three-axis MEMS gyroscope is sensitive to the angular motion of the carrier, and the three-axis MEMS accelerometer is sensitive to the linear acceleration of the carrier. The module internally compensates for the zero position, scale factor, non-orthogonal error, and acceleration related terms of all temperature parameters, which can maintain high measurement accuracy for a long time.

PRODUCT MAIN SPECIFICATION

MEMS gyroscope	
Range (°/s)	±200
Zero position (°/h, 1 σ)	≤0.2
Zero bias stability (°/h, 10s smooth)	≤0.1
Zero bias instability (°/h, Allan)	≤0.02
Zero bias repeatability (°/h)	≤0.1
Angle random walk (°/√ h)	≤0.01
Scale factor nonlinearity (ppm)	≤100
Cross coupling (rad)	≤0.001
Bandwidth (Hz)	≥50
MEMS accelerometer	
Range (g)	±30
Zero position (mg, 1 σ)	≤1
Zero bias stability (ug, 10s smooth)	≤100
Zero bias stability (ug, allan)	≤50
Zero bias repeatability (ug)	≤100
Speed random walk (mm/s/√ h)	≤40
Scale factor nonlinearity (ppm)	≤500
Cross coupling (rad)	≤0.001
Bandwidth (Hz)	≥50
Navigation accuracy	
North finding accuracy (°, 1 σ)	1secL (L represents latitude)
Horizontal attitude alignment accuracy (°, 1 σ)	zero point one five
Heading maintenance accuracy (°, 1 σ)	0.5°*h
Horizontal attitude maintenance accuracy (°, 1 σ)	0.2°*h
Attitude tracking measurement accuracy (°, 1 σ)	zero point one
Electrical/mechanical interface	
Power supply (V)	5~12
Power (W)	≤1.5
Start time (s)	≤2
Communication interface	1 RSS-422, 1 synchronous output
Update rate (Hz)	two hundred
Size (mm × mm × mm)	Φ31.8 × 85
Weight (g)	≤400

PRODUCT DIMENSION



- Orientation in complex environments, like mines
- Individual seeking north
- Underwater navigation
- Petroleum inclinometer and north search
- Pipeline measurement

NF2000: HIGH PERFORMANCE FOG NORTH SEEKER SENSOR

■ PRODUCT DESCRIPTION

NF2000 series is based on a closed-loop fiber optic gyroscope as the core component, and it consists of an inertial measurement unit, a digital signal processing unit, and a mechanical mechanism. It can simultaneously provide the azimuth angle between the carrier and true north, as well as the motion attitude, velocity, and position information of the carrier. Main applications: coal mining, oil drilling, tunnel construction, and geodesy. It is also used for static initial alignment and direction control of missile launch, weapon targeting, radar, antennas, vehicles, and other objects.

■ PRODUCT MAIN SPECIFICATION

	Parameters	NF2000-A	NF2000-B
1	Gyroscope type	3-axis Fiber optic gyroscope	3-axis Fiber optic gyroscope
2	Dimensions mm	200×100×90mm	200×100×90mm
3	Weight	2KG	2KG
4	Supply voltage	12V	12V
5	Electric current	1A	1A
6	Power waste	≤12W	≤12W
7	Start time	5min	5min
8	Working latitude	±65°	±65°
9	North finding accuracy	1°secψ	0.5°secψ
10	North search time	5min	5min
11	Range of heading angle measurement	0°~360°	0°~360°
12	Range of elevation angle measurement	-65°~+65°	-65°~+65°
13	Output method	RS422 (customizable according to user needs)	
14	Working temperature	-40~+70°C	
15	Vibration environment	10Hz~1000Hz，5g	
16	Impact environment	8ms~11ms，20g，half sine	

■ PRODUCT APPLICATION

- Static initial alignment and direction control of missile launch, weapon targeting, radar, antennas, vehicles, and other objects.
- Coal mining, oil drilling, tunnel construction, and geodesy

NF3000: HIGH PRECISION FOG NORTH SEEKER SENSOR

PRODUCT DESCRIPTION

NF3000 series is based on high-precision fiber optic gyroscope and quartz accelerometer as core components, mainly composed of inertial measurement unit, data acquisition and processing unit, precision indexing mechanism, and control display unit. At the same time, according to the usage characteristics, GPS/GNSS/BD receiver, odometer sensor, altimeter, star sensor and other components can be added to provide the azimuth angle between the carrier and true north, as well as the motion attitude, velocity and position information of the carrier.

PRODUCT MAIN SPECIFICATION

1	Parameter	NF3000-A	NF3000-B	NF3000-C
2	External dimensions	248×248×180mm (can be customized)		
3	weight	20Kg	18Kg	15Kg
4	Power supply	AC220V,50Hz/ AC110V,60Hz/ DC18V~36V		
5	power waste	≤50W		
6	Start time	3min		
7	Working latitude	-70°~+70°		
8	North finding accuracy	0.02°secψ	0.06°secψ	0.1°secψ
9	North search time	5min	5min	3min
10	Roll and pitch accuracy	0.02°	0.06°	0.1°
11	Range of heading angle measurement	0°~360°		
12	Measurement range of roll angle and pitch	-65°~+65°		
13	Position accuracy	0.8nmi/h	1.2nmi/h	1.5nmi/h
14	Display mode	LCD display screen, capable of providing attitude angle and position		
15	Output method	RS422 (customizable according to user needs)		
16	working temperature	-40°C~+60°C		
17	vibration environment	20Hz~2000Hz，6.06g		
18	parameter	8ms~11ms，30g		

PRODUCT APPLICATION

- Missile launch, weapon targeting
- dynamic and static initial alignment and direction control of objects such as radar, antennas, vehicles

NF7000A: HIGH PRECISION FOG NORTH SEEKER SENSOR FOR SHIP

■ PRODUCT DESCRIPTION

NF7000-A series is the north finder which is used for ship borne orientation and there is no external reference input, making the environment very complex. The satellite (GPS or Beidou) north finder is not suitable for this situation. And shipborne navigation requires precise navigation in three-dimensional space. When sailing at sea, the ship is affected by various factors such as wind, waves, and ocean currents, and faces multidimensional movements including roll, pitch, and yaw, resulting in significant sway and angular motion of the hull.

■ PRODUCT MAIN SPECIFICATION

No.	Parameter	NF7000-A
1	External dimensions	248 × 248 × 180mm (customizable)
2	Weight	15Kg
3	Power Supply	AC220V, 50Hz/AC110V, 60Hz/DC18V~36V (choose one from three)
4	Power waste	≤50W
5	Start time	3min
6	Working latitude	-70°~+70°
7	North search time	3min
8	Roll and pitch accuracy	0.1°
9	Range of heading angle measurement	0°~360°
10	Range of roll and pitch angle measurement	-30°~+30°
11	Display mode	LCD display screen, capable of providing attitude angle information
12	Output method	RS422 (customizable)
13	Working temperature	-30°C ~ 75°C
14	Vibration environment	20Hz~2000Hz，6.06g
15	Impact parameters	8ms~11ms，30g
16	Data rate	Maximum 4Hz and varies between 1-4Hz

■ PRODUCT APPLICATION

- Maritime scenario for ship pure inertial navigation

GT-50: HIGH PRECISON GYRO THEODOLITE

PRODUCT DESCRIPTION

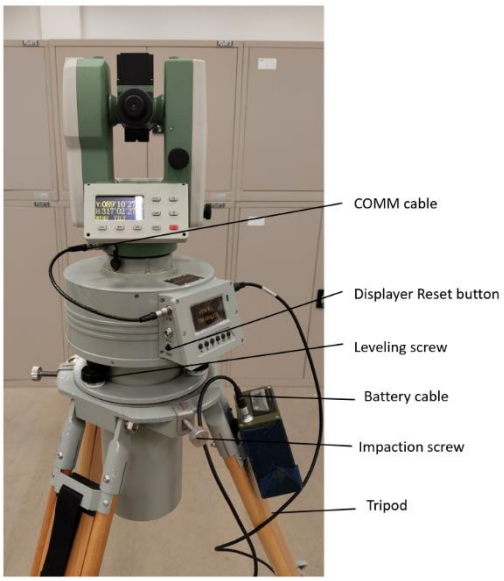
This product can determine the azimuth of the target or the prism which installed on the instrument without the help of the surveying point. There is no special installation deviation requirement before north seeking and it can determine high accuracy true north in all installation direction.

This instrument can be used in the field of subway surveying or construction, coal mine surveying, tunnel construction, etc.

PRODUCT MAIN SPECIFICATION

North seeking accuracy(1σ)	5″ (1 σ)
North Seeking time(min)	12min (average)
Theodolite	With auto-collimation function
Working	Fully automatic
Working power supply	Battery box DC 24V
Operating temperature range	-20°C～+50°C
Storage temperature	-40°C～+60°C
Applicable range	75°S～75°N
Initial northerly angle of erection	15°
Weight	16kg
Gyro theodolite main engine size	Φ300mm×800mm
Packaging box size	415mm×415mm×800mm
Height of the tripod	900mm～1500mm
Instrument calibration cycle	12 months
Angle measurement mode	Lf-collimating absolute grating coding type
Magnification factor	30X
Level	30″ /2mm
Minimum sight distance	1.5m
Display type	LCD, double line, line segment
Data Input & Output Interface	RS -232C
On-board battery power source	Rechargeable nickel-hydrogen battery
Voltage	DC 6V-7V
Continuous working time	5h
Operating temperature range	-20°C～+50°C
Instrument weight	5kg

PRODUCT INSTRUCTION



PRODUCT APPLICATION

- Subway surveying or construction
- Coal mine surveying
- Tunnel construction
- North Seeker

T7-A: DIGITAL OUTPUT DUAL-AXIS INCLINATION SENSOR SINGLE BOARD

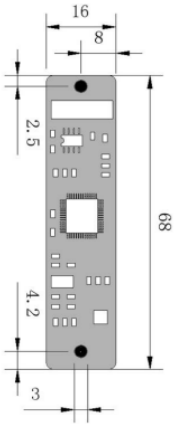
PRODUCT DESCRIPTION

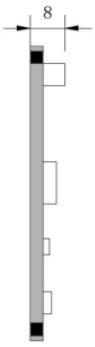
The T7-A series is a new generation of digital small-volume MEMS inclination sensors launched by MXMW Hi-Tech Company. It has a built-in dual-channel earth gravity inclination unit that measures dynamic gravity acceleration and converts it into inclination angle changes. This allows measurement of the roll and pitch angles of the sensor output relative to the horizontal plane. It has output mode as RS232, RS485, RS422, Modbus, TTL level interface standard optional. Due to the built-in MCU control system, the linearity of the sensor output is corrected twice, which makes up for the decrease in accuracy caused by insufficient correction of the analog type.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T7-A-10	T7-A-30	T7-A-60	T7-A-90	Unit
Measuring range		±10	±30	±60	±90	°
Measuring axis		X, Y	X, Y	X, Y	X, Y	
Zero temperature drift	-40 ~ 85°	±0.05	±0.05	±0.05	±0.05	°/℃
Sensitivity temperature coefficient	-40 ~ 85°	≤200	≤200	≤200	≤200	ppm/℃
Frequency response	DC response	100	100	100	100	Hz
Resolution	Bandwidth 5Hz	0.05	0.05	0.05	0.05	°
Accuracy	-40 ~ 85℃	0.3				°
Long term stability	-40 ~ 85℃	<0.32				°
Power-on start time		0.2				s
Response time		0.01				s
Output rate	5Hz, (15Hz, 35Hz, 50Hz, 100HZ can be set) (RS485 does not have this function)					
Output signal	RS232/RS485/RS422/TTL/PWM/ CAN/(MODBUS Optional)					
Average working hours	≥55000 hours/time					
Impact resistance	2500g, 0.5ms, 3 times/axis					
Anti-vibration	10grms、10 ~ 1000Hz					
Insulation resistance	≥100MΩ					
Waterproof level	IP67					
Cable	Standard 1.5 meter-length, wear-resistant, oil-proof, wide temperature, shielded cable 4*0.2mm2					
Weight	7g (excluding packaging box)					

PRODUCT DIMENSION





SIZE: L68*W16*H8MM

PRODUCT APPLICATION

- High-voltage power line tower monitoring
- Aerial work vehicles
- Pan/tilt leveling
- Charging piles and towers
- Forklifts, engineering dump trucks
- Mining machinery, oil drilling equipment
- Solar photovoltaic tracking antenna positioning
- Medical equipment
- Angle control of various construction machinery

T7-B: PHOTOVALTAIC DIGITAL OUTPUT SINGLE-AXIS INCLINATION SENSOR

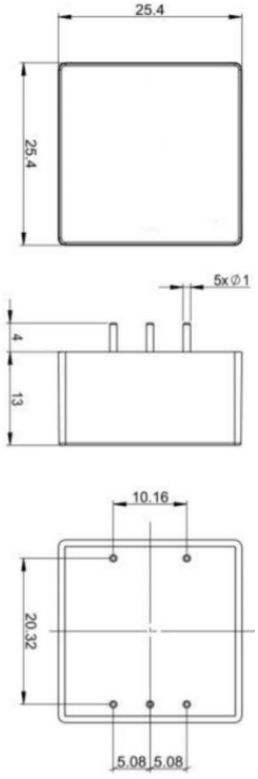
PRODUCT DESCRIPTION

The T7-B series is a digital small volume MEMS photovoltaic tracking inclinometer with a maximum measurement angle range of single axis 360 °, accuracy of 0.3 °, and 3.3V TTL output. Due to the built-in MCU control system, the sensor output linearity is corrected twice, compensating for the accuracy decrease caused by insufficient correction in analog models. Adopting non-contact measurement of the original quantity, it can output the current attitude inclination in real time, and is simple to use without the need to retrieve the relative changes of the two surfaces for installation. It is industrial automation control, wind deviation monitoring, inclination measurement, horizontal adjustment, vertical monitoring, and attitude recording; Engineering machinery, surveying and mapping instruments, etc.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T7-B-90	T7-B-180	T7-B-270	T7-B-360	Unit
Measuring range		90	180	270	360	°
Measuring axis		Y				
Zero temperature drift	-40 ~ 85°	±0.01	±0.01	±0.01	±0.01	°/℃
Sensitivity temperature coefficient	-40 ~ 85°	≤200	≤200	≤200	≤200	ppm/℃
Frequency response	DC response	100	100	100	100	Hz
Resolution	Bandwidth 5Hz	0.1	0.1	0.1	0.1	°
Accuracy	-40 ~ 85℃	0.1				°
Long term stability	-40 ~ 85℃	<0.3				°
Power-on start time		0.2				s
Response time		0.01				s
Output rate	5Hz, 15Hz, 35Hz, 50Hz, 100HZ can be set (RS485 does not have this function)					
Output signal	RS232/RS485/TTL					
Average working hours	≥55000 hours/time					
Impact resistance	2500g, 0.5ms, 3 times/axis					
Anti-vibration	10grms、10 ~ 1000Hz					
Insulation resistance	≥100MΩ					
Waterproof level	IP68					
Cable	Standard 15 cm-length, wear-resistant, oil-proof, wide temperature, shielded cable 4*0.2					
Weight	35g (excluding packaging box)					

PRODUCT DIMENSION



SIZE: L51.3*W36*H20MM

PRODUCT APPLICATION

- Signal tower, high-voltage power line tower monitoring
- Railway gauge
- Bridge and dam monitoring
- -Horizontal control of precision machine tools
- Fan-machine oscillation attitude
- Measurement of ship navigation attitude
- Robot tilt monitoring
- Solar photovoltaic tracking antenna positioning
- Medical equipment
- Angle control of various construction machinery

T7-C: DIGITAL OUTPUT DUAL-AXIS INCLINATION SENSOR SINGLE BOARD

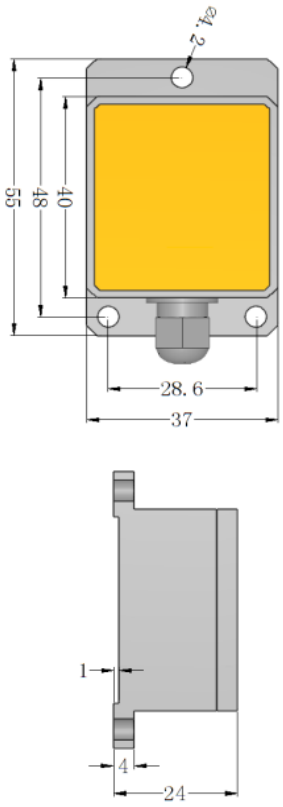
PRODUCT DESCRIPTION

The T7-C series is a new generation of digital small-volume MEMS inclination sensors launched by MXMW Hi-Tech Company. It has a built-in dual-channel earth gravity inclination unit that measures dynamic gravity acceleration and converts it into inclination angle changes. This allows measurement of the roll and pitch angles of the sensor output relative to the horizontal plane. It has output mode as RS232, RS485, RS422, Modbus, TTL level interface standard optional. Due to the built-in MCU control system, the linearity of the sensor output is corrected twice, which makes up for the decrease in accuracy caused by insufficient correction of the analog type.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T7-C-10	T7-C-30	T7-C-60	T7-C-90	Unit
Measuring range		±10	±30	±60	±90	°
Measuring axis		X, Y	X, Y	X, Y	X, Y	
Zero temperature drift	-40 ~ 85°	±0.05	±0.05	±0.05	±0.05	°/℃
Sensitivity temperature coefficient	-40 ~ 85°	≤200	≤200	≤200	≤200	ppm/℃
Frequency response	DC response	100	100	100	100	Hz
Resolution	Bandwidth 5Hz	0.05	0.05	0.05	0.05	°
Accuracy	-40 ~ 85℃	0.3				°
Long term stability	-40 ~ 85℃	<0.32				°
Power-on start time		0.2				s
Response time		0.01				s
Automatic output rate	5Hz output/15Hz, 35Hz, 50Hz can be set (RS485 does not have this function)					
Output signal	RS232/RS485/RS422/TTL/PWM/CAN/MODBUS can be ordered					
Average working hours	≥55000 hours/time					
Impact resistance	2500g, 0.5ms, 3 times/axis					
Anti-vibration	10grms、10 ~ 1000Hz					
Insulation resistance	≥100MΩ					
Waterproof level	IP67					
Cable	Standard 1.5 meter-length, wear-resistant, oil-proof, wide temperature, shielded cable 4*0.2mm2					
Weight	55g (excluding packaging box)					

PRODUCT DIMENSION



SIZE: L55*W37*H24MM

PRODUCT APPLICATION

- High-voltage power line tower monitoring
- Aerial work vehicles
- Pan/tilt leveling
- Charging piles and towers
- Forklifts, engineering dump trucks
- Mining machinery, oil drilling equipment
- Solar photovoltaic tracking antenna positioning
- Medical equipment
- Angle control of various construction machinery

T70-A: PHOTOVALTAIC TRACKING DIGITAL OUTPUT DUAL-AXIS TILT SENSOR

PRODUCT DESCRIPTION

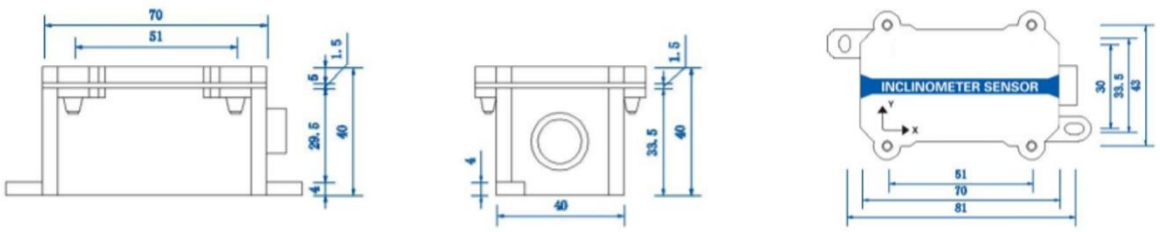
The T70-A is a dual-axis digital inclination sensor developed by MXMW Hi-Tech Company for its component MEMS inclination measurement module. It adopts RTU Modbus protocol and its internal core components are 100% produced in China, including MCU processor, A/D converter, and power circuit, output circuit, etc. For domestic equipment manufacturing, overcome technical barriers to independent research and development. All products have been calibrated, temperature compensated, and long-term aging and stability tested before leaving the factory. Each process is precise and rigorous to ensure reliability under different working conditions and long-term use cycles.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T70-A		Unit
Measuring range		±90	±180	°
Measuring axis	Y axis (optional)	X, Y	X	
Accuracy	-30 ~ 70℃	0.2	0.3	°
Long term stability	-30 ~ 70℃	<0.22	<0.35	Hz
Sensitivity temperature coefficient	-30 ~ 70℃	≤200		ppm/℃
Frequency response	DC response	100		Hz
Power-on start time		0.2		s
Response time		0.01		s
Automatic output rate	5Hz output, 15Hz, 35Hz, 50Hz can be set (RS485 does not have this function)			
Output signal	RS232/RS485/RS422/TTL /MODBUS can be ordered			
Average working hours	≥35000 hours/time			
Impact resistance	2450g, 0.5ms, 3 times/axis			
Anti-vibration	10grms、10 ~ 1000Hz			
Insulation resistance	≥100MΩ			
Waterproof level	IP67			
Cable wire	Standard 1.5m length, wear-resistant, oil-proof, wide temperature, shielded cable 4*0.2mm2			
Weight	30g (excluding packaging box)			

PRODUCT DIMENSION

SIZE: L81*W40*H40MM



PRODUCT APPLICATION

- High-voltage power line tower monitoring
- Aerial work vehicles
- Pan/tilt leveling
- Photovoltaic tracking
- Mining machinery, oil drilling equipment
- Medical equipment
- Angle control of various construction machinery
- Vehicle overload monitoring

T70-B: EXPLOSION-PROOF FOR MINING ANALOG/DIGITAL OUTPUT 2-AXIS TILT SENSOR

PRODUCT DESCRIPTION

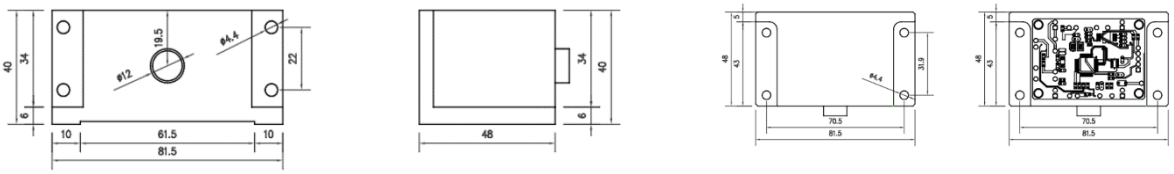
The T70-B series is a dual-axis tilt sensor for the fields of industrial site control and explosion-proof and hazardous inclination angle measurement. The internal MCU, MEMS inclination angle module, power circuit, and output circuit have been optimized for protection design. Before leaving the factory, each product has undergone a full temperature range calibration and compensation, and a two-week long-term stability test to ensure that it maintains the best performance indicators under different working conditions and long-term test cycles. The product integrates two digital output protocols and multiple output interfaces.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T70-B			Unit
Accuracy	-40 ~ 85℃	0.3	0.1	0.01	°
Resolution	-40 ~ 85℃	0.05	0.01	0.002	°
Measuring axis		X, Y axis	X, Y axis	X, Y axis	
Frequency response	DC response	100	100	100	Hz
Long term stability	-40 ~ 85℃	<0.032	<0.15	<0.02	°
Zero temperature drift	85°<sensor sensor<-40°	±0.05	±0.01	±0.002	°/℃
Measuring range		Biaxial ±90 Single axis ±180			°
Power-on start time		0.2			s
Response time		0.01			s
Automatic output rate	5Hz output/15Hz, 35Hz, 50Hz can be set (RS485 does not have this function)				
Output signal	RS232/RS485/RS422/TTL can be ordered				
Average working hours	≥55000 hours/time				
Impact resistance	20000g, 0.5ms, 3 times/axis				
Anti-vibration	10grms、10 ~ 1000Hz				
Insulation resistance	≥100MΩ				
Waterproof level	IP67				
Cable wire	Standard 1.5 meter-length, wear-resistant, oil-proof, wide temperature, shielded cable 6*0.2mm2				
Weight	185g (excluding packaging box)				

PRODUCT DIMENSION

SIZE: L81.5*W48*H40MM



PRODUCT APPLICATION

- Railway gauge ruler and gauge leveling
- Wind turbine shimmy attitude
- Bridge, dam monitoring
- Robot tilt monitoring
- Signal towers, high-voltage power poles
- Satellite solar antenna positioning
- Medical equipment
- Angle control of various construction machinery
- Precision machine tool horizontal control

T70-C: CURRENT OUTPUT TYPE SINGLE-AXIS INCLINATION SENSOR

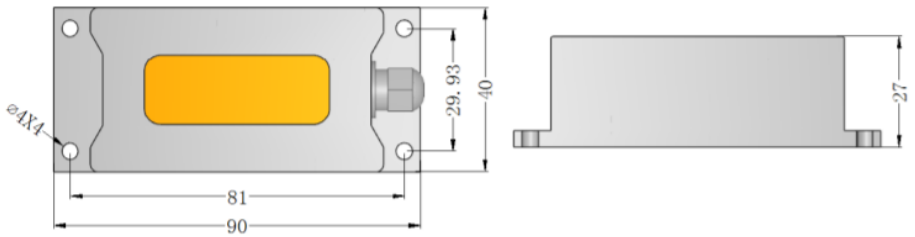
PRODUCT DESCRIPTION

T70-C is a small size single-axis current output inclination sensor developed by MXMW Hi-Tech Company. The output current is 4~20mA, 0~20mA, 0~24mA optional. Due to the built-in inclination unit of the latest micro-electromechanical production technology, it is small in size and low in power consumption. The working temperature reaches the industrial level -40~+85℃. The long-distance transmission can reach more than 2500 meters. It has strong anti-electromagnetic interference ability and can be adapted to the environment. Long-term work in harsh industrial environments.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T70-C-10	T70-C-30	T70-C-60	T70-C-90	Unit
Measuring range		±10	±30	±60	±90	°
Measuring axis	Y axis (optional)	X	X	X	X	
Zero temperature drift	-40 ~ 85°	±0.01	±0.01	±0.01	±0.01	°/℃
Sensitivity temperature coefficient	-40 ~ 85°	≤150	≤150	≤150	≤150	ppm/℃
Zero bias	0° output	4~20mA output 12mA 0~20mA output 10mA 0~24mA output 12mA				mA
Frequency response	DC response	100	100	100	100	Hz
Resolution	Bandwidth 5Hz	0.01	0.01	0.01	0.01	°
Accuracy	-40 ~ 85℃	0.1				°
Long term stability	-40 ~ 85℃	<0.12				°
Power-on start time		0.2				s
Response time		0.01				s
Output method	4-20mA, 0-20mA, 0-24mA optional					
Average working hours	≥55000 hours/time					
Impact resistance	3500g, 0.5ms, 3 times/axis					
Anti-vibration	10grms、10 ~ 1000Hz					
Insulation resistance	≥100MΩ					
Waterproof level	IP67					
Cable	Standard 1.5 meter-length, wear-resistant, oil-proof, wide temperature, shielded cable 6*0.3mm2					
Weight	145g (excluding packaging box)					

PRODUCT DIMENSION



SIZE: L90*W40*H27MM

PRODUCT APPLICATION

- Monitoring based on tilt/inclination sensor
- Aerial work vehicles
- Pan/tilt leveling
- Satellite solar antenna positioning
- Mining machinery, oil drilling equipment
- Bridge and dam monitoring
- Medical equipment
- Angle control of various construction machinery
- High-voltage power tower monitoring

T70-D: RELAY OUTPUT TYPE SINGLE-AXIS DUAL-WAY TILT SWITCH

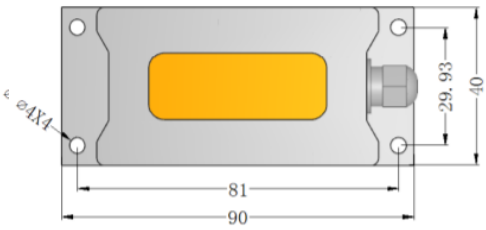
PRODUCT DESCRIPTION

T70-D is a high-performance relay output single-axis dual-channel digital tilt switch launched by MXMW Hi-Tech Company. The product has a measurement range of 0~±180° and two built-in relay output circuits. When the inclination angle value is greater than the preset alarm threshold, a non-inductive contact relay signal (driving current 1A) will be output, and the solenoid valve will be opened to perform corresponding hydraulic leg leveling. The alarm threshold is calibrated at the factory, and users can also set the alarm angle threshold by themselves.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T70-D	Unit
Measuring range		±180	°
Measuring axis	Y axis (optional)	X axis	
Alam axis	Y axis (optional)	X axis	
Frequency response	DC response	100	Hz
Resolution	Bandwidth 5Hz	0.01	°
Accuracy	-40 ~ 85℃	0.1	°
Long term stability	-40 ~ 85℃	0.1	°
Power-on start time		0.5	s
Output signal	Relay (normally open and normally closed) output, RS232 and TTL optional at the same time		
Average working hours	≥55000 hours/time		
Impact resistance	3500g, 0.5ms, 3 times/axis		
Anti-vibration	10grms、10 ~ 1000Hz		
Insulation resistance	≥100MΩ		
Waterproof level	IP67		
Cable	Standard 1.5 meter-length, wear-resistant, oil-proof, wide temperature, shielded cable 5*0.3mm2		
Weight	150g (excluding packaging box)		

PRODUCT DIMENSION



SIZE: L90*W40*H27MM

PRODUCT APPLICATION

- High-voltage power line tower monitoring
- Aerial work vehicles
- Pan/tilt leveling
- Charging piles and towers
- Forklifts, pile foundation
- Mining machinery, oil drilling equipment
- Monitoring based on tilt/inclination sensor
- Hydraulic lift table
- Medical equipment
- Angle control of various construction machinery

T70-E: MODBUS PROTOCOL RELAY OUTPUT DUAL-AXIS SINGLE WAY TILT SWITCH

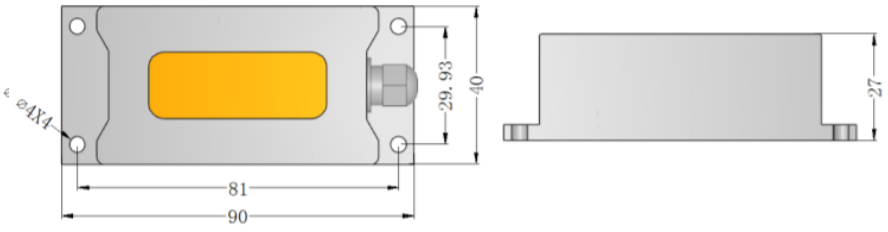
PRODUCT DESCRIPTION

T70-E is a high-performance relay output dual-axis single-channel tilt switch launched by MXMW Hi-Tech Company.. The product has a measurement range of 0~±90° and two built-in relay output circuits. When the inclination angle value is greater than the preset alarm threshold, a non-inductive contact relay signal (driving current 1A) will be output, and the solenoid valve will be opened to perform corresponding hydraulic leg leveling. The alarm threshold is calibrated at the factory, and users can also set the alarm angle threshold by themselves.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T70-E	Unit
Measuring range		±90	°
Measuring axis		X, Y axis	
Alam axis		X, Y axis	
Frequency response	DC response	100	Hz
Resolution	Bandwidth 5Hz	0.01	°
Accuracy	-40 ~ 85℃	0.1	°
Long term stability	-40 ~ 85℃	0.1	°
Power-on start time		0.5	s
Output signal	Relay (normally open and normally closed) output, RS232 and TTL optional at the same time		
Average working hours	≥55000 hours/time		
Impact resistance	3500g, 0.5ms, 3 times/axis		
Anti-vibration	10grms、10 ~ 1000Hz		
Insulation resistance	≥100MΩ		
Waterproof level	IP67		
Cable	Standard 1.5 meter-length, wear-resistant, oil-proof, wide temperature, shielded cable 5*0.3mm2		
Weight	150g (excluding packaging box)		

PRODUCT DIMENSION



SIZE: L90*W40*H27MM

PRODUCT APPLICATION

- High-voltage power line tower monitoring
- Aerial work vehicles
- Pan/tilt leveling
- Charging piles and towers
- Forklifts, pile foundation
- Mining machinery, oil drilling equipment
- Monitoring based on tilt/inclination sensor
- Hydraulic lift table
- Medical equipment
- Angle control of various construction machinery

T70-FA: HIGH PRECISION DUAL-AXIS 4 PHASE 4 WAY TILT SWITCH

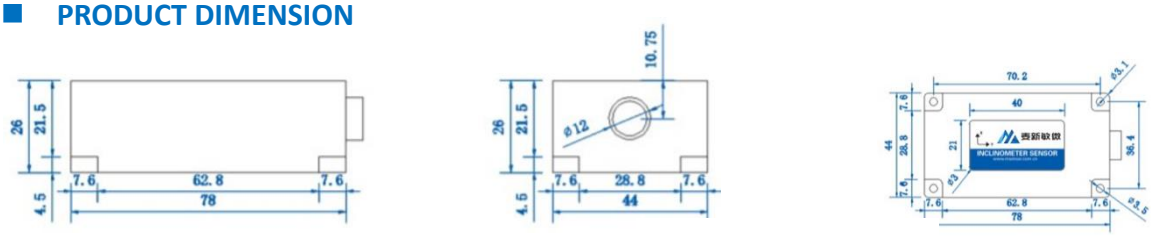
PRODUCT DESCRIPTION

T70-FA is a high-precision 0.01°, small size, low power consumption, high consistency and stability, dual axis 4-phase and 4-way tilt switch launched by MXMW Hi-Tech Company. The working temperature reaches industrial grade -40 ℃ -85 ℃, and the alarm threshold of the switch action point is calibrated at the factory. It is equipped with computer debugging software, and the switch action point and trigger delay time can be set by the user. The product is designed with precision, compensating for temperature and linearity again, integrating comprehensive protection functions such as short circuit, instantaneous high voltage, polarity, surge, etc.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T70-FA	Unit
Measuring range		±90	°
Measuring axis		X, Y axis	
Alam axis		X, Y axis	
Frequency response	DC response	100	Hz
Resolution	-40 ~ 85℃	0.002	°
Accuracy	-40 ~ 85℃	0.01	°
Long term stability	-40 ~ 85℃	<0.02	°
Power-on start time		0.5	s
Output signal	Switching quantity (voltage) output, RS232 and TTL optional at the same time, RS485 can be customized		
	Relay (normally open and normally closed) output, RS232 and TTL optional at the same time, RS485 can be customized		
Average working hours	≥55000 hours/time		
Impact resistance	20000g, 0.5ms, 3 times/axis		
Anti-vibration	10grms、10 ~ 1000Hz		
Insulation resistance	≥100MΩ		
Waterproof level	IP67		
Cable	Standard 1.5 meter-length, wear-resistant, oil-proof, wide temperature, shielded cable 8*0.3mm2		
Weight	130g (excluding packaging box)		

PRODUCT DIMENSION



SIZE: L78*W44*H28MM

PRODUCT APPLICATION

- High-voltage power line tower monitoring
- Aerial work vehicles
- Pan/tilt leveling
- Charging piles and towers
- Forklifts, pile foundation
- Mining machinery, oil drilling equipment
- Monitoring based on tilt/inclination sensor
- Hydraulic lift table
- Medical equipment
- Angle control of various construction machinery

T70-FB: HIGH PRECISION DUAL-AXIS 4 PHASE 2 WAY TILT SWITCH

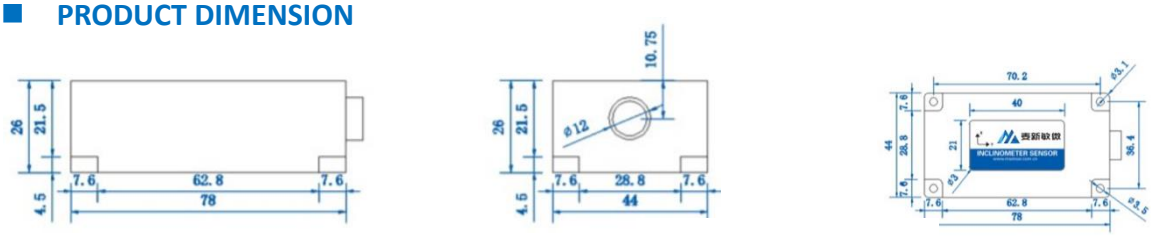
PRODUCT DESCRIPTION

T70-FB is a high-precision 0.01°, small size, low power consumption, high consistency and stability, dual axis 4-phase and 2-way tilt switch launched by MXMW Hi-Tech Company. The working temperature reaches industrial grade -40 ℃ -85 ℃, and the alarm threshold of the switch action point is calibrated at the factory. It is equipped with computer debugging software, and the switch action point and trigger delay time can be set by the user. The product is designed with precision, compensating for temperature and linearity again, integrating comprehensive protection functions such as short circuit, instantaneous high voltage, polarity, surge, etc.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T70-FB	Unit
Measuring range		±90	°
Measuring axis		X, Y axis	
Alam axis		X, Y axis	
Frequency response	DC response	100	Hz
Resolution	-40 ~ 85℃	0.002	°
Accuracy	-40 ~ 85℃	0.01	°
Long term stability	-40 ~ 85℃	<0.02	°
Power-on start time		0.5	s
Output signal	Switching quantity (voltage) output, RS232 and TTL optional at the same time, RS485 can be customized		
	Relay (normally open and normally closed) output, RS232 and TTL optional at the same time, RS485 can be customized		
Average working hours	≥55000 hours/time		
Impact resistance	20000g, 0.5ms, 3 times/axis		
Anti-vibration	10grms、10 ~ 1000Hz		
Insulation resistance	≥100MΩ		
Waterproof level	IP67		
Cable	Standard 1.5 meter-length, wear-resistant, oil-proof, wide temperature, shielded cable 8*0.3mm2		
Weight	130g (excluding packaging box)		

PRODUCT DIMENSION



SIZE: L78*W44*H28MM

PRODUCT APPLICATION

- High-voltage power line tower monitoring
- Aerial work vehicles
- Pan/tilt leveling
- Charging piles and towers
- Forklifts, pile foundation
- Mining machinery, oil drilling equipment
- Monitoring based on tilt/inclination sensor
- Hydraulic lift table
- Medical equipment
- Angle control of various construction machinery

T70-FC: PLANE 360° VERTICAL TILT MONITORING (Z AXIS) 1 WAY SWITCH

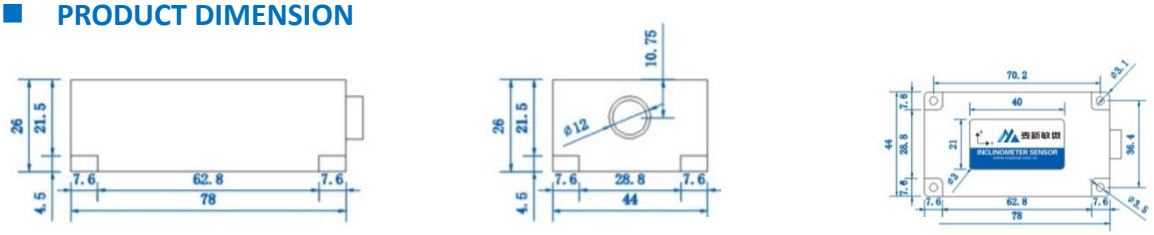
PRODUCT DESCRIPTION

T70-FC is a high-precision 0.01 °, small size, low power consumption, high consistency and stability, high-precision 1-channel switch output type, horizontal 360 ° vertical attitude measurement tilt angle switch in any direction, launched by MXMW Hi-Tech Company. The working temperature reaches industrial grade -40 ℃ -85 ℃, and the alarm threshold of the switch action point is calibrated at the factory. It is equipped with computer debugging software, and the switch action point and trigger delay time can be set by the user. The product is designed with precision, compensating for temperature and linearity again, integrating comprehensive protection functions such as short

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T70-FC	Unit
Measuring range		±90	°
Measuring axis		Z axis	
Alam axis		Z axis	
Frequency response	DC response	100	Hz
Resolution	-40 ~ 85℃	0.002	°
Accuracy	-40 ~ 85℃	0.01	°
Long term stability	-40 ~ 85℃	<0.02	°
Power-on start time		0.5	s
Output signal	Switching quantity (voltage) output, RS232 and TTL optional at the same time, RS485 can be customized		
	Relay (normally open and normally closed) output, RS232 and TTL optional at the same time, RS485 can be customized		
Average working hours	≥55000 hours/time		
Impact resistance	20000g, 0.5ms, 3 times/axis		
Anti-vibration	10grms、10 ~ 1000Hz		
Insulation resistance	≥100MΩ		
Waterproof level	IP67		
Cable	Standard 1.5 meter-length, wear-resistant, oil-proof, wide temperature, shielded cable 8*0.3mm2		
Weight	130g (excluding packaging box)		

PRODUCT DIMENSION



SIZE: L78*W44*H28MM

PRODUCT APPLICATION

- High-voltage power line tower monitoring
- Aerial work vehicles
- Pan/tilt leveling
- Charging piles and towers
- Forklifts, pile foundation
- Mining machinery, oil drilling equipment
- Monitoring based on tilt/inclination sensor
- Hydraulic lift table
- Medical equipment
- Angle control of various construction machinery

T70-G: DIGITAL OUTPUT DUAL-AXIS INCLINATION SENSOR SINGLE BOARD

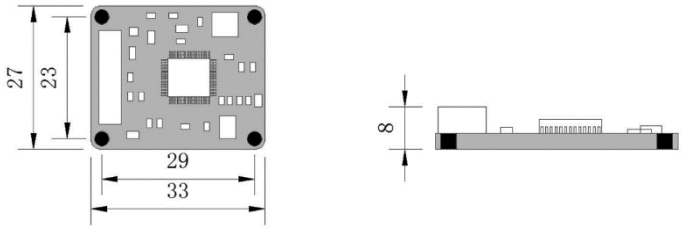
PRODUCT DESCRIPTION

The T70-G series is a new generation of digital small volume MEMS tilt sensors launched by MXMW Hi-Tech Company. It is equipped with a dual channel Earth gravity tilt unit, which measures dynamic gravity acceleration and converts it into tilt angle changes. Thus, it is possible to measure the tilt and pitch angles of the sensor output relative to the horizontal plane. The output methods RS232, RS485, RS422, Modbus, and TTL level interface standards are optional. Due to the built-in MCU control system, the sensor output linearity is corrected twice, compensating for the accuracy decrease caused by insufficient correction in analog models.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T70-G-10	T70-G-30	T70-G-60	T70-G-90	Unit
Measuring range		±10	±30	±60	±90	°
Measuring axis		X, Y	X, Y	X, Y	X, Y	
Zero temperature drift	-40 ~ 85°	±0.05	±0.05	±0.05	±0.05	°/℃
Sensitivity temperature coefficient	-40 ~ 85°	≤200	≤200	≤200	≤200	ppm/℃
Frequency response	DC response	100	100	100	100	Hz
Resolution	Bandwidth 5Hz	0.05	0.05	0.05	0.05	°
Accuracy	-40 ~ 85℃	0.3				°
Long term stability	-40 ~ 85℃	<0.32				°
Power-on start time		0.2				s
Response time		0.01				s
Output rate	5Hz, 15Hz, 35Hz, 50Hz, 100HZ can be set (RS485 does not have this function)					
Output signal	RS232/RS485/RS422/TTL/PWM/ CAN/(MODBUS Optional)					
Average working hours	≥55000 hours/time					
Impact resistance	2500g, 0.5ms, 3 times/axis					
Anti-vibration	10grms、10 ~ 1000Hz					
Insulation resistance	≥100MΩ					
Waterproof level	IP66					
Cable	Standard 10 cm-length, wear-resistant, oil-proof, wide temperature, shielded cable 4*0.2mm2					
Weight	6g (excluding packaging box)					

PRODUCT DIMENSION



SIZE: L33*W27*H8MM

PRODUCT APPLICATION

- High-voltage power line tower monitoring
- Aerial work vehicles
- Pan/tilt leveling
- Charging piles and towers
- Forklifts, engineering dump trucks
- Mining machinery, oil drilling equipment
- Charging piles and towers
- Solar photovoltaic tracking antenna positioning
- Medical equipment
- Angle control of various construction machinery

T70-H: DIGITAL OUTPUT DUAL-AXIS TILT SENSOR

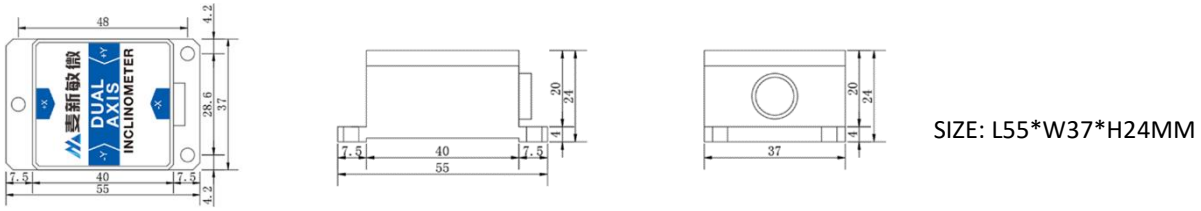
PRODUCT DESCRIPTION

The T70-H is a dual axis digital tilt sensor by MXMW Hi-Tech Company, integrating industrial standard RTU Modbus and 0x68 hexadecimal protocols; Output RS232, RS485, RS422, TTL optional. Mainly targeting application markets with high limitations in volume, cost, and localization rate. Due to the built-in MEMS micro electromechanical production process tilt unit, it has a small volume, low power consumption, high consistency and stability, strong resistance to external electromagnetic interference, and strong ability to withstand impact and vibration. To manufacture domestically produced equipment and overcome technological barriers in independent research and development.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T70-H	Unit
Measuring range		±90	°
Measuring axis		X, Y axis	
Zero temperature drift	-40 ~ 85℃	±0.05	°/℃
Sensitivity temperature coefficient	-40 ~ 85℃	≤200	ppm/℃
Accuracy	-40 ~ 85℃	0.1	°
Frequency response	DC response	100	Hz
Power-on start time		0.2	s
Response time		0.01	s
Automatic output rate	5Hz output, (15Hz, 35Hz, 50Hz, 100Hz can be set)		
Output signal	RS232/RS485/RS422/TTL can be ordered		
Average working hours	≥55000 hours/time		
Impact resistance	2600g, 0.5ms, 3 times/axis		
Anti-vibration	10grms、10 ~ 1000Hz		
Insulation resistance	≥100MΩ		
Waterproof level	IP67		
Cable wire	Standard 1.5m length, wear-resistant, oil-proof, wide temperature, shielded cable 4*0.2mm2		
Weight	55g (excluding packaging box)		

PRODUCT DIMENSION



SIZE: L55*W37*H24MM

PRODUCT APPLICATION

- High-voltage power line tower monitoring
- Aerial work vehicles
- Pan/tilt leveling
- Charging piles and towers
- Forklifts, engineering dump trucks
- Mining machinery, oil drilling equipment
- Charging piles and towers
- Vehicle overload monitoring
- Medical equipment
- Angle control of various construction machinery

T70-J: TILT SWITCH DUAL AXIS 4-WAY 2 CHANNEL OUTPUT TYPE SENSOR

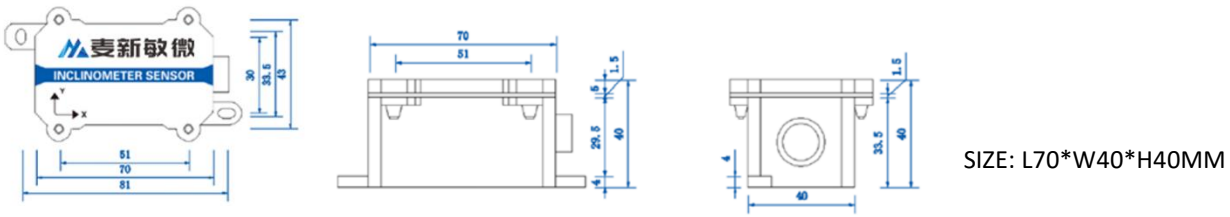
PRODUCT DESCRIPTION

T70-J is a domestically developed dual axis 4-way 2-way tilt angle switch for component tilt angle measurement module by Micro-Magic Inc. It adopts RTU Modbus protocol and has internal core components, including MCU processor, MEMS tilt unit, power circuit, output circuit, and other domestically produced components. To manufacture domestically produced equipment and overcome barriers to independent research and development technology.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T70-J	Unit
Measuring range		±90	°
Measuring axis		X, Y axis	
Alam axis		X, Y axis	
Frequency response	DC response	100	Hz
Accuracy	-40 ~ 85℃	0.2	°
Long term stability	-40 ~ 85℃	<0.3	°
Power-on start time		0.5	s
Output signal	Switching (voltage) output, RS232 and TTL optional, RS485 customizable		
	Relay (normally open and normally closed) output, RS232 and TTL optional, RS485 customizable		
Average working hours	≥35000 hours/time		
Impact resistance	2450g, 0.5ms, 3 times/axis		
Anti-vibration	10grms、10 ~ 1000Hz		
Insulation resistance	≥100MΩ		
Waterproof level	IP67		
Cable	Standard 1.5 meter-length, wear-resistant, oil-proof, wide temperature, shielded cable 8*0.3mm^2		
Weight	110g (excluding packaging box)		

PRODUCT DIMENSION



SIZE: L70*W40*H40MM

PRODUCT APPLICATION

- High-voltage power line tower monitoring
- Aerial work vehicles
- Pan/tilt leveling
- Charging piles and towers
- Forklifts, engineering dump trucks
- Mining machinery, oil drilling equipment
- Charging piles and towers
- Vehicle overload monitoring
- Medical equipment
- Angle control of various construction machinery

T70-K: TILT SWITCH DUAL AXIS 4-WAY 4 CHANNEL OUTPUT TYPE SENSOR

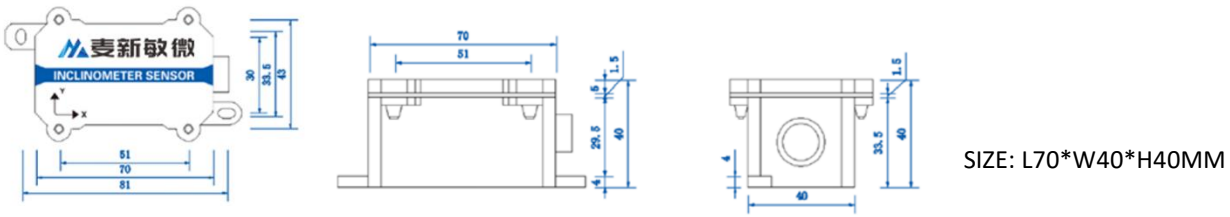
PRODUCT DESCRIPTION

T70-J is a domestically developed dual axis 4-way 4-way tilt angle switch for component tilt angle measurement module by Micro-Magic Inc. It adopts RTU Modbus protocol and has internal core components, including MCU processor, MEMS tilt unit, power circuit, output circuit, and other domestically produced components. To manufacture domestically produced equipment and overcome barriers to independent research and development technology.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T70-K	Unit
Measuring range		±90	°
Measuring axis		X, Y axis	
Alam axis		X, Y axis	
Frequency response	DC response	100	Hz
Accuracy	-40 ~ 85℃	0.2	°
Long term stability	-40 ~ 85℃	<0.3	°
Power-on start time		0.5	s
Output signal	Switching (voltage) output, RS232 and TTL optional, RS485 customizable		
	Relay (normally open and normally closed) output, RS232 and TTL optional, RS485 customizable		
Average working hours	≥35000 hours/time		
Impact resistance	2450g, 0.5ms, 3 times/axis		
Anti-vibration	10grms、10 ~ 1000Hz		
Insulation resistance	≥100MΩ		
Waterproof level	IP67		
Cable	Standard 1.5 meter-length, wear-resistant, oil-proof, wide temperature, shielded cable 8*0.3mm^2		
Weight	110g (excluding packaging box)		

PRODUCT DIMENSION



SIZE: L70*W40*H40MM

PRODUCT APPLICATION

- High-voltage power line tower monitoring
- Aerial work vehicles
- Pan/tilt leveling
- Charging piles and towers
- Forklifts, engineering dump trucks
- Mining machinery, oil drilling equipment
- Charging piles and towers
- Vehicle overload monitoring
- Medical equipment
- Angle control of various construction machinery

T700-A: MEDIUM PRECISION DIGITAL OUTPUT DUAL-AXIS TILT SENSOR

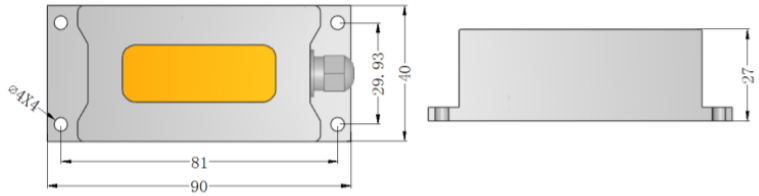
■ PRODUCT DESCRIPTION

T700-A is a digital output dual-axis inclination sensor with a built-in high-precision 16bit A/D converter and can measure the tilt and pitch angle of the sensor output relative to the horizontal plane through an n-order filter algorithm. Output interface RS232, RS485, RS422, TTL, Modbus, PWM, CANbus are optional. The product can correct the sensor temperature drift according to the monitoring temperature change of the built-in temperature sensor, ensuring the repeatability of the product in low temperature and high temperature environments. Output corresponding frequency 100HZ.

■ PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T700-A-10	T700-A-30	T700-A-60	T700-A-90	Unit
Measuring range		±10	±30	±60	±90	°
Measuring axis		X, Y	X, Y	X, Y	X, Y	
Zero temperature drift	-40 ~ 85°	±0.008	±0.008	±0.008	±0.008	°/℃
Sensitivity temperature coefficient	-40 ~ 85°	≤100	≤100	≤100	≤100	ppm/℃
Frequency response	DC response	100	100	100	100	Hz
Resolution		0.001	0.001	0.001	0.001	°
Accuracy	-40 ~ 85℃	0.01	0.02	0.03	0.05	°
Long term stability	-40 ~ 85℃	<0.013	<0.022	<0.031	<0.054	°
Power-on start time		0.2				s
Response time		0.01				s
Output rate	5Hz, 15Hz, 35Hz; 50Hz can be set (RS485 does not have this function)					
Output signal	RS232/RS485/RS422/TTL/PWM/ CAN/(MODBUS Optional)					
Average working hours	≥55000 hours/time					
Impact resistance	20000g, 0.5ms, 3 times/axis					
Anti-vibration	10grms、10 ~ 1000Hz					
Insulation resistance	≥100MΩ					
Waterproof level	IP67					
Cable	Standard 1.5 meter-length, wear-resistant, oil-proof, wide temperature, shielded cable 4*0.2mm2					
Weight	150g (excluding packaging box)					

■ PRODUCT DIMENSION



SIZE: L90*W40*H27MM

■ PRODUCT APPLICATION

- Railway gauge ruler and gauge leveling
- Wind turbine shimmy attitude
- Bridge, dam monitoring
- Robot tilt monitoring
- Signal towers, high-voltage power poles
- Satellite solar antenna positioning
- Medical equipment
- Angle control of various construction machinery
- Precision machine tool horizontal control

T700-B: DIGITAL OUTPUT TRI-AXIS INCLINATION SENSOR SINGLE BOARD

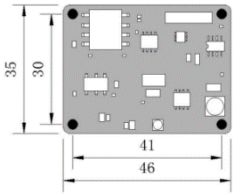
PRODUCT DESCRIPTION

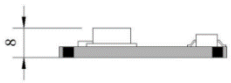
The T700-B is a digital output (X, Y, Z) three-axis inclination sensor with a built-in high-precision 16bit A/D converter, and through an n-order filtering algorithm, the final output X, Y, Z inclination values. Output interface has RS232, RS485, RS422, TTL, Modbus, and Canopen optional. The product can correct the sensor temperature drift based on the temperature changes monitored by the built-in temperature sensor to ensure the repeatability of the product in low and high temperature environments. Output corresponding frequency 100HZ. The product is good for dangerous building monitoring.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T700-B-10	T700-B-30	T700-B-60	T700-B-90	Unit
Measuring range		±10	±30	±60	±90	°
Measuring axis		X, Y, Z	X, Y, Z	X, Y, Z	X, Y, Z	
Zero temperature drift	-40 ~ 85°	±0.001	±0.001	±0.001	±0.001	°/℃
Sensitivity temperature coefficient	-40 ~ 85°	≤100	≤100	≤100	≤100	ppm/℃
Frequency response	DC response	100	100	100	100	Hz
Resolution		0.005	0.005	0.005	0.005	°
Accuracy	-40 ~ 85℃	0.01	0.02	0.03	0.05	°
Long term stability	-40 ~ 85℃	<0.013	<0.022	<0.031	<0.054	°
Power-on start time		0.2				s
Response time		0.01				s
Output rate	5Hz, 15Hz, 35Hz, 50HZ, 100HZ can be set (RS485 does not have this function)					
Output signal	RS232/RS485/RS422/TTL/PWM/CAN/Modbus can be set					
Average working hours	≥45000 hours/time					
Impact resistance	20000g, 0.5ms, 3 times/axis					
Anti-vibration	10grms、10 ~ 1000Hz					
Insulation resistance	≥100MΩ					
Waterproof level	IP66					
Cable	Standard 10 cm-length, wear-resistant, oil-proof, wide temperature, shielded cable 4*0.3mm2					
Weight	10g (excluding packaging box)					

PRODUCT DIMENSION





SIZE: L46*W35*H8MM

PRODUCT APPLICATION

- Railway gauge ruler and gauge leveling
- Wind turbine shimmy attitude
- Bridge, dam monitoring
- Robot tilt monitoring
- Signal towers, high-voltage power poles
- Satellite solar antenna positioning
- Medical equipment
- Angle control of various construction machinery
- Precision machine tool horizontal control

T700-C: DIGITAL OUTPUT TRI-AXIS INCLINATION SENSOR SINGLE BOARD

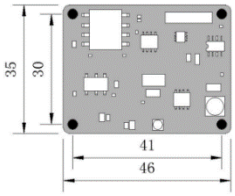
PRODUCT DESCRIPTION

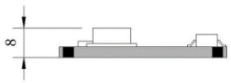
The T700-C is a digital output (X, Y, Z) three-axis inclination sensor with a built-in high-precision 16bit A/D converter, and through an n-order filtering algorithm, the final output X, Y, Z inclination values. Output interface has RS232, RS485, RS422, TTL, Modbus, and Canopen optional. The product can correct the sensor temperature drift based on the temperature changes monitored by the built-in temperature sensor to ensure the repeatability of the product in low and high temperature environments. Output corresponding frequency 100HZ.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T700-C-10	T700-C-30	T700-C-60	T700-C-90	Unit
Measuring range		±10	±30	±60	±90	°
Measuring axis		X, Y, Z	X, Y, Z	X, Y, Z	X, Y, Z	
Zero temperature drift	-40 ~ 85°	±0.005	±0.005	±0.005	±0.005	°/℃
Sensitivity temperature coefficient	-40 ~ 85°	≤100	≤100	≤100	≤100	ppm/℃
Frequency response	DC response	100	100	100	100	Hz
Resolution		0.005	0.005	0.005	0.005	°
Accuracy		0.02	0.03	0.04	0.05	°
Long term stability		<0.023	<0.035	<0.045	<0.054	°
Power-on start time		0.2				s
Response time		0.01				s
Output rate	5Hz, (15Hz, 35Hz, 50Hz, 100HZ can be set) (RS485 does not have this function)					
Output signal	RS232/RS485/RS422/TTL/PWM/ CAN/(MODBUS Optional)					
Average working hours	≥45000 hours/time					
Impact resistance	20000g, 0.5ms, 3 times/axis					
Anti-vibration	10grms、10 ~ 1000Hz					
Insulation resistance	≥100MΩ					
Waterproof level	IP66					
Cable	Standard 10cm length, wear-resistant, oil-proof, wide temperature, shielded cable 4*0.3mm2					
Weight	10g (excluding packaging box)					

PRODUCT DIMENSION



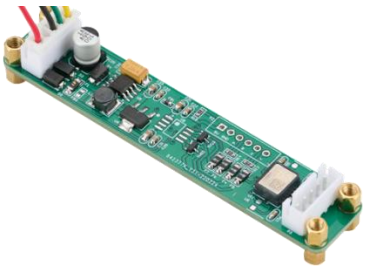


SIZE: L46*W35*H8MM

PRODUCT APPLICATION

- Railway gauge ruler and gauge leveling
- Wind turbine shimmy attitude
- Bridge, dam monitoring
- Robot tilt monitoring
- Signal towers, high-voltage power poles
- Satellite solar antenna positioning
- Medical equipment
- Angle control of various construction machinery
- Precision machine tool horizontal control

T700-D: DIGITAL OUTPUT TRI-AXIS INCLINATION SENSOR SINGLE BOARD



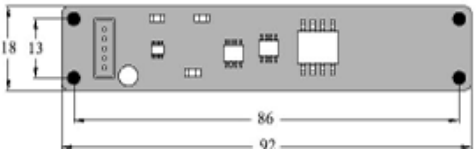
■ PRODUCT DESCRIPTION

T700-D is a digital output (X, Y, Z) three-axis inclination sensor launched by MXMW Hi-Tech Company for the field of industrial field control. It has a built-in high-precision 16bit A/D converter, and through an n-order filtering algorithm, it finally outputs X, Y, Z-axis inclination angle value. The output interfaces RS232, RS485, RS422, TTL, Modbus and CAN bus are optional. The product can correct the sensor temperature drift based on the temperature changes monitored by the built-in temperature sensor to ensure the repeatability of the product in low and high temperature environments. Output corresponding frequency 100HZ.

■ PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T700-D-10	T700-D-30	T700-D-90	T700-D-180	Unit
Measuring range		±10	±30	±90	±180	°
Measuring axis		X, Y, Z	X, Y, Z	X, Y, Z	X, Y, Z	
Zero temperature drift	-40 ~ 85°	±0.001	±0.001	±0.001	±0.001	°/℃
Sensitivity temperature coefficient	-40 ~ 85°	≤100	≤100	≤100	≤100	ppm/℃
Frequency response	DC response	100	100	100	100	Hz
Resolution		0.002	0.002	0.002	0.002	°
Accuracy		0.01	0.02	0.03	0.05	°
Long term stability		<0.015	<0.021	<0.033	<0.052	°
Power-on start time		0.2				s
Response time		0.01				s
Output rate	5Hz, (15Hz, 35Hz, 50Hz, 100HZ can be set) (RS485 does not have this function)					
Output signal	RS232/RS485/RS422/TTL/PWM/ CAN/(MODBUS Optional)					
Average working hours	≥55000 hours/time					
Impact resistance	20000g, 0.5ms, 3 times/axis					
Anti-vibration	10grms、10 ~ 1000Hz					
Insulation resistance	≥100MΩ					
Waterproof level	IP66					
Cable	Standard 10cm length, wear-resistant, oil-proof, wide temperature, shielded cable 4*0.3mm2					
Weight	10g (excluding packaging box)					

■ PRODUCT DIMENSION



SIZE: L92*W18*H16MM

■ PRODUCT APPLICATION

- Railway gauge ruler and gauge leveling
- Wind turbine shimmy attitude
- Bridge, dam monitoring
- Robot tilt monitoring
- Signal towers, high-voltage power poles
- Satellite solar antenna positioning
- Medical equipment
- Angle control of various construction machinery
- Precision machine tool horizontal control

T700-E: MEDIUM PRECISION ANALOG VOLTAGE OUTPUT DUAL-AXIS TILT SENSOR

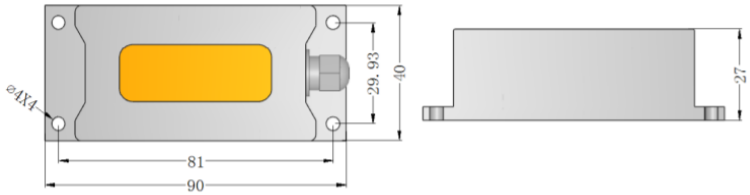
PRODUCT DESCRIPTION

The T700-E is an analog voltage dual-axis tilt sensor. Users only need to collect the voltage value of the sensor to calculate the current tilt angle of the object. The built-in (MEMS) solid pendulum measures changes in the static gravity field, converts them into tilt angle changes, and outputs them through voltage (0~10V, 0.5-4.5V, 0~5V optional). The product adopts a non-contact measurement principle and can output the current attitude and inclination angle in real time. It is small in size and has good ability to withstand shock and vibration. It is especially suitable for application machinery and other harsh industrial environments.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T700-E-10	T700-E-30	T700-E-60	T700-E-90	Unit
Measuring range		±10	±30	±60	±90	°
Measuring axis		X, Y	X, Y	X, Y	X, Y	
Zero temperature drift	-40 ~ 85°	±0.002	±0.002	±0.002	±0.002	°/℃
Sensitivity temperature coefficient	-40 ~ 85°	≤100	≤100	≤100	≤100	ppm/℃
Zero point bias	0° output	0-5V output-2.5V, 0-10V output-5V				V
Frequency response	DC response	100	100	100	100	Hz
Resolution	Bandwidth 5Hz	0.001	0.002	0.002	0.002	°
Accuracy	-40 ~ 85℃	0.01	0.02	0.03	0.05	°
Long term stability	-40 ~ 85℃	<0.013	<0.022	<0.031	<0.054	°
Power-on start time		0.2				s
Response time		0.01				s
Output signal	0-5V、0.5-4.5V、0-10V					
Average working hours	≥55000 hours/time					
Impact resistance	20000g, 0.5ms, 3 times/axis					
Anti-vibration	10grms、10 ~ 1000Hz					
Insulation resistance	≥100MΩ					
Waterproof level	IP67					
Cable	Standard 1.5 meter-length, wear-resistant, oil-proof, wide temperature, shielded cable 6*0.3mm2					
Weight	150g (excluding packaging box)					

PRODUCT DIMENSION



SIZE: L90*W40*H27MM

PRODUCT APPLICATION

- Railway gauge ruler and gauge leveling
- Wind turbine shimmy attitude
- Bridge, dam monitoring
- Robot tilt monitoring
- Signal towers, high-voltage power poles
- Satellite solar antenna positioning
- Medical equipment
- Angle control of various construction machinery
- Precision machine tool horizontal control

T700-F: MEDIUM PRECISION ANALOG CURRENT OUTPUT DUAL-AXIS TILT SENSOR

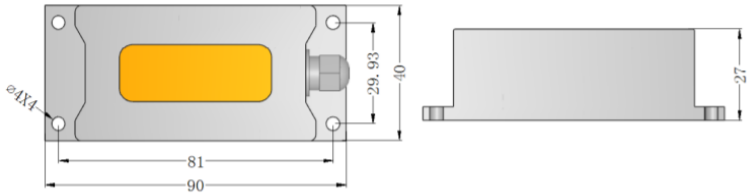
PRODUCT DESCRIPTION

T700-F is a standard industrial dual axis current output tilt sensor. The standard current is 4-20mA, 0-20mA, and 0-24MA, which can be selected for long-distance transmission of 2000 meters. The product adopts the latest MEMS sensing production process, which accurately compensates and corrects temperature and linearity errors. It has high accuracy, small size, high packaging technology, good vibration resistance, built-in anti RF, and adopts anti electromagnetic interference circuits, especially suitable for underground non excavation machinery and other harsh industrial environments.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T700-F-10	T700-F-30	T700-F-60	T700-F-90	Unit
Measuring range		±10	±30	±60	±90	°
Measuring axis	axis	X, Y	X, Y	X, Y	X, Y	
Zero temperature drift	-40 ~ 85°	±0.002	±0.002	±0.002	±0.002	°/℃
Sensitivity temperature coefficient	-40 ~ 85°	≤50	≤50	≤50	≤50	ppm/℃
Zero bias	0° output	4~20mA output-12mA 0~20mA output-10mA 0~24mA output-12mA				mA
Frequency response	DC response	100	100	100	100	Hz
Resolution	Bandwidth 5Hz	0.001	0.002	0.002	0.002	°
Accuracy	-40 ~ 85℃	0.01	0.02	0.03	0.05	°
Power-on start time		0.2				s
Response time		0.01				s
Output signal	4-20mA, 0-20mA, 0-24mA (optional)					
Average working hours	≥55000 hours/time					
Impact resistance	20000g, 0.5ms, 3 times/axis					
Anti-vibration	10grms、10 ~ 1000Hz					
Insulation resistance	≥100MΩ					
Waterproof level	IP67					
Cable	Standard 1.5 meter-length, wear-resistant, oil-proof, wide temperature, shielded cable 6*0.3mm2					
Weight	150g (excluding packaging box)					

PRODUCT DIMENSION



SIZE: L90*W40*H27MM

PRODUCT APPLICATION

- Railway gauge ruler and gauge leveling
- Wind turbine shimmy attitude
- Bridge, dam monitoring
- Robot tilt monitoring
- Signal towers, high-voltage power poles
- Satellite solar antenna positioning
- Medical equipment
- Angle control of various construction machinery
- Precision machine tool horizontal control

T700-G: MEDIUM PRECISION DIGITAL OUTPUT DUAL-AXIS TILT SENSOR SINGLE BOARD

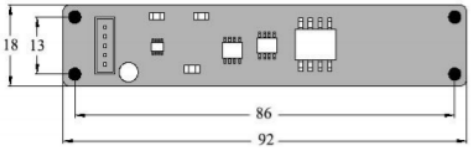
PRODUCT DESCRIPTION

The T700-G series is a digital output dual axis tilt sensor, equipped with a high-precision 16bit A/D converter and outputs the dual axis tilt value through an n-order filtering algorithm. The output interfaces RS232, RS485, RS422, TTL, Modbus, and CAN bus are optional. The product can correct sensor temperature drift based on the monitoring temperature changes of the built-in temperature sensor, ensuring the repeatability of the product in low and high temperature environments. Output the corresponding frequency of 100Hz.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T700-G-10	T700-G-30	T700-G-60	T700-G-90	Unit
Measuring range		±10	±30	±60	±90	°
Measuring axis		X, Y	X, Y	X, Y	X, Y	
Zero temperature drift	-40 ~ 85°	±0.001	±0.001	±0.001	±0.001	°/℃
Sensitivity temperature coefficient	-40 ~ 85°	≤100	≤100	≤100	≤100	ppm/℃
Frequency response	DC response	100	100	100	100	Hz
Resolution	Bandwidth 5Hz	0.005	0.005	0.005	0.005	°
Accuracy	-40 ~ 85℃	0.01	0.02	0.03	0.05	°
Long term stability	-40 ~ 85℃	<0.013	<0.022	<0.031	<0.054	°
Power-on start time		0.2				s
Response time		0.01				s
Output rate	5Hz, 15Hz, 35Hz, 50Hz, 100HZ can be set (RS485 does not have this function)					
Output signal	RS232/RS485/RS422/TTL/PWM/ CAN/(MODBUS Optional)					
Average working hours	≥55000 hours/time					
Impact resistance	20000g, 0.5ms, 3 times/axis					
Anti-vibration	10grms、10 ~ 1000Hz					
Insulation resistance	≥100MΩ					
Waterproof level	IP66					
Cable	Standard 10 cm-length, wear-resistant, oil-proof, wide temperature, shielded cable 4*0.2mm2					
Weight	10g (excluding packaging box)					

PRODUCT DIMENSION



SIZE: L92*W18*H16MM

PRODUCT APPLICATION

- Railway gauge ruler and gauge leveling
- Wind turbine shimmy attitude
- Bridge, dam monitoring
- Robot tilt monitoring
- Signal towers, high-voltage power poles
- Satellite solar antenna positioning
- Medical equipment
- Angle control of various construction machinery
- Precision machine tool horizontal control

T700-H: MEDIUM PRECISION DIGITAL OUTPUT DUAL-AXIS TILT SENSOR SINGLE BOARD

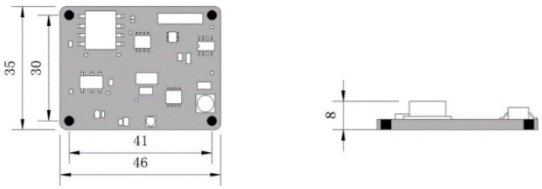
■ PRODUCT DESCRIPTION

The T700-H series is a digital output dual axis tilt sensor, equipped with a high-precision 16bit A/D converter and outputs the dual axis tilt value through an n-order filtering algorithm. The output interfaces RS232, RS485, RS422, TTL, Modbus, and CAN bus are optional. The product can correct sensor temperature drift based on the monitoring temperature changes of the built-in temperature sensor, ensuring the repeatability of the product in low and high temperature environments. Output the corresponding frequency of 100Hz.

■ PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T700-H-10	T700-H-30	T700-H-60	T700-H-90	Unit
Measuring range		±10	±30	±60	±90	°
Measuring axis		X, Y	X, Y	X, Y	X, Y	
Zero temperature drift	-40 ~ 85°	±0.001	±0.001	±0.001	±0.001	°/℃
Sensitivity temperature coefficient	-40 ~ 85°	≤100	≤100	≤100	≤100	ppm/℃
Frequency response	DC response	100	100	100	100	Hz
Resolution	Bandwidth 5Hz	0.005	0.005	0.005	0.005	°
Accuracy	-40 ~ 85℃	0.01	0.02	0.03	0.05	°
Long term stability	-40 ~ 85℃	<0.013	<0.022	<0.031	<0.054	°
Power-on start time		0.2				s
Response time		0.01				s
Output rate	5Hz, 15Hz, 35Hz, 50Hz, 100HZ can be set (RS485 does not have this function)					
Output signal	RS232/RS485/RS422/TTL/PWM/ CAN/(MODBUS Optional)					
Average working hours	≥45000 hours/time					
Impact resistance	20000g, 0.5ms, 3 times/axis					
Anti-vibration	10grms、10 ~ 1000Hz					
Insulation resistance	≥100MΩ					
Waterproof level	IP66					
Cable	Standard 10 cm-length, wear-resistant, oil-proof, wide temperature, shielded cable 4*0.3mm2					
Weight	10g (excluding packaging box)					

■ PRODUCT DIMENSION



SIZE: L46*W35*H8MM

■ PRODUCT APPLICATION

- Railway gauge ruler and gauge leveling
- Wind turbine shimmy attitude
- Bridge, dam monitoring
- Robot tilt monitoring
- Signal towers, high-voltage power poles
- Satellite solar antenna positioning
- Medical equipment
- Angle control of various construction machinery
- Precision machine tool horizontal control

T700-I: DIGITAL OUTPUT 3-AXIS EXCAVATION ANGLE SENSOR & SETTLEMENT INCLINOMETER

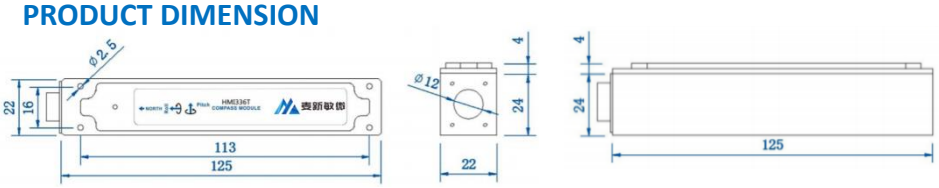
■ PRODUCT DESCRIPTION

The T700-I series is a digital output tri-axis tilt sensor, equipped with a high-precision 16bit A/D converter and outputs the dual axis tilt value through an n-order filtering algorithm. The output interfaces RS232, RS485, RS422, TTL, Modbus, and CAN bus are optional. The product can correct sensor temperature drift based on the monitoring temperature changes of the built-in temperature sensor, ensuring the repeatability of the product in low and high temperature environments. Output the corresponding frequency of 100Hz.

■ PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T700-I-10	T700-I-30	T700-I-60	T700-I-90	Unit
Measuring range		±10	±30	±60	±90	°
Measuring axis		X, Y, Z	X, Y, Z	X, Y, Z	X, Y, Z	
Zero temperature drift	-40 ~ 85°	±0.008	±0.008	±0.008	±0.008	°/℃
Sensitivity temperature coefficient	-40 ~ 85°	≤100	≤100	≤100	≤100	ppm/℃
Frequency response	DC response	100	100	100	100	Hz
Resolution		0.001	0.001	0.001	0.001	°
Accuracy	-40 ~ 85°	0.01	0.02	0.03	0.05	°
Long term stability	-40 ~ 85°	<0.013	<0.022	<0.031	<0.054	°
Power-on start time		0.2				s
Response time		0.01				s
Output rate	5Hz, (15Hz, 35Hz, 50Hz can be set) (RS485 does not have this function)					
Output signal	RS232/RS485/RS422/TTL/ CAN/(MODBUS Optional)					
Average working hours	≥55000 hours/time					
Impact resistance	20000g, 0.5ms, 3 times/axis					
Anti-vibration	10grms、10 ~ 1000Hz					
Insulation resistance	≥100MΩ					
Waterproof level	IP67					
Cable	Standard 1.5m length, wear-resistant, oil-proof, wide temperature, shielded cable 4*0.3mm2					
Weight	150g (excluding packaging box)					

■ PRODUCT DIMENSION



SIZE: L125*W24*H28MM

■ PRODUCT APPLICATION

- Railway gauge ruler and gauge leveling
- Wind turbine shimmy attitude
- Bridge, dam monitoring
- Robot tilt monitoring
- Signal towers, high-voltage power poles
- Satellite solar antenna positioning
- Medical equipment
- Angle control of various construction machinery
- Precision machine tool horizontal control

T7000-A: HIGH PRECISION ANALOG CURRENT OUTPUT DUAL-AXIS TILT SENSOR

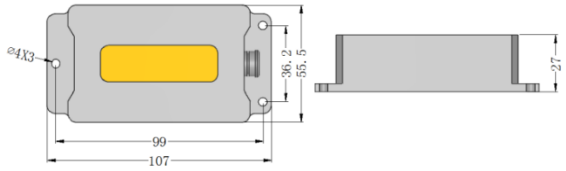
PRODUCT DESCRIPTION

T7000-A is a standard industrial high-precision current output dual-axis inclination sensor. RS232 output can be used for long-distance transmission of 2000 meters. The built-in (MEMS) solid pendulum converts the change of the static gravity field into a change of inclination angle by measuring the change of the static gravity field. The product makes accurate compensation and correction for temperature error and linearity error, high accuracy, good anti-vibration, anti-electromagnetic interference circuit, especially suitable for the application of underground non-excavation machinery and other harsh industrial environments.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T7000-A-5	T7000-A-10	T7000-A-15	T7000-A-30	Unit
Measuring range		±5	±10	±15	±30	°
Measuring axis	axis	X, Y	X, Y	X, Y	X, Y	
Zero temperature drift	-40 ~ 85°	±0.0007	±0.0007	±0.0007	±0.0007	°/℃
Sensitivity temperature coefficient	-40 ~ 85°	≤50	≤50	≤50	≤50	ppm/℃
Zero bias	0° output	4~20mA output-12mA 0~20mA output-10mA 0~24mA output-12mA				mA
Frequency response	DC response	100	100	100	100	Hz
Resolution	Bandwidth 5Hz	0.0007	0.0007	0.0007	0.0007	°
Accuracy	-40 ~ 85℃	0.005	0.006	0.0065	0.007	°
Power-on start time		0.2				s
Response time		0.01				s
Output signal	4-20mA, 0-20mA, 0-24mA (optional)					
Average working hours	≥45000 hours/time					
Impact resistance	20000g, 0.5ms, 3 times/axis					
Anti-vibration	10grms、10 ~ 1000Hz					
Insulation resistance	≥100MΩ					
Waterproof level	IP67					
Cable	Standard 1.5 meter-length, wear-resistant, oil-proof, wide temperature, shielded cable 6*0.3mm2					
Weight	250g (excluding packaging box)					

PRODUCT DIMENSION



SIZE: L107*W55.5*H27MM

PRODUCT APPLICATION

- Railway gauge ruler and gauge leveling
- Bridge, dam monitoring
- Gimbal leveling
- Precision laser platform equipment
- Tilt based monitoring
- Satellite solar antenna positioning
- Ship navigation attitude measurement
- Medical equipment
- Angle control of various construction machinery
- Precision machine tool horizontal control

T7000-B: HIGH PRECISION ANALOG CURRENT OUTPUT SINGLE-AXIS TILT SENSOR

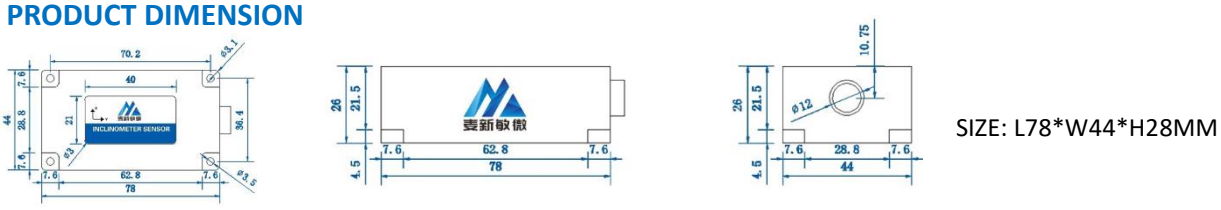
PRODUCT DESCRIPTION

The T7000-B series is a high-performance current output single axis tilt sensor. The measurement range is 0- ± 180 ° (0-360 °), with a maximum accuracy of 0.008 °. It can output standard 4-20mA, 0-20mA, and 0-24mA analog currents, with RS232 and RS485 options available simultaneously. Good anti-interference characteristics, suitable for long-distance signal transmission. The product is easy to install and use, with multiple output options, resistant to external electromagnetic interference, and strong ability to withstand vibration and impact, suitable for measuring angles in industrial control environments such as surveying and mapping.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T7000-B	Unit
Measuring range		±180	°
Measuring axis	Y axis option	X axis	
Zero temperature drift	-40 ~ 85°	±0.001	°/℃
Sensitivity temperature coefficient	-40 ~ 85°	≤50	ppm/℃
Zero bias	0° output	4~20mA output-12mA 0~20mA output-10mA 0~24mA output-12mA	mA
Frequency response	DC response	100	Hz
Resolution	Bandwidth 5Hz	0.001	°
Accuracy	-40 ~ 85℃	0.008	°
Power-on start time		0.2	s
Response time		0.01	s
Output signal	4-20mA, 0-20mA, 0-24mA (optional)		
Average working hours	≥55000 hours/time		
Impact resistance	10000g, 0.5ms, 3 times/axis		
Anti-vibration	10grms、10 ~ 1000Hz		
Insulation resistance	≥100MΩ		
Waterproof level	IP67		
Cable	Standard 1.5 meter-length, wear-resistant, oil-proof, wide temperature, shielded cable 6*0.3mm2		
Weight	150g (excluding packaging box)		

PRODUCT DIMENSION



SIZE: L78*W44*H28MM

PRODUCT APPLICATION

- Railway gauge ruler and gauge leveling
- Bridge, dam monitoring
- Gimbal leveling
- Wind turbine shimmy attitude
- Robot tilt monitoring
- Satellite solar antenna positioning
- Ship navigation attitude measurement
- Medical equipment
- Angle control of various construction machinery
- Precision machine tool horizontal control

T7000-C: HIGH PRECISION ANALOG CURRENT OUTPUT DUAL-AXIS TILT SENSOR

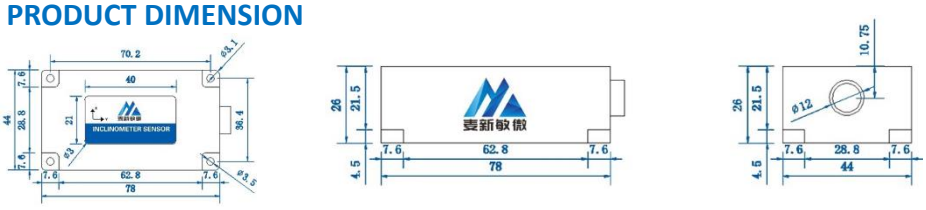
PRODUCT DESCRIPTION

The T7000-C series is a high-performance current output dual-axis tilt sensor. The measurement range is dual axis ± 90 ° with a maximum accuracy of 0.008 °. It can output standard 4-20mA, 0-20mA, and 0-24mA analog currents, with RS232 and RS485 options available simultaneously. Good anti-interference characteristics, suitable for long-distance signal transmission. The product is easy to install and use, with multiple output options, resistant to external electromagnetic interference, and strong ability to withstand vibration and impact, suitable for measuring angles in industrial control environments such as surveying and mapping.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T7000-C	Unit
Measuring range		±90	°
Measuring axis	axis	X, Y	
Zero temperature drift	-40 ~ 85°	±0.001	°/℃
Sensitivity temperature coefficient	-40 ~ 85°	≤50	ppm/℃
Zero bias	0° output	4~20mA output-12mA 0~20mA output-10mA 0~24mA output-12mA	mA
Frequency response	DC response	100	Hz
Resolution	Bandwidth 5Hz	0.001	°
Accuracy	-40 ~ 85℃	0.008	°
Power-on start time		0.2	s
Response time		0.01	s
Output signal	4-20mA, 0-20mA, 0-24mA (optional)		
Average working hours	≥55000 hours/time		
Impact resistance	10000g, 0.5ms, 3 times/axis		
Anti-vibration	10grms、10 ~ 1000Hz		
Insulation resistance	≥100MΩ		
Waterproof level	IP67		
Cable	Standard 1.5 meter-length, wear-resistant, oil-proof, wide temperature, shielded cable 6*0.3mm2		
Weight	150g (excluding packaging box)		

PRODUCT DIMENSION



SIZE: L78*W44*H28MM

PRODUCT APPLICATION

- Railway gauge ruler and gauge leveling
- Bridge, dam monitoring
- Fan oscillation attitude
- Signal tower, high-voltage power line tower
- Robot tilt monitoring
- Satellite solar antenna positioning
- Ship navigation attitude measurement
- Medical equipment
- Angle control of various construction machinery
- Precision machine tool horizontal control

T7000-D: HIGH PRECISION ANALOG VOLTAGE OUTPUT DUAL-AXIS TILT SENSOR

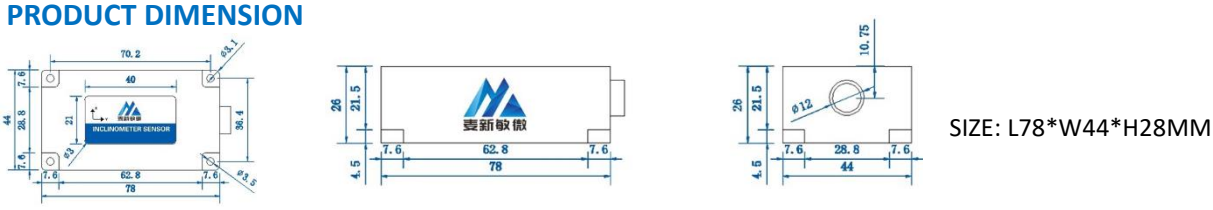
PRODUCT DESCRIPTION

The T7000-D series is a high-performance voltage output dual-axis tilt sensor with measurement range ± 90 ° and maximum accuracy of 0.008 °. It can output standard 0-5V and 0-10V analog voltages, with RS232 and RS485 options available simultaneously. Good anti-interference characteristics, suitable for long-distance signal transmission. The product is easy to install and use, with multiple output options, resistant to external electromagnetic interference, and strong ability to withstand vibration and impact, suitable for measuring angles in industrial control environments such as surveying and mapping.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T7000-D	Unit
Measuring range		±90	°
Measuring axis		X, Y	
Zero temperature drift	-40 ~ 85°	±0.001	°/℃
Sensitivity temperature coefficient	-40 ~ 85°	≤100	ppm/℃
Zero point bias	0° output	0-5V output-2.5V, 0-10V output-5V	V
Frequency response	DC response	100	Hz
Resolution	Bandwidth 5Hz	0.001	°
Accuracy	-40 ~ 85℃	0.008	°
Long term stability	-40 ~ 85℃	<0.01	°
Power-on start time		0.2	s
Response time		0.01	s
Output signal	0-5V、0-10V		
Average working hours	≥55000 hours/time		
Impact resistance	10000g, 0.5ms, 3 times/axis		
Anti-vibration	10grms、10 ~ 1000Hz		
Insulation resistance	≥100MΩ		
Waterproof level	IP67		
Cable	Standard 1.5 meter-length, wear-resistant, oil-proof, wide temperature, shielded cable 6*0.3mm2		
Weight	150g (excluding packaging box)		

PRODUCT DIMENSION



SIZE: L78*W44*H28MM

PRODUCT APPLICATION

- Railway gauge ruler and gauge leveling
- Bridge, dam monitoring
- Gimbal leveling
- Wind turbine shimmy attitude
- Robot tilt monitoring
- Satellite solar antenna positioning
- Ship navigation attitude measurement
- Medical equipment
- Angle control of various construction machinery
- Precision machine tool horizontal control

T7000-E: HIGH PRECISION ANALOG VOLTAGE OUTPUT SINGLE-AXIS TILT SENSOR

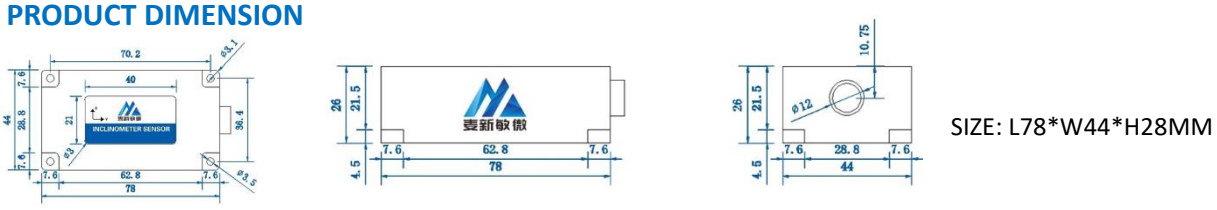
PRODUCT DESCRIPTION

The T7000-E series is a high-performance voltage output single-axis tilt sensor with measurement range ±180 °(0~±360° optional) and maximum accuracy of 0.008 °. It can output standard 0-5V and 0-10V analog voltages, with RS232 and RS485 options available simultaneously. Good anti-interference characteristics, suitable for long-distance signal transmission. The product is easy to install and use, with multiple output options, resistant to external electromagnetic interference, and strong ability to withstand vibration and impact, suitable for measuring angles in industrial control environments such as surveying and mapping.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T7000-E	Unit
Measuring range		±180	°
Measuring axis	axis	X/ Y	
Zero temperature drift	-40 ~ 85°	±0.001	°/℃
Sensitivity temperature coefficient	-40 ~ 85°	≤100	ppm/℃
Zero point bias	0° output	0-5V output-2.5V, 0-10V output-5V	V
Frequency response	DC response	100	Hz
Resolution	Bandwidth 5Hz	0.001	°
Accuracy	-40 ~ 85℃	0.008	°
Long term stability	-40 ~ 85℃	<0.01	°
Power-on start time		0.2	s
Response time		0.01	s
Output signal	0-5V、0-10V		
Average working hours	≥55000 hours/time		
Impact resistance	10000g, 0.5ms, 3 times/axis		
Anti-vibration	10grms、10 ~ 1000Hz		
Insulation resistance	≥100MΩ		
Waterproof level	IP67		
Cable	Standard 1.5 meter-length, wear-resistant, oil-proof, wide temperature, shielded cable 6*0.3mm2		
Weight	150g (excluding packaging box)		

PRODUCT DIMENSION



SIZE: L78*W44*H28MM

PRODUCT APPLICATION

- Railway gauge ruler and gauge leveling
- Bridge, dam monitoring
- Gimbal leveling
- Wind turbine shimmy attitude
- Robot tilt monitoring
- Satellite solar antenna positioning
- Ship navigation attitude measurement
- Medical equipment
- Angle control of various construction machinery
- Precision machine tool horizontal control

T7000-F: HIGH PRECISION ANALOG VOLTAGE OUTPUT DUAL-AXIS TILT SENSOR

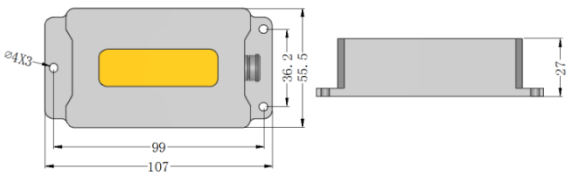
PRODUCT DESCRIPTION

T7000-F is a standard industrial high-precision voltage output dual-axis inclination sensor with standard voltage as 0~5V and 0.5~4.5V (0~10V optional). At the same time, RS232 output can be used for long-distance transmission of 2000 meters. The product makes accurate compensation and correction for temperature error and linearity error, high accuracy, good anti-vibration, anti-electromagnetic interference circuit, especially suitable for the application of underground non-excavation machinery and other harsh industrial environments.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T7000-F-5	T7000-F-10	T7000-F-15	T7000-F-30	Unit
Measuring range		±5	±10	±15	±30	°
Measuring axis	axis	X, Y	X, Y	X, Y	X, Y	
Zero temperature drift	-40 ~ 85°	±0.0007	±0.0007	±0.0007	±0.0007	°/℃
Sensitivity temperature coefficient	-40 ~ 85°	≤50	≤50	≤50	≤50	ppm/℃
Zero bias	0° output	0-5V output-2.5V, 0-10V output-5V				V
Frequency response	DC response	100	100	100	100	Hz
Resolution	Bandwidth 5Hz	0.0007	0.0007	0.0007	0.0007	°
Accuracy	-40 ~ 85℃	0.005	0.006	0.0065	0.007	°
Long term stability	-40 ~ 85℃	<0.006	<0.007	<0.007	<0.008	°
Power-on start time		0.2				s
Response time		0.01				s
Output signal	0-5V, 0-10V					
Average working hours	≥45000 hours/time					
Impact resistance	20000g, 0.5ms, 3 times/axis					
Anti-vibration	10grms、10 ~ 1000Hz					
Insulation resistance	≥100MΩ					
Waterproof level	IP67					
Cable	Standard 1.5 meter-length, wear-resistant, oil-proof, wide temperature, shielded cable 6*0.3mm2					
Weight	250g (excluding packaging box)					

PRODUCT DIMENSION



SIZE: L107*W55.5*H27MM

PRODUCT APPLICATION

- Railway gauge ruler and gauge leveling
- Bridge, dam monitoring
- Gimbal leveling
- Wind turbine shimmy attitude
- Robot tilt monitoring
- Satellite solar antenna positioning
- Ship navigation attitude measurement
- Medical equipment
- Angle control of various construction machinery
- Precision machine tool horizontal control

T7000-G: FULLY TEMP COMPENSATED ULTRA-HIGH PRECISION DIGITAL OUTPUT DUAL-AXIS TILT SENSOR SINGLE BOARD

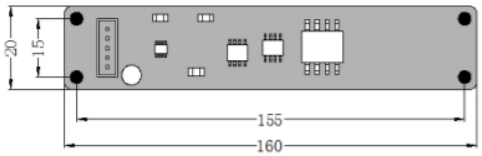
PRODUCT DESCRIPTION

The T7000-G is a fully temperature compensated ultra-high precision dual axis tilt sensor with a resolution of 0.0005°, an accuracy of 0.001°, and a temperature drift of 0.0005°/℃. The output interfaces RS232, RS485, RS422, Modbus, and TTL are optional. The product is a customized inclinometer for measuring the inclination angle of geotechnical and foundation pits. It integrates a 24-bit ARM high-end system internally, with a resolution of 4 seconds and a response frequency of up to 100Hz. Users only need to connect the T7000-G to the data transmission circuit to form a high-precision inclinometer.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T7000-G-5	T7000-G-10	T7000-G-15	T7000-G-30	Unit
Measuring range		±5	±10	±15	±30	°
Measuring axis	axis	X, Y	X, Y	X, Y	X, Y	
Zero temperature drift	-40 ~ 85°	±0.0005	±0.0005	±0.0005	±0.0005	°/℃
Sensitivity temperature coefficient	-40 ~ 85°	≤50	≤50	≤50	≤50	ppm/℃
Frequency response	DC response	100	100	100	100	Hz
Resolution		0.0005	0.0005	0.0005	0.0005	°
Accuracy	-40 ~ 85℃	0.001	0.002	0.003	0.005	°
Long term stability	-40 ~ 85℃	<0.002	<0.003	<0.004	<0.006	°
Power-on start time		0.2				s
Response time		0.01				s
Output rate	5Hz, 15Hz, 35Hz, 50Hz can be set (RS485 does not have this function)					
Output signal	RS232/RS485/RS422/TTL/ CAN/(MODBUS Optional)					
Average working hours	≥45000 hours/time					
Impact resistance	20000g, 0.5ms, 3 times/axis					
Anti-vibration	10grms、10 ~ 1000Hz					
Insulation resistance	≥100MΩ					
Waterproof level	IP66 (IP67 can be customized)					
Cable	Standard 10 cm-length, wear-resistant, oil-proof, wide temperature, shielded cable 4*0.2mm2					
Weight	20g (excluding packaging box)					

PRODUCT DIMENSION



SIZE: L160*W20*H20MM

PRODUCT APPLICATION

- Railway locomotive monitoring
- Precision laser platform equipment
- Vehicle chassis monitoring
- Based on tilt angle monitoring
- Pan tilt leveling
- Satellite solar antenna positioning
- Ship navigation attitude measurement
- Medical equipment
- Angle control of various construction machinery
- Precision machine tool horizontal control

T7000-H: FULLY TEMP COMPENSATED ULTRA-HIGH PRECISION DIGITAL OUTPUT DUAL-AXIS TILT SENSOR

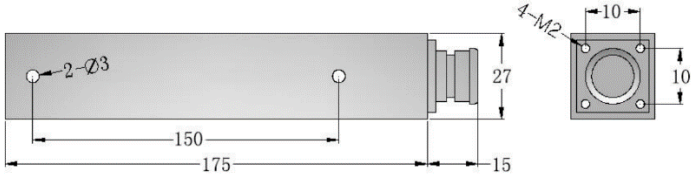
■ PRODUCT DESCRIPTION

The T7000-H is a fully temperature compensated ultra-high precision dual axis tilt sensor with a resolution of 0.0005°, an accuracy of 0.001°, and a temperature drift of 0.0005°/℃. The output interfaces RS232, RS485, RS422, Modbus, and TTL are optional. The product is equipped with professional computer software, data measurement and recording. The feature of non-contact installation has excellent system integration, convenient and convenient installation. It has the ability to resist external electromagnetic interference and withstand strong impact and vibration, and has an absolute advantage in domestic peer products.

■ PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T7000-H-5	T7000-H-10	T7000-H-15	T7000-H-30	Unit
Measuring range		±5	±10	±15	±30	°
Measuring axis	axis	X, Y	X, Y	X, Y	X, Y	
Zero temperature drift	-40 ~ 85°	±0.0005	±0.0005	±0.0005	±0.0005	°/℃
Sensitivity temperature coefficient	-40 ~ 85°	≤50	≤50	≤50	≤50	ppm/℃
Frequency response	DC response	100	100	100	100	Hz
Resolution		0.0005	0.0005	0.0005	0.0005	°
Accuracy	-40 ~ 85℃	0.001	0.002	0.003	0.005	°
Long term stability	-40 ~ 85℃	<0.002	<0.003	<0.004	<0.006	°
Power-on start time		0.2				s
Response time		0.01				s
Output rate	5Hz, 15Hz, 35Hz, 50Hz can be set (RS485 does not have this function)					
Output signal	RS232/RS485/RS422/TTL/ CAN/(MODBUS Optional)					
Average working hours	≥45000 hours/time					
Impact resistance	20000g, 0.5ms, 3 times/axis					
Anti-vibration	10grms、10 ~ 1000Hz					
Insulation resistance	≥100MΩ					
Waterproof level	IP67 (IP68 can be customized)					
Cable	Standard 1.5m-length, wear-resistant, oil-proof, wide temperature, shielded cable 4*0.2mm2					
Weight	255g (excluding packaging box)					

■ PRODUCT DIMENSION



SIZE: L175*W27*H27MM

■ PRODUCT APPLICATION

- Railway locomotive monitoring
- Precision laser platform equipment
- Vehicle chassis monitoring
- Based on tilt angle monitoring
- Pan tilt leveling
- Satellite solar antenna positioning
- Ship navigation attitude measurement
- Medical equipment
- Angle control of various construction machinery
- Precision machine tool horizontal control

T7000-I: LOW POWER FULLY TEMP COMPENSATED HIGH PRECISION WIRELESS TRANSMISSION TILT SENSOR

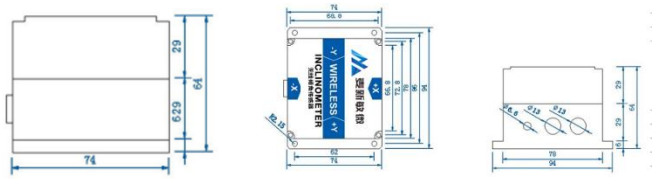
PRODUCT DESCRIPTION

T7000-I-Modbus protocol is an ultra-low power consumption, small size, and full temperature compensation high-precision wireless inclination sensor. Powered by lithium batteries, based on the Internet of Things technology Bluetooth/Zigbee (optional) wireless transmission technology, all internal circuits have been optimized and designed using various measures such as industrial-grade MCU, three-proof PCB board, imported cables, and wide-temperature metal casing. The product has great long-term stability and small zero-point drift, and can automatically enter low-power sleep mode and getting rid of dependence on the use environment.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T7000-I	Unit
Measuring range		±30	°
Measuring axis		X, Y	
Zero temperature drift	-40 ~ 85°	±0.0005	°/℃
Sensitivity temperature coefficient	-40 ~ 85°	≤150	ppm/℃
Frequency response	DC response	100	Hz
Resolution		0.0005	°
Accuracy	-40 ~ 85℃	0.001	°
Long term stability	-40 ~ 85℃	<0.0016	°
Power-on start time		0.2	s
Response time		0.05	s
Radio frequency	2460MHZ (default), 2405~2480 adjustable		
Transmission distance	1.6KM		
Built-in battery capacity	6000mAh		
Average working hours	≥55000 hours/time		
Impact resistance	2500g, 0.5ms, 3 times/axis		
Anti-vibration	10grms、10 ~ 1000Hz		
Insulation resistance	≥100MΩ		
Waterproof level	IP67		
Weight	475g (excluding packaging box)		

PRODUCT DIMENSION



SIZE: L94*W74*H64MM

PRODUCT APPLICATION

- Billboard monitoring
- Monitoring of high-speed railway foundation tunnels
- Bridge construction
- Satellite solar antenna positioning
- Ship navigation attitude measurement
- Medical equipment
- Angle control of various construction machinery
- Pan tilt leveling

T7000-J: WIRELESS DIGITAL OUTPUT DUAL-AXIS TILT SENSOR

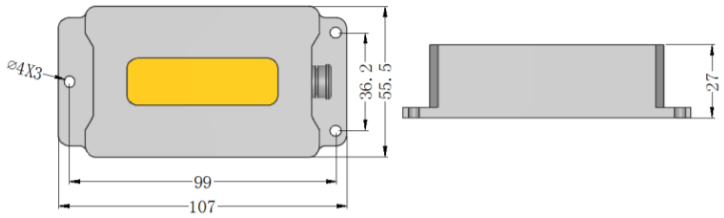
PRODUCT DESCRIPTION

T7000-J is a high-performance sensor based on Bluetooth and Zigbee (optional) wireless transmission technology. The sensor has a measuring range of ±90°, accuracy of 0.1°, resolution of 0.01° (optional). It is suitable for safety monitoring systems in industrial sites, buildings, and civil engineering. The wireless transmission distance of industrial grade equipment: Bluetooth<50 meters, Zigbee<450 meters. Wireless sensor nodes can form a huge wireless network, supporting thousands of measurement points for tilt monitoring simultaneously. Equipped with professional computer software, it can measure and record real-time data.

PRODUCT MAIN SPECIFICATION

Parameter	Conditions	T7000-J-10	T7000-J-30	T7000-J-60	T7000-J-90	Unit
Measuring range		±10	±30	±60	±90	°
Measuring axis	axis	X, Y	X, Y	X, Y	X, Y	
Zero temperature drift	-40 ~ 85°	±0.01	±0.01	±0.01	±0.01	°/℃
Sensitivity temperature coefficient	-40 ~ 85°	≤150	≤150	≤150	≤150	ppm/℃
Frequency response	DC response	100	100	100	100	Hz
Resolution	Bandwidth 5Hz	0.01	0.01	0.01	0.01	°
Accuracy	-40 ~ 85℃	0.1	0.1	0.1	0.1	°
Long term stability	-40 ~ 85℃	<0.12	<0.12	<0.12	<0.12	°
Power-on start time		0.2				s
Response time		0.05				s
Output rate	2450MHZ (default), 2450~2480 adjustable					
Output signal	Bluetooth/ Zigbee optional					
Average working hours	≥55000 hours/time					
Impact resistance	3500g, 0.5ms, 3 times/axis					
Anti-vibration	10grms、10 ~ 1000Hz					
Insulation resistance	≥100MΩ					
Waterproof level	IP67					
Weight	280g (excluding packaging box)					

PRODUCT DIMENSION



SIZE: L107*W55.5*H27MM

PRODUCT APPLICATION

- Railway locomotive monitoring
- Precision laser platform equipment
- Vehicle chassis monitoring
- Based on tilt angle monitoring
- Pan tilt leveling
- Satellite solar antenna positioning
- Ship navigation attitude measurement
- Medical equipment
- Angle control of various construction machinery
- Precision machine tool horizontal control

T7000-K: HIGH PRECISION WIRELESS TRANSMISSION INCLINATION SENSOR

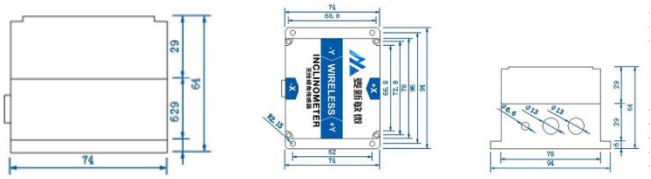
PRODUCT DESCRIPTION

T7000-K Modbus protocol is an ultra-low power consumption, small size, and high-performance wireless inclination sensor independently developed by Micro-Magic Inc. It is aimed at industry applications where users have no power supply conditions or real-time dynamic measurement of object attitude angles. Based on the Internet of Things technology Bluetooth, Zigbee (optional wireless transmission technology), all internal circuits have been optimized and designed, with good long-term stability and small zero-point drift. It can automatically enter low-power sleep mode to get rid of dependence on the use environment. Industrial-grade equipment wireless transmission distance Bluetooth <50 meters Zigbee< 160 0 meters.

PRODUCT MAIN SPECIFICATION

Parameter	Condition	T7000-K				Unit
Measuring range		±90				°
Measuring axis		X, Y axis				
Zero temperature drift	-40~85°C	±0.01				°/°C
Sensitivity temperature system number	-40~85°C	≤150				ppm/°C
Frequency response	DC response	100				Hz
Resolution		0.01				°
Accuracy	-40~85°C	0.1				°
Long term stability	-40~85°C	< 0.12				°
Power-on start time		0.2	0.2	0.2	0.2	s
Response time		0.05	0.05	0.05	0.05	s
Wireless frequency	2460MHZ (default), 2405~2480 adjustable					
Transmission distance	1.6KM					
Built-in battery capacity	5000mAh					
Average working hours	≥55000 hours/time					
Impact resistance	3500g, 0.5ms, 3rd axis					
Anti-vibration	10grms、10 ~ 1000Hz					
Insulation resistance	≥100MΩ					
Waterproof level	IP67					
Weight	450g (excluding packaging box)					

PRODUCT DIMENSION



SIZE: L94*W74*H64MM

PRODUCT APPLICATION

- Billboard monitoring
- Monitoring of high-speed railway foundation tunnels
- Bridge construction
- Satellite solar antenna positioning
- Ship navigation attitude measurement
- Medical equipment
- Angle control of various construction machinery
- Pan tilt leveling

DD-100: INDUSTRAIL GRADE DIGITAL OUTPUT ANGLE DISPLAY INSTRUMENT

PRODUCT DESCRIPTION

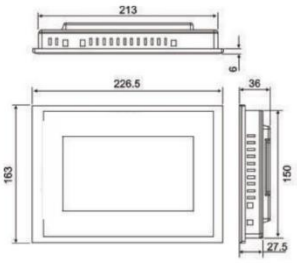
DD-100 industrial sensor angle digital display instrument, can be connected to MXMW developed all digital output sensor data, use high-performance embedded MCGS touch screen, the product is fast and accurate, can be wireless or wired transmission, remote monitoring, simple operation, and can store data in real time (optional); The product design adopts a 7-inch high brightness TFT LCD display screen, and also comes pre-installed with MCGS embedded configuration software (running version), which has industrial image display and data processing functions and can be customized by users.

PRODUCT MAIN SPECIFICATION

Parameter	DD-100
LCD screen	±180
Backlight	7” TFT
Display color	65535 True Color
Resolution	800*480
Display luminance	200cd/㎡
Tough screen	Resistance-type
Processor	Cortex-A8, 600MHZ
Memory	128M
System storage	128M
System software	MCGS embedded version
Interface	Modbus (Scalable)
Working humidity	5% ~ 90%
Shell material	Industrial plastics
Dimension	Panel size L226.5*M163mm, Cabinet size L215*M152mm
Product certification	CE, FCC
Protection level	IP65 (front panel)
Electromagnetic compatibility	Industrial Level 3
Installation	Hanging or vertical installation, or embedded in the cabinet
Weight	557g (excluding packaging box)

PRODUCT DIMENSION

SIZE: L226.5*W163*H36MM



PRODUCT APPLICATION

- Measurement of inclination platform
- Wireless base station attitude monitoring
- Based on tilt detection
- Instrument calibration and calibration
- Monitoring of bridges and dams
- Geological equipment inclination monitoring
- Angle control of various construction machinery

DD-200: 4.3 “ INDUSTRAIL GRADE DIGITAL OUTPUT ANGLE DISPLAY INSTRUMENT

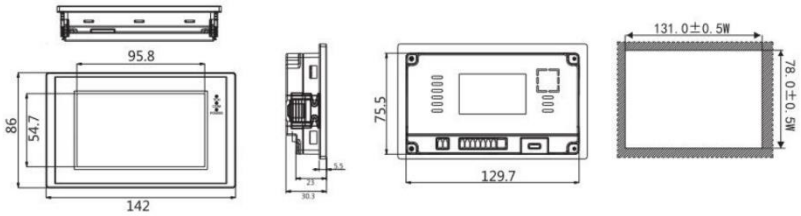
PRODUCT DESCRIPTION

DMD-200 industrial sensor angle digital display instrument, can be connected to Micro-Magic Inc develop all digital output sensor data, based on Linux kernel high-performance embedded system, the product is fast, accurate identification, can be wireless or wired transmission, remote monitoring, simple operation, and can store data in real time (optional); The product design adopts a 4.3-inch high brightness TFT LCD display screen, and is also pre-installed with embedded configuration software (user programmable). It has industrial image display and data processing functions and can accept customization of user software functions.

PRODUCT MAIN SPECIFICATION

Parameter	DD-200
LCD screen	4.3” TFT
Backlight	LED
Display color	65535 True Color
Resolution	800*480
Display luminance	200cd/㎡
Tough screen	Resistance-type
Processor	HMI, 300MHZ
Memory	64M
System storage	128M
System software	Linux embedded version
Interface	Rs232, Rs485, Rs422, CAN, Modbus (Scalable)
Working humidity	5% ~ 90%
Shell material	Industrial plastics
Dimension	Panel size L142*M86mm, Cabinet size L129.7*M75.5mm
Product certification	CE, FCC
Protection level	IP65 (front panel)
Electromagnetic compatibility	Industrial Level 3
Installation	Hanging or vertical installation, or embedded in the cabinet
Weight	205g (excluding packaging box)

PRODUCT DIMENSION



SIZE: L142*W86*H30.3MM

PRODUCT APPLICATION

- Measurement of inclination platform
- Wireless base station attitude monitoring
- Based on tilt detection
- Instrument calibration and calibration
- Monitoring of bridges and dams
- Geological equipment inclination monitoring
- Angle control of various construction machinery

U3000: DIGITAL OUTPUT HIGH PRECISION MEMS IMU SENSOR

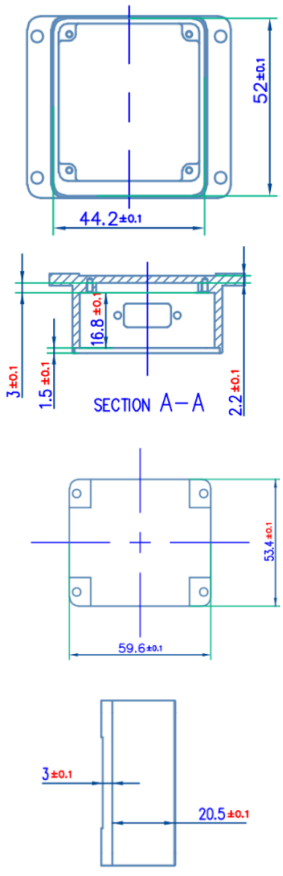
PRODUCT DESCRIPTION

The U3000 sensor is a high-precision strapdown Inertial measurement unit that can measure the angular velocity and acceleration parameters of a moving carrier. The original data is estimated by 6-state Kalman filter with appropriate gain, which is suitable for inertial measurement in motion or vibration state. This product adopts highly reliable MEMS accelerometers and gyroscopes, and ensures measurement accuracy through algorithms. At the same time, the sealing design and strict production process ensure that the product can still accurately measure the angular velocity and acceleration of the carrier and other motion parameters in harsh environments. Through nonlinear compensation, orthogonal compensation, temperature compensation, drift compensation and other compensation, the error source of the inertial chip itself can be greatly eliminated, and the product accuracy level can be improved. This product has a digital interface and can be easily integrated into the user's system. This product is all self-developed and has the characteristics of low power consumption, high reliability, high stability, shockproof, waterproof, dustproof, and electromagnetic interference resistance.

PRODUCT MAIN SPECIFICATION

Main parameter	Indication	Unit
Gyroscope		
Measurement range (can be customized)	±100	°/s
Angle random walk	0.09	°/ √ h
Linear scale factor	0.08%	FS
Zero bias stability (In-Run)	3	°/h (Allan)
Zero bias repeatability (In-Run)	3	°/h(Allan)
Accelerometer		
Measurement range (can be customized)	±10/±20/±40	g
Angle random walk	0.03	(m/s)/ √ h
Linear scale factor	0.1%	FS
Zero bias stability (In-Run)	0.05	mg
Zero bias repeatability (In-Run)	0.12	mg
Electrical indicators		
Data output interface	RS422	
Data update frequency	100	Hz
Voltage	DC 5±0.3	V
Power consumption	<0.6	W
Environment		
Operating temperature	-20～+85	℃
Storage temperature	-40～+85	℃
Anti-vibration	10	g
Impact resistance	150	g@15ms
Mechanical properties		
Waterproof level	IP67	
Dimension	59.6*59*23.5mm	
Weight	120g (excluding packaging box)	

PRODUCT DIMENSION



SIZE: L59.6*W59*H23.5MM

PRODUCT APPLICATION

- Autonomous mining or coal vehicles or machines
- Industry automation
- Robotics
- Autonomous agriculture vehicle or machines
- Communication in moving system
- Automated guided vehicle (AGV)
- Unmanned aerial vehicles (UAV)
- Unmanned surface vehicle (USV)
- Engineering dump trucks

U300-B: MINIATURE DIGITAL OUTPUT HIGH PERFORMANCE MEMS IMU SENSOR

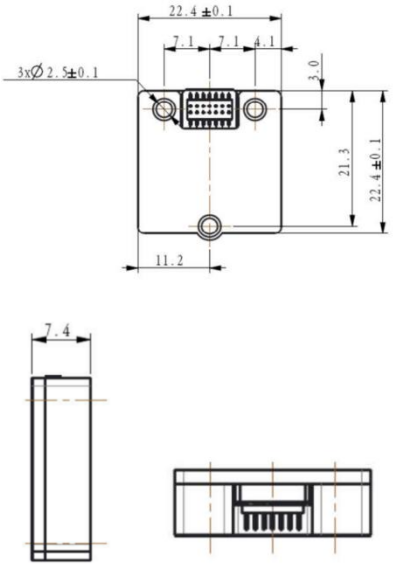
PRODUCT DESCRIPTION

The U300-B sensor, launched by MXMW Hi-Tech Company, is a sturdy and durable industrial-grade small-size inertial measurement unit (IMU) that can measure the acceleration, angular velocity and attitude angle (pitch angle, roll angle) parameters of the moving carrier. The U300-B is great replacement of ADIS16460, which uses high-reliability MEMS accelerometers and gyroscopes, and applies a 6-state extended Kalman filter algorithm with appropriate gain to ensure measurement accuracy, and greatly eliminates the problem through various compensations such as nonlinear compensation, orthogonal compensation, temperature compensation and drift compensation. It eliminates error sources and is especially suitable for inertial measurement under motion or vibration conditions to meet strict environmental requirements.

PRODUCT MAIN SPECIFICATION

Main parameter	Indication	Unit
Gyroscope		
Measurement range (can be customized)	±125/±250/±500/±1000	°/s
Angle random walk	0.12	°/ √ h
Linear scale factor	0.1	%FS
Zero bias stability (In-Run)	7	°/h (Allan)
Zero bias repeatability (In-Run)	7	°/h
Accelerometer		
Measurement range (can be customized)	±3/±6/±12/±24	g
Angle random walk	0.09	(m/s)/ √ h
Linear scale factor	0.1	%FS
Zero bias stability (In-Run)	0.08	mg
Zero bias repeatability (In-Run)	0.18	mg
Electrical indicators		
Data output interface	SPI/UART	
Data update frequency	200	Hz
Voltage	3.3	V
Power consumption	<0.2	W
Environment		
Operating temperature	-40～+85	℃
Storage temperature	-40～+85	℃
Anti-vibration	10	g
Impact resistance	150	g@15ms
Mechanical properties		
Waterproof level	IP67	
Dimension	22.4*22.4*7.4mm	
Weight	7g (excluding packaging box)	

PRODUCT DIMENSION



SIZE: L22.4*W22.4*H7.4MM

PRODUCT APPLICATION

- Autonomous mining or coal vehicles or machines
- Industry automation
- Robotics
- Autonomous agriculture vehicle or machines
- Communication in moving system
- Automated guided vehicle (AGV)
- Unmanned aerial vehicles (UAV)
- Unmanned surface vehicle (USV)
- Engineering dump trucks

U3500: HIGH PERFORMANCE MEMS IMU SENSOR

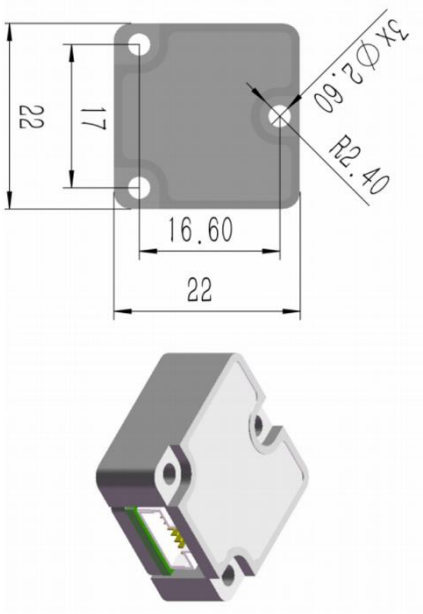
PRODUCT DESCRIPTION

U3500 series is an IMU/VRU/AHRS sensor composed of high-performance MEMS-IMU, magnetometer, and enhanced single axis gyroscope. It is equipped with self-developed adaptive extended Kalman filter, IMU noise dynamic analysis algorithm, and carrier motion state analysis algorithm, which can meet the accuracy of attitude angle under high dynamic conditions and reduce heading angle drift. Every sensor undergoes fine compensation including temperature, zero bias, scaling factor, and cross axis before leaving the factory.

PRODUCT MAIN SPECIFICATION

Parameter	U3500	Unit
Attitude Precision		
Pitch (±90°)	0.1(normal), 0.2(max)	°
Roll (±180°)	0.1(normal), 0.2(max)	°
Yaw (±180°) Static drift 2hrs (6DOF) ① Dynamic drift (6DOF) ② Magnetic assist (AHRS) ③ Rotation error (6DOF) ④	0.1(normal), 0.2(max) 5 2(normal), 3(max) <1(normal), <1.3(max)	° ° ° °
Resolution	0.01	°
3-Axis Gyroscope		
Measurement range	±400	°/s
Full temperature zero bias stability (10s, 1σ)	Z axis: 0.015~0.035 Y axis: 0.05~0.18 X axis: 0.03~0.08	°/s
Scale factor nonlinearity	<40	ppm
Zero bias instability (Allan)	5.1	°/h
Zero bias instability (10s, 1σ)	3.06	°/h
Zero bias repeatability (Allan)	0.09	°/s
Zero bias repeatability (10s, 1σ)	0.054	°/s
Angle random walk (Allan)	0.6	°/ √ h
Angle random walk (10s, 1σ)	0.36	°/ √ h
3dB Bandwidth	116	Hz
Sampling	1000	Hz
Resolution	16bit	
Accelerometer sensitivity (All 3 axis)	0.1	°/s/g
3-Axis Accelerometer		
Measurement range	±12/±16/±24 (can be customized)	g
Full temperature zero bias stability (10s, 1σ)@ -40-85℃	1	mg
Zero bias stability (10s, 1σ)?	10	mg
Zero bias instability (Allan)	60	μg
Zero bias repeatability (Allan)	2.52	mg
Angle random walk (Allan)	0.08	m/s/ √ h
Scale factor nonlinearity	0.5	%FS
3dB Bandwidth	145	Hz
Sampling	1600	Hz
Resolution	16bit	

PRODUCT DIMENSION



SIZE: L22*W22*H10MM

PRODUCT APPLICATION

- Autonomous mining or coal vehicles or machines
- Industry automation
- Robotics
- Autonomous agriculture vehicle or machines
- Communication in moving system
- Automated guided vehicle (AGV)
- Unmanned aerial vehicles (UAV)
- Unmanned surface vehicle (USV)
- Engineering dump trucks

U5000: HIGH PRECISION MEMS IMU SENSOR

PRODUCT DESCRIPTION

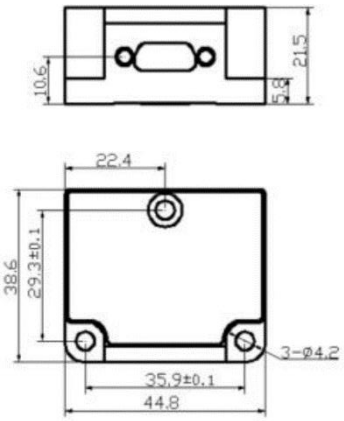
U5000-IMU sensor is a highly reliable and cost-effective six axis MEMS inertial heading and attitude system, which can be widely used in navigation, control, and measurement fields represented by vehicles, ships, and drones. High performance MEMS gyroscopes and MEMS accelerometers are integrated into the independent structure, and the gyroscopes and accelerometers selected in the system represent the leading level of MEMS process inertial devices.

The product can replace STIM-300 IMU, and its core indicators such as full temperature drift, scale factor error, and vibration performance are 3-5 times higher than STIM-300 sensor.

PRODUCT MAIN SPECIFICATION

Parameters		Unit	U5000
Gyroscope	Range	°/s	±400
	Zero bias stability (Allan Curve, 1σ)	°/h	≤0.5
	Zero bias stability (10s smoothing)	°/h	≤3
	Zero bias stability (full temperature)	°/h	≤15
	Zero bias repeatability	°/h	≤3
	Scale factor nonlinearity	ppm	≤100
	Bandwidth	Hz	100
Accelerometer	Range	g	±30
	Zero bias stability (10s smoothing)	μg	≤100
	Zero bias stability (full temperature)	mg	≤2
	Zero bias repeatability	μg	≤100
	Scale factor nonlinearity	ppm	≤1000
	Bandwidth	Hz	100
Interface	Starting time	s	2
	Output frequency	Hz	200 (Customizable, up to 1000)
	Communication interface	—	RS232 / RS422
Mechanical properties	Size	mm	44.8 × 38.6 × 21.5
	Weight	g	≤60
Electrical environment	Working temperature	℃	-40 ~ +80
	Storage temperature	℃	-55 ~ +85
	Working voltage	V	5 ±0.2
	Power consumption	W	2
	Vibration	grms	7.72
	Shock	g	1000, 1ms (on power)
	MTBF	h	200,000 hrs

PRODUCT DIMENSION



PRODUCT FEATURES

- Resistance to harsh mechanical environments
- High performance replacement with STIM300
- Equipped with software online upgrade function
- Full temperature calibration compensation from 40℃-80℃
- 1KHz high-speed sampling

PRODUCT APPLICATION

- UAV/Drone attitude reference/trajectory control
- Drilling and extraction system
- Radar/infrared antenna stabilization platform
- Missile Flight Control
- Vehicle and ship attitude measurement
- Vehicle positioning and orientation

U7000: HIGH PRECISION MEMS IMU SENSOR

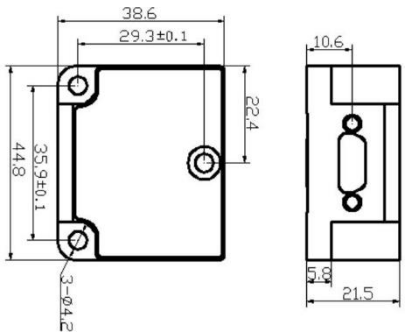
PRODUCT DESCRIPTION

U7000 series high-precision MEMS-IMU 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 stability. This series of MEMS inertial measurement units can be configured with different software and hardware according to user needs. For some inertial navigation applications, gyroscopes can be replaced with high-precision or high dynamic MEMS gyroscopes to meet the needs of different users to the greatest extent possible

PRODUCT MAIN SPECIFICATION

Parameter	U7000	Unit
Gyroscope		
Measurement range	±400	°/s
Full temperature zero bias stability (10s, 1σ)	⩽10	°/h
Zero bias stability (10s, 1σ)	⩽3	°/h
Zero bias stability (Allan)	⩽0.1	°/h
Zero bias repeatability (1σ)	⩽1	°/h
Angle random walk	⩽0.05	°/ √ h
Scale factor nonlinearity	⩽100	ppm
Bandwidth (adjustable)	100	Hz
Accelerometer		
Measurement range	±30	g
Full temperature zero bias stability (10s, 1σ)	⩽1	mg
Zero bias stability (10s, 1σ)	⩽100	μg
Zero bias stability (Allan)	⩽15	μg
Zero bias repeatability (1σ)	⩽100	μg
Angle random walk	⩽10	mm/s/ √ h
Scale factor nonlinearity	⩽500	ppm
Bandwidth (adjustable)	100	Hz
Electrical/Mechanical Interface		
Power supply	5 ~ 12	V
Power consumption	1.5	W
Starting time	2	s
Communication interface	RS422/RS232	
Data update rate	200 (configurable, up to 1kHz)	Hz
Dimension	44.8 x 38.6 x 21.5	mm
Weight	55±5	g
Environment		
Working temperature	-40 ~ +80	℃
Storage temperature	-55 ~ +85	℃
Vibration	6.06	g, Rms
Shock	1000g/1ms (on power)	g

PRODUCT DIMENSION



PRODUCT FEATURES

- Resistance to harsh mechanical environments
- High performance replacement with STIM300
- Equipped with software online upgrade function
- Full temperature calibration compensation from 40℃-80℃
- 1KHz high-speed sampling
- Can replace medium and low precision fiber optic inertial navigation

PRODUCT APPLICATION

- UAV/Drone attitude reference/trajectory control
- Guidance and control system
- Radar/infrared antenna stabilization platform
- Inertial/Satellite Integrated Navigation System
- Missile borne navigation and control
- Stable guidance head

U-F3X80: FIBER OPTIC GYROSCOPE IMU

PRODUCT DESCRIPTION

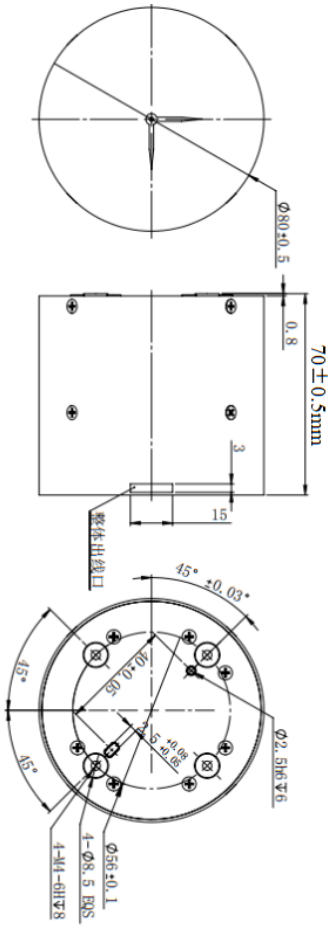
Fiber optical IMU (inertial measurement unit) is a small missile, guided bomb navigation guidance, attitude measurement and control system development of inertial products, by three solid state fiber gyroscope, three quartz accelerometer and data packing board, measuring the carrier movement angular velocity and line acceleration, for the carrier attitude and navigation control, measurement results through the RS422 serial port output.

PRODUCT MAIN SPECIFICATION

Fiber Optic Gyroscope	U-F3X80-H	U-F3X80-M	Unit
Zero bias stability (Under room temperature)	≤0.30	≤0.50	°/hr
Zero bias repeatability (Under certain temperature, step by step, day by day)	≤0.30	≤0.50	° /hr
The Scale factor of Repeatability (Under room temperature)	≤30	≤50	ppm
The Scale factor of asymmetry (Under certain temperature)	≤20	≤30	Ppm
The Scale factor of Nonlinearity (Under certain temperature)	≤20	≤30	ppm)
Threshold	≤0.50		° /hr
Dynamic range of angular velocity	±500		°/s
Bandwidth	≥100		Hz
Dimension	80**80*70		mm
Weight (including accelerometer)	780±20		g
Working temperature	-40～+65		℃

Quartz Accelerometer	Specification	Unit
Range	≥±40	g
The Scale factor temperature coefficient	≤100	ppm/℃
The Scale factor monthly stability	≤100	ppm
The Bias value	≤±7	mg
The Bias temperature coefficient	≤100	μg / ℃
The Partial monthly stability	≤100	μg
The Second-order nonlinear coefficient	≤20	μg /g2
Mounting angle	≤200	"
Appearance	No scratches, cracks, or rust	
Insulation	≥20MΩ, (100V), 25℃±5℃、humidity≤80%	

PRODUCT DIMENSION



PRODUCT APPLICATION

- Stabilization platform equipment
- Marine survey
- Ship navigation attitude measurement
- North finding instrument
- Crane bin and guide head
- Petroleum geological logging
- Underwater navigation

U-F3X90: FIBER OPTIC GYROSCOPE IMU

PRODUCT DESCRIPTION

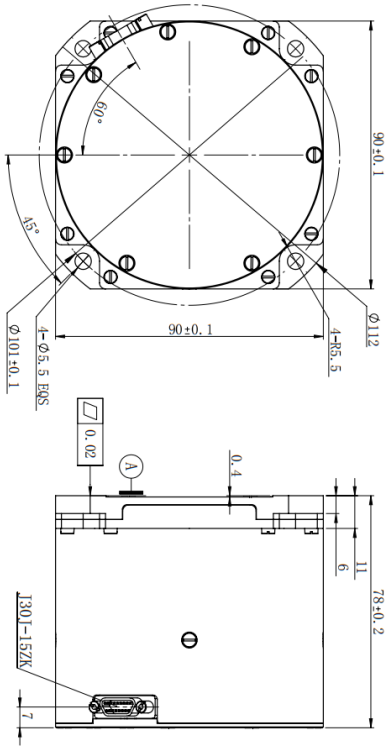
Fiber optic gyroscope, as a new type of all solid state gyroscope, has the advantages of fast start-up, wide measurement range, and high reliability. Among them, the U-F3X90 fiber optic gyroscope IMU (inertial measurement unit) is designed for the needs of medium and low precision application backgrounds, using three-axis shared technology, with low cost and stable performance; Structurally, it adopts integrated packaging of light path and circuit, with a simple structure and convenient installation. It can be applied to navigation guidance, attitude measurement and control systems of small missiles and guided bombs.

PRODUCT MAIN SPECIFICATION

Fiber Optic Gyroscope	U-F3X90-H	U-F3X90-M	Unit
Zero bias stability (Under room temperature)	≤0.10	≤0.20	°/hr
Zero bias repeatability (Under certain temperature, step by step, day by day)	≤0.10	≤0.20	° /hr
The Scale factor of Repeatability (Under room temperature)	≤30	≤50	ppm
The Scale factor of asymmetry (Under certain temperature)	≤30	≤50	Ppm
The Scale factor of Nonlinearity (Under certain temperature)	≤30	≤50	ppm)
Threshold	≤0.20		° /hr
Dynamic range of angular velocity	±500		°/s
Bandwidth	≥200		Hz
Dimension	90**90*78		mm
Weight (including accelerometer)	850±50		g
Working temperature	-40～+65		℃

Quartz Accelerometer	Specification	Unit
Range	≥±30	g
The Scale factor temperature coefficient	≤100	ppm/℃
The Scale factor monthly stability	≤100	ppm
The Bias value	≤±7	mg
The Bias temperature coefficient	≤100	μg / ℃
The Partial monthly stability	≤100	μg
The Second-order nonlinear coefficient	≤100	μg /g2
Mounting angle	≤200	"
Appearance	No scratches, cracks, or rust	

PRODUCT DIMENSION



PRODUCT APPLICATION

- Stabilization platform equipment
- Marine survey
- Ship navigation attitude measurement
- North finding instrument
- Crane bin and guide head
- Petroleum geological logging
- Underwater navigation

U-F3X100: FIBER OPTIC GYROSCOPE IMU

PRODUCT DESCRIPTION

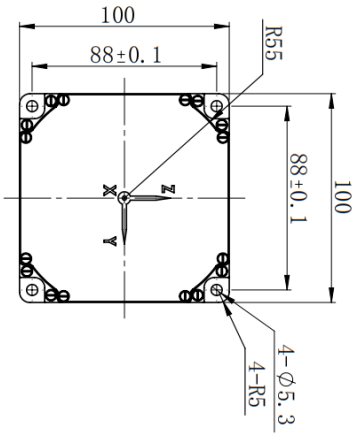
Fiber optic gyroscope, as a new type of all solid state gyroscope, has the advantages of fast start-up, wide measurement range, and high reliability. Among them, the U-F3X100 fiber optic gyroscope IMU (inertial measurement unit) is designed for the needs of medium and low precision application backgrounds, using three-axis shared technology, with low cost and stable performance; Structurally, it adopts integrated packaging of light path and circuit, with a simple structure and convenient installation. It can be applied to navigation guidance, attitude measurement and control systems of small missiles and guided bombs.

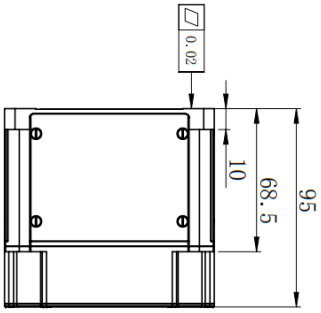
PRODUCT MAIN SPECIFICATION

Fiber Optic Gyroscope	U-F3X100-H	U-F3X100-M	Unit
Zero bias stability (Under room temperature)	≤0.05	≤0.10	°/hr
Zero bias repeatability (Under certain temperature, step by step, day by day)	≤0.05	≤0.10	° /hr
The Scale factor of repeatability (Under room temperature)	≤20	≤20	ppm
The Scale factor of asymmetry (Under certain temperature)	≤20	≤20	ppm
The Scale factor of nonlinearity (Under certain temperature)	≤30	≤30	ppm)
Threshold	≤0.10		° /hr
Dynamic range of angular velocity	±500		°/s
Bandwidth	≥200		Hz
Dimension	100**100*95		mm
Weight (including accelerometer)	1100±50		g
Working temperature	-40～+65		℃

Quartz Accelerometer	Specification	Unit
Range	≥±30	g
The Scale factor temperature coefficient	≤60	ppm/℃
The Scale factor monthly stability	≤60	ppm
The Bias value	≤±7	mg
The Bias temperature coefficient	≤60	μg / ℃
The Partial monthly stability	≤60	μg
The Second-order nonlinear coefficient	≤60	μg /g2
Mounting angle	≤200	"
Appearance	No scratches, cracks, or rust	

PRODUCT DIMENSION





PRODUCT APPLICATION

- Stabilization platform equipment
- Marine survey
- Ship navigation attitude measurement
- North finding instrument
- Crane bin and guide head
- Petroleum geological logging
- Underwater navigation

UF100A: MIDDLE REPCISION IMU BASED ON FOG AND QUARTZ ACCL

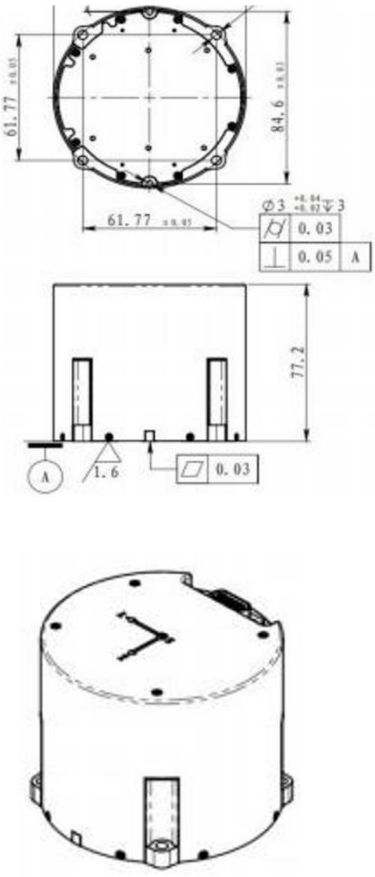
PRODUCT DESCRIPTION

UF100A fiber optic inertial group is a middle precision and small size IMU as Figure 1 shown. It is used to detect the angular velocity and linear acceleration of the carrier's motion, providing information for the carrier's attitude and navigation control. It has the advantages of small size, light weight, no moving parts, high reliability, and long service life. It can be widely used in aviation, aerospace, ships, weapons, coal mine measurement, automotive electronics and other fields.

PRODUCT MAIN SPECIFICATION

	Parameters	Unit	Requirement
Gyroscope			
1	Zero bias stability (1σ)	°/h	≤0.2
2	Zero bias repeatability (1σ)	°/h	≤0.2
3	Random walk coefficient	°/$h^{1/2}$	≤0.04
4	Scale factor nonlinearity	ppm	≤100
5	Scale factor asymmetry	ppm	≤100
6	Scale factor repeatability	ppm	≤50
7	Measuring range	°/s	-300~+300
8	Bandwidth	Hz	≥300
9	Resolving power	°/h	≤0.1
10	Threshold	°/h	≤0.1
Accelerometer			
11	Zero bias stability	g	≤5*10^{-4}
12	Bandwidth	Hz	≥300
13	Measuring range	g	-10 ~ +10
Other parameters			
14	Weight	g	820±50
15	Working temperature	℃	-55 ~ +70
16	Storage temperature	℃	-55 ~ +70

PRODUCT DIMENSION



PRODUCT APPLICATION

- Stabilization platform equipment
- Coal mine measurement
- Ship navigation attitude measurement
- North finding instrument
- Crane bin and guide head
- Petroleum geological logging
- Underwater navigation

UF300: MIDDLE AND HIGH REPCISION IMU BASED ON FOG

PRODUCT DESCRIPTION

UF300 series is the most cost-effective fiber optic inertial measurement unit with medium to high precision, which can be used for navigation, control, and dynamic measurement. The system adopts a highly reliable three-axis integrated closed-loop fiber optic gyroscope, with comprehensive performance exceeding the imported KVH1750. It can be post processed and replace the imported POS MV. The gyroscope has a high zero bias repeatability of one order of magnitude. You can choose to support one or more firmware such as IE post-processing, external GPS, odometer, multibeam, Doppler depth sounder (DVL), etc.

PRODUCT MAIN SPECIFICATION

Parameters		UF300-A	UF300-B	UF300-C
Gyroscope				
Range	°/s	±1000	±1000	±1000
Zero bias stability	°/h,10s	≤0.05	≤0.08	≤0.1
Zero bias repeatability	°/h	≤0.05	≤0.08	≤0.1
Scale factor nonlinearity	ppm	≤50	≤60	≤60
Scale factor asymmetry	ppm	≤50	≤60	≤60
Scale factor repeatability	ppm	≤50	≤60	≤60
Angle random walk	°/√h	≤0.005	≤0.008	≤0.01
Accelerometer				
Range	g	±10	±10	±10
Zero bias stability	μg	≤50	≤50	≤70
Zero bias repeatability	μg	≤50	≤50	≤70
Scale factor nonlinearity	ppm	<100	<200	<300
Electrical/mechanical interface				
Power Supply	V	+9~+36		
Power	W	＜18		
Start time	s	3		
Communication interface	/	RS422		
Update rate	Hz	100~4000		
Size	mm	145×122×125		
Weight	g	≤3000		
Environment				
Working temperature	℃	-40~+60		
Storage temperature	℃	-55~+70		
Vibration	grms	6.06		
Shocking	g	30/11ms		

PRODUCT APPLICATION

- Stabilization platform equipment
- Coal mine measurement
- Ship navigation attitude measurement
- North finding instrument
- Crane bin and guide head
- Petroleum geological logging
- Underwater navigation

UF500/UF600: HIGH PERFORMANCE IMU BASED ON FOG

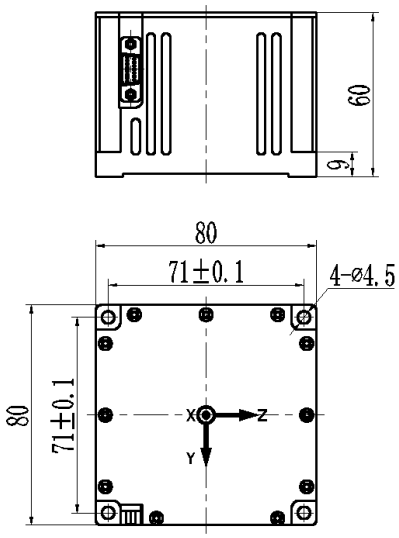
PRODUCT DESCRIPTION

UF500 and UF600 are high performance and cost-effective fiber optic gyroscopes based IMU combined with either with quartz flexible accelerometer or MEMS accelerometer, which can be used for navigation, control, and dynamic measurement. It has the advantages of small size, light weight, no moving parts, high reliability, and long service life. It can be widely used in aviation, aerospace, ships, weapons, coal mine measurement, automotive electronics and other fields.

PRODUCT MAIN SPECIFICATION

Parameters		UF500	UF600
Gyroscope			
Range	°/s	±360	±360
Zero bias stability	°/h,10s	≤0.1	≤0.1
Zero bias repeatability	°/h	≤0.8	≤0.8
Scale factor nonlinearity	ppm	≤100	≤100
Scale factor asymmetry	ppm	≤100	≤100
Scale factor repeatability	ppm	≤100	≤100
Angle random walk	°/√h	≤0.08	≤0.08
Accelerometer		Quartz Accl	MEMS Accl
Range	g	±50	±50
Zero bias stability	mg	≤0.02	≤0.05
Zero bias repeatability	mg	≤0.1	≤0.3
Scale factor nonlinearity	ppm	<100	<100
Scale factor repeatability	ppm	≤100	≤100
Angle random walk	m/sec/√h	≤0.007	≤0.01
Others			
Voltage Supply	V	+12~+36	
Power	W	＜15	
Communication interface	/	RS422	
Update rate	Hz	200	
Weight	g	≤1000	
Working temperature	℃	-40~+70	
Storage temperature	℃	-55~+85	
Vibration	grms	6.06	
Shocking	g	15/11ms, 1/2sine	

PRODUCT DIMENSION



SIZE: 80*80*60MM

PRODUCT APPLICATION

- Stabilization platform equipment
- Coal mine measurement
- Ship navigation attitude measurement
- North finding instrument
- Crane bin and guide head
- Petroleum geological logging
- Underwater navigation

V4000: DIGITAL OUTPUT HIGH PRECISION MEMS AHRS ATTITUDE SENSOR

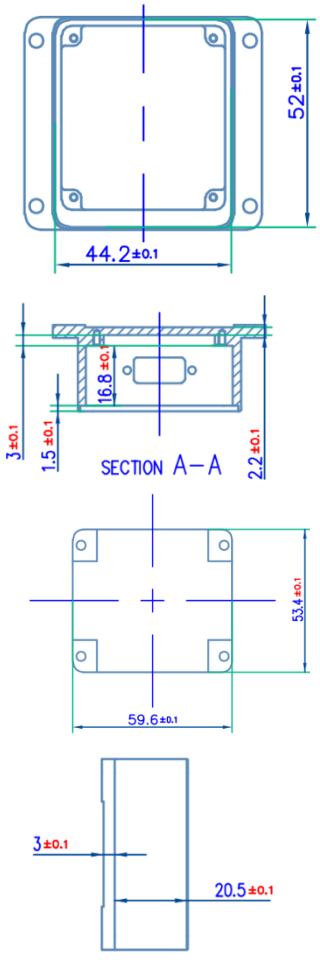
PRODUCT DESCRIPTION

The V4000 sensor is a high-precision strapdown vertical reference unit that can measure the angular velocity and acceleration parameters of a moving carrier and providing non reference standard heading angles in various harsh environments and continuously output gyroscope and accelerometer information. The original data is estimated by 6-state Kalman filter with appropriate gain, which is suitable for inertial measurement in motion or vibration state. This product adopts highly reliable MEMS accelerometers and gyroscopes, and ensures measurement accuracy through algorithms.

PRODUCT MAIN SPECIFICATION

Main parameter	Indication	Unit
Attitude angles Pitch/Roll angle	 0.2	 ° RMS
Attitude ranges Roll Pitch	 ±180 ±90	 ° RMS ° RMS
Gyroscope		
Measurement range (can be customized)	±100	°/s
Angle random walk	0.09	°/√h
Linear scale factor	0.08	%FS
Zero bias stability (In-Run)	3	°/h (Allan)
Zero bias repeatability (In-Run)	3	°/h(Allan)
Accelerometer		
Measurement range (can be customized)	±10/±20/±40	g
Angle random walk	0.03	(m/s)/√h
Linear scale factor	0.1	%FS
Zero bias stability (In-Run)	0.03	mg
Zero bias repeatability (In-Run)	0.08	mg
Electrical indicators		
Data output interface	RS422	
Data update frequency	100	Hz
Voltage	DC 5±0.3	V
Power consumption	<0.6	W
Environment		
Operating temperature	-20～+85	℃
Storage temperature	-40～+85	℃
Anti-vibration	10	g
Impact resistance	150	g@15ms
Mechanical properties		
Waterproof level	IP67	
Dimension	59.6*59*23.5mm	
Weight	120g (excluding packaging box)	

PRODUCT DIMENSION



SIZE: L59.6*W59*H23.5MM

PRODUCT APPLICATION

- Autonomous mining or coal vehicles or machines
- Industry automation
- Robotics
- Autonomous agriculture vehicle or machines
- Communication in moving system
- Automated guided vehicle (AGV)
- Unmanned aerial vehicles (UAV)
- Unmanned surface vehicle (USV)
- Engineering dump trucks

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