HEFEI BLUES ELECTRIC TECHNOLOGY CO.,LTD

Supporting Facilities and Product Introduction in the Aerospace Field

2025

BLUES IS BASED ON A SIMPLE PATTERN EASY TO PLAY BUT HARD TO FEEL

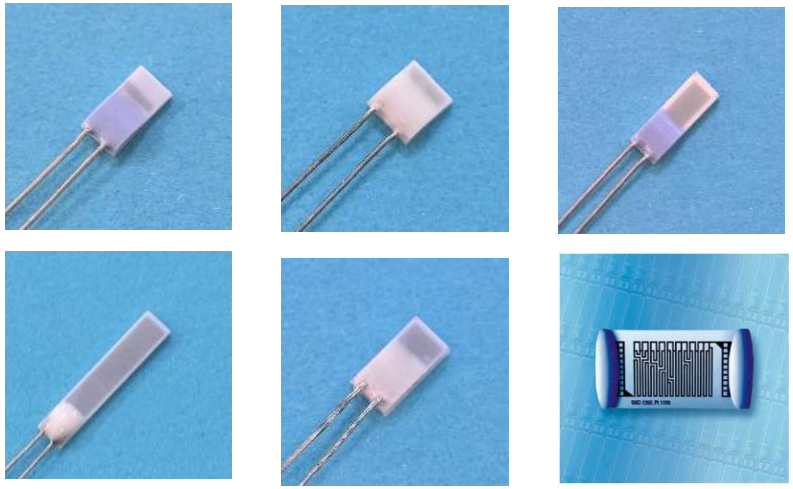
Typical product matching in the field of aerospace

NO	PRODUCT MODEL	APPLICATION FIELD
1	BEAS series pressure and differential pressure sensors	servo
2	BEAM1030 pressure sensor	TT&C system
3	BEAE2001 series pressure sensor	engine system
4	BEAP1007 Vacuum gauge	pipeline
5	BEAT4001 temperature sensor	telemetering system
6	BEAT4002/BEAT4003 temperature sensor	telemetering system
7	BEAT4004 temperature sensor /BEAT4004A temperature sensor	telemetering system
8	BEAE2002 series total temperature sensor	engine system
9	BEAT-4005/4006/4007 single axis/two axis/triple axis vibration sensor BEAT-4005C/4006C/4007C single axis/two axis/triple axis vibration transformer	telemetering system
10	BEAT4008 Three axis overload sensor	telemetering system
11	BEAT4009 shock sensor / BEAT4009A shock transformer	telemetering system
12	BEAT4010 series heat flow sensor /BEAT4010A series heat flow transformer	telemetering system
13	BEAT4011 noise sensor /BEAT4011A noise transformer	telemetering system
14	BEAP1006 Liquid flow sensor /BEAP1006A liquid flow converter	pipeline
15	BEAD3061 displacement sensor	split system
16	BEAT4012 series temperature and pressure composite sensor	telemetering system

BEA7001 series platinum film thermistor

Product overview

The BEA7001 series platinum film thermistors (or platinum resistors) are independently developed by Hefei Blues Electric, featuring complete independent intellectual property rights and 100% domestic production. These temperature sensing elements use thin-film preparation technology to deposit platinum on an AL2O3 ceramic substrate. The high-precision temperature sensing resistive film layer is formed through photolithography, ion beam etching, and laser resistance adjustment processes. The final product is manufactured through surface encapsulation, lead welding, and solder point encapsulation processes.



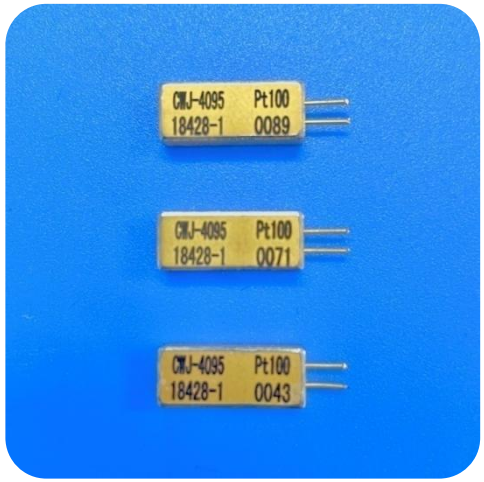
Key specifications

Main parameter	performance index
Product model	BEA7001 series
Measuring range	-196℃～ 150℃、-80℃～ 600℃ -70℃～ 500℃、-70~850℃ -60℃～ 400℃、-50℃~150℃
Product size	1.5×3×1.1（ mm）、2×2.3×1.3（ mm） 2×4×1.3（ mm）、2×5×1.3（ mm） 2×10×1.3（ mm）、 SMD1206
Nominal candle-power	Pt100、 Pt200、 Pt500、 Pt1000
Temperature coefficient	（3851±12）ppm/℃
Tolerance level	Grade A, Grade B
Insulation resistance	≥100MΩ
Weight	＜ 0.5g

BEA7002 platinum resistance temperature sensor

Product overview

The BEA7002 platinum resistance temperature sensor, designed and customized for the Aerospace 811 Institute, features a gold-plated metal casing and leads made of gold-coated alloy. It can be directly attached to the surface of the object being measured or soldered into a slot for use in various temperature measurement scenarios. This sensor is known for its compact size and excellent stability.



Key specifications

Main parameter	performance index
Nominal candle-power	100Ω、200Ω、1000Ω
Size	6×15×4（ mm）
Temperature range	- 60℃～ 18 0℃
Temperature coefficient	（3850±12）ppm/℃
Franchise	B level
Insulation resistance	＞100MΩ（ 100VDC）
Weight	≤ 10g

BEA7003 platinum resistance temperature sensor assembly

Product overview

The BEA7003 platinum resistance temperature sensor assembly, designed and customized for the Aerospace 11 Institute, is an armored wall-mounted platinum resistance sensor. The temperature sensing element converts temperature signals into electrical signals, and the sensor features a wide temperature measurement range, high accuracy, and excellent linearity. The sensor uses titanium alloy TC4 as the material for the temperature sensing probe and operates on a three-wire temperature measurement principle, with the resistance signal output through a high-temperature cable.

Key specifications

Main parameter	performance index
Nominal candle-power	100Ω
Output mode	three-wire system
Temperature range	- 4 0℃～ 50 0℃
Franchise	B level
Insulation resistance	＞50MΩ（ 100VDC）；
Response time	＜ 2.5s
Weight	≤ 50g

BEA7004 integrated oil-filled pressure sensor

Product overview

The BEA7004 integrated oil-filled pressure sensor, designed and customized for Aerospace Factory 307, features a structure where the pressure-sensitive chip and ASIC circuit chip are bonded and sealed within a 316L stainless steel tube shell. The 316L stainless steel diaphragm is isolated from the measured medium, and the tube shell is filled with silicone oil to transmit pressure. When pressure acts on the diaphragm, the pressure-sensitive chip detects the pressure through the silicone oil, generating an electrical signal.

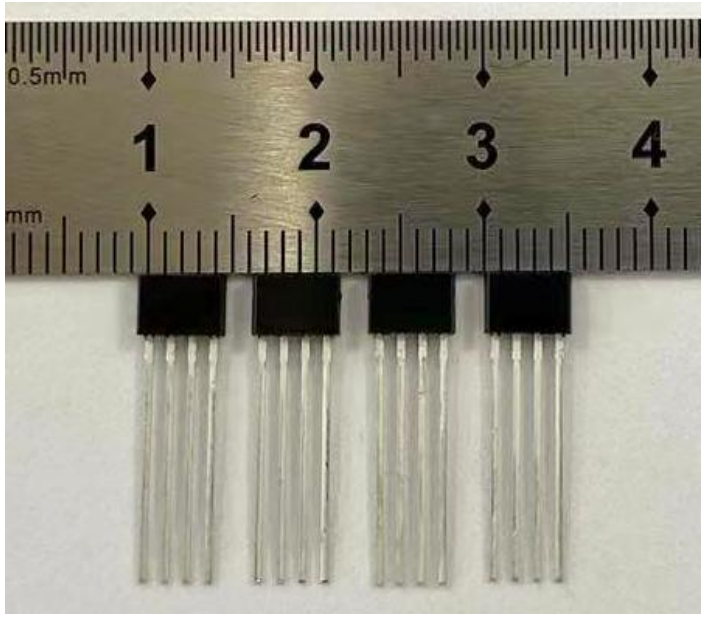
Key specifications

Main parameter	performance index
Measurement range	0.7MPa, 20MPa, etc
Excite the current	5V
Working temperature	(-40℃~125℃)
Combined accuracy	Soil 1.5%FS (full temperature zone)
Output voltage	0.5V~4.5V
Overload pressure	120%FS

BEA7005 series Hall sensor

Product overview

The BEA7005 series Hall sensors are designed for measuring current and magnetic fields. They feature high linearity, minimal temperature drift, heat resistance, and robust durability. Based on the Hall effect principle, these sensors are made from gallium arsenide materials using semiconductor manufacturing and micro electro mechanical processing technologies. When exposed to an external magnetic field, they output a voltage proportional to the applied magnetic field, offering advantages such as compact size and strong interference resistance.



Key specifications

Measurement range	±100mT, ±500mT
Working temperature	(-40℃~125℃)
Full scale output	MDL3A≧130mV MDL3B≧100mV
Supply electricity	5V DC
Input resistance	400Ω≦MDL3A≦600Ω 200Ω≦MDL3B≦400Ω
Degree of linearity	≦0.5%
Weight	≤ 0.2g
Zero output temperature drift coefficient	MDL3A≦0.5%℃ MDL3B≦0.02%℃
Pin 1 name VCC+	Power is positive
Pin 2 name Vout+	Output is positive
Pin 3 name VCC-	Power supply is negative
Pin 4 name Vout-	Output negative

BEAS series pressure and differential pressure sensor

Product overview

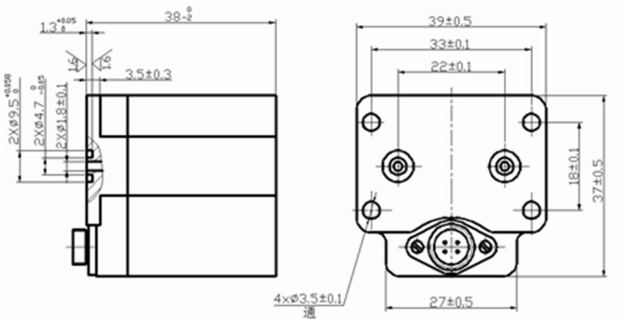
The product is designed for the space servo system. The sensor uses the piezoresistive working principle to realize the measurement of pressure and pressure difference signals. This series includes a series of products with multiple pressure and pressure difference range measurements. This series is mainly used for servo mechanism control and telemetry pressure signals.

Product features

good long-term stability, good temperature stability, high impact resistance.

Application field

measurement of pressure and differential pressure signal in space servo system.



Key specifications

Range	(±2~±40) MPa (customizable)
Nolinear	≤±0.25%FS
Accuracy	≤±0.25%FS
Thermal zero/sensitivity drift	≤±0.025%FS/℃
lash	8500g
Working temperature	（-40~+125）℃
Signal output	（0±0.03）V~（5±0.03） V

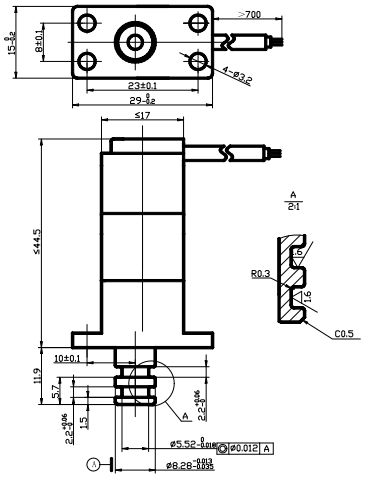
BEAS series pressure sensor

Product overview

BEAS series pressure sensors are based on the principle of piezoresistive effect. The core components of BEAS series pressure sensors are made by semiconductor process and micro-mechanical processing technology. The pressure sensitive core converts the pressure into voltage signal, and then converts it into the signal that meets the requirements through conditioning circuit.

Product features

small size, good stability, high precision, small temperature drift.
Application field: can be used for non-corrosive gas or liquid environment measurement.



Key specifications

Measuring range	0MPa～ 5MPa、0MPa～ 20MPa、0MPa～ 40MPa
Working temperature	-40℃～+125℃
Signal output	（0.5±0.05） V～（4.5±0.05） V
Accuracy	-0.25%FS to +0.25%FS range
Thermal zero point/thermal sensitivity drift	-0.02%FS/℃ to +0.02%FS/℃ range

BEAM1030 pressure sensor

Product overview

Based on the principle of piezoresistive effect, the pressure sensitive core is made by using semiconductor plane process and micro-machining technology. The pressure sensitive core converts the pressure signal into voltage signal, and adjusts it into the signal that meets the task requirements through circuit.

Product features

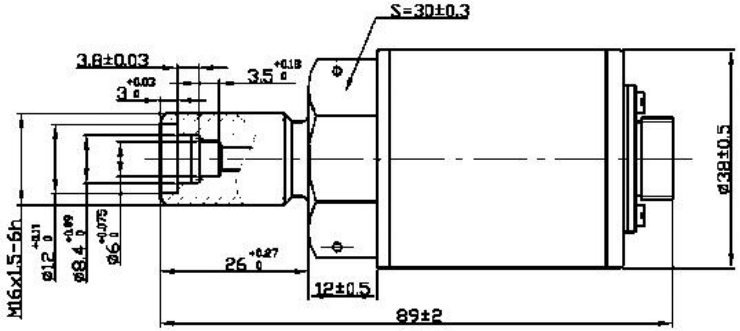
good stability, good electromagnetic compatibility, long storage life, long calibration period.

Application field

space measurement and control system

Key specifications

Range (upper pressure)	Absolute pressure: 0.6MPa, 1.0MPa, 1.2MPa, 2.0MPa, 10MPa, 25MPa
Working temperature	（-40～+125）℃
Ambient temperature accuracy	≤0.5 %FS
Overall accuracy	≤1.5 %FS（-40～+75）℃
Overload pressure	150%, upper pressure limit
Supply electricity	（15±1.5） VDC
Signal output	0.2V～ 4.8V



BEAE2001 series pressure sensor

Product overview

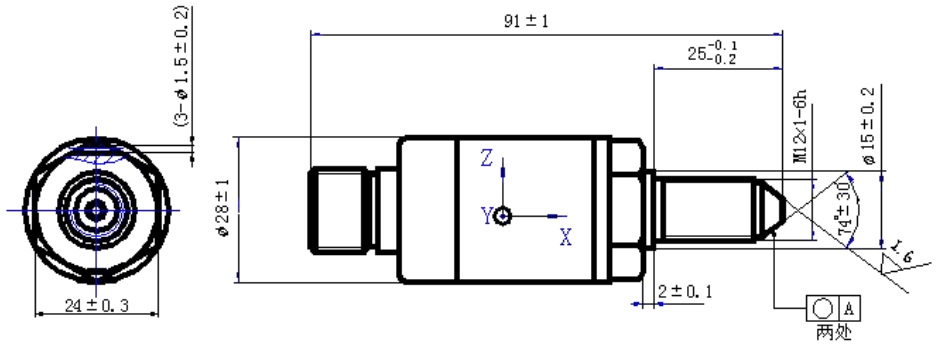
It is designed according to the principle of piezoresistive effect and uses semiconductor planar process and micro-mechanical processing technology to make pressure sensitive core. The pressure sensitive core converts the pressure signal into voltage signal and adjusts it into the signal that meets the task requirements through circuit.

Product features

good stability, light weight, small volume, wide working temperature range, basic error calculated according to theoretical line.

Application field

aerospace engine system



Key specifications

Range (upper pressure)	Absolute pressure: (0~ 0.25) MPa, (0~ 0.8) MPa, etc., can cover a series of products in the range of 0.1MPa~ 35MPa.
Working temperature	（-45～+125）℃
Intrinsic error	≤2.5 %FS（-45～+125）℃
Time constant	≤0.03s
Supply electricity	（15±1.5） VDC
Weight	≤200g

BEAP1007 Vacuum gauge

Product overview

The vacuum gauge is measured according to the piezoresistive principle, and the sensitive core body is made by semiconductor plane process and micro-mechanical processing technology. The pressure sensitive core body converts the pressure signal into voltage signal, and adjusts it into the signal that meets the task requirements through circuit.

Product features

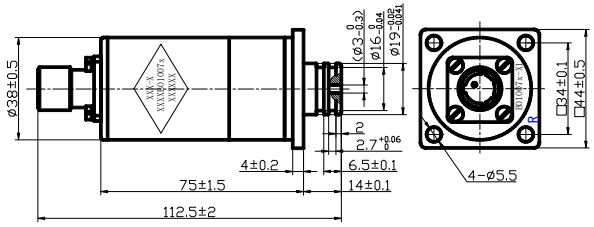
measuring vacuum, low pressure range, good stability, good mechanical environment performance.

Application field

can be used for non-corrosive gas vacuum measurement.

Key specifications

Measuring range	Absolute pressure: (0.1~ 100) Pa
Working temperature	（0～+40）℃
Accuracy	±3%FS
Overload pressure	110kPa
Supply electricity	（12±1.2） VDC
Signal output	1V～ 5V



BEAT4001 temperature sensor

Product overview

BEAT4001 temperature sensor is a product for the 18th Institute of the First Academy, used for temperature measurement in servo systems. The sensors sensitive element uses Pt100 platinum resistance to achieve temperature measurement. The measurement range is (-60~+300) ℃, with an error less than ± (0.30+0.005|t|) ℃, and can withstand 5MPa environmental pressure.

Product features

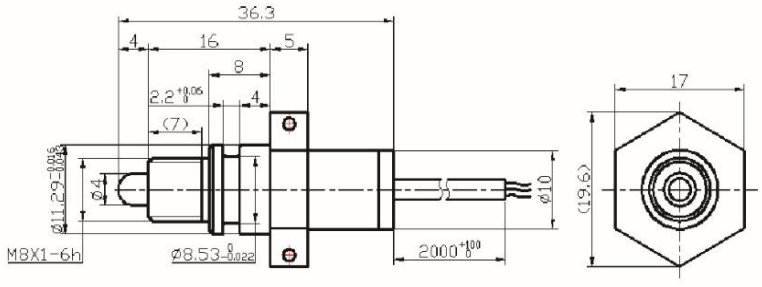
small size, light weight, fast response, high reliability, high stability, long-term stability, high pressure resistance.

Application field

it is applied in aviation, aerospace, shipbuilding and other fields for measuring pipeline temperature parameters.

Key specifications

Range	（-60～+300）℃
Weight	≤ 70g
Accuracy	±（0.30＋ 0.005｜t｜）℃
Working temperature	（-60～+300）℃
Signal output	Pt100 (preferred), Pt1000



BEAT4002/BEAT4003 type temperature sensor

Product overview

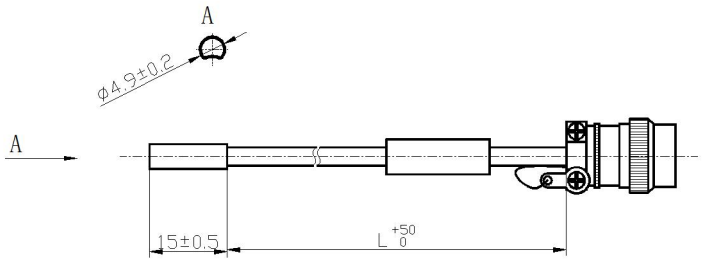
BEAT4002/BEAT4003 type temperature sensor is a product for AFK1. The sensor uses the principle of thermistor voltage divider to realize temperature parameter measurement. It can be used to measure the temperature in the range of (-70~+100) ℃, and is used to measure the surface temperature of the measured object in the end repair temperature control system.

Product features

small size, fast response speed, high measurement accuracy, cable structure, simple and reliable.

Application field

it is applied in aviation, aerospace, shipbuilding and other fields for wall temperature parameter measurement.



Key specifications

Working temperature	-55℃～+60℃
Measuring range	-70℃～ 100℃
Insulation resistance	Normal environment (temperature 25℃± 10℃, relative humidity not greater than 80%); insulation resistance is not less than 100MΩ/50VDC
Accuracy	-70℃(including) ~-40℃(including): ± 3℃; （-40～-30）℃：± 1℃；
	-30℃(including) ~ 55℃(including): ± 0.75 ℃;（+55～+100）℃：± 3℃；
Output at room temperature	（ 3225～ 8018）Ω；

BEAT4004 temperature sensor /BEAT4004A temperature converter

Product overview

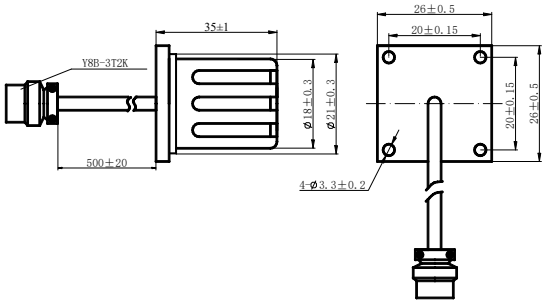
BEAT4004 temperature sensor / BEAT4004A temperature converter is a supporting product for one institute and one department XX-7, XX-7A. The sensor uses platinum resistance principle to realize temperature parameter measurement, which can be used to measure the temperature range of 233K~573K. It is installed in the XX telemetry system cabin to measure the temperature of the cabin air.

Product features

wide temperature range, resistance to harsh mechanical environment, high measurement accuracy, high reliability.

Application field

it is applied in aviation, aerospace, shipbuilding and other fields, and is used for space temperature parameter measurement in various fields.



Key specifications

Working temperature	-40℃～+60℃
Measuring range	233K～ 573K
Insulation resistance	The insulation resistance is greater than 100MΩ/100VDC, the temperature (20± 10) ℃, and the relative humidity is not greater than 80%
Accuracy	A) ± (0.50+0.005|t|) ℃ (sensor probe); b) ≤1%FS (converter);
Output at room temperature	0.85V～ 1.30V
Power Supply Voltage	± 15± 0.1） VDC
Converter output range	0.2V± 0.1V～ 4.8V± 0.1V
Working current	The positive power supply is not greater than 15mA, and the negative power supply is not greater than 15mA
Output impedence	＜ 1kΩ
Limiting voltage	V max≤ 6.5V， V min≥-1V
Nonlinear error	≤0.5%

BEAE2002 type total temperature sensor

Product overview

BEAE2002 total temperature sensor is a product for 31 Institute . The sensor uses the thermocouple principle to achieve temperature parameter measurement, which can be used to measure the temperature in the range of (-60~+700) ℃, and is used to measure the total incoming temperature in the control system.

Product features

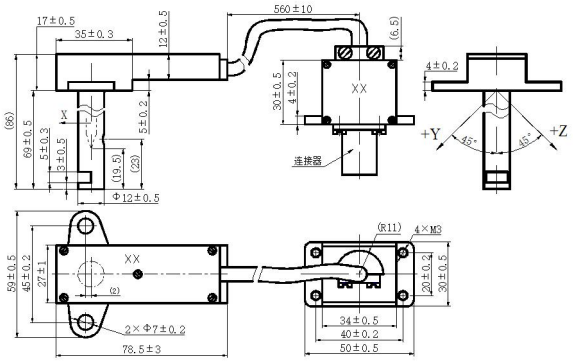
fast response speed, high measurement accuracy, high reliability.

Application field

it is applied in aviation, aerospace, shipbuilding and other fields for fluid temperature parameter measurement.

Key specifications

Thermocouple scale number	K mould
Measuring range	(-60～+700)℃
Use the temperature range	A) (-60~+700) ℃ (sensor probe); b) (-45~+125) ℃ (transformer); c) (-45~+200) ℃ (cable line)
Supply voltage	(±15±1.5) V (DC)
Output signal	(0± 0.2) V~ (10± 0.2) V (DC)
Output ripple	≤ 20mV (peak-to-peak)
Intrinsic error	≤1%FS



Insulation resistance	A) The insulation resistance of the probe is greater than or equal to 100MΩ (500VDC) (tested in the process); b) Overall (transmitter) insulation resistance is greater than or equal to 100MΩ (100VDC);
Thermal response time	≤ 1s（τ= 0.9）
Overlapping resistance	(0～ 2)Ω
Nolinear	No more than ±1%
Slow-moving	No more than ±1%
Weight	The total weight of the product is less than 0.5kg
Working temperature	（-40～ 80）℃
Signal output	（0.1±0.1） V～（4.9±0.1） V
Working current	≤40mA

BEAT4005/4006/4007 single axis/two axis/triple axis vibration sensor

BEAT4005C/4006C/4007C single axis/two axis/triple axis vibration transformer

Product overview

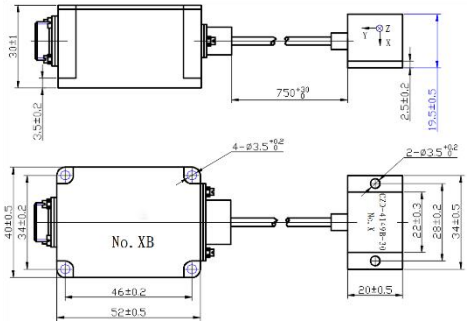
BEAT4005/BEAT4006/BEAT4007/BEAT4005C/BEAT4006C/BEAT4007C single-axis, dual-axis, and triple-axis vibration sensors and transformers are designed to support the XX-21A and X05 models from the Fourth Academy and Fourth Department. These sensors use a capacitive working principle to measure three-axis vibration parameters, offering a series of products ranging from (±20 to ±400) g. They are primarily used for measuring vibration signals in remote measurement systems.

Product features

separate structure, good long-term stability, good temperature stability, small probe volume.

Application field

The product can be applied to the vibration environment monitoring in aviation, aerospace and other fields. In the aerospace field, the vibration magnitude of key positions in each compartment of the aircraft can be tested.



Key specifications

Range	(±20~±400) g (customizable)
Nolinear	≤1.2%
Horizontal sensitivity ratio	≤3%
Frequency response	Within (10~2000) Hz, the unevenness is less than or equal to 1dB, and the attenuation is more than or equal to 50dB at 4500Hz outside the band
Excitation power supply	（±12/±15） VDC
Working temperature	（-40~85）℃
Signal output	（0.15±0.1）V~（4.85±0.1） V

BEAT4008 Three axis overload sensor

Product overview

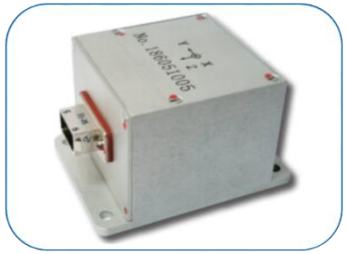
BEAT4008 three-axis overload sensor is a product for supporting one institute and one department XX-5A, XX-5B. The sensor uses capacitive working principle to realize three-axis overload parameter measurement, and can achieve (±1~± 100) g series products. This sensor is mainly used for measuring overload signals in remote measurement systems.

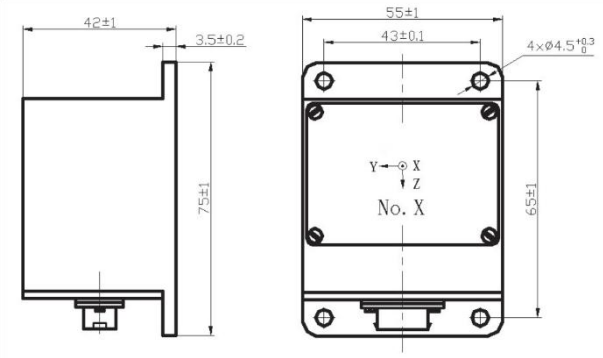
Product features

three-axis integrated product, good long-term stability, good temperature stability, small lateral sensitivity ratio.

Application field

the product can be used in aviation, aerospace and other fields overload signal measurement.





Key specifications

Range	(±1~±100) g (customizable)
Nolinear	≤1%
Horizontal sensitivity ratio	≤2%
Frequency response	(0~100) Hz (customizable within range)
Excitation power supply	（±12/±15） VDC
Working temperature	（-40~80）℃
Signal output	（0.1±0.1）V~（4.9±0.1） V

BEAT4009 shock sensor /BEAT4009A shock transformer

Product overview

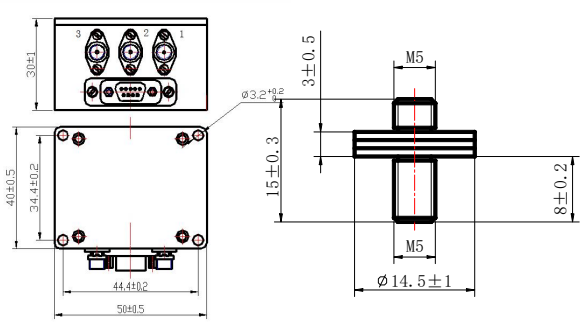
BEAT4009 impact sensor/BEAT4009A impact transformer is a product for the second department of the Second Institute XD-1. The sensor uses the piezoelectric working principle to achieve three-axis impact parameter measurement, and can realize (±500~± 50000) g series products. This sensor is mainly used for measuring impact signals in remote sensing systems.

Product features

separate structure, large impact measurement, small probe volume.

Application field

The product can be applied to the impact test in aviation, aerospace and other fields. In the aerospace field, it is mainly used to measure the explosion impact during the inter-stage separation.



Key specifications

Range	(±500~±50000) g (customizable)
Nolinear	Less than or equal to 4% for less than 1000 g, and 1% for each additional 1000g above 1000g, with a maximum of 10%
Horizontal sensitivity rati o	≤5%
Frequency response	Sensors:(10~ 5000) Hz with no flatness gre ater than ±1dB. Converter: upper frequency (5000±500) Hz, lower frequency (10±1) Hz; with 160Hz as t he reference point, the flatness within (50~ 4500) Hz is not more than ±1dB, and the att enuation at 10000Hz is not less than 45dB.
Excitation power supply	（±12/±15） VDC
Working temperature	（-40~60）℃

BEAT4010/BEAT4010A noise sensor/noise converter

Product overview

The BEAT4010/BEAT4010A noise sensor and transformer, along with similar products, are designed to support the XX-1 from the Fourth Academy and Fourth Department, the XX-7, XX-7A, and XX-8 from the First Academy and First Department. These sensors operate on the piezoresistive effect principle, enabling the measurement of noise signal parameters. They are available in a series with a measurement range of (140~165) dB. This sensor is primarily used for measuring noise signals within rocket and missile systems.

Product features

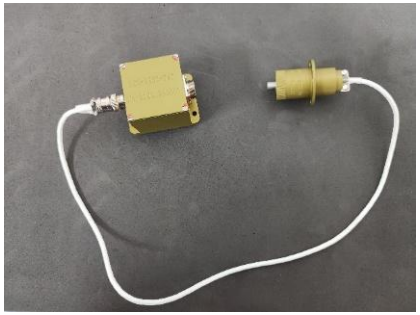
stable output, high precision, small volume.

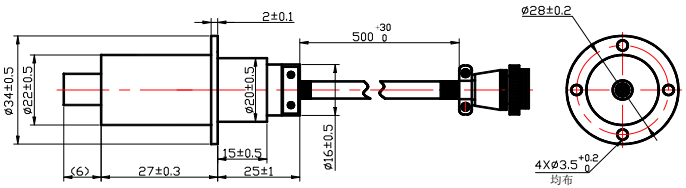
Application field

noise and poor signal measurement in aerospace, aviation and other fields.

Key specifications

Insulation resistance	Not less than 100MΩ at 50V DC
Output impedence	Less than 500
Working current	No more than 60mA
Limiting voltage	Upper limit voltage UL+ is less than or equal to 6.0V, and lower limit voltage UL-≥-1.0V
Zero drift	No more than 0.1%F.S/h
Converter accuracy	No more than 0.2%





BEAT4011 heat flow sensor /BEAT4011A heat flow transformer

Product overview

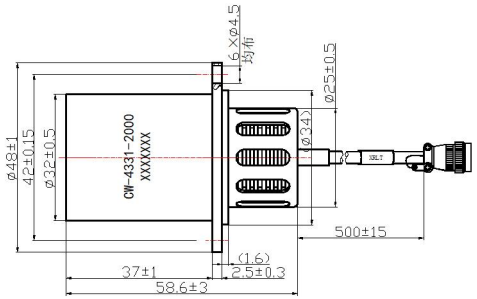
The BEAT4011 thermal flow sensor and the BEAT4011A thermal flow transformer are designed to complement the XX-1 model from the Second Institutes Second Department. These sensors operate on the principle of the thermoelectric effect, enabling the measurement of total thermal flux primarily through radiation. They offer a series of products with a range of (0~3500) kW/m². This sensor is primarily used for measuring the total thermal flux signal in remote measurement systems.

Product features

modular products, good long-term stability, high measurement accuracy.

Application field

it is applied in aviation, aerospace, shipbuilding and other fields, and is used for measuring the heat flow parameters of engine combustion gas reflux.



Key specifications

Range	(0~3500) kW/m2 (customizable)
Sensor accuracy	≤5%FS
Converter accuracy	≤±0.5%
Power Supply Voltage	(± 15± 0.1) VDC or (± 12± 0.1) VDC
Signal output	（0.2±0.2） V～（4.8±0.2） V

BEAP1006 liquid flow sensor /BEAP1006A liquid flow converter

Product overview

This sensor operates on the principle of orifice plate flow meters. It features a differential pressure sensitive core, manufactured using semiconductor technology and micro-machining techniques. This core converts flow into a voltage signal, which is then processed by a conditioning circuit to meet the contract requirements. The sensor and transmitter are designed as separate units.

Product features

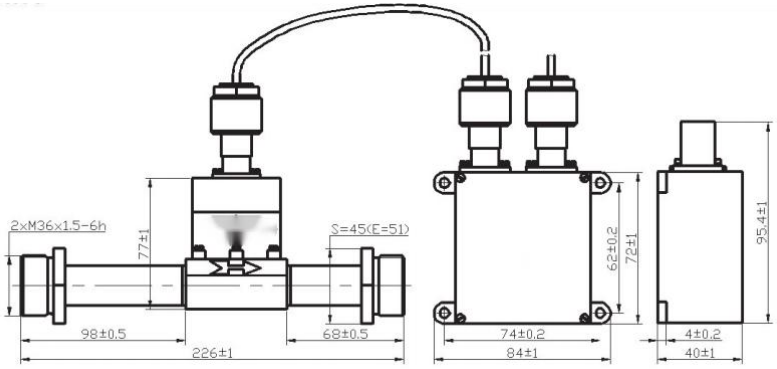
flow measurement, good stability, low flow resistance.

Application field

aerospace system, pipeline liquid flow measurement

Key specifications

Range	(300~ 1400) L/h; (customizable)
Working temperature	（-15～+45）℃
Accuracy	±5％ FS
Flow resistance	At rated flow of 900L/h, Sensor flow resistance is less than 5kPa (water)
Supply electricity	（11.4±0.5） VDC
Signal output	1V～ 5V



BEAD3061 displacement sensor

Product overview

It is designed as a pull wire displacement sensor based on the principle of potentiometer. The product has high accuracy through the use of high precision potentiometer and structural compensation design.

Product features

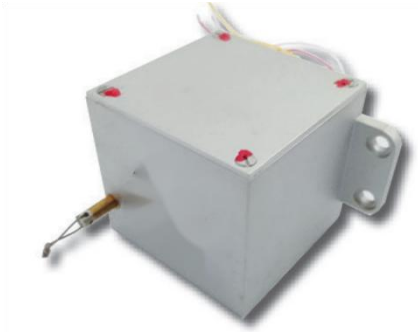
stable performance, wide range of application, high precision.

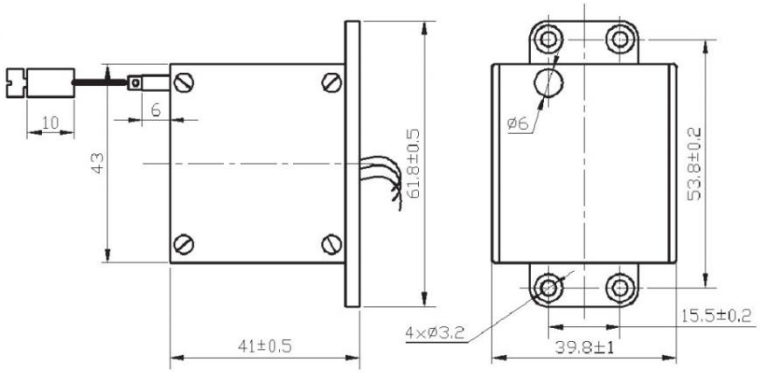
Application field

separation travel, fuel quantity and other measurement.

Key specifications

Range	(0~ 108) mm; (customizable)
Working temperature	（-20～+45）℃
Accuracy	±0.4％ FS
Supply electricity	（5±0.1） VDC
Signal output	0.1V～ 4.9V
Pull power	1N～ 3N
Resilience force	0.5N～ 2.5N





BEAT4012 series temperature and pressure composite sensor

Product overview

The pressure sensor is designed by using SOI material and silicon piezoresistive effect principle, and the temperature sensor is designed by using platinum resistance. The temperature and pressure sensors are packaged in the same shell. This product has been used in long-term model engineering, which proves that it has high stability.

Product features

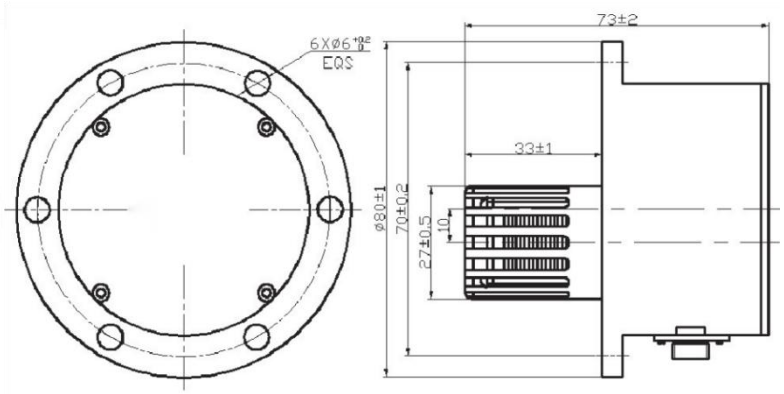
temperature and pressure composite, wide range of application, high precision.

Application field

measurement and control, pipeline system pressure, temperature signal measurement.

Key specifications

Temperature range	（-40～+150）℃
Pressure force range	（ 0～ 0.15） MPa、（ 0～ 0.6） MPa
working temperature	（+ 5～+100）℃
accuracy	temperature ： ≤1%； Pressure accuracy (ambient temperature): less than or equal to 0.5%FS
supply electricity	±12V、 24VDC
signal output	temperature ： 0.3V~4.7V； Pressure: 0.15V~ 4.85V



BEA7006 smoke sensor

Product overview

Ion smoke detector is one of the most widely used smoke fire detectors in engineering at present. It can detect the invisible aerosol and visible smoke produced in the initial stage of material combustion to give early warning of possible fire, and then transmit the sensed fire signal to the measurement and control subsystem for further processing after processing and amplification.

Product features

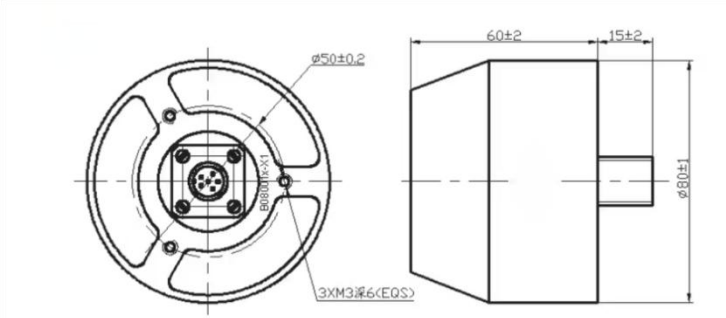
small size, high reliability, anti-vibration.

Application field

suitable for fire detection in the aerospace field.

Key specifications

Sensitivity	Response threshold 0.5~1
Supply voltage	(12±1.2)VDC
Alarm output	(1.85～2.5)V
Signal output	(0～0.3)V



BEA7007 dual channel current sensor

Product overview

This product contains two independent magnetic balance Hall current measurement units, which are installed in the servo motor to measure DC, AC, pulse and other forms of current using the Hall effect. The current is converted into isolated DC voltage and output to the servo driver control circuit for collection.

Product features

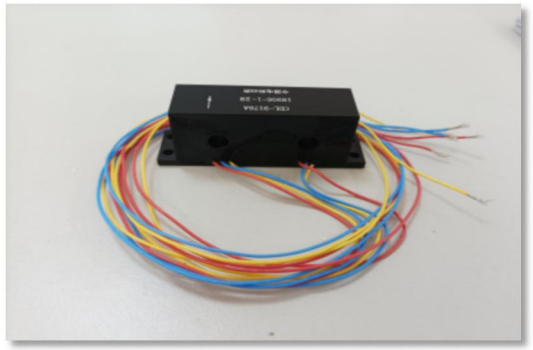
high precision, good linearity, fast bandwidth response and strong overload resistance.

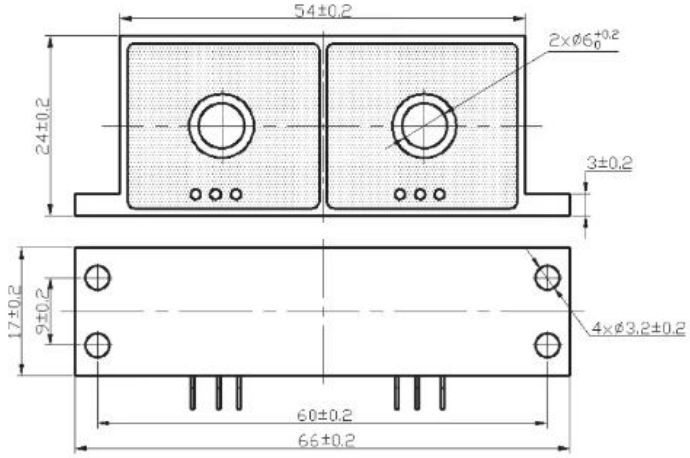
Application field

engine electronic control, servo system, etc.

Key specifications

Range	(0-±180) A (range extensible)
Degree of linearity	≤±0.5%FS
Full scale accuracy	≤±1%FS
Zero output	(-0.3-＋ 0.3) mA
Working temperature	(-40～+85) ℃
Weight	＜75g





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