SST200 Inclinometer

Vigor Technology

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Features

- High reliability & performance-cost ratio
- Repeatability & Offset ±0.02°
- Response time 0.3s@t_{90}
- Cross axis sensitivity less than ±0.3%FS
- Temperature drift reach ±0.1°@ -40~85℃ (Option)
- Full seal & anti-shock,IP67 protection
- Carried 50 industry & military standards

Descriptions

SST200 inclinometer based on MEMS technology,integrated with cross-axis sensitivity compensation,filte ring,nonlinearity correction,CAE&EDA simulation and patented automatic testing technology,to meet various industrial measurement & control in most hash environment.

SST200 inclinometer performs high reliability & stability. Thanks full-sealed technology,enhanced PCBA, intelligent power management,enhanced anti-shock & anti-vibration,enforced cable (heavy duty up to 30kg) assembly and robust aluminium alloy house(with heat treatment and anti-torsion finishing). As well as the long-term dynamic simulation and patented auto-test technology.

SST200 meets various strict or special military applications. As request,make fixed test programs according to MIL/EN/IEC/GJB etc. standards. As general option,the total temperature drift can reach ±0.1° within -40~+85℃ .

Applications

Factory automation,Precision instruments,Vessel,Engineering machinery,Aerospace,Civil engineering, Military project.

Referenced Standards

- GB/T 191 SJ 20873 General requirements for Inclinometer & levelmeter (China)
- GBT 18459 Methods for Calculating the Main static performance specifications for transducers(China)
- JJF 1059 Evaluation and Express of Uncertainty in Measurement(China)
- JJF 1094 Evaluation of the Characteristics of Measuring Instruments(China)
- JJF 1116 Calibration Specification for Linear Accelerometer used precision Centrifuger(China)
- QJ 2318 The test method of gyro & accelerometer(China)
- GJB 2786A General Requirements for Military Software Development(China)
- GJB 2884 General Specification for Three-Axis angular motion simulator(China)
- EN61000-4-11 Voltage dips &Voltage variations

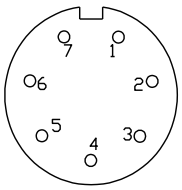
- MIL-HDBD-338B	- MIL-STD-810F-510.4	- MIL-STD-810F-507.4
- ISO 5348 IDT	- MIL-STD-810F-514.5	- EN61000-4-4 EFT
- MIL-STD-810F-501.4	- MIL-STD-810F-516.5	- EN61000-4-5 SURGE
- MIL-STD-810F-502.4	- IEC60529 IP	- EN61000-4-6 CS
- MIL-STD-810F-503.4	- EN61000 -4-2 ESD	- EN61000-4-8 PFMF
- MIL-STD-810F-506.4	- EN61000-4-3 RS	- ISTA-2A

Performances

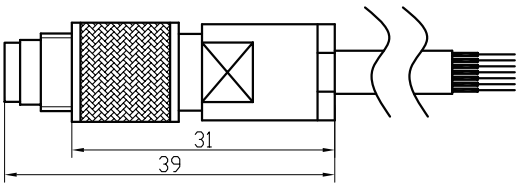
Table 1 Specifications

Measurement range	±5°	±10°	±15°	±30°	±45°	±60°	±90°(Single-axis)
Accuracy(@25 ℃)	±0.05°				±0.08°		±0.1°
Temperature drift @ -20~65 ℃	±0.004°/℃				±0.005°/℃		±0.009°/℃
Temperature drift(Option) @ -40~85 ℃	±0.1°				±0.2°		
Resolution	0.003°						
Repeatability	±0.02°						
Offset repeatability	±0.02°						
Offset	±0.02°						
Cross-axis sensitivity	±0.3%FS						
Measurement axis	1 axis or 2 axis,(only single-axis at ±90°range)						
Digital output for SST250/SST260	RS232(optional: RS485,RS422) Refresh Rate:5Hz(default)10Hz,20Hz(optional) Format:19200 baud,8 data bits,1start bit,1stop bit,none parity,ASCII						
	CAN2.0: according to ISO11898-2 standard, 5k~1MBit/s baud rate, support 127 nodes, built in high speed photoelectric isolator						
Voltage output for SST230/SST240	Voltage:0.5~4.5VDC Output resistance:0.3Ω Load resistance:<100Ω						
Current output for SST210/SST220	Current:4~20mA Output impedance:50MΩ Load resistance:150~250Ω						
Response time	0.3s@t_{90}						
EMC	According to EN61000						
Insulation resistance	100MΩ						
MTBF	≥150000h/times						
Power supply	With voltage & digital output :9~36VDC,consumption≤20mA With current output:16~36VDC,consumption≤40mA						
Power supply reject ratio	>85dB						
Operation temperature range	-40~85℃						
Storage temperature range	-40~100℃						
Protection	IP67						
Housing	6061-T6 aluminum alloy						
Connecting	Standard: Binder712 connector,optional: metal pigtail						
Cable	7-wire shielded cable with tensile reinforcement,heavy duty up to 30Kg						
Shock	100g@11ms,three-axis, half-sine						
Vibration	8grms,20~2000Hz						
Weight	240g(without connector and cable)						

Wiring



Picture 1 Binder712 socket
(View from outside)

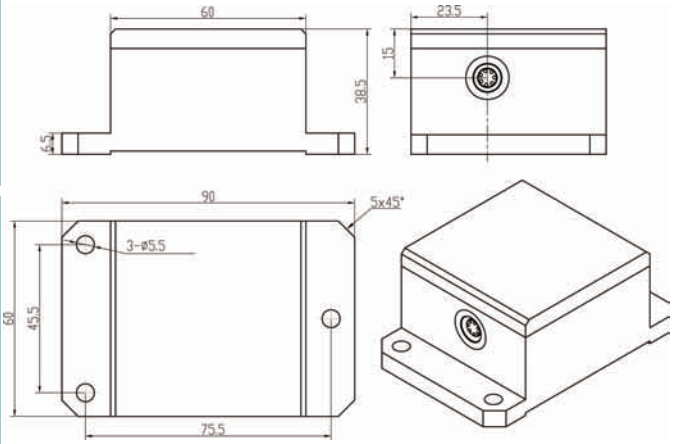


Picture 2 Binder712 plug and cable

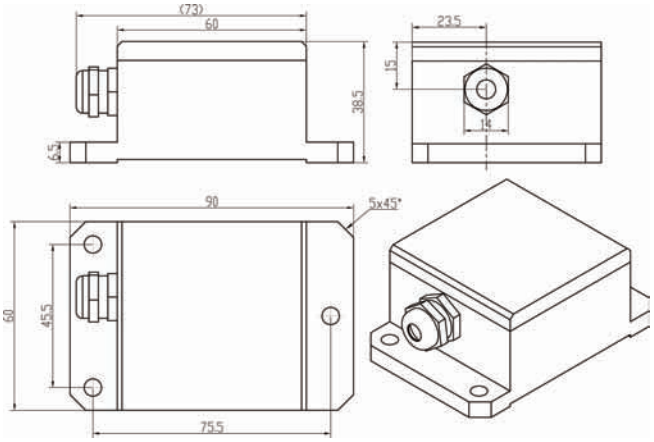
Table2 Binder712/ Pigtail definition

Binder712 Socket Pin	Pigtail Cable color	SST250,SST260				SST220	SST210	SST240	SST230
		RS232	RS485	RS422	CAN	4~20mA		0.5~4.5VDC	
1	Red	Power +	Power +	Power +	Power +	Power +	Power +	Power +	Power +
2	Black	Power -	Power -	Power -	Power -	Power -	Power -	Power -	Power -
3	Green	Signal GND	Signal GND	Signal GND	Signal GND	Signal GND	Signal GND	Signal GND	Signal GND
4	Yellow	NC	NC	RS422-RX+	CANH	Ioutx	Iout	Voutx	Vout
5	White	NC	NC	RS422-RXD-	CANL	Iouty	NC	Vouty	NC
6	Blue	RS232-TXD	RS485-A	RS422-TX+	NC	NC	NC	NC	NC
7	Brown	RS232-RXD	RS485-B	RS422-TXD-	NC	NC	NC	NC	NC

Dimensions (mm)



Picture 3 Housing with Binder712 socket



Picture 4 Housing with metal pigtail wiring

Ordering

Model	Axis	Connection	Output type	Range
SST210	1	Binder712(-C) ,optional Pigtail (-P)	4~20mA	±5°,±10°, ±15°,±30°, ±45°,±60°,±90°
SST220	2	Binder712(-C) ,optional Pigtail (-P)	4~20mA	
SST230	1	Binder712(-C) ,optional Pigtail (-P)	0.5~4.5VDC	
SST240	2	Binder712(-C) ,optional Pigtail (-P)	0.5~4.5VDC	
SST250	1	Binder712(-C) ,optional Pigtail (-P)	RS232(Option RS485, RS422, CAN)	
SST260	2	Binder712(-C) ,optional Pigtail (-P)	RS232(Option RS485, RS422, CAN)	

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