

SST400 Inclinometer



Vigor Technology

SST400 Inclinometer

Features

- Continuous output or acknowledge output
- Adjustable filter to absorb vibration
- Available to modify with local gravity value
- Mostly compatible to SST300's accessories and options (90 types)
- Accuracy up to $\pm 20''$
- Cross-axis sensitivity $\leq \pm 0.2\%FS$
- $\pm 9''$ offset repeatability
- Refer to about 50 industry & military standards
- Military class product available



Descriptions

SST400 inclinometer is intelligent renewed product, improved functions & performances comprehensively. SST400 inclinometer strictly tested and combined with simulation & process with advanced EDA&CAE technologies including materials collection, heat treatment, finite element analysis, modal analysis & test (include housing, sensitive apparatus, PCB board and relationship between characters of each other).

SST400 inclinometer adopts Vigor's patented automatic testing technology, not only general test, correct and compensate to temperature drift/non-linearity/cross-axis sensitivity error/orthogonal error/sensitive axis and so on, also made life test with different angular rate & angular acceleration impact and long time temperature cycle test for each product. More test programs, correction and compensation of parameters can be made as special request.

Applications

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

Referenced Standards

- GB/T 191 SJ 20873 General requirements for Inclinometer & levelmeter (China)
- GBT 18459 Methods for Calculation 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
- ISO 5348 IDT
- MIL-STD-810F-501.4
- MIL-STD-810F-502.4
- MIL-STD-810F-503.4
- MIL-STD-810F-506.4
- MIL-STD-810F-510.4
- MIL-STD-810F-514.5
- MIL-STD-810F-516.5
- IEC60529 IP
- EN61000 -4-2 ESD
- EN61000-4-3 RS
- MIL-STD-810F-507.4
- EN61000-4-4 EFT
- EN61000-4-5 SURGE
- EN61000-4-6 CS
- EN61000-4-8 PFMF
- ISTA-2A

SST20

SST30

SST100

SST200

SST300

SST400

SST500

SST800

SST810

SST820

SST830

SSG100

SSG200

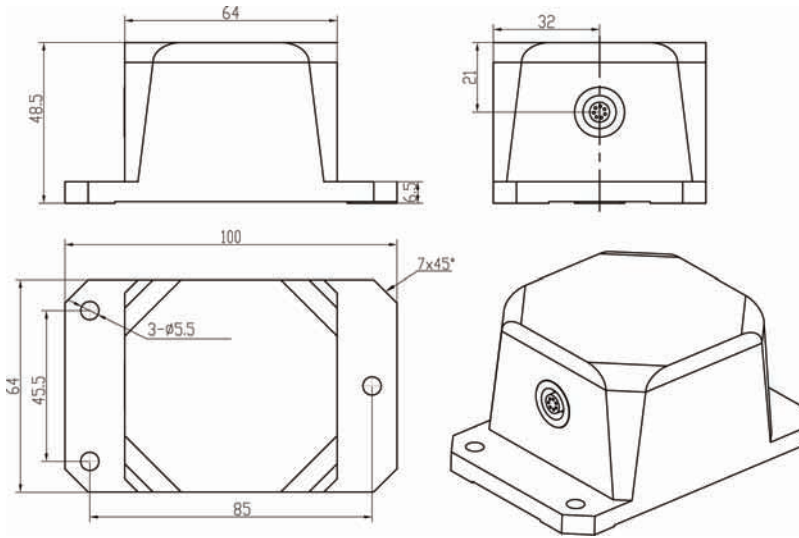
SST900

Performances

Table1 Specifications

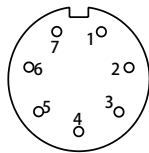
Measurement range	$\pm 5^\circ$	$\pm 10^\circ$	$\pm 15^\circ$	$\pm 30^\circ$
Accuracy(@25°C)	$\pm 20''$			
Repeatability	$\pm 9''$			
Input-axis misalignment	$\leq \pm 0.1^\circ$			
Resolution	$2''$			
Offset	$\pm 0.004^\circ$			
Response time	0.3s			
Offset temperature drift coefficient	$\leq 0.0006\%/^\circ\text{C}$ @ -20~65 °C			
Sensitivity temperature drift coefficient	$\leq 0.005\%/^\circ\text{C}$ @ -20~65 °C			
Temperature sensor	Range:-50~125°C ,Accuracy: $\pm 1^\circ\text{C}$			
Measurement axis	1 or 2 axis			
Cross-axis sensitivity	$\pm 0.2\%\text{FS}$			
Output type	RS232 (optional RS422, RS485), 0~5VDC,4~20mA 0~5VDC,4~20mA,CAN2.0			
RS232 data format	115200 baud,8 data bits,1start bit,1stop bit, none parity,ASCII			
Cold start warming time	60s			
Refresh rate	5Hz(optional 10Hz or 20Hz)			
Response time	0.3s			
Power supply	9~36VDC			
Current consumption	$\leq 100\text{mA}$			
Power dissipation	Supply current $\leq 50\text{mA}$, power dissipation $\leq 1.5\text{W}$ (25°C & 24VDC)			
Output impedance	Internal resistance of voltage source:100Ω,sink/leakage current about 10mA Internal resistance of current source: 50MΩ, load :0~625Ω			
Power supply rejection ratio	$> 85\text{dB}$			
Operation temperature range	-40~85°C			
Storage temperature range	-60~100°C			
EMC	According to EN 61000			
Insulation resistance	100MΩ			
MTBF	$\geq 25000\text{h/times}$			
Shock	100g@11ms,three-axis,half-sine			
Vibration	8grms, 20~2000Hz			
Protection	IP65(optional IP67)			
Housing	6061-T6 aluminum alloy			
Cable	7-wire shielded cable with tensile reinforcement			
Connecting	Binder712 connector			
Weight	$\leq 500\text{g}$ (without connector and cable)			

Dimensions (mm)

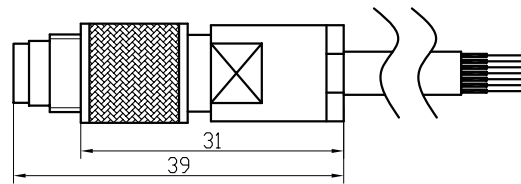


Picture1 Housing with Binder712 socket

Wiring



Picture 2 Binder712 socket
(View from outside)



Picture 3 Binder712 plug and cable

Table 2 Binder712 wiring

Binder712 socket pin	Cable wire colour	Output					
		4~20mA	0~5VDC	RS232	RS485	RS422	CAN
1	Red	Power +	Power +	Power +	Power +	Power +	Power +
2	Black	Power -	Power -	Power -	Power -	Power-	Power-
3	Green	Signal GND	Signal GND	Signal GND	Signal GND	Signal GND	Signal GND
4	Yellow	Ioutx	Voutx	NC	NC	RS422-RXD+	CANH
5	White	Iouty	Vouty	NC	NC	RS422-RXD-	CANL
6	Blue	NC	NC	RS232-TXD	RS485-A	RS422-TXD+	NC
7	Brown	NC	NC	RS232-RXD	RS485-B	RS422-TXD-	NC

Ordering information

Table 3 Ordering product list

Model	Axis	Output type	Range
SST410	1	4~20mA	±5° ±10° ±15° ±30°
SST420	2	4~20mA	
SST430	1	0~5VDC	
SST440	2	0~5VDC	
SST450	1	RS232(optional RS485,RS422, CAN)	
SST460	2	RS232(optional RS485,RS422, CAN)	

Shanghai Vigor Technology Development Co., Ltd.

No.289-4, Bisheng Road, Pudong New District Shanghai China 201204

Hotline. +86-400-0505-021

Tel. +86-21-5840-4921

Fax. +86-21-5835-4552

Email: sales@vigordigital.com

Web: www.vigordigital.com