

SST20 Inclinometer



辉格科技
Vigor Technology

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Features

- Low cost, high performance, suitable for batch application
- 50Hz refresh rate, 10Hz response frequency
- $\pm 0.5\%$ Cross-axis error, $\pm 0.1^\circ$ or $\pm 0.07^\circ$ accuracy
- Available to horizontal, vertical, headstand, etc installation way
- Auto-correct installation error
- IP69K protection, 10 m submersible depth
- 7~42VDC supply, compatible to automotive application
- Survive to 1500g shock while operating
- OEM available, MIL/ EN/DIN/ISO/IEC testing standard upon request application



Description

SST20 inclinometer based on Vigor's advanced tilt measurement technology, to meet with low cost, high reliability and volume application, performs high performance-cost ratio.

SST20 employed most universal & mass-produced components, casting aluminum alloy house, universal high reliability M12-5pin industrial connector; full epoxy seal with IP69K protection, auto-test/calibration equipment which not only ensure delivery speed, also keep the consistency of goods.

Thanks for Vigor engineers, they adopt advanced technologies as:

- CAE/EDA simulation;
- Modal test for both housing and PCB to eliminate resonance due to vibration;
- Comprehensive performance & function test for component & firmware;
- Calibration technology based on SST300 high accuracy inclinometer;
- Refer MIL/ EN/ ISO/IEC standards to enhance SST20 durability & reliability.

SST20 support remote diagnosis without disassembling. MTBF more than 10 years per time. Can work in 10m submersible depth long time and has better EMC ability.

SST20 output RS485/CAN/CANOpen and Voltage/Current signals. Better power management to meet with automotive /truck/vehicle application without regulated power.

OEM service is available with calibrated PCBA or MIL qualified.

Applications

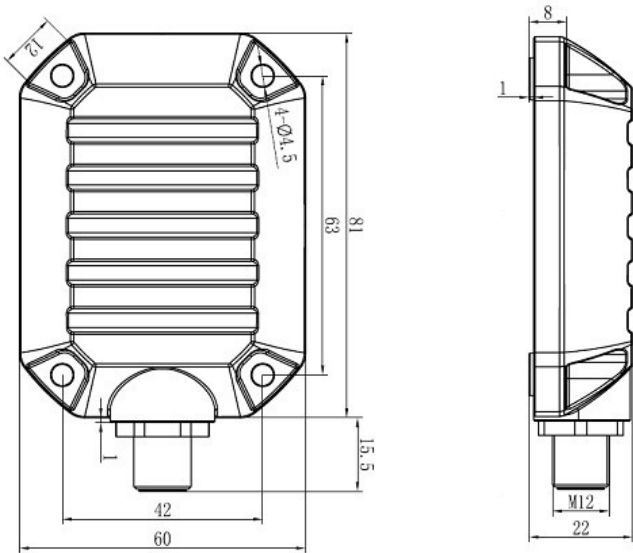
Vessel, engineering machinery, solar/wind energy, automobile/truck/vehicle, communication/electric tower monitoring, high-voltage pylon monitoring, antenna, construction engineering, landslide, etc

Performances

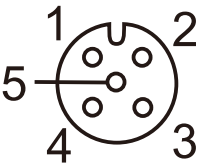
Table 1 Specifications

Measurement range	$\pm 5^{\circ}$, $\pm 10^{\circ}$, $\pm 15^{\circ}$, $\pm 30^{\circ}$, $\pm 45^{\circ}$, $\pm 60^{\circ}$, $\pm 90^{\circ}$, 0~360°	
Accuracy	$\pm 0.1^{\circ}@-15\sim 50^{\circ}\text{C}$	$\pm 0.07^{\circ}@-15\sim 50^{\circ}\text{C}$
Resolution	0.005°	0.002°
Repeatability	$\pm 0.05^{\circ}$	$\pm 0.02^{\circ}$
Offset	$\pm 0.05^{\circ}$	$\pm 0.02^{\circ}$
Cross-axis sensitivity	$\pm 1.0\%\text{FS}$	$\pm 0.5\%\text{FS}$
Measurement axis	1 axis or 2 axis	
Bandwidth	10Hz(max)	
Response time	1ms(no filtering)	
Refresh rate	50Hz(max)	
Cold start warming time	60s	
Function	zeroing, baud rate, refresh rate, zero point correction, bandwidth, ID address, factory producing data	
Output	CAN2.0B: according to ISO11898-2 standard, twisted-pair output, 5k~1MBit/s baud rate, support 127 nodes, max cable length 10 km, built in high speed photoelectric isolator	
	CANOpen: according to DS301,DS303,DS305 standard, confirm to CiA 410 protocol standard , 5Kbps~1Mbps baud rate, support 127 nodes, max cable length 10 km, built in high speed photoelectric isolator	
	Voltage output: 0.5~4.5VDC; output impedance 0.3Ω;load impedance <100Ω	
	Current output: 4~20mA; output impedance 50MΩ; load impedance 150~650Ω	
	RS485 output: 115200bps(adjustable), 8 data bits, 1 start bit, 1 stop bit, none parity, ASCII	
	Switch output: Darlington OC output, load with1A @7~42VDC, alarm point can be pre-set in factory	
Power supply	RS485/CAN/CANopen output: current consumption $\leq 30\text{mA}@7\sim 42\text{VDC}$, no-load Voltage/current ouput: current consumption $\leq 15\text{mA}@7\sim 42\text{VDC}$, no-load Switch output: current consumption $\leq 10\text{mA}@7\sim 42\text{VDC}$, no-load	
Operation temperature range	-40~85℃	
Storage temperature range	-40~85℃	
EMC	According to EN 61000, CE approved	
Insolation	$\geq 100\text{M}\Omega$	
MTBF	10 years	
Shock	1500g, three-axis, half- sine	
Vibration	8grms, 20~2000Hz	
Protection	IP69K	
Connecting	M12-5Pin socket	
Weight	$\leq 200\text{g}$	

Demisions (mm)



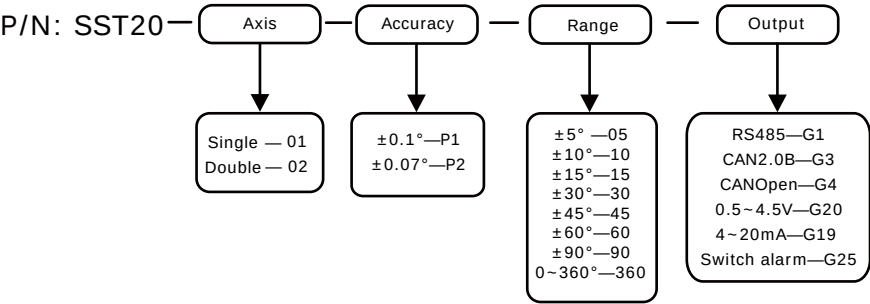
Wiring



Connector Socket (View from outside)

Socket Pin	Output					
	RS485	CAN	CANOpen	Voltage	Current	Switch alarm
1	Power +	Power +	Power +	Power +	Power +	Power +
2	Power GND	Power GND	Power GND	Power GND	Power GND	Power/signal GND
3	RS485-A	CAN_L	CAN_L	Vy	Iy	Control power +
4	RS485-B	CAN_H	CAN_H	Vx	Ix	X axis Alarm
5	Signal GND	Signal GND	Signal GND	Signal GND	Signal GND	Y axis Alarm

Ordering information



For example, if order a double-axis SST20 inclinometer, with range ±60°, ±0.1° accuracy, Output CAN2.0B, the model should be chosen as: SST20-02-P1-60-G3

Compatible connector:

IFM (www.ifm.com) P/N: E11596,~E11599; E11591~E11595

Turck (www.turck.com) M12 eurofast

P+F(www.pepperl-fuchs.com/) P/N: V15-G

Banner(www.bannerengineering.com) P/N: MQDC



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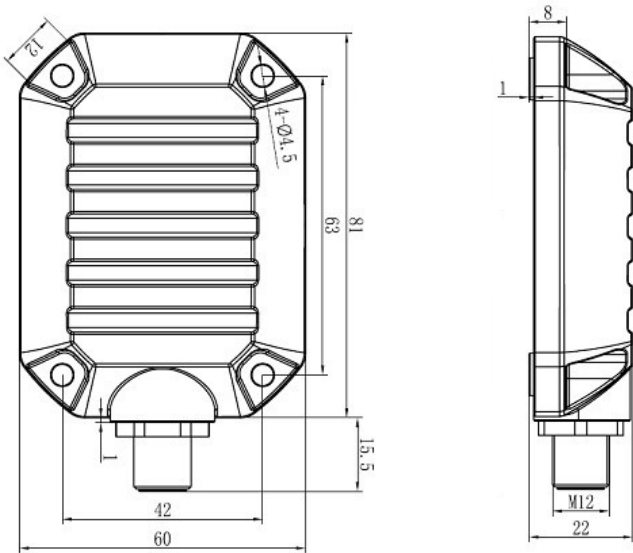
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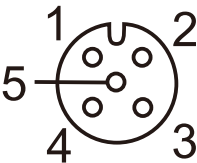
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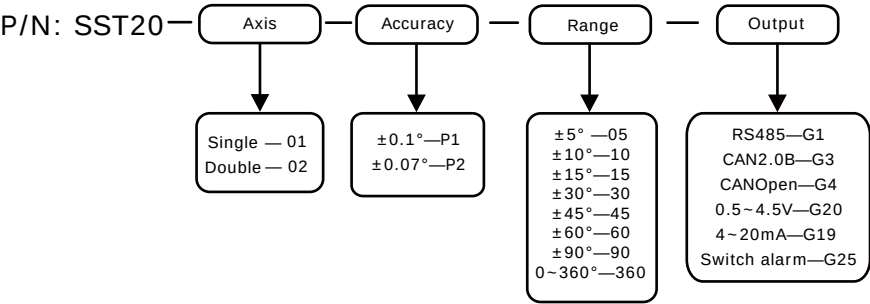
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