



DIGITAL INCLINOMETER Series SST20



- **Low cost, high performance, suitable for batch application**
- **50Hz refresh rate, 10Hz response frequency**
- **±0.07° accuracy @ -15~50°C**
- **±0.2% cross-axis error**
- **Available to horizontal, vertical, headstand, etc installation methods**

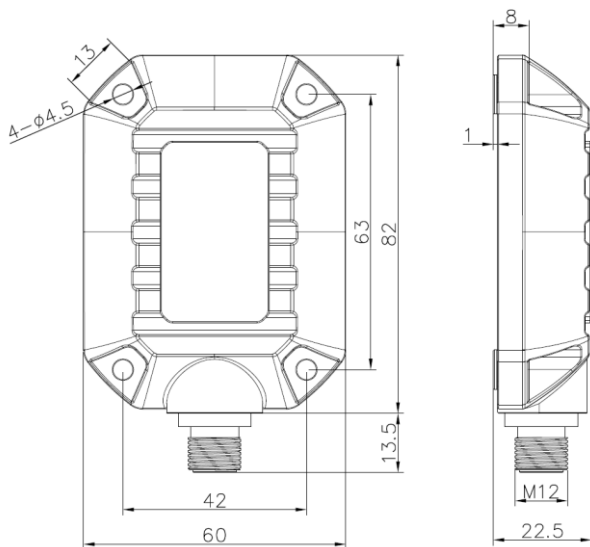
DESCRIPTION

- **SST20 inclinometer** is based on **Vigor's advanced tilt measurement technology**, to meet with **low cost, high reliability and volume application**, performs **high performance-cost ratio**.
- **SST20** employs most universal & mass-produced components, **casting aluminum alloy house**, universal **high reliability M12-5pin industrial connector, IP67 protection**, auto-test/calibration equipment
- **Inclinometers SST20** are engineered according to 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.
 - MTBF more than 10 years per time and has better EMC ability
- SST20 output **RS232/RS485/CAN/CANOpen/Switch and Voltage/Current signals** allows 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

DIMENSIONS



MECHANICAL & ENVIRONMENTAL SPECIFICATIONS

• <i>Operation temperature range</i>	-40~85°C
• <i>Storage temperature range</i>	-40~85°C
• <i>EMC</i>	According to EN 61000/GBT17626
• <i>Insolation</i>	≥100MΩ
• <i>MTBF</i>	10 years
• <i>Shock</i>	100g@11ms, three-axis, half-sine
• <i>Vibration</i>	8grms, 20~2000Hz
• <i>Protection</i>	IP67
• <i>Connector</i>	M12 5-Pin
• <i>Weight</i>	≤200g (no connector or cable)

OUTPUT SIGNALS





PERFORMANCES		@25°C test conditions, except other notification	
• Output Interface	RS232/RS485/CAN/CANOpen/Switch	0.5~4.5VDC/4~20mA	
• Measurement range	1 or 2 axes 1 axis	±5°, ±10°, ±15°, ±30°, ±45°, ±60°, ±90° ±180°, 0~360°*	
• Accuracy		±0.07° @-15~50°C	±0.15° @-15~50°C
• Non-linearity		±0.03°	±0.05°
• Resolution		0.002°	0.005°
• Repeatability		±0.02°	±0.05°
• Offset		±0.02°	±0.05°
• Cross-axis sensitivity		±0.2%FS	±0.2%FS
• Bandwidth	Default 3Hz, 5Hz, 10Hz available		
• Response time	5ms (no filtering)	10ms (no filtering)	
• Refresh rate	Default 5Hz, max. 50Hz	50Hz	
• Cold start warming time	Less than 60s		
• Interface features	RS232: 9600bps (adjustable), 8 data bits, 1 start bit, 1 stop bit RS485: 9600bps (adjustable), 8 data bits, 1 start bit, 1 stop bit No matched resistance	Voltage output: 0.5~4.5VDC; Internal resistance 0.3Ω; Drive current (max.) 15mA	
	CAN2.0: according to ISO11898-2 standard, 40k~1MBit/s baud rate, adaptive standard frame and extended frame format No matched resistance		
	CANOpen: according to DS301 standard, 40k~1MBit/s baud rate No matched resistance	Current output: 4~20mA; Internal resistance 50MΩ; Load impedance 150~650Ω	
	Switch output: Darlington OC output, load with 1A @9~36VDC, alarm point can be pre-set in factory		
• Voltage supply & Power consumption	RS232/RS485 Output: 9~36VDC, current ≤50mA@24VDC CAN/CANOpen Output: 9~36VDC, current ≤80mA@24VDC Switch output 9~36VDC, current ≤50mA (no-load) @24VDC	16~36VDC Current ≤30mA no-load @24VDC	

ORDERING INFORMATION

SST20	01	P1	05	00
TYPE SST20	AXES NO. 01 Single Axis 02 Dual Axis	ACCURACY P1 ±0.15° P2 ±0,07°	RANGE 05 ±05° 60 ±60° 10 ±10° 90 ±90° 15 ±15° 180 ±180° 30 ±30° 360 0-360° 45 ±45°	OUTPUT SIGNAL 00 RS232 G19 4-20mA G1 RS485 G20 0.5-4.5V G3 CAN2 G25 Switch Alarm G4 CANOpen

Remark: With output G19-G20 accuracy is P1.
Measuring range 180 & 360 only available with single axis type.

CONNECTIONS

<p>M12 Plug Connector</p>	Pin	Wire color	Output interface						
			RS232	RS485	CAN	CANOpen	voltage	Current	Switch alarm
1	Red	Power+	Power+	Power+	Power+	Power+	Power+	Power+	
2	Black	Power GND	Power GND	Power GND	Power GND	Power GND	Power GND	Power/Signal GND	
3	Blue	TXD	RS485-A	CAN_H	CAN_H	Vx	Ix	Control power +	
4	Brown	RXD	RS485-B	CAN_L	CAN_L	Vy	Iy	X axis Alarm	
5	Green	Signal GND	Signal GND	Signal GND	Signal GND	Signal GND	Signal GND	Y axis Alarm	

Remarks: Factory Switch alarm output inclinometers are provided with factory settings for alarm point only. In case a special set alarm point is needed, please, specify all requirements when ordering. Single axis inclinometers only have X axis.

