

SST810 Dynamic Inclinometer



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Features

- No drift, dynamic tilt measuring
- Lowest cost
- Built in MEMS tri-axis accelerometer and tri-axis gyroscope
- Dynamic repeatability $\pm 0.5^\circ$
- Highest refresh rate 1000Hz
- X/Y/Z angular rate & acceleration data available
- Autonomous working, do not need any external auxiliary
- Mounted wherever needed



Descriptions

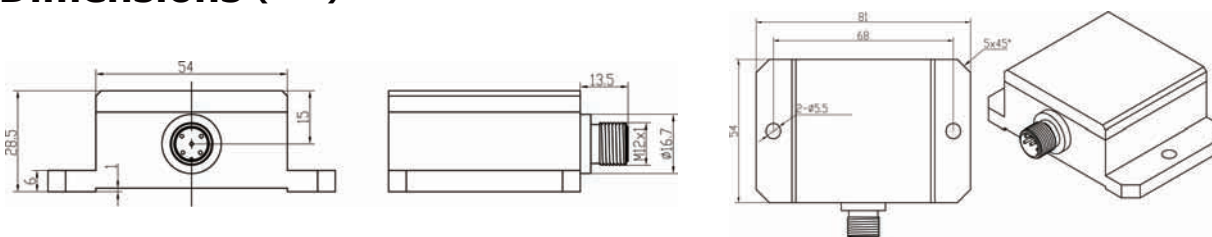
SST810 dynamic inclinometer is specially designed for motion application, which is an inertial product measures dynamic roll/pitch angle with high update rate. SST810 has concentrated Vigor years of application experiences and technologies of tilt measurement, combines with inertial navigation technology, to achieve max. 1000Hz update rate.

Traditional inclinometer based on accelerometer and electrolyte principles. In dynamic motion such as rapid movement vehicle and vessel, the measurement result will be affected by extra axial acceleration and centripetal acceleration, so that valid angle measurement data can't identify effectively, and accuracy is unable to guarantee. SST810 adopts advanced inertial navigation technology to exactly measure dynamic pitch/roll angle long term, without aiding of GPS etc..

Applications

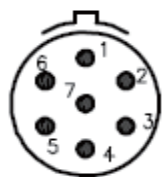
Ship, ROV, Engineering machinery, Rail transportation, Automotive, Robot, Radar positioning, Weapon Platform, Photoelectric platform, Logistics, etc.

Dimensions (mm)



Picture 2 Housing with connector

Wiring



Picture 3 Connector socket
(View from outside)

Table 2 Pin definition

Pin	RS422	RS232	CAN
1	Power+	Power+	Power+
2	Power GND	Power GND	Power GND
3	Signal GND	Signal GND	Signal GND
4	RS422-TXD+	NC	CAN_H
5	RS422-TXD-	NC	CAN_L
6	RS422-RXD+	TXD	NC
7	RS422-RXD-	RXD	NC

Performances

Table 1 Specifications

Roll/pitch range	$\pm 90^\circ / \pm 90^\circ$
Resolution	0.05°
Response frequency	0~400Hz
Non-linearity	$\leq \pm 0.4\%FS$ dynamic
Repeatability	$\leq \pm 0.5^\circ$, dynamic
	$\leq \pm 0.05^\circ$, static
Latency	$\leq 5ms$
Refresh rate	50Hz~1000Hz(Adjustable)
Acceleration range	MEMS, $\pm 4g$
Angular rate range	MEMS, $\pm 300^\circ/s$
Tilt Measurement axis	2 axis
Power supply	9~36VDC(+5VDC $\pm 10\%$ for OEM board)
Power consumption	$\leq 1W$
Output interface	RS232, RS485, CAN
Output data	Roll/pitch, tri-axis acceleration, tri-axis angular rate, Quaternion, Euler
Operation temperature range	-40~85°C
Storage temperature range	-40~85°C
MTBF	≥ 100000 h/times
Shock	500g@1ms, three-axis, half-sine
Vibration	4grms, 20~2000Hz
Protection	IP67
Connecting	M12
Dimensions	81x54x28.5mm
Weight	240g(without connector and cable)

Ordering

Table 3 Ordering product list

Product type	Description
SST810-G0	With RS232 output
SST810-G1	With RS485 output
SST810-G3	With CAN2.0A/B output
SST810-OEM	No housing