

SST800 Dynamic Inclinometer



Vigor Technology

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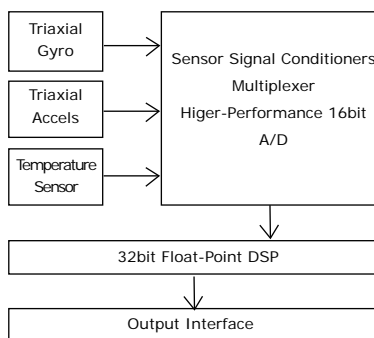
Features

- No drift dynamic inclinometer product
- Built in tri-axis accelerator and tri-axis gyro
- Highest dynamic accuracy $\pm 0.05^\circ$ RMS
- Highest refresh rate 1000Hz
- X/Y/Z angular rate & acceleration data available
- Autonomous working, do not need any external auxiliary
- Can be mounted wherever needed, do not need to install at centroid point
- Customized kinds of different housing, function and performance product



Descriptions

SST800 dynamic inclinometer is specially designed for motion application, which is an inertial product measures dynamic roll/pitch angle with high update rate. SST800 has concentrated Vigor years of application experience and technology of tilt measurement, combines with military inertial navigation technology; highly increase the performances of traditional vertical gyro product, to achieve max. accuracy $\pm 0.05^\circ$.

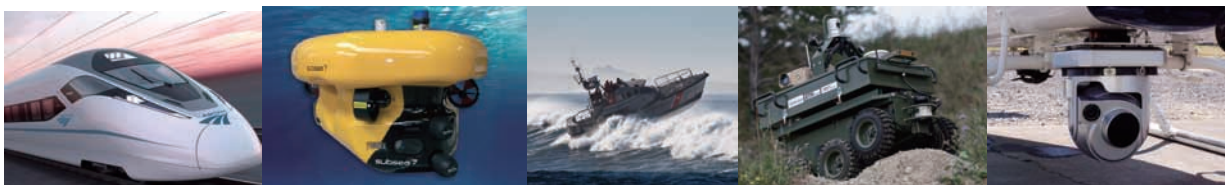


SST800 Diagram

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. SST800 adopts advanced inertial navigation technology to exactly measure dynamic pitch/roll angle long term, without aiding of GPS/compass etc..

SST800 dynamic inclinometer has excellent dynamic measurement ability:

- ✓ $\pm 0.05^\circ$ dynamic measurement accuracy, high performance-cost ratio
- ✓ Max. 1000Hz update rate, real-time data processing
- ✓ Free from acceleration interference
- ✓ No drift, keep high precision long time
- ✓ Not needs any external auxiliary
- ✓ Installed wherever needed
- ✓ Built in tri-axis accelerator and tri-axis gyro, MEMS/Servo/FOG optional
- ✓ Unique attitude algorithms
- ✓ Survival to transient power supply under vibration/shock environment
- ✓ Customized with heave, surge, sway data for vessel



Applications

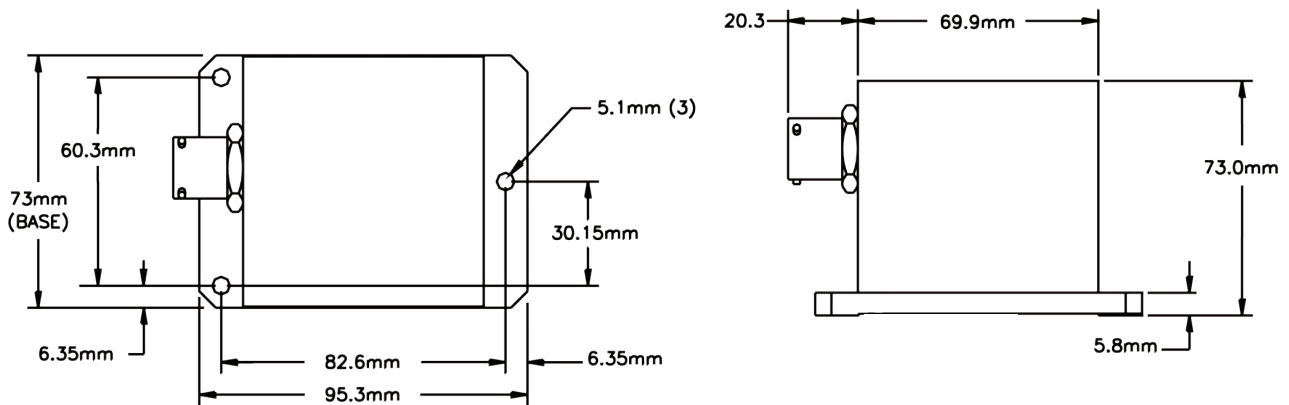
Vessel, engineering machinery, rail transportation, automobile test, robot, radar positioning while moving, weapon platform, photoelectric platform, logistics, etc

Performances

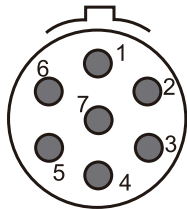
Table 1 Specifications

Roll/pitching rang	$\pm 60^\circ / \pm 60^\circ$			$\pm 180^\circ / \pm 90^\circ$		
Dynamic accuracy RMS	$\pm 0.05^\circ$	$\pm 0.1^\circ$	$\pm 0.25^\circ$	$\pm 0.5^\circ$	$\pm 0.7^\circ$	$\pm 1.0^\circ$
Refresh rate	50Hz、100Hz			50Hz, 100Hz, 200Hz, 500Hz, 1000Hz		
Resolution	0.005°	0.01°	0.02°	0.05°		
misalignment	$\pm 1.0\text{mrad.}$			$\pm 1.3\text{mrad.}$		
Acceleration range	$\pm 2 \sim \pm 60\text{g}$ servo accelerometer			MEMS, $\pm 2 \sim \pm 60\text{g}$ Option: servo accelerometer		
Angular rate range	$\pm 10 \sim \pm 450^\circ/\text{s}$ fiber optical gyro			MEMS, $\pm 150 \sim \pm 1000^\circ/\text{s}$ Option: fiber optical gyro		
Measurement axis	1 axis or 2 axis					
Power supply	9~36VDC					
Power consumption	$\geq 2.5\text{W}$, depends on measurement accuracy and refresh rate					
Output interface	RS232、RS422、CAN、Ethernet					
Output data	roll/pitch, tri-axis acceleration, tri-axis angular rate, internal temperature, Quaternion, Euler					
Operation temperature range	-30~70 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	Military class connector					
Dimensions	73x73x95.3mm(MEMS product) High accuracy product's dimension upon request, details please contact with Vigor					
Weight	0.9kg (without connector and cable for MEMS product) High accuracy product's weight upon request, details please contact with Vigor					

Demisions (mm)



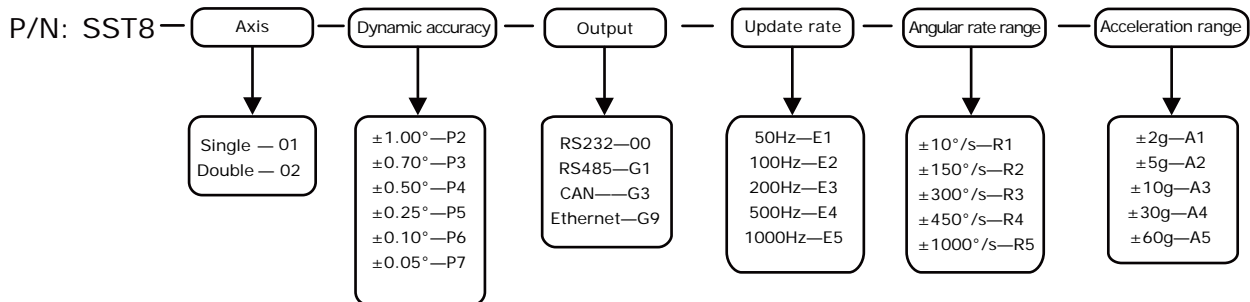
Wiring



Connector socket
(View from outside)

Pin	RS485	RS232	CAN	Ethernet
1	Power+	Power+	Power+	Power+
2	Power GND	Power GND	Power GND	Power GND
3	Signal GND	Signal GND	Signal GND	Shield
4	NC	NC	CAN_H	E-RXD+
5	NC	NC	CAN_L	E-RXD-
6	RS485-A	TXD	NC	E-TXD+
7	RS485-B	RXD	NC	E-TXD-

Ordering



For example, if order a single-axis dynamic inclinometer, dynamic accuracy $\pm 0.5^\circ$, with acceleration $\pm 10g$ and $\pm 450^\circ/s$ angular rate, Output RS422, 100HZ update rate, the correct product model should be chosen as: SST801-P4-G2-E2-R4-A3

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