

SILICIUM INERTIAL REFERENCE : SX 43030 SERIES



SPECIFICATIONS

- Acceleration and angular Speed measurements
- Compact and Robust
- Designed for severe environments
- Low Cost, high Performances
- Easy to use

GENERAL DESCRIPTION

The SENSOREX 43030 inertial reference incorporates 3 micro-machined silicon accelerometers (5.10-3 class), and 3 vibrating-structure silicon Gyrometers, positioned in the 3 orthogonal XYZ axis.

The 6 sensors give analogue information, proportional to the angular speed and to the acceleration applied to the controlled device. Thanks to the conditioning circuit, the output range (+/- 5 V standard) and the bandwidth can be adjusted according to the application.

Outside temperature is known thanks to a probe integrated in the housing. This enables error compensation by taking into account the thermal coefficients of the sensors, if necessary.

The user will then process the information gathered, according to the parameters that he wishes to measure (Displacement, Speed, Localisation,...)

This device uses a non regulated, 12 or 24 V nominal single voltage, and its compactness and robustness permit an utilisation in severe environments.

APPLICATIONS

- Vehicle performance measurements, on test tracks.
- Road and railway vehicle behaviour studies
- Robot instrumentation
- Localisation
- Stabilisation
- Flight tests

GENERAL SPECIFICATIONS (AT 25°C)

Power Supply		
Excitation Voltage	12 to 24 V	12 to 24 V
Consumption	≤ 10 W	≤ 10 W
Acceleration		
Measurement Range	± 2 g	± 10 g
Output signals	± 5V ± 1 %	5 V ± 1 %
Non Linearity Error	0,2 % FS typ 0,5 % FS max	0,2 % FS typ 0,5 % FS max
Resolution	1 mg	4 mg
Zero Null Voltage	0,15 % FS	0,15 % FS
Bandwidth at -3dB	0 to 800 Hz	0 to 600 Hz
Signal/Noise Ratio	70 dB	70 dB
Zero Thermal Drift	0,4 mg/°C	2 mg/°C
Scale Factor Thermal Drift	100 ppm of measure/°C typ 250 ppm of measure/°C max	100 ppm of measure/°C typ 250 ppm of measure/°C max

GENERAL SPECIFICATIONS (AT 25°C)

Angular speed		
Measurement Range	± 50°/sec	± 110°/sec
Output Signals	± 5V ± 1 %	± 5V ± 1 %
Non Linearity Error	< 1 % FS	< 1 % FS
Scale factor variations on the temp. range	± 3 % Max.	± 3 % Max.
Scale factor repeatability	± 0,5 % 1 g	± 0,5 % 1 g
Bias (on temperature range)	± 3°/sec	± 3°/sec
Bias stability	± 0,3 %/sec	± 0,3 %/sec
Bias repeatability	± 0,03 %/sec	± 0,03 %/sec
Bandwidth at -3dB	> 50 hZ	> 50 hZ
Sensitivity to accelerations	0,002°/s/g	0,002°/s/g
Auto-test function	Yes	Yes
Start uptime	< 300 ms	< 300 ms
Operating Environment		
Operating Temperature	- 40°C to + 75°C	
Storage Temperature	- 45°C to + 80°C	
Random Vibrations	0,05 g ² /Hz (20 to 2000 Hz)*	
Shocks	200 g – 6 ms	
Protection	IP 65	
Electro-magnetic environment Certifications	NF-EN 61326	
Weight	< 1,100 Kg	

INTERFACE DRAWING

Raccordement (Connection)
Connecteur suivant MIL-C 38999 serie III (MIL-C 38999 serie III connector)
Fiche + raccord droit à serre-câble fournis (Plug + straight cable clamp supplied)

- 1 : + V alimentation (+V power supply)
- 2 : NC
- 3 : 0V alimentation (0V power supply)
- 4 : NC
- 5 : Sortie Gyromètre X (Output gyrometer X)
- 6 : Sortie Gyromètre Y (Output gyrometer Y)
- 7 : Sortie Gyromètre Z (Output gyrometer Z)
- 8 : Point froid gyromètres X Y Z (Low point gyrometers X Y Z)
- 9 : Sortie accéléromètre X (Output accelerometer X)
- 10 : Sortie accéléromètre Y (Output accelerometer Y)
- 11 : Sortie accéléromètre Z (Output accelerometer Z)
- 12 : Point froid accéléromètres X Y Z + Temp. (Low point accelerometers X Y Z + Temp.)
- 13 : Temperature
- 14 : NC
- 15 : NC
- 16 : NC

Masse (weight) : < 1100 g

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SELECTION GUIDE

Range	± 50°/sec	± 110°/sec
± 2 g	43030	43031
± 10 g	43032	43033