

Position and Attitude Sensor for Motion Measurement

VSAS-4GM

Overview

VSAS-4GM outputs attitude (heading, pitch, and roll), angular rate and acceleration with vibration gyroscopes and accelerometers. This sensor realize advanced motion measurement by complementing the location information of GNSS (Global Navigation Satellite System) with magnetic heading sensor, gyroscopes, accelerometers.



Feature

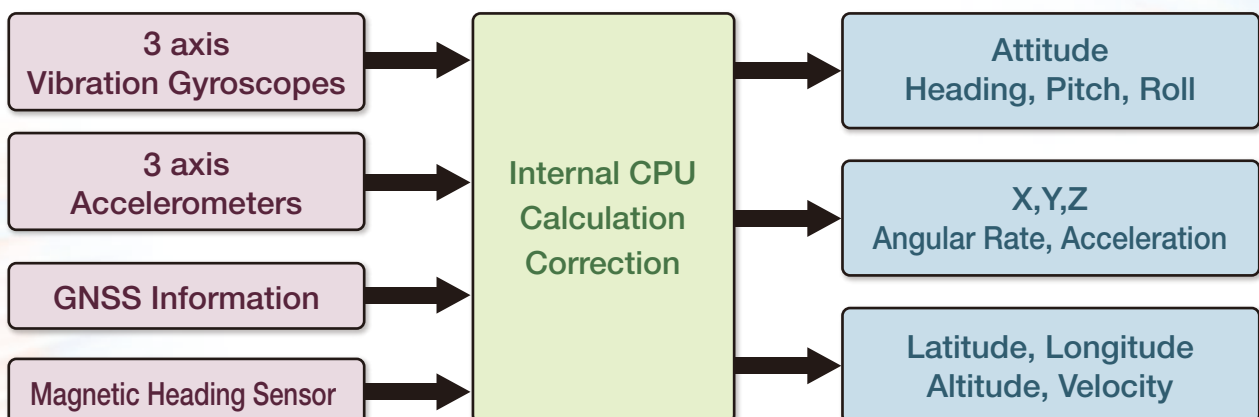
- High attitude accuracy : pitch, roll, low heading drift
- Wide dynamic range : angular rate, acceleration
- Location measurement error : within a few meters
- High performance GNSS receiver : support for GPS, QZSS, SBAS
- Interface : RS-232C, CAN2.0B

Application

For automobile, motorcycle, unmanned aerial vehicle, machinery and robot.

- Motion measurement
- Attitude measurement
- Control for motion and attitude

Composition

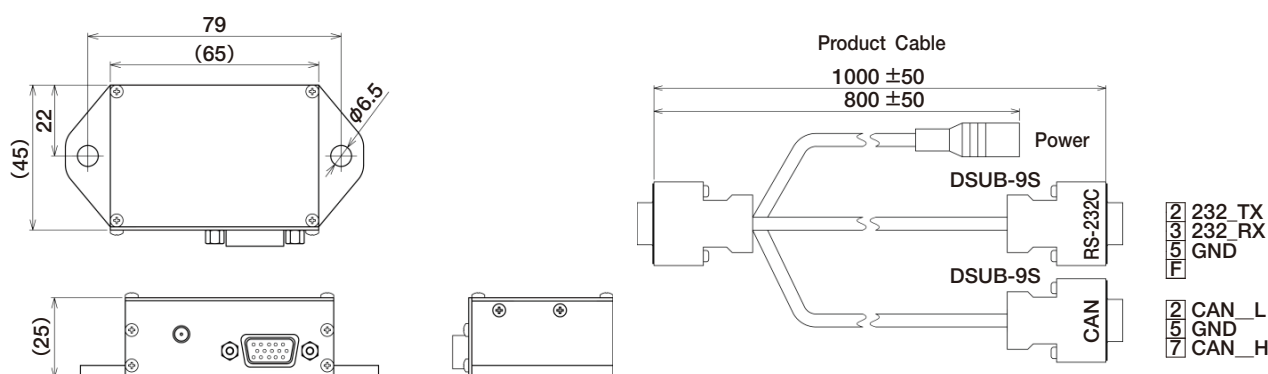


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Specification

Item		Range	Accuracy
Attitude	Heading	$\pm 180^\circ (\pm \pi \text{rad})$	1.0° rms (Room Temp. · GNSS-on · 5km/hour or more)
	Pitch	$\pm 90^\circ (\pm \pi/2 \text{rad})$	2.0° rms (Room Temp.) Within $\pm 30^\circ$
	Roll	$\pm 180^\circ (\pm \pi \text{rad})$	2.0° rms (Room Temp.) Within $\pm 30^\circ$
Acceleration	ACC X,Y,Z	$\pm 39.2 \text{m/s}^2 (\pm 4\text{G})$	$\pm 0.08 \text{m/s}^2 \pm 1\%$ FS (Room Temp.) Resolution : 0.01m/s ² Frequency Res. : 50Hz (typ)
Angular Rate	RATE X,Y,Z	$\pm 5.24 \text{rad/s} (300^\circ/\text{s})$	$\pm 0.5^\circ/\text{s} \pm 1\%$ FS (Room Temp.) Resolution : $1.75 \times 10^{-3} \text{rad/s} (0.1^\circ/\text{s})$ Frequency CASC : 40Hz (typ)
Latitude		$\pm 180^\circ (\pm \pi \text{rad})$	1mCEP (GNSS-on) GNSS Update Cycle : 10Hz
Longitude		$\pm 90^\circ (\pm \pi/2 \text{rad})$	1mCEP (GNSS-on) GNSS Update Cycle : 10Hz
Altitude		50000m	2mCEP (GNSS-on) GNSS Update Cycle : 10Hz
Velocity		500m/s	$\pm 0.1 \text{m/s}$ (GNSS-on) GNSS Update Cycle : 10Hz
Magnetic Heading		$\pm 180^\circ (\pm \pi \text{rad})$	5°rms (Room Temp. · Sensor on horizontal condition)
Environmental Condition	Temp.for Use	-30°C ~ +65°C No Condensation	
	Temp.for Stock	-35°C ~ +85°C No Condensation	
	Shockproof	294m/s ² (30G) , 11ms	
	Vibration	40m/s ² , 10~400Hz	
Interface		RS-232C, CAN 2.0B	
Data Transfer Frequency		RS-232C (100Hz) CAN 2.0B (100Hz/50Hz/20Hz/10Hz/5Hz/2Hz/1Hz/0 for frame)	
Power		+12V (120mA) Range of Voltage : +7V~24V	
Size · Mass		Size : 65mm×45mm×25mm (Except for Protuberance) Mass : 125 g or less	
Activation		5 second after Power-on, 5 minutes for GNSS data receipt	
Dust and Water Proof		No Support	
Composition		Sensor, Antenna for GNSS, AC Adapter, Cable (232 · CAN) , Software	

External Dimension (mm)



Design and specifications are subject to change without prior notice, and without any obligation on the part of the manufacturer.



CAUTION

Before operating this equipment, you should first thoroughly read the operator's manual.

TOKYO KEIKI INC.

www.tokyokeiki.jp/e/products/sensor/

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