Channel
MICROELECTRONIC GMBH
POWERS YOUR SYSTEM

SENSING SOLUTIONS

THE WORLD IS GETTING AUTONOMOUS

EPSON

Inertial Measurement Units

Features

- **6 DOF- IMU**
- Small size & Light Weight: 24 x 24 x 10 mm, 10 g | 65 x 60 x 30 mm, 115g
- **Low- Noise, High- Stability:**
  Gyro Bias Instability: down to 0,8°/ h
  Angular Random Walk: down to 0.03 °/√h
- Low current consumption 16 mA @ 3,3V | 32 mA @ 12V
- Calibration Temperature: -40 °C to + 85 °C
- **Solid Case: IP67 possible**
- Built in Dynamic Tilt Function (EKF) possible
- Different Interfaces – J1939/ CANopen, RS- 422, UART, PI

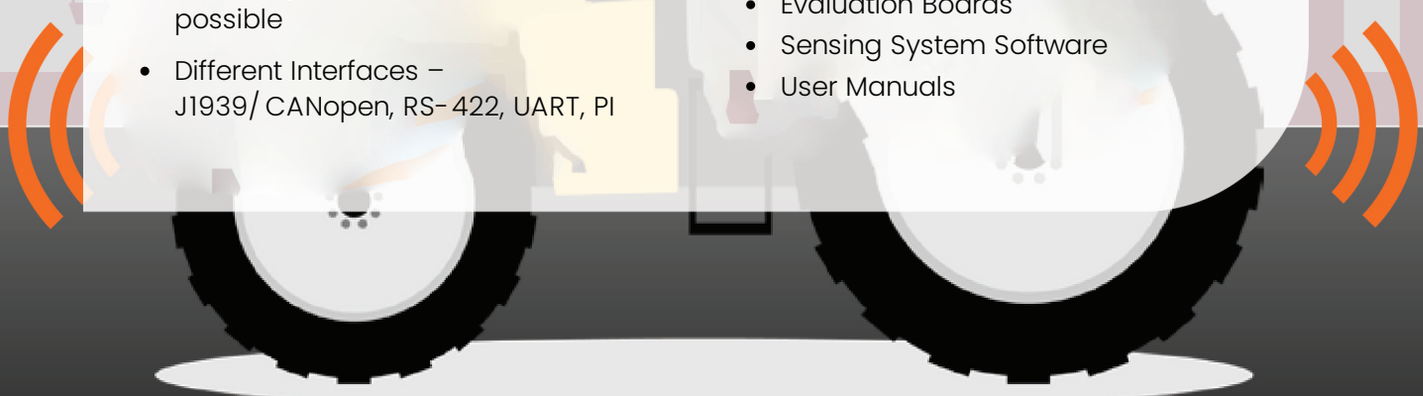
Target Applications

- UAV
- Autonomous vehicles
- MotionControl/ Stabilisation
- Mapping (LIDAR/ Sonar)
- Position detection
- Multisensor Systems / Gimbals

(i.e. construction machinery/ attachments, agricultural machinery/ implements, robots)

Development environments/ kits

- Evaluation Boards
- Sensing System Software
- User Manuals



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Detailed overview of the EPSON IMU line-up

Part#	Gyro Range [°/s]	Bias Instability [°/h]	ARW [°/√h]	Accl. Range [G]	Type	Interface	Pkg. Size [mm]	Operating Temp. [°C]
M-G570PR	±450	0.5	0.04	±15	Waterproof & Dustproof	RS422	65x60x30	-30 to +70
M-G370PDT	±200	0.8	0.03	±8/16	Built-in	SPI/UART	24x24x10	-40 to +85
M-G370PDS	±200	0.8	0.03	±10	Built-in	SPI/UART	24x24x10	-40 to +85
M-G370PDG	±450	0.8	0.06	±8/16	Built-in	SPI/UART	24x24x10	-40 to +85
M-G370PDF	±450	0.8	0.06	±10	Built-in	SPI/UART	24x24x10	-40 to +85
M-G366PDG	±450	1.2	0.08	±8/16	Built-in	SPI/UART	24x24x10	-40 to +85
M-G330PDG	±400	3	0.1	±8/16	Built-in	SPI/UART	24x24x10	-40 to +85
M-G552 Series	±450	0.8	0.06	±10	Waterproof & Dustproof	J1939 (CANopen & RS422 is selectable by product code)	65x60x30	-30 to +80

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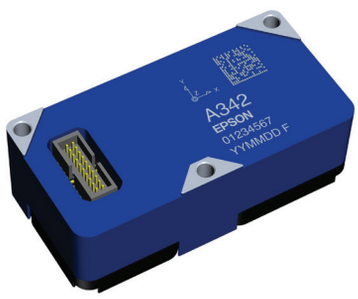
Accelerometer & Vibration Sensors



Features

- Wide dynamic range - No need to adjust for measurement range in accordance with intensity of vibration in the site.
- Small size & Light Weight: 48 x 24 x g 16 mm, 25 g | 65 x 60 x 30 mm, 128
- **Ultra low noise** of 0.2μ G/√Hz typ.
- Quartz crystal is a **diamagnetic** material - No need to care about magnetic field
- Peripheral like charge amplifier and AD converter is not needed
- Three axis digital output
- **High reliability** MTBF: 87,600 hours
- ISO10816 / 20816 compliant
- Solid Case: IP67 possible
- Different Interfaces – CAN, RS-422 UART, SPI
- **Ultra Low Power Consumption**

Target Applications

- SHM: Structural Health Monitoring
- MHM: Machine Health Monitoring
- WIM: Weight in Motion
- Seismic observation
- Position detection

(i.e. construction machinery/ attachments, agricultural machinery/ implements, robots)

Development environments/kits

- Evaluation Boards
- Sensing System Software
- User Manuals

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Detailed overview of the EPSON Accelerometer line-up

Part#	Acc. Range [G]	Band width [Hz]	Output Rate [Sps]	Resolution [uG/LSB]	Type	Inter-face	Pkg. Size [mm]	Operating Temp. [°C]
M-A352AD	±15	460	1000	0.06	Built -in	SPI/ UART	48×24×16	-30 to +85
M-A552AC1	±15	460	1000	0.06	Water proof & Dust proof	CAN open	65×60×30	-30 to +80
M-A552AR1						RS422	65×60×30	

Detailed overview of the EPSON Vibration Sensor line-up

Part#	Output Range	Frequency Range [Hz]	Possible to Measure	Output Value Type	Type	Inter-face	Pkg. Size [mm]	Operating Temp. [°C]
M-A342VD10	Velocity: ±100 mm/s	Velocity: 10 to 1,000	Velocity and	raw, rms, p-p (Digital Output)	Built -in	SPI/ UART	48×24×16	-30 to +85
M-A552AC1	Displace ment: ±200 mm	Displace ment: 1 to 100	Displace ment		Water proof & Dust proof	RS422	60×60×30	-30 to +70

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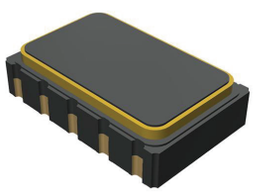
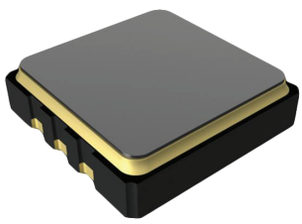
Gyro & combined Sensors


Features

- Small size: down to 5,0 x 3,2 x 1,3 mm
- **Excellent bias stability over temperature and low ARW**
  Bias temperature coefficient: down to 0,016 °/ s / °C Typ.
  Angular Random Walk: down to 0.065 °/ √h
- Low power consumption
- Operating temperature range up to -40 °C to +85 °C
- Built-in temperature sensor
- Built-in and selectable digital filter
- **AEC-Q100/200 compliant**
- SPI/I2C serial interface, Analog Voltage

Target Applications

- Autonomous machines
- Autonomous driving equipment
- Anti vibration and attitude control
- Rollover Protection System
- Electric Stability Control System

(i.e. construction machinery/ attachments, agricultural machinery/ implements, robots)

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Detailed overview of the EPSON Gyro & combined Sensor line-up

Part#	Rate Range [°/s]	Scale Factor [°/s]	Bias [°/s]/ Typ. @ 25°C	Axis	Interface	Pkg. Size [mm]	Operating Temp. [°C]
XV7181BB	+/-115(FS=1) +/-460(FS=1/4)	264 LSB +/-5% (16bit) 17920 LSB +/-5% (24bit)	+/-1(0 LSB Typ.)	1	SPI/I²C	5.0 x 3.2 x 1.3	-40 to +85
XV7021BB	+/-400	70 LSB +/-5% (16bit) 17920 LSB +/-5% (24bit)	+/-1(0 LSB Typ.)	1	SPI/I²C	5.0 x 3.2 x 1.3	-20 to +80
XV7081BB	+/-400	70 LSB +/-5% (16bit) 17920 LSB +/-5% (24bit)	+/-1(0 LSB Typ.)	1	SPI/I²C	5.0 x 3.2 x 1.3	-20 to +80
XV7011BB	+/-100	280LSB +/-5% (16bit) 71680LSB +/-5% (24bit)	+/-1(0 LSB Typ.)	1	SPI/I²C	5.0 x 3.2 x 1.3	-20 to +80 *contact for -40 to +85
XV7001BB	+/-100	280LSB +/-5% (16bit)	+/-1(0 LSB Typ.)	1	SPI/I²C	5.0 x 3.2 x 1.3	-20 to +80
XV-9100CD	+/-100	0.004 x VDD mV	0.5 x VDD V	1	Analog Voltage	5.0 x 5.0 x 1.4	-40 to +105
XV4001BD	+/-70	370LSB +/-1.5%	+/-2(0 LSB Typ.)	1	SPI/I²C	5.0 x 3.2 x 1.3	-40 to +85
XC1011SD	±160°/s	±30G (ACC-Range) ±57 mG (Zero G Offset)	± 525 [LSB] (± 3 °/s)	1Gyro 2ACC	SPI	6.5 x 5.2 x 1.9	-40 to +105

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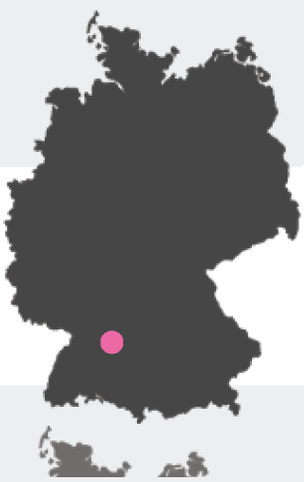
GET IN TOUCH WITH US!

- Assembly and Manufacturing
- Component Programming
- HW-/SW-Development
- Project Planning
- Distribution
- HMI-Solutions
- Design-IN
- Sourcing



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