SmartIndustrial™

PRIMARY APPLICATIONS

Navigation
Maintain your vehicle or navigation unit in the right path over the full temperature range. IMU data is coupled with GNSS to constrain position and bridge GNSS outage.

Vibration Monitoring
Motors monitoring systems use vibration sensors to prevent down times and schedule maintenance at the right time.

Tilt Sensing for Construction Equipment
Whether it is for construction vehicles or electrical tools, an accurate tilt sensor is critical to securely operate most construction equipment.

Manufacturing & Robotics
Industrial robots use motion data to enable automation, improve efficiency, monitor conditions via the precise motion and vibration measurements produced.

FEATURED PRODUCTS

IIM-42630/4
23 × 23 × 8 mm³
High-performance fault tolerant 6-Axis IMU module that provides best in class bias instability and ARW at an affordable price

IIM-20670
4.5 × 4.5 × 1.1 mm³
Thermally Stable IMU for Drone & Stabilization Applications. The low VRE specification leverages the product for deployment in high vibration environment

IIM-42652/3
2.5 × 3 × 0.91 mm³
Compact 6-axis, high FSR (/3), configurable IMU that can withstand an extended operating temperature range while requiring very low power

IIM-42351/2
2.5 × 3 × 0.91 mm³
High-performance, Low-power Accelerometer with multiple capabilities to enable easy, robust and accurate tilt and vibration measurements

InvenSense, a TDK Group Company ("TDK InvenSense") is committed through its Product Longevity Program ("PLP") to ensure that its customers will have access to a stable supply of products for their designs. Products are selected for the PLP from products developed for automotive and industrial markets.

PRODUCT CATEGORIES

IIM-46230 & IIM-46234

High End Industrial, GNSS Module, Delivery Systems

- Best in class bias instability 1.9°/hr
- Ultra-low ARW = 0.09°/√(hr)
- Custom calibration to improve thermal stability
- Processing power to incorporate complex algorithms

IIM-20670

Antenna Stabilization, Drones

- Max Gyroscope FSR: ±1966 dps
- Max Accelerometer FSR: ±65g
- Good stability over temp
- Low Vibration Rectification Error

IIM-42652 & IIM-42653

Autonomous Mobile Robots, Navigation Units, Drones

- High FSR – 4000dps & 32g (IIM-42653 only)
- Good bias instability 3.8°/hr
- Low noise density 70µg

IIM-42351 & IIM-42352

Tilt Sensing, Construction Tools, Vibration Sensing (IIM-42352 only)

- 3-Axis Accelerometer
- High bandwidth up to 4 kHz (IIM-42352 only)

Note: All products have an Operating Temperature Range of -40°C to 105°C and a Shock Tolerance of 10,000g

PRODUCT DETAILS

Parameters	Units	IIM-46234	IIM-46230	IIM-20670		IIM-42653
	Axes	X, Y, Z	X, Y, Z	X, Y	Z	X, Y, Z
	L x W x H ³	23 x 23 x 8	23 x 23 x 8	4.5 x 4.5 x 1.1		2.5 x 3 x .91
Output Data Rate (Max ODR)	kHz	**1**	**1**	**8**		**32**
Gyro FSR	dps	±480	±250/500/1000/2000	± 41, 61 … 1311, 1966		±500/1000/2000/4000
Gyro Noise Density	mdps/√Hz	1.6	3	5		3.8
Gyro Bias instability	deg/H	1.9	4.1	13		3.6
Gyro Bias over Temp	mdps/C ±	0.966	2.069	1.724		10
Gyro Sensitivity Over Temp	%/C ±	0.001	0.001	0.001		0.005
Angular random walk	deg/√hr	0.07	0.15	0.23		0.15
Gyro Non-Linearity	%FS ±	0.04	0.046	0.2		0.1
Accel FSR	g	±8	±2/4/8/16	±2/4/8/16/32/64		±2/4/8/16/32
Accel Bias repeatability	mg ±	0.2	0.4	1		20
Accel Noise Density	µg/√Hz	29	41	172	248	70
Accel Bias Over Temp	ug/C ±	6.9	13.8	3.5	138	150
Accel Sensitivity Over Temp	%/C ±	0.001	0.001	0.001	0.003	0.005
Accel Non-Linearity	%FS ±	0.05	0.05	1		0.1

Scan Here for additional materials and information.