

SmartIndustrial™

PRIMARY APPLICATIONS



Navigation

IMU data couples with GNSS to constrain position, bridge GNSS outages, and maintain the right path over the full temperature range



Vibration Monitoring

Motor monitoring systems use vibration sensors to prevent downtime and enable an ideal maintenance schedule



Tilt Sensing for Construction Equipment

Accurate tilt sensing is critical to securely operate most construction equipment, vehicles, and tools



Manufacturing & Robotics

Industrial robots use precise motion data to enable automation, improve efficiency, and monitor conditions

FEATURED PRODUCTS

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-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

- High FSR – 4000dps & 32g (IIM-42653 only)
- Good bias instability
- Low noise density

IIM-42351 & IIM-42352

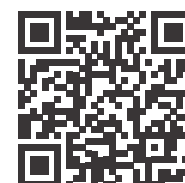
Tilt Sensing, Construction Tools, Vibration Sensing (IIM-42352 only)

- 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-20670		IIM-42652/3	Color Key
	Axes	X, Y	Z	X, Y, Z	
	L × W × H (mm ³)	4.5 × 4.5 × 1.1		2.5 × 3 × 0.91	
Output Data Rate (Max ODR)	kHz	8		32	
Gyro FSR	dps	± 41, 61 ... 1311, 1966		±500 / 1000 / 2000 / 4000	
Gyro Noise Density	mdps/√Hz	5		3.8	
Gyro Bias Over Temp	mdps/°C ±	1.724		10	
Gyro Sensitivity Over Temp	%/°C ±	0.001		0.005	
Gyro Non-Linearity	%FS ±	0.2		0.1	
Gyro Bias Instability	deg/hr				
Angular Random Walk	deg/√hr				
Accel FSR	g	±2 / 4 / 8 / 16 / 32 / 64		±2 / 4 / 8 / 16 / 32	
Accel Bias Repeatability	mg ±	1		20	
Accel Noise Density	μg/√Hz	172	248	70	
Accel Bias Over Temp	μg/°C ±	3.5	138	150	
Accel Sensitivity Over Temp	%/°C ±	0.001	0.003	0.005	
Accel Non-Linearity	%FS ±	1		0.1	
Accel Bias Instability	μg				
Velocity Random Walk	m/s/√hr				



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materials and
information.