



MODELS 66203RPZ1 &
66213RPZ1

MICRO-POWER ICP[®] EMBEDDABLE ACCELEROMETERS

Extremely low power consumption (180 μ W)
60 μ A current draw for extended battery life
350 μ s typical settling time enables fast readings
Zero current draw when idle

APPLICATIONS

Ideal for vibration and shock measurements in wireless, battery-powered IoT solutions
Critical condition monitoring applications that require a wide frequency range
High frequency monitoring of bearings, fans, pumps, gearboxes, and other rotating equipment



EASILY INTEGRATED, BATTERY-FRIENDLY ASSET MONITORING

Equipped with the industry's most trusted sensor technology for machine health monitoring, IMI's micro-power ICP[®] embeddable accelerometers excel in performance and reliability, making them the ideal choice for wireless, battery-powered IoT devices. Featuring versatile frequency ranges up to 12,500 Hz (\pm 3 dB) and sensitivity options of 50 or 100 mv/g, these sensors are tailored for critical data collection on motors, pumps, fans, and other rotating equipment.

Micropower ICP[®] embeddable accelerometers can be mounted in various ways within your device, due to a low-profile design and location of the piezoelectric sensing element at the base of the accelerometer. When compared to similar MEMS devices, this design ensures tighter coupling between the sensor and the object being measured, minimizing unwanted vibration for superior signal integrity. Remarkably low power consumption (180 μ W) extends battery life by 3-4x compared to similar products – a critical advantage for continuous machine health monitoring that reduces the need for frequent battery replacements and ensures uninterrupted operation.

SPECIFICATIONS

Model Number	66203RPZ1		66213RPZ1	
Performance	Imperial	Metric	Imperial	Metric
Sensitivity ($\pm 20\%$)	50 mV/g	5.1 mV/(m/s ²)	100 mV/g	10.2 mV/(m/s ²)
Measurement Range	± 25 g	± 245 m/s ²	± 12.5 g	± 123 m/s ²
Frequency Range (± 3 dB)	60 to 750 kcpm	1 to 12.5k Hz	120 to 750 kcpm	2 to 12.5k Hz
Resonant Frequency	> 1500 kcpm	> 25 kHz	> 1500 kcpm	> 25 kHz
Broadband Resolution	550 μ g rms	5.4 mm/sec ²	400 μ g	3.9 mm/sec ²
Non-Linearity	$\leq 1\%$			
Transverse Sensitivity	$\leq 7\%$			
Environmental				
Overload Limit (Shock)	5,000 g pk	49,000 m/s ² pk	5,000 g pk	49,000 m/s ² pk
Temperature Range	-65 to 250°F	-54 to 121°C	-65 to 250°F	-54 to 121°C
Electrical				
Settling Time (within 10% of bias)	350 μ s			
Discharge Time Constant	≥ 0.16 sec		≥ 0.08 sec	
Excitation Voltage	3 to 5.5 VDC			
Output Impedance	< 1,000 Ohm			
Current Draw	60 μ A			
Output Bias Voltage	1.5 VDC			
Spectral Noise (10 Hz)	35 μ g/ $\sqrt{\text{Hz}}$	343 ($\mu\text{m/sec}^2$)/ $\sqrt{\text{Hz}}$	24 μ g/ $\sqrt{\text{Hz}}$	235 ($\mu\text{m/sec}^2$)/ $\sqrt{\text{Hz}}$
Spectral Noise (100 Hz)	12 μ g/ $\sqrt{\text{Hz}}$	118 ($\mu\text{m/sec}^2$)/ $\sqrt{\text{Hz}}$	8 μ g/ $\sqrt{\text{Hz}}$	78 ($\mu\text{m/sec}^2$)/ $\sqrt{\text{Hz}}$
Spectral Noise (1 kHz)	6 μ g/ $\sqrt{\text{Hz}}$	59 ($\mu\text{m/sec}^2$)/ $\sqrt{\text{Hz}}$	4 μ g/ $\sqrt{\text{Hz}}$	39 ($\mu\text{m/sec}^2$)/ $\sqrt{\text{Hz}}$
Physical				
Size (Lip Diameter x Height)	0.36 in x 0.38 in	9.1 mm x 9.7 mm	0.36 in x 0.38 in	9.1 mm x 9.7 mm
Weight	0.1 oz	3 gm	0.1 oz	3 gm
Mounting	Adhesive / Solder			
Sensing Element	Ceramic			
Sensing Geometry	Shear			
Housing Material	Stainless Steel			
Sealing	Welded Hermetic			
Electrical Connector	Header Pins			
Electrical Connector Position	Bottom			

