



# IMI SENSORS

A PCB DIVISION



MODELS 66203RPZ1 &  
66213RPZ1

## MICRO-POWER ICP<sup>®</sup> EMBEDDABLE ACCELEROMETERS

- Extremely low power consumption (180  $\mu$ W)
- 60  $\mu$ A current draw for extended battery life
- 350 ms 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

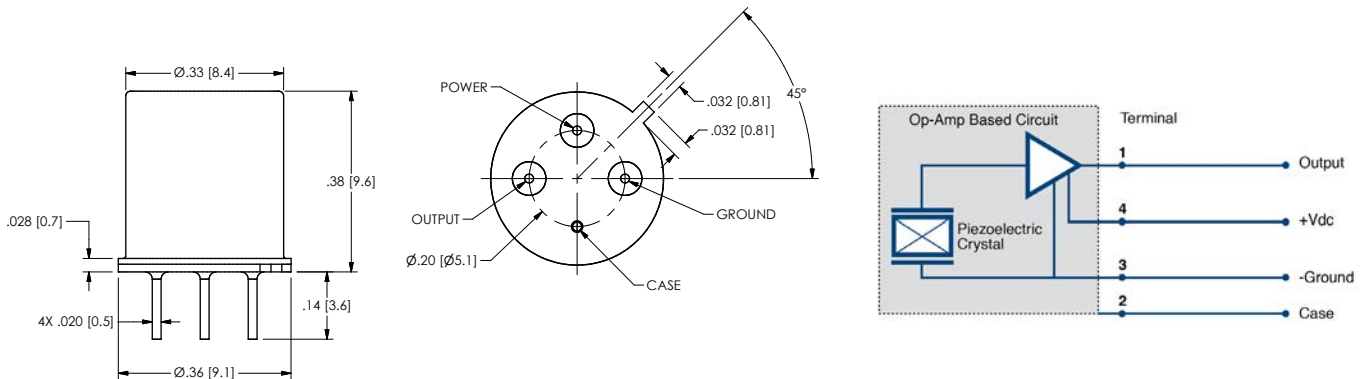
Equipped with the industry's most trusted sensor technology for machine health monitoring, IMI's micro-power ICP<sup>®</sup> embeddable accelerometers excel in performance and reliability, making them the ideal choice for wireless, battery-powered IoT devices. Featuring versatile frequency ranges up 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<sup>®</sup> 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  $\mu$ 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 (± 20%)	50 mV/g	5.1 mV/(m/s <sup>2</sup> )	100 mV/g	10.2 mV/(m/s <sup>2</sup> )
Measurement Range	± 25 g	± 245 m/s <sup>2</sup>	± 14 g	± 137 m/s <sup>2</sup>
Frequency Range (± 3dB)	60 to 750 kcpm	1 to 12.5k Hz	120 to 750 kcpm	2 to 12.5k Hz
Resonant Frequency	> 25 kHz	> 25 kHz	> 25 kHz	> 25 kHz
Broadband Resolution	450 µg rms	4.4 mm/sec <sup>2</sup>	400 µg	3.9 mm/sec <sup>2</sup>
Non-Linearity	≤ 1 %		≤ 1 %	
Transverse Sensitivity	≤ 7 %		≤ 7 %	
Environmental				
Overload Limit (Shock)	5,000 g pk	49,000 m/s <sup>2</sup> pk	5,000 g pk	49,000 m/s <sup>2</sup> 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)	≤ 0.0003 sec		≤ 0.0003 sec	
Discharge Time Constant	≥ 0.16 sec		≥ 0.08 sec	
Excitation Voltage	3 to 5.5 VDC		3 to 5.5 VDC	
Constant Current Excitation	2 to 20 mA		2 to 20 mA	
Output Impedance	< 1,000 Ohm		< 1,000 Ohm	
Current Draw	60 µA		60 µA	
Output Bias Voltage	1.5 VDC		1.5 VDC	
Spectral Noise (10 Hz)	30 µg/√Hz	294 (µm/sec <sup>2</sup> )/√Hz	24 µg/√Hz	235 (µm/sec <sup>2</sup> )/√Hz
Spectral Noise (100 Hz)	12 µg/√Hz	118 (µm/sec <sup>2</sup> )/√Hz	8 µg/√Hz	78 (µm/sec <sup>2</sup> )/√Hz
Spectral Noise (1 kHz)	6 µg/√Hz	59 (µm/sec <sup>2</sup> )/√Hz	4 µg/√Hz	39 (µm/sec <sup>2</sup> )/√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		Adhesive / Solder	
Sensing Element	Ceramic		Ceramic	
Sensing Geometry	Shear		Shear	
Housing Material	Stainless Steel		Stainless Steel	
Sealing	Welded Hermetic		Welded Hermetic	
Electrical Connector	Header Pins		Header Pins	
Electrical Connector Position	Bottom		Bottom	



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