



IMI SENSORS

A PCB DIVISION



MODELS 66203RPZ1,
66213RPZ1 & 66253RPZ1

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 (± 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		66253RPZ1	
Performance	Imperial	Metric	Imperial	Metric	Imperial	Metric
Sensitivity (± 20%)	50 mV/g	5.1 mV/(m/s²)	100 mV/g	10.2 mV/(m/s²)	25 mV/g	2.5 mV/(m/s²)
Measurement Range	± 25 g	± 245 m/s²	± 12.5 g	± 123 m/s²	± 50 g	± 491 m/s²
Frequency Range (± 3dB)	60 to 750 kcpm	1 to 12.5k Hz	120 to 750 kcpm	2 to 12.5k Hz	30 to 750 kcpm	0.5 to 12.5k Hz
Resonant Frequency	> 1,500 kcpm	> 25 kHz	> 1,500 kcpm	> 25 kHz	> 1,500 kcpm	> 25 kHz
Broadband Resolution	550 µg rms	5.4 mm/sec²	400 µg	3.9 mm/sec²	1200 µg	11.8 mm/sec²
Non-Linearity	≤ 1 %					
Transverse Sensitivity	≤ 7 %					
Environmental						
Overload Limit (Shock)	5,000 g pk	49,000 m/s² pk	5,000 g pk	49,000 m/s² pk	5,000 g pk	49,000 m/s² pk
Temperature Range	-65 to 250°F	-54 to 121°C	-65 to 250°F	-54 to 121°C	-65 to 250°F	-54 to 121°C
Electrical						
Settling Time (within 10% of bias)	350 µs					
Discharge Time Constant	≥ 0.16 sec		≥ 0.08 sec		≥ 0.32 sec	
Excitation Voltage	3 to 5.5 VDC					
Output Impedance	< 1,000 Ohm					
Current Draw	60 µA					
Output Bias Voltage	1.5 VDC					
Spectral Noise (10 Hz)	35 µg/√Hz	343 (µm/sec²)/√Hz	24 µg/√Hz	235 (µm/sec²)/√Hz	120 µg/√Hz	1,177 (µm/sec²)/√Hz
Spectral Noise (100 Hz)	12 µg/√Hz	118 (µm/sec²)/√Hz	8 µg/√Hz	78 (µm/sec²)/√Hz	26 µg/√Hz	255 (µm/sec²)/√Hz
Spectral Noise (1 kHz)	6 µg/√Hz	59 (µm/sec²)/√Hz	4 µg/√Hz	39 (µm/sec²)/√Hz	10 µg/√Hz	98 (µm/sec²)/√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	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	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					

