IMI SENSORS
A PCB DIVISION

MODELS **RTD602D11 & RTD602D91**

LOW-COST ICP® ACCELEROMETER AND RESISTANCE TEMPERATURE DETECTOR

- Dual vibration and temperature output
- PT100 sensing element
- Hermetic 316L stainless steel housing
- Single point ISO 17025 accredited calibration

APPLICATIONS

- Wind turbines
- Hydroelectric power plants
- Motor vibration sensors
- Machine tool spindles
- Food and beverage production

CE

HIGH-PRECISION VIBRATION AND TEMPERATURE MONITORING

Models RTD602D11 and RTD602D91 bring resistance temperature detection to our line of low-cost 100 mV/g ICP® accelerometers to provide a highly accurate, versatile solution for machine health monitoring. Featuring a hermetic stainless steel housing and low profile, the sensors are designed for easy installation and performance in harsh industrial environments up to 250° F.

At the heart of these sensors lies PCB's patented ICP® technology, widely regarded as the industry's best for machine health monitoring due to its high sensitivity, broad frequency range, and low noise floor. RTD602D11 and RTD602D91 feature measurement ranges of ±50 g and frequency ranges (±3 dB) of 0.5 to 8,000 Hz. Additionally, resistance temperature detectors (RTD) provide higher accuracy and repeatability in temperature output compared to thermocouples and thermistors. The RTD sensor utilizes a commercially available "PT100" type of temperature sensing element.

Our low-cost series operates on a simple, two-wire system consisting of an 18-30 VDC power source, current-regulating diode, voltmeter, and decoupling capacitor. These accelerometers are ideal for route-based and permanently-mounted predictive maintenance applications. Achieve unparalleled precision in monitoring vibration and temperature, while keeping installation costs low and minimizing downtime.

SPECIFICATIONS

Model Number	RTD602D11		RTD602D91	
Performance	**Imperial**	**Metric**	**Imperial**	**Metric**
Sensitivity (± 10%)	100 mV/g	10.2 mV/(m/s²)	100 mV/g	10.2 mV/(m/s²)
Measurement Range	± 50 g	± 490 m/s²	± 50 g	± 490 m/s²
Frequency Range (± 3dB)	30 to 480,000 cpm	0.5 to 8,000 Hz	30 to 480,000 cpm	0.5 to 8,000 Hz
Resonant Frequency	1,500 kcpm	25 kHz	1,500 kcpm	25 kHz
Broadband Resolution (1 to 10,000 Hz)	350 µg	3,434 µm/sec²	350 µg	3,434 µm/sec²
Non-Linearity	± 1 %		± 1 %	
Transverse Sensitivity	≤ 7 %		≤ 7 %	
Environmental				
Overload Limit (Shock)	5,000 g pk	49,050 m/s² pk	5,000 g pk	49,050 m/s² pk
Temperature Range	-65 to 250°F	-54 to 121°C	-65 to 250°F	-54 to 121°C
Enclosure Rating	IP68		IP68, IP69K	
Electrical				
Settling Time (within 1% of bias)	≤ 2.0 sec		≤ 3.0 sec	
Discharge Time Constant	≥ 0.3 sec		≥ 0.3 sec	
Excitation Voltage	18 to 28 VDC		18 to 28 VDC	
Constant Current Excitation	2 to 20 mA		2 to 20 mA	
Output Impedance	< 150 Ohm		< 150 Ohm	
Output Bias Voltage	8 to 12 VDC		8 to 12 VDC	
Spectral Noise (10 Hz)	8 µg/√Hz	78.5 (µm/sec²)/√Hz	8 µg/√Hz	78.5 (µm/sec²)/√Hz
Spectral Noise (100 Hz)	5 µg/√Hz	49.1 (µm/sec²)/√Hz	5 µg/√Hz	49.1 (µm/sec²)/√Hz
Spectral Noise (1 kHz)	4 µg/√Hz	39.2 (µm/sec²)/√Hz	4 µg/√Hz	39.2 (µm/sec²)/√Hz
Electrical Isolation (Case)	$>10^8$ Ohm		$>10^8$ Ohm	
Physical				
Size (Length x Height x Width)	3.70 in x 0.845 in x 0.74 in	94 mm x 21.5 mm x 18.8 mm	1.73 in x 0.845 in x 0.74 in	43.9 mm x 21.5 mm x 18.8 mm
Weight	2.68 oz	76 gm	2.68 oz	76 gm
Mounting Thread	¼-28 UNF		¼-28 UNF	
Mounting Torque	2 to 5 ft-lb	2.7 to 6.8 Nm	2 to 5 ft-lb	2.7 to 6.8 Nm
Sensing Element	Ceramic		Ceramic	
Sensing Geometry	Shear		Shear	
Sensing Element (Temperature)	PT100		PT100	
Housing Material	316L Stainless Steel		316L Stainless Steel	
Sealing	Welded Hermetic		Welded Hermetic	
Electrical Connector	Molded Integral Cable		4-Pin M12	
Electrical Connector Position	Side		Side	
Cable Type	Polyurethane		Cable Not Included	

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