

Columbia Research Laboratories, Inc. **Vibration / Temperature Transmitters**

Models 972

- *Monitor & Trend Machinery Performance
- *Two 4-20mA Signal Outputs, Vibration Level and Temperature
- *Six Standard Ranges
- *Electrically Isolated
- *Reverse Polarity Protection
- *Choice of Two Case Designs & Mounting Configurations

The Model 972 Solid State Loop-Powered Vibration and Temperature Sensors are specifically designed for industrial machinery monitoring. The Sensor continuously measures both vibration level and temperature, key machinery health parameters, and transmit the data directly into a PLC, providing accurate level monitoring and with support alarm and machinery shutdown capabilities.

The vibration level output indicates either Velocity or peak Acceleration with factory set ranges of 0-1, 0-2, and 0-5 inches/sec and 0-10, 0-20, and 0-50Gs pk respectively. The frequency response range is from 5 to 2000Hz and $\pm 5\%$ accuracy is maintained over an operating temperature range of from 0 to 100 degrees C.

The sensor is offered in two case styles, both of which are case isolated with outputs accessible via standard 4 pin connectors. The Model 972-H1 is mounted with an integral $\frac{1}{4}$ -28-socket head cap screw which allows the case to be rotated to any 360 degree position prior to lockdown. The 972-H2 is mounted with a removable $\frac{1}{4}$ -28 base mounting stud. Consult the factory for customized versions of these sensors



Specifications

Velocity Models	972-V1 - H1	972-V2-H1	972-V5-H1	972-V1-H2	972-V2-H2	972-V5-H2
Range	0 to 1 in/sec pk	0 to 2 in/sec pk	0 to 5 in/sec pk	0 to 1 in/sec pk	0 to 2 in/sec pk	0 to 5 in/sec pk
Acceleration Models	972-A10 - H1	972-A20 - H1	972-A50 - H1	972-A10 - H2	972-A20 - H2	972-A50 - H2
Range	0 to 10 Gs pk	0 to 20 Gs pk	0 to 50 Gs pk	0 to 10 Gs pk	0 to 20 Gs pk	0 to 50 Gs pk
Accuracy	$\pm 5\%$ From 0 to 100 Degrees C					
Frequency Response	$\pm 0.5\text{dB}$, 5Hz to 2KHz					
Output Ripple	< 1% of Reading @ 10Hz					
Output Rise / Fall Time	1 Second, 10% to 90%					

Temperature

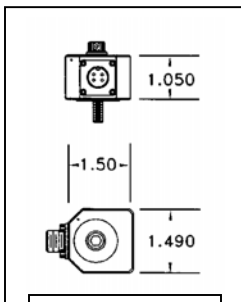
Sensor Type	100 Ohm PT RTD, Linearized
Output	4 mA @ 0 Deg. C to 20 mA @ 100 Deg. C
Accuracy	± 1.5 Deg. C

Electrical

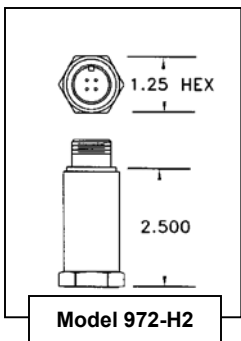
Minimum Operating Voltage	10 VDC
Maximum Operating Voltage	36 VDC
Isolation	100M Ohm Min. Circuit to Circuit and Circuit To Case
Reverse Polarity	Both Circuits Protected
Operating Temperature Range	0 Deg. C To +100 Deg. C

Physical

	H1 Case Configuration	H2 Case Configuration
Size (Excluding Connector & Mounting Stud)	1.50 in. L x 1.49 in. W x 1.05 in H 3.81 cm L x 3.8 cm W x 2.67 cm H	1.25 in. Hex x 2.50 in. H 3.81 cm L x 3.8 cm W x 2.67 cm H
Weight	150 Grams	230 Grams
Case Material	Aluminum Alloy	Stainless Steel
Electrical Interface	Connector PTO2A-8-4P (Mates with PTO6E-8-4S)	4-Pin Connector, MIL-C-5015 (Mates with MS3106A-14-S)
Mounting	$\frac{1}{4}$ -28 x 1.50 Socket Hd Cap Screw	$\frac{1}{4}$ -28 x 0.25 Stud



Model 972-H1



Model 972-H2

Output Connector Pin Functions:
 Pin A Vibration Loop (+)
 Pin B Vibration Loop (-)
 Pin C Temperature Loop (+)
 Pin D Temperature Loop (-)

Columbia Research Laboratories Inc. 1925 Mac Dade Blvd. Woodlyn, PA 19094 USA
Phone: 1.800.813.8471 / Fax: 610.872.3882 / email:sales@columbiaresearchlab.com