IMI SENSORS
A PCB DIVISION


Photo Courtesy of Dresser Rand

MODELS
(EX)649A01 & (EX)649A71

RECIPROCATING MACHINERY PROTECTOR (RMP)

- Outperforms impact transmitters by providing earlier warnings of mechanical looseness and faults, including loose/broken bolts/rod nuts, cracked rods and cylinder debris.
- Provides peak acceleration output signal when no impacts are detected above the threshold levels.
- Counts impacts based on two threshold levels with their own independent weightings.
- Incorporates dead time after initial impact where peaks are not counted to prevent false counts.
- Offers electronically-configurable time window, peak acceleration range, threshold levels and weightings.
- Program with optional USB programmer kit (Model 600A35).

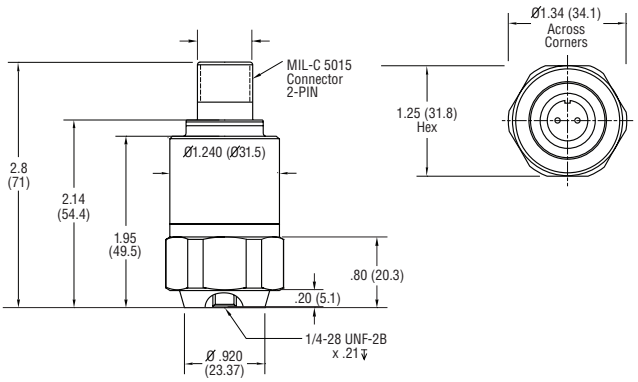
FOR MONITORING RECIPROCATING COMPRESSORS AND OTHER RECIPROCATING MACHINERY

Reciprocating machinery faults typically manifest themselves as high frequency, high amplitude impacts. While simple to integrate with PLCs for continuous monitoring, standard vibration transmitters with a current output aren't ideal for identifying their impacts because, in the conversion of AC voltage to DC voltage via the RMS process, signal peaks are smoothed out and have little effect on the resulting overall vibration level. By the time that a vibration transmitter would signal a problem, equipment damage would have already occurred.

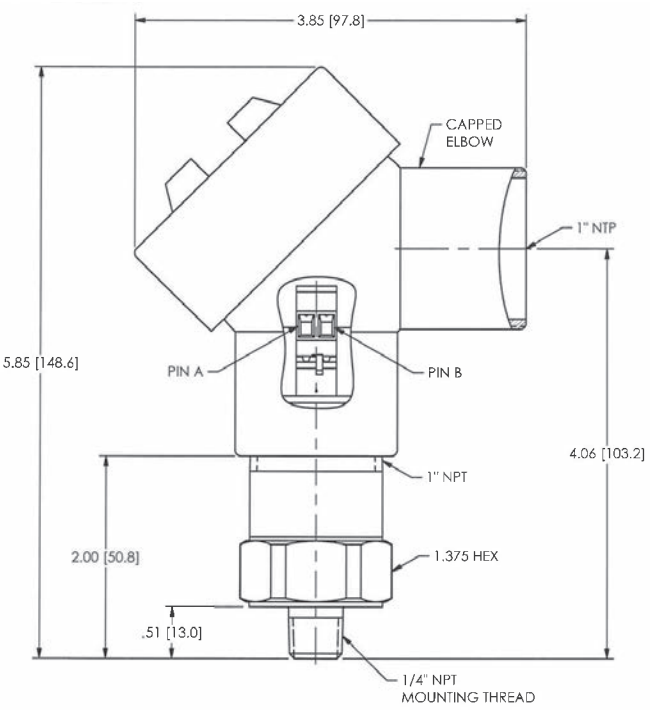
The patented Reciprocating Machinery Protector (US Patent No. 7, 171, 313) offers the best of both worlds by providing a 4-20 mA current output that is reflective of the number of high-frequency, high-amplitude impacts occurring. The output is calculated by counting the number of short, high-amplitude impacts, comparing them to field-adjustable vibration threshold levels and weighting them accordingly. This process allows the resulting output to indicate a problem and prompt a technician to take corrective measures before the fault becomes catastrophic.

SPECIFICATIONS

Model Number	(EX)649A01	(EX)649A71
Performance		
Output	4-20 mA	
Machinery Frequency Range	240 to 10,000 RPM	
	4-166 Hz	
Time Window	0.1 - 4.0 sec	
Trending Current Range	4-20 mA	
Lower Threshold Level	2 - 50 g	
Upper Threshold Level	2 - 50 g	
Lower Weighting	0.2 - 16 mA in 0.2 mA increments	
Upper Weighting	0.2 - 16 mA in 0.2 mA increments	
Environmental		
Overload Limit (Shock)	5,000 g pk	
	49,050 m/s² pk	
Operating Temperature Range	-40 to +212 °F	
	-40 to +100 °C	
Hazardous Area Approval	ATEX and CSA (EX prefix only)	
Electrical		
Excitation Voltage	15-30 VDC	
Maximum Load Resistance	50 (Vs-15) ohm	
Electrical Isolation	$>10^8$ ohm	
Physical		
Housing Material	Stainless Steel	
Sealing	Welded Hermetic	
Mounting Thread	1/4-28 Female	1/4 NPT Male
Mounting Torque	3 to 5 ft-lb	N/A
	4 to 7 N-m	N/A
Electrical Connector	2-pin MIL-C-5015	Terminal Block
Electrical Connection A	4-20 mA Pos (+)	4-20 mA Pos (+)
Electrical Connections B	4-20 mA Neg (-)	4-20 mA Neg (-)
Size (Hex x Height)	1.25 x 2.60 in	5.80 x 3.85 in
	32 x 66 mm	147 x 98 mm
Weight	7.0 oz	17.6 oz
	198 gm	500 gm



Models (EX)649A01



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