

GENERAL DESCRIPTION

Robertshaw Model 368 **PNEUMATIC** The VIBRASWITCH constitutes the most effective known method of avoiding costly damage due to mechanical malfunction of rotating and reciprocating machinery. In operation, the **VIBRASWITCH** actuates an audible warning system and/or shutdown circuit when vibration level of the **VIBRASWITCH-PROTECTED** equipment exceeds "normal" by a pre-selected amount. VIBRASWITCHES are widely used in permanent installations throughout the world; this versatile non-electric model requires only air or natural gas for operation.

Being non-electric, Model 368 may be employed in hazardous locations without the usual necessity of an explosion proof housing. This feature also makes the instrument well suited for applications at pipeline compressor stations and on skid-mounted compressors, as well as countless other applications.

The **VIBRASWITCH** is an acceleration sensitive instrument that measures the total acceleratory shock present on the machine. Acceleration is a vibration characteristic of prime importance in cases of mechanical failure on reciprocating or rotating machinery. Acceleration is directly related to the shock forces (impact) acting on a machine thus the **VIBRASWITCH** offers a valid measurement of the destructive forces acting on the machine.

PRINCIPLE OF OPERATION

The **Model 368 VIBRASWITCH** employs a magnetic circuit opposed by the inertial force of the disturbing vibration. The armature is the only moving part when actuation occurs, and is constrained to movement in one plane by a frictionless flexure pivot. The pivot consists of two overlapping blocks and a leaf spring that is so loaded as to hold the blocks together. The armature rotates at the pivot, being forced in one direction by the adjusting spring and constrained in the opposite direction by the force of a permanent magnet.

When the instrument is subjected to vibration perpendicular to the base, resultant vibratory inertial force, aided by the adjusting spring, pulls the armature away from the hold down magnet. Magnitude of this inertial force is proportional to the mass of the armature and the acceleration component of the vibratory motion. When the peak acceleration exceeds the set point level, the armature breaks away from the stop pin, moving upward to open the pneumatic valve, which is normally closed maintaining a 15 psig pressure; on opening, inlet (controlled) line pressure drops to 3 psig or lower.

The pneumatic valve vents into the sealed cover and out the exhaust (vent) port. The decrease in control pressure actuates a pneumatic relay to initiate alarm or shut down of the malfunctioning equipment.

Operation of the reset valve will apply pressure to the reset piston, returning the **VIBRASWITCH** armature to the reset position. Returning the three-way reset valve to its normal position vents the reset piston and returns the reset piston to its normal position. Manual reset of the armature is also provided by a reset button.

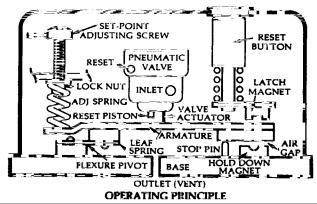
VIBRASWITCH® MALFUNCTION DETECTOR Model 368



VIBRASWITCH MODEL 368

FEATURES AND BENEFITS

- ACCELERATION SENSITIVE Measures total destructive shock, not displacement.
- **NO MAINTENANCE** No moving parts except when set-point is exceeded.
- **CONTINUOUS PROTECTION -** No attention required after installation
- **EASE OF INSTALLATION** Requires no special training.
- LONG LIFE –
- Instrument is rugged and durable no wearing parts.
 EASE OF ADJUSTMENT Set it and forget it -
- EASE OF ADJUSTIVIENT Set it and forget it one adjustment.
- **RESET** Choice of remote pneumatic or manual at unit.
- SELF POWERED Does not require any form of external power to operate.
- LOW COST Small initial investment with no maintenance costs.



MOUNTING DIMENSIONS

SPECIFICATIONS:

Inlet Pressure	15-50 psig
Control Pressure	(Tripped) 3 psig nominal
Reset Pressure	15-50 psig
Setpoint Range 0-4.5	g (peak), adjustable 1 g per turn
Accuracy	5% of full range at frequencies
	0 to 300 Hz
Shock	40 g @11 ms maximum
SYSTEM OPERATING	CONDITIONS:

15 50

Reset - No Flow......Tripped - 0.266 SCFM @ 20 psig

ENCLOSURE MATERIALS:

Cover	High impact, ABS Thermoplastic
Base	Type 360 (Cu Free) Aluminum

LOCATIONS	Hazardous,	outdoor,	unprotected
			(NEMA-4)

WEIGHT:

Net	
Shipping	2.5 lbs.

ORDERING INFORMATION

Specify complete model number from the table below.

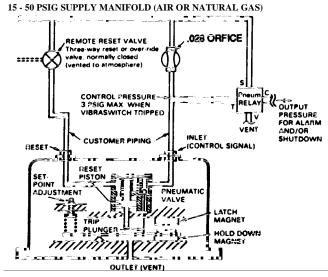
Model No.	Description
368-R	Pneumatic Vibration Detector, Weather Resistant
	Housing. Range: 0-4.5 G.
	Pneumatic signal loss when setpoint is exceeded
	with manual and remote pneumatic reset
	provisions. Reset supply pressure 15-50 psig.

ACCESSORIES*

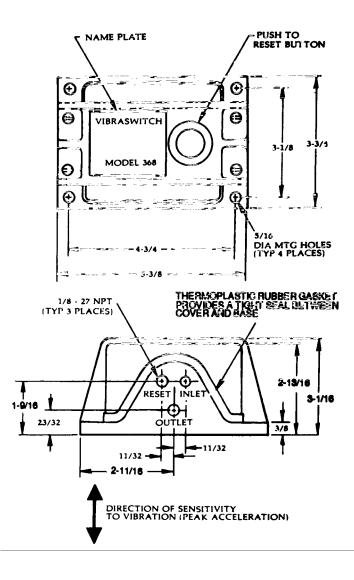
(Must	be	ordered	separately)
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Part No.	Description		
904GB014	.028 Orifice. Double ended male fitting. Mates		
	with SAE 45° flared female fitting for 1/4" hose.		
99448-A1	.028 Orifice. (1) 1/8 NPT male end and (1) 1/8		
	NPT female end.		
83939-B21	Pneumatic relay. 1/8 NPT female connections		
83939-F211	Reset valve, push-button. 1/8 NPT female		
	connections.		
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* An Orifice must be connected to inlet of VIBRASWITCH for proper operation.



PIPING DIAGRAM - MODEL 368





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