



APPLICATION TIPS	BASIC MODEL NUMBER
<ul style="list-style-type: none"> -Lowest cost vibration protection; -Baseplates available to accommodate most previous Metrix or competitor's switch models for easy retrofit. -Watertight & optional hazardous area rated enclosure -Options for built-in start up trip delay and/or remote reset. 	5550

The Model 5550 vibration switch is designed to meet all requirements for mechanical switches in a single, affordable package. This unit provides economical vibration protection for low to medium speed machinery. An inertia sensitive mechanism activates a snap-action switch with SPDT output contacts if the vibration exceeds an adjustable setpoint. The Model 5550 contacts can be used to activate an alarm or initiate equipment shutdown. The housing is weatherproof with an optional hazardous area rating. Electrical (remote) reset with start-up time delay and a second set of SPDT output contacts to accommodate DPDT needs (e.g. separate trip and trip light circuits) are available.

4 Switches

Features

- Meets all requirements for mechanical switches in one package
- Weatherproof and optional hazard area rating
- Local and optional remote reset with startup delay
- SPDT or (2)SPDT switch output contacts

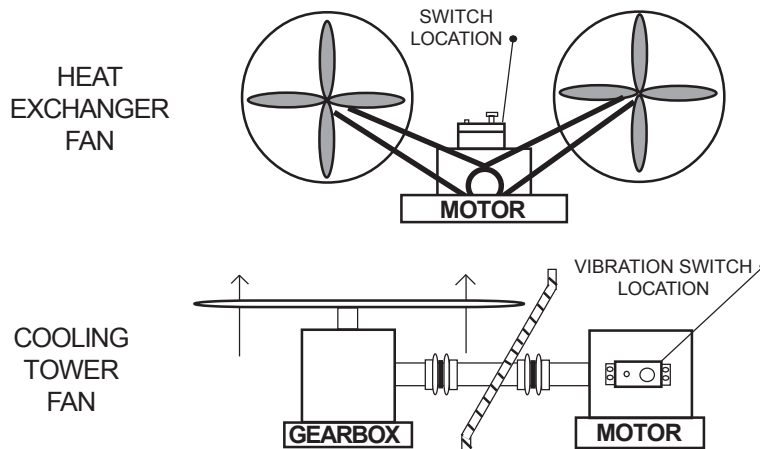
Applications

- Heat Exchanger Fans
- Cooling Tower Fans
- Recip Engines
- Recip Compressors

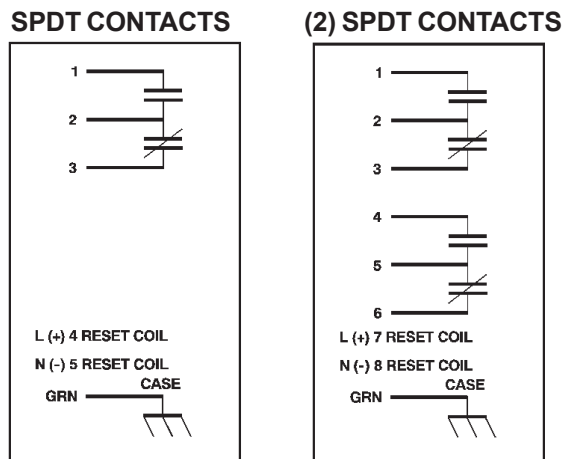
Application Note:

For an upgrade to velocity (ips or mm/s) monitoring or for dual limits (i.e. separate alarm and trip setpoints), see SW Series electronic switches.

Typical Installation Diagrams



User Wiring Diagrams



NOTE:
(2) SPDT contacts and reset coil optional



VibrAlert® Mechanical Switch

Model 5550

Specifications

Function: Armature mechanism trips on high vibration and operates snap action switch(es).

Vibration Range: See How to Select "C"

Frequency Range: 0 to 3600 RPM

Set Point Adjust: 0 to 100% of range. External set point adjustment.

Reset: Local reset, plus optional remote reset electrical coil. See How to Select.

Start Delay: Applying reset coil voltage at start up holds mechanism from tripping for 20-30 seconds, after which the switch is automatically activated. Requires electric reset option (D'0).

Temperature Limit: -40° to +70°C (-40° to +158° F)

Enclosure: Cast Aluminum

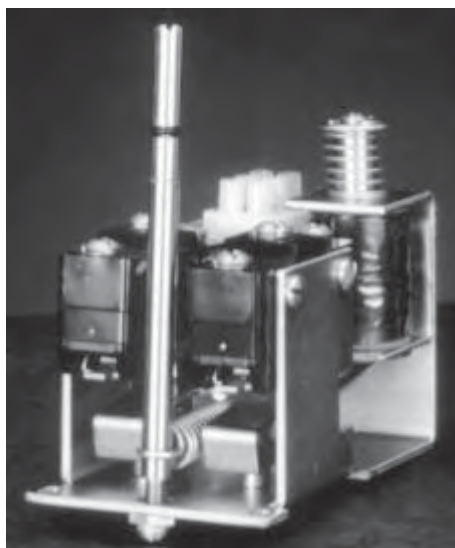
Environmental Rating: NEMA 4, IP 65 & CE mark

Switch Contact(s) Rating: 15 amps, 125, or 480 vac; 1/8 hp, 125 vac; 1/4 hp, 250 vac; 1/2 amp, 125 vdc; 1/4 amp, 250 vdc.

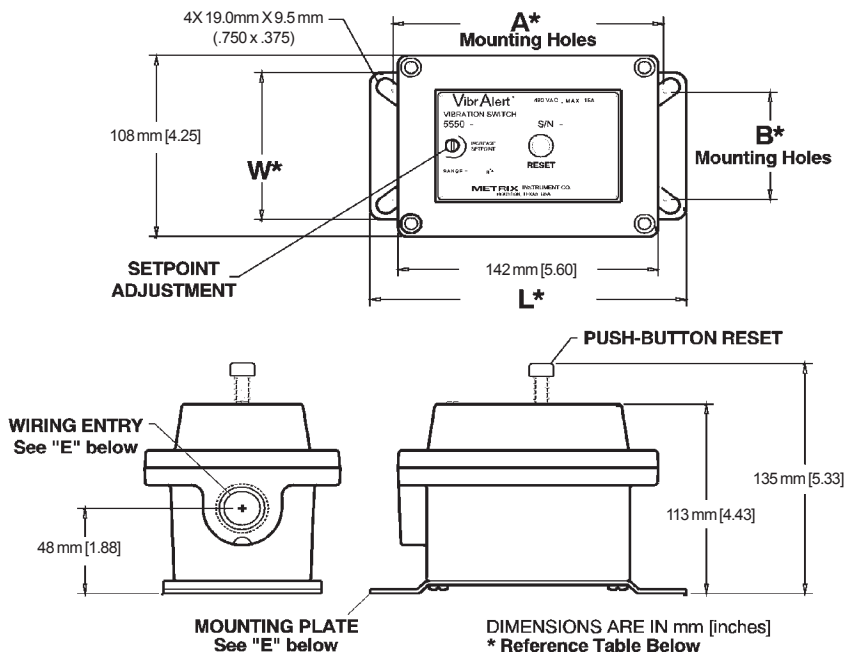
Hazard Rating: See How to Select "A"

Weight: 1.8 kg (4.0 lbs.)

Internal Mechanism



Model 5550 Weight & Dimensions



How To Select...

MODEL A B C - D E F
5550 - -

Standard
5550 - 0 1 1 - 0 1

- A** Hazard Area Rating
 - 0= None
 - 1= UL, cUL Explosion Proof
 - Class I, Groups C & D, Div 1
 - Class II, Groups E, F & G, Div 1
 - 2= UL, cUL Explosion Proof
 - Class I, Groups B, C & D, Div 1
 - Class II, Groups E, F & G, Div 1
 - 3= CENELEC Flameproof
 - EEx d IIB T6
 - 4= CENELEC Flameproof
 - EEx d IIB+H₂ T6
- B** Contacts
 - 1= SPDT
 - 2= (2) SPDT (use for DPDT too)
- C** Full Scale Vibration Range
 - 1= 5 g
 - 2= 2 g
 - 3= 10 g
- D** Reset Coil & Start Up Delay
 - 0= None
 - 1= 115 VAC
 - 2= 230 VAC
 - 3= 24 VDC
 - 4= 115 VDC
- E** Wiring Entry/Mounting Plate (See Chart below for E)
 - 1 = 3/4" NPT/Metrix 5173 or 5175
 - 2 = 3/4" NPT/Metrix 5097; VS-2-EX; 366
 - 3 = 3/4" NPT/Metrix 5078; 365
 - 4*= M20 x 1.5/Metrix 5097; VS-2-EX; 366
 - *For E=4, A ≠ 1 OR 2
- F** Environmental Rating
 - 1= NEMA 4X

CHART FOR HOW TO SELECT "E"	(L)	(W)	(A)	(B)
E = 1	165 mm [6.50]	38 mm [3.25]	141 mm [5.56]	59 mm [2.33]
E = 2; 4	152 mm [6.00]	121 mm [4.75]	118 mm [4.63]	79 mm [3.12]
E = 3	165 mm [6.50]	121 mm [4.75]	136 mm [5.37]	92 mm [3.62]

INSTALLATION OF METRIX MODEL 5550 MECHANICAL VIBRATION SWITCH

This bulletin should be used by experienced personnel as a guide to the installation of the Model 5550 vibration switch. Selection or installation of equipment should always be accompanied by competent technical assistance. We encourage you to contact Metrix Instrument Co. or its local representative if further information is required.

IMPORTANT: BEFORE PROCEEDING TO INSTALL AND WIRE THE UNIT, READ AND THOROUGHLY UNDERSTAND THESE INSTRUCTIONS.

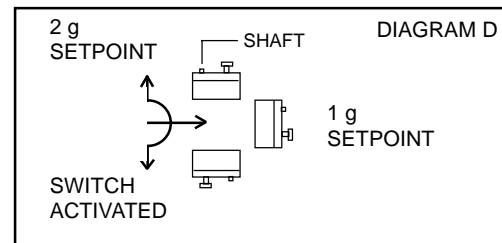
THE SWITCH MODEL NUMBER SHOULD BE CHECKED TO CONFIRM THAT YOU HAVE THE CORRECT HAZARDOUS AREA RATING FOR YOUR APPLICATION. SEE HOW TO ORDER INFORMATION. "A"

INSTALLATION:

- 1) The sensitive axis of the vibration switch is perpendicular to the mounting base. The preferred mounting is with the sensitive axis in the horizontal plane, since most machines vibrate more in that plane. Mount the switch solidly to the frame of the machine.
- 2) Remove the cover and wire the switch(es) into the alarm or shutdown circuit. Do not exceed switch contact ratings listed in the specifications. **Keep field wiring away from the moving part of the mechanism.**
- 3) Observe all local electrical codes.

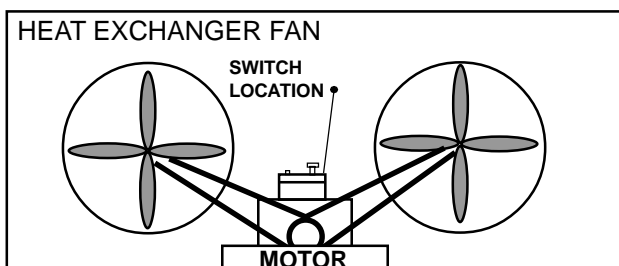
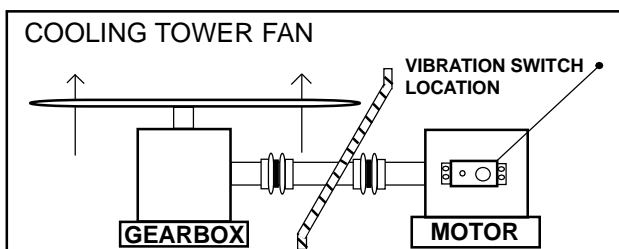
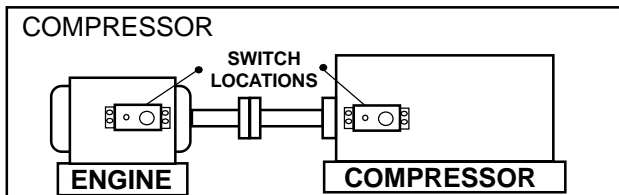
SETPOINT ADJUSTMENT:

- 1) The vibration setpoint adjustment is accessible externally. Turning the setpoint adjustment clockwise (CW) increases the vibration setpoint.
- 2) When the switch is shipped from the factory, the setpoint adjustment is set to 2g when installed in the vertical position and 1g when installed in the horizontal position (with reference to the setpoint adjustment shaft).
- 3) To check factory calibration, place unmounted unit in your hand and rotate per diagram D. The switch(es) should activate at dead bottom position. If necessary, adjust setpoint using the setpoint adjustment screw.



- 4) To preset switch at other than factory setpoint, start with step three (3) and then rotate adjustment screw 1/8 turn per g until you reach the required setpoint.
- 5) To adjust setpoint when installed on the machine, mount and wire the unit. Reset the switch by depressing the reset plunger and start the machine. When the machine has reached full speed, slowly turn the vibration setpoint adjustment counter-clockwise until the switch trips. Then turn the adjustment clockwise a small amount (approx. 1/8 turn). Reset the switch and restart the machine to determine whether the machine starting roughness will cause the switch to trip, in which case it may be necessary to increase the setpoint.

TYPICAL INSTALLATIONS



ELECTRICAL RESET AND STARTUP LOCKOUT:

The optional electrical reset circuit consists of an electrical solenoid in series with a thermistor. If the rated voltage is continuously applied to the reset circuit at machine startup, the reset solenoid energizes for a fixed time interval (approx. 30 sec.), after which time the solenoid is automatically de-energized by the thermistor. This action provides a trip lockout during machine startup roughness. The voltage must be removed from the reset circuit when the machine is stopped to allow the thermistor to cool off. The switch mechanism can then be reset electrically by a momentary application of the reset voltage or it can be reset manually.

NOTE: If the machine is restarted immediately after a shutdown, the lockout period will be shortened because the thermistor will be hot. An increase in the ambient temperature will also shorten the lockout period.

SPECIFICATIONS

Function: Armature mechanism trips on high vibration and operates snap action switch(es).

Amplitude Range: See How to Order. "C"

Frequency Range: 0 to 3600 RPM.

Setpoint Adjust: 0 to 100% of range.
External setpoint adjustment.

Reset: Local reset, plus optional remote reset electrical coil. See How to Order. "D"

Start Delay: Applying reset coil voltage at start up holds mechanism from tripping for 20-30 seconds, after which the switch is active. Requires electric reset option.

Temperature Range: -40°C to 70°C

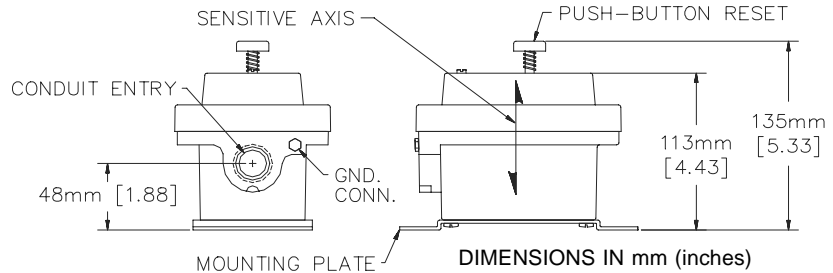
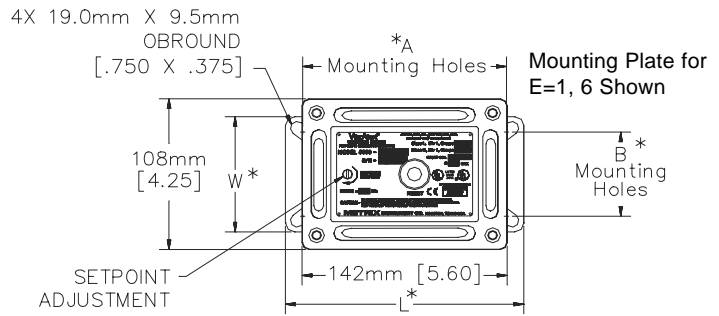
Enclosure: High strength copper-free (4/10 of 1% max) Aluminum alloy.

Environmental Rating: NEMA 4, IP 65 & CE Mark (NEMA 4X OPTIONAL)

Switch Contact(s) Rating: 15 amps, 125, or 480 Vac; 1/8 hp, 125 Vac; 1/4 hp, 250 Vac; 1/2 amp, 125 Vdc; 1/4 amp, 250 Vdc.

Hazard Rating: See How to Order. "A"

Weight: 2.1 kg (4.5 lbs.)



How To Order...

MODEL **A** **B** **C** **D** **E** **F**
5550 - -

Example

5550 - **0 1 1 - 0 1 0**

A **Hazard Area Rating**

0= None

*** 1**= UL, cUL Explosion Proof, Class I, Groups C & D, Div 1
Class II, Groups E, F & G, Div 1

*** 2**= UL, cUL Explosion Proof, Class I, Groups B, C & D, Div 1
Class II, Groups E, F & G, Div 1

3= CENELEC Flameproof, EEx d IIB T6

DEMKO 02 ATEX 0212409

4= CENELEC Flameproof, EEx d IIB+H₂ T6

CE 0600 II 2 GD

B **Contacts**

1= SPDT **2**= DPDT

C **Full Scale Range**

1= 5 g **2**= 2 g **3**= 10 g

D **Reset Coil & Start Up Delay**

0= None **1**= 115 VAC **2**= 230 VAC **3**= 24 VDC **4**= 115 VDC

E **Wiring Entry/Mounting Plate (retrofit)**

1= 3/4" NPT/Metrix 5173 or 5175

2= 3/4" NPT/Metrix 5097; VS-2-EX; 366

3= 3/4" NPT/Metrix 5078; 365

*** 4**= M20 x 1.5/Metrix 5097; VS-2-EX; 366

*** 5**= Same as option 4 above with epoxy coated mounting plate

*** 6**= M20 X 1.5 / METRIX 5173 or 5175

7= 3/4" NPT / PMC/BETA 440

*** 8**= M20 X 1.5 / METRIX 5078; 365

F **Environmental Rating**

Tested for Compliance with the

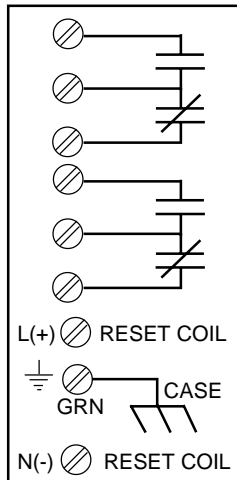
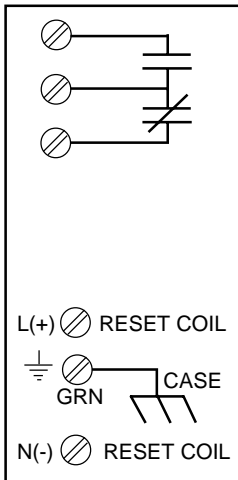
0 (or blank) = NEMA 4, IP 65, CE applicable EC Electromagnetic

1 = NEMA 4X, IP 65, CE Compatibility Requirements

WIRING DIAGRAM

SPDT

DPDT



DPDT CONTACTS AND RESET COIL OPTIONAL

***Note:** When option A1 or A2 is specified, options E4, E5, E6 and E8 are not allowed.

	(L)	(W)	(A)	(B)
E=1, 6	165mm [6.50]	83mm [3.25]	141mm [5.56]	59mm [2.33]
E=2, 4, 5	121mm [4.75]	152mm [6.00]	79mm [3.12]	118mm [4.63]
E=3, 8	165mm [6.50]	121mm [4.75]	136mm [5.37]	92mm [3.62]
E=7	114mm [4.50]	127mm [5.00]	71mm [2.80]	108mm [4.25]