

## VS102 Electronic Vibration Switch

### Introduction

The VS102 Electronic Vibration Switch is designed to be the cost effective solution for vibration switch applications. The VS102's unique and rugged design is suitable for harsh environments and hazardous areas. It has a universal mounting feature, relays or triacs, and a 4-20mA output.



### Applications

- ✓ Pumps
- ✓ Motors
- ✓ Industrial Fans
- ✓ Heat Exchangers/ Cooling Towers
- ✓ Engines
- ✓ Reciprocating Compressors
- ✓ Centrifuges
- ✓ Rock or Coal Crushers

### Features

- ✓ Direct replacement for mechanical switches with universal mounting plates and studs
- ✓ 4-20mA output
- ✓ Dual alarms with relays or triacs
- ✓ NEMA 4X, IP65 environmental rating
- ✓ Hazardous area approvals: CSA, CE, ATEX, PCEC, TR CU

### Specifications

**Frequency Range:** 2 to 1000 Hz

**Alarms:** Dual alarms

Dry-contact relay: 5A 230VAC/115VAC or 5A 30VDC

Triac: 5A 230VAC. Optically Isolated, Standard NC

**Temperature Limit:** -52°C to +75°C (-62°F to +167°F)

**Power Supply:**

95 - 250VAC@100mA, 50-60Hz, or

22 - 30VDC @ 200mA

**Enclosure:** Cast Aluminum

**Coating:** Standard plastic coating on outside of surface, or E-coating for optional on both inside and outside of surfaces and mounting plate (AL alloy). Mounting stud and local reset are SS304.

**Environmental Rating:** NEMA 4X(optional E-coating), IP65



**Hazard Rating:** See order information

IECEX: Ex db IIC T4/T6 Gb

Ex db IIB+H<sub>2</sub> T4/T6 Gb

IECEX DEK 16.0002X

IEC 60079-0: 2011

IEC 60079-1: 2014

ATEX: II 2G Ex db IIC T4/T6 Gb

II 2G Ex db IIB+ H<sub>2</sub> T4/T6 Gb

T4@Ta= -52°C to +100°C

T6@Ta= -52°C to +70°C

DEKRA 16ATEX0003X

EN 60079-0: 2012

EN 60079-1: 2014

TR CU : 1Ex db IIC T4, T6 X Gb

1Ex db IIB+H<sub>2</sub> T4, T6 X Gb

Nº TC RU C-US.AA87.B.01024

NANIO CCVE

GOST 31610.0-2014 (IEC 60079-0: 2011) Explosive atmospheres. Part 0. Equipment. General requirements and GOST IEC 60079-1-2013 Explosive media. Part 1. Equipment with type of protection "flameproof enclosure" d".

### Physical

**Temperature:**

Operation: -52°C to +75°C (-62°F to +167°F)

Storage: -52°C to +120°C (-62°F to +248°F)

**Dimensions:**

See attached drawing

**Weight:**

1.4kg (3 lbs)



### Order Information

#### VS102-ABCD-EFGG

##### A: Alarms\*\*\*

- A = 0: Dual SPDT Relays
- A = 1\*: Single SPDT Relay
- A = 2: Single SPST Triac, NO
- A = 3: Dual SPST Triacs, NO
- A = 4: Single SPST Triac, NC
- A = 5: Dual SPST Triacs, NC

##### B: Conduit Entries

- B = 0\*: 3/4" NPT
- B = 1: M20x1.5

##### C: Mounting Plate or Mounting Stud

- C = 0\*: Mounting Plate PT500-13
- C = 1: Mounting Plate PT500-14
- C = 2: Mounting Stud 3/4" NPT
- C = 3: Mounting Stud M20x1.5

##### D: Power Supply

- D = 0\*: 115VAC or 230VAC
- D = 1: 24VDC

##### E: Hazardous Area Approvals

- E = 0: CE Mark (With Local Reset)
- E = 1: Multiple approvals (With Local Reset):
  - CSA: Class I, Div 1, Groups B, C, D, T4 & T6  
CERTIFICATE: 2079756
  - ATEX: II 2 G Ex db II B+H<sub>2</sub> T4/T6 Gb  
T4@Ta= -52°C to +100°C  
T6@Ta= -52°C to +70°C  
DEKRA 16ATEX0003X
  - IECEX: Ex db II B+H<sub>2</sub> T4/T6 Gb  
IECEX DEK 16.0002X
  - PCEC: Ex d II B+ H<sub>2</sub>T4/T6 Gb  
CE Mark
- E = 2: Multiple approvals (No Local Reset):
  - CSA: Class I, Div 1, Groups A, B, C, D, T4 & T6  
CERTIFICATE: 2079756
  - ATEX: II 2 G Ex db II C T4/T6 Gb  
T4@Ta= -52°C to +100°C  
T6@Ta= -52°C to +70°C  
DEKRA 16ATEX0003X
  - IECEX: Ex db IIC T4/T6 Gb  
IECEX DEK 16.0002X

PCEC: Ex d IIC T4/T6 Gb

CE Mark

E = 3\*: CE Mark (No Local Reset)

E = 4: Multiple approvals (Whit Local Reset):

TR CU: 1Ex db IIB+H<sub>2</sub> T4, T6 X Gb

№ TC RU C-US.AA87.B.01024

NANIO CCVE

CE Mark

E = 5: Multiple approvals (No Local Reset):

TR CU: 1Ex db IIC T4, T6 X Gb

№ TC RU C-US.AA87.B.01024

NANIO CCVE

CE Mark

##### F: 4-20mA Outputs

- F = 0: None
- F = 1\*: 4-20mA

##### GG: Full Scale

- GG = 09: 0 - 5.0g pk
- GG = 10: 0 - 10.0g pk
- GG = 11: 0 - 20.0g pk
- GG = 20: 0 - 12.5 mm/s pk
- GG = 21: 0 - 20mm/s pk
- GG = 22: 0 - 25mm/s pk
- GG = 23: 0 - 50mm/s pk
- GG = 24: 0 - 100mm/s pk
- GG = 30: 0 - 12.5 mm/s rms
- GG = 31: 0 - 20mm/s rms
- GG = 32\*: 0 - 25mm/s rms
- GG = 33: 0 - 50mm/s rms
- GG = 34: 0 - 100mm/s rms
- GG = 40: 0 - 0.5ips pk
- GG = 41: 0 - 1.0ips pk
- GG = 42: 0 - 2.0ips pk
- GG = 43: 0 - 4.0ips pk
- GG = 50: 0 - 0.5ips rms
- GG = 51: 0 - 1.0ips rms
- GG = 52: 0 - 2.0ips rms
- GG = 53: 0 - 4.0ips rms

##### Note:

\* Factory default

\*\*\* Alarm delays 6s and relay works in non-energized mode.

## Accessories



Cover1\*  
PT500-2



Cover2\*  
PT500-3



magnetic ring\*\*\*  
PT500-10

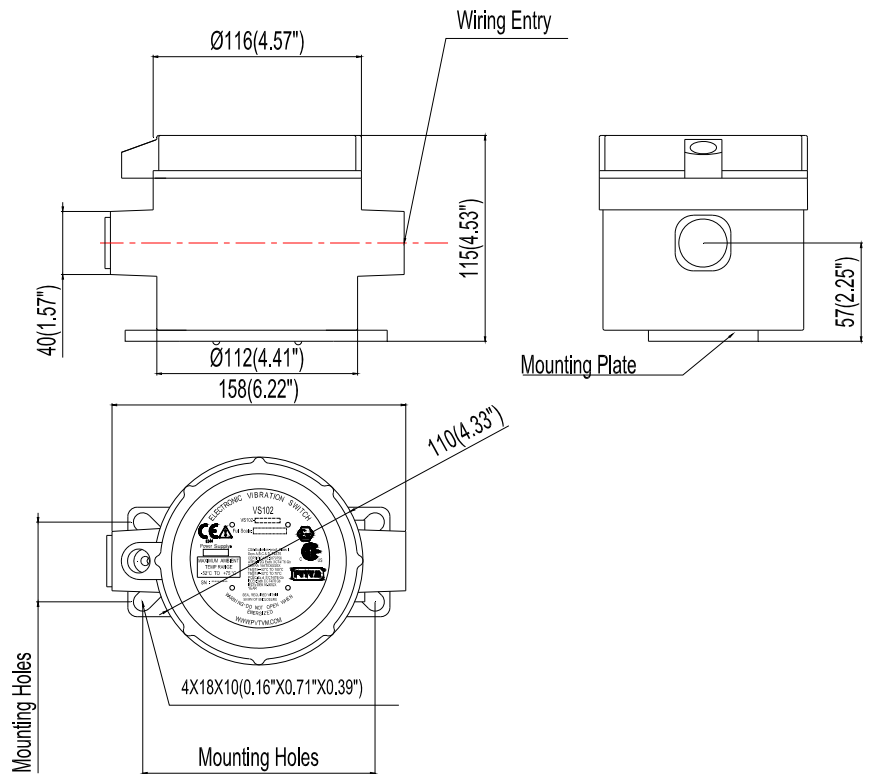
Note:

\* Cover1: Relates to the E option; if E=0 or 1, the factory default option is Cover1.

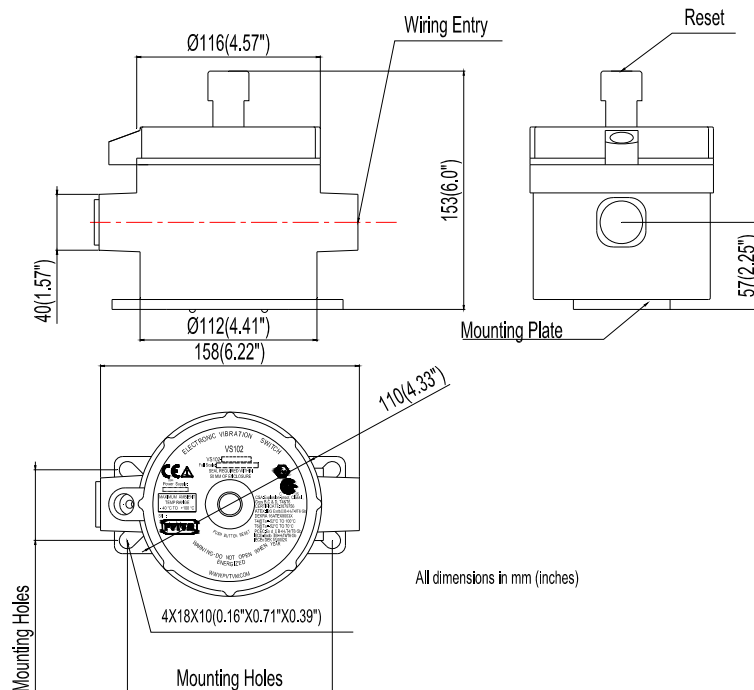
\*\* Cover2: Relates to the E option; if E=2 or 3, the factory default option is Cover2.

\*\*\* Magnetic ring: One at the factory default setting. When in extremely environment or both ends of the vibration switch have wires, user should order additional accessories to acquire good effects. Please refer to figure Trouble Shooting 6 for installation method.

**VS102 Mechanical Outline Drawing**



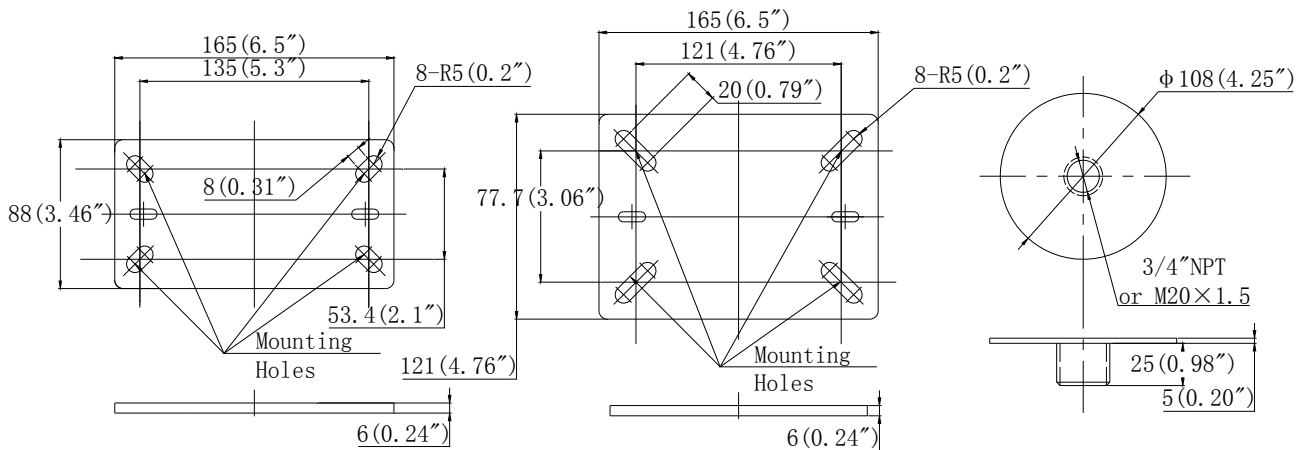
All dimensions in mm (inches)



All dimensions in mm (inches)

**Note:** The default case has no local Reset.

**Mounting Plate, Mounting Studs**



All dimensions in mm (inches)

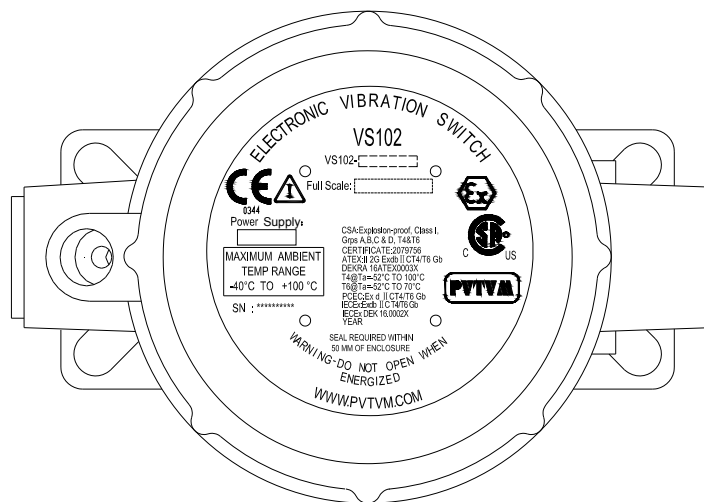
**PT500-13**

**PT500-14**

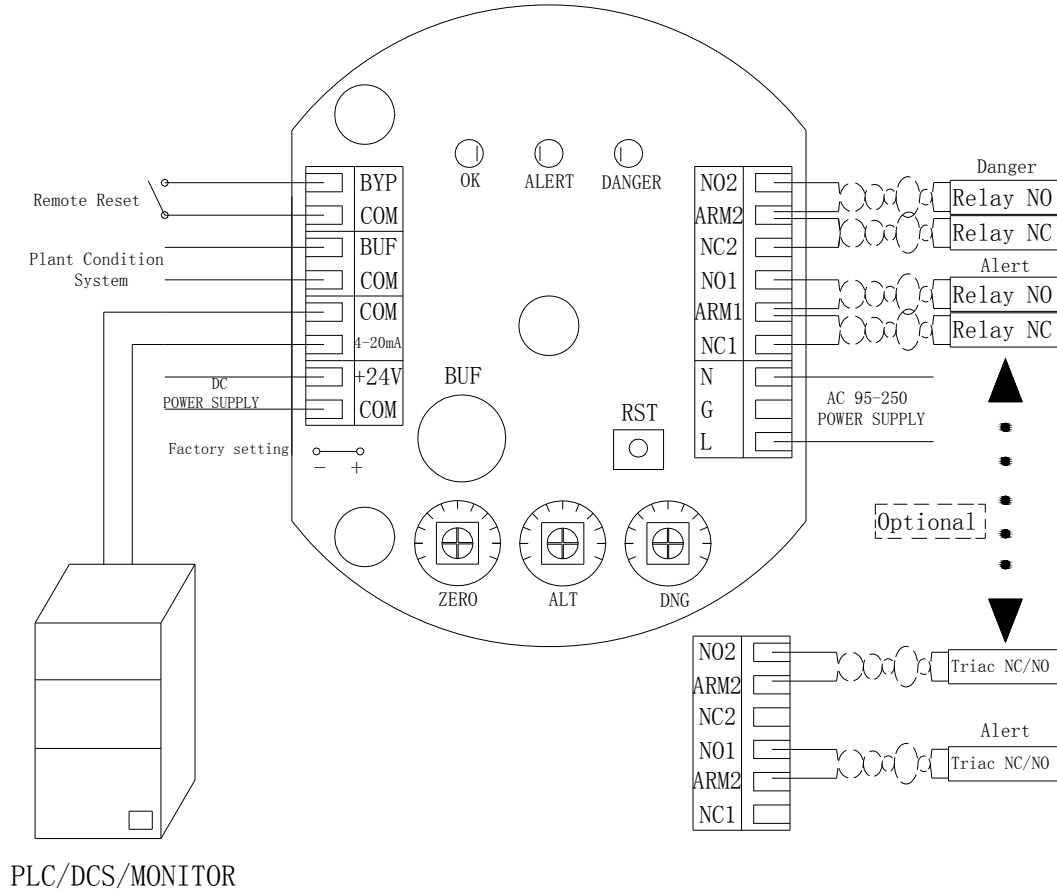
**PT500-15 (3/4" NPT)**

**PT500-17 (M20×1.5)**

Plate is consistent with the direction of Conduit Entries, as shown below. If customers need other installation direction, please be sure to mark it clearly in purchase order.



**Field-Wiring Diagram**



Note: 1. Select Relay/Triac NO/Triac NC as per Alarm option  
 2. If single alarm is selected, Alert is valid only