



## PT580 Digital Vibration Switch

### Introduction

The PT580 Digital Vibration Switch is designed to be the “one stop shop” for all vibration switch applications. The PT580 is fully programmable, suitable for harsh environments and hazardous areas. It has a universal mounting feature, wide operating temperature range, dual alarms, 4-20mA output, Modbus communication, and works with an internal or a remote sensor.

### Applications

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

### Features

- ✓ The first digital vibration switch
- ✓ Direct replacement for mechanical switches with universal mounting plates and studs
- ✓ Fully programmable
- ✓ 4-20mA output and Modbus
- ✓ Dual alarms with relays or triacs
- ✓ Works with internal or external sensor
- ✓ “Smart Design” universal power supply
- ✓ Wide operating temperature range of -40°C to +85°C (-40°F to +185°F)
- ✓ NEMA 4X, IP65 environmental rating
- ✓ Hazardous area approvals: CSA, CE, ATEX, PCEC, GOST-R
- ✓ Additional API 670 features: trip-multiply, bypass, programmable alarm delay etc.

### Specifications

#### Frequency Range:

Internal sensor: 2 - 1,000 Hz

External sensor: 2 - 2,000 Hz

#### Alarms: Dual alarms

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

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



**Temperature Limit:** - 40°C to +85°C (-40 °F to +185 °F)

#### Power Supply:

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

22 - 30VDC @ 200mA

**Enclosure:** Cast Aluminum (copper free)

**Coating:** Standard plastic coating for all cased aluminum parts outside. Mounting plate, mounting stud and local reset are 304 stainless steel.

**Environmental Rating:** NEMA 4X, IP65

**Hazard Rating:** See order information

**Programming (customer selects the option):**

Fully programmable with software or

Pre-configured at factory

### Physical

#### Temperature:

Operation: -40°C to +85 °C (-40 °F to +185 °F)

Storage: -50°C to +120°C (-58°F to +248°F)

#### Dimensions:

See attached drawing

#### Weight:

1.4kg (3 lbs)



**Order Information**

**PT580-ABC-DEF-GGHI**

GOST R: II2G Ex d II C T4T6  
Russia Pattern Approval  
CE Mark

**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
- A = 6: None

**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: Local Display**

- D = 0\*: With display (No Local Reset)
- D = 1: No display (No Local Reset)
- D = 2: No display (With Local Reset)

**E: Hazardous Area Approval**

- E = 0\*: CE Mark
- E = 1: Multiple approvals:
  - CSA: Class I, Div 1, Groups B, C, D, T4 & T6  
CERTIFICATE: 2079756
  - ATEX: II2G Ex d II B+ H<sub>2</sub>T4T6  
KAMA 09ATEX0080 X  
T4@Ta= -40°C to +100°C  
T6@Ta= -40°C to +70°C

PCEC: Ex d II CT4

CE Mark

- E = 2: Multiple approvals (D=1 only) :
  - CSA: Class I, Div 1, Groups A, B, C, D, T4 & T6  
CERTIFICATE: 2079756
  - ATEX: II2G Ex d II CT4T6  
KAMA 09ATEX0080 X  
T4@Ta= -40°C to +100°C  
T6@Ta= -40°C to +70°C

PCEC: Ex d II CT4

CE Mark

- E = 3: Multiple approvals:
  - GOST R: II2G Ex d IIB+H<sub>2</sub>T4T6
  - Russia Pattern Approval
  - CE Mark

- E = 4: Multiple approvals (D=1 only) :

**F: Outputs/Communication**

- F = 0: None
- F = 1\*: 4-20mA
- F = 2: Modbus
- F = 3: 4-20mA and Modbus

**GG: Full Scale**

- GG = 09: 0 - 5.0g pk
- GG = 10: 0 - 10.0g pk
- GG = 11: 0 - 20.0g pk
- GG = 13: 0 - 200 um pk-pk (with H=2)
- GG = 14: 0 - 250 um pk-pk (with H=2)
- GG = 15: 0 - 500 um pk-pk (with H=2)
- GG = 16: 0 - 10 mil pk-pk (with H=2)
- GG = 17: 0 - 20 mil pk-pk (with H=2)
- 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

**H: Sensors**

- H = 0\*: Internal accelerometer
- H = 1: TM0782A or accelerometer with 100mV/g (purchase separately)
- H = 2: TM0793V or velocity sensors with 4.0 mV/mm/s (purchase separately)

**I: Power Supply**

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

**Note:**

- \* Factory default
- \*\*\* Alarm delays 6s and relay works in non-energized mode.
- D=0/D=1 default setting is alarm non-latching.
- D=2 default setting is alarm latching.



### **Optional Accessories**

#### **PT580-CFG-K**

Configuration and calibration software kit includes:

- ✓ PT580-CFG configuration software CD
- ✓ RS485-USB converter with cable
- ✓ User manual

#### **PT580-CFG**

Configuration and calibration software only includes:

- ✓ PT580-CFG configuration software CD
- ✓ User manual

#### **RS485-USB**

Cable with RS485 to USB connections for configuration with laptop computer

#### **DTM-96**

The system interface module converts the modbus output from the PT580 to an isolated RS232, RS422 or RS485 protocol for communication with PLC or DCS. Each DTM-96 can connect up to 32 PT580 switches.

#### **PCM370**

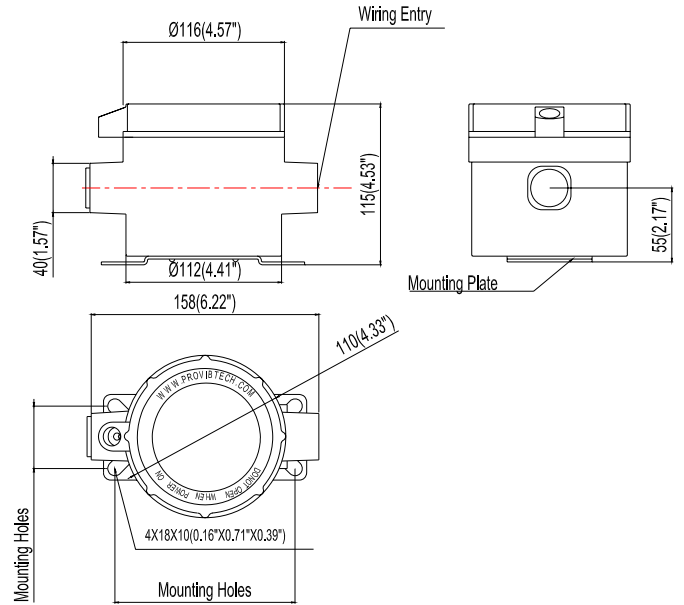
The PCM370 condition monitoring software is ideal for plant wide condition monitoring. The PCM370 requires the DTM96 to communicate with the PT580.

#### **PCM-TOUCH**

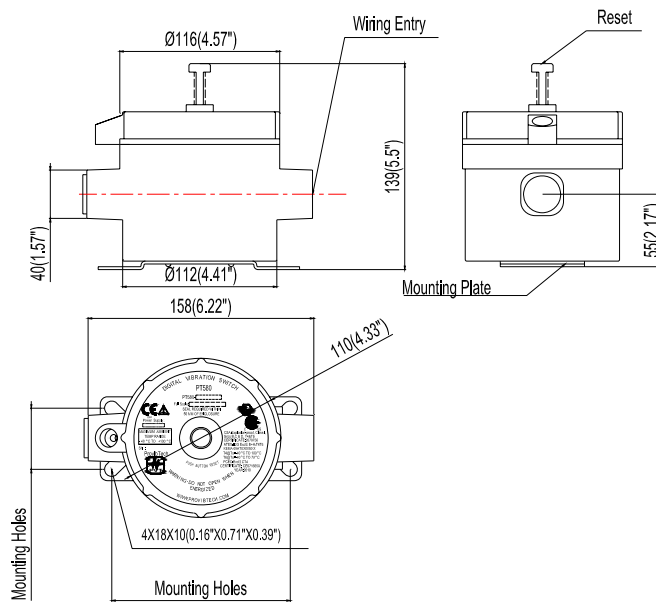
Touch panel PC with IP65 rating. Ideal to work with PCM370 and PT580-CFG.



**Mechanical Outline Drawing**



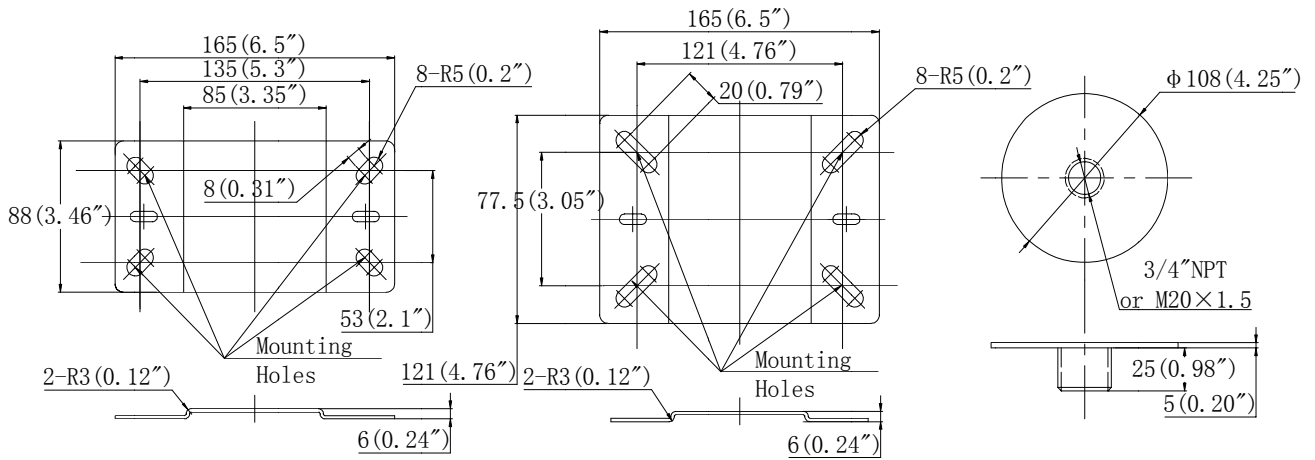
All dimensions in mm (inches)



All dimensions in mm (inches)



### Mounting Plate, Mounting Studs



All dimensions in mm (inches)

### Accessories



3/4" NPT seal  
PT500



**Field-Wiring Diagram**

