



Toase-eh Park Sanati Gohar Ofogh  
Petrochemical Co.  
**CONCEPTUAL, BASIC and DETAIL DESIGN  
ENGINEERING OF STYRENE PARK OFFSITE**



**dttdamafin**  
thermal technology

Document Title: Vibration Switch Data Sheet

Document No.: EI027-DMF-VD-IN-DSH-019-R1

Rev. R1

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# STYRENE PARK OFFSITE

**Document Title:  
Vibration Switch Data Sheet**

Rev.	Issued Date	DESCRIPTION	PREPARED	CHECKED	APPROVED
R1	17-09-2024	IFA	F.Aghaienezhad	J.Beigloo	A.Gholizadeh
R0	22-06-2024	IFA	F.Aghaienezhad	J.Beigloo	A.Gholizadeh



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**REVISION RECORD SHEET**

Page Page	Revisions							Page	Revisions						
	R0	R1	R2	R3	R4	R5	R6		R0	R1	R2	R3	R4	R5	R6
1	X	X						41							
2	X	X						42							
3	X	X						43							
4		X						44							
5		X						45							
6		X						46							
7		X						47							
8		X						48							
9		X						49							
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 	<b>Toase-eh Park Sanati Gohar Ofogh Petrochemical Co.</b> <b>CONCEPTUAL, BASIC and DETAIL DESIGN ENGINEERING OF STYRENE PARK OFFSITE</b>	 	
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Vibration Switch Data sheet										
Basic Data					Manufacturer Data					
1	PROJECT- Customer item	1158			1	Manufacturer / Origin	PVTVM / USA			
2	Quantity	4			2	Type - Model	PT500-111-04			
3	Tag No.	VS-RU0001A-10A VS-RU0001A-10B VS-RU0001B-10A VS-RU0001B-10B			3	Enclosure material	CAST ALUMINUM			
4	Area classification	IEC	Yes			4	Certification	II 2G Ex db IIB+H2 T4/T6 Gb		
5		NEMA	Yes			5	Working	HORIZONTAL	Yes	VERTICAL
6	Enclosure	Exd			6	Wiring entry(type-size)	M20			
7	Reset	Electric	NO	Manual	YES	7	CABLE GLAND	M20*1.5		
8	Switch contacts	SPDT	YES	DPDT	NO	8	RANGE	0-5g		
9	Protection	IP 65			9	TEMP CLASS	T4			
10	Zone - Gas group	2			10	Normal Operation Temp	(-52, 100) °C			
11	RANGE - SET POINT	(0- 5 g)								
12	Temperature class	IIB-T3			11	Set point adjust	2g			
13	Ambient temp. min/max	(5 To 48) °C			12	RESET	MANUAL			
14	Humidity (RH ) (%)	65%			13	PROTECTION	IP65			
15	Altitude (m)	20			14					
16	Contact rating	24VDC, 1A			15					
17	Start-up delay	N.A			16					
18	MOUNTING	Yes			17					
19	Housing	CAST ALOMINIUM			18					
20	Thered size - TYPE	M20 @ 1.5			19					



## PT500 Electro-Mechanical Vibration Switch



**PVTVM, Inc.**

Email: [sales@pvtvm.com](mailto:sales@pvtvm.com), Web: [www.pvtvm.com](http://www.pvtvm.com)

PVTVM-PT500-CATALOG-E-A-3



## PT500 Electro-Mechanical Vibration Switch Introduction

The PT500 is an economical solution to provide basic vibration protection for your rotating or reciprocating machines. The PT500 uses an inertia sensitive mechanism which actuates internal micro-switch contacts when the vibration level exceeds the adjustable set point. The PT 500 start-up delay feature prevents the switch from activating during the higher vibration levels present during the start-up of the machine so that the set point may be adjusted closer to the vibration levels present during normal operation or running speed of the machine.

The PT500 is your “one stop shopping” for all electro-mechanical vibration switch applications. The unique design has all industry required environmental and hazardous area approvals. The E-coat option is suitable for offshore and very corrosive environmental applications. Universal mounting plate will mount in existing mounting holes when replacing older mechanical vibration switches.

Applications include:

- ✓ Fans
- ✓ Cooling Motor/Fans
- ✓ Fin Fans
- ✓ Heat Exchangers
- ✓ Engines
- ✓ Reciprocating Compressors
- ✓ Centrifuges
- ✓ Rock or Coal Crushers

### PT500 Features

- ✓ Wide operating temperature range of -52°C – 100°C (-62°F – 212°F)
- ✓ All industry environmental ratings
- ✓ Optional NEMA(E-coat),IP65 environmental rating
- ✓ Hazardous area agency approvals CSA, ATEX, CE



- ✓ Universal mounting
- ✓ Local and remote reset
- ✓ Start up delay
- ✓ SPDT, (2) SPDT and gold plated contact options

### Specification

**Function:** Armature mechanism trips on high vibration and operates snap action switch.

**Vibration Range:** See How to Select “C”

**Frequency Range:** 0 to 3600 rpm

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

**Local Reset:** For field local reset of the switch

**Remote reset with Start-up Delay:** Applying reset coil voltage at start up holds mechanism from tripping delay about 3 seconds, after which the switch is automatically activated.

#### Reset Coil Power Supply:

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

20 - 30VDC @ 200mA

**Temperature Limit:** -52°C to +100°C

**Enclosure:** Casted 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:** IP65



## Switch Contact(s) Rating:

15A, 125VAC, 250VAC, 480VAC; 1/8 HP 125VAC  
 1/4 HP 250VAC; 1/2A, 125VDC; 1/4A, 250VDC;  
 1.5A, 8VDC,14VDC,30VDC;  
 Gold plated contact: 0.1A 125VAC; 0.1A 30VDC

## Storage:

The PT500 switches must be stored in a dry area when not installed. Don't move the conduit plug away which can protect the hole thread from damages during the storage and shipping/handling.

## Hazard Rating: See order information

IECEX: Ex db IIC T4/T6 Gb  
 Ex db IIB+H2 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+H2 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,T6X Gb  
 1Ex db IIB+H2T4,T6 X Gb  
 № 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 - + 100°C (-62°F - +212°F)  
 Storage: -52°C - + 120°C (-62°F - +248°F)

### Dimension

See attached drawing

### Weight

PT500	1285g (2.8 lbs)
PT500-13	205g (0.45 lbs)
PT500-14	279g (0.6 lbs)
PT500-15(PT500-17)	440g (0.97 lbs)
PT500-20	112g (0.25 lbs)

## Order Information

### PT500-ABC-DE\*

A: Hazardous Area Approvals

A = 0: CE Mark

**A = 1: Multiple Approvals (D=0, 1)**

CSA: Class I, Div 1, Groups B,C & D T4,T6

CERTIFICATE: 2079756

**ATEX: II 2G Ex db IIB+H2 T4/T6 Gb**

T4@Ta= -52°C to +100°C

T6@Ta= -52°C to +70°C

DEKRA 16ATEX0003X

IECEX: Ex db IIB+H2 T4/T6 Gb

IECEX DEK 16.0002X

PCEC: Ex d II B+ H2T4/T6 Gb

CE Mark

A = 5: Multiple Approvals (D=5)

CSA: Class I, Div 1, Groups A, B, C & D, T4, T6

CERTIFICATE: 2079756

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

CE Mark

A = 6: Multiple approvals (D=0, 1):

TR CU: 1Ex db IIB+H2T4,T6 X Gb

CE Mark

A = 7: Multiple approvals (D=5):

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

CE Mark

B: Relay Contact

**B = 1: SPDT**

B = 2: (2) SPDT

B = 3: SPDT (gold plated contact)

B = 4: (2) SPDT (gold plated contact)

C: Full Scale

**C = 1: 5g**

C = 2: 2g

C = 3: 10g

D: Reset Power with Start-up Inhibit; Local Reset

**D = 0: Local Reset only**

D = 1: Remote Reset and Inhibit; Local Reset

D = 5: Remote Reset and Inhibit; No Local Reset

E: Conduit Entries/Mounting Plate or Mounting Stud

E = 1: 3/4" NPT, Mounting Plate PT500-13



## *PT500 Electro-Mechanical Vibration Switches*

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E = 2: 3/4" NPT, Mounting Plate PT500-14

E = 4: M20×1.5, Mounting Plate PT500-14

E = 5: M20×1.5, Mounting Plate PT500-13

E = 6: 3/4" NPT, Mounting Stud 3/4" NPT

E = 7: M20×1.5, Mounting Stud M20×1.5

Note:

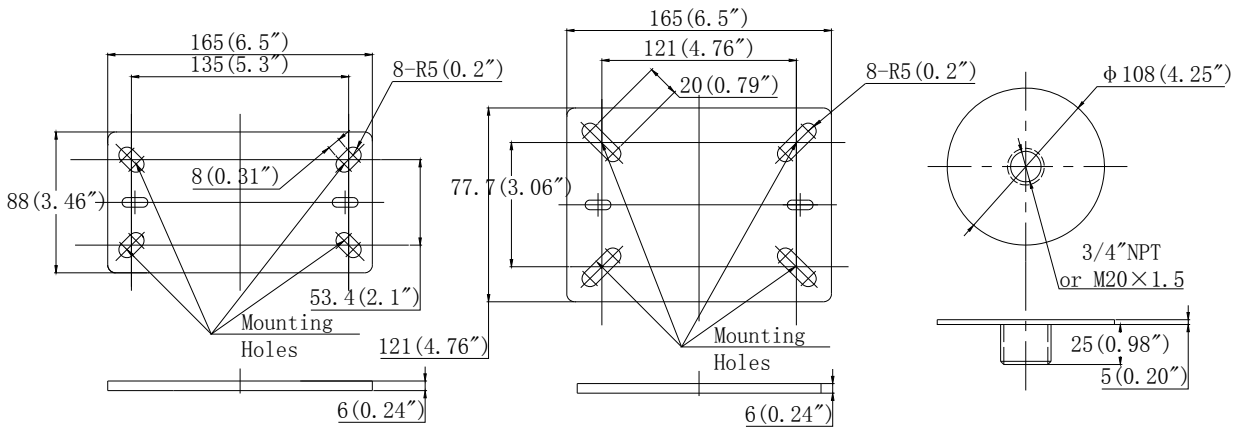
\* If E-coating is required, add the suffix "E" at the end of part number. For example: PT500-122-15E.





**Accessories**

Mounting Plate and mounting studs:



**PT500-13**

**PT500-14**

All dimensions in mm (inches)

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

**PT500-17 (M20 x 1.5)**



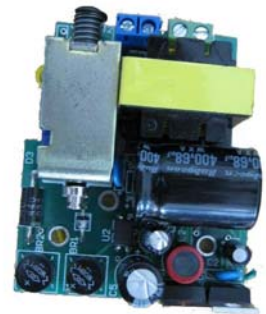
**3/4" NPT seal**  
**PT500-18**



**3/4" NPT cable feedthrough**  
**PT500-19**



**Blank cover**  
**PT500-3**



**Remote reset circuit**  
**PT500-20**