



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

Page 1 of 9

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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Page 2 of 9

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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Page 3 of 9

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- IOA VS-RU0001A- IOB VS-RU0001B- IOA VS-RU0001B- IOB		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)		11	Set point adjust	2g		
12	Temperature class	IIB-T3		12	RESET	MANUAL		
13	Ambient temp. min/max	(5 To 48) °C		13	PROTECTION	IP65		
14	Humidity (RH) (%)	65%		14	Setting for Vibration	HH		
15	Altitude (m)	20		15				
16	Contact rating	24VDC, 1A		16				
17	Start-up delay	N.A		17				
18	MOUNTING	Yes		18				
19	Housing	CAST ALOMINIUM		19				
20	Thered size - TYPE	M20 @ 1.5		19				

China Branch is not accepted

Please submit all certificates



PT500 Electro-Mechanical Vibration Switch



PVTVM, Inc.

Email: sales@pvtvm.com, Web: 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

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

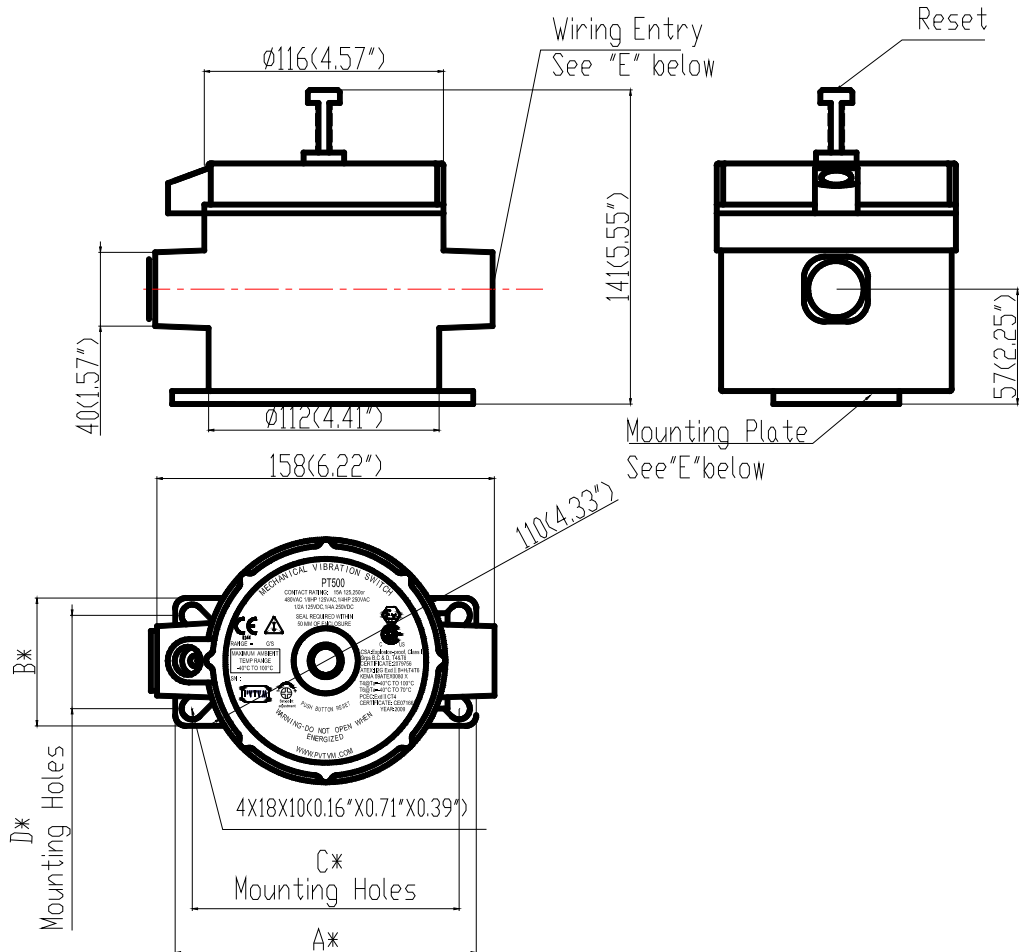
Note:

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



PT500 Electro-Mechanical Vibration Switches

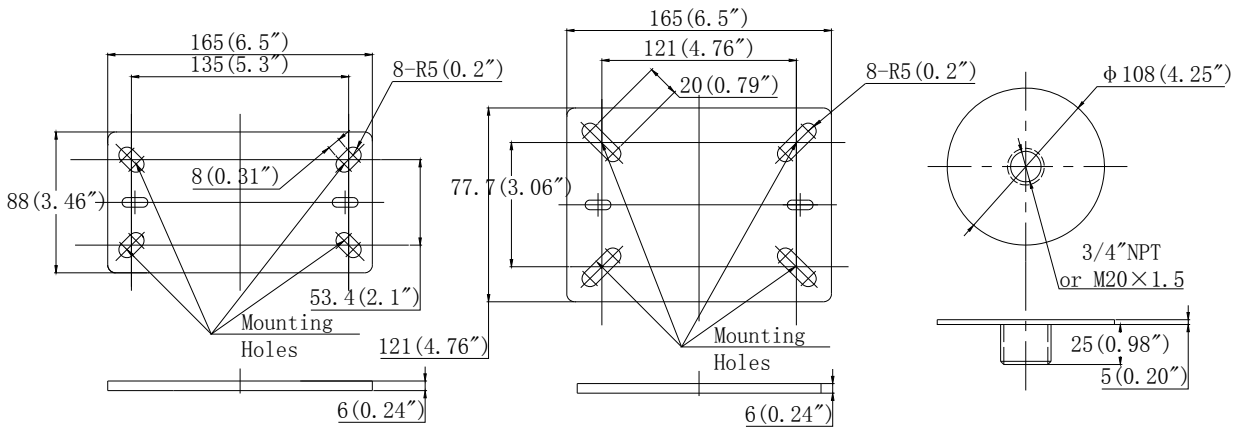
Mechanical Outline Drawings





Accessories

Mounting Plate and mounting studs:



PT500-13

PT500-14

All dimensions in mm (inches)

PT500-15 (3/4" NPT)

PT500-17 (M20×1.5)



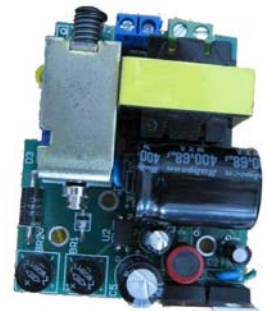
3/4" NPT seal
PT500-18



3/4" NPT cable feedthrough
PT500-19



Blank cover
PT500-3



Remote reset circuit
PT500-20