



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



Document Title: Vibration Switch Data Sheet

Document No.: EI027-DMF-VD-IN-DSH-019-R4

Rev. R4

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# STYRENE PARK OFFSITE

**Document Title:**  
**Vibration Switch Data Sheet**

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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	X	X	X			41							
2	X	X	X	X	X			42							
3	X	X	X	X	X			43							
4		X	X	X	X			44							
5		X	X	X	X			45							
6		X	X	X	X			46							
7		X	X	X	X			47							
8		X	X	X	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	SAMI/ WIKA/Italy			
2	Quantity	4			2	Type - Model	VBS SPDT without M20*2.5			
3	Tag No.	VS-RU0001A-01A VS-RU0001A-01B VS-RU0001B-01A VS-RU0001B-01B			3	Enclosure material	Cast aluminum painted			
4	Area classification	IEC	Yes			4	Certification	According to 2014/34/EU ATEX Exd IIC T5		
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	T5			
10	Zone - Gas group	2			10	Normal Operation Temp	(-20, 55) °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) (%)	80%			13	PROTECTION	IP65			
15	Altitude (m)	20			14	Installation	With fixing base or bracket. The vibration sensitive axle is perpendicular or axial to the switch fixing base			
16	Contact rating	24VDC, 1A			15					
17	Start-up delay	N.A			16					
18	MOUNTING	Yes			17					
19	Housing	CAST ALUMINIUM			18					
20	Thered size - TYPE	M20 @ 1.5			19					

# Compact vibration switch, flameproof enclosure Ex D Model VBS

WIKA data sheet PR XX.XX



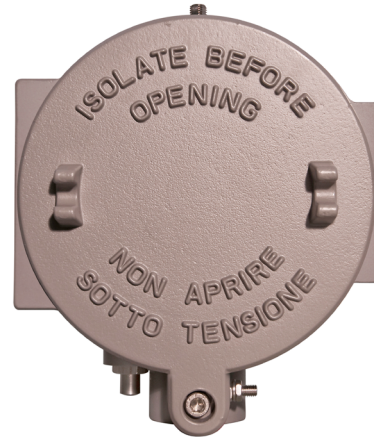
for further approvals see  
page 4

## Applications

- Monitor excess of vibrations in machinery equipments
- Safety-critical applications in chemical and petrochemical industries, oil and gas, power generation, including nuclear power plants, water/wastewater, mining
- Ventilation / Air conditioning
- Pumps & compressors, turbines
- Engines, motors & generators

## Special features

- Robust switch enclosure from aluminium alloy
- Frequency sensitivity up to 60 Hz (< 3600 RPM)
- SPDT or DPDT contacts, up to AC 380 Vac, 15 A
- Calibration: up to 5 g with outer calibration screw



Model VBS

## Description

The Vibration switches have been developed to protect the rotating equipments against increase in vibration due to operating anomalies or failures that could damage the entire machinery.

The high quality of the products and manufacturing in accordance with ISO 9001 ensure reliable monitoring of your machine. During the production phase the switches are 100% calibrated and tested.

The switches are of mechanical type. The robust switch enclosure from aluminium alloy can withstand the rough and corrosive operating conditions of the process industry.

To adjust the set point simply open the access cover plate. The access to the terminal block for the electrical connection is protected by a screw-on lid, which is secured with a screw-

type lock against unauthorised intervention.

The vibration switches have a frequency sensitivity up to 60Hz and can be calibrated up to 5g acceleration directly in field.

Vibrations Switches contain a spring inside the body.

The excessive vibration, beyond a defined range, causes the movement of the spring, which consequently activates the switch through magnetic attraction.

The position of the magnet in relation to the spring can be changed to match the desired threshold value.

Disengaging the magnet from the spring will reset the Vibration Switch.

In order to ensure operation as flexible as possible, the Vibration switches are fitted with micro switches which enable the switching of an electrical load of up to AC 380V 15A directly.

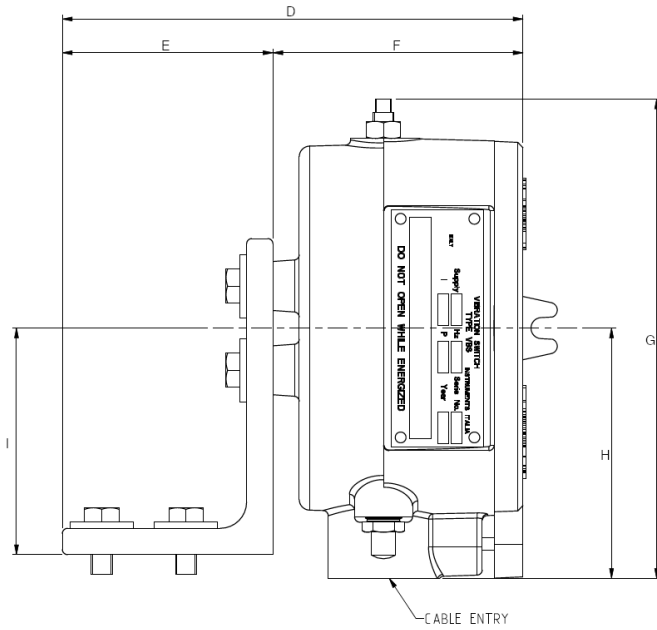
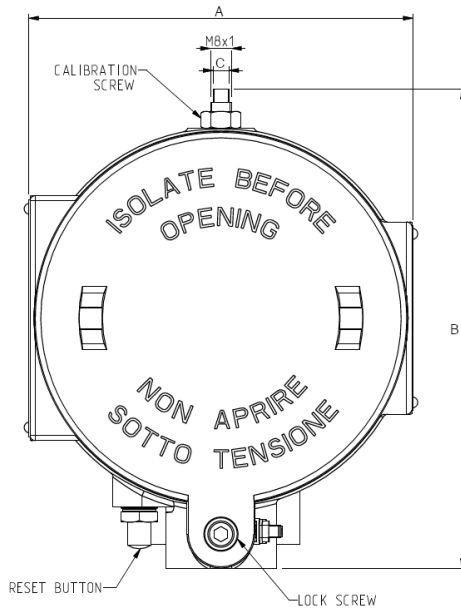
## Specifications

Specifications	
<b>Enclosure material</b>	High resistance aluminium alloy. Max copper content: 1%
<b>Ignition protection</b>	CESI Flameproof, Ex d IIC T6 or T5 Gb
<b>Switch enclosure</b>	Epoxy resin coated and tamper-proof junction box and terminal box provided together with the equipment
<b>Peak vibration range</b>	5 g
<b>Calibration</b>	0 to 5g with outer calibration screw <sup>1)</sup>
<b>Frequency sensitivity</b>	0 to 60 Hz (0 ÷ 3600 RPM)
<b>Mechanical protection</b>	IP 65 & CE mark
<b>Working axes</b>	2 Axis only (A-B see picture)
<b>Ambient Temperature</b>	<ul style="list-style-type: none"> <li>■ -20°C +40°C for temperature class T6</li> <li>■ -20°C +55°C for temperature class T5</li> </ul>
<b>Capacity of contacts</b>	<ul style="list-style-type: none"> <li>■ SPDT 15A @ 0÷380 Vac</li> <li>■ DPDT 10A @ 0÷250 Vac</li> </ul>
<b>Start-up delay</b>	Optional reset coil required <sup>2)</sup>
<b>Reset</b>	<ul style="list-style-type: none"> <li>■ Local reset is provided as standard</li> <li>■ Electrical Remote Reset can be supplied as optional</li> </ul>
<b>Weight</b>	3 kg (including bracket and fixing screws)
<b>Earth screws</b>	Internal and external
<b>Terminal box</b>	Suitable for cable up to 2,5 mm <sup>2</sup>
<b>Installation</b>	With fixing base or bracket. The vibration sensitive axle is perpendicular or axial to the switch fixing base
<b>Label</b>	Laser-engraved stainless steel nameplate fixed to the body, containing the following information: <ul style="list-style-type: none"> <li>■ Manufacturer name</li> <li>■ Model</li> <li>■ Serial Number</li> <li>■ Range</li> <li>■ Purchase Order number</li> <li>■ Tag number</li> </ul>
<b>Reset coil</b>	<ul style="list-style-type: none"> <li>■ None</li> <li>■ 115/120 Vac</li> <li>■ 220/230 Vac</li> <li>■ 24 Vdc</li> </ul>
<b>Electrical connection</b>	<ul style="list-style-type: none"> <li>■ M20 X 1,5</li> <li>■ ¾" NPT-F</li> <li>■ 1/2" NPT-F</li> </ul>
<b>Switch contacts</b>	<ul style="list-style-type: none"> <li>■ SPDT</li> <li>■ DPDT</li> </ul>

<sup>1)</sup> The vibration switches are provided with a standard pre-set factory set-point. The set-point of the instrument strongly depends on the intensity of the natural vibration produced by the equipment during the normal operation. The final calibration of the vibration switch must be done on field according to the peculiarity of machinery on which the device is installed. For this reasons, due to the huge variables that depend on the equipment and application, WIKA does not provide any customized set-point or any calibration certificate of the instrument.

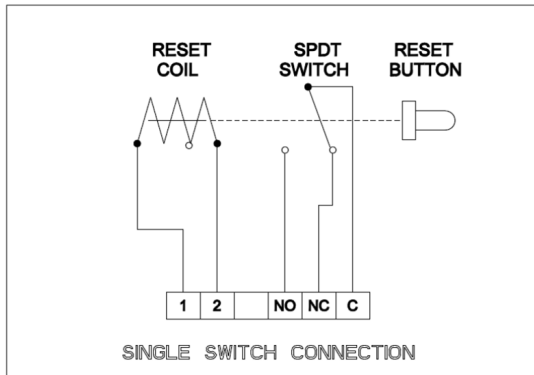
<sup>2)</sup> Apply voltage to the reset coil to stop bounces for at least 20 seconds after the machine has started

# Dimensions

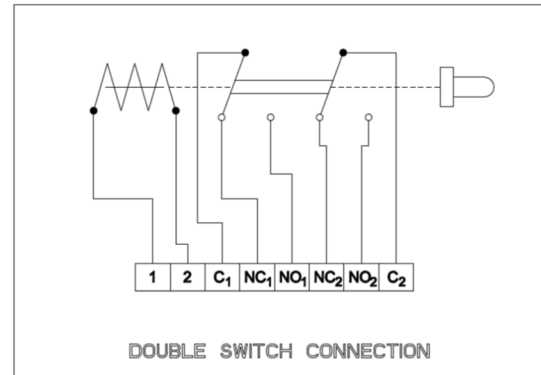


Dimensions in mm [in]								
A	B	C	D	E	F	G	H	I
146 [5.75]	182 [7.16]	6 [0.24]	175 [6.89]	80 [3.15]	95 [3.74]	182 [7.16]	95 [3.74]	86 [3.38]

Single Switch Connection Electrical Diagram



Double Switch Connection Electrical Diagram



## Ordering Information

Item Number	Reset coil	Switch contacts	Electrical connections
81647076	24 VDC	DPDT	¾" NPT-F + ½" NPF-F adapter
81647079	24 VDC	DPDT	¾" NPT-F direct
81647080	24 VDC	DPDT	M20x1,5 + Cable gland 11-18mm adapter
81647083	24 VDC	DPDT	M20x1,5 direct
81647077	24 VDC	SPDT	¾" NPT-F + ½" NPF-F adapter
81647078	24 VDC	SPDT	¾" NPT-F direct
81647081	24 VDC	SPDT	M20x1,5 + Cable gland 11-18mm adapter
81647082	24 VDC	SPDT	M20x1,5 direct
81647168	110 VAC	DPDT	¾" NPT-F + ½" NPF-F adapter
81647165	110 VAC	DPDT	¾" NPT-F direct
81647087	110 VAC	DPDT	M20x1,5 + Cable gland 11-18mm adapter
81647084	110 VAC	DPDT	M20x1,5 direct
81647167	110 VAC	SPDT	¾" NPT-F + ½" NPF-F adapter
81647166	110 VAC	SPDT	¾" NPT-F direct
81647086	110 VAC	SPDT	M20x1,5 + Cable gland 11-18mm adapter
81647085	110 VAC	SPDT	M20x1,5 direct
81647170	220 VAC	DPDT	¾" NPT-F + ½" NPF-F adapter
81647173	220 VAC	DPDT	¾" NPT-F direct
81647174	220 VAC	DPDT	M20x1,5 + Cable gland 11-18mm adapter
81647177	220 VAC	DPDT	M20x1,5 direct
81647171	220 VAC	SPDT	¾" NPT-F + ½" NPF-F adapter
81647172	220 VAC	SPDT	¾" NPT-F direct
81647175	220 VAC	SPDT	M20x1,5 + Cable gland 11-18mm adapter
81647176	220 VAC	SPDT	M20x1,5 direct
81647072	Without	DPDT	¾" NPT-F + ½" NPF-F adapter
81647068	Without	DPDT	¾" NPT-F direct
81647074	Without	DPDT	M20x1,5 + Cable gland 11-18mm adapter
81647071	Without	DPDT	M20x1,5 direct
81647073	Without	SPDT	¾" NPT-F + ½" NPF-F adapter
81647069	Without	SPDT	¾" NPT-F direct
81647075	Without	SPDT	M20x1,5 + Cable gland 11-18mm adapter
81647070	Without	SPDT	M20x1,5 direct

## Approvals

Logo	Description	Country
CE	<ul style="list-style-type: none"><li>- EU Declaration of conformity</li><li>- RoHS directive</li><li>- ATEX directive</li><li>- II 2G</li></ul>	European Union

Approvals and certificates, see website

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