

EuroSwitch - Vibration Sensor

VS-V1-C Series Overview

VS-V1-C : Velocity 4-20mA - Cabled Version

The VS series of vibration sensors provide measurement of overall vibration levels being generated by all types of rotating machinery in Hazardous Areas, and can be directly connected to PLC, DCS and other industrial controllers.

The VS-V1-C type are loop powered, 4-20mA output vibration sensors configured with a full scale velocity (RMS or Peak) of between 10 mm/s to 100mm/s (or 0.5 ips to 2 ips). The housing is manufactured from 316 stainless steel, and it is provided with a fully potted cable suitable for use in -20°C to +70°C environments.

Benefiting from state-of-the-art annular shear design, our VS series sensors provide better frequency response, improved base strain, lower noise, and an insensitivity to cable motion compared to the market competition.

It is available certified for Hazardous Area use including ATEX / IECEx / UL / CSA / TRCU & INMETRO.



Physical Properties

Body Style	Cylindrical with cable
Body Material	316 Stainless Steel
Connection	1/2" NPT Conduit Entry
Mounting	Stud Mount - Options available
Sensing Element Type	Piezoelectric Shear

Dynamic Specifications

Output	Velocity
Output Type	4-20mA (4mA = no vibration, 20mA = full scale)
Sensitivity	10 mm/s - 100 mm/s or 0.5 ips - 2 ips (RMS or Peak)
Frequency Response	3Hz to 1KHz ±10%
Accuracy (Repeatability)	2%

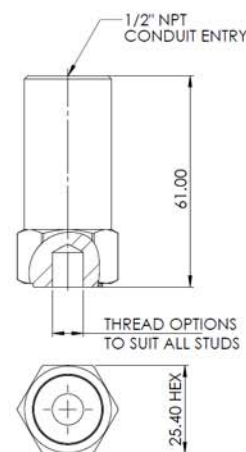
Environmental & Certification

Operating Temperature	-20°C to +70°C
Temperature Class (T Rating)	T4/T6 (Can also be used in T5 and T3)
Vibration Limit (Continuous)	250g
Shock Limit	2500g peak
ESD Protection	> 40V
Environmental Protection	IP 66 / 67 / 68 NEMA 4X / 6P
Gas Group	IIC (Can also be used in IIA and IIB)
Dust Group	IIIC (Can also be used in IIIA and IIIB)
Hazardous Location	Zones 1, 2, 21 and 22 Class I & II Div 1 & 2

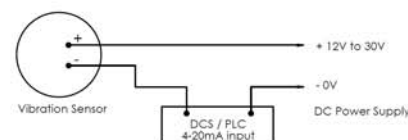
Electrical

Power Requirements	+10 to +30 VDC
Max Loop Resistance, RL	See note below
Turn on Time, 4-20mA loop	<15 sec
Grounding	Internally isolated from machine ground
Shielding	Internal Faraday shielding
Maximum Cable Length	15 000 m
Protection	Overvoltage and Reverse Polarity

Dimensions



Connection



DC Supply Voltage	RL (Max Resistance)*	RL (Max Wattage Capability)**
12 VDC	100 Ω	1/8 Watt
24 VDC	700 Ω	1/2 Watt
30 VDC	1000 Ω	1/2 Watt

Max. Loop Resistance Calculation:

$$R_L (\text{max}) = \frac{(\text{VDC supply} - 10 \text{ V}) \times 1000}{20 \text{ mA}}$$

* Lower resistance is allowed, ≥ 10Ω recommended.

** Minimum RL wattage determined by: 0.0004 x RL