

USER MANUAL

VIBRATION TRANSMITTER

PCE-VT 420

ENGLISH



User manuals in various languages (français, italiano, español, português, niederlands, türk, polski) can be found via our product search on:
www.pce-instruments.com

FEATURES

- » 4-wire installation.
- » Linear current output .
- » Easy installation and connection.
- » Frequency range 10 Hz - 1 kHz, sensitivity relative meet ISO 2954.
- » Acceleration, Velocity, Displacement measurement.
- » Zero & Span adjustment VR.
- » Separate vibration probe with magnetic base, easy operation.

SPECIFICATIONS

Measurement	Velocity, Acceleration, Displacement	
Function	Acceleration, Velocity : RMS, Displacement : p-p (peak-peak)	
Unit	Measurement	Metric
	Accele	m/s ²
	Velocity	mm/s
	Displacement	mm
Frequency range	10 Hz to 1 KHz Sensitivity relative during the the frequency range meet ISO 2954 Refer to table 1, page 28	
Analog output	Analog output: 4 to 20 mA. linear to temperature.	
Loop impedance	Max. 500 Ω@24 V DC	
Power supply	Isolated Power 9 to 30VDC@200 mA. Ripple< 2.5%	
Operation Temp.	0°C to 70°C /32°F to 158°F.	
Operation humidity	Max. 85% RH.	
Dimensions	120 mm x 96 mm x 43 mm	
Weight	164 g.	

Enclosure rating	Meter : IP63 , sensor probe: IP60
Dimension	Meter : 182 x 73 x 47.5 mm Vibration sensor probe: Round 16 mm Dia. x 37 mm. Cable length : 1.2 meter.
Accessories Included	Instruction manual Vibration sensor with cable Magnetic base

2-2 Electrical Specifications (23±5 °C)

Acceleration (RMS, Peak, Max Hold)

Unit	m/s ²
Range	0.5 to 199.9 m/s ²
Resolution	0.1 m/s ²
Accuracy	±(5 % + 2 d) reading @ 160 Hz, 80 Hz, 23 ± 5 °C
Calibration Point	50 m/s ² (160 Hz)

Velocity (RMS, Peak, Max Hold)

Unit	mm/s
Range	0.5 to 199.9 mm/s
Resolution	0.1 mm/s
Accuracy	±(5 % + 2 d) reading @ 160 Hz, 80 Hz, 23 ± 5 °C
Calibration Point	50 mm/s (160 Hz)

Displacement (p-p, Max Hold p-p)

Unit	mm
Range	1.999 mm
Resolution	0.001 mm
Accuracy	±(5 % + 2 d) reading @ 160 Hz, 80 Hz, 23 ± 5 °C
Calibration Point	0.141 mm (160 Hz)

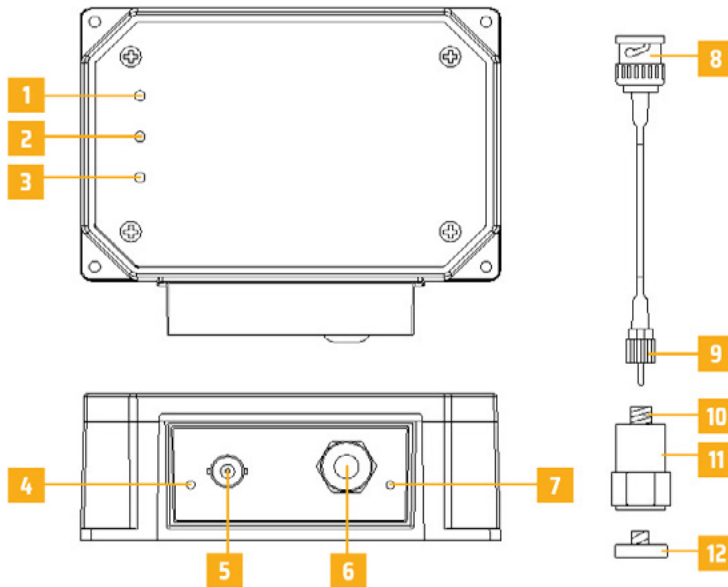
Remark :

RMS : To measure the true RMS value.

Peak : To measure and update the peak value.

Max. Hold : To measure and update the max. peak value.

FRONT PANEL DESCRIPTION



- 1 Acceleration indicator
- 2 Velocity indicator
- 3 Displacement indicator
- 4 ZERO (4 mA)
- 5 BNC connector
- 6 Cable connector/Output Cable
- 7 SPAN (20 mA)

- 8 Cable BNC Plug
- 9 Mini Plug of Cable
- 10 Input Socket of Vibration Sensor
- 11 Vibration Sensor
- 12 Magnetic Base

CURRENT LOOP AND TAGET VIBRATION

The following table shows the relationship for the Current Loop Output with the Target Vibration. The different Current Loop Output is corresponding to the relevant target Vibration.

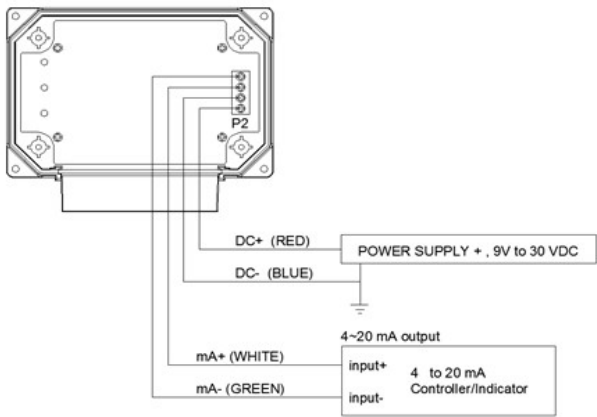
Table 1: Current Loop Output & Target Vibration

Code	Current Loop Output mA	Target Vibration		
		ACC	VEL	Disp
1	4.00	0 m/s ²	0 mm/s	0 mm
2	8.00	50 m/s ²	50 mm/s	0.500mm
3	12.00	100 m/s ²	100 mm/s	1.000mm
4	16.00	150 m/s ²	150 mm/s	1.500mm
5	20.00	200 m/s ²	200 mm/s	2.000mm

MEASURING PROCEDURE OF VIBERTION TRANSMITTER

Vibration Transmitter Wire connection

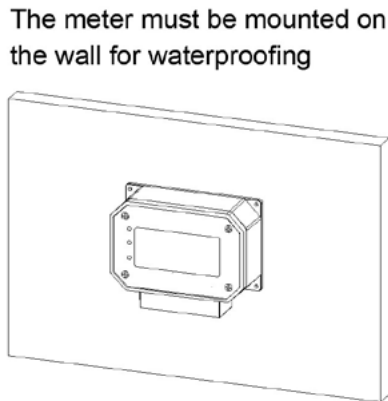
The following diagram and table show the proper wiring connections. Each wire is numbered with the number and the relative color. Please follow the function guide when you connect the wire.



Warning:
Please pay the special attention to the wire connection for the DCV + (V+) and DCV-(V-). Please take care that current output can not be linked with any Power line (DCV+) or (DCV-), and the current output (mA+) connecting to controller (mA+) input, The current output(mA-) please connection to controller (mA-)

Vibration Transmitter Fixed installation considerations
Fix the transmitter, it must be vertical to the wall , to have waterproofing.

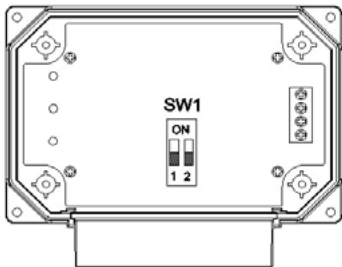
Please refer to the figure below for the installation method.



Vibration MEASUREMENT

- (1) Mini Plug of Cable Fig13-9 connecto Vibration Sensor Input Socket Fig13-10.
- (2) Cable BNC Plug Fig13-8 connec to Vibration Transmitter Input Socket Fig13-5.
- (3) Then to do the Vibration measurment ,at the same time the measure value will transng to DC mA current and output to mA output socket.

Vibration MEASUREMENT Function chang
How to select the measurement unit, use screw drive open the transmitter top case,Then following diagram and use sw1 dip switch, then according to the function select table, select to want measurement function.



SW1 Function select table

1	2	
OFF	OFF	Acceleration
ON	OFF	Velocity
OFF	ON	Displacement

Vibration Transmitter ZERO & SPAN (Calibration)

The Vibration transmitter can be Adjustment ZERO(4.00mA) & how to adjust the zero and span , zero adjust Procedure,

zero adjust:

first vibration sensor leave the vibration signal ,then use screw drive to adjust the zero VR, make the DMM mA value equal 4.00mA.

span adjust:

span adjust vibration sensor bnc cable connect to the transmitter , vibration signal input to the vibration sensor ,then use screw drive adjust the span VR, make the DMM mA value equal 20.00mA.

DISPOSAL

For the disposal of batteries in the EU, the (EU) 2023/1542 directive of the European Parliament applies. Due to the contained pollutants, batteries must not be disposed of as household waste. They must be given to collection points designed for that purpose. In order to comply with the EU directive 2012/19/EU we take our devices back. We either re-use them or give them to a recycling company which disposes of the devices in line with law. For countries outside the EU, batteries and devices should be disposed of in accordance with your local waste regulations. If you have any questions, please contact PCE Instruments.

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