



Specifications and Instruction Manuals

Direct Output Vibration Pick-up
(4-20mA Velocity + AC Acceleration Type)

Model: VP-421

Manufacture: **IMV CORPORATION**
Specification No.: TVE-5-5677
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1. Outline

This product has 4-20mA DC Output which is proportional to the vibration level and the capability of interfacing direct into PLC, BMS or 4-20mA input module.

2. Feature

- (1) Velocity measurements based on ISO10816 which defines the vibration severity is possible by this product.
- (2) Output is 4-20mA DC which is proportional to the vibration level.
- (3) This product has the capability of interfacing direct into PLC, BMS or 4-20mA input module.

3. Typical Applications

- (1) Vibration Sensors of Vibration Monitoring systems for manufacturing plants or machine tools.
- (2) Built-in vibration sensors for fans, motors, Compressors, etc.



4. Specifications

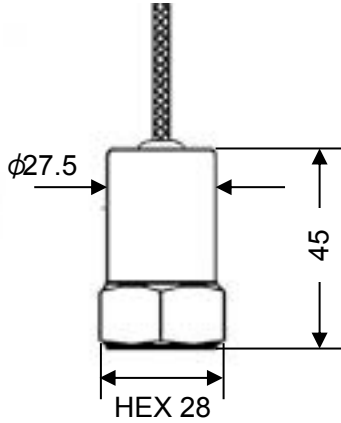
Model	VP-421
Acceleration Ranges (RMS)	<input type="checkbox"/> 0 - 10mm/sec 10.2mV/(m/s ²) (Max. Acc. 490m/s ²) <input type="checkbox"/> 0 - 20mm/sec 10.2mV/(m/s ²) (Max. Acc. 490m/s ²) <input type="checkbox"/> 0 - 25mm/sec 10.2mV/(m/s ²) (Max. Acc. 490m/s ²) <input type="checkbox"/> 0 - 50mm/sec 5.1mV/(m/s ²) (Max. Acc. 490m/s ²) <input type="checkbox"/> 0 - 100mm/sec 5.1mV/(m/s ²) (Max. Acc. 490m/s ²) (Nominal 80Hz at 22°C ±10%)
Frequency Response	10 to 1,000Hz ±5% - ISO10816
Transverse Sensitivity	Less than 5%
Output Current	4-20mA DC proportional to RMS Velocity “mm/sec” and AC ”m/s ² ” for data collectors
Supply Voltage	15 to 30VDC (for 4-20mA)
Settling Time	2 seconds
Ambient Temperature	-25 to 90°C
Sealing	<input type="checkbox"/> Drip-proof Direct-connect Type: IP65 (Dust-proof, Drip-proof) <input type="checkbox"/> Water-proof Connector Type: IP67 (Dust-proof, Water-proof) <input type="checkbox"/> Water Resistant Type: IP68 (Dust-proof, Water Resistant) Submersible Depth: max 100m, 10bar
Maximum Shock	49,000m/s ²
Output Impedance	Loop Resistance 600Ω max at 24VDC
Case Isolation	above 100MΩ at 500VDC
Dimensions	<input type="checkbox"/> Drip-Proof Direct-Connect Type: φ27.5×45mm (Excluding Protrusions) <input type="checkbox"/> Water-Proof Connector Type: φ27.5×56mm (Excluding Protrusions) <input type="checkbox"/> Water-Resistant Type: φ27.5×69mm (Excluding Protrusions) Detail Reference : ”5. Outline Dimensional Drawing”
Weight	<input type="checkbox"/> Drip-Proof Direct-Connect Type: 135g (Excluding Cables) <input type="checkbox"/> Water-Proof Connector Type: 150g (Excluding Cables) <input type="checkbox"/> Water-Resistant Type: 140g (Excluding Cables)
Case Material	Stainless Steel (SUS303)
Output Cable	<input type="checkbox"/> Drip-Proof Direct-Connect Type: 2 Core Shielded Cable, 5m Standard Accessory Sheath : Stainless Mesh <input type="checkbox"/> Water-Proof Connector Type: 2 Core Shielded Cable Available Accessory M12-4Pin Connector to the pick-up Detail Reference: “8. Outline View of Connector Cable” <input type="checkbox"/> Water-Resistant Type: 2 Core Shielded Cable, 5m Standard Accessory Sheath : Blue Silicon Screened
Maximum Length of Output Cable	1,000m
Mounting Studs	<input type="checkbox"/> Quick Fit: Glue face <input type="checkbox"/> Quick Fit: M8 Male <input type="checkbox"/> Quick Fit: M6 Male <input type="checkbox"/> Quick Fit: φ25.4mm Pole Piece Pot Magnet Detail Reference: “6. Vibration Pick-up Mounting Studs”



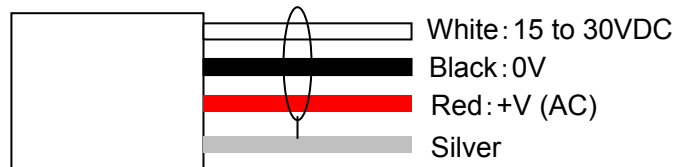
5. Outline Dimensional Drawing

(Detail Reference: “4. Specifications”)

Drip-Proof Direct-Connect Type

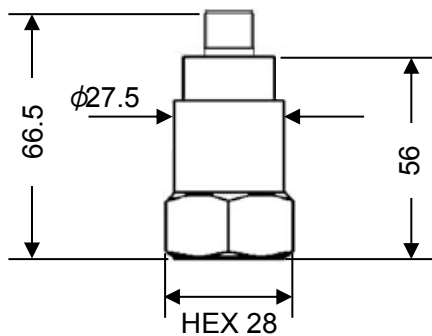


Sensor Body

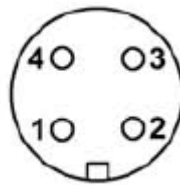


Cable

Water-Proof Connector Type



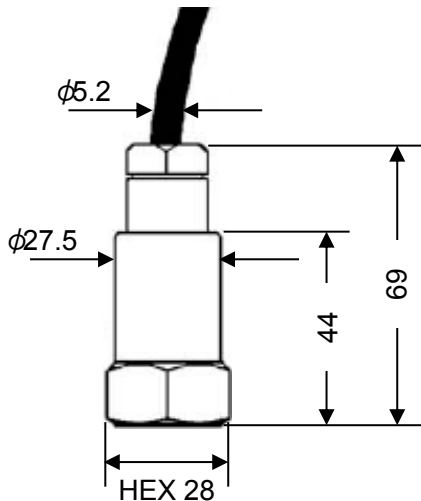
Sensor Body



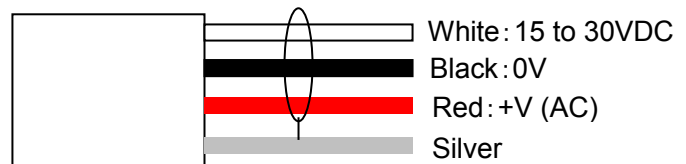
Pin1 : no-connection
 Pin2 : 15 to 30VDC (White)
 Pin3 : no-connection
 Pin4 : 0V (Black)

Connector Shape

Water-Resistant Type



Sensor Body

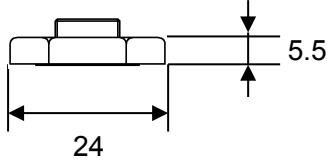


Cable

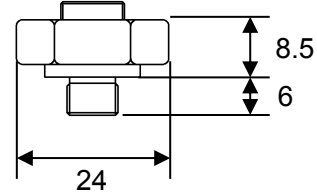


6. Vibration Pickup Mounting Studs

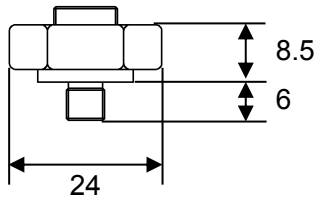
Quick Fit: Glue face



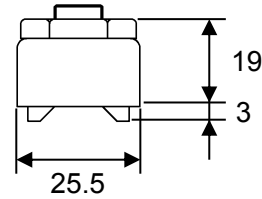
Quick Fit: M8 Male



Quick Fit : M6 Male

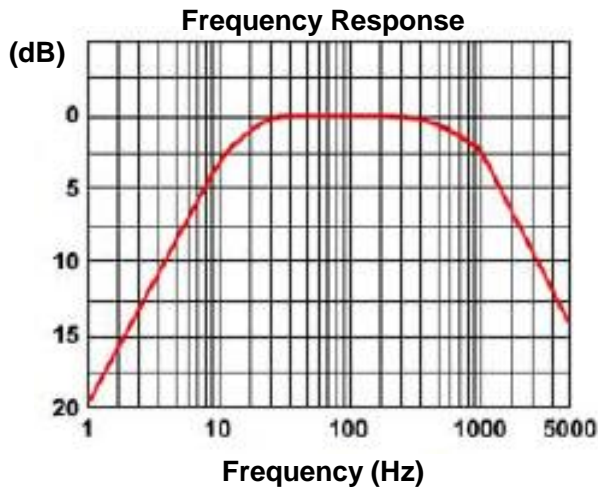


Quick Fit: $\phi 25.4$ mm Pole Piece Pot Magnet



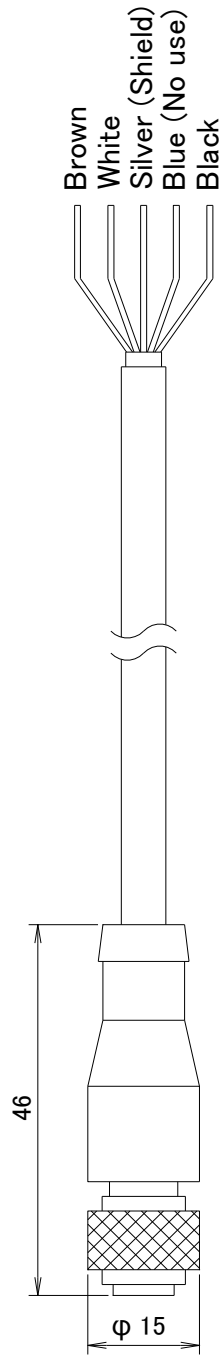
(Unit: mm)

7. Frequency Response

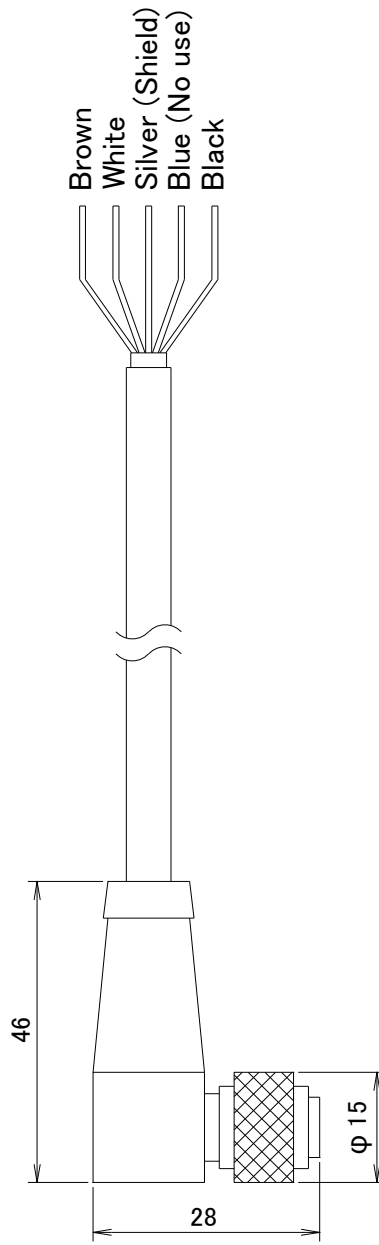




8. Outline View of Connector Cable



MS-AC010
Straight Connector



MS-AC011
Angle Connector



9. Connection Method / Instruction Manual

Operation for Direct Output Vibration Pick-up is as below figure 1.

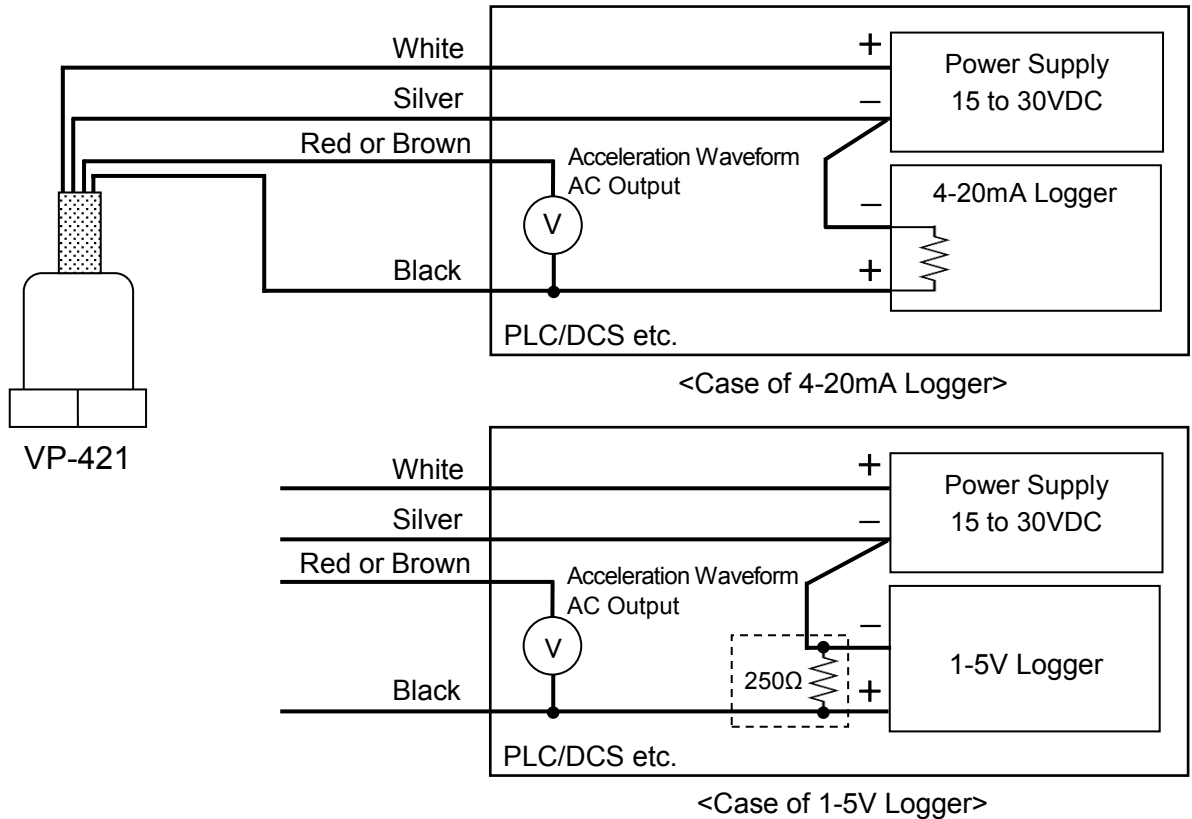


Fig.1 Example of Connection method

Caution on cable connection and instruction

- (1) Confirm “+” and “-” polarity first. If the polarity is opposite, sensor cannot operate.
- (2) Do not supply power voltage more than the specification. It will cause breakdown on sensor.
- (3) In case of using any receiver such as logger with 1-5V, connect 250Ω resistance with it in parallel.

10. Warranty

If there is any breakdown caused by producing error, material fault, or obviously our fault, we repair or exchange with no charge. This condition is valid only in warranty term and the term is for 1 year after delivered. However, even if it is under warranty, it will occur some charge on exchanging.

- (A) Any damage and breakdown caused by natural disaster such as fire, earthquake, flood, lightning damage.
- (B) Any transporting, moving, or dropping which does not related us after finishing our delivery.
- (C) Any error operation, unusual power supply input, and the fault caused by disassembling/repairing/modifying by customer.