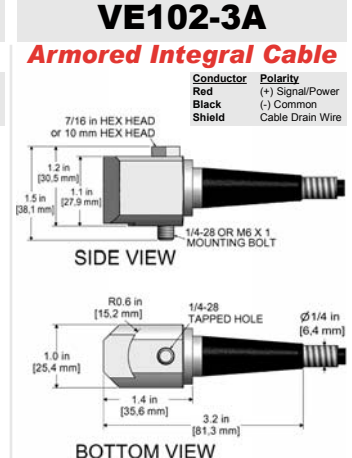
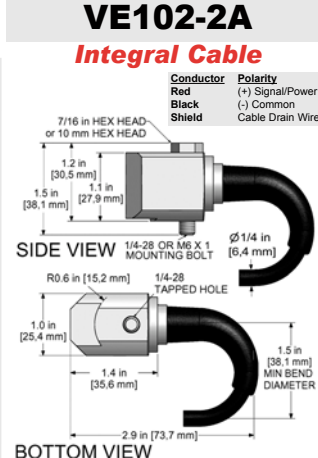
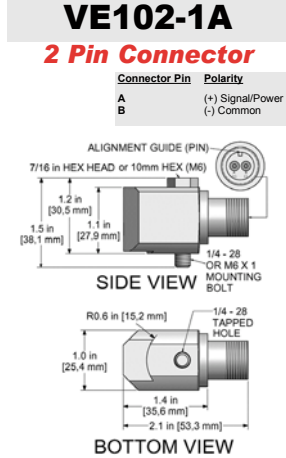


# VE102 Series

## Piezo Velocity Sensor, Side Exit Connector / Cable, 100 mV/in/sec



| Part Numbers & Ordering Information:  | VE102-1A   | VE102-2A       |                                    | VE102-3A       |                                    |
|---|--|----------------|------------------------------------|----------------|------------------------------------|
|   |  | Part Number    | Length                             | Part Number    | Length                             |
| <p><b>Part Numbers &amp; Ordering Information:</b></p> <p>When Ordering Metric, add "M" prefix. (Example: M/VE102-2A/010-Z)</p> | Piezo velocity sensor, 100 mV/in/sec, 2 pin side connector | VE102-2A/010-Z | 10 ft. (3 m), blunt cut end        | VE102-3A/010-Z | 10 ft. (3 m), blunt cut end        |
|   |  | VE102-2A/020-Z | 20 ft. (6 m), blunt cut end        | VE102-3A/020-Z | 20 ft. (6 m), blunt cut end        |
|   |  | VE102-2A/030-Z | 30 ft. (9 m), blunt cut end        | VE102-3A/030-Z | 30 ft. (9 m), blunt cut end        |
|   |  | VE102-2A/050-Z | 50 ft. (15 m), blunt cut end       | VE102-3A/050-Z | 50 ft. (15 m), blunt cut end       |
|   |  | VE102-2A/100-Z | 100 ft. (30 m), blunt cut end      | VE102-3A/100-Z | 100 ft. (30 m), blunt cut end      |
|   |  | VE102-2A/010-F | 10 ft. (3 m), BNC plug connector   | VE102-3A/010-F | 10 ft. (3 m), BNC plug connector   |
|   |  | VE102-2A/020-F | 20 ft. (6 m), BNC plug connector   | VE102-3A/020-F | 20 ft. (6 m), BNC plug connector   |
|   |  | VE102-2A/030-F | 30 ft. (9 m), BNC plug connector   | VE102-3A/030-F | 30 ft. (9 m), BNC plug connector   |
|   |  | VE102-2A/050-F | 50 ft. (15 m), BNC plug connector  | VE102-3A/050-F | 50 ft. (15 m), BNC plug connector  |
|   |  | VE102-2A/100-F | 100 ft. (30 m), BNC plug connector | VE102-3A/100-F | 100 ft. (30 m), BNC plug connector |

| Performance Specifications          | English              | Metric               |
|-------------------------------------|----------------------|----------------------|
| <b>Sensitivity</b> ±10%             | 100 mV/in/sec        | 4 mV/mm/sec          |
| <b>Frequency Response</b>           |                      |                      |
| ±3 dB                               | 90-420,000 CPM       | 1.5-7000 Hz          |
| ±10%                                | 480-240,000 CPM      | 8,0-4000 Hz          |
| <b>Dynamic Range</b>                | ±50 in/sec, pk       | ±1270 mm/sec, pk     |
| <b>Electrical</b>                   |                      |                      |
| <b>Settling Time (Turn on Time)</b> |                      |                      |
| @ Room Temp (68°F/20°C)             | <4 Seconds           | <4 Seconds           |
| <b>Power Requirement</b>            |                      |                      |
| Voltage Source                      | 18-30 VDC            | 18-30 VDC            |
| Constant Current Excitation         | 2-10 mA              | 2-10 mA              |
| <b>Electrical Noise (Typical)</b>   |                      |                      |
| Broadband 2.5 Hz to 25 kHz          | 1800 σg, rms         | 1800 σg, rms         |
| Spectral 10 Hz                      | 165 σg/√Hz           | 165 σg/√Hz           |
| 100 Hz                              | 10 σg/√Hz            | 10 σg/√Hz            |
| 1000 Hz                             | 3 σg/√Hz             | 3 σg/√Hz             |
| <b>Output Impedance, Max</b>        | <100 ohm             | <100 ohm             |
| <b>Bias Output Voltage</b>          | 10-14 VDC            | 10-14 VDC            |
| <b>Electrical Case Isolation</b>    | >10 <sup>8</sup> ohm | >10 <sup>8</sup> ohm |

| Environmental                       | English              | Metric               |
|-------------------------------------|----------------------|----------------------|
| <b>Temperature Range</b>            | -58 to 250° F        | -50 to 121° C        |
| <b>Maximum Shock Protection</b>     | 5,000 g, peak        | 5000 g, peak         |
| <b>Electromagnetic Sensitivity</b>  | CE                   | CE                   |
| <b>Sealing</b>                      | Welded, Hermetic     | Welded, Hermetic     |
| <b>Submersible Depth (VE102-2A)</b> | 500 ft.              | 152 m                |
| <b>Physical</b>                     |                      |                      |
| <b>Sensing Element</b>              | PZT Ceramic          | PZT Ceramic          |
| <b>Sensing Structure</b>            | Shear Mode           | Shear Mode           |
| <b>Weight</b>                       | 5.1 oz.              | 145 grams            |
| <b>Case Material</b>                | 316L Stainless Steel | 316L Stainless Steel |
| <b>Mounting Hole</b>                | 1/4-28               | 1/4-28               |
| <b>Connector (VE102-1A)</b>         | 2 Pin MIL-C-5015     | 2 Pin MIL-C-5015     |
| <b>Integral Cable (VE102-2A)</b>    | CB103                | CB103                |
| <b>Armored Cable (VE102-3A)</b>     | CB206, Armor Jacket  | CB206, Armor Jacket  |
| <b>Mechanical</b>                   |                      |                      |
| <b>Resonant Frequency</b>           | 1,260,000 CPM        | 21000 Hz             |
| <b>Mounting Torque</b>              | 2 to 5 ft. lbs.      | 2.7 to 6.8 Nm        |
| <b>Supplied Accessories</b>         |                      |                      |
| <b>Mounting Hardware</b>            | 1/4-28 Captive Bolt  | M6x1 Captive Bolt    |
| <b>Calibration Certificate</b>      | CA10                 | CA10                 |

### Common Applications

#### Industries Served

- Automotive
- Power
- Manufacturing
- Pulp and Paper
- Petrochemical
- Steel
- Pharmaceutical
- Wastewater Treatment

#### Typical Applications

- Air Compressors
- Dryer Sections <250° F (121° C)
- Motors
- Pumps, Underwater
- Air Handlers
- Fans
- Press Sections
- Roll and Process Equipment
- Conveyors
- Fourdriniers
- Presses and Stamping
- Spindles
- Cooling Towers
- Gear Boxes
- Pumps

#### Measurement Types

- Permanent Mount
- Portable

For optional accessories, please see the *Sensor Accessory Selection Chart*.



VIBRATION ANALYSIS HARDWARE