

VMPLUS

Improved Third Generation Galvo Motors



Key Specifications

- Smaller Size
- Simpler Cabling
- Improved Thermal Drift
- Higher EMI Resistance
- Drop-in Replacement*
- RoHS Compliant

The new VMPLUS galvo motors offer high dynamic performance along with high accuracy. This new design combines our advanced third generation VM motors, which were known for low inertia and high rigidity, with an entirely new optical position detector. The result is VMPLUS.

Now, any design based on our previous VM series galvos can be upgraded instantly because the VMPLUS is a drop-in replacement. That can extend the competitive life of current designs with virtually no added engineering costs.

VMPLUS delivers outstanding speed and accuracy, with improved thermal performance and EMI resistance, in a package that is significantly smaller than the previous generation.

VMPLUS galvo motors are fully RoHS compliant and are optimized for both large and small signal applications.

VMPLUS series galvos, coupled with General Scanning's innovative mirrors, mounts, and servo drivers, will bring higher levels of performance to your optical scanning applications.

*For Current General Scanning Motors

Technical Specifications

| Dynamic Specifications | | VM500+ | VM1000+ | VM2500+ |
|--|---------------------|--------------|--------------|----------------------------|
| Optimal mirror size | mm, clear aperture | 4 - 6 | 6 - 9 | 10 - 15 |
| Max Scan Angle | degrees, optical | ±40 | ±40 | ±40 |
| Non-linearity (max) | % over ±20° optical | 0.2 | 0.2 | 0.2 |
| Offset Drift (Avg. / [Std Dev]) | μ Radians/°C | 0/[10] | 0/[10] | 0/[10] |
| Gain Drift ¹ (Avg. / [Std Dev]) | PPM/°C | 0/[35] | 0/[35] | 0/[35] |
| Small Step Time ^{2,3} (typical) | μ Second | 200 | 250 | 200 |
| Operating Temperature | °C | 0 - 50 | 0 - 50 | 0 - 50 |
| Output Shaft Diameter | mm [Inch] | 2.37 [3/32"] | 3.96 [5/32"] | Tapered Mount ⁴ |

| Motor Specifications | | VM500+ | VM1000+ | VM2500+ |
|----------------------------------|-------------------|--------|---------|---------|
| Torque Constant | Nm/A | 0.004 | 0.01 | 0.0078 |
| Coil Resistance (@ 60°C) | Ohms | 3.5 | 3.0 | 1.9 |
| Coil Inductance (@1 KHz) | mHy | 0.23 | 0.22 | 0.13 |
| Rotor Inertia | g*cm ² | 0.028 | 0.29 | 0.5 |
| Thermal Impedance (Coil to Case) | °C/W | 2.7 | 2.0 | 2.0 |

- Gain Drift characteristics are typical, compensated by General Scanning's servo.
Contact General Scanning to discuss compensation requirements if you plan to use your own servo driver.
- Dynamic specifications dependent on mirror inertia, command waveform, servo technology, and tuning
- Settle to within 1% of position. Mirrors used: 5mm Y Si, 8mm Y Si, 10mm Y SiC respectively
- General Scanning's patented tapered-mount provides low inertia, high dynamic stiffness, adjustable orientation and field-replaceability

Note: VMplus Galvo Motors are fully RoHS compliant

Possible Configurations

Innovative Mirrors

- 4-15mm Clear Apertures
- Various Industrial Coatings

Flexible Mounts

- Sleeve and Taper* Designs
- Flexible Orientation/Replacement

*Patented

Improved Galvo Motors

- Family of Galvo Motors to Support Mirrors of up to 15mm Clear Aperture
- Patented Optical Position Detector Used by All Sizes

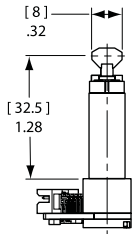
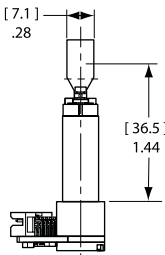
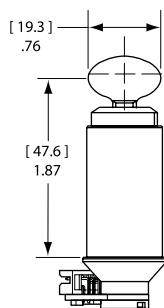
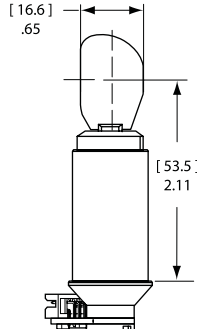
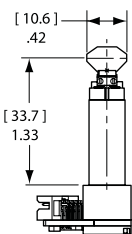
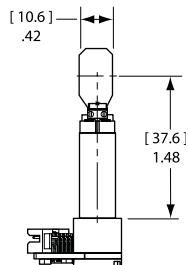
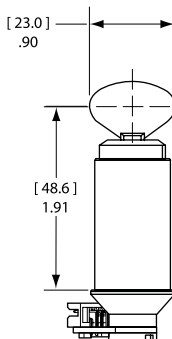
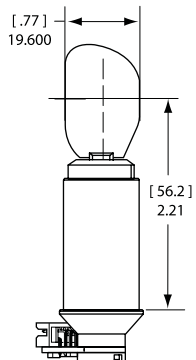
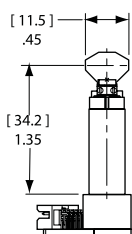
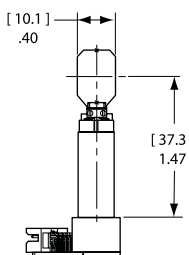
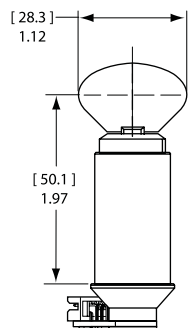
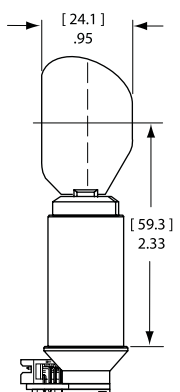
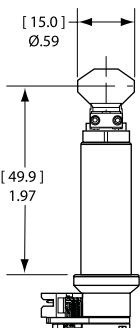
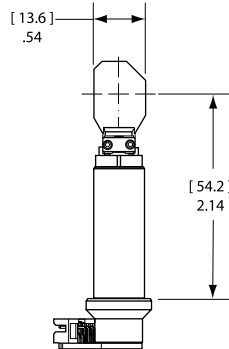


Advanced Servo Electronics

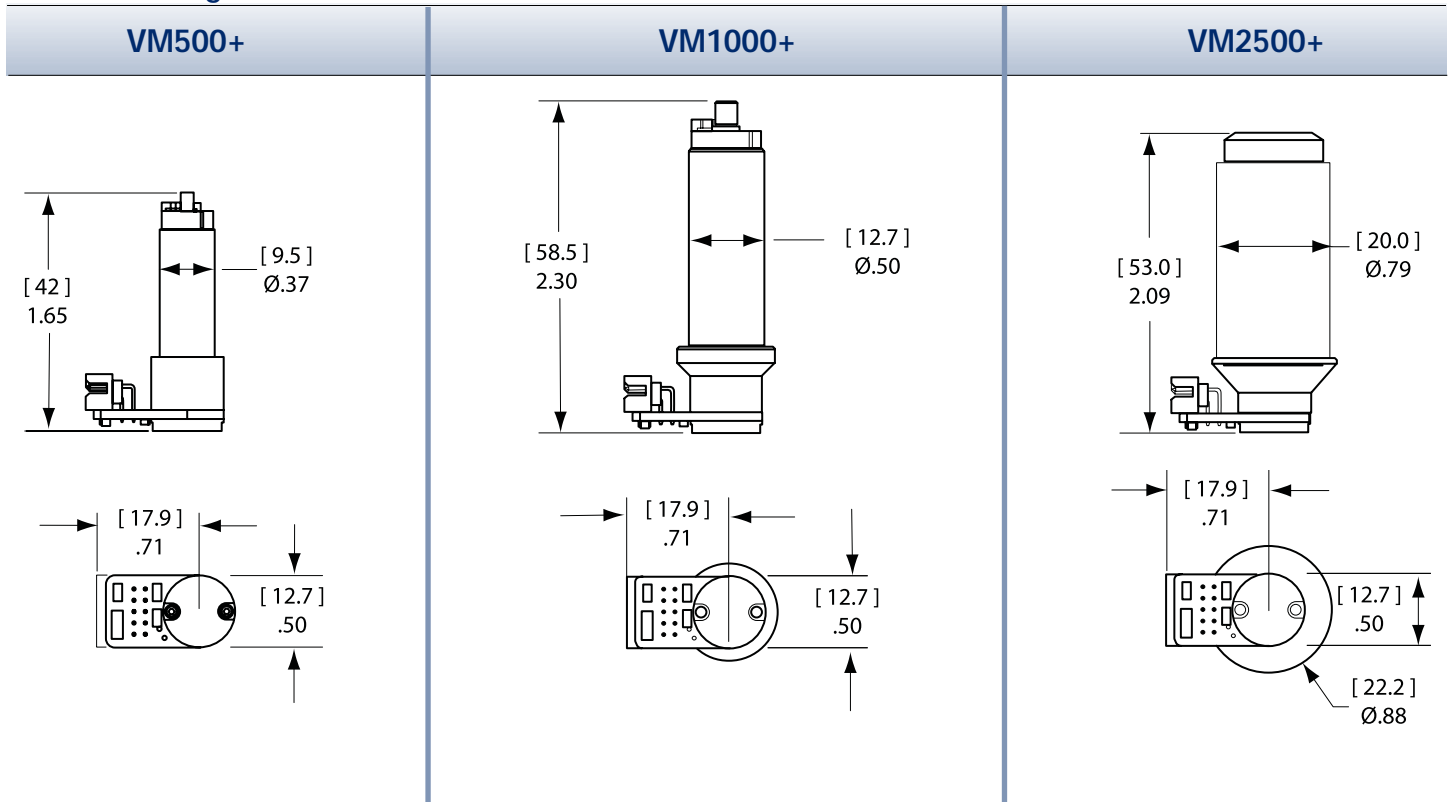
- Single & Dual Axis Options
- Analog and Digital Servo Technology Available



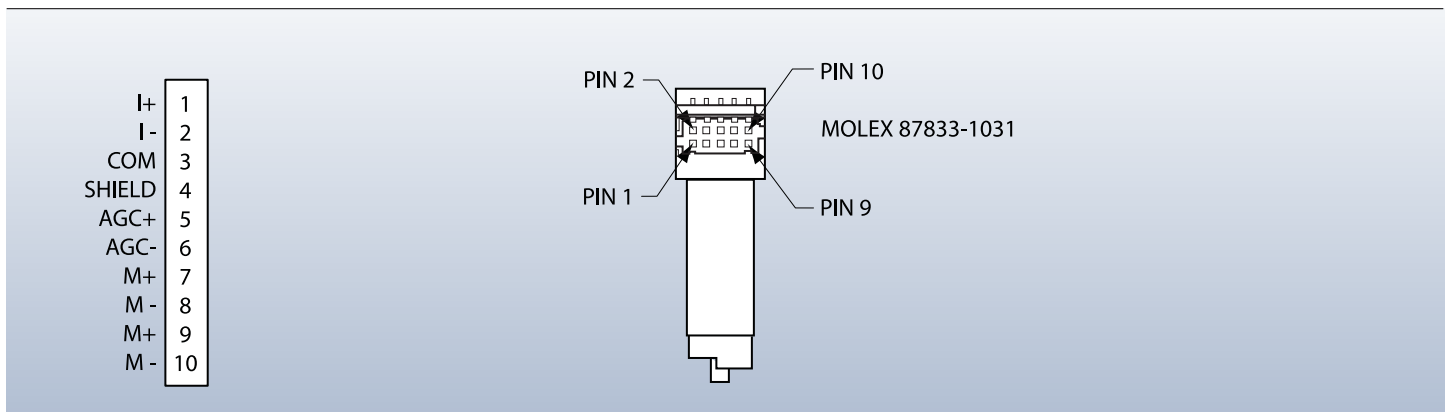
Mounted Mirror Dimensions

| VM500+ | | VM2500+ | |
|---|--|--|---|
| X Mirrors | Y Mirrors | X Mirrors | Y Mirrors |
|  <p>[8] .32</p> <p>[32.5] 1.28</p> |  <p>[7.1] .28</p> <p>[36.5] 1.44</p> |  <p>[19.3] .76</p> <p>[47.6] 1.87</p> |  <p>[16.6] .65</p> <p>[53.5] 2.11</p> |
|  <p>[10.6] .42</p> <p>[33.7] 1.33</p> |  <p>[10.6] .42</p> <p>[37.6] 1.48</p> |  <p>[23.0] .90</p> <p>[48.6] 1.91</p> |  <p>[.77] 19.600</p> <p>[56.2] 2.21</p> |
|  <p>[11.5] .45</p> <p>[34.2] 1.35</p> |  <p>[10.1] .40</p> <p>[37.3] 1.47</p> |  <p>[28.3] 1.12</p> <p>[50.1] 1.97</p> |  <p>[24.1] .95</p> <p>[59.3] 2.33</p> |
| VM1000+ | | | |
| X Mirrors | Y Mirrors | | |
|  <p>[15.0] Ø.59</p> <p>[49.9] 1.97</p> |  <p>[13.6] .54</p> <p>[54.2] 2.14</p> | | |

Outline Drawings



Connector Pinout



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