

## VSR-V2 Series Datasheet



- Vacuum compatible to 10<sup>-6</sup> Torr
- 20 mm or 40 mm travel
- Up to 48 mm/s speed and up to 200 N thrust
- 10 kg load capacity
- 55 or 85 mm retracted height
- Only 7 feedthrough wires required to control these units
- Designed for use with a X-MCB1 Series stepper motor controller or any 2-phase stepper motor controller

## VSR-V2 Series Overview

For more information about the basics of a vacuum system and considerations to keep in mind when gathering requirements for your application, read our technical article, "Motion Device Design Considerations for Vacuum Applications".

Zaber's VSR-V2 Series devices are high-vacuum compatible, computer-controlled, motorized vertical lift stages capable of moving 10 kg loads.

Like all of Zaber's products, the VSR-V2 Series is designed to be very easy to set up and operate. If you are considering a multi-axis system, with Z-axis, these lift stages make an excellent platform.

These stages are wired with a male D-sub 15 connector for plug-and-play use with our X-MCB1 Series stepper motor controllers. Simply cut the connector off for flying leads in vacuum and match the wire connections outside of the vacuum for an easy connection. Our handy kits include free software, and all of the accessories that you will need to get the stage running right out of the box.

*For more information visit: <https://www.zaber.com/products/vacuum-compatible-stages/VSR-V2>*

## VSR-V2 Series Part Numbering

# VSR-V2 Series Drawings

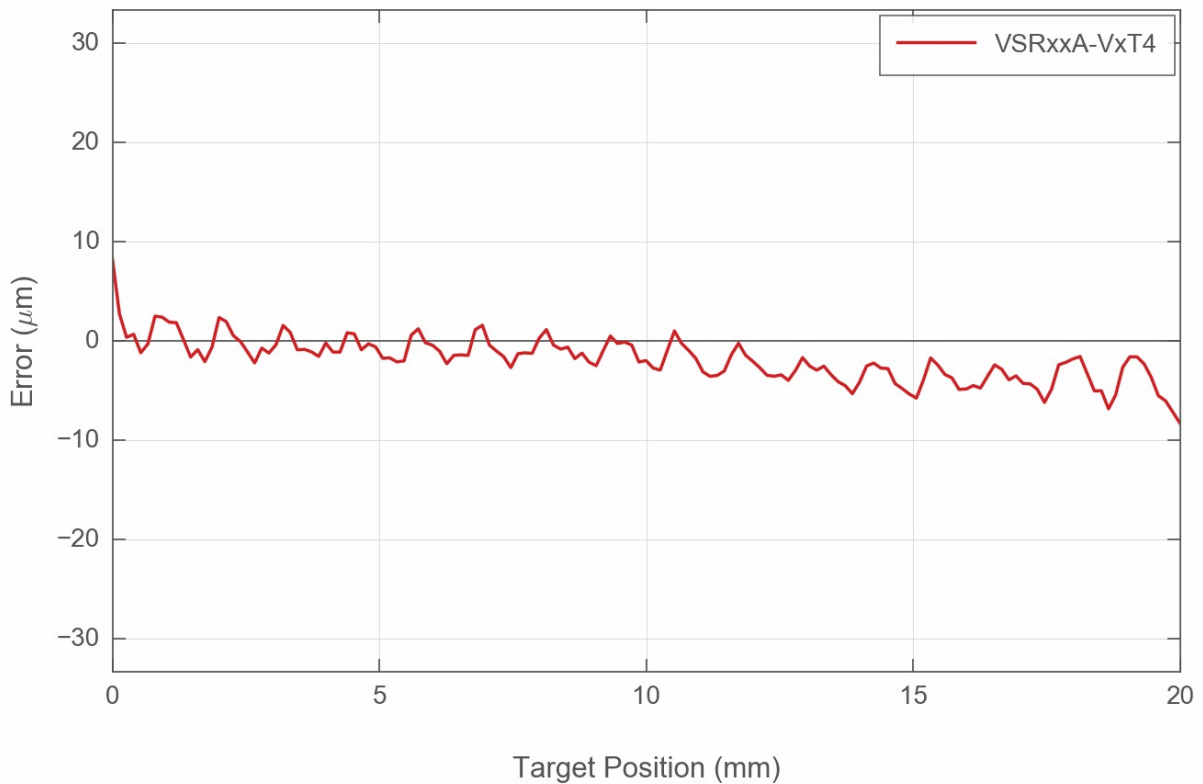
## VSR-V2 Series Specifications

Specification	Value	Alternate Unit
Microstep Size (Default Resolution)	0.09525 $\mu\text{m}$	
Built-in Controller	No	
Recommended Controller	X-MCC (48 V) Recommended	
AutoDetect	No	
Travel Range	20 mm	0.787"
Accuracy (unidirectional)	50 $\mu\text{m}$	0.001968"
Loaded Accuracy (10 N)	35 $\mu\text{m}$	0.001378"
Repeatability	< 1 $\mu\text{m}$	< 0.000039"
Loaded Backlash (10 N)	< 10 $\mu\text{m}$	< 0.000394"
Backlash	< 35 $\mu\text{m}$	< 0.001378"
Maximum Speed	48 mm/s	1.890"/s
Minimum Speed	0.000058 mm/s	0.000002"/s
Speed Resolution	0.000058 mm/s	0.000002"/s
Peak Thrust	200 N	44.9 lb
Maximum Continuous Thrust	100 N	22.4 lb
Maximum Centered Load	100 N	22.4 lb
Maximum Cantilever Load	300 N-cm	424.8 oz-in
Guide Type	Ball Bearing	
Horizontal Runout	< 30 $\mu\text{m}$	< 0.001181"
Pitch	0.08°	1.396 mrad
Roll	0.08°	1.396 mrad
Linear Motion Per Motor Rev	1.2192 mm	0.048"
Motor Steps Per Rev	200	
Motor Type	Stepper (2 phase)	
Motor Rated Current	700 mA/phase	
Inductance	8.7 mH/phase	
Motor Connection	Teflon flying leads with D-sub15 connector	
Default Resolution	1/64 of a step	
Mechanical Drive System	Precision Lead Screw	
Limit or Home Sensing	Magnetic home sensor	

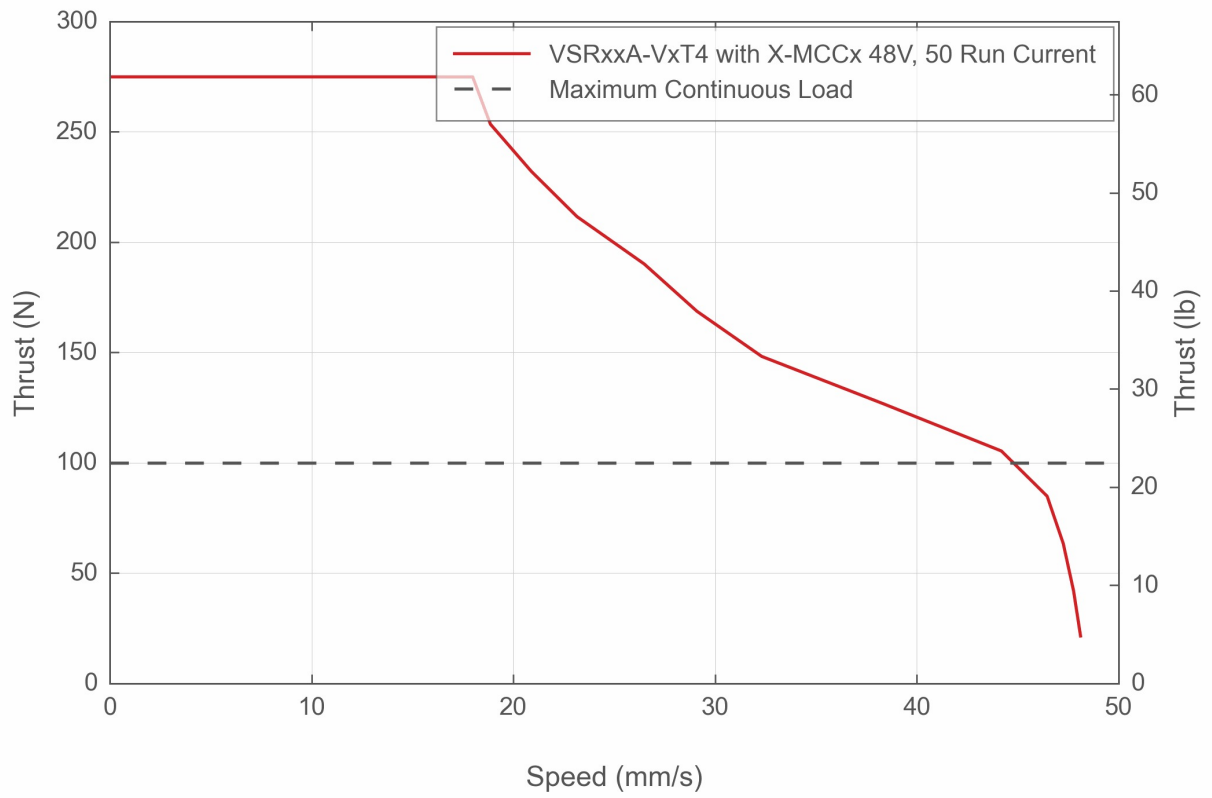
Specification	Value	Alternate Unit
Manual Control	No	
Axes of Motion	1	
Mounting Interface	M6 and M3 threaded holes	
Operating Temperature Range	0-50 °C	
Vacuum Compatible	High vacuum (10 <sup>-6</sup> Torr)	
RoHS Compliant	Yes	
CE Compliant	Yes	
Weight	0.560 kg	1.235 lb

## VSR-V2 Series Charts

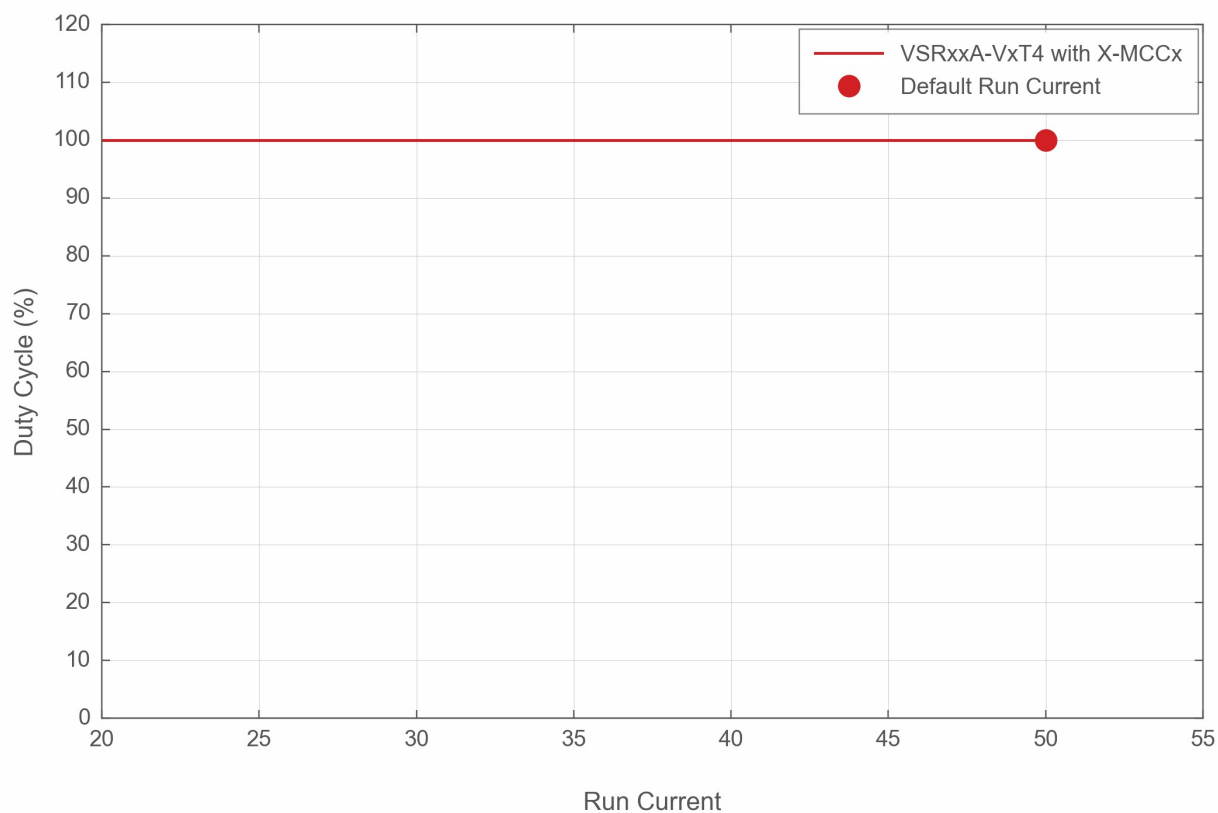
### Typical Accuracy



## Thrust Speed Performance



## Recommended Duty Cycle



## Contact

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