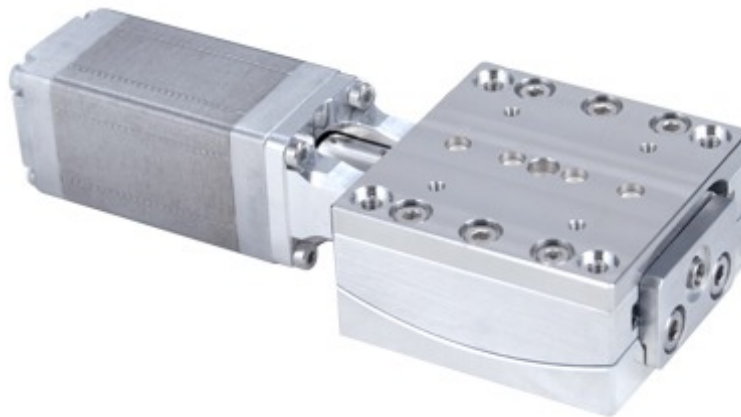


## GSM-V2 Series Datasheet



- Vacuum compatible to 10<sup>-6</sup> Torr
- 40 mm and 60 mm centre of rotation options allow for two axes of motion about a common centre of rotation
- 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

### 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 GSM-V2 Series devices are high-vacuum compatible, computer-controlled, motorized goniometers with a compact size.

Like all of Zaber's products, the GSM-V2 Series is designed to be very easy to set up and operate. If you are considering a multi-axis system, in the XY configuration, these stages are designed to stack with mounting alignment features in the stage top and base.

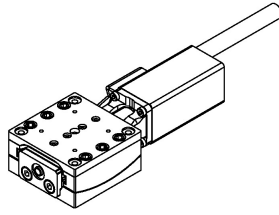
These stages are wired with a male D-sub 15 connector for plug-and-play use with our X-MCB1 Series stepper motor controllers. Simply cut the connector off for flying leads in vacuum and match the wire connections outside of the vacuum for an easy connection. Our

handy kits include free software, and all of the accessories that you will need to get the stage running right out of the box.

## Drawings

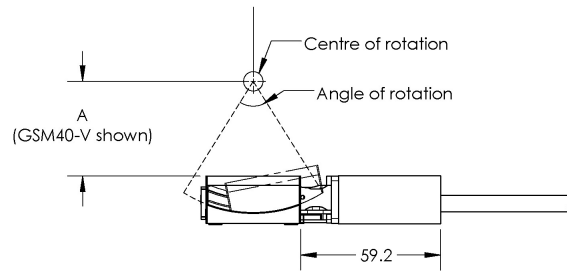
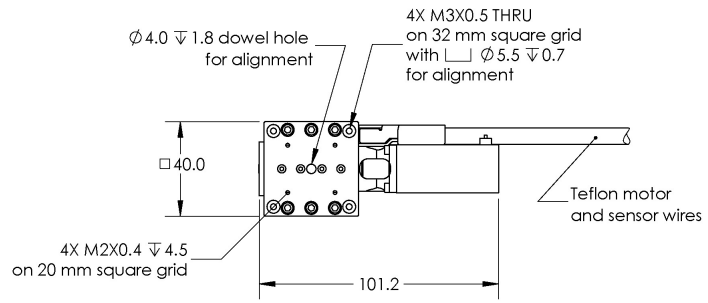
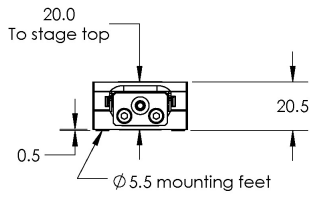
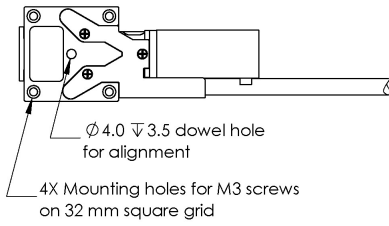
# ZABER

**GSM-V Vacuum Compatible  
Motorized Goniometer Stage**  
dimensions in mm



Model Number*	A (Distance To Centre Of Rotation)	Rotation
GSM40-V	40.0	±10°
GSM60-V	60.0	±7°

\*See product page for complete list of available models at [www.zaber.com](http://www.zaber.com)



## Specifications

Specification	Value	Alternate Unit
Built-in Controller	No	
Recommended Controller	X-MCB1 (48 V) Recommended	
Accuracy (unidirectional)	0.06 °	1.047000 mrad
Repeatability	< 0.005 °	< 0.087 mrad
Backlash	< 0.01 °	< 0.174 mrad
Maximum Speed	30 °/s	5.0 rpm
Encoder Type	None	
Maximum Centered Load	30 N	6.7 lb
Guide Type	Crossed roller bearing	
Rotation Centre Accuracy	< 0.1 mm	< 0.004 "
Motor Steps Per Rev	200	
Motor Type	Stepper (2 phase)	
Motor Rated Current	800 mA/phase	
Inductance	3.5 mH/phase	
Motor Connection	Teflon flying leads with D-sub15 connector	
Default Resolution	1/64 of a step	
Motor Frame Size	NEMA 08	
Mechanical Drive System	Precision Worm Gear	
Limit or Home Sensing	Magnetic home and away sensors	
Manual Control	No	
Axes of Motion	1	
Mounting Interface	M2 and M3 mounting holes	
Vacuum Compatible	High vacuum (10 <sup>-6</sup> Torr)	
Operating Temperature Range	0-50 °C	
RoHS Compliant	Yes	
CE Compliant	Yes	
Weight	0.320 kg	0.705 lb

Part Number	Microstep Size (Default Resolution)	Range	Minimum Speed	Rotation Centre Height
	0.0001625794173		0.00009923 °/s	

Part Number	Microstep Size (Default Resolution)	Range	Minimum Speed	Rotation Centre Height
GSM40-V2T4	° (2.837 µrad)	+/-10 °	(1.732 µrad/s)	40 mm (1.575 ")
GSM60-V2T4	0.0001131413171 ° (1.975 µrad)	+/-7 °	0.00006906 °/s (1.205 µrad/s)	60 mm (2.362 ")

Part Number	Angular Motion Per Motor Rev
GSM40-V2T4	2.08101654144 °
GSM60-V2T4	1.44820885888 °

## Charts

### Recommended Duty Cycle

