

X-GSM-SV1 Series Datasheet



- Vacuum compatible to 10⁻³ Torr
- 40 mm and 60 mm centre of rotation options allow for two axes of motion about a common centre of rotation
- Crossed roller bearings for smooth motion and high stiffness
- Built-in controller; daisy-chains with other Zaber products
- Only 4 feedthrough wires required to control all units in the daisy-chain via serial port (with an X-PIB adaptor)

X-GSM-SV1 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".

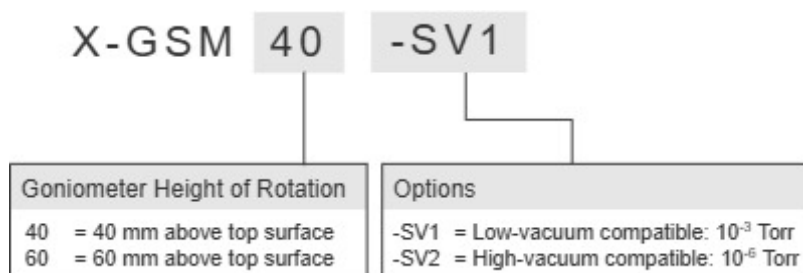
Zaber's X-GSM-SV1 Series devices are low-vacuum compatible, computer-controlled, motorized goniometers with a compact size and built-in controller. They are stand-alone units requiring only a standard 24 V or 48 V power supply.

These stages connect to the RS-232 port or USB port of any computer, and they can be daisy-chained with any other Zaber products. The daisy-chain also shares power, making it possible for multiple X-Series products to share a single power supply.

Like all of Zaber's products, the X-GSM-SV1 Series is designed to be 'plug and play' and 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.

For more information visit: <https://www.zaber.com/products/vacuum-compatible-stages/X-GSM-SV1>

X-GSM-SV1 Series Part Numbering & Options



X-GSM-SV1 Series Drawings

- [X-GSM-SV.pdf \(Drawing for the X-GSM-SV\)](#)

X-GSM-SV1 Series Specifications

Built-in Controller	
Accuracy (unidirectional)	0.06° (1.047000 mrad)
Repeatability	< 0.005° (< 0.087 mrad)
Backlash	< 0.01° (< 0.174 mrad)
Maximum Speed	30°/s (5 rpm)
Encoder Type	No
Communication Interface	RS-232
Communication Protocol	Zaber ASCII (Default), Zaber Binary
Data Cable Connection	Teflon flying leads with M8 4 pin M/F
Maximum Centered Load	30 N (6.7 lb)
Rotation Centre Accuracy	< 0.1 mm (< 0.004")
Power Supply	24-48 VDC
Power Plug	None, use X-PIB
Maximum Current Draw	350 mA
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	800 mA/phase
Inductance	3.5 mH/phase
Default Resolution	1/64 of a step
Motor Frame Size	NEMA 08
Guide Type	Crossed roller bearing
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
Operating Temperature Range	0-50 °C
CE Compliant	Yes
Vacuum Compatible	Low vacuum (10-3 Torr)
Weight	0.320 kg (0.705 lb)

Part Number	Microstep Size (Default Resolution)	Range	Minimum Speed	Speed Resolution
X-GSM40-SV1	0.0001625794173 ° (2.837 µrad)	+/-10°	0.000099°/s (1.728 µrad/s)	0.000099°/s (1.728 µrad/s)
X-GSM60-SV1	0.0001131413171 ° (1.975 µrad)	+/-7°	0.000069°/s (1.204 µrad/s)	0.000069°/s (1.204 µrad/s)

Part Number	Rotation Centre Height	Angular Motion Per Motor Rev
X-GSM40-SV1	40 mm (1.575")	2.08101654144°
X-GSM60-SV1	60 mm (2.362")	1.44820885888°

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