Zaber Technologies Inc.
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X-RSM40B-E03 Datasheet



- 50 N load capacity
- 0.02° repeatability
- 21 mm total height
- 4 mm aperture
- Worm gear driven for continuous rotation
- Encoder position feedback with slip/stall detection and automatic recovery
- Built-in controller; daisy-chains with other Zaber products

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X-RSM40B-E03 Overview

Zaber's X-RSM-E Series rotation stages are our most compact stepper and worm gear driven devices. These are stand-alone units requiring only a power supply. An indexed knob provides convenient manual control for versatile operation even without a computer. 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.

Self-aligning feet and mounting points make it easy to set up multi-axis tilt or gimbal systems using the GSM tilt devices or AP146 and AB147 brackets.

For more information visit: https://www.zaber.com/products/rotary-stages/X-RSM-E?part=X-RSM40B-E03

X-RSM40B-E03 Part Numbering & Options

Part number: X-RSM40B-E03

X-RSM 40 B - E03

Rotation Stage Size	Worm Gear Ratio	Encoder Options
40 — 40 mm square top surface (this part)	**B — 60:1 (this part)**	**E03 — Motor Encoder, 200 CPR (this part)**

X-RSM40B-E03 Drawings

- X-RSM-E.png (Drawing for the X-RSM-E)
- View all drawings and documents at zaber.com

X-RSM40B-E03 Specifications

Overview

Specification	Value
Built-in Controller	Yes
Range	+/-360 °
Manual Control	Yes
Weight	0.278 kg (0.613 lb)

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Positioning Performance

Specification	Value
Accuracy (unidirectional)	0.14 ° (2.443 mrad)
Repeatability	<0.02 ° (<0.349 mrad)
Backlash	<0.04 ° (<0.698 mrad)
Microstep Size (Default Resolution)	0.00046875 ° (8.181 µrad)
Default Resolution	1/64 of a step

Load Performance

Specification	Value
Maximum Continuous Torque	0.6 N·m (0.443 lb·ft)
Maximum Centered Load	50 N (11.2 lb)
Maximum Moment (Tilt)	100 N·cm (141.6 oz·in)

Speed

Specification	Value
Maximum Speed	120 °/s (2 rpm)
Minimum Speed	0.000286 °/s (4.992 µrad/s)
Speed Resolution	0.000286 °/s (4.992 µrad/s)

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Encoder & Sensing

Specification	Value
Encoder Type	Rotary quadrature encoder (incremental)
Encoder Resolution	200 CPR (8 states/rev)
Limit or Home Sensing	Magnetic home sensor

Motor

Specification	Value
Angular Motion Per Motor Rev	6 °
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Winding Inductance	3.5 mH/phase
Motor Frame Size	NEMA 08

Power and Communication

Specification	Value
Communication Interface	RS-232
Communication Protocol	Zaber ASCII (Default), Zaber Binary
Data Cable Connection	Locking 4-pin M8
Power Supply	24-48 VDC
Power Plug	2-pin Screw Terminal
Maximum Current Draw	350 mA

Mechanical

Specification	Value
Stage Top Dimension	40 mm (1.575 ")
Mechanical Drive System	Precision Worm Gear
Mounting Interface	M2 and M3 mounting holes

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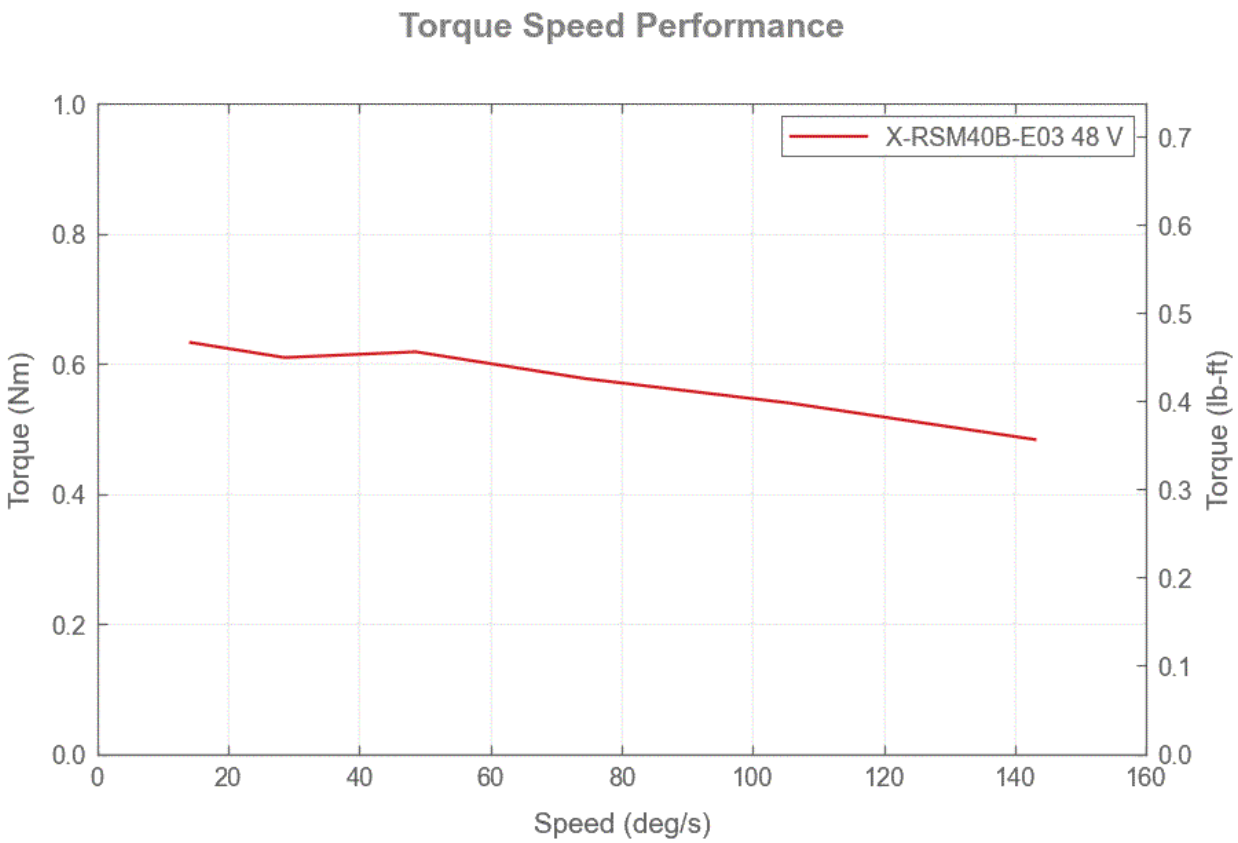
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Environmental & Compliance

Specification	Value
Operating Temperature Range	0-50 °C
CE Compliant	Yes
Vacuum Compatible	No

X-RSM40B-E03 Charts

X RSM40B E03 Torque Speed



Contact

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X-RSM40B Datasheet



- 50 N load capacity
- 0.02° repeatability
- 21 mm total height
- 4 mm aperture
- Worm gear driven for continuous rotation
- Built-in controller; daisy-chains with other Zaber products

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X-RSM40B Overview

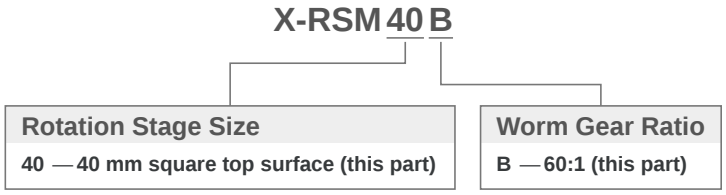
Zaber's X-RSM Series rotation stages are our most compact stepper and worm gear driven devices. These are stand-alone units requiring only a power supply. An indexed knob provides convenient manual control for versatile operation even without a computer. These stages connect to the RS-232 port or USB 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.

Self-aligning feet and mounting points make it easy to set up multi-axis tilt or gimbal systems using the GSM tilt devices or AP146 and AB147 brackets.

For more information visit: https://www.zaber.com/products/rotary-stages/X-RSM?part=X-RSM40B

X-RSM40B Part Numbering & Options

Part number: X-RSM40B



X-RSM40B Drawings

- X-RSM.png (Drawing for the X-RSM)
- View all drawings and documents at zaber.com

X-RSM40B Specifications

Overview

Specification	Value
Built-in Controller	Yes
Range	+/-360 °
Manual Control	Yes
Weight	0.278 kg (0.613 lb)

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Positioning Performance

Specification	Value
Accuracy (unidirectional)	0.14 ° (2.443 mrad)
Repeatability	<0.02 ° (<0.349 mrad)
Backlash	<0.04 ° (<0.698 mrad)
Microstep Size (Default Resolution)	0.00046875 ° (8.181 µrad)
Default Resolution	1/64 of a step

Load Performance

Specification	Value
Maximum Continuous Torque	0.6 N·m (0.443 lb·ft)
Maximum Centered Load	50 N (11.2 lb)
Maximum Moment (Tilt)	100 N·cm (141.6 oz·in)

Speed

Specification	Value
Maximum Speed	120 °/s (2 rpm)
Minimum Speed	0.000286 °/s (4.992 µrad/s)
Speed Resolution	0.000286 °/s (4.992 µrad/s)

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Encoder & Sensing

Specification	Value
Encoder Type	None
Limit or Home Sensing	Magnetic home sensor

Motor

Specification	Value
Angular Motion Per Motor Rev	6 °
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Winding Inductance	3.5 mH/phase
Motor Frame Size	NEMA 08

Power and Communication

Specification	Value
Communication Interface	RS-232
Communication Protocol	Zaber ASCII (Default), Zaber Binary
Data Cable Connection	Locking 4-pin M8
Power Supply	24-48 VDC
Power Plug	2-pin Screw Terminal
Maximum Current Draw	350 mA

Mechanical

Specification	Value
Stage Top Dimension	40 mm (1.575 ")
Mechanical Drive System	Precision Worm Gear
Mounting Interface	M2 and M3 mounting holes

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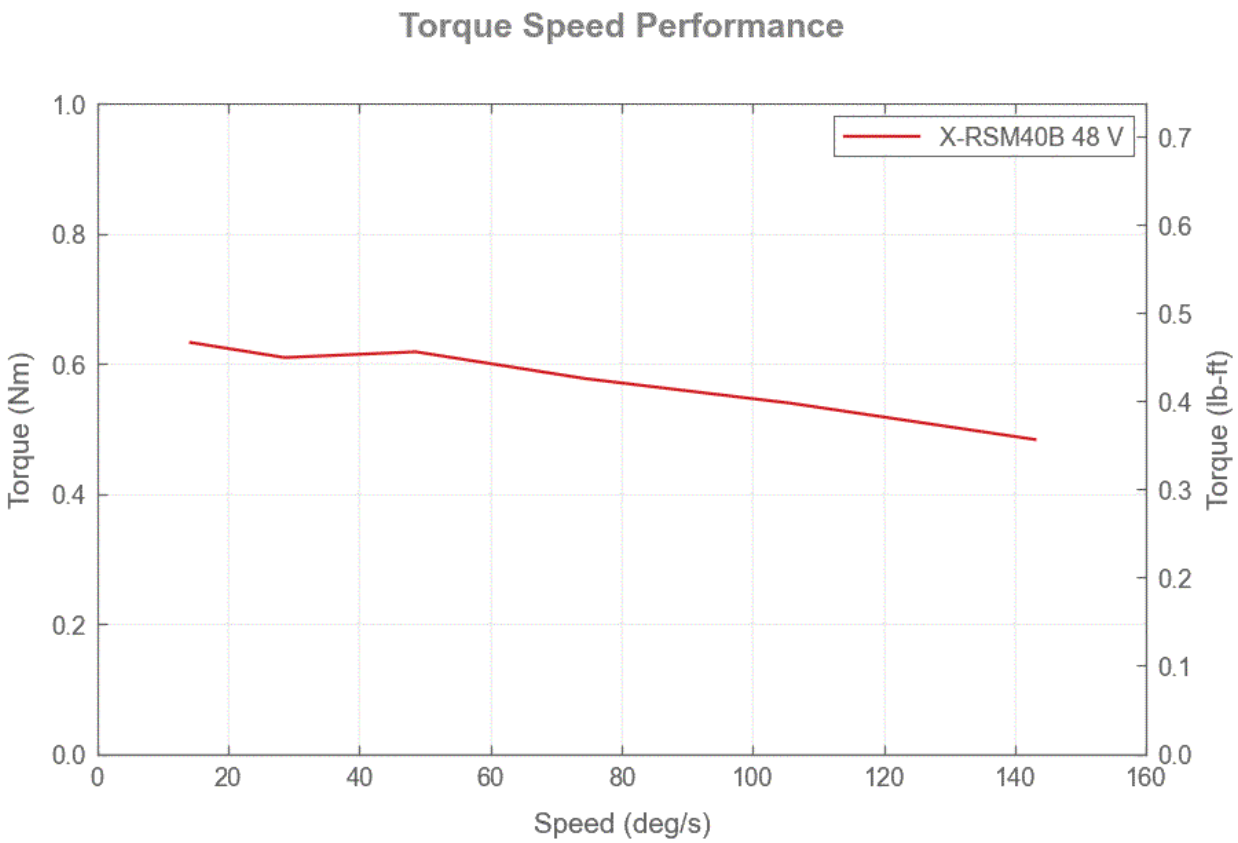
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Environmental & Compliance

Specification	Value
Operating Temperature Range	0-50 °C
CE Compliant	Yes
Vacuum Compatible	No

X-RSM40B Charts

X RSM40B Torque Speed



Contact

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RSM40B-E03T4A Datasheet



- 50 N load capacity
- 0.02° repeatability
- 21 mm total height
- 4 mm aperture
- Worm gear driven for continuous rotation
- Encoder position feedback with slip/stall detection and automatic recovery
- Designed for use with MCC Family controllers or any 2-phase stepper motor controller
- With AutoDetect, Zaber controllers automatically configure settings for the connected peripheral

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RSM40B-E03T4A Overview

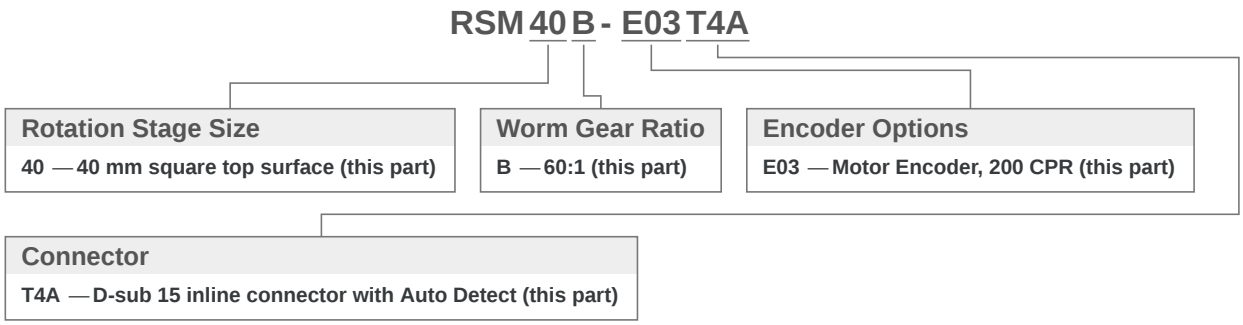
Zaber's RSM-E Series rotation stages are our most compact stepper and worm gear driven devices. Self-aligning feet and mounting points make it easy to set up multi-axis tilt or gimbal systems using the GSM tilt devices or AP146 and AB147 brackets.

RSM-E stages are designed to interface with our MCC Family universal motor controllers. Set up is easy with AutoDetect. Once connected, the controller will automatically detect and configure the RSM-E.

For more information visit: https://www.zaber.com/products/rotary-stages/RSM-E?part=RSM40B-E03T4A

RSM40B-E03T4A Part Numbering & Options

Part number: RSM40B-E03T4A



RSM40B-E03T4A Drawings

- RSM-E.png (Drawing for the RSM-E)
- View all drawings and documents at zaber.com

RSM40B-E03T4A Specifications

Overview

Specification	Value
Built-in Controller	No
Recommended Controller	MCC (48 V) Recommended
AutoDetect	Yes
Range	+/-360 °
Manual Control	Yes
Weight	0.255 kg (0.562 lb)

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Positioning Performance

Specification	Value
Accuracy (unidirectional)	0.14 ° (2.443 mrad)
Repeatability	<0.02 ° (<0.349 mrad)
Backlash	<0.04 ° (<0.698 mrad)
Radial Error Motion	+/-10 µm (+/-0.000394 ")
Axial Error Motion	<4 µm (<0.000157 ")
Tilt Error Motion	+/-0.011 ° (+/-191.99 µrad)
Microstep Size (Default Resolution)	0.00046875 ° (8.181 µrad)
Default Resolution	1/64 of a step

Load Performance

Specification	Value
Maximum Continuous Torque	0.6 N·m (0.443 lb·ft)
Maximum Centered Load	50 N (11.2 lb)
Maximum Moment (Tilt)	1 N·m (0.738 lb·ft)

Speed

Specification	Value
Maximum Speed	120 °/s (2 rpm)
Minimum Speed	0.000286 °/s (4.992 µrad/s)
Speed Resolution	0.000286 °/s (4.992 µrad/s)

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Encoder & Sensing

Specification	Value
Encoder Type	Rotary quadrature encoder (incremental)
Encoder Resolution	200 CPR (8 states/rev)
Limit or Home Sensing	Magnetic home sensor

Motor

Specification	Value
Angular Motion Per Motor Rev	6 °
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	600 mA/phase
Motor Winding Resistance	6.5 ohms/phase
Motor Winding Inductance	3.5 mH/phase
Motor Connection	D-sub 15
Motor Frame Size	NEMA 08

Mechanical

Specification	Value
Stage Top Dimension	40 mm (1.575 ")
Bearing Plane Offset	11 mm (0.433 ")
Mechanical Drive System	Precision Worm Gear
Mounting Interface	M2 and M3 mounting holes

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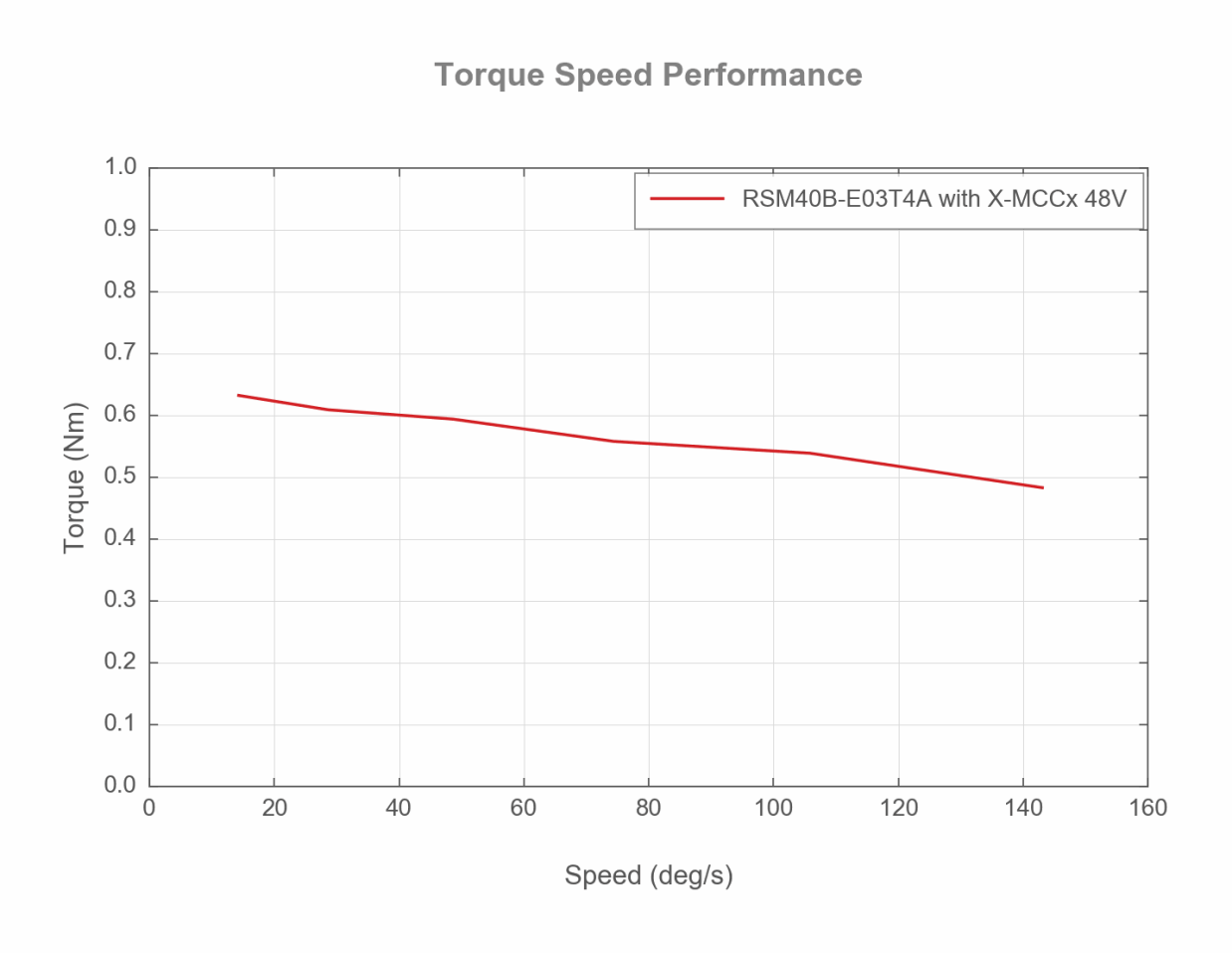
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Environmental & Compliance

Specification	Value
Operating Temperature Range	0-50 °C
CE Compliant	Yes
Vacuum Compatible	No

RSM40B-E03T4A Charts

RSM40B E03T4A TORQUE SPEED



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RSM40B-T4A Datasheet



- 50 N load capacity
- 0.02° repeatability
- 21 mm total height
- 4 mm aperture
- Worm gear driven for continuous rotation
- Designed for use with MCC Family controllers or any 2-phase stepper motor controller
- With AutoDetect, Zaber controllers automatically configure settings for the connected peripheral

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RSM40B-T4A Overview

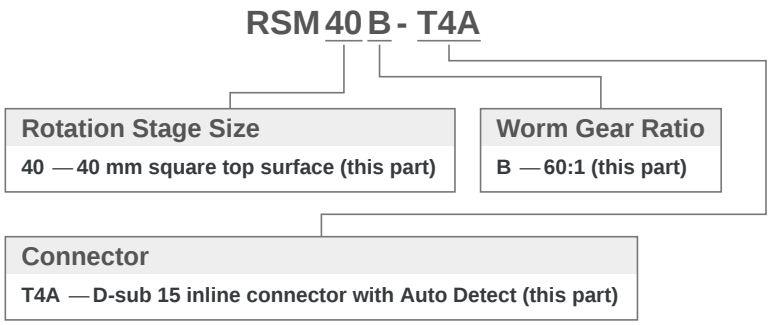
Zaber's RSM Series rotation stages are our most compact stepper and worm gear driven devices. Self-aligning feet and mounting points make it easy to set up multi-axis tilt or gimbal systems using the GSM tilt devices or AP146 and AB147 brackets.

RSM stages are designed to interface with our MCC Family universal motor controllers. Set up is easy with AutoDetect. Once connected, the controller will automatically detect and configure the RSM.

For more information visit: https://www.zaber.com/products/rotary-stages/RSM?part=RSM40B-T4A

RSM40B-T4A Part Numbering & Options

Part number: RSM40B-T4A



RSM40B-T4A Drawings

- RSM.png (Drawing for the RSM)
- View all drawings and documents at zaber.com

RSM40B-T4A Specifications

Overview

Specification	Value
Built-in Controller	No
Recommended Controller	MCC (48 V) Recommended
AutoDetect	Yes
Range	+/-360 °
Manual Control	Yes
Weight	0.24 kg (0.529 lb)

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Positioning Performance

Specification	Value
Accuracy (unidirectional)	0.14 ° (2.443 mrad)
Repeatability	<0.02 ° (<0.349 mrad)
Backlash	<0.04 ° (<0.698 mrad)
Radial Error Motion	+/-10 µm (+/-0.000394 ")
Axial Error Motion	<4 µm (<0.000157 ")
Tilt Error Motion	+/-0.011 ° (+/-191.99 µrad)
Microstep Size (Default Resolution)	0.00046875 ° (8.181 µrad)
Default Resolution	1/64 of a step

Load Performance

Specification	Value
Maximum Continuous Torque	0.6 N·m (0.443 lb·ft)
Maximum Centered Load	50 N (11.2 lb)
Maximum Moment (Tilt)	1 N·m (0.738 lb·ft)

Speed

Specification	Value
Maximum Speed	120 °/s (2 rpm)
Minimum Speed	0.000286 °/s (4.992 µrad/s)
Speed Resolution	0.000286 °/s (4.992 µrad/s)

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Encoder & Sensing

Specification	Value
Encoder Type	None
Limit or Home Sensing	Magnetic home sensor

Motor

Specification	Value
Angular Motion Per Motor Rev	6 °
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	600 mA/phase
Motor Winding Resistance	6.5 ohms/phase
Motor Winding Inductance	3.5 mH/phase
Motor Connection	D-sub 15
Motor Frame Size	NEMA 08

Mechanical

Specification	Value
Stage Top Dimension	40 mm (1.575 ")
Bearing Plane Offset	11 mm (0.433 ")
Mechanical Drive System	Precision Worm Gear
Mounting Interface	M2 and M3 mounting holes

Environmental & Compliance

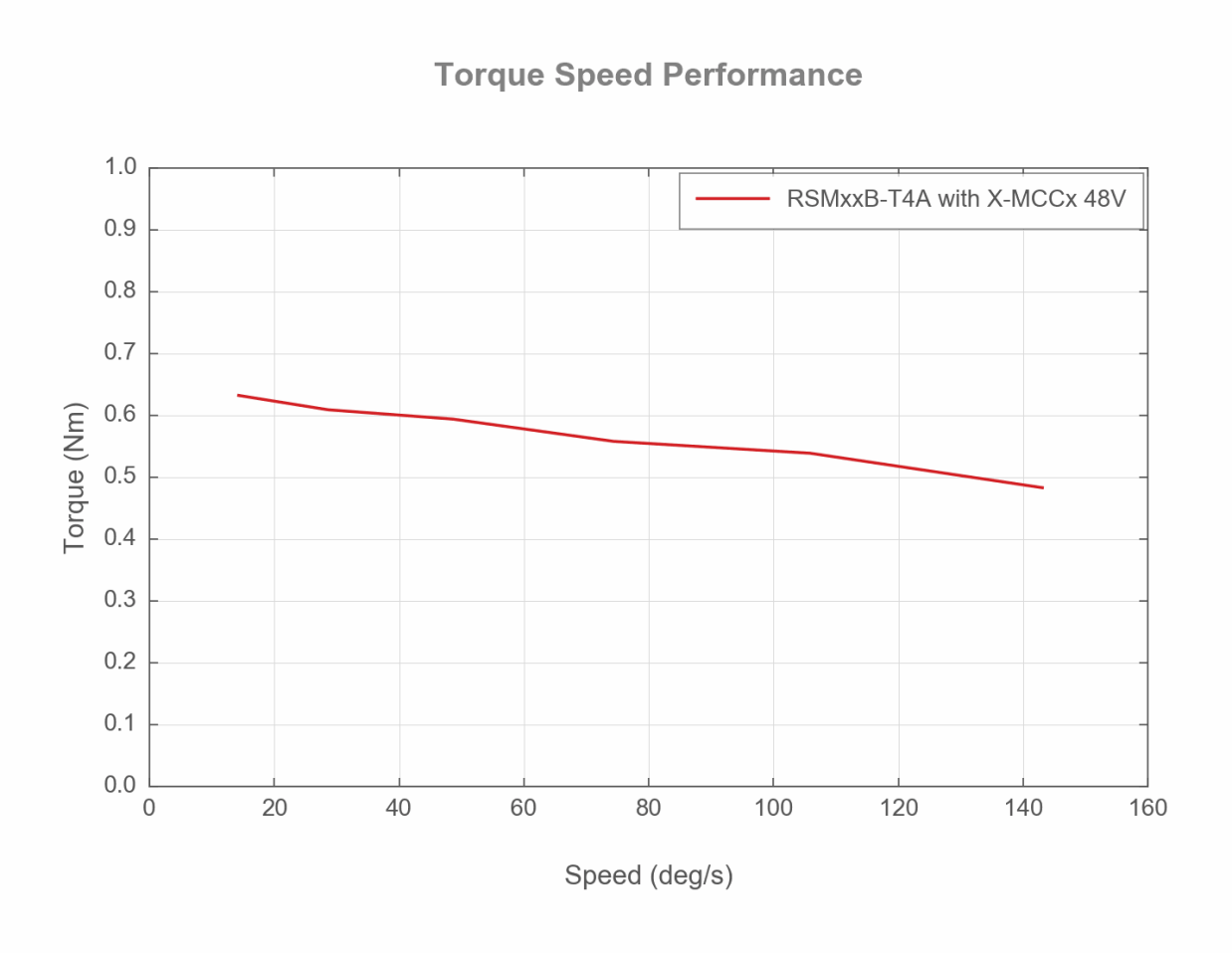
Specification	Value
Operating Temperature Range	0-50 °C
CE Compliant	Yes
Vacuum Compatible	No

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RSM40B-T4A Charts

RSM40B T4A TORQUE SPEED



Contact

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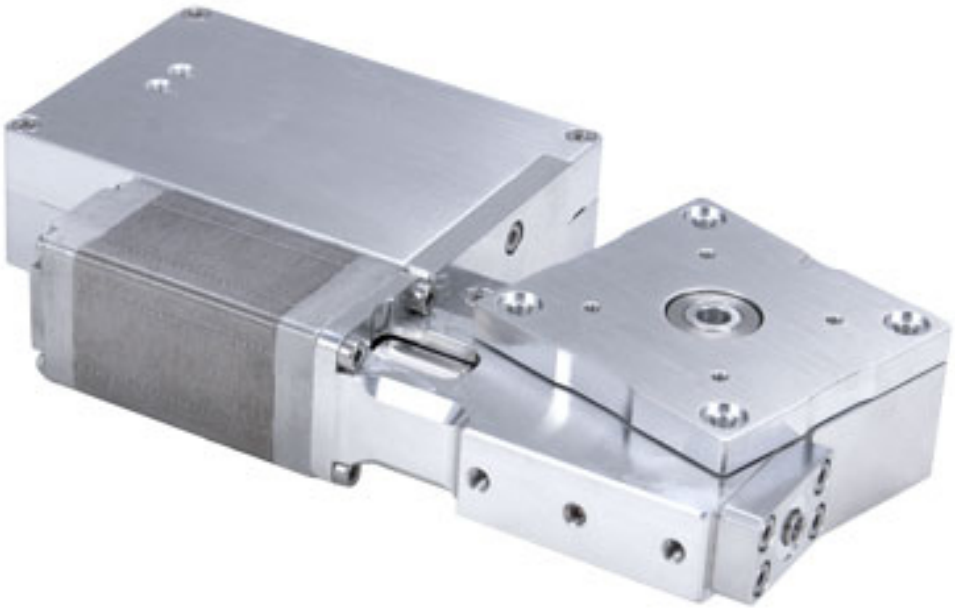
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X-RSM40B-SV2 Datasheet



- Vacuum compatible to 10-6 Torr
- 0.02° repeatability
- 4 mm aperture
- 21 mm total height
- Worm gear driven for continuous rotation
- Integrated stepper motor controller and motor driver allows for easy-to-use control
- Only 4 feedthrough wires required to control all units in the daisy-chain via serial port (with an X-PIB adaptor)

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X-RSM40B-SV2 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-RSM-SV2 Series, high-vacuum compatible rotation stages are our most compact stepper and worm gear driven devices. These are stand-alone units requiring only 4 wires for power and data connection.

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.

The X-RSM-SV2 is designed with vacuum compatible materials to minimize outgassing and allow for faster pump down times. Like all of Zaber's products, the X-RSM-SV2 Series is designed to be 'plug and play' and very easy to set up and operate.

For more information visit: https://www.zaber.com/products/vacuum-compatible-stages/X-RSM-SV2?part=X-RSM40B-SV2

X-RSM40B-SV2 Part Numbering & Options

Part number: X-RSM40B-SV2

X-RSM 40 B -SV2

Rotation Stage Size	Worm Gear Ratio	Options
40 — 40 mm square top surface (this part)	**B — 60:1 (this part)**	**-SV2 — High-vacuum compatible: 10-6 Torr (this part)**

X-RSM40B-SV2 Drawings

- X-RSM-SV.png (Drawing for the X-RSM-SV)
- View all drawings and documents at zaber.com

X-RSM40B-SV2 Specifications

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Overview

Specification	Value
Built-in Controller	Yes
Range	+/-360 °
Manual Control	No
Weight	0.3 kg (0.661 lb)

Positioning Performance

Specification	Value
Accuracy (unidirectional)	0.14 ° (2.443 mrad)
Repeatability	<0.02 ° (<0.349 mrad)
Backlash	<0.04 ° (<0.698 mrad)
Microstep Size (Default Resolution)	0.00046875 ° (8.181 µrad)
Default Resolution	1/64 of a step

Load Performance

Specification	Value
Maximum Continuous Torque	0.2 N·m (0.148 lb·ft)
Maximum Centered Load	50 N (11.2 lb)
Maximum Moment (Tilt)	30 N·cm (42.5 oz·in)

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Speed

Specification	Value
Maximum Speed	120 °/s (2 rpm)
Minimum Speed	0.000286 °/s (4.992 µrad/s)
Speed Resolution	0.000286 °/s (4.992 µrad/s)

Encoder & Sensing

Specification	Value
Encoder Type	None
Limit or Home Sensing	Magnetic home sensor

Motor

Specification	Value
Angular Motion Per Motor Rev	6 °
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Winding Inductance	3.5 mH/phase
Motor Frame Size	NEMA 08

Power and Communication

Specification	Value
Communication Interface	RS-232
Communication Protocol	Zaber ASCII (Default), Zaber Binary
Data Cable Connection	Teflon flying leads with M8 4 pin M/F
Power Supply	24-48 VDC
Power Plug	None, use X-PIB
Maximum Current Draw	280 mA

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Mechanical

Specification	Value
Stage Top Dimension	40 mm (1.575 ")
Mechanical Drive System	Precision Worm Gear
Mounting Interface	M2 and M3 mounting holes

Environmental & Compliance

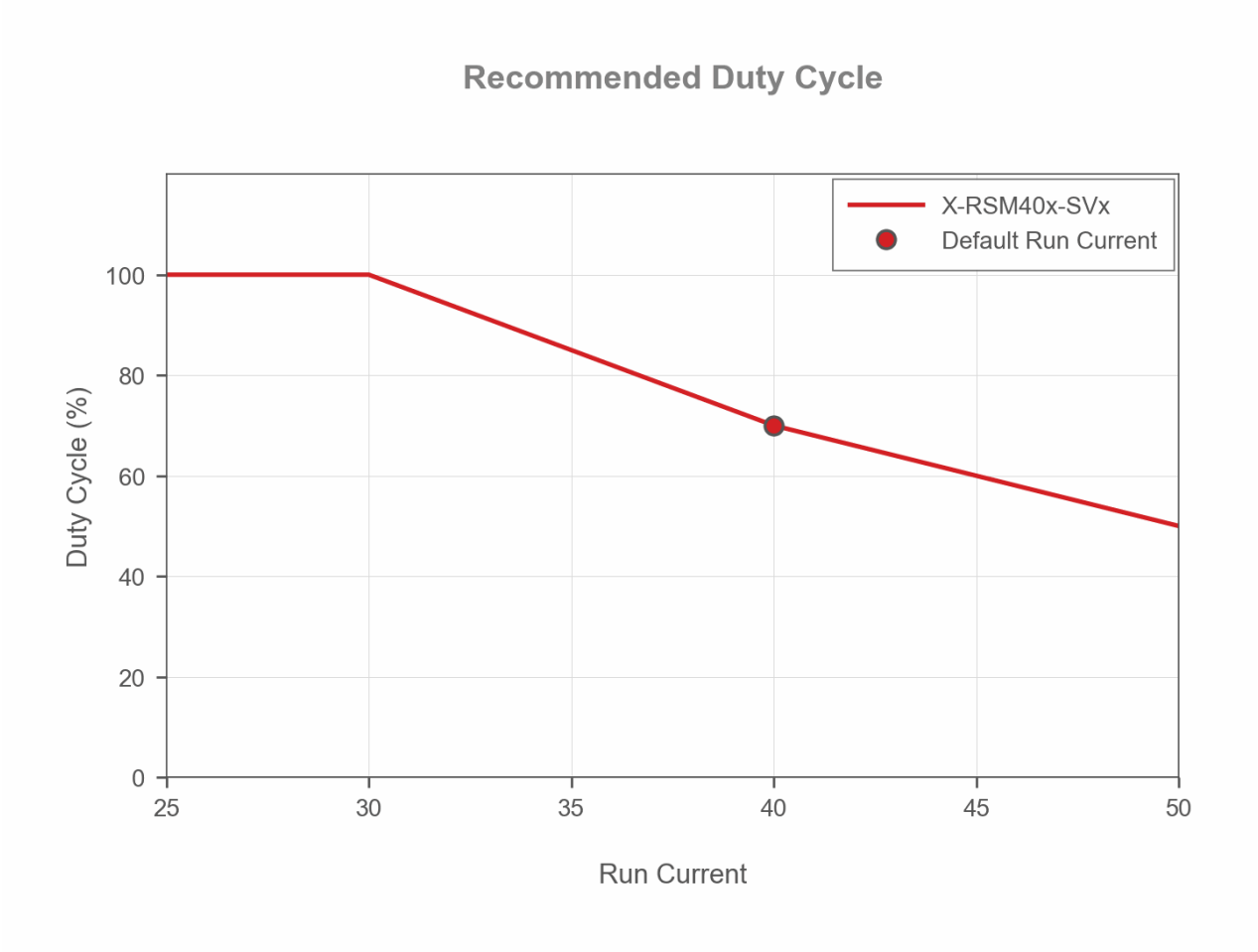
Specification	Value
Operating Temperature Range	0-50 °C
CE Compliant	Yes
Vacuum Compatible	High vacuum (10-6 Torr)

X-RSM40B-SV2 Charts

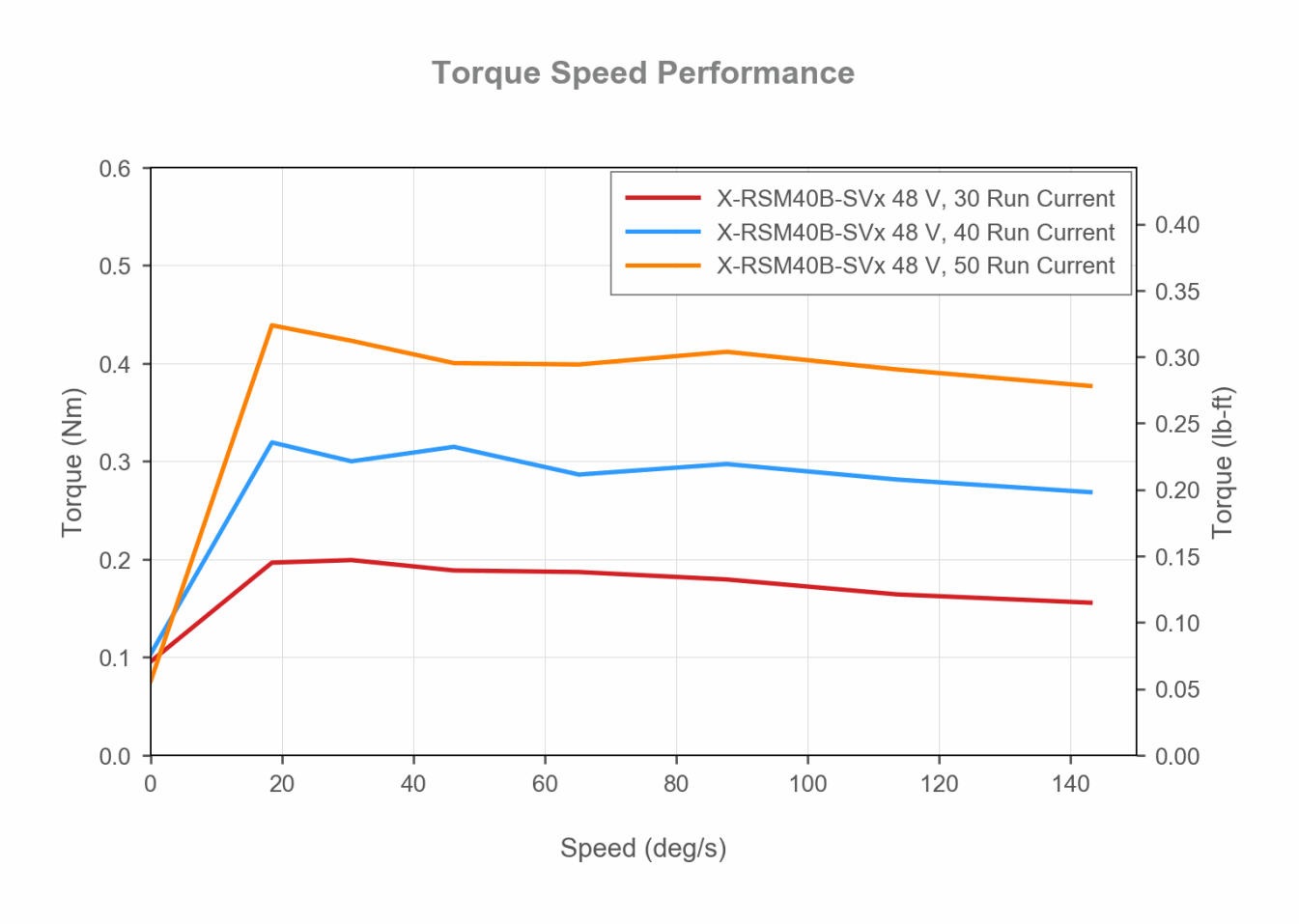
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X RSM40x SVx Duty Cycle Vs Run Current



X RSM40B SVx Torque Speed



Contact

Email: contact@zaber.com

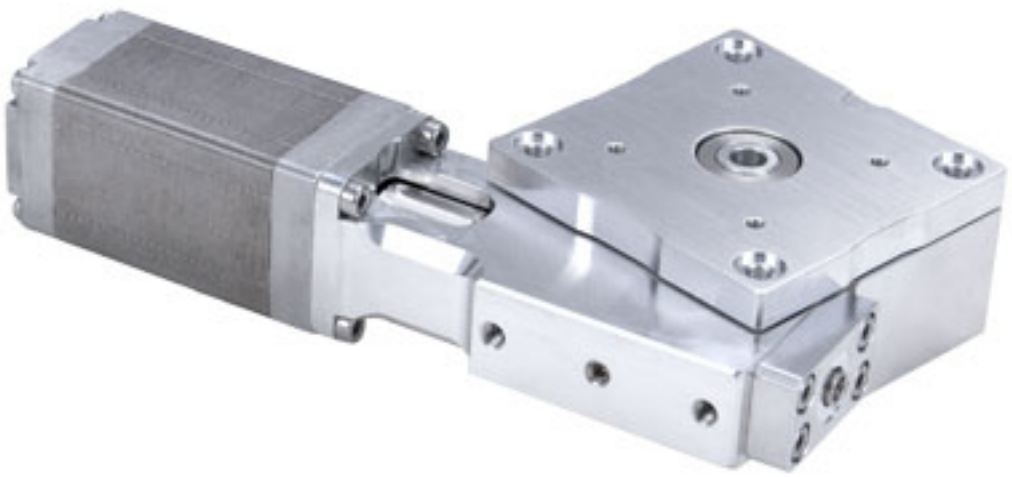
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RSM40B-V2T4 Datasheet



- Vacuum compatible to 10-6 Torr
- 0.02° repeatability
- 21 mm total height
- 4 mm aperture
- Worm gear driven for continuous rotation
- Designed for use with an X-MCC Series stepper motor controller or any 2-phase stepper motor controller
- Only 7 feedthrough wires required to control these units

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RSM40B-V2T4 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 RSM-V2 Series, high-vacuum compatible rotation stages are our most compact stepper and worm gear driven devices.

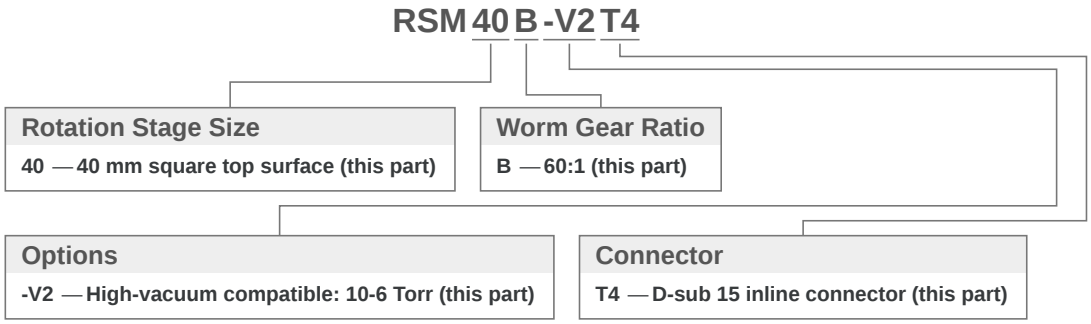
The RSM-V2 is designed with vacuum compatible materials to minimize outgassing and allow for faster pump down times. Like all of Zaber's products, the RSM-V2 Series is designed to be very easy to set up and operate.

These stages are wired with a male D-sub 15 connector for plug-and-play use with our X-MCC 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/RSM-V2?part=RSM40B-V2T4

RSM40B-V2T4 Part Numbering & Options

Part number: RSM40B-V2T4



RSM40B-V2T4 Drawings

- RSM-V.png (Drawing for the RSM-V)
- View all drawings and documents at zaber.com

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RSM40B-V2T4 Specifications

Overview

Specification	Value
Built-in Controller	No
Recommended Controller	MCC (48 V) Recommended
AutoDetect	No
Range	+/-360 °
Manual Control	No
Weight	0.3 kg (0.661 lb)

Positioning Performance

Specification	Value
Accuracy (unidirectional)	0.14 ° (2.443 mrad)
Repeatability	<0.02 ° (<0.349 mrad)
Backlash	<0.04 ° (<0.698 mrad)
Radial Error Motion	+/-10 µm (+/-0.000394 ")
Axial Error Motion	<4 µm (<0.000157 ")
Tilt Error Motion	+/-0.011 ° (+/-191.99 µrad)
Microstep Size (Default Resolution)	0.00046875 ° (8.181 µrad)
Default Resolution	1/64 of a step

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Load Performance

Specification	Value
Maximum Continuous Torque	0.2 N·m (0.148 lb·ft)
Maximum Centered Load	50 N (11.2 lb)
Maximum Moment (Tilt)	30 N·cm (42.5 oz·in)

Speed

Specification	Value
Maximum Speed	120 °/s (2 rpm)
Minimum Speed	0.000286 °/s (4.992 µrad/s)
Speed Resolution	0.000286 °/s (4.992 µrad/s)

Encoder & Sensing

Specification	Value
Encoder Type	None
Limit or Home Sensing	Magnetic home sensor

Motor

Specification	Value
Angular Motion Per Motor Rev	6 °
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Winding Inductance	3.5 mH/phase
Motor Connection	Teflon flying leads with D-sub15 connector
Motor Frame Size	NEMA 08

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Mechanical

Specification	Value
Stage Top Dimension	40 mm (1.575 ")
Bearing Plane Offset	11 mm (0.433 ")
Mechanical Drive System	Precision Worm Gear
Mounting Interface	M2 and M3 mounting holes

Environmental & Compliance

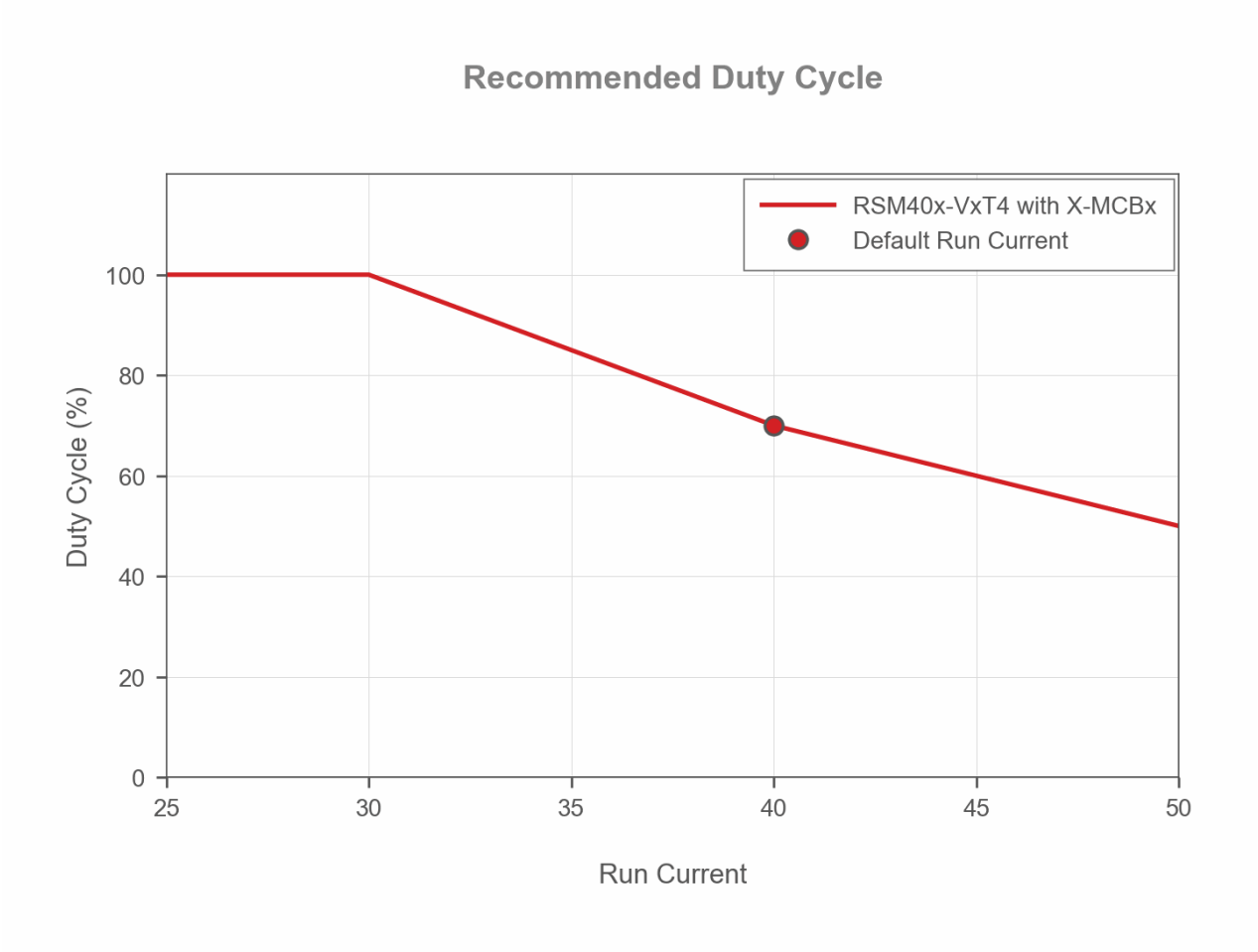
Specification	Value
Operating Temperature Range	0-50 °C
CE Compliant	Yes
Vacuum Compatible	High vacuum (10-6 Torr)

RSM40B-V2T4 Charts

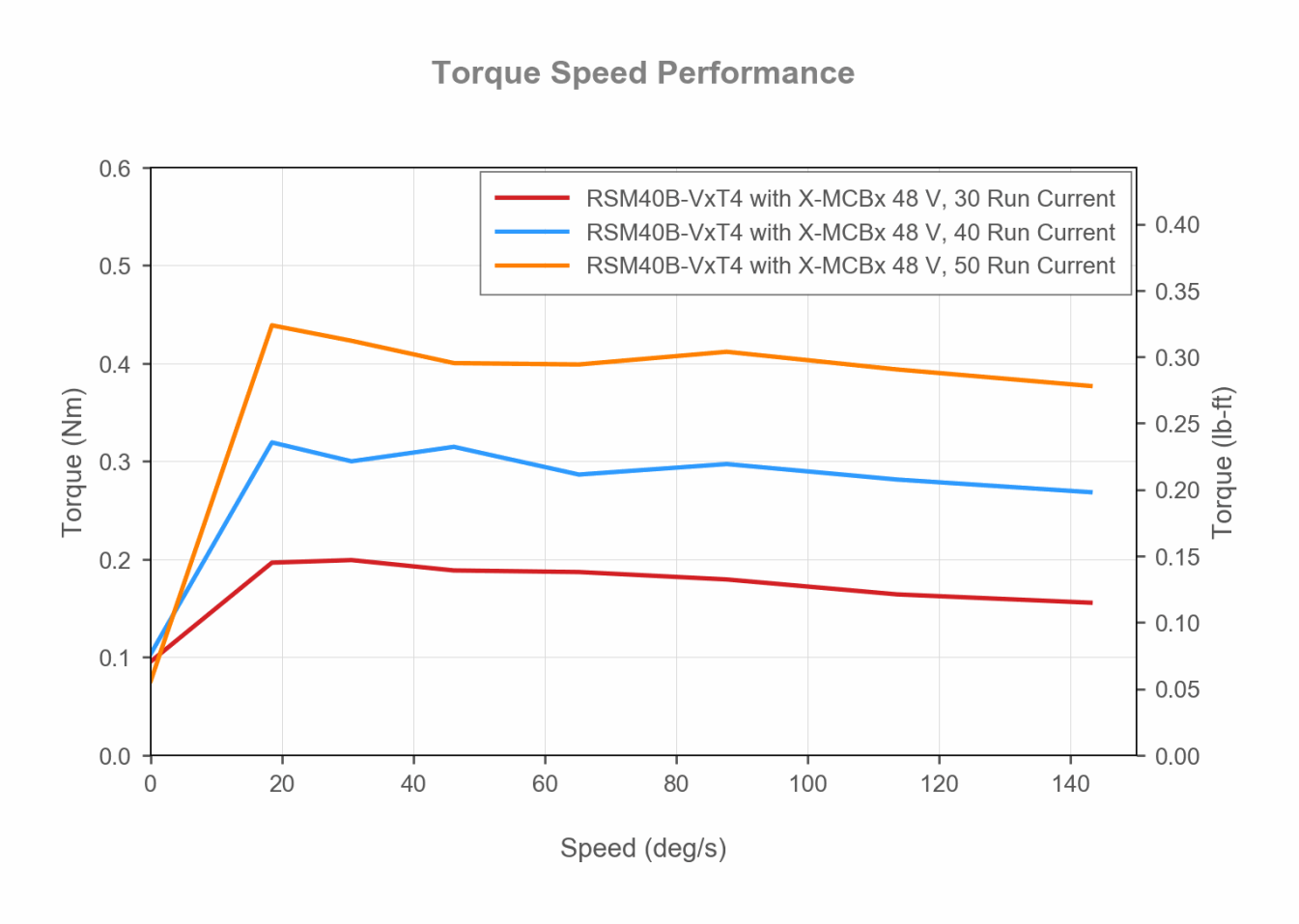
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RSM40x VxT4 With X MCBx Duty Cycle Vs Run Current



RSM40B VxT4 With X MCBx Torque Speed



Contact

Email: contact@zaber.com

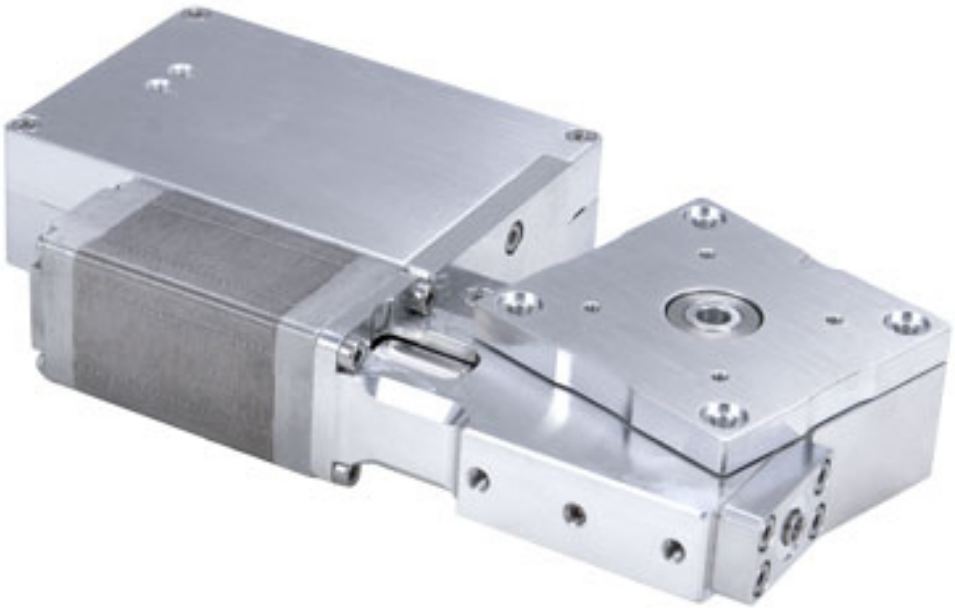
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X-RSM40B-SV1 Datasheet



- Vacuum compatible to 10-3 Torr
- 0.02° repeatability
- 4 mm aperture
- 21 mm total height
- Worm gear driven for continuous rotation
- Only 4 feedthrough wires required to control all units in the daisy-chain via serial port (with an X-PIB adaptor)
- Integrated stepper motor controller and motor driver allows for easy-to-use control

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X-RSM40B-SV1 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-RSM-SV1 Series, low-vacuum compatible rotation stages are our most compact stepper and worm gear driven devices. These are stand-alone units requiring only 4 wires for power and data connection.

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.

The X-RSM-SV1 is designed with vacuum compatible materials to minimize outgassing and allow for faster pump down times. Like all of Zaber's products, the X-RSM-SV1 Series is designed to be 'plug and play' and very easy to set up and operate.

For more information visit: https://www.zaber.com/products/vacuum-compatible-stages/X-RSM-SV1?part=X-RSM40B-SV1

X-RSM40B-SV1 Part Numbering & Options

Part number: X-RSM40B-SV1

X-RSM 40 B -SV1

Rotation Stage Size	Worm Gear Ratio	Options
40 — 40 mm square top surface (this part)	**B — 60:1 (this part)**	**-SV1 — Low-vacuum compatible: 10-3 Torr (this part)**

X-RSM40B-SV1 Drawings

- X-RSM-SV.png (Drawing for the X-RSM-SV)
- View all drawings and documents at zaber.com

X-RSM40B-SV1 Specifications

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Overview

Specification	Value
Built-in Controller	Yes
Range	+/-360 °
Manual Control	No
Weight	0.3 kg (0.661 lb)

Positioning Performance

Specification	Value
Accuracy (unidirectional)	0.14 ° (2.443 mrad)
Repeatability	<0.02 ° (<0.349 mrad)
Backlash	<0.04 ° (<0.698 mrad)
Microstep Size (Default Resolution)	0.00046875 ° (8.181 µrad)
Default Resolution	1/64 of a step

Load Performance

Specification	Value
Maximum Continuous Torque	0.2 N·m (0.148 lb·ft)
Maximum Centered Load	50 N (11.2 lb)
Maximum Moment (Tilt)	30 N·cm (42.5 oz·in)

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Speed

Specification	Value
Maximum Speed	120 °/s (2 rpm)
Minimum Speed	0.000286 °/s (4.992 µrad/s)
Speed Resolution	0.000286 °/s (4.992 µrad/s)

Encoder & Sensing

Specification	Value
Encoder Type	None
Limit or Home Sensing	Magnetic home sensor

Motor

Specification	Value
Angular Motion Per Motor Rev	6 °
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Winding Inductance	3.5 mH/phase
Motor Frame Size	NEMA 08

Power and Communication

Specification	Value
Communication Interface	RS-232
Communication Protocol	Zaber ASCII (Default), Zaber Binary
Data Cable Connection	Teflon flying leads with M8 4 pin M/F
Power Supply	24-48 VDC
Power Plug	None, use X-PIB
Maximum Current Draw	280 mA

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Mechanical

Specification	Value
Stage Top Dimension	40 mm (1.575 ")
Mechanical Drive System	Precision Worm Gear
Mounting Interface	M2 and M3 mounting holes

Environmental & Compliance

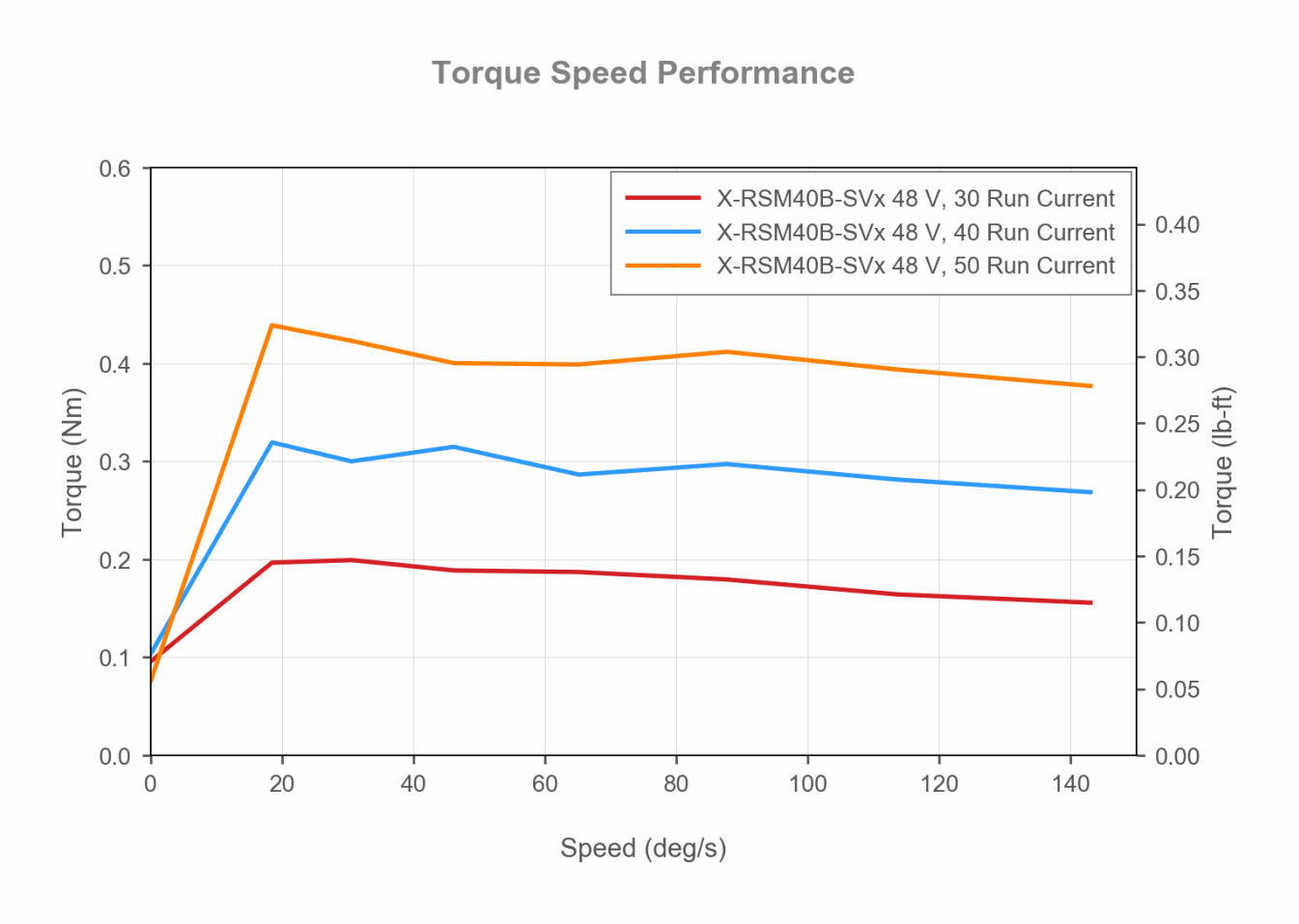
Specification	Value
Operating Temperature Range	0-50 °C
CE Compliant	Yes
Vacuum Compatible	Low vacuum (10-3 Torr)

X-RSM40B-SV1 Charts

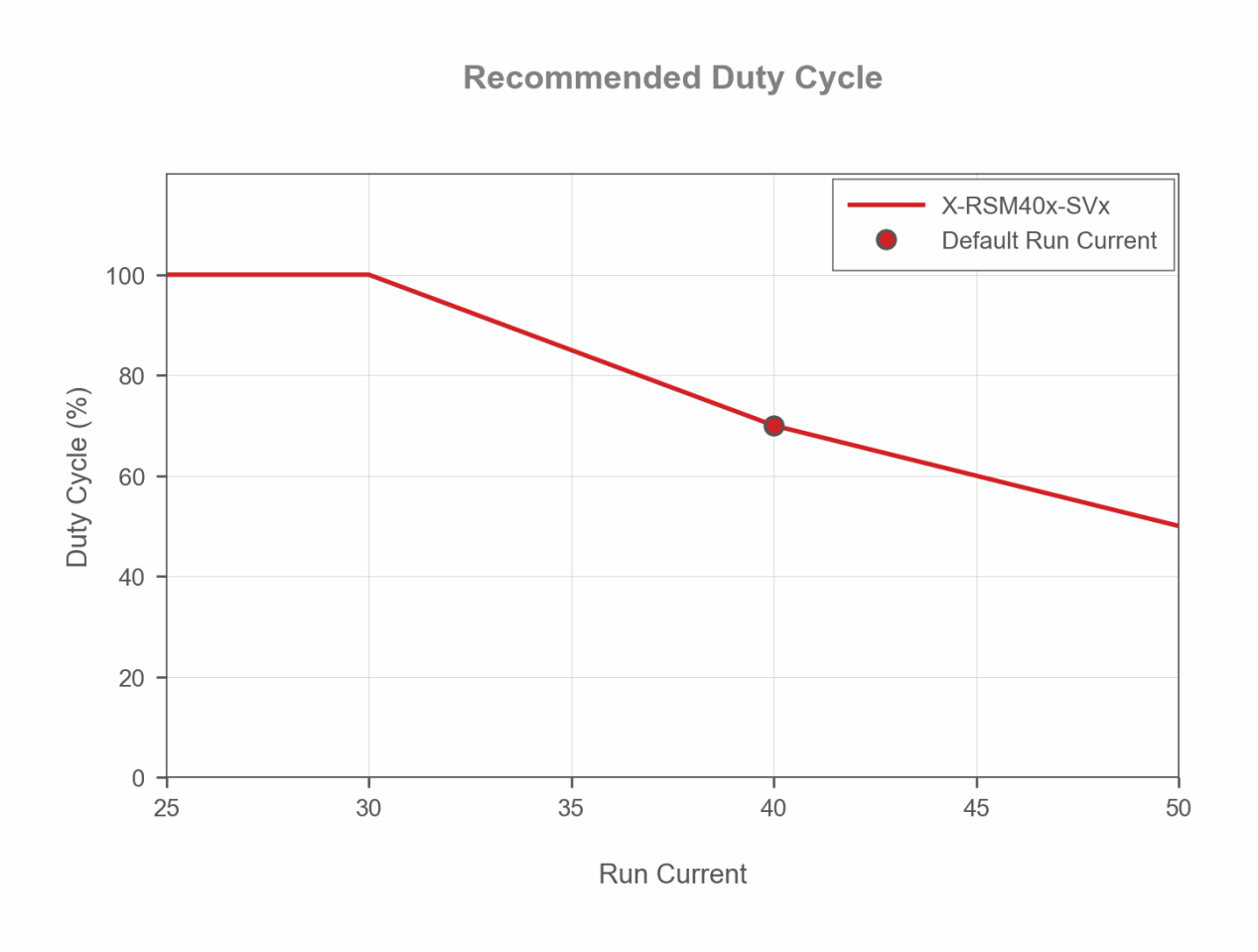
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X RSM40B SVx Torque Speed



X RSM40x SVx Duty Cycle Vs Run Current



Contact

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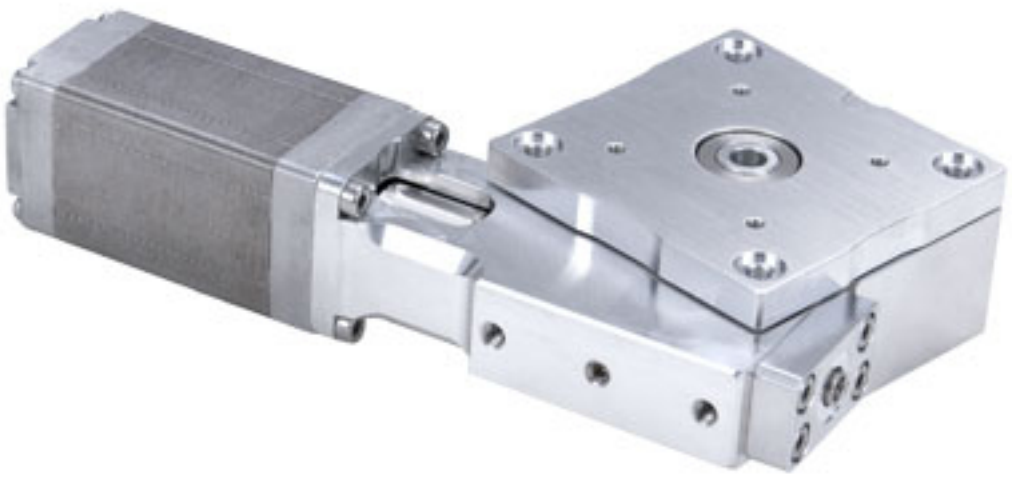
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RSM40B-V1T4 Datasheet



- Vacuum compatible to 10-3 Torr
- 0.02° repeatability
- 21 mm total height
- 4 mm aperture
- Worm gear driven for continuous rotation
- Designed for use with an X-MCC Series stepper motor controller or any 2-phase stepper motor controller
- Only 7 feedthrough wires required to control these units

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RSM40B-V1T4 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".

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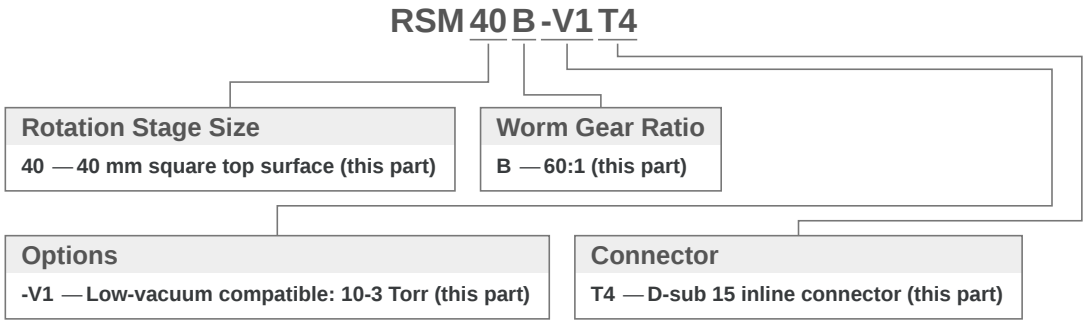
The RSM-V1 is designed with vacuum compatible materials to minimize outgassing and allow for faster pump down times. Like all of Zaber's products, the RSM-V1 Series is designed to be very easy to set up and operate.

These stages are wired with a male D-sub 15 connector for plug-and-play use with our X-MCC 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/RSM-V1?part=RSM40B-V1T4

RSM40B-V1T4 Part Numbering & Options

Part number: RSM40B-V1T4



RSM40B-V1T4 Drawings

- RSM-V.png (Drawing for the RSM-V)
- View all drawings and documents at zaber.com

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RSM40B-V1T4 Specifications

Overview

Specification	Value
Built-in Controller	No
Recommended Controller	MCC (48 V) Recommended
AutoDetect	No
Range	+/-360 °
Manual Control	No
Weight	0.3 kg (0.661 lb)

Positioning Performance

Specification	Value
Accuracy (unidirectional)	0.14 ° (2.443 mrad)
Repeatability	<0.02 ° (<0.349 mrad)
Backlash	<0.04 ° (<0.698 mrad)
Radial Error Motion	+/-10 µm (+/-0.000394 ")
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Microstep Size (Default Resolution)	0.00046875 ° (8.181 µrad)
Default Resolution	1/64 of a step

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Load Performance

Specification	Value
Maximum Continuous Torque	0.2 N·m (0.148 lb·ft)
Maximum Centered Load	50 N (11.2 lb)
Maximum Moment (Tilt)	30 N·cm (42.5 oz·in)

Speed

Specification	Value
Maximum Speed	120 °/s (2 rpm)
Minimum Speed	0.000286 °/s (4.992 µrad/s)
Speed Resolution	0.000286 °/s (4.992 µrad/s)

Encoder & Sensing

Specification	Value
Encoder Type	None
Limit or Home Sensing	Magnetic home sensor

Motor

Specification	Value
Angular Motion Per Motor Rev	6 °
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Winding Inductance	3.5 mH/phase
Motor Connection	Teflon flying leads with D-sub15 connector
Motor Frame Size	NEMA 08

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Mechanical

Specification	Value
Stage Top Dimension	40 mm (1.575 ")
Bearing Plane Offset	11 mm (0.433 ")
Mechanical Drive System	Precision Worm Gear
Mounting Interface	M2 and M3 mounting holes

Environmental & Compliance

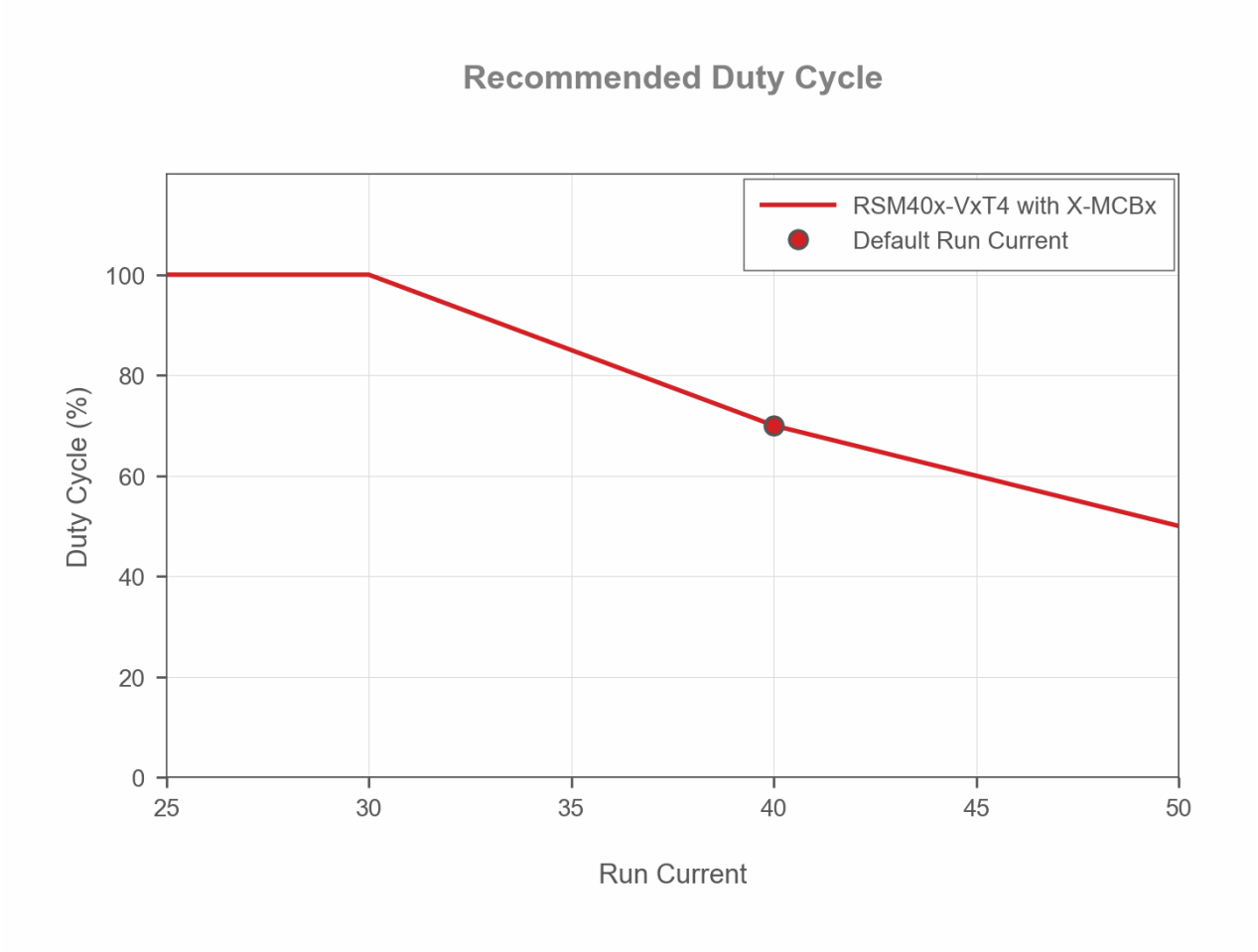
Specification	Value
Operating Temperature Range	0-50 °C
CE Compliant	Yes
Vacuum Compatible	Low vacuum (10-3 Torr)

RSM40B-V1T4 Charts

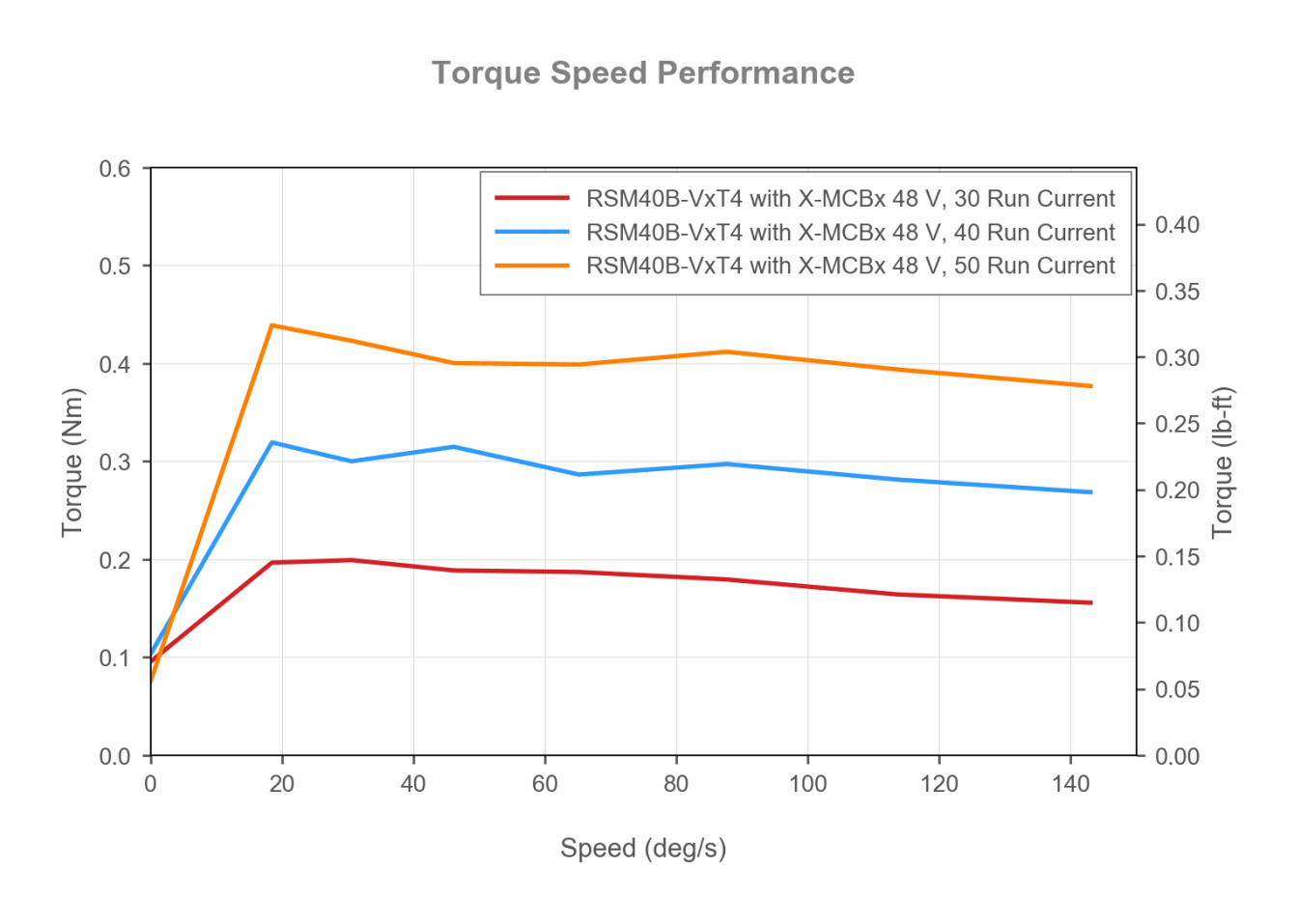
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RSM40x VxT4 With X MCBx Duty Cycle Vs Run Current



RSM40B VxT4 With X MCBx Torque Speed



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