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#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

X-RSW-E Series Datasheet



- Speed up to 75 rpm and torque up to 2.25 N⋅m
- Two lens holders allow for use as a polarizer mount
- Worm gear driven for continuous rotation
- Built-in controller; daisy-chains with other Zaber products
- Encoder position feedback with slip/stall detection and automatic recovery
- Multiple X-Series products in a daisy-chain can share a single power supply
- Custom versions available

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X-RSW-E Series Overview

Zaber's X-RSW-E Series products are computer controlled motorized rotary stages with integrated controllers and motor encoders. They are stand-alone units requiring only a standard 24-48 V power supply.

Built-in motor encoders allow for closed-loop operation and slip/stall recovery features. An indexed knob provides smooth manual control at variable speeds in both directions for versatile operation even without a computer. Press and hold to switch between velocity mode and distance mode, turn to move the stage, and press to stop.

The stages connect to the USB 2.0 or RS-232 port of any computer and can be chained with several units per chain. They can also be chained with any other Zaber products. Convenient locking, 4-pin, M8 connectors on the unit allow for easy and secure connection between products. The chain also shares power, so multiple X-Series products can use a single power supply.

For more information visit: https://www.zaber.com/products/rotary-stages/X-RSW-E

X-RSW-E Series Part Numbering & Options

X-RSW 60 A - E03

Rotation Stage Diameter	Worm Gear Ratio	Encoder Options
60 — 60 mm	**A** — 120:1 **C** — 30:1	**E03** — Motor Encoder, 200 CPR

X-RSW-E Series Drawings

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

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X-RSW-E Series Specifications

Overview

Specification	Value
Built-in Controller	Yes
Range	+/-360 °
Manual Control	Yes
Weight	0.67 kg (1.477 lb)

Positioning Performance

Specification	Value
Accuracy (unidirectional)	0.08 ° (1.396 mrad)
Repeatability	<0.02 ° (<0.349 mrad)
Backlash	<0.04 ° (<0.698 mrad)
Radial Error Motion	+/-4 µm (+/-0.000157 ")
Axial Error Motion	<4 µm (<0.000157 ")
Tilt Error Motion	+/-0.0033 ° (+/-57.6 µrad)
Default Resolution	1/64 of a step

Load Performance

Specification	Value
Maximum Centered Load	200 N (44.9 lb)
Maximum Moment (Tilt)	4.1 N·m (3.026 lb·ft)

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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
Motor Type	Stepper (2 phase)
Motor Rated Current	1500 mA/phase
Motor Winding Inductance	1 mH/phase

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	950 mA

Mechanical

Specification	Value
Stage Top Dimension	60 mm (2.362 ")
Bearing Plane Offset	16.4 mm (0.646 ")
Mechanical Drive System	Precision Worm Gear

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Environmental & Compliance

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

Part Number	Microstep Size (Default Resolution)	Maximum Continuous Torque	Maximum Speed	Minimum Speed
X-RSW60A-E03	0.000234375 ° (4.091 µrad)	2.25 N·m (1.66 lb·ft)	115 °/s (19 rpm)	0.000143 °/s (2.496 µrad/s)
X-RSW60C-E03	0.0009375 ° (16.362 µrad)	1.05 N·m (0.775 lb·ft)	450 °/s (75 rpm)	0.000572 °/s (9.983 µrad/s)

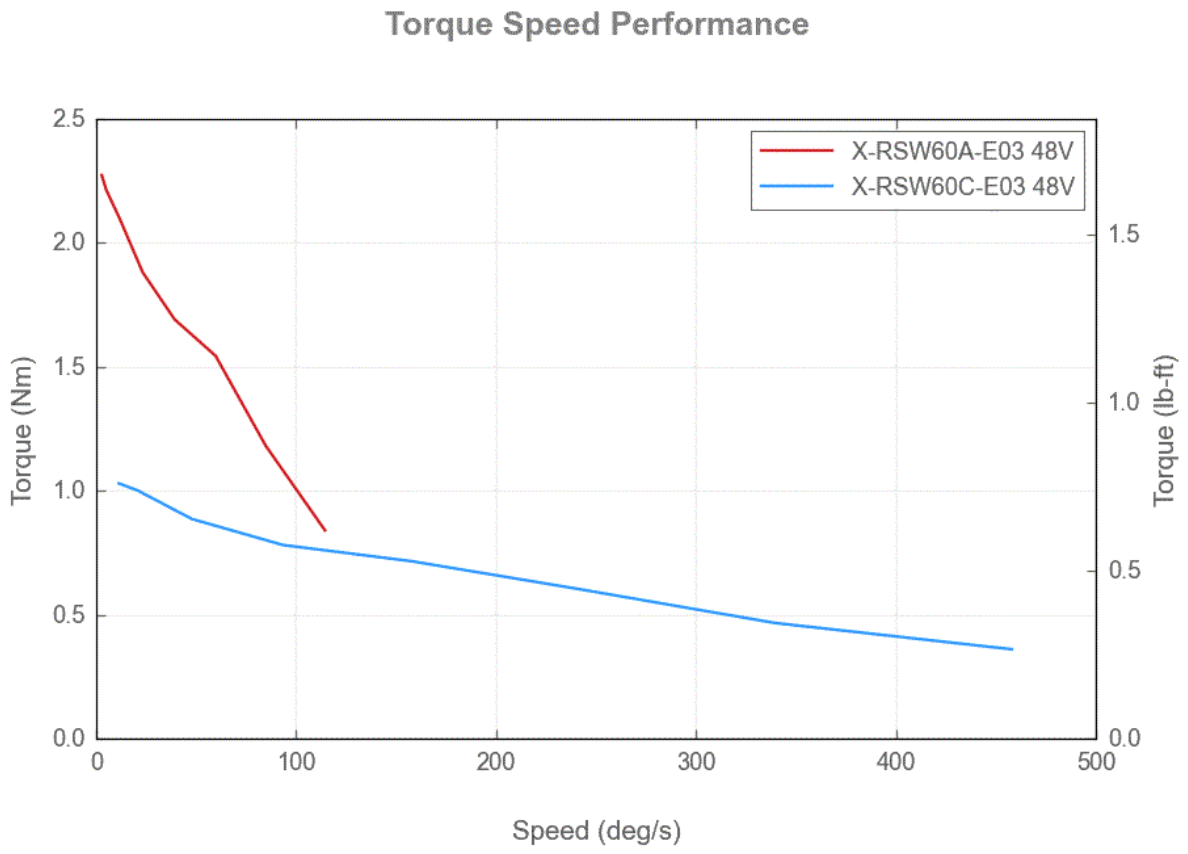
Part Number	Speed Resolution	Angular Motion Per Motor Rev
X-RSW60A-E03	0.000143 °/s (2.496 µrad/s)	3 °
X-RSW60C-E03	0.000572 °/s (9.983 µrad/s)	12 °

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X-RSW-E Series Charts

Torque Speed



Contact

Email: contact@zaber.com

Zaber Technologies Inc.
#2 - 605 West Kent Avenue N.
Vancouver, BC V6P 6T7
Canada
Phone: +1-604-569-3780
Fax: +1-604-648-8033

https://www.zaber.com

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
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X-RSW Series Datasheet



- Speed up to 75 rpm and torque up to 2.25 N m
- 20 kg centered load capacity
- Two lens holders allow for use as a polarizer mount
- Worm gear driven for continuous rotation
- Built-in controller; daisy-chains with other Zaber products
- Multiple X-Series products in a daisy-chain can share a single power supply
- Custom versions available

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X-RSW Series Overview

Zaber's X-RSW Series products are motorized rotary stage devices with built-in controllers. Rated for 2.25 N m of torque they are ideal for high precision, angular positioning applications.

They are stand-alone units requiring only a standard 24-48 V power supply. An indexed knob provides smooth manual control at variable speeds in both directions for versatile operation even without a computer. Press and hold to switch between velocity mode and position mode, turn to move the stage, and press to stop.

The stages connect to the USB 2.0 or RS-232 port of any computer and can be chained with several units per chain. They can be chained with any other Zaber products. Convenient locking, 4-pin, M8 connectors on the unit allow for easy and secure connection between products. The chain also shares power, so multiple X-Series products can use a single power supply.

For more information visit: https://www.zaber.com/products/rotary-stages/X-RSW

X-RSW Series Part Numbering & Options

X-RSW 60 A

Rotation Stage Diameter	Worm Gear Ratio
60 — 60 mm	**A** — 120:1 **C** — 30:1

X-RSW Series Drawings

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

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X-RSW Series Specifications

Overview

Specification	Value
Built-in Controller	Yes
Range	+/-360 °
Manual Control	Yes
Weight	0.66 kg (1.455 lb)

Positioning Performance

Specification	Value
Accuracy (unidirectional)	0.08 ° (1.396 mrad)
Repeatability	<0.02 ° (<0.349 mrad)
Backlash	<0.04 ° (<0.698 mrad)
Radial Error Motion	+/-4 µm (+/-0.000157 ")
Axial Error Motion	<4 µm (<0.000157 ")
Tilt Error Motion	+/-0.0033 ° (+/-57.6 µrad)
Default Resolution	1/64 of a step

Load Performance

Specification	Value
Maximum Centered Load	200 N (44.9 lb)
Maximum Moment (Tilt)	4.1 N·m (3.026 lb·ft)

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Encoder & Sensing

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

Motor

Specification	Value
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	1500 mA/phase
Motor Winding Inductance	1 mH/phase

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	950 mA

Mechanical

Specification	Value
Stage Top Dimension	60 mm (2.362 ")
Bearing Plane Offset	16.4 mm (0.646 ")
Mechanical Drive System	Precision Worm Gear

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Environmental & Compliance

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

Part Number	Microstep Size (Default Resolution)	Maximum Continuous Torque	Maximum Speed	Minimum Speed
X-RSW60A	0.000234375 ° (4.091 µrad)	2.25 N·m (1.66 lb·ft)	115 °/s (19 rpm)	0.000143 °/s (2.496 µrad/s)
X-RSW60C	0.0009375 ° (16.362 µrad)	1.05 N·m (0.775 lb·ft)	450 °/s (75 rpm)	0.000572 °/s (9.983 µrad/s)

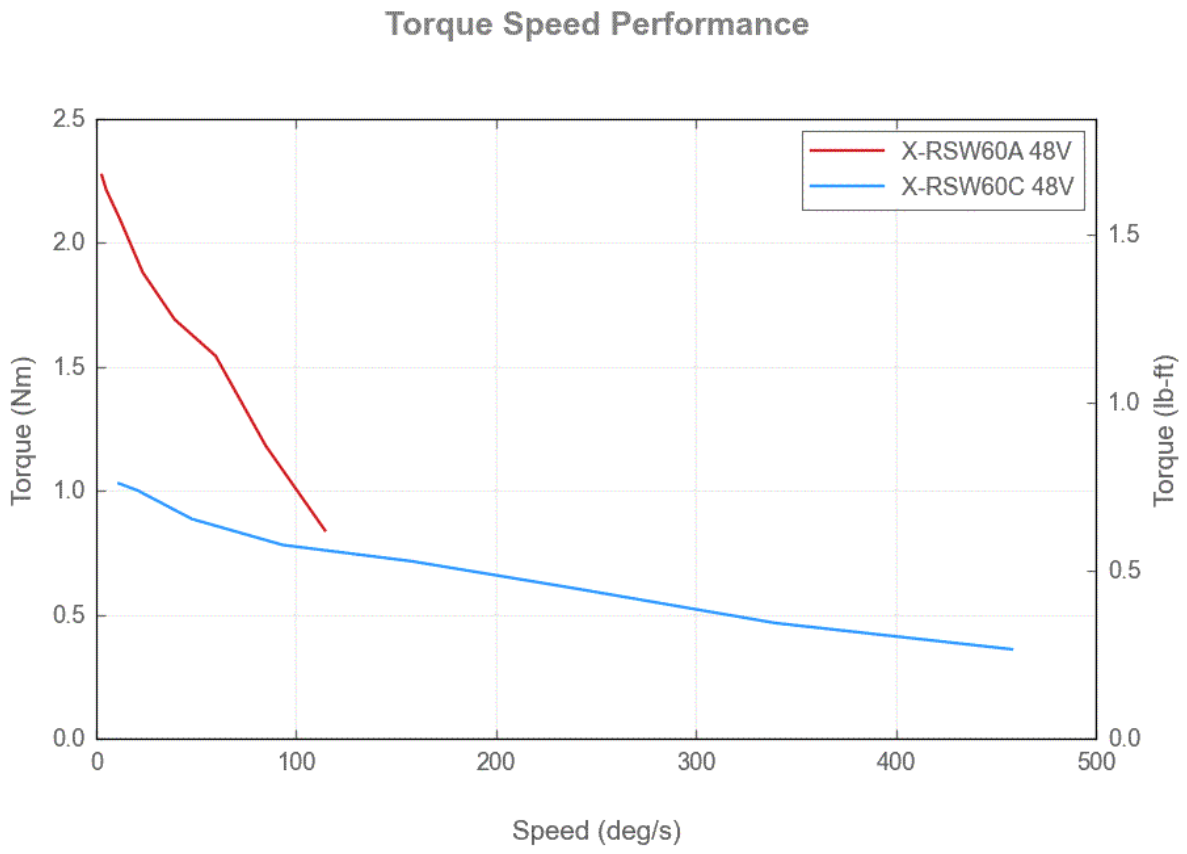
Part Number	Speed Resolution	Angular Motion Per Motor Rev
X-RSW60A	0.000143 °/s (2.496 µrad/s)	3 °
X-RSW60C	0.000572 °/s (9.983 µrad/s)	12 °

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X-RSW Series Charts

Speed



Contact

Email: contact@zaber.com

Zaber Technologies Inc.
#2 - 605 West Kent Avenue N.
Vancouver, BC V6P 6T7
Canada
Phone: +1-604-569-3780
Fax: +1-604-648-8033

https://www.zaber.com

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#2 - 605 West Kent Ave.
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RSW-E Series Datasheet



- Speed up to 75 rpm and torque up to 280 N cm
- 23 mm aperture
- Worm gear driven for continuous rotation
- Two lens holders allow for use as a polarizer mount
- 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
- Custom versions available

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RSW-E Series Overview

Zaber's RSW-E precision motorized rotation stages, with integrated motor encoders, are stepper motor and worm gear driven and capable of continuous rotation. The stages are designed to connect directly to our MCC Family universal motor controllers, or they can be used with any 2-phase stepper motor controller through the panel mount DB15 connector. Set up is easy with AutoDetect. Once connected, the controller will automatically detect and configure the RSW-E.

For more information visit: https://www.zaber.com/products/rotary-stages/RSW-E

RSW-E Series Part Numbering & Options

RSW 60 A - E03 T3A

Rotation Stage Diameter
60 — 60 mm

Worm Gear Ratio
A — 120:1
C — 30:1

Encoder Options
E03 — Motor Encoder, 200 CPR

Connector
T3A — D-sub 15 panel mount connector with Auto Detect

RSW-E Series Drawings

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

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RSW-E Series Specifications

Overview

Specification	Value
Built-in Controller	No
Recommended Controller	MCC (48 V) Recommended
AutoDetect	Yes
Range	+/-360 °
Weight	0.64 kg (1.411 lb)

Positioning Performance

Specification	Value
Accuracy (unidirectional)	0.08 ° (1.396 mrad)
Repeatability	<0.02 ° (<0.349 mrad)
Backlash	<0.04 ° (<0.698 mrad)
Radial Error Motion	+/-4 µm (+/-0.000157 ")
Axial Error Motion	<4 µm (<0.000157 ")
Tilt Error Motion	+/-0.0033 ° (+/-57.6 µrad)
Default Resolution	1/64 of a step

Load Performance

Specification	Value
Maximum Centered Load	200 N (44.9 lb)
Maximum Moment (Tilt)	4.1 N·m (3.026 lb·ft)

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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
Motor Type	Stepper (2 phase)
Motor Rated Current	1500 mA/phase
Motor Winding Resistance	2.05 ohms/phase
Motor Winding Inductance	1 mH/phase
Motor Connection	D-sub 15

Mechanical

Specification	Value
Stage Top Dimension	60 mm (2.362 ")
Bearing Plane Offset	16.4 mm (0.646 ")
Mechanical Drive System	Precision Worm Gear

Environmental & Compliance

Specification	Value
CE Compliant	Yes
Vacuum Compatible	No

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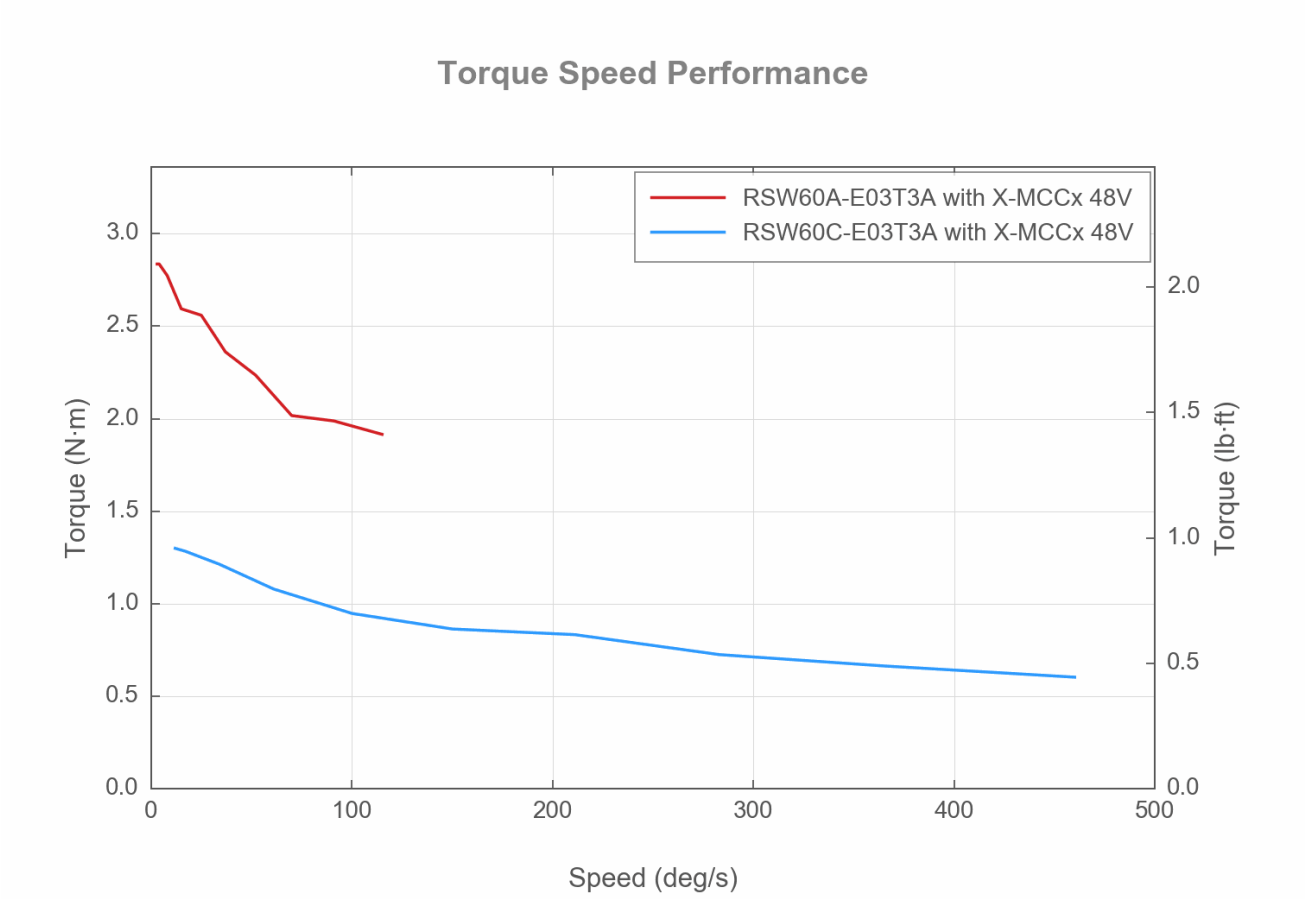
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Part Number	Microstep Size (Default Resolution)	Maximum Continuous Torque	Maximum Speed	Minimum Speed
RSW60A-E03T3A	0.000234375 ° (4.091 µrad)	2.8 N·m (2.066 lb·ft)	115 °/s (19 rpm)	0.000143 °/s (2.496 µrad/s)
RSW60C-E03T3A	0.0009375 ° (16.362 µrad)	1.25 N·m (0.922 lb·ft)	450 °/s (75 rpm)	0.000572 °/s (9.983 µrad/s)

Part Number	Speed Resolution	Angular Motion Per Motor Rev
RSW60A-E03T3A	0.000143 °/s (2.496 µrad/s)	3 °
RSW60C-E03T3A	0.000572 °/s (9.983 µrad/s)	12 °

RSW-E Series Charts

RSx E03T3A TORQUE SPEED



Contact

Email: contact@zaber.com

Zaber Technologies Inc.
#2 - 605 West Kent Avenue N.
Vancouver, BC V6P 6T7
Canada
Phone: +1-604-569-3780
Fax: +1-604-648-8033

https://www.zaber.com

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#2 - 605 West Kent Ave.
Vancouver, BC

1-604-569-3780 *Direct*
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RSW Series Datasheet



- Speed up to 75 rpm and torque up to 280 N cm
- 23 mm aperture
- Worm gear driven for continuous rotation
- Two lens holders allow for use as a polarizer mount
- 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
- Custom versions available

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RSW Series Overview

Zaber's RSW precision motorized rotation stage is stepper motor and worm gear driven and capable of continuous rotation. The stages are designed to connect directly to our MCC Family universal motor controllers, or they can be used with any 2-phase stepper motor controller through the panel mount DB15 connector. Set up is easy with AutoDetect. Once connected, controller will automatically detect and configure the RSW.

For more information visit: https://www.zaber.com/products/rotary-stages/RSW

RSW Series Part Numbering & Options

RSW 60 A - T3A

Rotation Stage Diameter	Worm Gear Ratio	Connector
60 — 60 mm	**A** — 120:1 **C** — 30:1	**T3A** — D-sub 15 panel mount connector with Auto Detect

RSW Series Drawings

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

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RSW Series Specifications

Overview

Specification	Value
Built-in Controller	No
Recommended Controller	MCC (48 V) Recommended
AutoDetect	Yes
Range	+/-360 °
Weight	0.62 kg (1.367 lb)

Positioning Performance

Specification	Value
Accuracy (unidirectional)	0.08 ° (1.396 mrad)
Repeatability	<0.02 ° (<0.349 mrad)
Backlash	<0.04 ° (<0.698 mrad)
Radial Error Motion	+/-4 µm (+/-0.000157 ")
Axial Error Motion	<4 µm (<0.000157 ")
Tilt Error Motion	+/-0.0033 ° (+/-57.6 µrad)
Default Resolution	1/64 of a step

Load Performance

Specification	Value
Maximum Centered Load	200 N (44.9 lb)
Maximum Moment (Tilt)	4.1 N·m (3.026 lb·ft)

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Encoder & Sensing

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

Motor

Specification	Value
Motor Type	Stepper (2 phase)
Motor Rated Current	1500 mA/phase
Motor Winding Resistance	2.05 ohms/phase
Motor Winding Inductance	1 mH/phase
Motor Connection	D-sub 15

Mechanical

Specification	Value
Stage Top Dimension	60 mm (2.362 ")
Bearing Plane Offset	16.4 mm (0.646 ")
Mechanical Drive System	Precision Worm Gear

Environmental & Compliance

Specification	Value
CE Compliant	Yes
Vacuum Compatible	No

Part Number	Microstep Size (Default Resolution)	Maximum Continuous Torque	Maximum Speed	Minimum Speed

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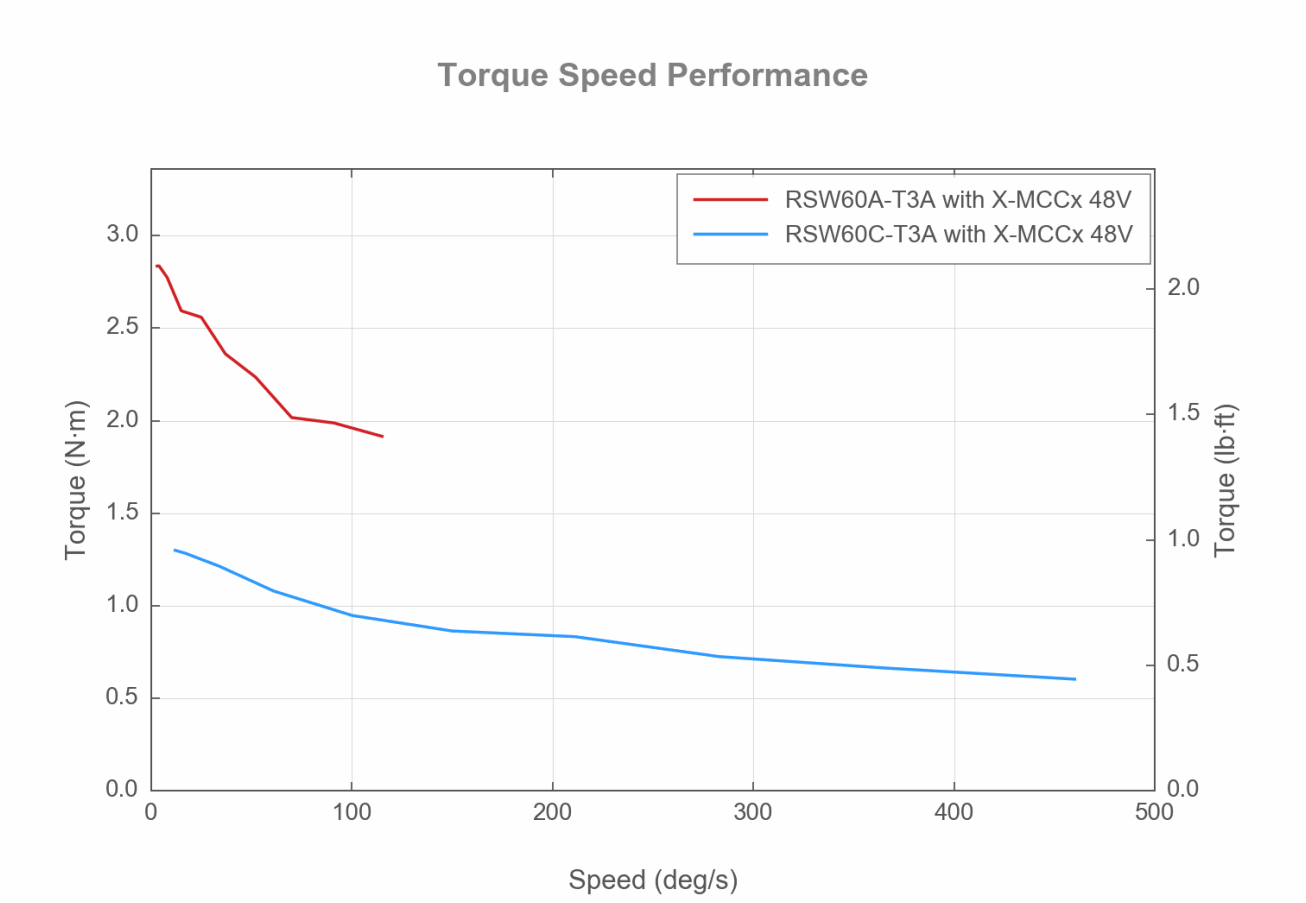
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RSW60A-T3A	0.000234375 ° (4.091 µrad)	2.8 N·m (2.066 lb·ft)	115 °/s (19 rpm)	0.000143 °/s (2.496 µrad/s)
RSW60C-T3A	0.0009375 ° (16.362 µrad)	1.25 N·m (0.922 lb·ft)	450 °/s (75 rpm)	0.000572 °/s (9.983 µrad/s)

Part Number	Speed Resolution	Angular Motion Per Motor Rev
RSW60A-T3A	0.000143 °/s (2.496 µrad/s)	3 °
RSW60C-T3A	0.000572 °/s (9.983 µrad/s)	12 °

RSW Series Charts

RSx T3A TORQUE SPEED



Contact

Email: contact@zaber.com

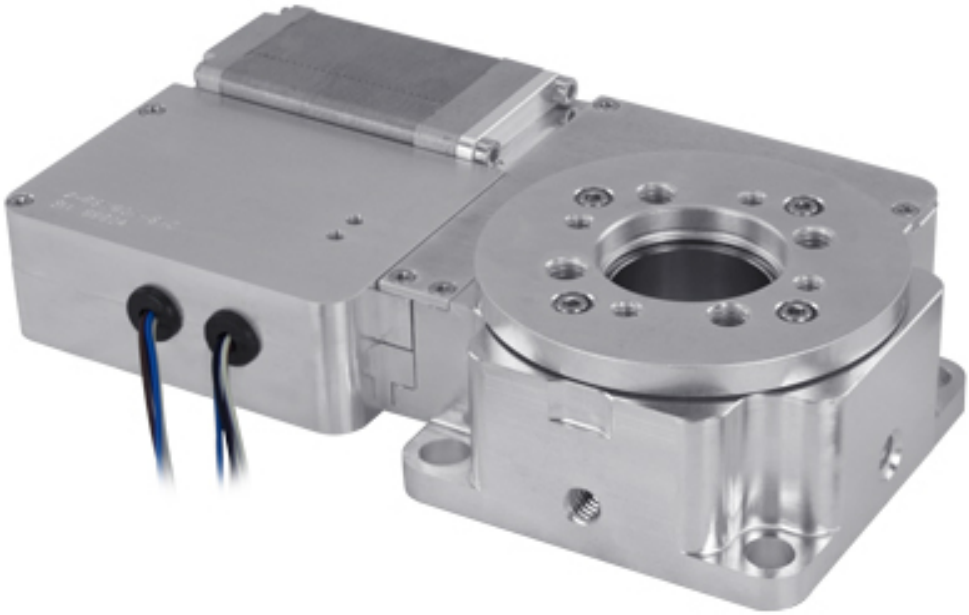
Zaber Technologies Inc.
#2 - 605 West Kent Avenue N.
Vancouver, BC V6P 6T7
Canada
Phone: +1-604-569-3780
Fax: +1-604-648-8033

https://www.zaber.com

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#2 - 605 West Kent Ave.
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1-604-569-3780 *Direct*
1-888-276-8033 *Toll Free*
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X-RSW60A-SV2 Datasheet



- Vacuum compatible to 10-6 Torr
- Speed up to 100 °/s and torque up to 100 N cm
- 20 kg load capacity
- 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-RSW60A-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-RSW-SV2 Series devices are high-vacuum compatible, computer-controlled, motorized rotary stages with built-in controllers. They are stand-alone units requiring only a standard 24 - 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.

The X-RSW-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-RSW-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-RSW-SV2?part=X-RSW60A-SV2

X-RSW60A-SV2 Part Numbering & Options

Part number: X-RSW60A-SV2

X-RSW 60 A -SV2

Rotation Stage Size	Worm Gear Ratio	Options
60 — 60 mm (this part)	**A — 120:1 (this part)**	**-SV2 — High-vacuum compatible: 10-6 Torr (this part)**

X-RSW60A-SV2 Drawings

- X-RSW-SV.png (Drawing for the X-RSW-SV)
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X-RSW60A-SV2 Specifications

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Overview

Specification	Value
Built-in Controller	Yes
Range	+/-360 °
Manual Control	No
Weight	0.72 kg (1.587 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)	0.000234375 ° (4.091 µrad)
Default Resolution	1/64 of a step

Load Performance

Specification	Value
Maximum Torque	1 N·m (0.738 lb·ft)
Maximum Centered Load	200 N (44.9 lb)
Maximum Moment (Tilt)	410 N·cm (580.6 oz·in)

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Speed

Specification	Value
Maximum Speed	100 °/s (17 rpm)
Minimum Speed	0.000143 °/s (2.496 µrad/s)
Speed Resolution	0.000143 °/s (2.496 µrad/s)

Encoder & Sensing

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

Motor

Specification	Value
Angular Motion Per Motor Rev	3 °
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	1300 mA/phase
Motor Winding Inductance	1 mH/phase

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	950 mA

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1-888-276-8033 *Toll Free*
1-604-648-8033 *Fax*

Mechanical

Specification	Value
Stage Top Dimension	60 mm (2.362 ")
Mechanical Drive System	Precision Worm Gear

Environmental & Compliance

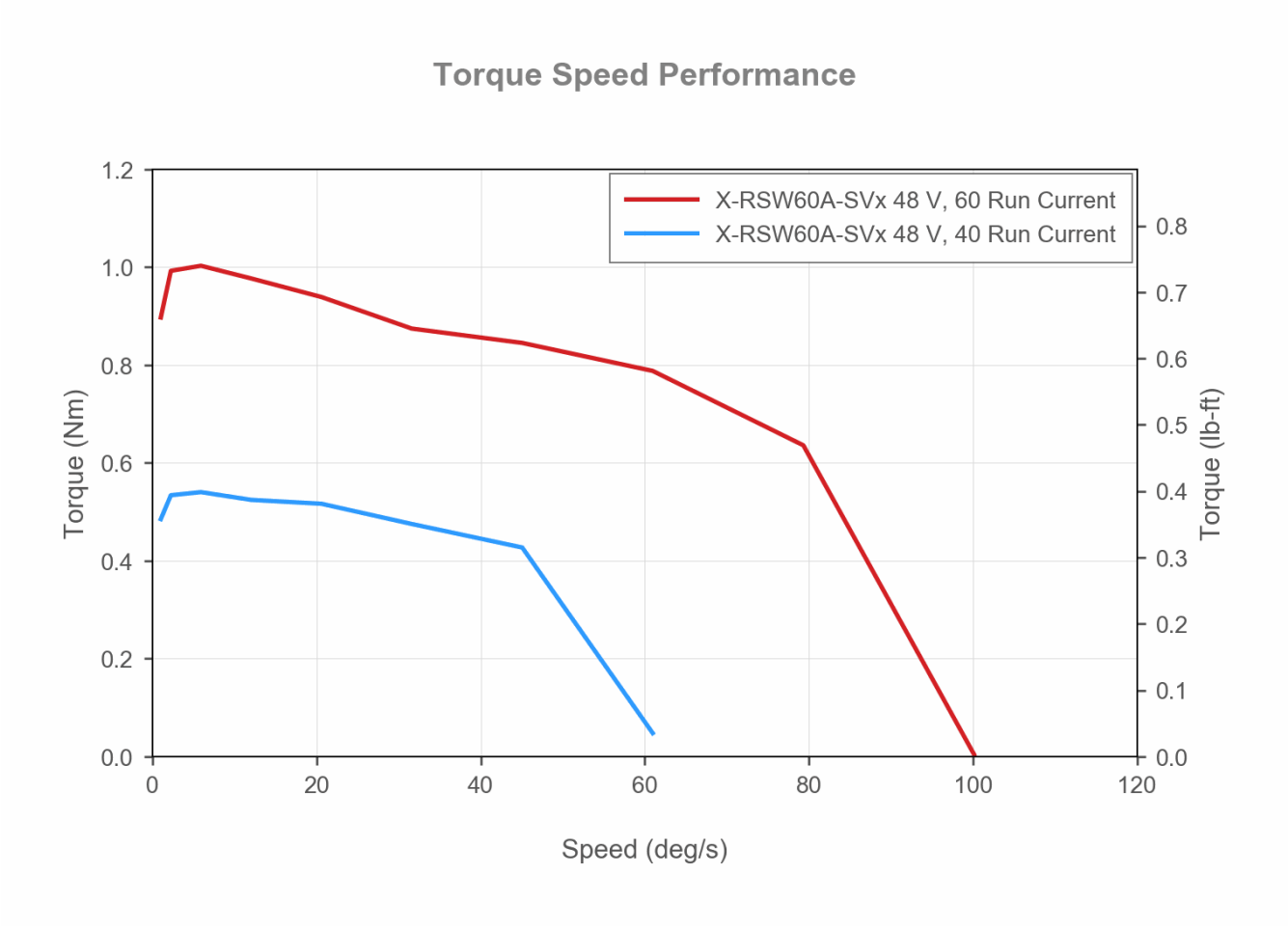
Specification	Value
Operating Temperature Range	0-50 °C
CE Compliant	Yes
Vacuum Compatible	High vacuum (10-6 Torr)

X-RSW60A-SV2 Charts

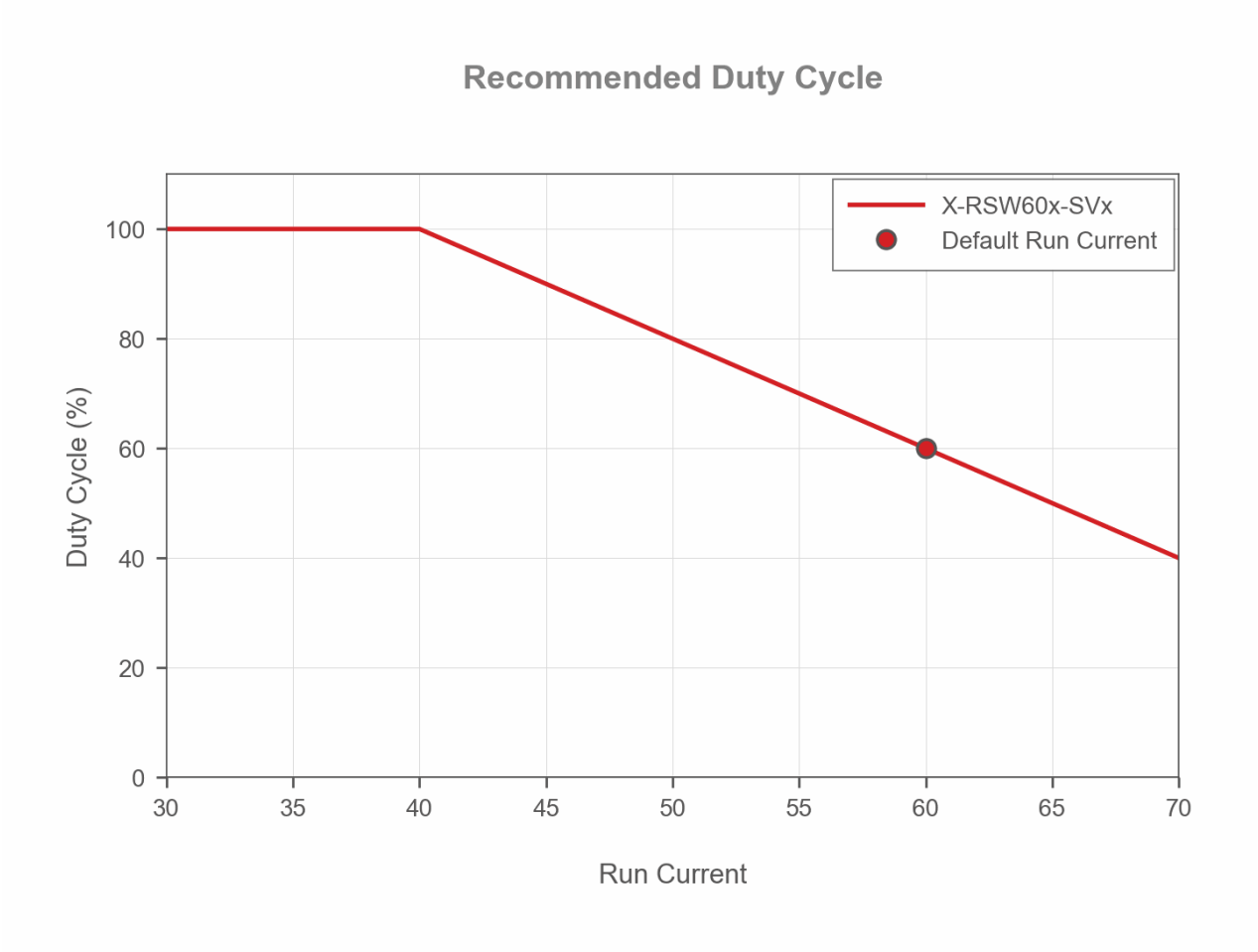
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Torque Speed



Duty Cycle Vs Run Current



Contact

Email: contact@zaber.com

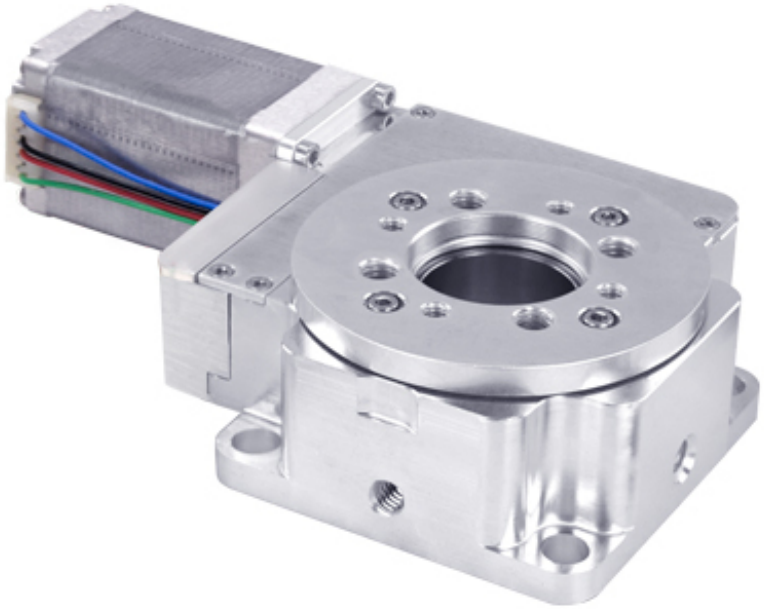
Zaber Technologies Inc.
#2 - 605 West Kent Avenue N.
Vancouver, BC V6P 6T7
Canada
Phone: +1-604-569-3780
Fax: +1-604-648-8033

https://www.zaber.com

Zaber Technologies Inc.
#2 - 605 West Kent Ave.
Vancouver, BC

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RSW60A-V2T4 Datasheet



- Vacuum compatible to 10-6 Torr
- Speed up to 100 °/s and torque up to 100 N cm
- 20 kg load capacity
- 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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RSW60A-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 RSW-V2 Series devices are high-vacuum compatible, computer-controlled, motorized rotary stages with built-in controllers.

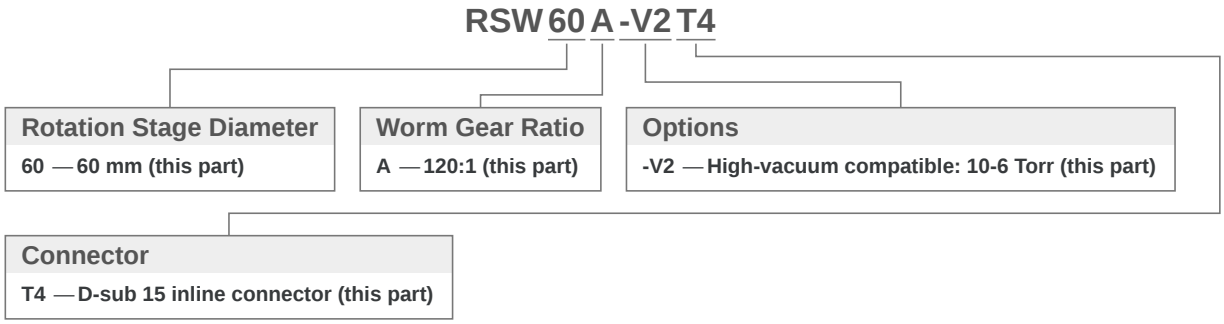
The RSW-V2 is designed with vacuum compatible materials to minimize outgassing and allow for faster pump down times. Like all of Zaber's products, the RSW-V2 Series is designed to be very easy to set up and operate.

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/RSW-V2?part=RSW60A-V2T4

RSW60A-V2T4 Part Numbering & Options

Part number: RSW60A-V2T4



RSW60A-V2T4 Drawings

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

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RSW60A-V2T4 Specifications

Overview

Specification	Value
Built-in Controller	No
Recommended Controller	MCC (48 V) Recommended
AutoDetect	No
Range	+/-360 °
Manual Control	No
Weight	0.62 kg (1.367 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)	0.000234375 ° (4.091 µrad)
Default Resolution	1/64 of a step

Load Performance

Specification	Value
Maximum Torque	1 N·m (0.738 lb·ft)
Maximum Centered Load	200 N (44.9 lb)
Maximum Moment (Tilt)	410 N·cm (580.6 oz·in)

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Speed

Specification	Value
Maximum Speed	100 °/s (17 rpm)
Minimum Speed	0.000143 °/s (2.496 µrad/s)
Speed Resolution	0.000143 °/s (2.496 µrad/s)

Encoder & Sensing

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

Motor

Specification	Value
Angular Motion Per Motor Rev	3 °
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	1300 mA/phase
Motor Winding Inductance	1 mH/phase
Motor Connection	Teflon flying leads with D-sub15 connector

Mechanical

Specification	Value
Stage Top Dimension	60 mm (2.362 ")
Mechanical Drive System	Precision Worm Gear

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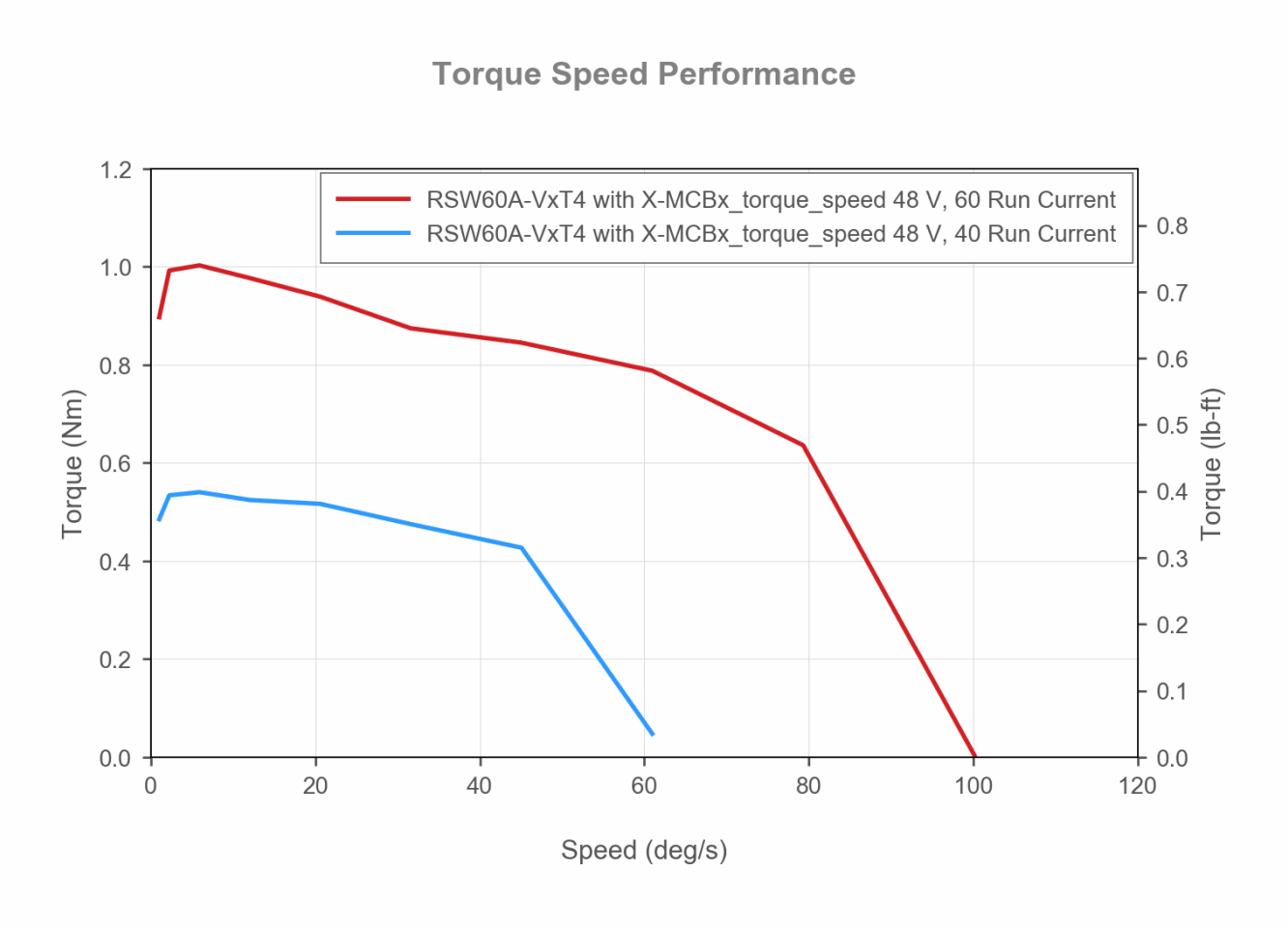
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Environmental & Compliance

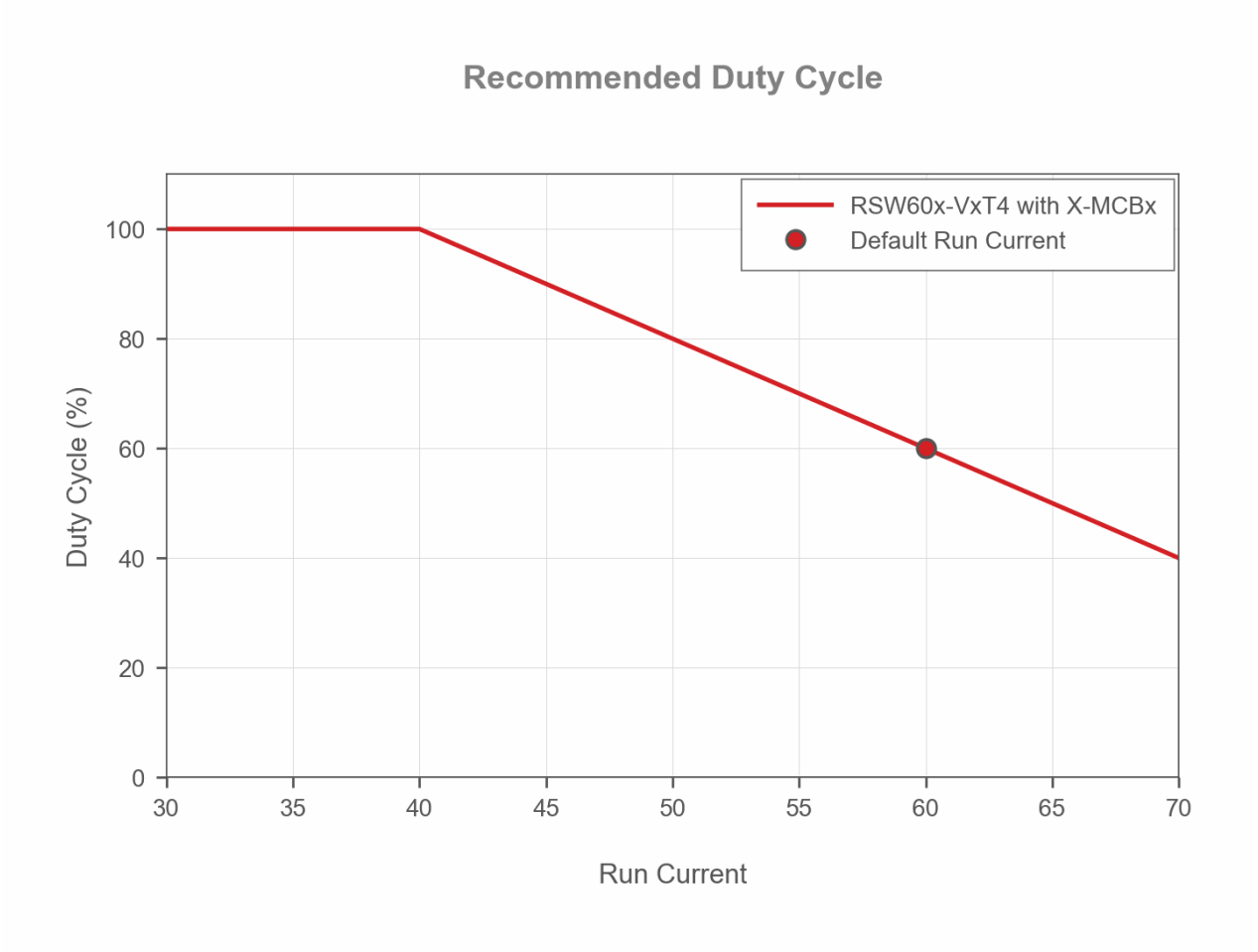
Specification	Value
Operating Temperature Range	0-50 °C
CE Compliant	Yes
Vacuum Compatible	High vacuum (10-6 Torr)

RSW60A-V2T4 Charts

RSA VxT4 With X MCBx Torque Speed Torque Speed



RSx VxT4 With X MCBx Duty Cycle Vs Run Current



Contact

Email: contact@zaber.com

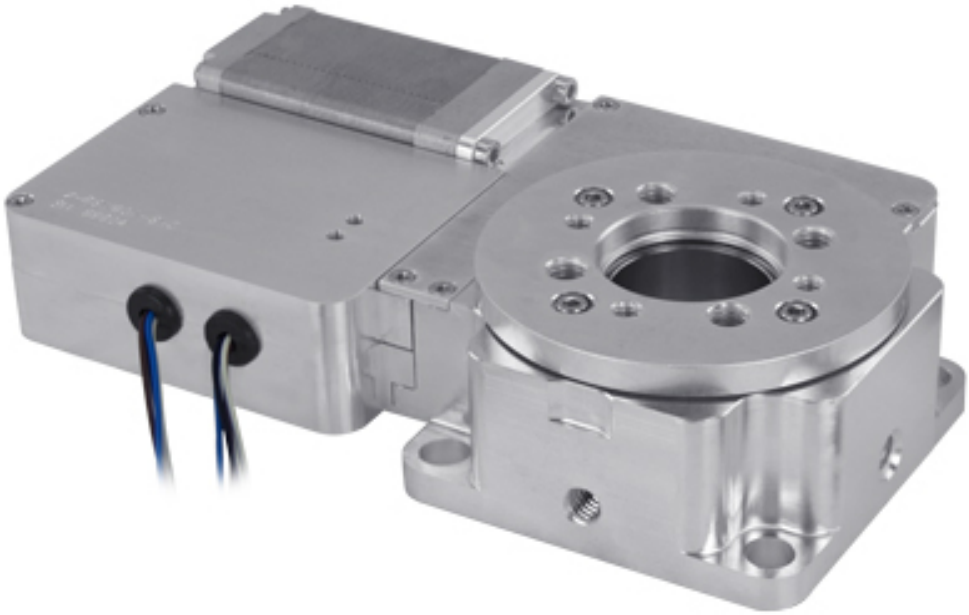
Zaber Technologies Inc.
#2 - 605 West Kent Avenue N.
Vancouver, BC V6P 6T7
Canada
Phone: +1-604-569-3780
Fax: +1-604-648-8033

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X-RSW60A-SV1 Datasheet



- Vacuum compatible to 10-3 Torr
- Speed up to 100 °/s and torque up to 100 N cm
- 20 kg load capacity
- 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-RSW60A-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-RSW-SV1 Series devices are low-vacuum compatible, computer-controlled, motorized rotary stages with built-in controllers. They are stand-alone units requiring only a standard 24 - 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.

The X-RSW-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-RSW-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-RSW-SV1?part=X-RSW60A-SV1

X-RSW60A-SV1 Part Numbering & Options

Part number: X-RSW60A-SV1

X-RSW 60 A -SV1

Rotation Stage Size	Worm Gear Ratio	Options
60 — 60 mm (this part)	**A — 120:1 (this part)**	**-SV1 — Low-vacuum compatible: 10-3 Torr (this part)**

X-RSW60A-SV1 Drawings

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

X-RSW60A-SV1 Specifications

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Overview

Specification	Value
Built-in Controller	Yes
Range	+/-360 °
Manual Control	No
Weight	0.72 kg (1.587 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)	0.000234375 ° (4.091 µrad)
Default Resolution	1/64 of a step

Load Performance

Specification	Value
Maximum Torque	1 N·m (0.738 lb·ft)
Maximum Centered Load	200 N (44.9 lb)
Maximum Moment (Tilt)	410 N·cm (580.6 oz·in)

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Speed

Specification	Value
Maximum Speed	100 °/s (17 rpm)
Minimum Speed	0.000143 °/s (2.496 µrad/s)
Speed Resolution	0.000143 °/s (2.496 µrad/s)

Encoder & Sensing

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

Motor

Specification	Value
Angular Motion Per Motor Rev	3 °
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	1300 mA/phase
Motor Winding Inductance	1 mH/phase

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	950 mA

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Mechanical

Specification	Value
Stage Top Dimension	60 mm (2.362 ")
Mechanical Drive System	Precision Worm Gear

Environmental & Compliance

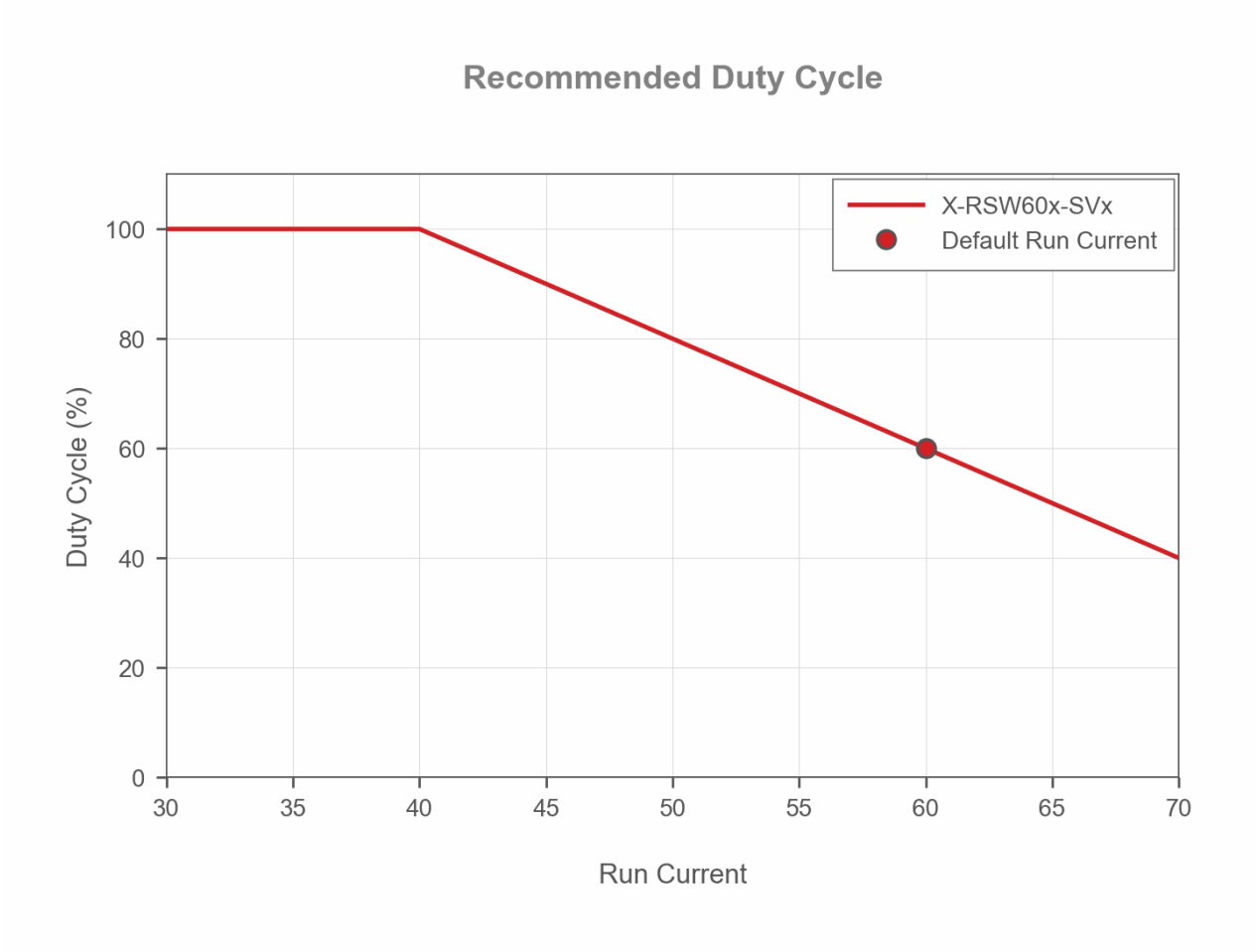
Specification	Value
Operating Temperature Range	0-50 °C
CE Compliant	Yes
Vacuum Compatible	Low vacuum (10-3 Torr)

X-RSW60A-SV1 Charts

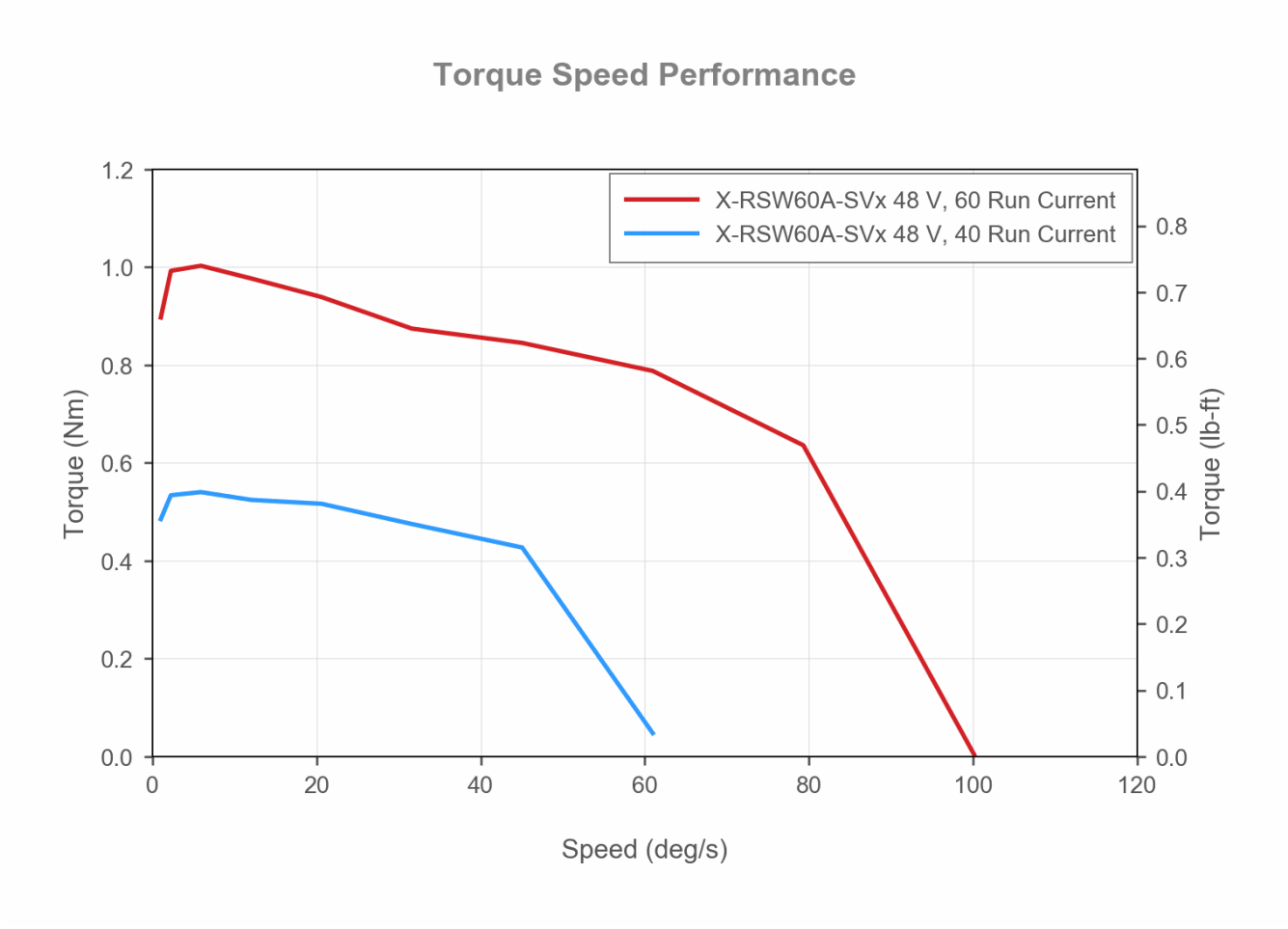
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Duty Cycle Vs Run Current



Torque Speed



Contact

Email: contact@zaber.com

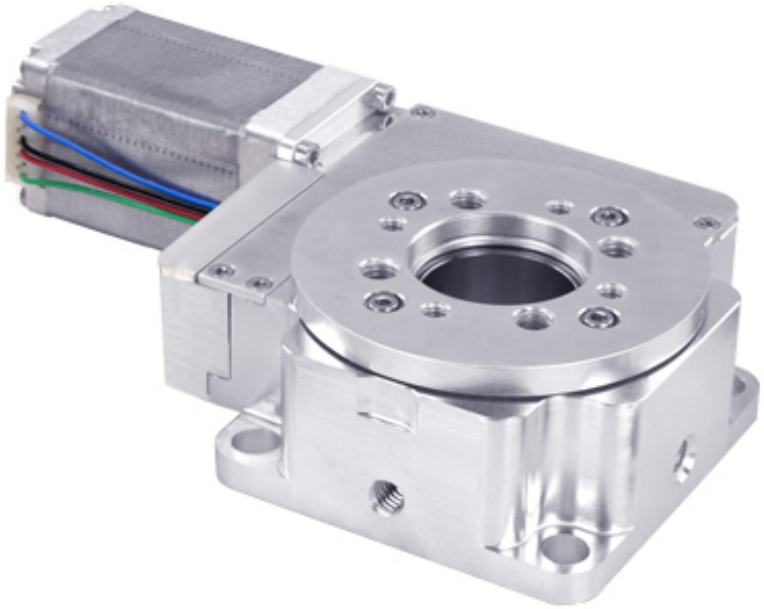
Zaber Technologies Inc.
#2 - 605 West Kent Avenue N.
Vancouver, BC V6P 6T7
Canada
Phone: +1-604-569-3780
Fax: +1-604-648-8033

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#2 - 605 West Kent Ave.
Vancouver, BC

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RSW60A-V1T4 Datasheet



- Vacuum compatible to 10-3 Torr
- Speed up to 100 °/s and torque up to 100 N cm
- 20 kg load capacity
- Worm gear driven for continuous rotation
- Only 7 feedthrough wires required to control these units
- Designed for use with an X-MCC Series stepper motor controller or any 2-phase stepper motor controller

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RSW60A-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".

Zaber's RSW-V1 Series devices are low-vacuum compatible, computer-controlled, motorized rotary stages with built-in controllers.

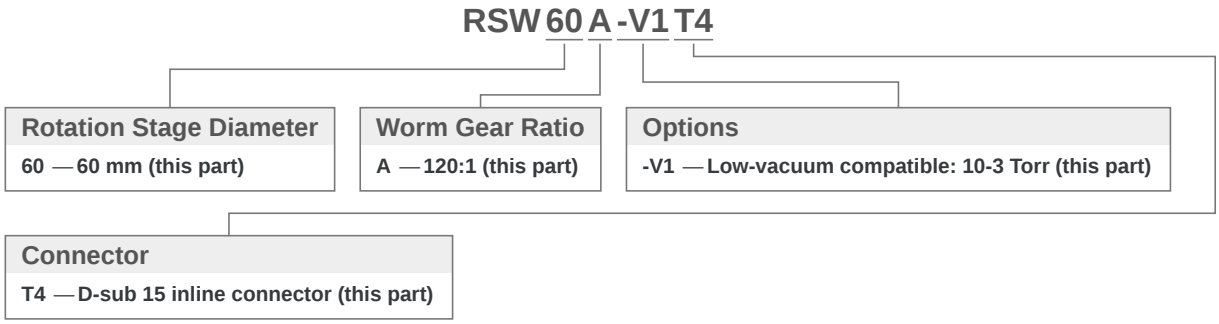
The RSW-V1 is designed with vacuum compatible materials to minimize outgassing and allow for faster pump down times. Like all of Zaber's products, the RSW-V1 Series is designed to be very easy to set up and operate.

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/RSW-V1?part=RSW60A-V1T4

RSW60A-V1T4 Part Numbering & Options

Part number: RSW60A-V1T4



RSW60A-V1T4 Drawings

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

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RSW60A-V1T4 Specifications

Overview

Specification	Value
Built-in Controller	No
Recommended Controller	MCC (48 V) Recommended
AutoDetect	No
Range	+/-360 °
Manual Control	No
Weight	0.62 kg (1.367 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)	0.000234375 ° (4.091 µrad)
Default Resolution	1/64 of a step

Load Performance

Specification	Value
Maximum Torque	1 N·m (0.738 lb·ft)
Maximum Centered Load	200 N (44.9 lb)
Maximum Moment (Tilt)	410 N·cm (580.6 oz·in)

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Speed

Specification	Value
Maximum Speed	100 °/s (17 rpm)
Minimum Speed	0.000143 °/s (2.496 µrad/s)
Speed Resolution	0.000143 °/s (2.496 µrad/s)

Encoder & Sensing

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

Motor

Specification	Value
Angular Motion Per Motor Rev	3 °
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	1300 mA/phase
Motor Winding Inductance	1 mH/phase
Motor Connection	Teflon flying leads with D-sub15 connector

Mechanical

Specification	Value
Stage Top Dimension	60 mm (2.362 ")
Mechanical Drive System	Precision Worm Gear

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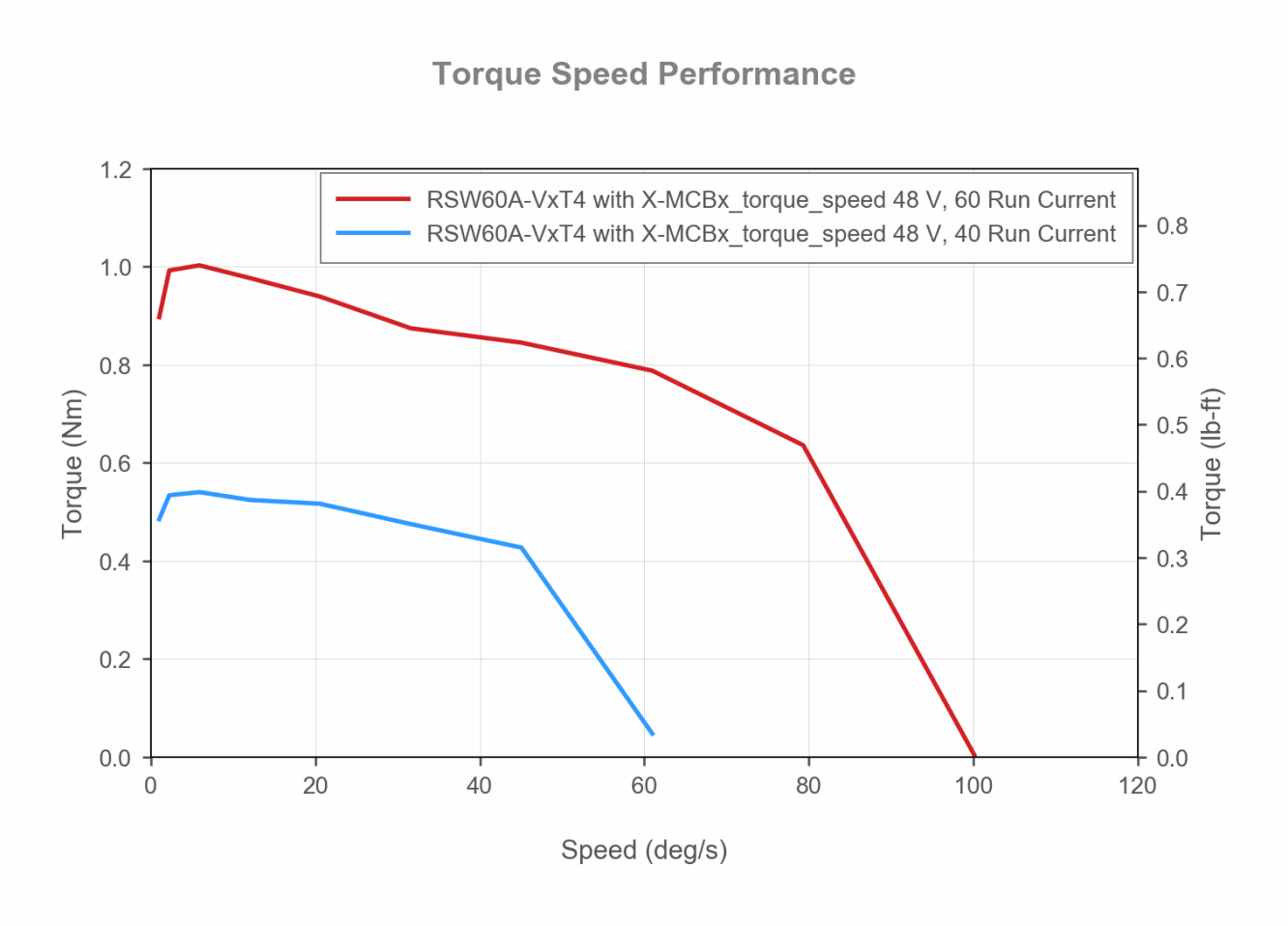
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Environmental & Compliance

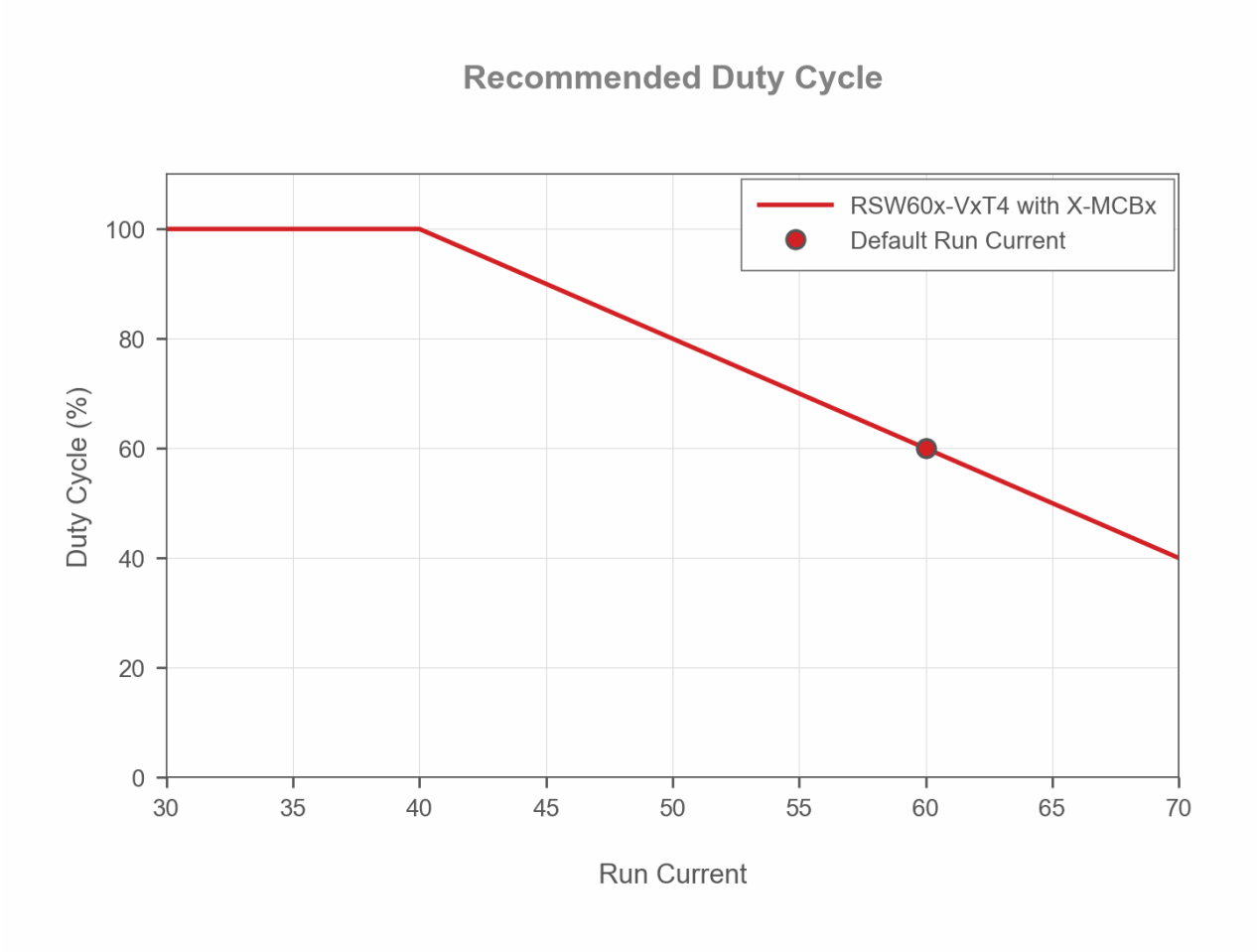
Specification	Value
Operating Temperature Range	0-50 °C
CE Compliant	Yes
Vacuum Compatible	Low vacuum (10-3 Torr)

RSW60A-V1T4 Charts

RSA VxT4 With X MCBx Torque Speed Torque Speed



RSx VxT4 With X MCBx Duty Cycle Vs Run Current



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Zaber Technologies Inc.
#2 - 605 West Kent Avenue N.
Vancouver, BC V6P 6T7
Canada
Phone: +1-604-569-3780
Fax: +1-604-648-8033

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