

## X-RSB Series Datasheet



- Continuous 360° rotation stage
- Speeds up to 300 rpm
- 50.8 mm aperture
- Built-in controller; daisy-chains with other Zaber products
- Multiple motor configurations

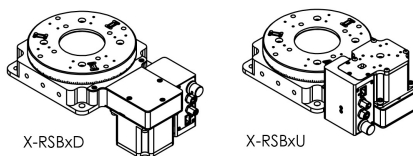
Zaber's X-RSB Series rotation stages have a 120 mm table diameter and a 50.8 mm (2 inch) aperture. They feature a compact footprint, low profile, and a load capability of up to 50 kg. With a maximum speed of 300 rpm, these rotation stages are ideal for the rapid positioning of light loads to within a fraction of a degree.

They are stand-alone units requiring either a standard 24 V or 48 V power supply. There are two motor configurations available: up and down. Motor up configurations allow flush mounting of the device to a flat surface, and motor down configurations allow for a full 360° movement of loads that extend past the edge of the stage top. 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. Convenient locking, 4-pin, M8 connectors on the unit allow for secure connection between units. Like all of Zaber's products, the X-RSB Series is designed to be 'plug and play' and very easy to set up and operate.

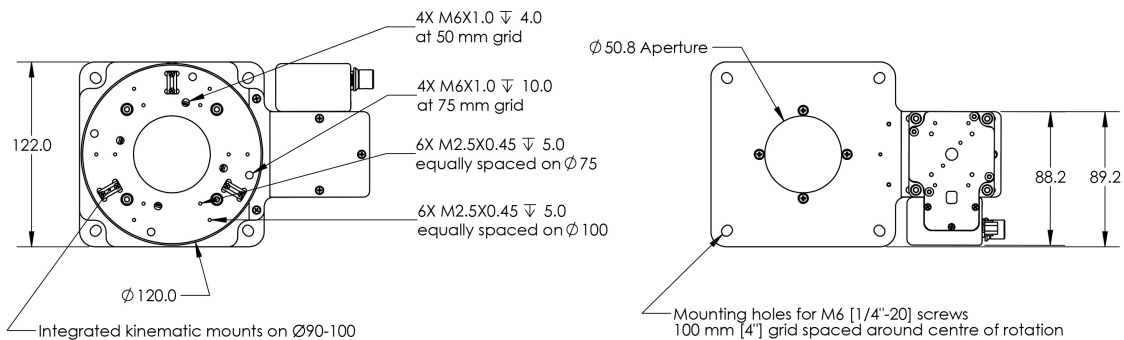
# Drawings

**ZABER**  
X-RSB Rotation Stage  
dimensions in mm

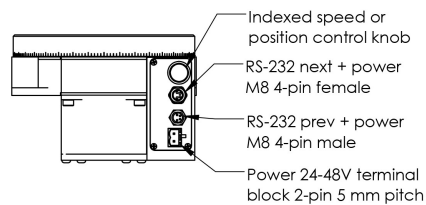


\*See product page for complete list of available models at [www.zaber.com](http://www.zaber.com)

X-RSBxD shown below



DWG 1098 801



## Specifications

| Specification                       | Value                               | Alternate Unit |
|-------------------------------------|-------------------------------------|----------------|
| Microstep Size (Default Resolution) | 0.005625 °                          | 98.173 μrad    |
| Built-in Controller                 | Yes                                 |                |
| Range                               | 360 °                               |                |
| Minimum Speed                       | 0.026 °/s                           | 453.778 μrad/s |
| Speed Resolution                    | 0.026 °/s                           |                |
| Encoder Type                        | None                                |                |
| Communication Interface             | RS-232                              |                |
| Communication Protocol              | Zaber ASCII (Default), Zaber Binary |                |
| Maximum Current Draw                | 1200 mA                             |                |
| Power Supply                        | 24 - 48 VDC                         |                |
| Power Plug                          | 2-pin Screw Terminal                |                |
| Angular Motion Per Motor Rev        | 72 °                                |                |
| Motor Steps Per Rev                 | 200                                 |                |
| Motor Type                          | Stepper (2-phase)                   |                |
| Default Resolution                  | 1/64 of a step                      |                |
| Data Cable Connection               | Locking 4-pin M8                    |                |
| Mechanical Drive System             | Synchronous belt                    |                |
| Limit or Home Sensing               | Magnetic home sensor                |                |
| Manual Control                      | Yes                                 |                |
| Axes of Motion                      | 1                                   |                |
| LED Indicators                      | Yes                                 |                |
| Vacuum Compatible                   | No                                  |                |
| Operating Temperature Range         | 0 - 50 °C                           |                |
| RoHS Compliant                      | Yes                                 |                |
| CE Compliant                        | Yes                                 |                |

| Part Number | Accuracy<br>(unidirectional) | Repeatability              | Backlash                  | Maximum Speed           |
|-------------|------------------------------|----------------------------|---------------------------|-------------------------|
| X-RSB060AD  | 0.2 °<br>(3.490000 mrad)     | < 0.01 °<br>(< 0.174 mrad) | < 0.1 °<br>(< 1.745 mrad) | 3000 °/s<br>(500.0 rpm) |

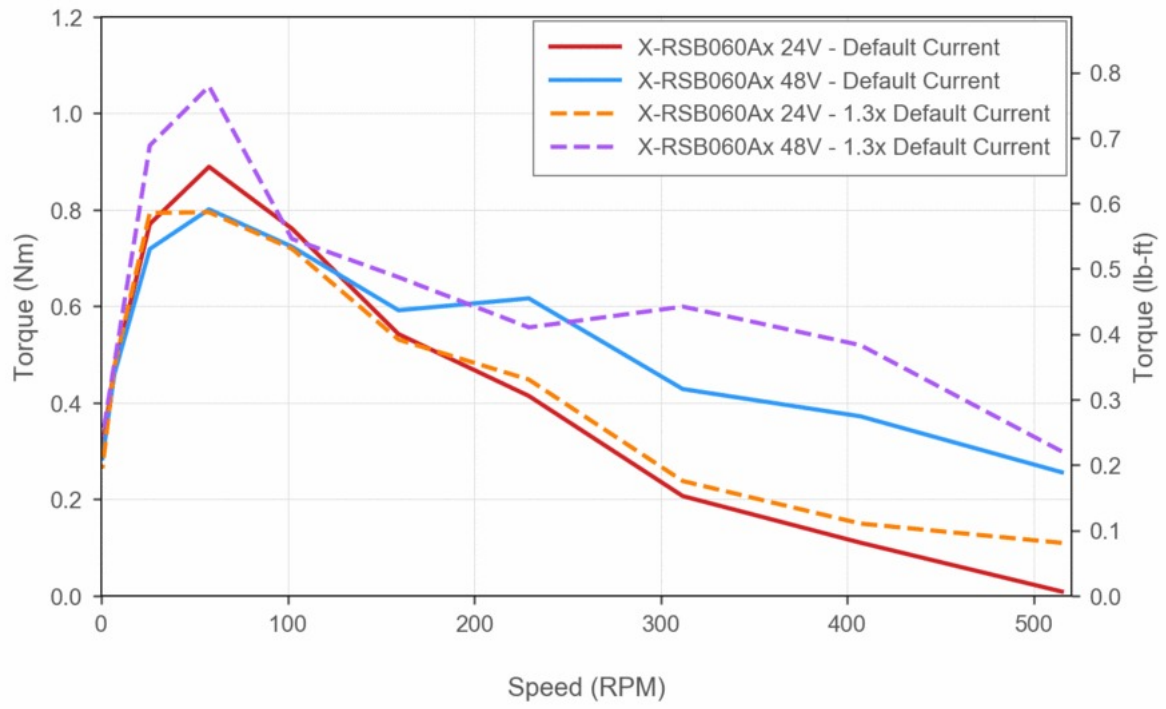
| Part Number | Accuracy<br>(unidirectional) | Repeatability              | Backlash                   | Maximum Speed           |
|-------------|------------------------------|----------------------------|----------------------------|-------------------------|
| X-RSB060AU  | 0.2 °<br>(3.490000 mrad)     | < 0.01 °<br>(< 0.174 mrad) | < 0.1 °<br>(< 1.745 mrad)  | 3000 °/s<br>(500.0 rpm) |
| X-RSB120AD  | 0.19 °<br>(3.315500 mrad)    | < 0.02 °<br>(< 0.349 mrad) | < 0.19 °<br>(< 3.316 mrad) | 1800 °/s<br>(300.0 rpm) |
| X-RSB120AU  | 0.19 °<br>(3.315500 mrad)    | < 0.02 °<br>(< 0.349 mrad) | < 0.19 °<br>(< 3.316 mrad) | 1800 °/s<br>(300.0 rpm) |

| Part Number | Maximum<br>Continuous<br>Torque | Maximum<br>Centered Load | Maximum<br>Cantilever Load  | Stage Top<br>Dimension |
|-------------|---------------------------------|--------------------------|-----------------------------|------------------------|
| X-RSB060AD  | 80 N-cm<br>(113.3 oz-in)        | 200 N (44.9 lb)          | 410 N-cm<br>(580.6 oz-in)   | 60 mm (2.362 ")        |
| X-RSB060AU  | 80 N-cm<br>(113.3 oz-in)        | 200 N (44.9 lb)          | 410 N-cm<br>(580.6 oz-in)   | 60 mm (2.362 ")        |
| X-RSB120AD  | 120 N-cm<br>(169.9 oz-in)       | 500 N (112.1 lb)         | 2000 N-cm<br>(2832.2 oz-in) | 120 mm<br>(4.724 ")    |
| X-RSB120AU  | 120 N-cm<br>(169.9 oz-in)       | 500 N (112.1 lb)         | 2000 N-cm<br>(2832.2 oz-in) | 120 mm<br>(4.724 ")    |

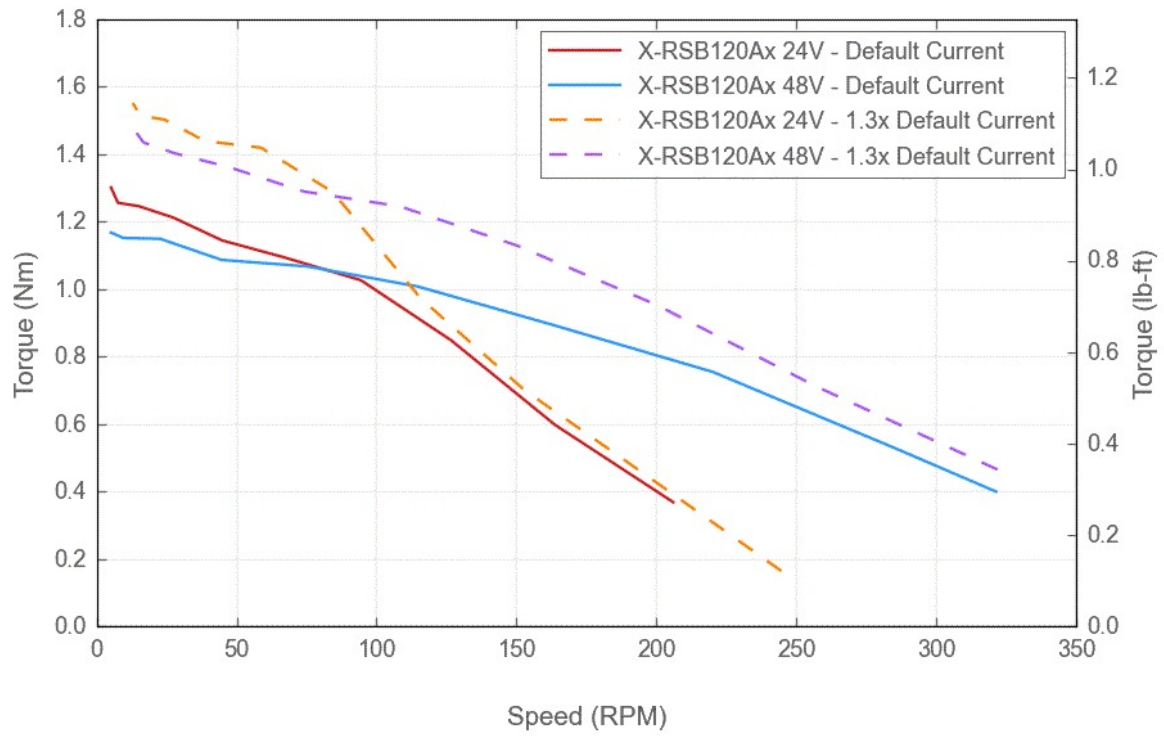
| Part Number | Motor Rated<br>Current | Inductance   | Mounting<br>Interface                           | Weight                |
|-------------|------------------------|--------------|---|-----------------------|
| X-RSB060AD  | 2300 mA/phase          | 2.8 mH/phase | M6 and #8-32<br>threaded holes                  | 0.82 kg<br>(1.808 lb) |
| X-RSB060AU  | 2300 mA/phase          | 2.8 mH/phase | M6 and #8-32<br>threaded holes                  | 0.82 kg<br>(1.808 lb) |
| X-RSB120AD  | 2100 mA/phase          | 7.2 mH/phase | Kinematic with<br>M2.5 and M6<br>threaded holes | 2.04 kg<br>(4.497 lb) |
| X-RSB120AU  | 2100 mA/phase          | 7.2 mH/phase | Kinematic with<br>M2.5 and M6<br>threaded holes | 2.04 kg<br>(4.497 lb) |

# Charts

## Torque Speed Performance



## Torque Speed Performance



### Angular Acceleration

