

X-RSB120AB-BE08 Datasheet



- Speeds up to 1,200 rpm
- Continuous 360° rotation stage
- Multiple motor configurations
- Encoder position feedback with slip/stall detection and automatic recovery
- Built-in controller; daisy-chains with other Zaber products
- Optional integrated power-off brake

X-RSB-E Series Overview

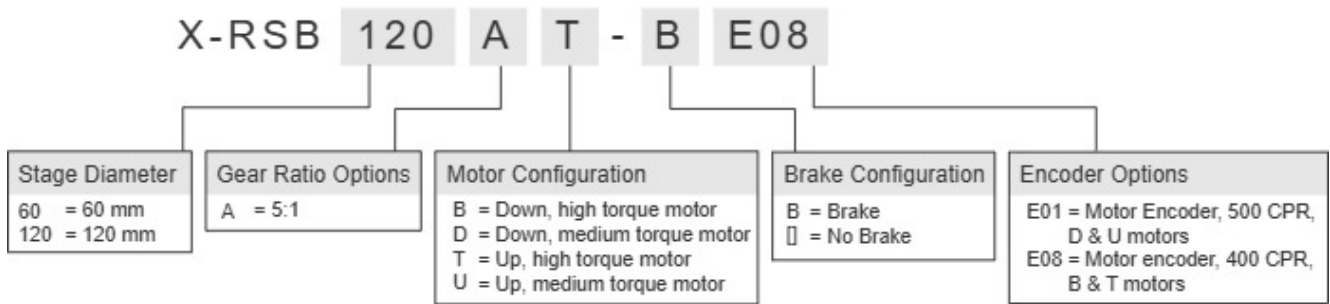
Zaber's X-RSB-E Series rotation stages feature a compact footprint, low profile, and a load capability of up to 50 kg. With a maximum speed of 1,200 rpm, these rotation stages are ideal for the rapid positioning of light loads to within a fraction of a degree.

They are stand-alone units requiring either a standard 24 V or 48 V power supply. A built-in motor encoder allows for closed-loop operation and slip/stall recovery features. 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. An optional power-off brake is available to protect the payload from unintended motion in the event of power loss.

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-E 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/rotary-stages/X-RSB-E>

X-RSB-E Series Part Numbering & Options



X-RSB120AB-BE08 Drawings

- [X-RSB120-BE_B&T_configs.png \(Drawing for the X-RSB120-BE_B&T_configs\)](#)

X-RSB120AB-BE08 Specifications

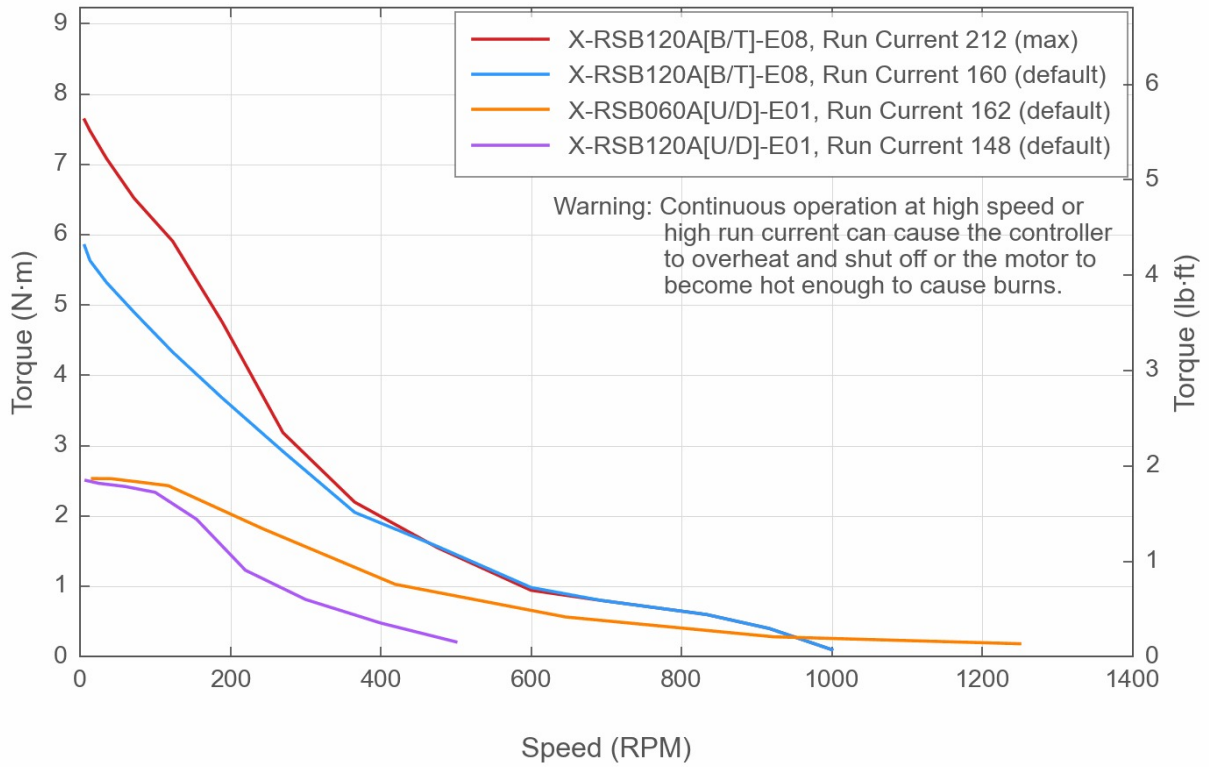
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|--|-------------------------------------|
| Microstep Size (Default Resolution) | 0.005625° (98.173 µrad) |
| Built-in Controller | Yes |
| Range | 360° |
| Accuracy (unidirectional) | 0.28° (4.886000 mrad) |
| Repeatability | < 0.001° (< 0.017 mrad) |
| Backlash | < 0.25° (< 4.362 mrad) |
| Maximum Speed | 3600°/s (600 rpm) |
| Minimum Speed | 0.003434°/s (59.934 µrad/s) |
| Speed Resolution | 0.003434°/s (59.934 µrad/s) |
| Encoder Resolution | 400 CPR (1600 states/rev) |
| Encoder Type | Rotary quadrature encoder |
| Communication Interface | RS-232 |
| Communication Protocol | Zaber ASCII (Default), Zaber Binary |
| Data Cable Connection | Locking 4-pin M8 |
| Maximum Continuous Torque | 750 N-cm (1062.1 oz-in) |
| Maximum Brake Torque | 750 N-cm (1062.1 oz-in) |
| Maximum Centered Load | 500 N (112.1 lb) |
| Maximum Moment (Transverse) | 2000 N-cm (2832.2 oz-in) |
| Stage Top Dimension | 120 mm (4.724") |
| Radial Error Motion | +/- 3 µm (+/- 0.000118") |
| Axial Error Motion | < 3 µm (< 0.000118") |
| Tilt Error Motion | +/- 0.0014° (+/- 24.43 µrad) |
| Bearing Plane Offset | 20 mm (0.787") |
| Power Supply | 24 - 48 VDC |
| Power Plug | 2-pin Screw Terminal |
| Maximum Current Draw | 3600 mA |
| Angular Motion Per Motor Rev | 72° |
| Motor Steps Per Rev | 200 |
| Motor Type | Stepper (2-phase) |
| Motor Rated Current | 3000 mA/phase |
| Inductance | 2 mH/phase |

| | |
|--|---|
| Microstep Size (Default Resolution) | 0.005625° (98.173 μrad) |
| Default Resolution | 1/64 of a step |
| Mechanical Drive System | Synchronous belt |
| Limit or Home Sensing | Magnetic home sensor |
| Manual Control | Yes |
| Axes of Motion | 1 |
| LED Indicators | Yes |
| Mounting Interface | Kinematic with M2.5 and M6 threaded holes |
| Operating Temperature Range | 0 - 50 °C |
| CE Compliant | Yes |
| Vacuum Compatible | No |
| Weight | 2.766 kg (6.098 lb) |

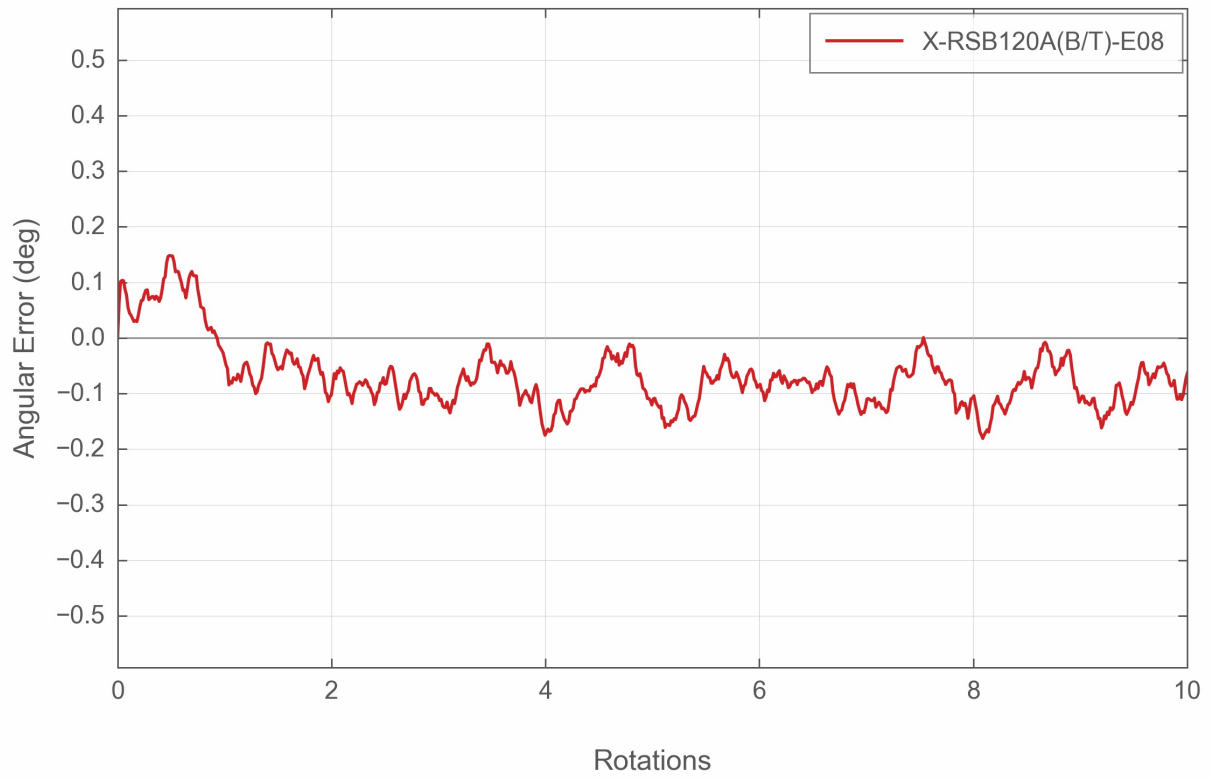
X-RSB-E Series Charts

Torque Speed Performance

48V

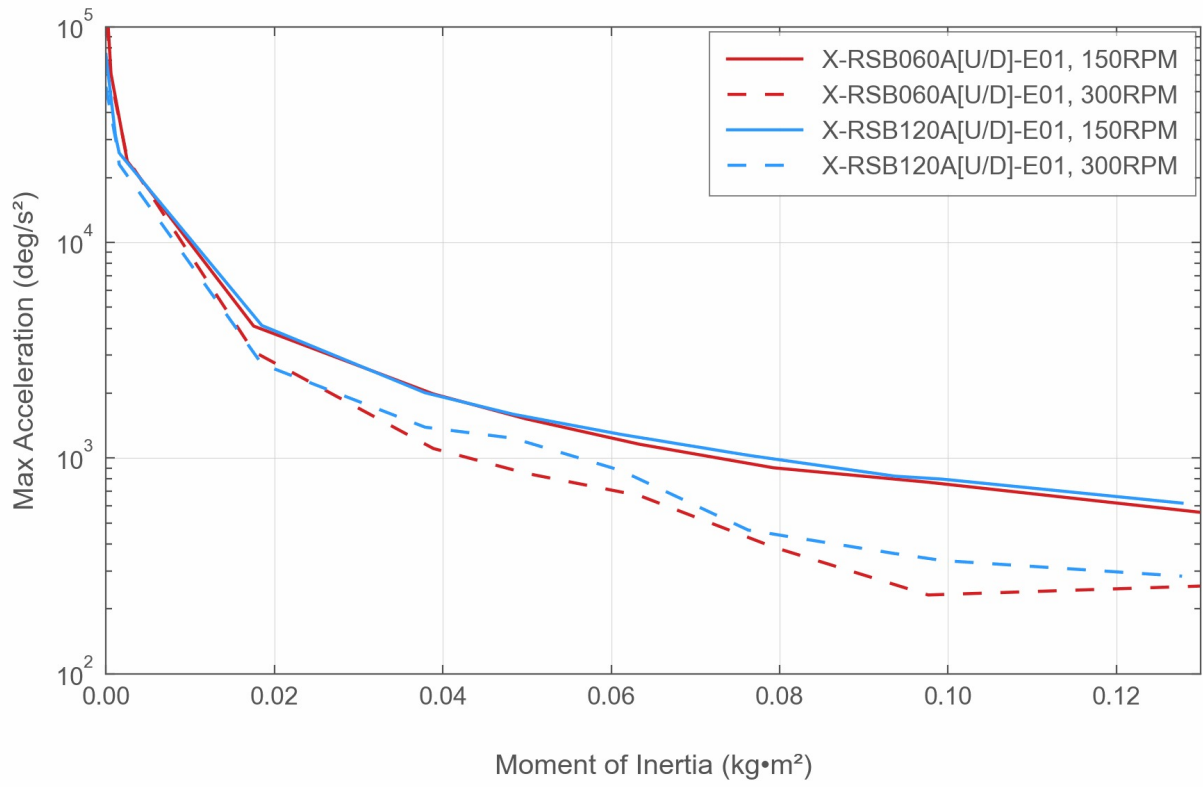


Typical Accuracy



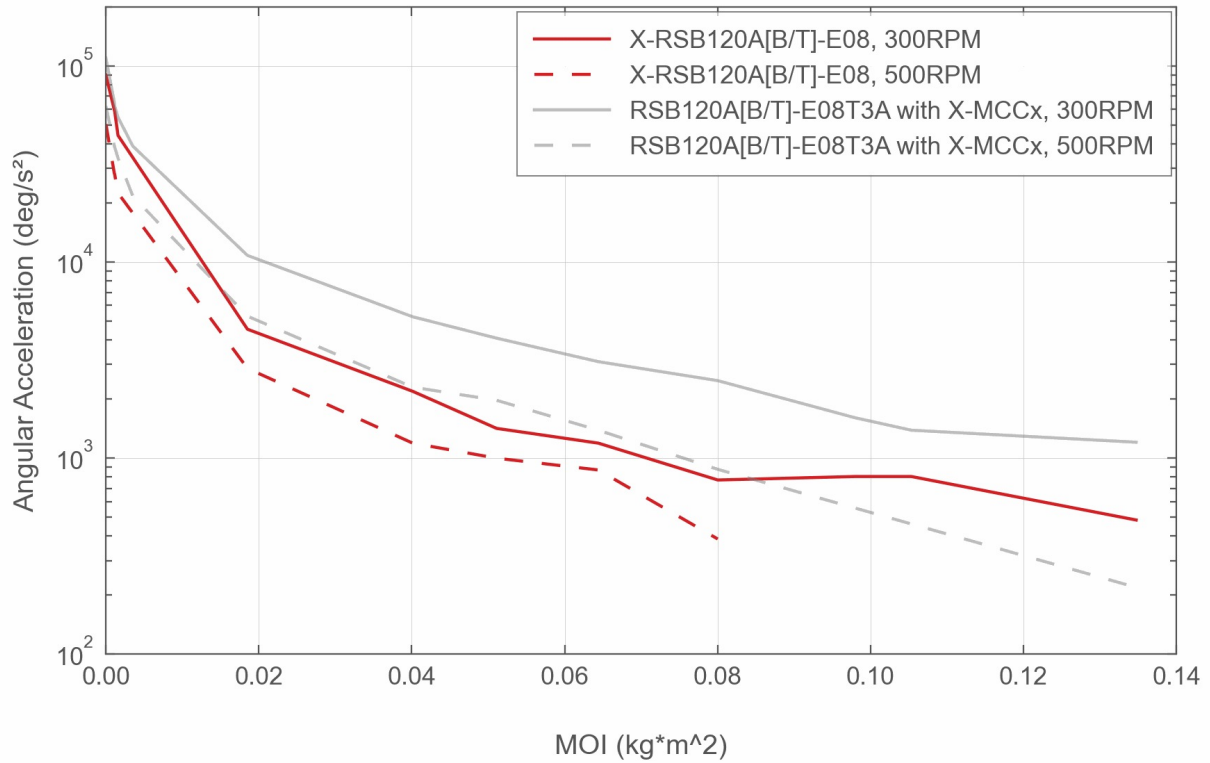
Angular Acceleration

48V, Default Run Current



Angular Acceleration

48V, Run Current 212 (max)



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