

## X-RST120AK-DE50 Datasheet



- Speed up to 24 °/s and torque up to 10 N-m
- 50 kg centered load capacity
- 50.8 mm (2") aperture with kinematic mounting options for repeatability of assembly
- Direct reading encoder for position correction; stage accuracy to 0.01°
- Multiple X-Series products in a daisy-chain can share a single power supply
- Built-in controller; daisy-chains with other Zaber products
- Custom versions available

## X-RST-DE Series Overview

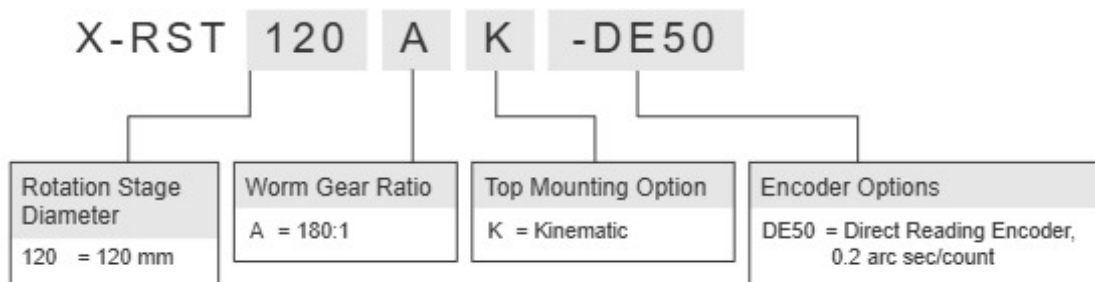
Zaber's X-RST-DE Series products are motorized rotation stage devices with built-in controllers and direct reading encoders for high accuracy motion. Rated for a 50 kg centered load capacity and 10 N-m of torque, they are ideal for high load, high precision, angular positioning applications.

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 an easy and secure connection. 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-RST-DE>

## X-RST-DE Series Part Numbering & Options



## X-RST120AK-DE50 Drawings

- [X-RST-DE.png \(Dimension Drawing for the X-RST-DE\)](#)

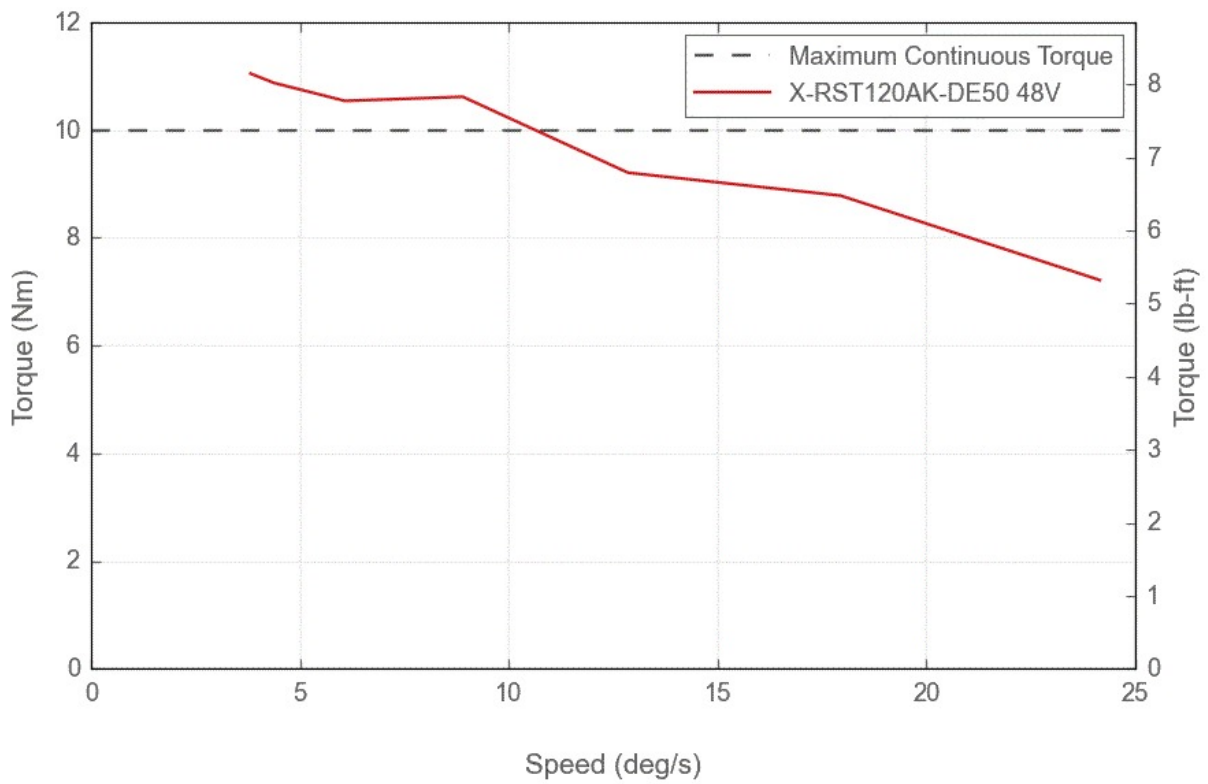
## X-RST120AK-DE50 Specifications

<b>Microstep Size (Default Resolution)</b>	<b>0.00015625° (2.727 μrad)</b>
Built-in Controller	Yes
Range	360°
Accuracy (unidirectional)	0.01° (0.174500 mrad)
Repeatability	< 0.005° (< 0.087 mrad)
Backlash	< 0.005° (< 0.087 mrad)
Maximum Speed	24°/s (4 rpm)
Encoder Count Size	0.00005556°/count (0.200016 arcseconds/count)
Minimum Speed	0.000095°/s (1.658 μrad/s)
Speed Resolution	0.000095°/s (1.658 μrad/s)
Encoder Resolution	1620000 CPR (6480000 states/rev)
Encoder Type	Direct Reading Optical Encoder
Communication Interface	RS-232
Communication Protocol	Zaber ASCII (Default), Zaber Binary
Data Cable Connection	Locking 4-pin M8
Maximum Torque	1000 N-cm (1416.1 oz-in)
Maximum Continuous Torque	1000 N-cm (1416.1 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	27.11 mm (1.067")
Power Supply	24-48 VDC
Power Plug	2-pin Screw Terminal
Maximum Current Draw	1100 mA
Angular Motion Per Motor Rev	2°
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	1500 mA/phase

<b>Microstep Size (Default Resolution)</b>	<b>0.00015625° (2.727 μrad)</b>
Inductance	6.6 mH/phase
Default Resolution	1/64 of a step
Maximum Angular Momentum	0.4 kg-m <sup>2</sup> /s
Mechanical Drive System	Precision Worm Gear
Limit or Home Sensing	Magnetic home sensor
Manual Control	Yes
Operating Temperature Range	0-50 °C
CE Compliant	Yes
Vacuum Compatible	No
Weight	2.46 kg (5.423 lb)

## X-RST-DE Series Charts

### Torque Speed Performance



## Contact

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