



## X-RST-DE Series Datasheet



- Direct reading encoder for position correction; stage accuracy to  $0.01^\circ$
- 50.8 mm (2 inch) aperture with kinematic mounting options for repeatability of assembly
- 50 kg centered load capacity
- Speed up to  $24^\circ/\text{s}$  and torque up to 10 N-m
- 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

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 easy and secure connection. The chain also shares power, so multiple X-Series products can use a single power supply.

## Drawings

## Specifications

Specification	Value	Alternate Unit
Built-in Controller	Yes	
Microstep Size (Default Resolution)	0.00015625 °	2.727 μrad
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	4.0 rpm
Minimum Speed	0.000095 °/s	1.658 μrad/s
Encoder Resolution	16200 CPR	64800 states/rev
Encoder Count Size	0.00005556 °/count	0.200016 arc sec/count
Encoder Type	Direct reading optical encoder	
Communication Interface	RS-232	
Communication Protocol	Zaber ASCII (Default), Zaber Binary	
Maximum Continuous Torque	1000 N-cm	1416.1 oz-in
Maximum Centered Load	500 N	112.1 lb
Maximum Cantilever Load	2000 N-cm	2832.2 oz-in
Stage Top Dimension	120 mm	4.724 "
Maximum Current Draw	1100 mA	
Power Supply	24-48 VDC	
Power Plug	2-pin Screw Terminal	
Angular Motion Per Motor Rev	2 °	
Motor Steps Per Rev	200	
Motor Type	Stepper (2 phase)	
Motor Rated Current	1500 mA/phase	
Inductance	6.6 mH/phase	
Maximum Angular Momentum	0.4 kg-m <sup>2</sup> /s	
Default Resolution	1/64 of a step	
Data Cable Connection	Locking 4-pin M8	
Mechanical Drive System	Precision Worm Gear	

Specification	Value	Alternate Unit
Limit or Home Sensing	Magnetic home sensor	
Manual Control	Yes	
Vacuum Compatible	No	
Operating Temperature Range	0-50 °C	
RoHS Compliant	Yes	
CE Compliant	Yes	
Weight	2.46 kg	5.423 lb

## Charts

Torque Speed Performance

