



## RL50 Specification

No.	1	2	3	4	
<b>Model</b>	RL50	RL150	RL300	RL600	
<b>Structure</b>	Reduction Method	Inverted Roller Screw	Inverted Roller Screw	Inverted Roller Screw	Inverted Roller Screw
	Stroke Length (mm)	35	50	70	85
	Lead Screw Pitch (mm)	2	3.5	4.5	6.5
	Axial Length (mm)	134.5	169.5	205	228
	Radial Length (mm)	32	50	56	65
	Peak Thrust (N)	500	1500	3000	6000
	Maximum Linear Speed (mm/s)	70	300	300	300
	Maximum Linear Acceleration (mm/s <sup>2</sup> )	1500	1800	1300	1100
	Housing Appearance (Process Color)	Aluminum Alloy Black Anodized			
<b>Hardware</b>	Repeatability Accuracy (mm)	±0.01	±0.01	±0.01	±0.01
	Encoder Feedback Type	Absolute Encoder, provides absolute position of the pushrod	Absolute Encoder, provides absolute position of the pushrod	Absolute Encoder, provides absolute position of the pushrod	Absolute Encoder, provides absolute position of the pushrod
	Encoder Resolution (mm)	±0.01	±0.01	±0.01	±0.01
	Encoder Positioning Accuracy (mm)	±0.01	±0.01	±0.01	±0.01
	Encoder Data Update Rate (kHz)	>1	>1	>1	>1
	Driver	Built-in	Built-in	Built-in	Built-in
	Driver Interface	Power (DC in DC out) 、CAN FD (In,Out)	Power (DC in DC out) 、CAN FD (In,Out)	Power (DC in DC out) 、CAN FD (In,Out)	Power (DC in DC out) 、CAN FD (In,Out)
	Connector Model	XT30(2+2)-F	XT30(2+2)-F	XT30(2+2)-F	XT30(2+2)-F
	Rated Operating Voltage (VDC)	48	48	48	48
	Minimum Startup Voltage (VDC)	≥24	≥24	≥24	≥24
	Maximum Withstand Voltage (VDC)	90	90	90	90
	Peak Operating Current (A)	<2@24V, <1@50V	<2@24V, <1@50V	<2@24V, <1@50V	<2@24V, <1@50V
<b>Software</b>	Communication Method	CANFD	CANFD	CANFD	CANFD
	Control Mode	Control Modes: Current, Velocity, Position, Interpolated Position Mode (IPM), Cyclic Synchronous Position Mode (CSP), Profile Position Mode (PP)	Control Modes: Current, Velocity, Position, Interpolated Position Mode (IPM), Cyclic Synchronous Position Mode (CSP), Profile Position Mode (PP)	Control Modes: Current, Velocity, Position, Interpolated Position Mode (IPM), Cyclic Synchronous Position Mode (CSP), Profile Position Mode (PP)	Control Modes: Current, Velocity, Position, Interpolated Position Mode (IPM), Cyclic Synchronous Position Mode (CSP), Profile Position Mode (PP)
	Response Time (ms)	<0.5 (Command to Action Delay)			
	Speed Smoothness	<5% (Speed Fluctuation)	<5% (Speed Fluctuation)	<5% (Speed Fluctuation)	<5% (Speed Fluctuation)
	Pushrod Control Accuracy (mm)	<0.05	<0.05	<0.05	<0.05
	<b>Reliability and Lifespan</b>	Housing Operating Temperature Rise (°C)	≤60	≤60	≤60
Noise (dB)		≤65 (Directly above at 1m)			
Operating Temperature Range (°C)		-10~50	-10~50	-10~50	-10~50
Storage Temperature Range (°C)		-20~70	-20~70	-20~70	-20~70
ESD		Contact ±4kV, Air ±8kV			
IP Rating		IP54	IP54	IP54	IP54
Strength		Single pushrod motor must withstand an axial force of 1600N under compression limit condition without damage, and operate normally after unloading	Single pushrod motor must withstand an axial force of 1600N under compression limit condition without damage, and operate normally after unloading	Single pushrod motor must withstand an axial force of 1600N under compression limit condition without damage, and operate normally after unloading	Single pushrod motor must withstand an axial force of 1600N under compression limit condition without damage, and operate normally after unloading
Service Life (h)		>6200	>6200	>6200	>6200
Reliability		10g acceleration, 3100h without damage, 2.5 million cycles	10g acceleration, 3100h without damage, 2.5 million cycles	10g acceleration, 3100h without damage, 2.5 million cycles	10g acceleration, 3100h without damage, 2.5 million cycles