ERC2-RA7C

Controller-Integrated, Rod Type, Actuator Width 68mm, Pulse Motor, Straight Type
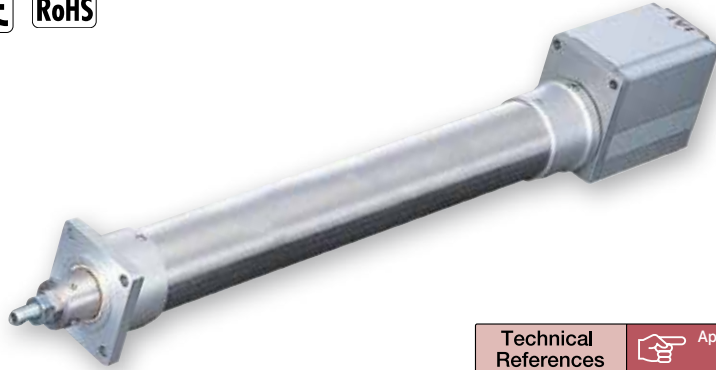
Model Specification Items

ERC2	—	RA7C	—	I	—	PM	—	☐	—	☐	—	☐	—	☐	—	☐
Series		Type		Encoder type		Motor type		Lead		Stroke		I/O type		Cable length		Options

I: Incremental PM: Pulse motor

Lead	Stroke	I/O type	Cable length	Options
16: 16mm	50: 50mm	NP : PIO (NPN) type	N : None P : 1m	B : Brake
8: 8mm	≀	PN : PIO (PNP) type	S : 3m M : 5m	FT : Foot bracket
4: 4mm	300: 300mm	SE: SIO type	X☐☐: Custom length	NM : Non-motor end
	(50mm pitch increments)		W☐☐: Double-ended cable	
			R☐☐: Robot cable	
			RW☐☐:Double-ended Robot cable	

* See page Pre-47 for details on the model descriptions.

CE RoHS

Technical References → Appendix **P.5**

POINT Notes on Selection
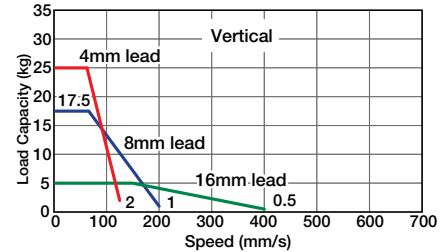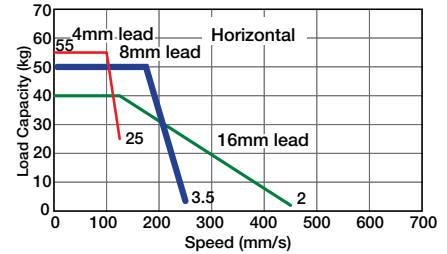
(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
(2) Since the ERC2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.
(3) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 4mm-lead model, or when used vertically). This is the upper limit of the acceleration.
(4) The value for the horizontal load capacity is with an external guide.
(5) See page A-71 for details on push motion.

■ Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the ERC2 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.

■ Actuator Specifications

■ Leads and Payloads

(Note 1) Please note that the maximum load capacity decreases as the speed increases.

Model number	Lead (mm)	Maximum payload (Note 1) Horizontal (kg)	Maximum payload (Note 1) Vertical (kg)	Maximum push force (N)	Stroke (mm)
ERC2-RA7C-I-PM-16-①-②-③-④	16	~40	~5	220	50 to 300 (every 50mm)
ERC2-RA7C-I-PM-8-①-②-③-④	8	~50	~17.5	441	
ERC2-RA7C-I-PM-4-①-②-③-④	4	~55	~25	873	

Code explanation ① Stroke ② I/O type ③ Cable length ④ Options *See page A-71 for details on push motion.

■ Stroke and Maximum Speed

Stroke Lead	50~300 (every 50mm)
16	450 <400>
8	250 <200>
4	125

* The values enclosed in < > apply to vertical settings.   (Unit: mm/s)

①Stroke

①Stroke (mm)	Standard price
50	—
100	—
150	—
200	—
250	—
300	—

③Cable Length

Type	Cable symbol	Standard price
Standard type	P (1m)	—
	S (3m)	—
	M (5m)	—
Special length	X06 (6m) ~ X10 (3m)	—
Double ended	W01 (1m) ~ W03 (5m)	—
	W04 (4m) ~ W05 (10m)	—
	W06 (6m) ~ W10 (10m)	—
Robot cable	R01 (1m) ~ R03 (3m)	—
	R04 (4m) ~ R05 (5m)	—
	R06 (6m) ~ R10 (10m)	—
Double ended Robot cable	RW01 (1m) ~ RW03 (3m)	—
	RW04 (4m) ~ RW05 (5m)	—
	RW06 (6m) ~ RW10 (10m)	—

The values in < > apply to the SE type.
* See page 606 for cables for maintenance.

④Options

Name	Option code	Page	Standard Price
Brake	B	→ A-42	—
Foot bracket	FT	→ A-47	—
Non-motor end specification	NM	→ A-52	—

■ Actuator Specifications

Item	Description
Drive method	Ball screw, ø12mm, rolled C10
Positioning repeatability	±0.02mm
Lost motion	0.1mm or less
Rod diameter	ø30mm special SUS type
Rod non-rotation precision	±1.5 deg
Ambient operating temperature/humidity	0 to 40°C, 85% RH max. (Non-condensing)

Dimensional Drawings

For Special Orders ☞ Appendix P.15

2D CAD   **3D CAD**

Note:
Do not apply any external force on the rod from any direction other than the direction of the rod's motion. If a force is exerted on the rod in a perpendicular or rotational direction, the detent may become damaged.

Home
ME*2
Stroke
B
L
(300)

Cable joint connector*1
*1 Connect the power and I/O cables. See page 606 for details on cables
*2 When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end

4-ø6.6
17 (width across flats)
89.6
64
50
32
1
7
50
64
68

(Note) The actual orientation of the bolt may differ by product.

M10×1.5   M10×1.5 nuts (3 types)
ø45h7
Rod diameter ø30
9   2   8.5
21   40
61
C
A
118.5
Secure at least 100

Teaching port
51.5
20
20

PIO Type   SIO Type

* The SIO type does not have a teaching port.

Brake Specifications Diagram

* Compared to the standard model, the brake-equipped model is longer by 49mm and heavier by 0.5kg.

49   118.5
Brake unit

■Dimensions and Mass by Stroke

Stroke	50	100	150	200	250	300
L	312.5	362.5	412.5	462.5	512.5	562.5
A	194	244	294	344	394	444
C	106	156	206	256	306	356
Weight (kg)	2.7	2.9	3.0	3.2	3.3	3.5

I/O type (Controller built into the Actuator)

■②I/O type

With the ERC2 series, one of the following three types of built-in controllers can be selected depending on the external input/output (I/O) type. Select the type that meets your purpose.

Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power supply capacity	Standard price	Reference page
PIO Type (NPN Specification)		ERC2-RA7C-I-PM-□-□-NP-□-□	Simple control type with up to 16-point positioning	16				
PIO Type (PNP Specification)		ERC2-RA7C-I-PM-□-□-PN-□-□	Supports the PNP I/O commonly used overseas.	16	DC24V	2A max.	—	→ P597
SIO Type		ERC2-RA7C-I-PM-□-□-SE-□-□	Field Network Connection Serial (Gateway unit used)	64				

IAI

Slider Type
Mini
Standard
Controllers Integrated
Rod Type
Mini
Standard
Controllers Integrated
Table/ Arm/ Flat Type
Mini
Standard
Gripper/ Rotary Type
Linear Servo Type
Clean-room Type
Splash-Proof Type
Pulse Motor
Servo Motor (24V)
Servo Motor (200V)
Linear Servo Motor