

# ERC2-RA7C

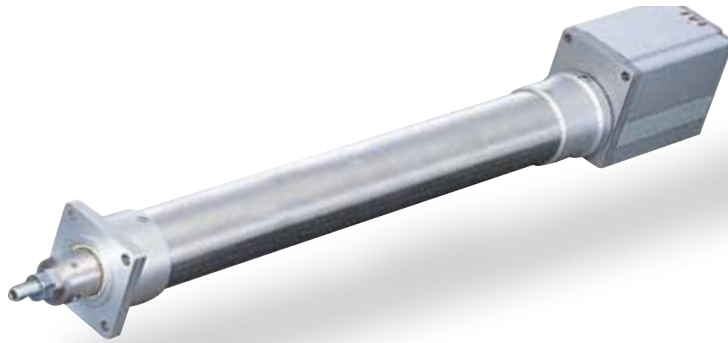
Controller-Integrated Rod Type 68mm Width Pulse Motor Straight Type

**Configuration:** **ERC2** — **RA7C** — **I** — **PM** —  —  —  —  —

Series — Type — Encoder — Motor — Lead — Stroke — I/O Type — Cable Length — Option

I: Incremental    PM: Pulse motor    16 : 16mm    50: 50mm    NP : PIO (NPN) type    N : None P : 1m    B : Brake  
 8 : 8mm    300: 300mm (50mm pitch increments)    PN : PIO (PNP) type    S : 3m M : 5m    FT : Foot bracket  
 4 : 4mm    SE : SIO type    X   : Custom    W   : Double-ended cable    R   : Robot cable    NM: Reversed-home  
 RW   : Double-ended Robot cable

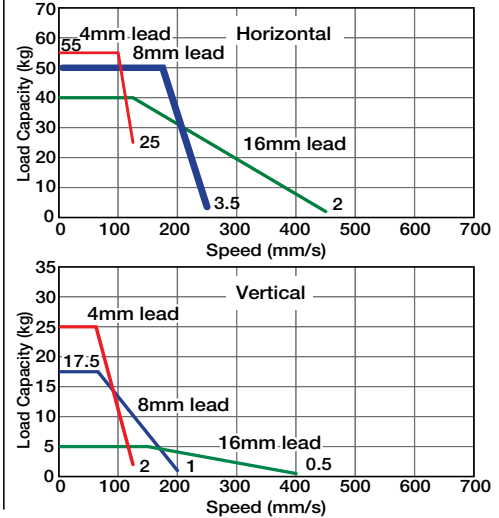
\* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5

- POINT** Notes on Selection
- 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.
  - 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.
  - 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.
  - The value for the horizontal load capacity is with an external guide.

**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					
Lead and Load Capacity (Note 1) Please note that the maximum load capacity decreases as the speed increases.					
Model	Lead (mm)	Max. Load Capacity (Note 1)		Maximum Push Force (N)(Note 2)	Stroke (mm)
		Horizontal (kg)	Vertical (kg)		
ERC2-RA7C-I-PM-16-①-②-③-④	16	~ 40	~ 5	220	50~300 (50mm increments)
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	

Legend ① Stroke ② I/O Type ③ Cable length ④ Options (Note 2) See page A-64 for the pushing force graphs. \*The values enclosed in < > apply for vertical usage. (Unit: mm/s)

**① Stroke List**

Stroke (mm)	Standard Price
50	-
100	-
150	-
200	-
250	-
300	-

**③ Cable List**

Type	Cable Symbol	Standard Price
Standard	P (1m)	-
	S (3m)	-
	M (5m)	-
Special Lengths	X06 (6m) ~ X10 (10m)	-
Double-Ended	W01 (1m) ~ W03 (3m)	-
	W04 (4m) ~ W05 (5m)	-
	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 A-39 for cables for maintenance.

**④ Option List**

Name	Option Code	See Page	Standard Price
Brake	B	→ A-25	-
Foot bracket	FT	→ A-29	-
Reversed-home	NM	→ A-33	-

**Actuator Specifications**

Item	Description
Drive System	Ball screw ø12mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Rod Diameter	ø30mm special SUS type
Non-rotating accuracy of rod	±1.5 deg
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

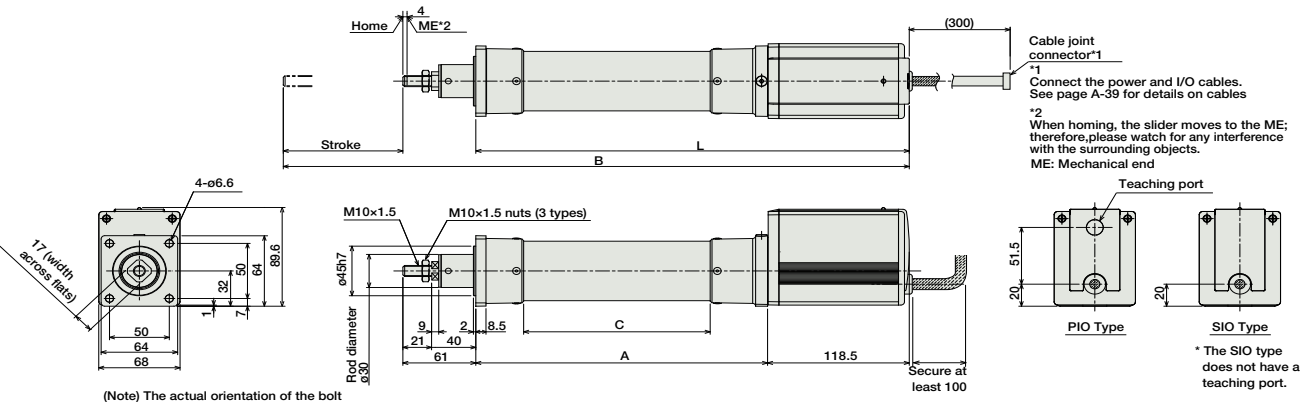
Dimensions

CAD drawings can be downloaded from IAI website. [www.intelligentactuator.com](http://www.intelligentactuator.com)

For Special Orders P. A-9

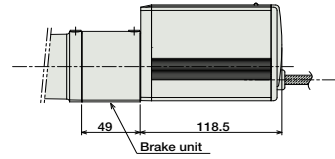


**Note:**  
Do not apply any external force on the rod from any direction other than the direction of the rod's motion. If a force is exerted on the rod in a perpendicular or rotational direction, the detent may become damaged.



**Brake Specifications Diagram**

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



**■ Dimensions/Weight 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
B	423.5	523.5	623.5	723.5	823.5	923.5
C	106	156	206	256	306	356
Weight (kg)	2.7	2.9	3.0	3.2	3.3	3.5

**I/O Type (Built-In Controller)**

② I/O Type  
The integrated controller in the ERC2 series can be selected from the following 3 types based on the type of external input and output (I/O). Select the controller according to your applications.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	Standard Price	See Page
PIO Type (NPN)		ERC2-RA7C-I-PM-□-□-NP-□-□	Easy to control, capable of positioning up to 16 points	16				
PIO Type (PNP)		ERC2-RA7C-I-PM-□-□-PN-□-□	Supports the PNP I/O, commonly used overseas.	16	DC24V	2A max.	-	→ P515
SIO Type		ERC2-RA7C-I-PM-□-□-SE-□-□	For connecting to a field network (gateway unit used)	64				

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm/Flat Type
- Mini
- Standard
- Controllers Integrated
- Gripper/Rotary Type
- Linear Servo Type
- Cleanroom Type
- Splash Proof
- Controllers
- PMEC/AMEC
- PSEP/ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (200V)
- Linear Servo Motor