

ERC3-RA4C

● Rod type

● Actuator Width 45mm

Model Specification Items

ERC3-RA4C-I-42P

Series

Type

Encoder type

Motor type

Lead

Stroke

I/O type

Cable length

Controller type

Option

I: Incremental specification

42P: Pulse motor, size 42□

20: 20mm
12: 12mm
6: 6mm
3: 3mm

50: 50mm
300: 300mm
(Can be set in 50-mm increments)

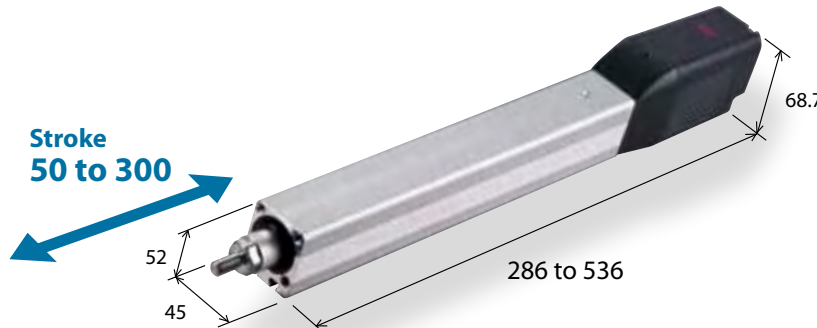
NP: PIO (NPN) type
PN: PIO (PNP) type
SE: SIO type
PLN: Pulse-train (NPN) type
PLP: Pulse-train (PNP) type

N: None P: 1m
S: 3m M: 5m
X□□: Specified length

CN: CON type
MC: MEC type

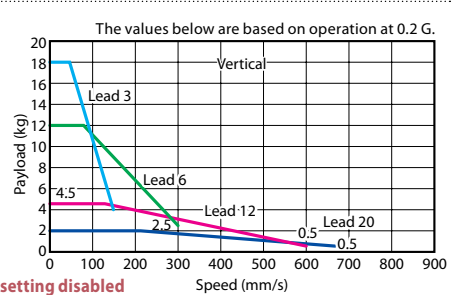
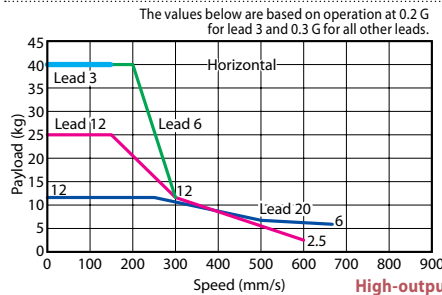
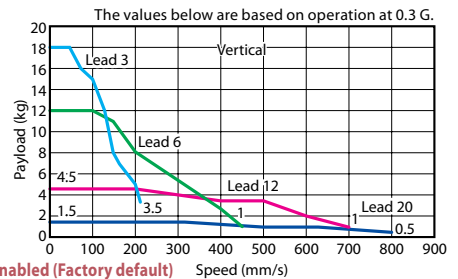
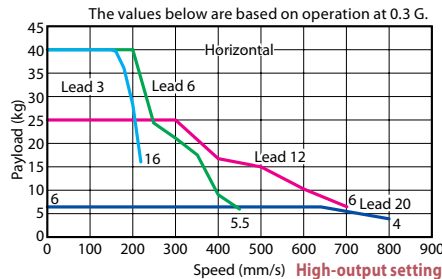
B : Brake
NM : Non-motor side specification
ABU: Simple absolute specification
FL : Flange
FT : Foot bracket

*Refer to P. 14 for the description of items constituting the model number.



Correlation diagrams of Speed and Payload

With the ERC3 series, due to the characteristics of the pulse motor, payload decreases as the speed increases. Use the chart below to confirm that the desired speed and payload requirements are met.



POINT

Notes on selection

If the high-output setting is enabled (factory default), the duty must be limited. (Refer to P. 16.) If the high-output setting is disabled, the payload and maximum speed become lower, but the actuator can be used at a duty of 100%. Refer to the operation manual for information on how to change the high-output setting. Refer to P. 26 for the payload at each speed/acceleration when the high-output setting is enabled. For other cautionary items, refer to "Explanations of/Cautionary Notes on Items Specified in Catalog (P. 15)."

Actuator Specifications (High-output Setting Enabled)

Leads and Payloads

(Note 1) Take caution that the maximum payload decreases as the speed increases.

Model number	Lead (mm)	Maximum payload (Note 1)		Maximum push force (N)	Stroke (mm)
		Horizontal (kg)	Vertical (kg)		
ERC3-RA4C-I-42P-20-①-②-③-④	20	6	1.5	56	50~300 (every 50 mm)
ERC3-RA4C-I-42P-12-①-②-③-④	12	25	4.5	93	
ERC3-RA4C-I-42P-6-①-②-③-④	6	40	12	185	
ERC3-RA4C-I-42P-3-①-②-③-④	3	40	18	370	

Legend ① Stroke ② I/O type ③ Cable length ④ Option

Stroke and Maximum Speed

Stroke Lead	50~200 (every 50mm)	250 (mm)	300 (mm)
20	800		
12	700	695	485
6	450	345	240
3	225	170	120

(Unit: mm/s)

① Stroke

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

③ Cable length

Type	Cable symbol	Standard price	
		PIO type	SIO type
Standard type (Robot cable)	P (1m)	—	—
	S (3m)	—	—
	M (5m)	—	—
Special length	X06(6m)~X10(10m)	—	—

*Refer to P. 36 for maintenance cables.

④ Options

Name	Option code	See page	Standard price
Brake	B	→P15	—
Non-motor side specification	NM	→P15	—
Simple absolute specification	ABU	→P15	—(*)
Flange	FL	→P15	—
Foot bracket	FT	→P15	—

(*) If the simple absolute specification is selected, the separately sold PIO converter of simple absolute specification (with battery) is required.

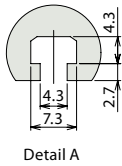
Dimensional Drawings

CAD drawings can be downloaded from the website.

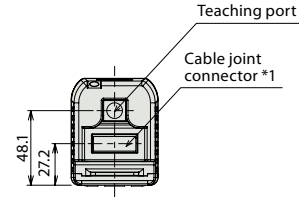
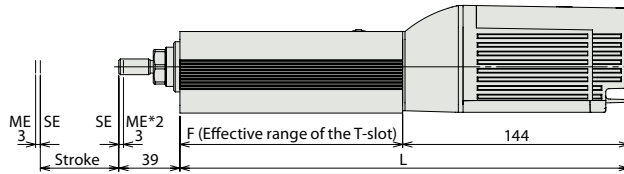
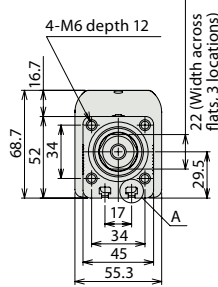
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2D
CAD

* If the non-motor side (NM) specification is selected, the dimension on the motor side (the distance to the home from ME) and that on the front side are flipped.



Detail A



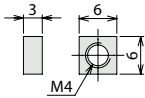
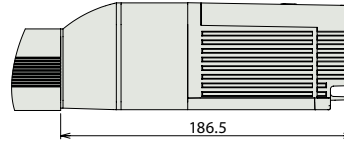
*1 Connect the power & I/O cable. Refer to P.36 for details on this cable.
SE: Stroke End
ME: Mechanical End

*2 The slider moves to the ME during home return, so pay attention to possible contact with surrounding structures.

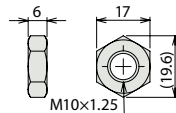
*3 The orientation of the bolt will vary depending on the product.

External view of the brake specification

*The overall length of the brake specification is 42.5 mm longer than the standard specification and its mass is 0.4 kg heavier.



Supplied square nut for mounting via the T-slot (4 pcs are supplied)



Supplied rod end nut

Actuator specification

Item	Description
Drive system	Ball screw ø10 mm, rolled C10
Positioning repeatability (*1)	± 0.02 mm [± 0.03 mm]
Lost motion	0.1 mm or less [0.2 mm or less]
Rod diameter	ø25 mm
Rod non-rotation preciseness	±1.5 degrees
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

(*1)The specification in [] applies when the lead is 20 mm.

Dimensions and Mass by Stroke

Stroke	50	100	150	200	250	300
L	286	336	386	436	486	536
F	142	192	242	292	342	392
Mass (kg)	1.4	1.7	2.0	2.3	2.6	2.9

Controllers (Built into the Actuator)

I/O type

With the ERC3 series, one of the following five 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)		ERC3-RA4C-I-42P-□-□-NP-□-□	Simple control type accommodating up to 16 positioning points	16	DC24V	High-output setting enabled: 3.5A rated 4.2A max. High-output setting disabled: 2A	—	→P27
PIO type (PNP specification)		ERC3-RA4C-I-42P-□-□-PN-□-□	PNP I/O type	16				
SIO type		ERC3-RA4C-I-42P-□-□-SE-□-□	High-function type accommodating up to 512 positioning points (PIO converter is used)	512				
Pulse-train type (NPN specification)		ERC3-RA4C-I-42P-□-□-PLN-□-□	Pulse-train input type supporting the NPN specification	—				
Pulse-train type (PNP specification)		ERC3-RA4C-I-42P-□-□-PLP-□-□	Pulse-train input type supporting the PNP specification	—				