ERC3-SA5C

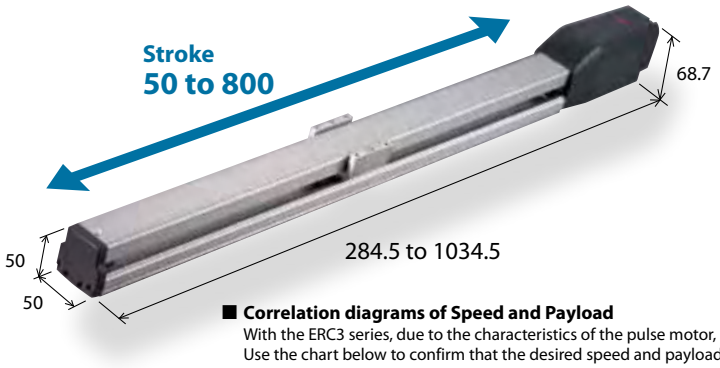
● Slider type ● Actuator Width 50mm

■ Model Specification Items

ERC3 — SA5C — 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 ~ 800:800mm (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: 3 m M: 5m X☐☐: Specified length	CN: CON type MC: MEC type	B : Brake NM : Non-motor side specification ABU: Simple absolute specification

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



Unit: mm

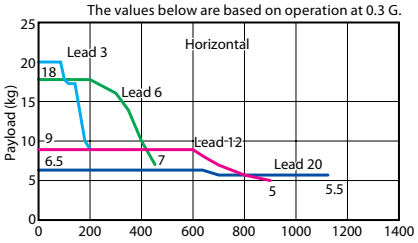
POINT Notes on selection

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)."

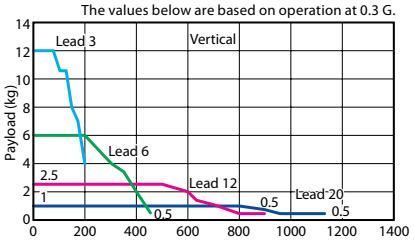
■ Correlation diagrams of Speed and Payload

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.

The values below are based on operation at 0.3 G.

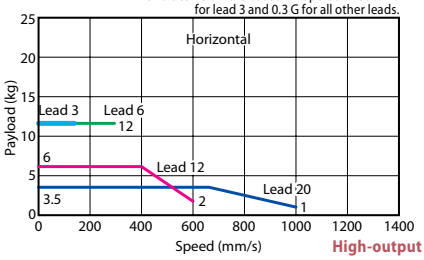


The values below are based on operation at 0.3 G.

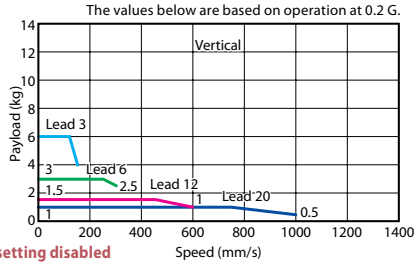


High-output setting enabled (Factory default)

The values below are based on operation at 0.2 G for lead 3 and 0.3 G for all other leads.



The values below are based on operation at 0.2 G.



High-output setting disabled

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) Horizontal (kg)	Maximum payload (Note 1) Vertical (kg)	Stroke (mm)
ERC3-SA5C-I-42P-20-①-②-③-④	20	6.5	1	50~800 (every 50 mm)
ERC3-SA5C-I-42P-12-①-②-③-④	12	9	2.5	
ERC3-SA5C-I-42P-6-①-②-③-④	6	18	6	
ERC3-SA5C-I-42P-3-①-②-③-④	3	20	12	

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

■ Stroke and Maximum Speed

Lead \ Stroke	50~450 (every 50mm)	500 (mm)	550 (mm)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)
20	1120		1115	935	795	680	585	510
12	900	805	665	560	475	405	350	300
6	450	400	330	280	235	200	175	150
3	225	200	165	140	115	100	85	75

(Unit: mm/s)

①Stroke

Stroke (mm)	Standard price	Stroke (mm)	Standard price
50	—	450	—
100	—	500	—
150	—	550	—
200	—	600	—
250	—	650	—
300	—	700	—
350	—	750	—
400	—	800	—

③Cable length

Type	Cable symbol	Standard price PIO type	Standard price 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.

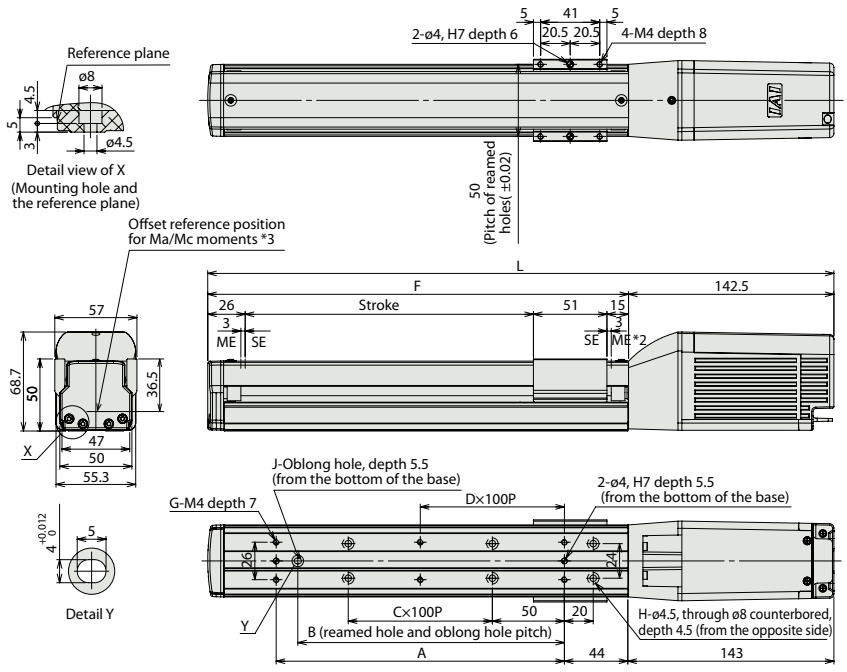
④Options

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

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

Dimensional Drawings

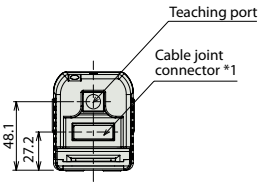
* If the non-motor side (NM) specification is selected, the dimension on the motor side (the distance to the home from ME) and that on the front side are flipped.



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

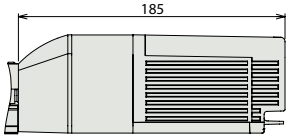
*2 The slider moves to the ME during home return, so pay attention to possible contact with surrounding structures.

*3 Reference position is used when calculating the Ma and Mc moments.



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.

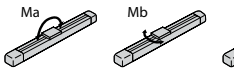


Actuator specificaton

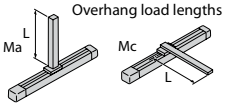
Item	Description
Drive system	Ball screw ø10 mm, rolled C10
Positioning repeatability (*1)	± 0.02 mm [± 0.03 mm]
Lost motion	0.1 mm or less
Static allowable load moment	Ma: 29.4 N•m, Mb: 42.0 N•m, Mc: 60.5 N•m
Dynamic allowable load moment (*2)	Ma: 7.1 N•m, Mb: 10.2 N•m, Mc: 14.7 N•m
Overhang load lengths	150 mm or less in Ma directions, 150 mm or less in Mb and Mc directions
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.
(*2) Based on 5,000 km of traveling life

Allowable load moment directions



Overhang load lengths



■Dimensions and Mass by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	284.5	334.5	384.5	434.5	484.5	534.5	584.5	634.5	684.5	734.5	784.5	834.5	884.5	934.5	984.5	1034.5
A	73	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800
B	0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785
C	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7
D	0	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7
F	142	192	242	292	342	392	442	492	542	592	642	692	742	792	842	892
G	4	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18
H	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18
J	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mass (kg)	1.4	1.5	1.6	1.7	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.7	2.8	2.9	3.0	3.1

Controllers (Built into the Actuator)

②I/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-SA5C-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-SA5C-I-42P-□-□-PN-□-□	PNP I/O type	16				
SIO type		ERC3-SA5C-I-42P-□-□-SE-□-□	High-function type accommodating up to 512 positioning points (PIO converter is used)	512				
Pulse-train type (NPN specification)		ERC3-SA5C-I-42P-□-□-PLN-□-□	Pulse-train input type supporting the NPN specification	–				
Pulse-train type (PNP specification)		ERC3-SA5C-I-42P-□-□-PLP-□-□	Pulse-train input type supporting the PNP specification	–				