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

ERC3D-SA7C

Controller-Integrated, Simple-dustproof Slider Type, Actuator Width 73mm, Pulse Motor, Straight Type

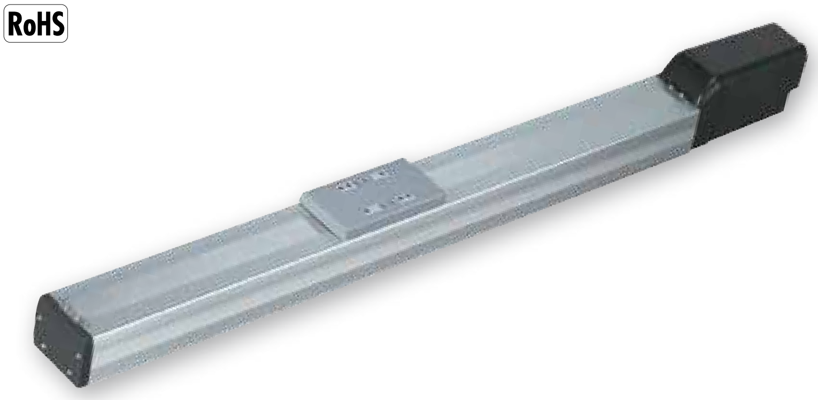
Model Specification Items

ERC3D-SA7C	I	56P						
Series	Type	Encoder type	Motor type	Lead	Stroke	I/O type	Cable length	Controller type	Options

Encoder type	Motor type	Lead	Stroke	I/O type	Cable length	Controller type	Options
I: Incremental	42□Pulse motor	24:24mm 16:16mm 8: 8mm 4: 4mm	50:50mm ~ 800:800mm (50mm pitch 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□□: Custom length	CN: CON type MC: MEC type	B : Brake NM : Non-motor end specification ABU: Simple absolute specification

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

RoHS



Technical References Appendix P.5

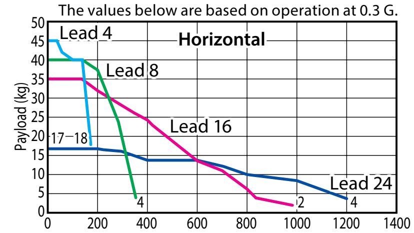
POINT Notes on selection

(1) If the high-output setting is enabled (factory default), the duty must be limited. (Refer to page A-95.) 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.
(2) Refer to page A-99 for the payload at each speed/acceleration when the high-output setting is enabled.

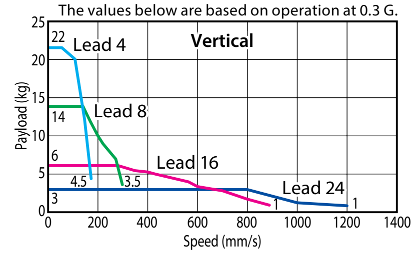
■ Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the ERC3 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.

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)

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)	Max. Load Capacity (Note 1) Horizontal (kg)	Vertical (kg)	Stroke (mm)
ERC3D-SA7C-I-56P-24-①-②-③-④	24	17	3	50~800 (every 50mm)
ERC3D-SA7C-I-56P-16-①-②-③-④	16	35	6	
ERC3D-SA7C-I-56P-8-①-②-③-④	8	40	14	
ERC3D-SA7C-I-56P-4-①-②-③-④	4	45	22	

■ Stroke and Maximum Speed

(Unit: mm/s)

Lead \ Stroke	50~550 (every 50mm)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)
24	1200		1155	1010	890	790
16	980 ‹840›	865 ‹840›	750	655	580	515
8	490	430	375	325	290	255
4	210		185	160	145	125

Code explanation ①Stroke ②I/O type ③Cable length ④Options

*See page A-71 for details on push motion.

* The values enclosed in ‹ › apply to vertical settings.
* The values of lead 8 and lead 4 apply when acceleration is at 0.1G.

①Stroke

①Stroke (mm)	Standard price	①Stroke (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
Standard (Robot Cables)	**P** (1m)	—
	S (3m)	—
	M (5m)	—
Special length	**X06** (6m) ~ **X10** (10m)	—

* See page 586 for cables for maintenance.

④Options

Name	Option code	See page	Standard price
Brake	**B**	→ A-42	—
Non-motor end specification	**NM**	→ A-52	—
Simple absolute specification	**ABU**	→ A-42	— (*)

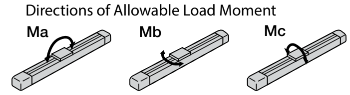
(*1) If the simple absolute specification is selected, SE (SIO type) I/O type and the separately sold PIO converter with simple absolute specification (with battery) are required.

Actuator Specifications

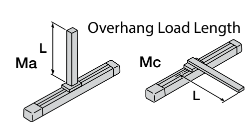
Item	Description
Drive System	Ball screw, ø12mm, rolled C10
Positioning repeatability (*1)	±0.02mm [±0.03mm]
Lost Motion	0.1mm or less
Allowable static moment	Ma: 50.4 N·m, Mb: 71.9 N·m, Mc: 138.0 N·m
Allowable dynamic moment (*2)	Ma: 13.9 N·m, Mb: 19.9 N·m, Mc: 38.3 N·m
Allowable overhang	230mm or less in Ma, 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 24mm.
(*2) Based on 5,000km of traveling life.

Directions of Allowable Load Moment



Overhang Load Length

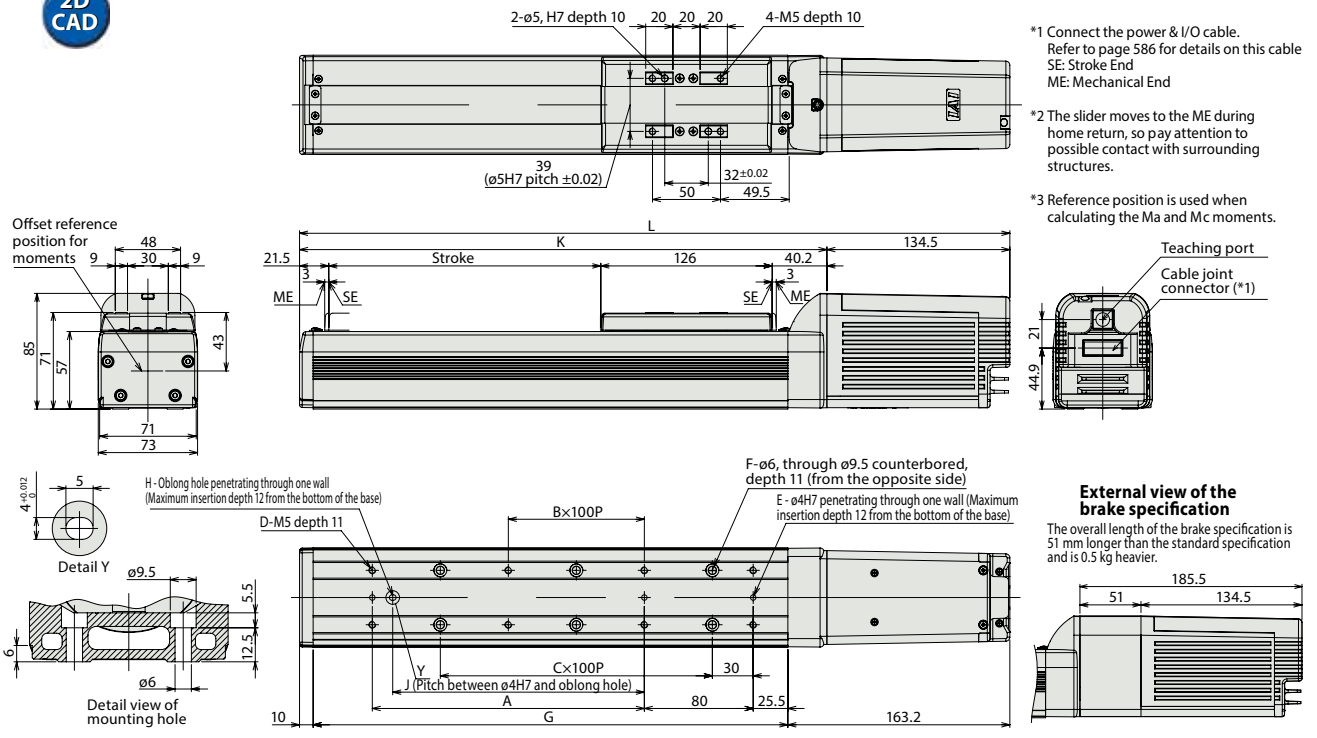


Dimensional Drawings

CAD drawings can be downloaded from the website. www.intelligentactuator.com

For Special Orders Appendix P.15

2D CAD



*1 Connect the power & I/O cable. Refer to page 586 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 51 mm longer than the standard specification and is 0.5 kg heavier.

■ Dimensions and Mass by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	372.2	422.2	472.2	522.2	572.2	622.2	672.2	722.2	772.2	822.2	872.2	922.2	972.2	1022.2	1072.2	1122.2
A	0	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800
B	0	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7
C	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
D	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20
E	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
F	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18
G	199	249	299	349	399	449	499	549	599	649	699	749	799	849	899	949
H	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
J	0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785
K	237.7	287.7	337.7	387.7	437.7	487.7	537.7	587.7	637.7	687.7	737.7	787.7	837.7	887.7	937.7	987.7
Weight (kg)	3.6	3.9	4.1	4.4	4.7	4.9	5.2	5.5	5.7	6.0	6.3	6.5	6.8	7.1	7.3	7.6

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)		ERC3D-SA7C-I-56P-☐-☐-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: 2.2A	—	→ P577
PIO type (PNP specification)		ERC3D-SA7C-I-56P-☐-☐-PN-☐-☐	I/O type supporting inputs/outputs of the PNP specification often used overseas	16				
SIO type		ERC3D-SA7C-I-56P-☐-☐-SE-☐-☐	High-function type accommodating up to 512 positioning points (PIO converter is used)	512				
Pulse-train type (NPN specification)		ERC3D-SA7C-I-56P-☐-☐-PLN-☐-☐	Pulse-train input type supporting the NPN specification	—				
Pulse-train type (PNP specification)		ERC3D-SA7C-I-56P-☐-☐-PLP-☐-☐	Pulse-train input type supporting the PNP specification	—				