RCA-SA4D

ROBO Cylinder, Slider Type, Actuator Width 40mm, 24V Servo Motor, Motor Build-in (Direct Coupled)

Model Specification Items

RCA — **SA4D** — □ — **20** — □ — □ — □ — □ — □ — □

RCA	SA4D	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
Series	Type	I: Incremental A: Absolute * Absolute encoder models can only use ASEL. When the actuator is used with the simple absolute encoder, the model is considered an incremental model.	20: 20W Servo motor	10: 10mm 5: 5mm 2.5: 2.5mm	50: 50mm 〜 300: 300mm (50mm pitch increments)	A1: ACON ASEL A3: AMEC ASEP MSEP	N: None P: 1m S: 3m M: 5m X□□: Custom length R□□: Robot cable	See Options below.

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

CE RoHS

Power-saving

Technical References → Appendix P.5

POINT — Notes on selection

(1) When the stroke increases, the maximum 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) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 2.5mm-lead model.) These values are the upper limits for the acceleration.
(3) See page A-71 for details on push motion.

Actuator Specifications

■ Leads and Payloads

Model number	Motor output (W)	Lead (mm)	Max. Load Capacity Horizontal (kg)	Max. Load Capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCA2-SA4D-①-20-10-②-③-④-⑤	20	10	4	1	19.6	50~300 (every 50mm)
RCA2-SA4D-①-20-5-②-③-④-⑤		5	6	2.5	39.2	
RCA2-SA4D-①-20-2.5-②-③-④-⑤		2.5	8	4.5	78.4	

■ Stroke and Maximum Speed

Lead \ Stroke	50~300 (every 50mm)
10	665
5	330
2.5	165

(Unit: mm/s)

Code explanation ① Encoder ② Stroke ③ Applicable Controller ④ Cable length ⑤ Options *See page A-71 for details on push motion.

①Encoder type/②Stroke

②Stroke (mm)	Standard price ①Encoder Type Incremental I	Standard price ①Encoder Type Absolute A
50	—	—
100	—	—
150	—	—
200	—	—
250	—	—
300	—	—

④Cable Length

Type	Cable symbol	Standard Price
Standard	**P** (1m)	—
	S (3m)	—
	M (5m)	—
Special length	**X06** (6m) ~ **X10** (10m)	—
	X11 (11m) ~ **X15** (15m)	—
	X16 (16m) ~ **X20** (20m)	—
Robot Cable	**R01** (1m) ~ **R03** (3m)	—
	R04 (4m) ~ **R05** (5m)	—
	R06 (6m) ~ **R10** (10m)	—
	R11 (11m) ~ **R15** (15m)	—
	R16 (16m) ~ **R20** (20m)	—

* See page A-59 for cables for maintenance.

⑤Options

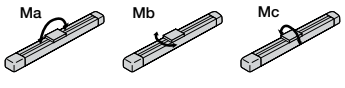
Name	Option code	See page	Standard price
Brake (cable exiting end)	**BE**	→ A-42	—
Brake (cable exiting left)	**BL**	→ A-42	—
Brake (cable exiting right)	**BR**	→ A-42	—
Foot bracket	**FT**	→ A-47	—
Power-saving	**LA**	→ A-52	—
Non-motor end specification	**NM**	→ A-52	—

Actuator Specifications

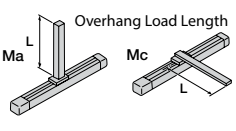
Item	Description
Drive System	Ball screw, ø8mm, rolled C10
Positioning repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum, white alumite treated
Allowable static moment	Ma: 6.9 N·m, Mb: 9.9 N·m, Mc: 17.0 N·m
Allowable dynamic moment (*)	Ma: 2.7 N·m, Mb: 3.9 N·m, Mc: 6.8 N·m
Allowable overhang	120mm or less in Ma, Mb and Mc directions
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

(*) Based on 5,000km of traveling life

Directions of Allowable Load Moment



Overhang Load Length



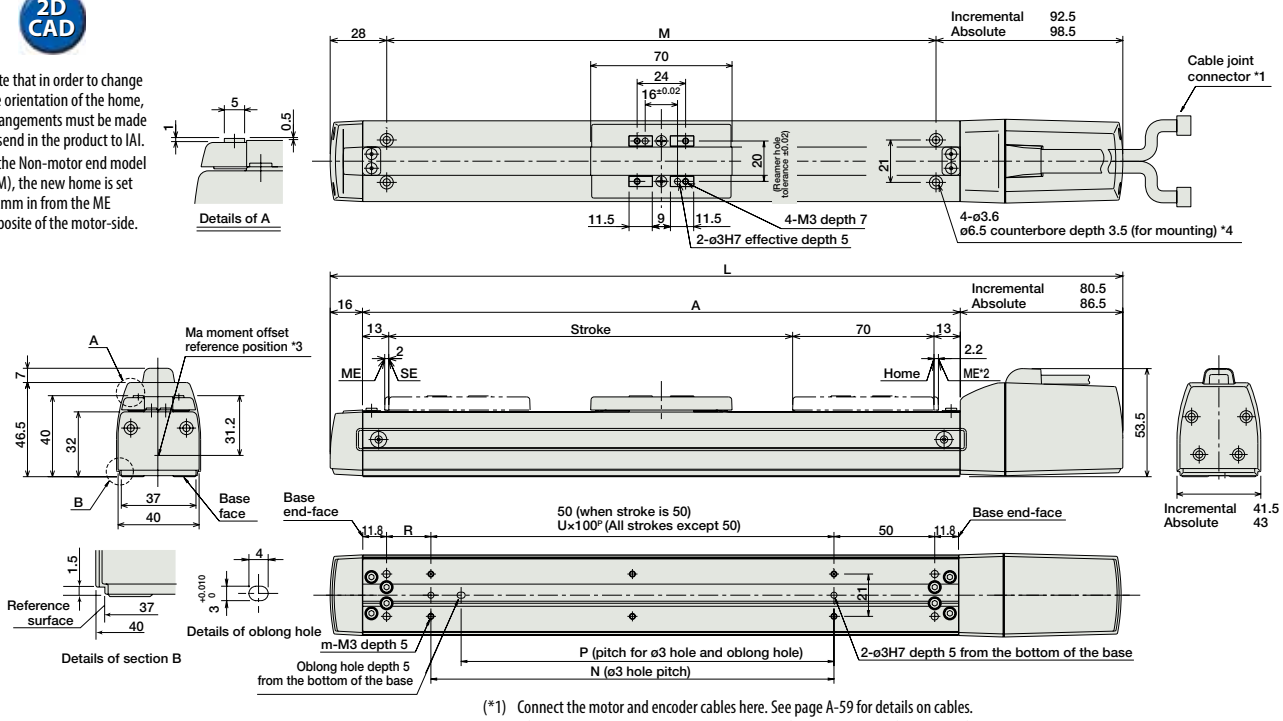
Dimensional Drawings

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

For Special Orders Appendix P.15

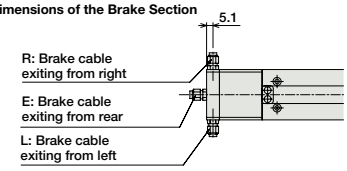
2D CAD

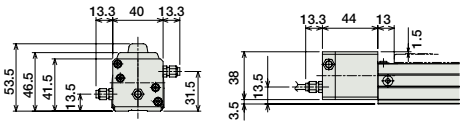
* Note that in order to change the orientation of the home, arrangements must be made to send in the product to IAI.
* In the Non-motor end model (NM), the new home is set 2.2mm in from the ME opposite of the motor-side.



(*1) Connect the motor and encoder cables here. See page A-59 for details on cables.
(*2) After homing, the slider moves to the ME, therefore, please watch for any interference with surrounding objects.
ME : Mechanical end SE : Stroke end
(*3) Reference position for calculating the Ma moment
(*4) If the actuator is secured using only the mounting holes provided on the top surface of the base, the base may twist to cause abnormal sliding of the slider, or may produce abnormal noise. Therefore, when using the mounting holes on the top surface of the base, keep the stroke at 200mm or less.

Dimensions of the Brake Section





* Adding a brake increases the actuator's overall length (L) by 28mm (41.3mm with the cable coming out its end), and is heavier by 0.2kg.

Dimensions and Mass by Stroke

Stroke		50	100	150	200	250	300
L	Incremental	242.5	292.5	342.5	392.5	442.5	492.5
	Absolute	248.5	298.5	348.5	398.5	448.5	498.5
A		146	196	246	296	346	396
M		122	172	222	272	322	372
N		50	100	100	200	200	300
P		35	85	85	185	185	285
R		22	22	72	22	72	22
U		—	1	1	2	2	3
m		4	4	4	6	6	8
Weight (kg)		0.6	0.7	0.8	0.9	1.0	1.1

③Applicable Controllers

RCA series actuators can be operated with the controllers indicated below. Select the type according to your intended application.

Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Reference page
Solenoid Valve Type		AMEC-C-20Ⅰ-Ⅲ-2-1	Easy-to-use controller, even for beginners	3 points	AC100V	2.4A rated	—	→ P537
		ASEP-C-20Ⅰ-Ⅲ-2-0	Simple controller operable with the same signal as a solenoid valve		DC24V	(Standard) 1.3A rated 4.4A max. (Power-saving) 1.3A rated 2.5A max.	—	→ P547
Solenoid valve multi-axis type PIO specification		MSEP-C-Ⅳ-~~-Ⅲ-2-0	Positioner type based on PIO control, allowing up to 8 axes to be connected				—	→ P563
Solenoid valve multi-axis type Network specification		MSEP-C-Ⅳ-~~-Ⓥ-0-0	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points				
Positioner type		ACON-C-20Ⅰ-Ⅲ-2-0	Positioning is possible for up to 512 points	512 points			—	→ P631
Safety-Compliant Positioner Type		ACON-CG-20Ⅰ-Ⅲ-2-0					—	
Pulse Train Input Type (Differential Line Driver)		ACON-PL-20Ⅰ-Ⅲ-2-0	Pulse train input type with differential line driver support	(—)			—	
Pulse Train Input Type (Open Collector)		ACON-PO-20Ⅰ-Ⅲ-2-0	Pulse train input type with open collector support				—	
Serial Communication Type		ACON-SE-20Ⅰ-N-0-0	Dedicated Serial Communication	64 points			—	
Program Control Type		ASEL-CS-1-20Ⅰ-Ⅲ-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points			—	→ P675

* This is for the single-axis ASEL.
* Ⅲ indicates I/O type (NP/PN).
* Ⅰ indicates encoder type (I: incremental, A: absolute)
* Ⅳ indicates number of axes (1 to 8).
* Enter the code "LA" in Ⅲ when the power-saving option is specified.
* Ⓥ indicates field network specification symbol.