

RCA-SA5D

ROBO Cylinder, Slider Type, Actuator Width 52mm, 24V Servo Motor, Motor Built-in (Direct-Coupled)

Model Specification Items	RCA — SA5D — <input type="checkbox"/> — 20 — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/>
Series — Type — Encoder type — Motor type — Lead — Stroke — Applicable controller — Cable length — Options	
I: Incremental A: Absolute <small>* Absolute encoder models can only use ASEL. When the actuator is used with the simple absolute encoder, the model is considered an incremental model.</small>	20: 20W Servo motor 12: 12mm 6: 6mm 3: 3mm 50: 50mm ? 500: 500mm (50mm pitch increments)
	A1: ACON ASEL A3: AMEC ASEP MSEP
	N: None P: 1m S: 3m M: 5m X <input type="checkbox"/> : Custom length R <input type="checkbox"/> : Robot cable
See Options below.	

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



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 3mm-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		Rated thrust (N)	Stroke (mm)
			Horizontal (kg)	Vertical (kg)		
RCA-SA5D-①-20-12-②-③-④-⑤	20	12	4	1	16.7	50~500 (every 50mm)
RCA-SA5D-①-20-6-②-③-④-⑤		6	8	2	33.3	
RCA-SA5D-①-20-3-②-③-④-⑤		3	12	4	78.4	

Stroke and Maximum Speed

Stroke Lead	50~450 (every 50mm)	500 (mm)
	12	800
6	400	380
3	200	190

Code explanation ① Encoder ② Stroke ③ Applicable Controller ④ Cable length ⑤ Options * See page A-71 for details on push motion. (Unit: mm/s)

① Encoder type/② Stroke

② Stroke (mm)	Standard price	
	① Encoder Type	
	Incremental	Absolute
50	—	—
100	—	—
150	—	—
200	—	—
250	—	—
300	—	—
350	—	—
400	—	—
450	—	—
500	—	—

④ Cable 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)	—
	R01 (1m) ~ R03 (3m)	—
Robot Cable	R04 (4m) ~ R05 (5m)	—
	R06 (6m) ~ R10 (10m)	—
	R11 (11m) ~ R15 (15m)	—
	R16 (16m) ~ R20 (20m)	—

* See page A-59 for cables for maintenance.

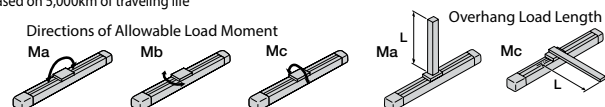
⑤ Options

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	—
Slider roller specification	SR	→ A-55	—

Actuator Specifications

Item	Description
Drive System	Ball screw, ϕ 10mm, rolled C10
Positioning repeatability	\pm 0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum, white alumite treated
Allowable static moment	Ma: 18.6 N·m, Mb: 26.6 N·m, Mc: 47.5 N·m
Allowable dynamic moment (*)	Ma: 4.9 N·m, Mb: 6.8 N·m, Mc: 11.7 N·m
Allowable overhang	150mm 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



Dimensional Drawings

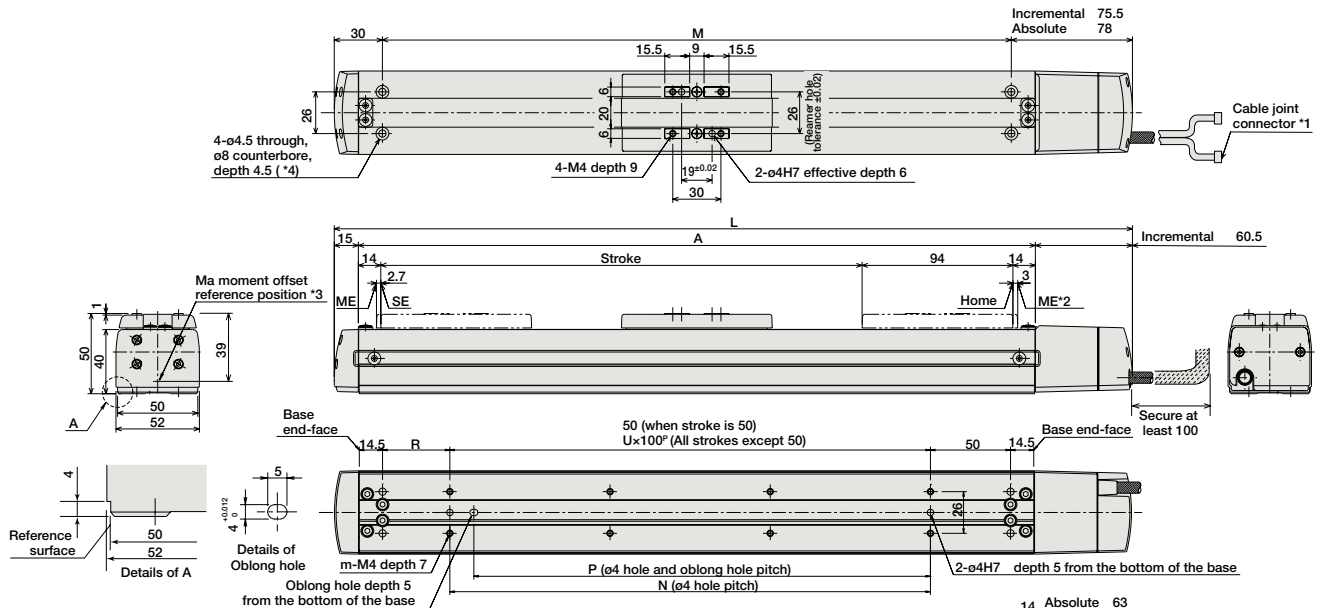
CAD drawings can be downloaded from the website. www.intelligentactuator.com

For Special Orders Appendix P.15

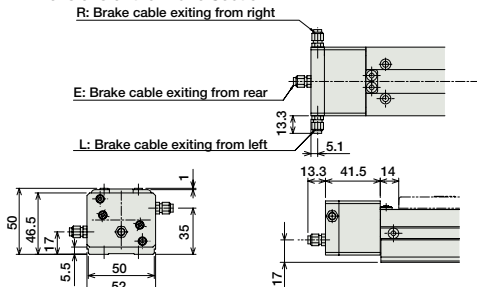


- (*1) Connect the motor and encoder cables here. See page A-59 for details on cables.
- (*2) After homing, the slider moves to the ME, therefore, please watch for any interference with surrounding objects. ME : Mechanical end SE : Stroke end

- (*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 300mm or less.



Dimensions of the Brake Section



* Adding a brake increases the actuator's overall length (L) by 26.5mm (39.8mm with the cable coming out its end), and is heavier by 0.3kg.

■ Dimensions and Mass by Stroke

Stroke	Stroke										
	50	100	150	200	250	300	350	400	450	500	
L	Incremental	247.5	297.5	347.5	397.5	447.5	497.5	547.5	597.5	647.5	697.5
	Absolute	250	300	350	400	450	500	550	600	650	700
A	172	222	272	322	372	422	472	522	572	622	
M	142	192	242	292	342	392	442	492	542	592	
N	50	100	100	200	200	300	300	400	400	500	
P	35	85	85	185	185	285	285	385	385	485	
R	42	42	92	42	92	42	22	42	92	42	
U	—	1	1	2	2	3	3	4	4	5	
m	4	4	4	6	6	8	8	10	10	12	
Weight (kg)	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	

③ Applicable 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-①-②-2-1	Easy-to-use controller, even for beginners	3 points	AC100V	2.4A rated	—	→ P537
		ASEP-C-20I-①-③-2-0	Simple controller operable with the same signal as a solenoid valve					→ P547
Solenoid valve multi-axis type PIO specification		MSEP-C-④-⑤-⑥-2-0	Positioner type based on PIO control, allowing up to 8 axes to be connected	256 points	DC24V	(Standard) 1.3A rated 4.4A max.	—	→ P563
Solenoid valve multi-axis type Network specification		MSEP-C-④-⑤-⑦-0-0	Field network-ready positioner type, allowing up to 8 axes to be connected					
Positioner type		ACON-C-20I-①-②-2-0	Positioning is possible for up to 512 points	512 points	DC24V	(Power-saving) 1.3A rated 2.5A max.	—	→ P631
Safety-Compliant Positioner Type		ACON-CG-20I-①-③-2-0						
Pulse Train Input Type (Differential Line Driver)		ACON-PL-20I-①-③-2-0	Pulse train input type with differential line driver support	(—)	DC24V	(Power-saving) 1.3A rated 2.5A max.	—	→ P631
Pulse Train Input Type (Open Collector)		ACON-PO-20I-①-③-2-0	Pulse train input type with open collector support					
Serial Communication Type		ACON-SE-20I-①-N-0-0	Dedicated Serial Communication	64 points	DC24V	(Power-saving) 1.3A rated 2.5A max.	—	→ P631
Program Control Type		ASEL-CS-1-20I-①-③-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points	DC24V	(Power-saving) 1.3A rated 2.5A max.	—	→ P675

* This is for the single-axis ASEL.
* ① indicates I/O type (NP/PN).

* ① indicates encoder type (I: incremental, A: absolute)
* ④ indicates number of axes (1 to 8).

* Enter the code "LA" in ① when the power-saving option is specified.
* ⑦ indicates field network specification symbol.

- Slider Type
- Mini
- Standard
- Controller 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