

# RCA-SA5C

ROBO Cylinder, Slider Type, Actuator Width 52mm, 24V Servo Motor, Coupled

<b>Model Specification Items</b>	<b>RCA</b> — <b>SA5C</b> — <input type="checkbox"/> — <b>20</b> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/>
<b>Series</b> — <b>Type</b> — <b>Encoder type</b> — <b>Motor type</b> — <b>Lead</b> — <b>Stroke</b> — <b>Applicable controller</b> — <b>Cable length</b> — <b>Options</b>	
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 20: 20mm 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.



**For High Acceleration/Deceleration** **Power-saving**  
(excluding the 3-mm lead model)



Technical References Appendix P.5



- 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.
- The load capacity is based on operating the standard and power-saving models at 0.3G (0.2G for 3mm-lead), and the high acceleration/deceleration model at 0.8G (excluding the 3mm-lead model). (Even when the acceleration/deceleration is dropped, the maximum load capacity values shown in the table below are the upper limits.)
- See page A-71 for details on push motion.

\*This product is equipped with a position adjusting screw at the A area shown above. (See dimensional drawing on the page to the right.)

### 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-SA5C-①-20-20-②-③-④-⑤	20	20	2	0.5	10.7	50~500 (every 50mm)
RCA-SA5C-①-20-12-②-③-④-⑤		12	4	1	16.7	
RCA-SA5C-①-20-6-②-③-④-⑤		6	8	2	33.3	
RCA-SA5C-①-20-3-②-③-④-⑤		3	12	4	65.7	

#### Stroke and Maximum Speed (Unit: mm/s)

Stroke Lead	50~450 (every 50mm)	500 (mm)
20	1300 <800>	1300 <800>
12	800	760
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.

\* The values enclosed in < > apply to vertical settings.

#### ① Encoder type/② Stroke

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

#### 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)	—
	R16 (16m) ~ R20 (20m)	—

\* See page A-59 for cables for maintenance.

#### ⑤ Options

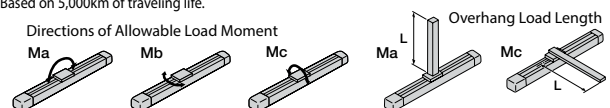
Name	Option code	See page	Standard price
Brake	B	→ A-42	—
Foot bracket	FT	→ A-47	—
For high acceleration/deceleration	HA	→ A-50	—
Home sensor	HS	→ A-50	—
Power-saving	LA	→ A-52	—
Non-motor end specification	NM	→ A-52	—
Slider roller specification	SR	→ A-55	—

\* The high-acceleration/deceleration option and the slider roller option cannot be used together.  
 \* The high-acceleration/deceleration option cannot be used on the 3mm-lead model.  
 \* The high-acceleration/deceleration option and the power saving option cannot be used together.

#### Actuator Specifications

Item	Description
Drive System	Ball screw, ø10mm, rolled C10
Positioning repeatability	±0.02mm [±0.03mm]
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)

(\*) The specification in [ ] applies when the lead is 20mm.  
 (\*2) Based on 5,000km of traveling life.



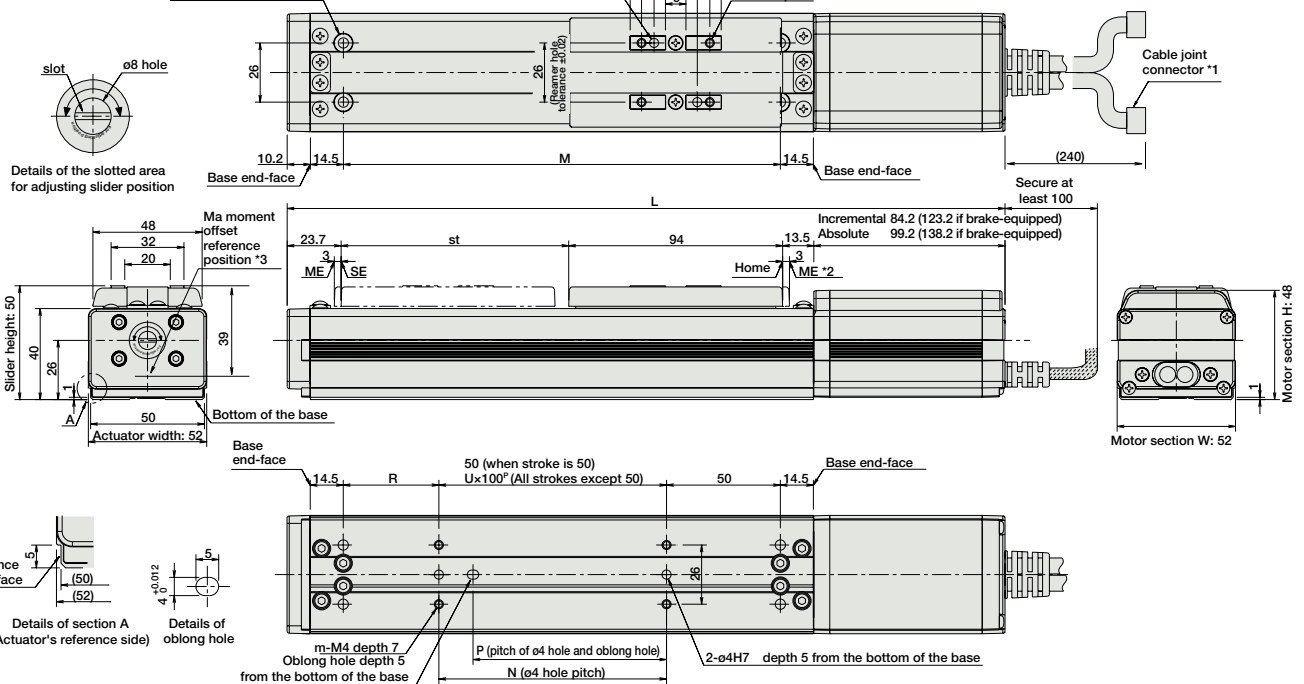
Dimensional Drawings

CAD drawings can be downloaded from the website. [www.intelligentactuator.com](http://www.intelligentactuator.com)

For Special Orders Appendix P.15



4-ø4.5 ø8 counterbore, depth 4.5 (for mounting actuator) \*4



■ Dimensions and Mass by Stroke

\* Brake-equipped models are heavier by 0.3kg.

Stroke		50	100	150	200	250	300	350	400	450	500	
L	Incremental	Without brake	265.4	315.4	365.4	415.4	465.4	515.4	565.4	615.4	665.4	715.4
		With brake	304.4	354.4	404.4	454.4	504.4	554.4	604.4	654.4	704.4	754.4
	Absolute	Without brake	280.4	330.4	380.4	430.4	480.4	530.4	580.4	630.4	680.4	730.4
		With brake	319.4	369.4	419.4	469.4	519.4	569.4	619.4	669.4	719.4	769.4
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	92	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)		1.3	1.4	1.5	1.6	1.7	1.8	1.9	2	2.1	2.2	

- (\*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.

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(I)(II)-2-1	Easy-to-use controller, even for beginners	3 points	AC100V	2.4A rated	—	→ P537
		ASEP-C-20I(I)(II)-2-0	Simple controller operable with the same signal as a solenoid valve					
Solenoid valve multi-axis type PIO specification		MSEP-C-(IV)(V)(VI)-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-(IV)(V)(VI)-0-0	Field network-ready positioner type, allowing up to 8 axes to be connected					
Positioner type		ACON-C-20I(I)(II)-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(I)(II)-2-0						
Pulse Train Input Type (Differential Line Driver)		ACON-PL-20I(I)(II)-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(I)(II)-2-0	Pulse train input type with open collector support					
Serial Communication Type		ACON-SE-20I(I)(II)-N-0-0	Dedicated Serial Communication	64 points	DC24V	(Power-saving) 1.3A rated 2.5A max.	—	→ P675
Program Control Type		ASEL-CS-1-20(I)(II)-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. \* (I) indicates encoder type (I: incremental, A: absolute) \* Enter the code "HA" or "LA" in (II) when the high-acceleration/deceleration option or the power-saving option is specified. \* (II) indicates I/O type (NP/PN). \* (IV) indicates number of axes (1 to 8). \* (V) indicates field network specification symbol.

Slider Type

Mini

Standard

Controller Integrated

Rod Type

Mini

Standard

Controller 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