

Slider Type

Rod Type

ROBO Cylinder® **RCP4-SA3/RA3**



RCP4
series

SA3/RA3 Types with body width 32mm added to RCP4 Series

RCP4 Series												
Series	Specification	Feature	Type	External view	Actuator width	Stroke (mm)	Ball screw lead (mm)	Maximum speed (mm/s)	Maximum payload (kg)			
									Horizontal	Vertical		
RCP4	Motor Straight Specification	Slider Type	NEW SA3C			25 ~ 300	6	420	3	1.5		
							4	280	5	2.5		
							2	140	8	3.5		
									20	1440	6.5	1
									12	900	9	2.5
									6	450	18	6
									3	225	20	12
									20	1440	10	1
									12	900	15	2.5
									6	450	25	6
									3	225	25	12
									24	1200	20	3
							16	980	40	8		
							8	490	45	16		
							4	245	45	25		
				NEW RA3C			25 ~ 300	16	1120	6	1.5	
								10	700	12	2.5	
								5	350	24	5	
								2.5	175	36	10	
								20	800	6	1.5	
								12	700	25	4	
								6	450	40	10	
								3	225	60	20	
								24	800	20	3	
							16	700	50	8		
							8	420	60	18		
							4	210	80	28		
	Side-mounted Motor Specification	Slider Type	SA5R			50 ~ 800	20	1440	6.5	1		
								12	900	9	2.5	
								6	450	18	6	
								3	225	20	12	
								20	1280	10	1	
								12	900	15	2.5	
								6	450	25	6	
								3	225	25	12	
								24	1000	20	3	
								16	840	40	8	
								8	490	45	16	
								4	210	45	25	
		Rod Type (Radial Cylinder)	RA5R			50 ~ 400	20	800	6	1.5		
							12	700	25	4		
							6	450	40	10		
							3	225	60	20		
							24	800	20	3		
							16	560	50	8		
							8	420	60	18		
							4	175	80	28		
RCP4CR	Cleanroom Specification	Slider Type	SA5C			50 ~ 800	20	1440	6.5	1		
								12	900	9	2.5	
								6	450	18	6	
								3	225	20	12	
								20	1440	10	1	
								12	900	15	2.5	
								6	450	25	6	
								3	225	25	12	
								24	1200	20	3	
						16	980	40	8			
						8	490	45	16			
						4	245	45	25			

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●The horizontal payload of the Rod Type described above is that when an external guide is used. ●Refer to the "ROBO Cylinder General Catalog 2014" for the RCP4 Series.

RCP5 Series

Battery-less Absolute Encoder Installed as Standard

Series	Specification	Feature	Type	External view	Actuator width	Stroke (mm)	Ball screw lead (mm)	Maximum speed (mm/s)	Maximum payload (kg)	
									Horizontal	Vertical
RCP5	Motor Straight Specification	Slider Type	SA4C		40mm	50 ~ 500	16	1260	4	1
							10	785	10	2.25
							5	390	12	4.5
			SA6C		50 ~ 800	2.5	195	12	9	
						20	1440<1280>	10	1	
						12	900	15	2.5	
		SA7C		50 ~ 800	6	450	25	6		
					3	225	25	16		
					24	1200	20	3		
		Rod Type (Radial Cylinder)	RA4C		40mm	60 ~ 410	16	1120<840>	6	1.5
							10	700	15	2.5
							5	350	28	5
	RA6C			65 ~ 415	2.5	175	40	10		
					20	800	6	1.5		
					12	700	25	4		
	RA7C		70 ~ 520	6	450	40	10			
				3	225	60	20			
				24	800<600>	20	3			
	RA8C		50 ~ 700	16	700<560>	50	8			
				8	420	60	18			
4				210	80	28				
RA10C		50 ~ 800	5	150	100	70				
			10	250<167>	80	80				
			2.5	63	300	150				
Side-mounted Motor Specification	Rod Type (Radial Cylinder)	RA8R		88mm	50 ~ 700	20	400	30	5	
						10	200	60	40	
	RA10R		108mm	50 ~ 800	5	100	100	70		
					10	200<140>	80	80		
2.5	50	300	150							

●Refer to the individual catalog for the RCP5 Series.

RCP4-SA3/RA3 Applicable Controllers

Name	External view	Model number	Features	Max. number of positioning points	Input power	Power supply capacity	Standard price	Reference page
Positioner type		PCON-CA-28P①-NP-2-0 PCON-CA-28P①-PN-2-0	Equipped with a high-output driver Positioner type based on PIO control	512 points	24V DC	Refer to ROBO Cylinder General Catalog	—	Refer to ROBO Cylinder General Catalog
Pulse-train type		PCON-CA-28PWAI-PLN-2-0 PCON-CA-28PWAI-PLP-2-0	Equipped with a high-output driver Pulse-train input type	—				
Field network type		PCON-CA-28P①-①-0-0	Equipped with a high-output driver Applicable for 7 types of principal field networks	768 points				
Positioner Multiple Axes Specification PIO type		MSEP-②-③-~ -NP-2-0 MSEP-②-③-~ -PN-2-0	Positioner type with PIO control available to connect 8 axes at maximum	3 points	24V DC	Refer to ROBO Cylinder General Catalog	—	Refer to ROBO Cylinder General Catalog
Positioner Multiple Axes Specification network type		MSEP-②-③-~ -①-0-0	Positioner type applicable for field network available to connect 8 axes at maximum	256 points				

*The encoder type comes in ①. Incremental Type is "WAI" and Simple Absolute is "SA". *Either Type C or LC comes in ②. 6 axes are available to connect at the maximum if LC.
*The number of axes (1 to 8) comes in ③. *The symbol (DV, CC, PR, CN, EC or EP) for the field network types comes in ④.

RCP4-SA3C

ROBO Cylinder, Slider Type, Motor Unit Coupled, Actuator Width 32m, Pulse Motor 24V

Model Specification Items

RCP4	SA3C	I	28P			P3		
Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
		I: Incremental specification	28P: Pulse motor, size 28 □	6: 6mm 4: 4mm 2: 2mm	25: 25mm ?: 300: 300mm (every 25 mm)	P3: PCON-CA MSEP-C/LC	N: None P: 1m S: 3m M: 5m X □ □: Specified length R □ □: Robot cable	Refer to the option list below.

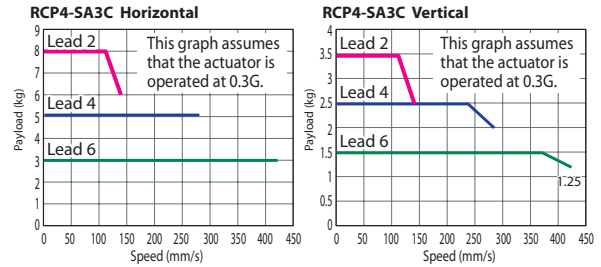


POINT
Note on selection

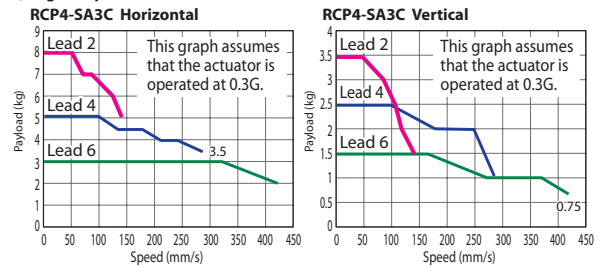
(1) Even though the payload described in the actuator specifications is the maximum value, it may vary depending on the acceleration. Refer to "Tables for Payload by Acceleration and Speed" on pg. 4 for details.
(2) Refer to "Relative Graph for Pressing Force and Current Limit" at the back of the catalog for the pressing operation.

Correlation Diagrams of Speed and Payload

① High output enabled PCON-CA-MSEP-C/LC connected



② High output disabled PCON-CA-MSEP-C/LC connected



Actuator Specifications Table

Leads and Payloads

Model number	Lead (mm)	Maximum payload		Stroke (mm)
		Horizontal (kg)	Vertical (kg)	
RCP4-SA3C-I-28P-6-①-P3-②-③	6	3	1.5	25 ~ 300 (every 25 mm)
RCP4-SA3C-I-28P-4-①-P3-②-③	4	5	2.5	
RCP4-SA3C-I-28P-2-①-P3-②-③	2	8	3.5	

Legend ① Stroke ② Cable length ③ Options

Stroke and Max. Speed (unit: mm/s)

Lead (mm)	High-Output Setting	25 ~ 300 (every 25 mm)
6	Enabled	420
	Disabled	
4	Enabled	280
	Disabled	
2	Enabled	140
	Disabled	

① Stroke List (Standard price)

Stroke (mm)	Standard price	Stroke (mm)	Standard price
25	—	175	—
50	—	200	—
75	—	225	—
100	—	250	—
125	—	275	—
150	—	300	—

② Cable Length (Standard price)

Type	Cable symbol	Standard price
Standard type	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)	—

③ Option List (Standard price)

Name	Option code	Reference page	Standard price
Brake	B	Refer to ROBO Cylinder General Catalog	—
Home-Position Check Sensor (on right)	HSR		—
Home-Position Check Sensor (on left)	HSL		—
Non-motor end specification	NM		Free

* In the home-position check sensor "HS", there are variations of "HSR" (attached on the right) and "HSL" (attached on the left) depending on the orientation that the sensor is attached. Refer to the ROBO Cylinder General Catalog for the contents of "HS" and the following page for the orientation of the attachment.

Actuator Specifications

Item	Description
Drive system	Ball screw Ø6mm rolled C10
Positioning repeatability	±0.02mm
Lost motion	0.1mm or less
Base	Material: Aluminum with white alumite treatment
Guide	Linear guide
Dynamic allowable moment (*1)	Ma: 2.4 N·m, Mb: 3.5 N·m, Mc: 3.8 N·m
Allowable overhang	Ma direction: 100mm or less Mb-Mc direction: 100mm or less
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

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

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RCP4-RA3C

ROBO Cylinder, Rod Type, Motor Unit Coupled, Actuator Width 32mm, Pulse Motor 24V

Model Specification Items

RCP4 - **RA3C** - **I** - **28P** - - - **P3** - -

Series - Type - Encoder type - Motor type - Lead - Stroke - Applicable controller - Cable length - Options

I: Incremental specification
 28P: Pulse motor, size 28
 16: 16mm
 10: 10mm
 5: 5mm
 2.5: 2.5mm
 25: 25mm
 300: 300mm (every 25 mm)
 P3: PCON-CA
 MSEP-C/LC
 N: None
 P: 1m
 S: 3m
 M: 5m
 X : Specified length
 R : Robot cable
 Refer to the option list below.

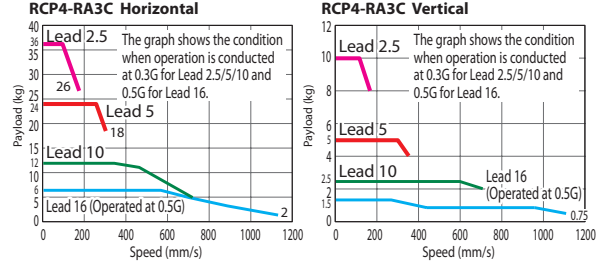
Built-in guide mechanism



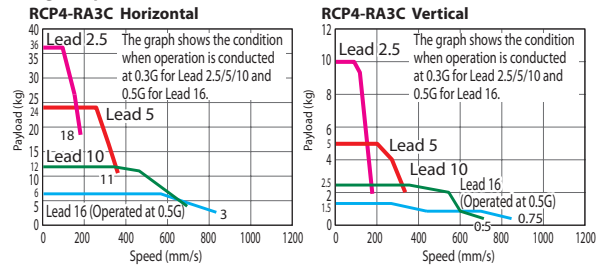
- Even though the payload described in the actuator specifications is the maximum value, it may vary depending on the acceleration. Refer to "Tables for Payload by Acceleration and Speed" on pg. 6 for details.
- Refer to "Relative Graph for Pressing Force and Current Limit" at the back of the catalog for the pressing operation.

Correlation Diagrams of Speed and Payload

① High output enabled PCON-CA-MSEP-C/LC connected



② High output disabled PCON-CA-MSEP-C/LC connected



Actuator Specifications Table

Leads and Payloads

Model number	Lead (mm)	Maximum payload		Maximum push force (N)	Stroke (mm)
		Horizontal (kg)	Vertical (kg)		
RCP4-RA3C-I-28P-16-①-P3-②-③	16	6	1.5	36	25 ~ 300 (every 25 mm)
RCP4-RA3C-I-28P-10-①-P3-②-③	10	12	2.5	57	
RCP4-RA3C-I-28P-5-①-P3-②-③	5	24	5	114	
RCP4-RA3C-I-28P-2.5-①-P3-②-③	2.5	36	10	229	

Legend ① Stroke ② Cable length ③ Options

Stroke and Max. Speed (unit: mm/s)

Lead (mm)	High-Output Setting	25 ~ 300 (every 25 mm)
16	Enabled	1120
	Disabled	840
10	Enabled	700
	Disabled	350
5	Enabled	350
	Disabled	175
2.5	Enabled	175
	Disabled	175

① Stroke List (Standard price)

Stroke (mm)	Standard price	Stroke (mm)	Standard price
25	—	175	—
50	—	200	—
75	—	225	—
100	—	250	—
125	—	275	—
150	—	300	—

② Cable Length (Standard price)

Type	Cable symbol	Standard price
Standard type	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)	—
	R01 (1m) ~ R03 (3m)	—
	R04 (4m) ~ R05 (5m)	—

③ Option List (Standard price)

Name	Option code	Reference page	Standard price
Brake	B	Refer to ROBO Cylinder General Catalog	—
Home-Position Check Sensor (top)	HS		—
Non-motor end specification	NM		Free

Actuator Specifications

Item	Description
Drive system	Ball screw Ø8mm rolled C10
Positioning repeatability	±0.02mm
Lost motion	0.1mm or less
Rod	Ø16mm Aluminum
Rod non-rotation precision(*1)	±0 deg
Allowable rod load mass	Refer to reference at the back
Rod tip overhang distance	100mm or less
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

(*1) Accuracy of rod displacement in rotating direction when no load is received.

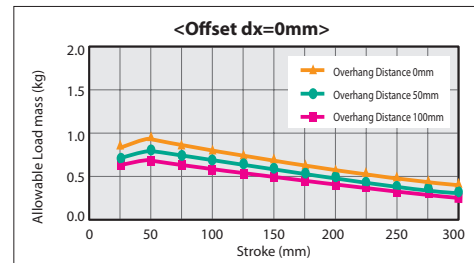
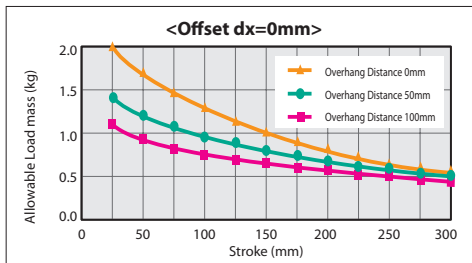
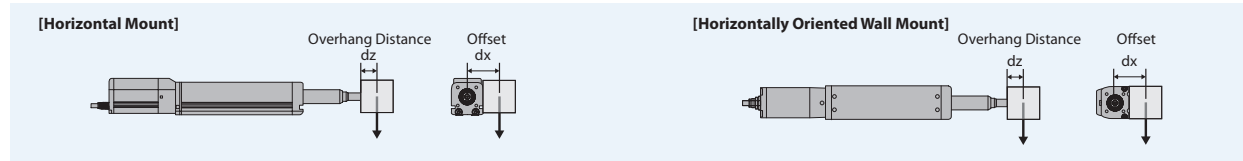
Criteria for Selection

Document for Selection of Radial Cylinder Allowable Load

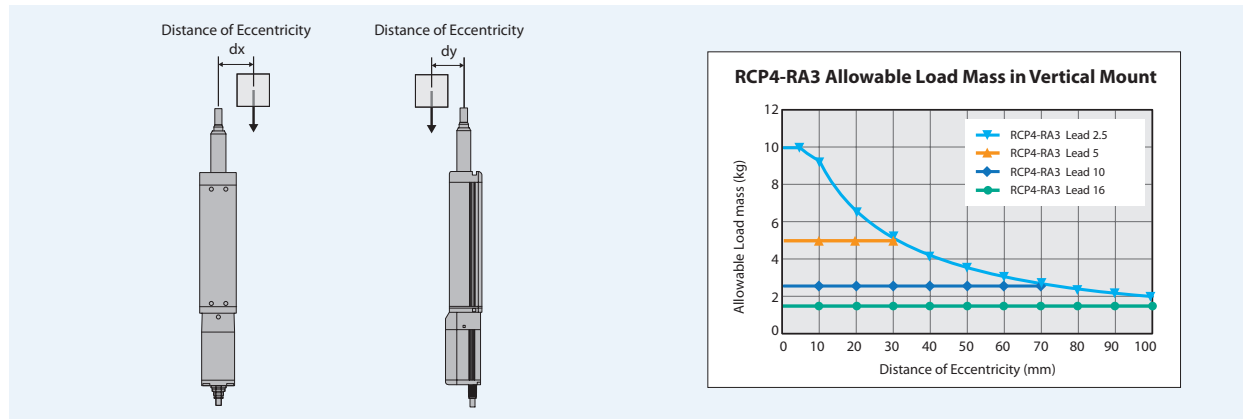
Because the Radial Cylinder is equipped with a built-in guide structure, a certain amount of load can be applied to the rod even without an external guide. Refer to the graphs below for the allowable load mass.

Please note that it is necessary to apply an external guide feature when the operational condition exceeds the allowable load.

Allowable Load Mass in Horizontal Mount



Allowable Load Mass in Vertical Mount

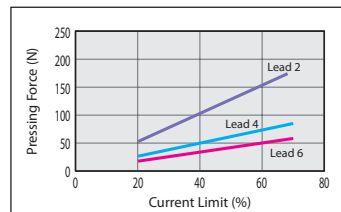


Relative Graph for Pressing Force and Current Limit

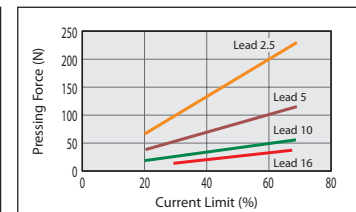
The pressing force in the pressing operation can be changed with the current limit (20% to 70%) on the controller.

It is necessary to control the pressing force so the reaction moment generated by the pressing force in the pressing operation would not exceed 80% of the rated moment (Ma, Mb) specified in the catalog when pressing operation is conducted with the Slider Type. Refer to the instruction manual for the details of how to select.

RCP4-SA3 Type



RCP4-RA3 Type



Maintenance Parts

Model number	CB-CAN-MPA□□□	Integrated Motor-Encoder Cable	for
	CB-CAN-MPA□□□-RB	Integrated Motor-Encoder Robot Cable	RCP4-SA3/RA3

* Please indicate cable length (L) in □□□, maximum 20m. e.g.) 080 = 8m

*Refer to the RCP5 individual catalog for details.