RCP3-SA5R

ROBO Cylinder, Slider Type, 50mm Width, Pulse Motor, Side-mounted Motor

Model Specification Items: **RCP3** — **SA5R** — **I** — **42P** — □ — □ — □ — □ — □ — □

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
RCP3	SA5R	I: Incremental * The Simple absolute encoder is also considered type "I".	42P: Pulse motor, 42□ size	12: 12mm 6: 6mm 3: 3mm	50: 50mm ~ 800: 800mm (50mm pitch increments)	P1: PCON-PL/PO/SE PSEL P3: PCON-CA PMEC/PSEP MSEP	N: None P: 1m S: 3m M: 5m X□□: Custom length	See options below. *Be sure to specify which side the motor is to be mounted (ML/MR)

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

CE RoHS

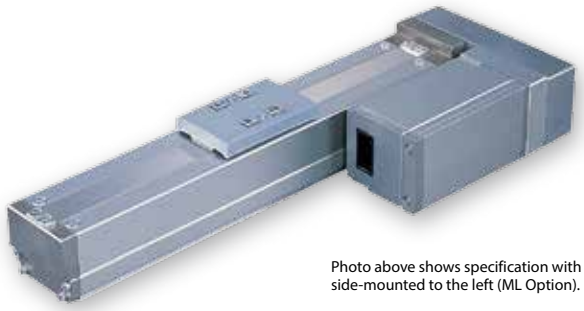


Photo above shows specification with motor side-mounted to the left (ML Option).

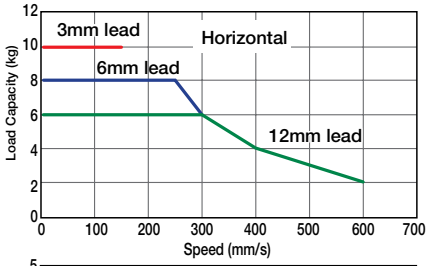
Technical References → Appendix P.5

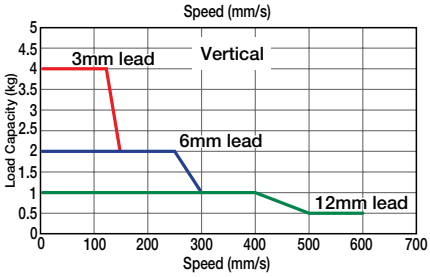
POINT — Notes on selection

(1) Since the RCP3 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph to see if your desired speed and load capacity are supported.
(2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for 3mm-lead model, or when used vertically). These values are the upper limits for the acceleration.
(3) See page A-71 for details on push motion.

■ Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the RCP3 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.





Actuator Specifications

■ Leads and Payloads

Model number	Lead (mm)	Max. Load Capacity Horizontal (kg)	Max. Load Capacity Vertical (kg)	Stroke (mm)
RCP3-SA5R-I-42P-12-①-②-③-④	12	~6	~1	50~800 (every 50mm)
RCP3-SA5R-I-42P-6-①-②-③-④	6	~8	~2	
RCP3-SA5R-I-42P-3-①-②-③-④	3	10	~4	

■ Stroke and Maximum Speed

Lead \ Stroke	50~550 (every 50mm)	600 (mm)	650 (mm)	700 (mm)	750 (mm)	800 (mm)
12	600	570	490	425	370	330
6	300	285	245	210	185	165
3	150	140	120	105	90	80

(Unit: mm/s)

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

① Stroke

①Stroke (mm)	Standard price With cover	Standard price Without cover	①Stroke (mm)	Standard price With cover	Standard price Without cover
50	—	—	450	—	—
100	—	—	500	—	—
150	—	—	550	—	—
200	—	—	600	—	—
250	—	—	650	—	—
300	—	—	700	—	—
350	—	—	750	—	—
400	—	—	800	—	—

③ Cable Length

Type	Cable symbol	Standard price
Standard (Robot Cables)	**P** (1m)	—
	S (3m)	—
	M (5m)	—
Special length	**X06** (6m) ~ **X10** (10m)	—
	X11 (11m) ~ **X15** (15m)	—
	X16 (16m) ~ **X20** (20m)	—

* The standard cable is the motor-encoderintegrated robot cable.
* See page A-59 for cables for maintenance.

④ Options

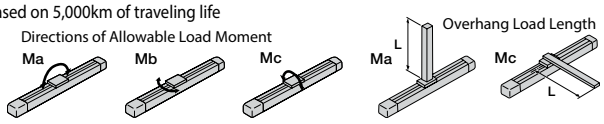
Name	Option code	See page	Standard price
Brake	**B**	→ A-42	—
Optional cable exit direction (top)	**CJT**	→ A-42	—
Optional cable exit direction (outside)	**CJO**	→ A-42	
Optional cable exit direction (bottom)	**CJB**	→ A-42	—
Left-mounted motor (standard)	**ML**	→ A-52	—
Right-mounted motor	**MR**	→ A-52	—
No cover	**NCO**	→ A-52	—
Non-motor end specification	**NM**	→ A-52	—

Actuator Specifications

Item	Description
Drive System	Ball screw, ø10mm, rolled C10
Positioning repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum, special alumite treated
Allowable static moment	Ma: 10.2 N·m, Mb: 14.6 N·m, Mc: 22.4 N·m
Allowable dynamic moment (*)	Ma: 3.92 N·m, Mb: 5.58 N·m, Mc: 8.53 N·m
Allowable overhang	130mm 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



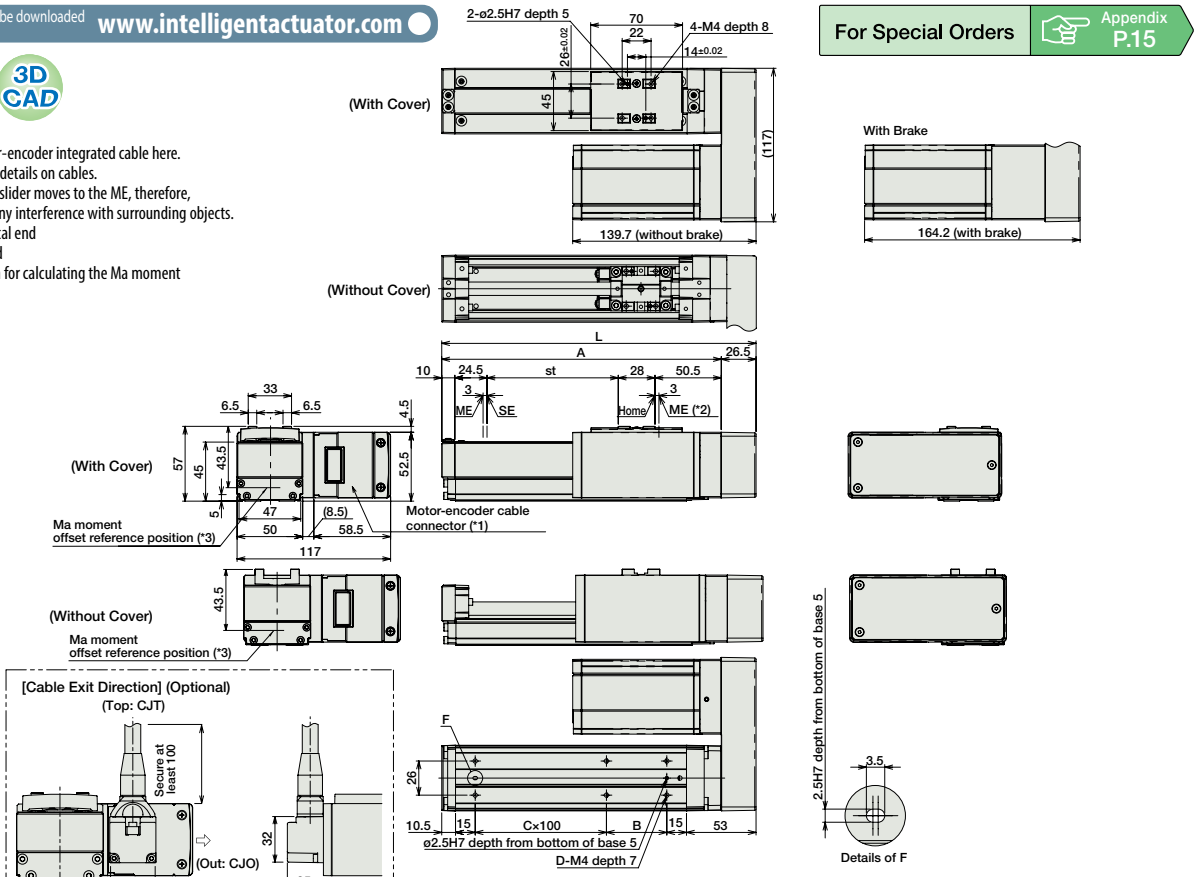
Dimensional Drawings

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

2D CAD 3D CAD

For Special Orders Appendix P.15

(*1) Connect the motor-encoder integrated cable 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



Dimensions and Mass by Stroke

* Brake-equipped models are heavier by 0.4kg.

Stroke		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L		189.5	239.5	289.5	339.5	389.5	439.5	489.5	539.5	589.5	639.5	689.5	739.5	789.5	839.5	889.5	939.5
A		163	213	263	313	363	413	463	513	563	613	663	713	763	813	863	913
B		96	46	96	46	96	46	96	46	96	46	96	46	96	46	96	46
C		0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8
D		4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20
Weight (kg)	With cover	1.7	1.8	1.9	2.1	2.2	2.3	2.5	2.6	2.8	2.9	3.0	3.2	3.3	3.4	3.6	3.7
	Without cover	1.6	1.7	1.8	1.9	2.0	2.1	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.1	3.2	3.3

②Applicable Controllers

RCP3 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		PMEC-C-42PI-Ⓘ-2-Ⓘⅈ	Easy-to-use controller, even for beginners	3 points	AC100V AC200V	Refer to P541	—	→ P537
		PSEP-C-42PI-Ⓘ-2-0	Simple controller operable with the same signal as a solenoid valve		DC24V	Refer to P555	—	→ P547
Solenoid valve multi-axis type PIO specification		MSEP-C-Ⓘⅈ-~-Ⓘ-2-0	Positioner type based on PIO control, allowing up to 8 axes to be connected			Refer to P572	—	→ P563
Solenoid valve multi-axis type Network specification		MSEP-C-Ⓘⅈ-~-Ⓥ-0-0	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points				
Positioner type High-output specification		PCON-CA-42PI-Ⓘ-2-0	Equipped with a high-output driver Positioner type based on PIO control	512 points		Refer to P618	—	→ P607
Pulse-train type High-output specification		PCON-CA-42PI-PL□-2-0	Equipped with a high-output driver Pulse-train input type	(—)			—	
Field network type High-output specification		PCON-CA-42PI-Ⓥ-0-0	Equipped with a high-output driver Supporting 7 major field networks	768 points			—	
Pulse Train Input Type (Differential Line Driver)		PCON-PL-42PI-Ⓘ-2-0	Pulse train input type with differential line driver support	(—)		Refer to P628	—	→ P623
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-Ⓘ-2-0	Pulse train input type with open collector support				—	
Serial Communication Type		PCON-SE-42PI-N-0-0	Dedicated Serial Communication	64 points			—	
Program Control Type		PSEL-CS-1-42PI-Ⓘ-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points		Refer to P671	—	→ P665

* This is for the single-axis PSEL. * Ⓘ indicates I/O type (NP/PN). * Ⓘⅈ indicates power supply voltage (1: 100V / 2: 100~240V).
* Ⓘⅈ indicates number of axes (1 to 8). * Ⓥ indicates field network specification symbol. * □ indicates N (NPN specification) or P (PNP specification) symbol.