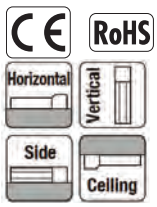
RCP5-RA4R ROBO Cylinder, Rod Type, Side-mounted Motor Type, Actuator Width 40mm, 24V Pulse Motor

■Model Specification Items

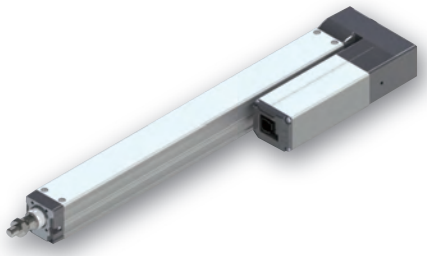
RCP5	RA4R	WA	35P	☐	☐	☐	P3	☐	☐
Series	Type	Encoder type	Motor type	Lead	Stroke		Applicable controllers	Cable length	Options
		WA: Battery-less absolute specification	35P: Pulse motor, size 35☐	16: 16mm 10: 10mm 5: 5mm 2.5: 2.5mm	60: 60mm ~ 410: 410mm (Every 50mm)		P3: PCON-CA MSEP MSEL	N: No cable P: 1m S: 3m M: 5m X☐☐: Specified length R☐☐: Robot cable	Please refer to the options table below.

*Controller is not included.

Radial Load Applicable



* Depending on the model, there may be some limitations to using the vertical mount position. Please refer to P.59 for details.



The figure above is the motor side-mounted to the left (ML).

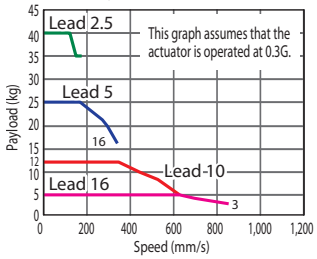
POINT Note on selection

(1) The actuator specification displays the payload's maximum value, but it will vary depending on the acceleration. Please refer to the "Selection Guidelines" (RCP5 Payload by Speed/Acceleration Table) on P. 61.
(2) Please refer to P. 59 for push-motion operation.
(3) The radial cylinder is equipped with a built-in guide. Please refer to the graphs shown in P. 65 and after for the allowable load mass.

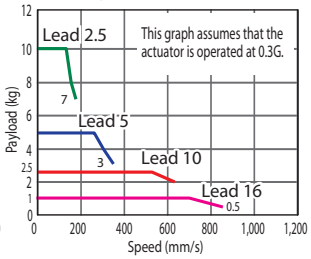
■Correlation Diagrams of Speed and Payload

(1) High-output enabled with PCON-CA, MSEP, MSEL connected

RCP5-RA4R, Horizontal mount

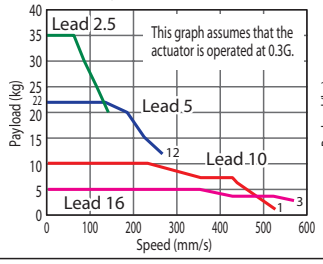


RCP5-RA4R, Vertical mount

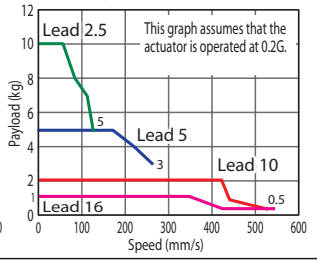


(2) High-output disabled with PCON-CA, MSEP connected

RCP5-RA4R, Horizontal mount



RCP5-RA4R, Vertical mount



Actuator Specifications

■Lead and Payload

Model number	Lead (mm)	Connected controller	Maximum payload Horizontal (kg)	Maximum payload Vertical (kg)	Maximum push force (N)	Stroke (mm)
RCP5-RA4R-WA-35P-16-①-P3-②-③	16	High-output enabled	5	1	48	60~410 (Every 50mm)
		High-output disabled				
RCP5-RA4R-WA-35P-10-①-P3-②-③	10	High-output enabled	12	2.5	77	
		High-output disabled	10	2		
RCP5-RA4R-WA-35P-5-①-P3-②-③	5	High-output enabled	25	5	155	
		High-output disabled	22			
RCP5-RA4R-WA-35P-2.5-①-P3-②-③	2.5	High-output enabled	40	10	310	
		High-output disabled	35			

Legend: ① Stroke ② Cable length ③ Options *Please refer to P. 59 for push-motion operation.

■Stroke and Maximum Speed

(Unit: mm/s)

Lead (mm)	Connected controller	60~360 (Every 50mm)	410 (mm)
16	High-output enabled	840	
	High-output disabled	560	
10	High-output enabled	610	
	High-output disabled	525	
5	High-output enabled	350	340
	High-output disabled	260	
2.5	High-output enabled	175	170
	High-output disabled	130	

① Stroke

Stroke (mm)	Standard price	Stroke (mm)	Standard price
60	-	**260**	-
110	-	**310**	-
160	-	**360**	-
210	-	**410**	-

② Cable Length

Type	Cable code	Standard price
Standard type	**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)	-

*Please refer to P. 89 for maintenance cables.

③ Options

Name	Option code	Reference page	Standard price
Brake	**B**	→P. 11	-
Cable exit direction (Top)	**CJT**	→P. 11	-
Cable exit direction (Outside)	**CJO**	→P. 11	-
Cable exit direction (Bottom)	**CJB**	→P. 11	-
Flange	**FL**	→P. 12	-
Tip adapter (Flange)	**FFA**	→P. 12	-
Tip adapter (Internal thread)	**NFA**	→P. 13	-
Tip adapter (Keyway)	**KFA**	→P. 13	-
Motor side-mounted to the left (Standard)	**ML**	→P. 11	-
Motor side-mounted to the right	**MR**	→P. 11	-
Non-motor end specification	**NM**	→P. 11	-

Depending on the stroke, some rod attachment options are not available. Also, when selecting the shorter strokes, please be careful of nearby objects. Some interference may occur. Please refer to P. 14.

Actuator Specifications

Item	Description
Drive system	Ball screw Ø8mm, rolled C10
Positioning repeatability	±0.02mm
Lost motion	0.1mm or less
Rod	Ø20mm Aluminum
Rod non-rotation precision (*1)	0 deg.
Allowable load and torque on rod tip	Refer to table in the page on the right, refer to P. 65
Rod tip overhang distance	100mm or less
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

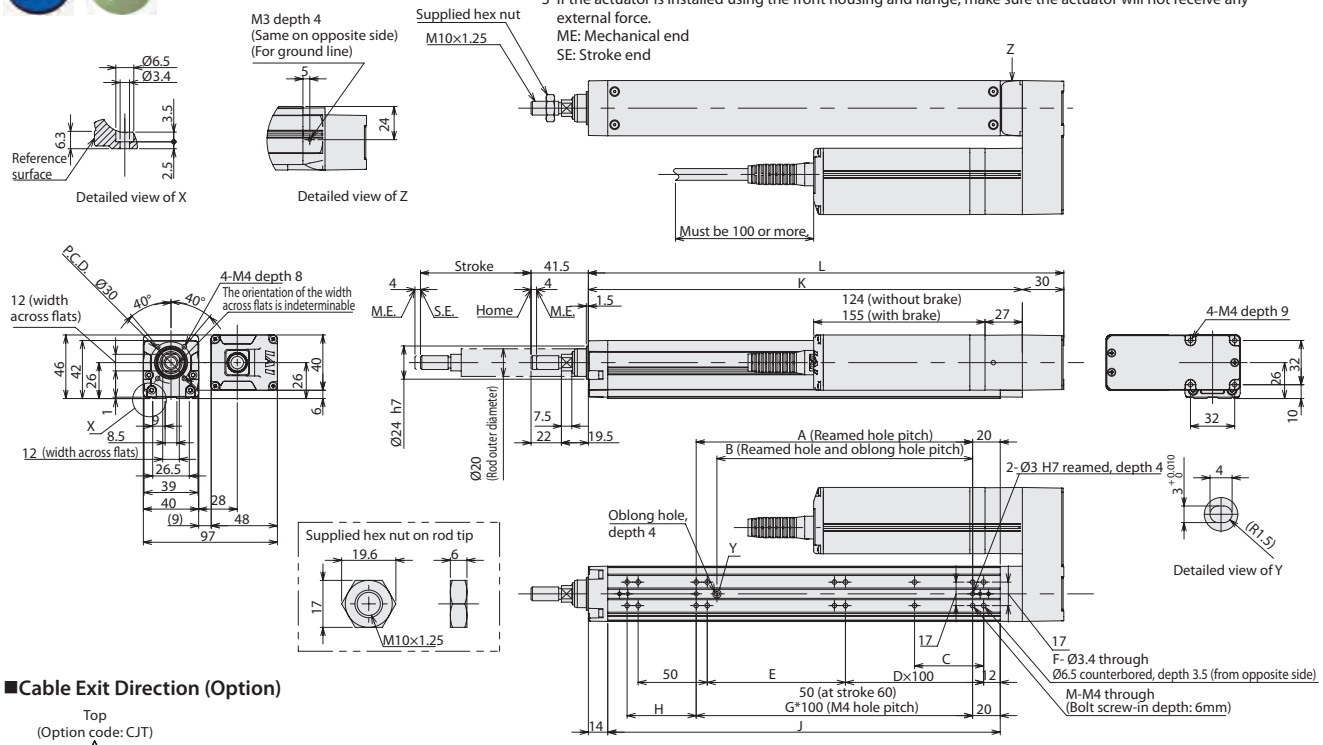
(*1) Rod's angular displacement in rotational direction with no applied load is shown.

Dimensions

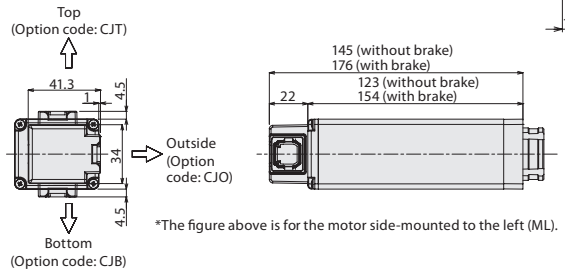
CAD drawings can be downloaded from our website. www.intelligentactuator.com

2D CAD 3D CAD

*1 When the rod is returning to its home position, please be careful of interference from surrounding objects, as it will travel until it reaches the ME.
*2 The direction of width across flats varies depending on the product.
*3 If the actuator is installed using the front housing and flange, make sure the actuator will not receive any external force.
ME: Mechanical end
SE: Stroke end

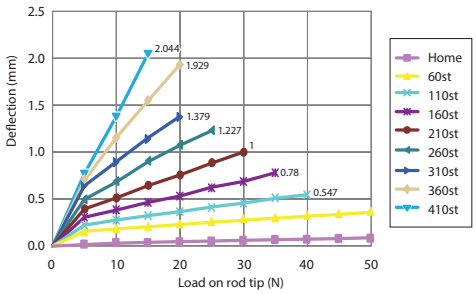


■Cable Exit Direction (Option)



*The figure above is for the motor side-mounted to the left (ML).

■Rod Deflection of RCP5-RA4R (Reference Values)



■Dimensions and Mass by Stroke

Stroke		60	110	160	210	260	310	360	410
L		194	244	294	344	394	444	494	544
A		50	100	100	200	200	300	300	400
B		35	85	85	185	185	285	285	385
C		25	50	50	50	50	50	50	50
D		0	0	1	1	2	2	3	3
E		50	100	50	100	50	100	50	100
F		8	8	10	10	12	12	14	14
G		-	1	1	2	2	3	3	4
H		50	50	100	50	100	50	100	50
J		134	184	234	284	334	384	434	484
K		164	214	264	314	364	414	464	514
M		6	6	6	8	8	10	10	12
Allowable static load on rod tip (N)		55.8	44.6	37.1	31.7	27.6	24.3	21.7	19.5
Allowable dynamic load on rod tip (N)	Load offset 0mm	25.4	19.5	15.5	12.8	10.8	9.2	7.9	6.9
	Load offset 100mm	16.5	14.5	12.4	10.7	9.2	8.0	7.0	6.2
Allowable static torque on rod tip (N•m)		5.6	4.5	3.8	3.2	2.8	2.5	2.3	2.1
Allowable dynamic torque on rod tip (N•m)		1.7	1.5	1.2	1.1	0.9	0.8	0.7	0.6
Mass (kg)	Without brake	1.4	1.5	1.6	1.7	1.9	2.0	2.1	2.2
	With brake	1.6	1.7	1.8	1.9	2.1	2.2	2.3	2.4

Applicable Controllers

The RCP5 series actuators can be operated by the controllers indicated below. Please select the type depending on your intended use.

Name	External view	Model number	Max. number of controlled axes	Maximum number of positioning points	Input power	Standard price	Reference page
Positioner type (High-output specification)		PCON-CA-35PWAI-Ⓘ-2-0	1	512 points	DC24V	-	→P. 69
Pulse train type (High-output specification)		PCON-CA-35PWAI-PLⓋ-2-0				-	
Network type (High-output specification)		PCON-CA-35PWAI-Ⓘⅲ-0-0		768 points		-	
Solenoid valve multi-axis type (PIO specification)		MSEP-Ⓥ-Ⓘⅱ-~Ⓘ-2-0	C: 8 (4 when high-output enabled)	3 points		-	→P. 77
Solenoid valve multi-axis type (Network specification)		MSEP-Ⓥ-Ⓘⅱ-~Ⓘⅲ-0-0	LC: 6 (3 when high-output enabled)	256 points			
Program control multi-axis type		MSEL-PC-1-35PWAI-Ⓘ-2-4	4	30,000 points	Single-phase AC 100V~230V	-	→P. 87
Program control multi-axis type (w/network board)		MSEL-PC-1-35PWAI-Ⓘⅲ-0-4					
Program control multi-axis type (Safety category compliant spec.)		MSEL-PG-1-35PWAI-Ⓘ-2-4					
Program control multi-axis type (Safety category compliant spec. w/network board)		MSEL-PG-1-35PWAI-Ⓘⅲ-0-4					

*Above MSEL models are for single-axis specification *Ⓘ I/O type (NP/PN) *Ⓘⅱ Number of axes
*Ⓘⅲ Field network specification code *Ⓥ C or LC *Ⓥ N (NPN specification) or P (PNP specification) code
*The high output enabled operation is only available when the "High-output setting specs" is selected in the MSEP-C/LC.