

RCP4W-RA6C

ROBO Cylinder Water-proof rod type
24-V Pulse motor

Actuator width: 65 mm

Model
Specification
Items

RCP4W — RA6C

I

Encoder
type
I: Incremental
specification

42P

Motor type
42P: Pulse motor,
size 42
42SP: High-thrust
pulse motor,
size 42

12

Lead
12: 12mm
6: 6mm
3: 3mm

50

Stroke
50: 50mm
400: 400mm
(every 50-mm)

P3

Applicable
controller
P3: PCON-CA

N

Cable length
N: None
P: 1m
S: 3m
M: 5m
X: Specified length
R: Robot cable

Options

Refer to the option
list below.
* If the high-thrust pulse
motor is selected, the
actuator comes standard
with option B (Brake).

Built-in Guide Mechanism

RoHS

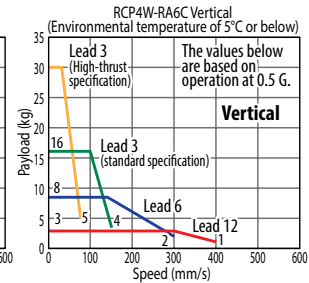
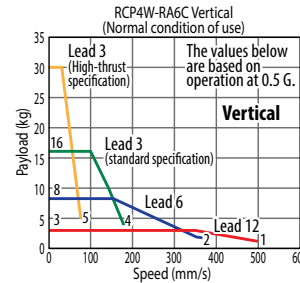
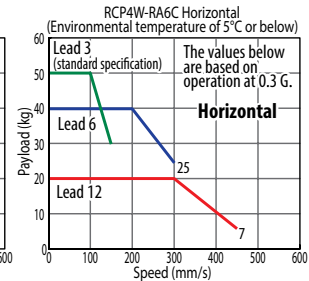
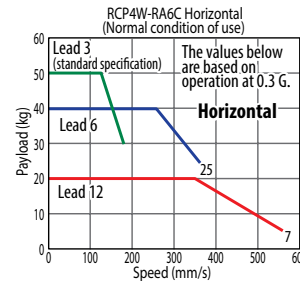


POINT
Notes
on
selection

- (1) The maximum payload is the value when operated horizontally and vertically at 0.3G and 0.5G, respectively. Note that raising the acceleration causes the payload to drop. (Refer to P. 10 for the maximum payload by acceleration.)
- (2) The horizontal payload is calculated by assuming that an external guide is also used.
- (3) The high-thrust specification is designed exclusively for vertical operation. It comes standard with a brake.

Correlation Diagrams of Speed and Payload

Due to its pulse motor characteristics, the RCP4 series provides lower payload at higher speed. Check the tables below to see if the desired speed and payload can be achieved.



Actuator Specifications

Leads and Payloads

Model number	Lead (mm)	Maximum payload (kg)		Maximum push force (N)	Positioning repeatability (mm)	Stroke (mm)
		Horizontal (kg)	Vertical (kg)			
Standard specification	RCP4W-RA6C-I-42P-12-①-P3-②-③	12	20	3	93	±0.02 50 to 400 (in 50-mm increments)
	RCP4W-RA6C-I-42P-6-①-P3-②-③	6	40	8	185	
	RCP4W-RA6C-I-42P-3-①-P3-②-③	3	50	16	370	
High-thrust specification	RCP4W-RA6C-I-42SP-3-①-P3-②-③-B	3	—	30	590	

Legend ① Stroke ② Cable length ③ Options

Stroke and Maximum Speed (unit: mm/s)

Stroke	50 (mm)	100 ~ 400 (in 50-mm increments)
Lead 12	500 [450 < 400 >]	560 < 500 > [450 < 400 >]
6	360 [300]	
3	180 [150]	
3	< 70 > [< 70 >]	

*The values in < > apply when the actuator is used vertically.
*The values in [] apply when the actuator is used at an environmental temperature of 5°C or below.

① Stroke

Stroke (mm)	Standard price	
	Standard specification	High-thrust specification
50	—	—
100	—	
150	—	
200	—	
250	—	
300	—	
350	—	
400	—	

② Options

Name	Option code	See page	Standard price
Cable exit from the left side face	A1	P4	—
Cable exit from the right side face	A3		—
Cable exit from the top face	AT		—
Brake	B		—
With flange	FL		—
With foot bracket	FT		—
Non-motor side specification	NM		—

*The high-thrust specification comes standard with a brake.

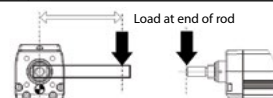
② Cable length

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)	—

Actuator Specifications

Item	Description
Drive system	Ball screw ø10mm, rolled C10
Positioning repeatability	±0.02mm
Lost motion	0.1mm or less
Rod	ø22 stainless steel pipe
Rod non-rotation accuracy	±0.1 deg
Allowable load/allowable torque at end of rod	Refer to the page on the right.
Lost offset distance at end of rod	100mm or less
Protective structure	IP67
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

Offset distance at end of rod (100mm or less)



Dimensional Drawings

CAD drawings can be downloaded from the website.

www.intelligentactuator.com

2D
CAD

- *1 Connect the motor and encoder cables.
- *2 The rod moves to the ME during home return, so pay attention to possible contact with surrounding structures and objects.
- *3 The orientation of the width across flats varies from one product to another.
- *4 When installing the actuator using the front housing or flange, make sure the actuator does not receive any external force

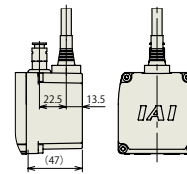
Materials of Key Components

① Frame	Aluminum extrusion material (A6063SS-T5 or equivalent) with white alumite coating
② Front bracket	Aluminum die-cast
③ Rear cover	Aluminum die-cast
④ Rod	Stainless steel pipe (SUS304 or equivalent), polished + hard chrome plated
⑤ Actuator cable	Polyvinyl chloride (PVC)
⑥ Intake/exhaust port	Polyphenylene sulfide (PPS)

<Cable Exit Direction Option>

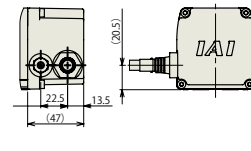
Exit from the top

Option code: AT



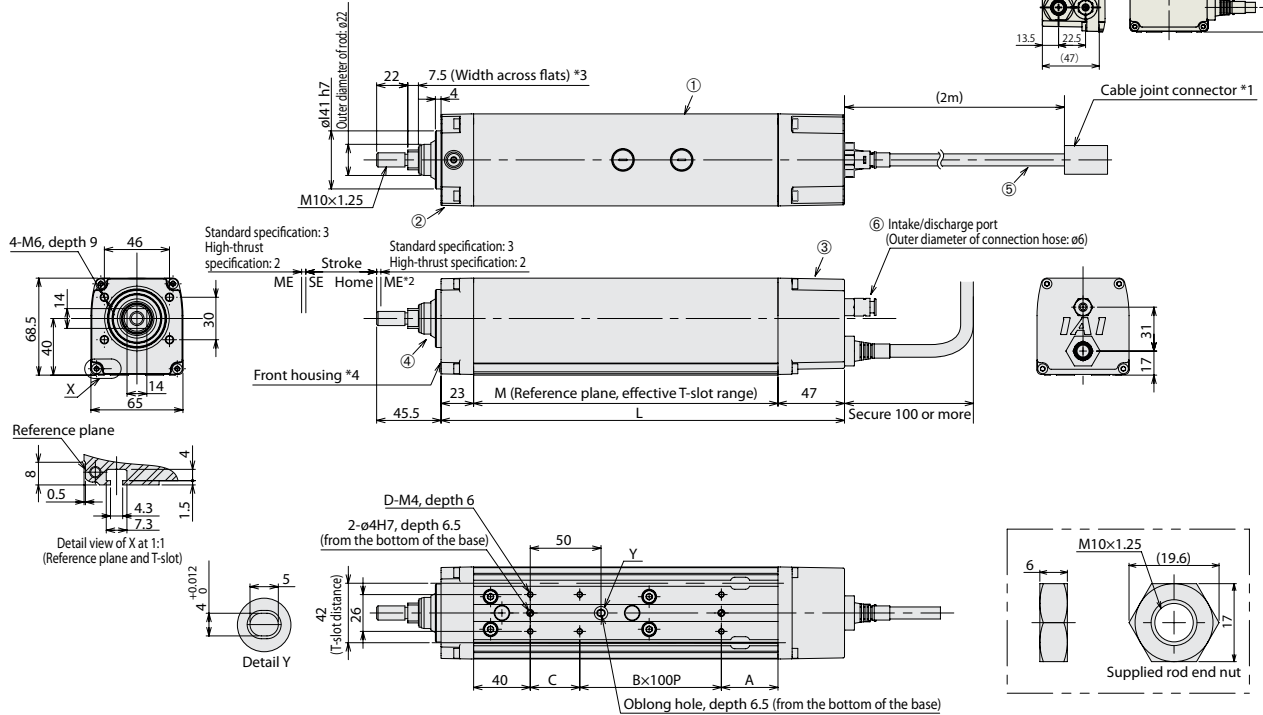
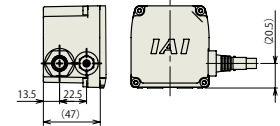
Exit from the left side face

Option code: A1



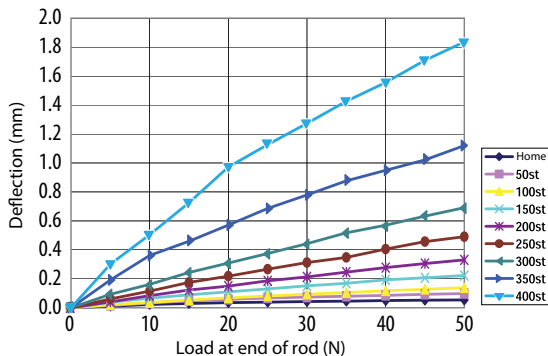
Exit from the right side face

Option code: A3



■ Rod Deflection of RCP4W-RA6C (Reference Values)

(The graph below plots deflection as measured by installing the actuator vertically and applying a force to the rod from one side.)



■ Dimensions and Mass by Stroke

Stroke		50	100	150	200	250	300	350	400
L	Without brake	285	335	385	435	485	535	585	635
	With brake (*)	346	396	446	496	546	596	646	696
A	Without brake	40	40	40	40	40	40	40	40
	With brake (*)	101	101	101	101	101	101	101	101
B		1	1	2	2	3	3	4	4
C		35	85	35	85	35	85	35	85
D		6	6	8	8	10	10	12	12
M	Without brake	215	265	315	365	415	465	515	565
	With brake	276	326	376	426	476	526	576	626
Allowable static load at end of rod (N)		65.6	51.2	41.7	34.9	29.8	25.7	22.4	19.7
Allowable dynamic load at end of rod (N)	Load offset 0 mm	32.4	23.6	18.1	14.4	11.6	9.5	7.7	6.2
	Load offset 100 mm	25.6	19.7	15.7	12.7	10.4	8.6	7.1	5.7
Allowable static torque at end of rod (N·m)		6.6	5.2	4.3	3.7	3.2	2.8	2.6	2.3
Allowable dynamic torque at end of rod (N·m)		2.6	2.0	1.6	1.3	1.0	0.9	0.7	0.6
Mass (kg)	Without brake	3.1	3.5	3.8	4.2	4.6	5.0	5.4	5.8
	With brake	3.6	4.0	4.4	4.8	5.2	5.6	6.0	6.4

(*) The dimensions of the high-thrust specification include the brake.

Applicable Controller

RCP4 series actuators can be operated with the controller 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
Positioner type		PCON-CA-42PI-NP-□-0-□ PCON-CA-42PI-PN-□-0-□	Positioner type based on PIO control	512 points	DC24V	Refer to P. 13	-	Refer to P. 12
Pulse-train type		PCON-CA-42PI-PLN-□-0-□ PCON-CA-42PI-PLP-□-0-□	Pulse-train input type The actuator can be operated freely by pulse-train control.	-				
Field network type		PCON-CA-42PI-□-0-0-□	Supporting 7 major field networks	768 points				

*In the model numbers shown above, □ indicates the field network specification (DV, CC, PR, CN, ML, EC or EP).