

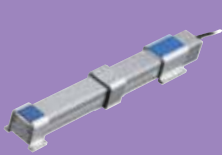
Dust-proof/Splash-proof Type



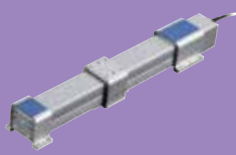
Dust-proof/Splash-proof Type

RCP4W
RCP2W

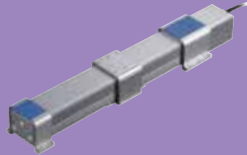
RCAW
RCS2W



RCP4W-SA5C



RCP4W-SA6C



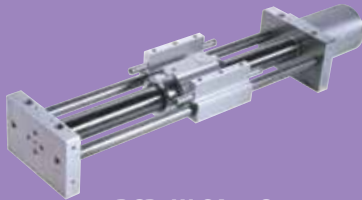
RCP4W-SA7C



RCP4W-RA6C



RCP4W-RA7C



RCP2W-SA16C



RCP2W-RA4C



RCP2W-RA6C



RCP2W-RA10C



RCAW-RA3C



RCAW/RCS2W-RA4C

IP Marking

IP

First digit

Protecting against the human body and solid objects

Second digit

Protecting against the intrusion of water

*Please contact IAI when using liquids other than water.



493

Dust-proof/Splash-proof Type

Sold & Serviced By:

ELECTROMATE

Toll Free Phone (877) SERV098

Toll Free Fax (877) SERV099

www.electromate.com

sales@electromate.com

Dust-proof/Splash-proof Type



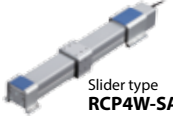





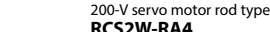

RCP4W series	Slider Type	Coupled	55mm Width	RCP4W-SA5C	495
			62mm Width	RCP4W-SA6C	497
			77mm Width	RCP4W-SA7C	499
Pulse Motor Type	Rod Type		65mm Width	RCP4W-RA6C	501
			75mm Width	RCP4W-RA7C	503

RCP2W series	Slider Type	Coupled	158mm Width	RCP2W-SA16C	505		
			Rod Type	Coupled	45mm Width	RCP2W-RA4C	507
					64mm Width	RCP2W-RA6C	509
Pulse Motor Type	Gripper Type	High-Thrust Type	100mm Width	RCP2W-RA10C	511		
			Mini Slider Type	42mm Width	RCP2W-GRSS	513	
					Mini Lever Type	RCP2W-GRLS	515

RCAW series	Rod Type	Coupled	ø32mm	RCAW-RA3C	517	
			Built-in	ø32mm		RCAW-RA3D
			Side-Mounted Motor	ø32mm		RCAW-RA3R
24 Servo Motor Type	Rod Type	Coupled	ø37mm	RCAW-RA4C	519	
			Built-in	ø37mm		RCAW-RA4D
			Side-Mounted Motor	ø37mm		RCAW-RA4R

RCS2W series	Rod Type	Coupled	ø37mm	RCS2W-RA4C	521	
			Built-in	ø37mm		RCS2W-RA4D
			Side-Mounted Motor	ø37mm		RCS2W-RA4R
200V Servo Motor Type						

IP Classes

IP class		Description	Applicable IAI products
IP67	Solid objects	Fully protected against the entry of powder dust into the equipment.	 Rod type RCP4W-RA  Slider type RCP2W-SA16C
	Water	Even when the equipment is submerged in water, water does not enter the equipment.	
IP65	Solid objects	Fully protected against the entry of powder dust into the equipment.	 Slider type RCP4W-SA  Slider type ISWA/ISPWA  Pulse motor rod type RCP2W-RA4C/RA6C  SCARA robot IX-NNW
	Water	The equipment receives no harmful effect even when directly hit by water jets from any direction.	
IP54	Solid objects	Dust that would affect the operation of the equipment does not enter the equipment.	 High-thrust rod type RCP2W-RA10C  24-V servo motor rod type RCAW-RA3/RA4  200-V servo motor rod type RCS2W-RA4
	Water	The equipment receives no harmful effect even when contacted by water splashes from any direction.	
IP50	Solid objects	Dust that would affect the operation of the equipment does not enter the equipment.	 Small gripper (dust-proof type) RCP2W-GR
	Water	The equipment is not protected against water.	

Slider Type

Mini

Standard

Controllers Integrated

Rod Type

Mini

Standard

Controllers 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

RCP4W-SA5C

ROBO Cylinder, Splash-Proof Slider Type, Actuator Width 55mm, Pulse Motor, Coupled

Model Specification Items	RCP4W — SA5C — I — 35P — <input type="checkbox"/> — <input type="checkbox"/> — P3 — <input type="checkbox"/> — <input type="checkbox"/>
Series	Type — Encoder type — Motor type — Lead — Stroke — Applicable controller — Cable length — Options
	I: Incremental 35P: Pulse motor, 35□ size * The Simple absolute encoder is also considered type "I".
	10: 10mm 5: 5mm
	100: 100mm ? 500: 500mm (50mm pitch increments)
	P3: PCON-CA
	N: None P: 1m S: 3m M: 5m X□□: Custom length R□□: Robot cable
	* The RCP4W can be operated only with the PCON-CA
	See options below.

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



Technical References Appendix P.5

- POINT** Notes on selection
- (1) This actuator is designed exclusively for horizontal installation. It cannot be installed vertically. When hanging the actuator from the ceiling or mounting it on the wall, be sure to do so using an optional dedicated bracket.
 - (2) The payload varies depending on the acceleration/deceleration. The upper limit of acceleration/deceleration is 0.6 G.
 - (3) The cable joint connector is not splash-proof, so install the connector in a location where it will not come in contact with water.
 - (4) Refer to the page at right for the air tube length and air flow rate when implementing air purge.
 - (5) See page A-71 for details on push motion.

■ Payload by Acceleration/Deceleration

With the RCP4W series, the payload remains the same even when the speed is raised. However, the payload will drop if the acceleration is raised. Check on the table below.

Diagram of Acceleration/Deceleration vs. Payload [Supported at Both Ends]

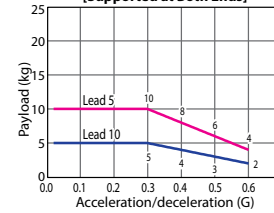
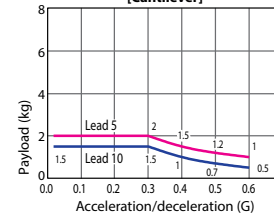


Diagram of Acceleration/Deceleration vs. Payload [Cantilever]



Actuator Specifications

■ Lead and Payload

Model number	Lead (mm)	Maximum horizontal payload (kg)		Maximum push force (N)	Positioning repeatability (mm)	Stroke (mm)
		Supported on both ends	Cantilever			
RCP4W-SA5C-I-35P-10-①-P3-②-③	10	5	1.5	66.9	±0.02	100~500 (every 50mm)
RCP4W-SA5C-I-35P-10-①-P3-②-③	5	10	2	147.9		

■ Stroke and Maximum Speed

Stroke / Lead	100~500 (every 50mm)
	10
5	165

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

(Unit: mm/s)

① Stroke

Stroke (mm)	Standard price
100	—
150	—
200	—
250	—
300	—
350	—
400	—
450	—
500	—

② 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)	—

* See page A-59 for cables for maintenance.

③ Options

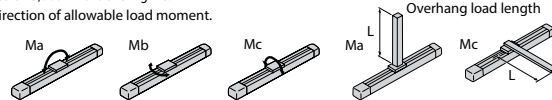
Name	Option code	See page	Standard price
Cable exit from the left side face	A1	→ A-41	—
Cable exit from the right side face	A3	→ A-41	—
Additional alumite coating	AL	→ A-42	—
Food grade grease (edible grease)	GE	→ A-50	—
Non-motor end specification	NM	→ A-52	—
Ceiling mount (bracket mounted on the left)	HFL	→ A-51	—
Ceiling mount (bracket mounted on the right)	HFR	→ A-51	—
Wall mount sideways on the left	TFL	→ A-57	—
Wall mount sideways on the right	TFR	→ A-57	—

Actuator Specifications

Item	Description
Drive system	Ball screw ø8 mm, rolled C10
Positioning repeatability	±0.02mm
Lost motion	0.1 mm or less
Allowable static moment	Supported on both ends: Ma: 5.9 N·m Mb: 8.4 N·m Mc: 13.7 N·m Cantilever: Ma: 2.9 N·m Mb: 4.2 N·m Mc: 6.8 N·m
Allowable dynamic moment (*)	Supported on both ends: Ma: 3.4 N·m Mb: 4.9 N·m Mc: 8.0 N·m Cantilever: Ma: 1.7 N·m Mb: 2.5 N·m Mc: 4.0 N·m
Overhang load length	Supported on both ends: 125mm or less Cantilever: 75mm or less
Protective structure	IP65 (with air purge)
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

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

Direction of allowable load moment.



495 RCP4W-SA5C

Dimensional Drawings

For Special Orders Appendix P.15

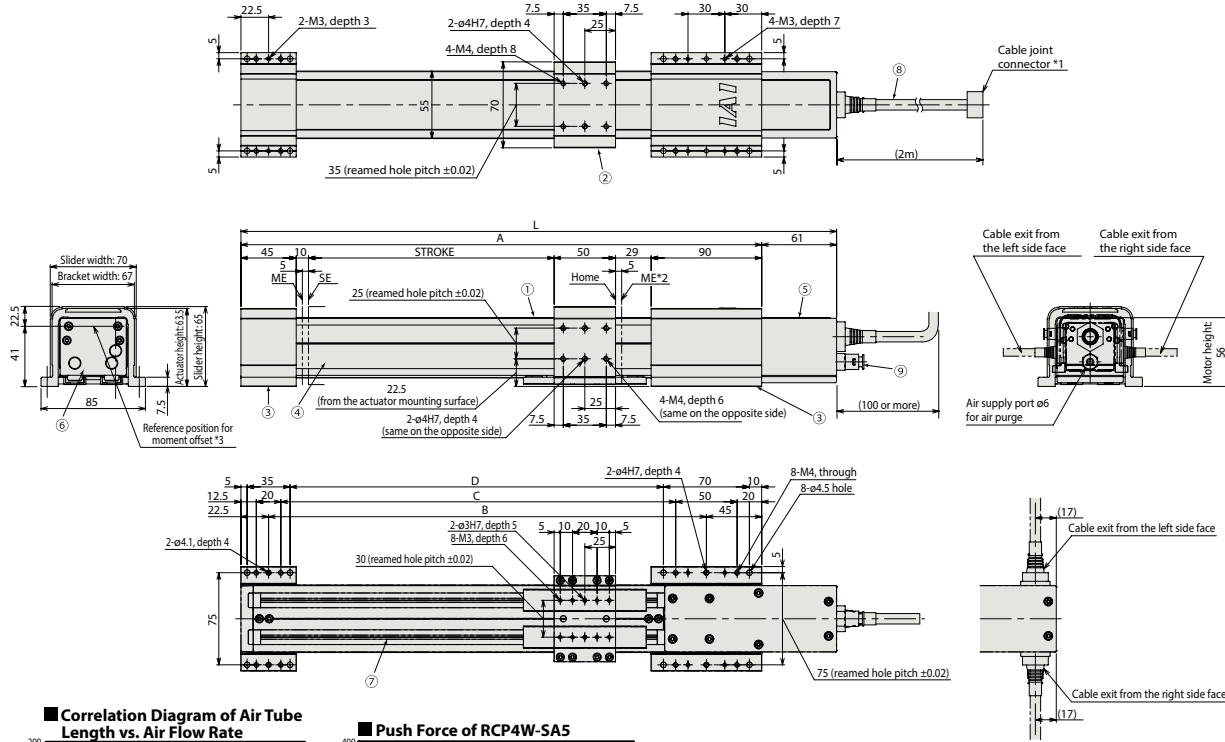
*See Page A-9 for the dimensional drawing for the ceiling mount specification.
See Page A-10 for the dimensional drawing for the wall mount specification.

Materials of Main Components

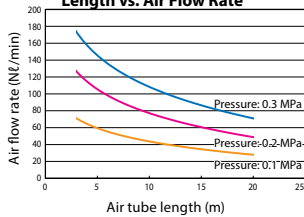
① Base	Extruded aluminum (A6063)	Surface treatment: Alumite coating
② Table	Extruded aluminum (A6063)	Surface treatment: Alumite coating (excluding machined areas)
③ Mounting bracket (front/rear)	Extruded aluminum (A6063)	Surface treatment: Alumite coating (excluding machined areas)
④ Side cover	Extruded aluminum (A6063)	Surface treatment: Alumite coating
⑤ Motor cover	Die-cast aluminum (ADC12)	Surface treatment: Alumite coating + Paint
⑥ Front cover	Die-cast aluminum (ADC12)	Surface treatment: Alumite coating + Paint
⑦ Seal	Urethane rubber (U)	
⑧ Actuator cable	Polyvinyl chloride (PVC)	* High flex type cable
⑨ Air purge joint	Polyphenylene sulfide (PPS)	

* Alumite coating has been removed in the machined areas of the table ② and mounting bracket ③. To add alumite coating to these areas, specify the "Additional alumite coating (code: AL)" option.

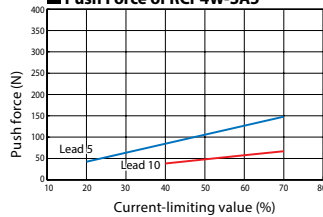
- (*1) Connect the motor-encoder integrated cable here.
- (*2) After homing, the slider moves to the ME, therefore, please watch for any interference with surrounding objects.
- (*3) Reference position for calculating the moments.



Correlation Diagram of Air Tube Length vs. Air Flow Rate



Push Force of RCP4W-SA5



- The above correlation diagram assumes an air tube of 6mm in outer diameter and 4mm in inner diameter. (A joint of 6mm in outer diameter is used on the actuator side.)
- Use the correlation diagram as a reference to determine an appropriate pressure and air tube length in such a way that the air flow rate will become 40 NL/min or more (clean dry air).

Note on Push-motion Operation

When performing push-motion operation, make sure the reactive moment generated by the push force does not exceed 80% of the dynamic allowable moment (Ma or Mb) specified in the catalog.

In push-motion operation, the travel speed is fixed at 25 mm/s.

Dimensions and Weight by Stroke

Stroke	100	150	200	250	300	350	400	450	500
L	385	435	485	535	585	635	685	735	785
A	324	374	424	474	524	574	624	674	724
B	256.5	306.5	356.5	406.5	456.5	506.5	556.5	606.5	656.5
C	221.5	271.5	321.5	371.5	421.5	471.5	521.5	571.5	621.5
D	204	254	304	354	404	454	504	554	604
Weight (kg)	2.8	2.9	3.1	3.2	3.4	3.5	3.7	3.8	4.0

Applicable Controllers

RCP4W series actuators can be operated with the controllers indicated below. Select the type according to your intended application.

(Note) These actuators cannot be operated with controllers other than the PCON-CA.

Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power supply capacity	Standard price	Reference page
Positioner type		PCON-CA-35PI-①-2-0	Equipped with a high-output driver Positioner type based on PIO control	512 points	DC24V	Refer to P618	—	→ P607
Pulse-train type		PCON-CA-35PI-□-2-0	Equipped with a high-output driver Pulse-train input type	—				
Field network type		PCON-CA-35PI-①-0-0	Equipped with a high-output driver Supporting 7 major field networks	768 points				

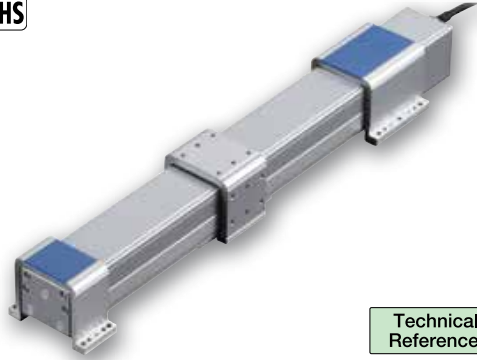
* ① indicates I/O type (NP/PN). * □ indicates N (NPN specification) or P (PNP specification) symbol * ① indicates field network specification symbol.

RCP4W-SA6C

ROBO Cylinder, Splash-Proof Slider Type, Actuator Width 62mm, Pulse Motor, Coupled

Model Specification Items	RCP4W — SA6C — I — 42P — — — P3 — — 	Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
	I: Incremental * The Simple absolute encoder is also considered type "I".	42P: Pulse motor, 42□ size	12: 12mm 6: 6mm	100: 100mm ? 600: 600mm (50mm pitch increments)	P3: PCON-CA	N: None P: 1m S: 3m M: 5m X□□: Custom length R□□: Robot cable	See options below.			

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



Technical References Appendix P.5

- POINT** Notes on selection
- (1) This actuator is designed exclusively for horizontal installation. It cannot be installed vertically. When hanging the actuator from the ceiling or mounting it on the wall, be sure to do so using an optional dedicated bracket.
 - (2) The payload varies depending on the acceleration/deceleration. The upper limit of acceleration/deceleration is 0.6 G.
 - (3) The cable joint connector is not splash-proof, so install the connector in a location where it will not come in contact with water.
 - (4) Refer to the page at right for the air tube length and air flow rate when implementing air purge.
 - (5) See page A-71 for details on push motion.

■ Payload by Acceleration/Deceleration
With the RCP4W series, the payload remains the same even when the speed is raised. However, the payload will drop if the acceleration is raised. Check on the table below.

Diagram of Acceleration/Deceleration vs. Payload [Supported at Both Ends]

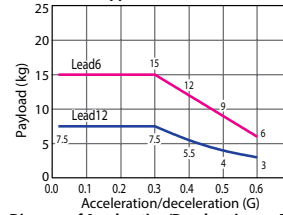
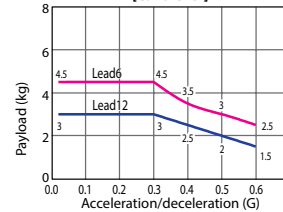


Diagram of Acceleration/Deceleration vs. Payload [Cantilever]



Actuator Specifications

■ Lead and Payload

Model number	Lead (mm)	Maximum horizontal payload (kg)		Maximum push force (N)	Positioning repeatability (mm)	Stroke (mm)
		Supported on both ends	Cantilever			
RCP4W-SA6C-I-42P-12-①-P3-②-③	12	7.5	3	82.8	±0.02	100~600 (every 50mm)
RCP4W-SA6C-I-42P-6-①-P3-②-③	6	15	4.5	179.5		

■ Stroke and Maximum Speed

Stroke / Lead	100~600 (every 50mm)
	12
6	200

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

(Unit: mm/s)

① Stroke

Stroke (mm)	Standard price
100	—
150	—
200	—
250	—
300	—
350	—
400	—
450	—
500	—
550	—
600	—

② 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)	—

* See page A-59 for cables for maintenance.

③ Options

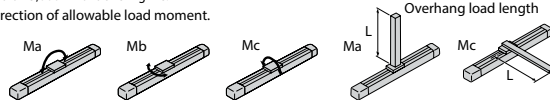
Name	Option code	See page	Standard price
Cable exit from the left side face	A1	→ A-41	—
Cable exit from the right side face	A3	→ A-41	—
Additional alumite coating	AL	→ A-42	—
Food grade grease (edible grease)	GE	→ A-50	—
Non-motor end specification	NM	→ A-52	—
Ceiling mount (bracket mounted on the left)	HFL	→ A-51	—
Ceiling mount (bracket mounted on the right)	HFR	→ A-51	—
Wall mount sideways on the left	TFL	→ A-57	—
Wall mount sideways on the right	TFR	→ A-57	—

Actuator Specifications

Item	Description
Drive system	Ball screw ø10 mm, rolled C10
Positioning repeatability	±0.02mm
Lost motion	0.1 mm or less
Allowable static moment	Supported on both ends: Ma: 8.5 N·m Mb: 12.2 N·m Mc: 19.9 N·m Cantilever: Ma: 4.3 N·m Mb: 6.1 N·m Mc: 10.0 N·m
Allowable dynamic moment (*)	Supported on both ends: Ma: 4.7 N·m Mb: 6.7 N·m Mc: 11.0 N·m Cantilever: Ma: 2.4 N·m Mb: 3.4 N·m Mc: 5.5 N·m
Overhang load length	Supported on both ends: 150mm or less Cantilever: 90mm or less
Protective structure	IP65 (with air purge)
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

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

Direction of allowable load moment.

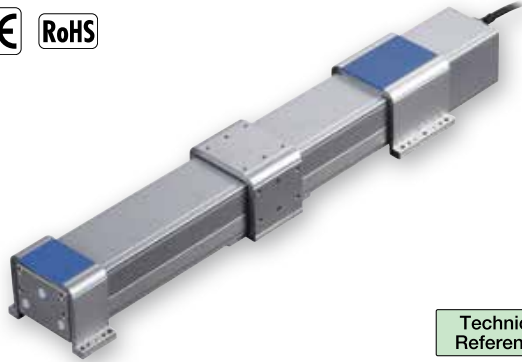


497 RCP4W-SA6C

RCP4W-SA7C

ROBO Cylinder, Splash-Proof Slider Type, Actuator Width 77mm, Pulse Motor, Coupled

Model Specification Items	RCP4W — SA7C — I — 56P — □ — □ — □ — □ — □
Series	Type — Encoder type — Motor type — Lead — Stroke — Applicable controller — Cable length — Options
	I: Incremental 56P: Pulse motor, 16: 16mm 100: 100mm ? 8: 8mm 700: 700mm (50mm pitch increments)
	P3: PCON-CA N: None P: 1m S: 3m M: 5m X□□: Custom length R□□: Robot cable
	* The RCP4W can be operated only with the PCON-CA
	* The Simple absolute encoder is also considered type "I".
	* See page Pre-47 for details on the model descriptions.



Technical References Appendix P.5

- POINT** Notes on selection
- (1) This actuator is designed exclusively for horizontal installation. It cannot be installed vertically. When hanging the actuator from the ceiling or mounting it on the wall, be sure to do so using an optional dedicated bracket.
 - (2) The payload varies depending on the acceleration/deceleration. The upper limit of acceleration/deceleration is 0.6 G.
 - (3) The cable joint connector is not splash-proof, so install the connector in a location where it will not come in contact with water.
 - (4) Refer to the page at right for the air tube length and air flow rate when implementing air purge.
 - (5) See page A-71 for details on push motion.

■ Payload by Acceleration/Deceleration
With the RCP4W series, the payload remains the same even when the speed is raised. However, the payload will drop if the acceleration is raised. Check on the table below.

Diagram of Acceleration/Deceleration vs. Payload [Supported at Both Ends]

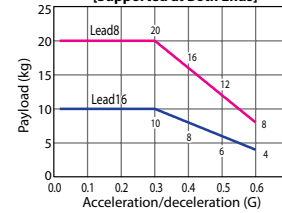
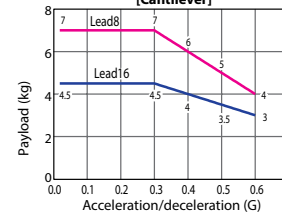


Diagram of Acceleration/Deceleration vs. Payload [Cantilever]



Actuator Specifications

■ Lead and Payload

Model number	Lead (mm)	Maximum horizontal payload (kg)		Maximum push force (N)	Positioning repeatability (mm)	Stroke (mm)
		Supported on both ends	Cantilever			
RCP4W-SA7C-I-56P-16-①-P3-②-③	16	10	4.5	161.9	±0.02	100~700 (every 50mm)
RCP4W-SA7C-I-56P-8-①-P3-②-③	8	20	7	337.9		

■ Stroke and Maximum Speed

Stroke / Lead	100~700 (every 50mm)
	16
8	265

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

(Unit: mm/s)

① Stroke

Stroke (mm)	Standard price
100	—
150	—
200	—
250	—
300	—
350	—
400	—
450	—
500	—
550	—
600	—
650	—
700	—

② 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)	—	
	R01 (1m) ~ R03 (3m)	—	
Robot Cable	R04 (4m) ~ R05 (5m)	—	
	R06 (6m) ~ R10 (10m)	—	
	R11 (11m) ~ R15 (15m)	—	
	R16 (16m) ~ R20 (20m)	—	

* See page A-59 for cables for maintenance.

③ Options

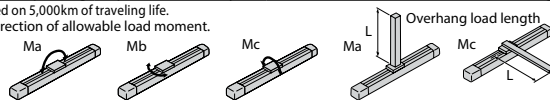
Name	Option code	See page	Standard price
Cable exit from the left side face	A1	→ A-41	—
Cable exit from the right side face	A3	→ A-41	—
Additional alumite coating	AL	→ A-42	—
Food grade grease (edible grease)	GE	→ A-50	—
Non-motor end specification	NM	→ A-52	—
Ceiling mount (bracket mounted on the left)	HFL	→ A-51	—
Ceiling mount (bracket mounted on the right)	HFR	→ A-51	—
Wall mount sideways on the left	TFL	→ A-57	—
Wall mount sideways on the right	TFR	→ A-57	—

Actuator Specifications

Item	Description
Drive system	Ball screw ø12 mm, rolled C10
Positioning repeatability	±0.02mm
Lost motion	0.1 mm or less
Allowable static moment	Supported on both ends: Ma: 11.7 N·m Mb: 16.6 N·m Mc: 31.8 N·m Cantilever: Ma: 5.8 N·m Mb: 8.3 N·m Mc: 15.9 N·m
Allowable dynamic moment (*)	Supported on both ends: Ma: 6.1 N·m Mb: 8.8 N·m Mc: 16.8 N·m Cantilever: Ma: 3.1 N·m Mb: 4.4 N·m Mc: 8.4 N·m
Overhang load length	Supported on both ends: 175mm or less Cantilever: 105mm or less
Protective structure	IP65 (with air purge)
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

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

Direction of allowable load moment.



499 RCP4W-SA7C

Dimensional Drawings

For Special Orders Appendix P.15

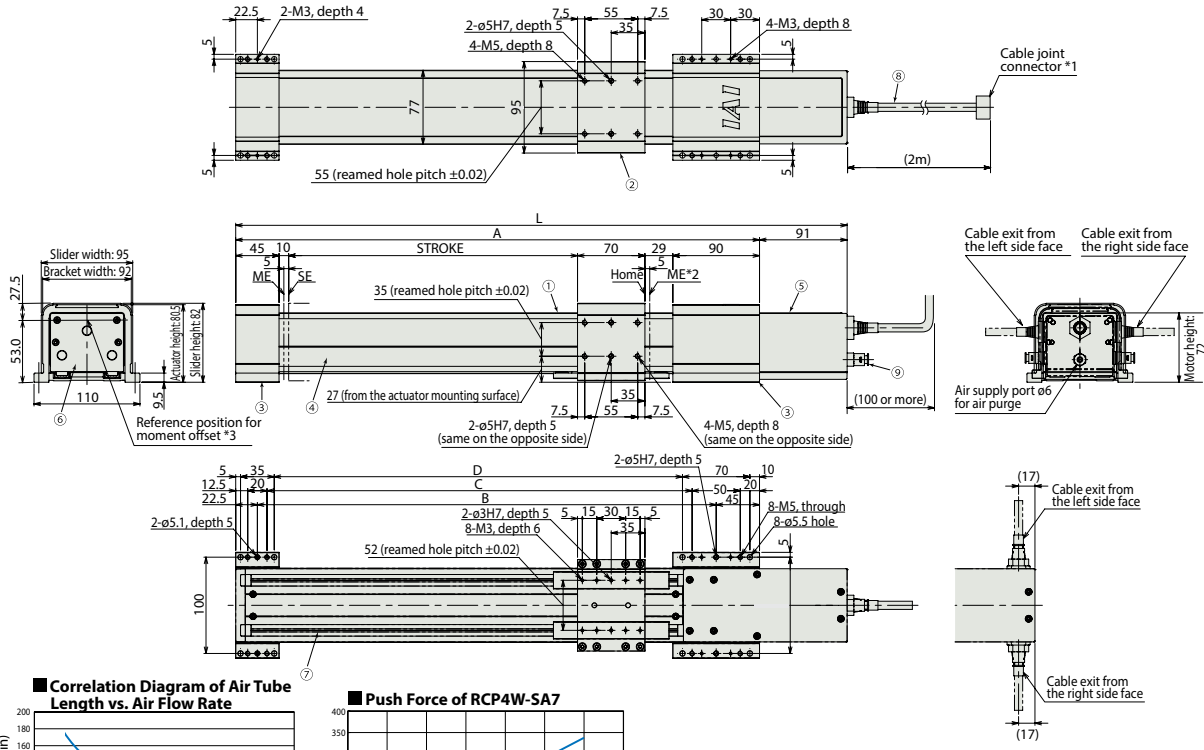
*See Page A-9 for the dimensional drawing for the ceiling mount specification.
See Page A-10 for the dimensional drawing for the wall mount specification.

- (*1) Connect the motor-encoder integrated cable here.
- (*2) After homing, the slider moves to the ME, therefore, please watch for any interference with surrounding objects.
- (*3) Reference position for calculating the moments.

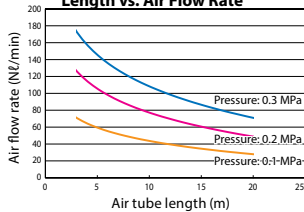
Materials of Main Components

① Base	Extruded aluminum (A6063)	Surface treatment: Alumite coating
② Table	Extruded aluminum (A6063)	Surface treatment: Alumite coating (excluding machined areas)
③ Mounting bracket (front/rear)	Extruded aluminum (A6063)	Surface treatment: Alumite coating (excluding machined areas)
④ Side cover	Extruded aluminum (A6063)	Surface treatment: Alumite coating
⑤ Motor cover	Die-cast aluminum (ADC12)	Surface treatment: Alumite coating + Paint
⑥ Front cover	Die-cast aluminum (ADC12)	Surface treatment: Alumite coating + Paint
⑦ Seal	Urethane rubber (U)	
⑧ Actuator cable	Polyvinyl chloride (PVC)	* High flex type cable
⑨ Air purge joint	Polyphenylene sulfide (PPS)	

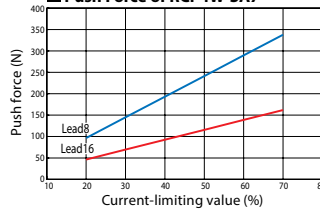
* Alumite coating has been removed in the machined areas of the table ② and mounting bracket ③. To add alumite coating to these areas, specify the "Additional alumite coating (code: AL)" option.



Correlation Diagram of Air Tube Length vs. Air Flow Rate



Push Force of RCP4W-SA7



Note on Push-motion Operation

When performing push-motion operation, make sure the reactive moment generated by the push force does not exceed 80% of the dynamic allowable moment (Ma or Mb) specified in the catalog.

In push-motion operation, the travel speed is fixed at 20 mm/s.

- The above correlation diagram assumes an air tube of 6mm in outer diameter and 4mm in inner diameter. (A joint of 6mm in outer diameter is used on the actuator side.)
- Use the correlation diagram as a reference to determine an appropriate pressure and air tube length in such a way that the air flow rate will become 40 NL/min or more (clean dry air).

Dimensions and Weight by Stroke

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700
L	435	485	535	585	635	685	735	785	835	885	935	985	1035
A	344	394	444	494	544	594	644	694	744	794	844	894	944
B	276.5	326.5	376.5	426.5	476.5	526.5	576.5	626.5	676.5	726.5	776.5	826.5	876.5
C	241.5	291.5	341.5	391.5	441.5	491.5	541.5	591.5	641.5	691.5	741.5	791.5	841.5
D	224	274	324	374	424	474	524	574	624	674	724	774	824
Weight (kg)	5.9	6.2	6.5	6.8	7.1	7.4	7.6	7.9	8.2	8.5	8.8	9.0	9.3

Applicable Controllers

RCP4W series actuators can be operated with the controllers indicated below. Select the type according to your intended application.

(Note) These actuators cannot be operated with controllers other than the PCON-CA.

Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power supply capacity	Standard price	Reference page
Positioner type		PCON-CA-56PI-①-2-0	Equipped with a high-output driver Positioner type based on PIO control	512 points	DC24V	Refer to P618	—	→ P607
Pulse-train type		PCON-CA-56PI-□-2-0	Equipped with a high-output driver Pulse-train input type	—				
Field network type		PCON-CA-56PI-①-0-0	Equipped with a high-output driver Supporting 7 major field networks	768 points				

* ① indicates I/O type (NP/PN). * □ indicates N (NPN specification) or P (PNP specification) symbol * ① indicates field network specification symbol.



RCP4W-SA7C

500

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sales@electromate.com

Slider Type

Mini

Standard

Controllers Integrated

Rod Type

Mini

Standard

Controllers 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

RCP4W-RA6C

ROBO Cylinder, Splash-Proof Rod Type, Actuator Width 65mm, 24V Pulse Motor

Model Specification Items	RCP4W — RA6C — I — 42P — □ — □ — P3 — □ — □
	Series — Type — Encoder type — Motor type — Lead — Stroke — Applicable controller — Cable length — Options
	I: Incremental 42P: Pulse motor, size 42 □ 42SP: High-thrust pulse motor, size 42 □
	12: 12mm 50: 50mm P3: PCON-CA
	6: 6mm ?
	3: 3mm 400: 400mm (50mm pitch increments)
	N: None P: 1m S: 3m M: 5m X □ □: Custom length R □ □: Robot cable
	See Options below. * If the high-thrust pulse motor is selected, the actuator comes standard with option B (Brake).

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

Built-in Guide Mechanism

RoHS

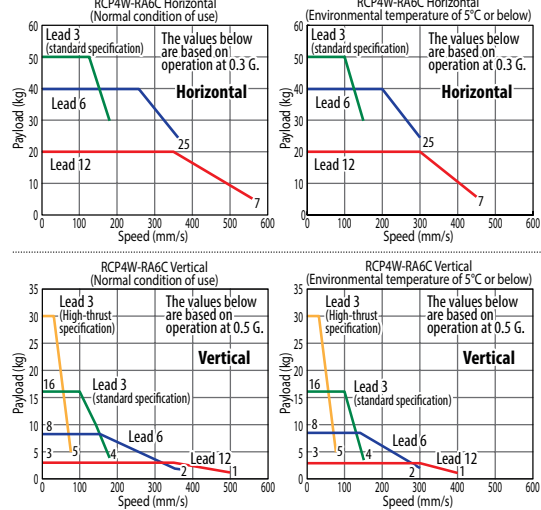


Technical References Appendix P.5

- POINT** Notes on selection
- 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 page A-108 for the maximum payload by acceleration.)
 - The horizontal payload is calculated by assuming that an external guide is also used.
 - The high-thrust specification is designed exclusively for vertical operation. It comes standard with a brake.

Speed vs. Load Capacity

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

Lead and Payload

	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-□-□-□-□-□-□	12	20	3	93	±0.02	50 to 400 (Every 50mm)
	RCP4W-RA6C-I-42P-6-□-□-□-□-□-□	6	40	8	185		
	RCP4W-RA6C-I-42P-3-□-□-□-□-□-□	3	50	16	370		
High-thrust specification	RCP4W-RA6C-I-42SP-3-□-□-□-□-□-□-□	3	—	30	590		

Code explanation ① Stroke ② Cable length ③ Options

Stroke and Maximum Speed (Unit: mm/s)

Lead	Stroke	50 (mm)	100 ~ 400 (Every 50mm)
		12	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 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)	—

* See page A-59 for cables for maintenance.

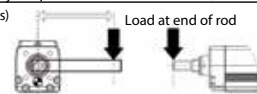
③ Options

Name	Option code		Standard price
Cable exit from the left side face	A1	→ A-41	—
Cable exit from the right side face	A3	→ A-41	—
Cable exit from the top face	AT	→ A-41	—
Brake	B	→ A-42	—
With flange	FL	→ A-45	—
With foot bracket	FT	→ A-48	—
Non-motor side specification	NM	→ A-52	—

Actuator Specifications

Item	Description
Drive method	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 degrees
Allowable load/allowable torque at end of rod	Refer to the page on the right.
Load 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)



501

RCP4W-RA6C

Dimensional Drawings

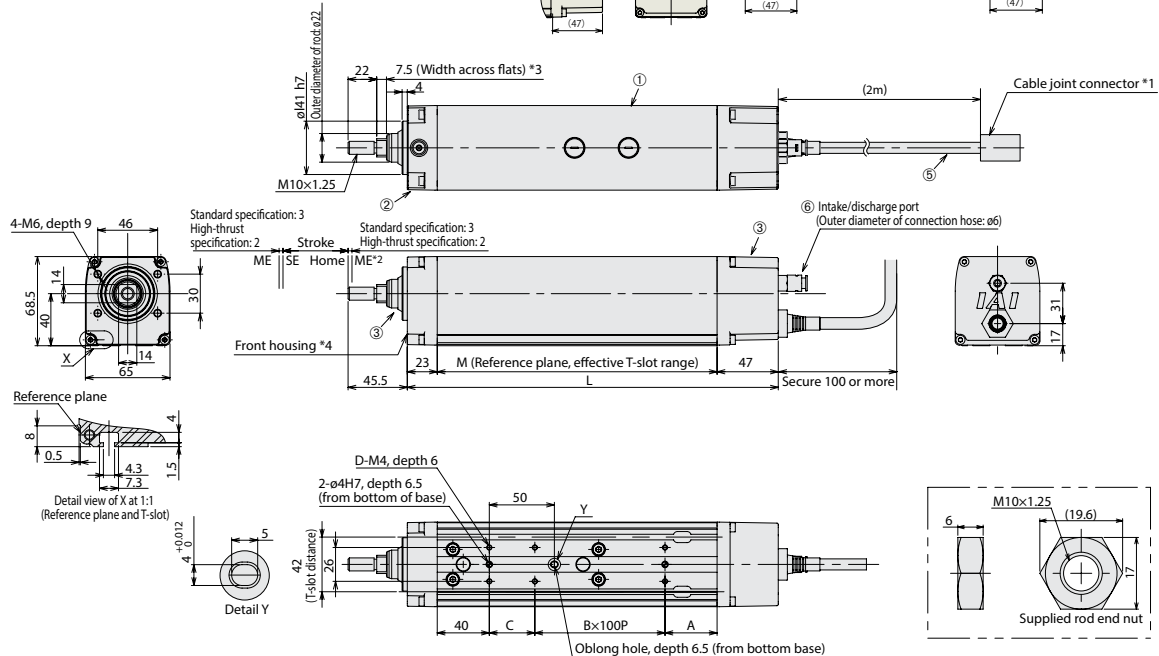
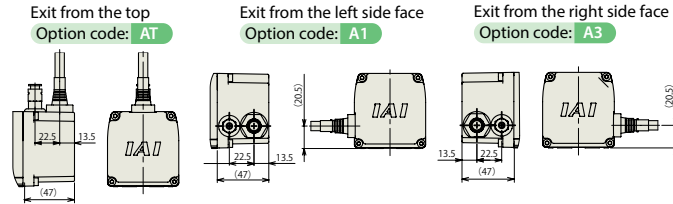
For Special Orders Appendix P.15

- *1 Connect the motor-encoder integrated cable here.
- *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 bolt 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

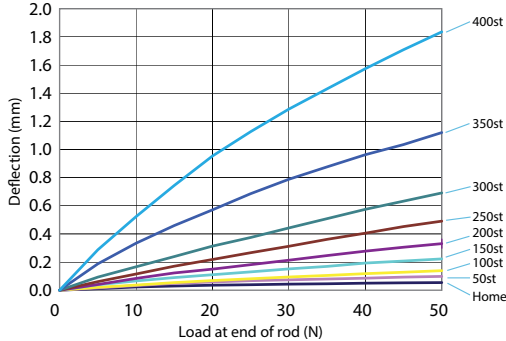
① Frame	Aluminum extrusion material (A6063SS-T5 or equivalent) with white alumite coating
② Front bracket	Aluminum die-cast
③ Rear cover	Aluminum die-cast
④ Rod	Stainless steel pipe (SUS304 or equivalent), polished + hard chrome plated
⑤ Actuator cable	Polyvinyl chloride (PVC)
⑥ Intake/exhaust port	Polyphenylene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

<Cable Exit Direction Option>



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 Weight 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)	Without brake	65.6	51.2	41.7	34.9	29.8	25.7	22.4	19.7
	With brake	32.4	23.6	18.1	14.4	11.6	9.5	7.7	6.2
Allowable dynamic load at end of rod (N)	Without brake	25.6	19.7	15.7	12.7	10.4	8.6	7.1	5.7
	With brake	6.6	5.2	4.3	3.7	3.2	2.8	2.6	2.3
Allowable static torque at end of rod (N·m)	Without brake	2.6	2.0	1.6	1.3	1.0	0.9	0.7	0.6
	With brake	2.6	2.0	1.6	1.3	1.0	0.9	0.7	0.6
Weight (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 Controllers

RCP4W 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
Positioner type		PCON-CA-42OI-①-2-0	Equipped with a high-output driver Positioner type based on PIO control	512 points	DC24V	Refer to P618	—	→ P607
Pulse-train type		PCON-CA-42OI-□-2-0	Equipped with a high-output driver Pulse-train input type	—				
Field network type		PCON-CA-42OI-①-0-0	Equipped with a high-output driver Supporting 7 major field networks	768 points				

* ① indicates I/O type (NP/PN). * □ indicates N (NPN specification) or P (PNP specification) symbol * ① indicates field network specification symbol. * ○ indicates P (Standard specification) or SP (High-thrust specification) symbol.

IAI

RCP4W-RA6C

502

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Slider Type

Mini

Standard

Controllers Integrated

Rod Type

Mini

Standard

Controllers 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

RCP4W-RA7C

ROBO Cylinder, Splash-Proof Rod Type, Actuator Width 75mm, 24V Pulse Motor

Model Specification Items	RCP4W — RA7C — I — 56P — — — P3 — —
Series	Type — Encoder type — Motor type — Lead — Stroke — Applicable controller — Cable length — Options
	I: Incremental 56P: Pulse motor, size 56□ 56SP: High-thrust pulse motor, size 56□
	16: 16mm 8: 8mm 4: 4mm
	50: 50mm ? ? 500: 500mm (50mm pitch increments)
	P3: PCON-CA P4: PCON-CFA * The PCON-CFA is designed exclusively for the high-thrust specification.
	N: None P: 1m S: 3m M: 5m X□□: Custom length R□□: Robot cable
	See Options below. * If the high-thrust pulse motor is selected, the actuator comes standard with option B (Brake).

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

Built-in Guide Mechanism

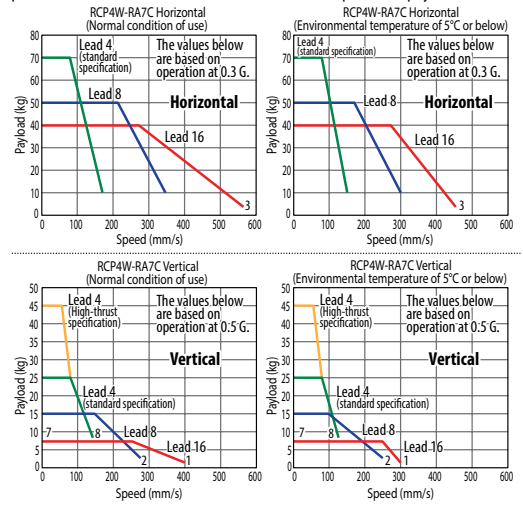


Technical References Appendix P.5

- POINT** Notes on selection
- 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 page A-108 for the maximum payload by acceleration.)
 - The horizontal payload is calculated by assuming that an external guide is also used.
 - The high-thrust specification is designed exclusively for vertical operation. It comes standard with a brake.

Speed vs. Load Capacity

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

Lead and Payload

Model number	Lead (mm)	Maximum payload (kg)		Maximum push force (N)	Positioning repeatability (mm)	Stroke (mm)
		Horizontal (kg)	Vertical (kg)			
RCP4W-RA7C-I-56P-16-①-P3-②-③	16	40	7	219	±0.02	50 to 500 (Every 50mm)
RCP4W-RA7C-I-56P-8-①-P3-②-③	8	50	15	437		
RCP4W-RA7C-I-56P-4-①-P3-②-③	4	70	25	875		
RCP4W-RA7C-I-56SP-4-①-P4-②-③-B	4	—	45	1030		

Code explanation ① Stroke ② Cable length ③ Options

Stroke and Maximum Speed (Unit: mm/s)

Stroke Lead	Maximum Speed (mm/s)	
	50 (mm)	100 ~ 500 (Every 50mm)
16	500 [450 < 300 >]	560 < 400 > [450 < 300 >]
8	340 < 280 > [300 < 250 >]	—
4	170 < 140 > [150 < 125 >]	—
4	< 80 > [<lt; >]<="" 80="" td=""> <td>—</td> </lt;>	—

* 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	—	—
450	—	—
500	—	—

② 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)	—
	—	—

* See page A-59 for cables for maintenance.

③ Options

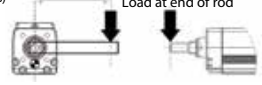
Name	Option code	Standard price
Cable exit from the left side face	A1 → A-41	—
Cable exit from the right side face	A3 → A-41	—
Cable exit from the top face	AT → A-41	—
Brake	B → A-42	—
With flange	FL → A-45	—
With foot bracket	FT → A-48	—
Non-motor side specification	NM → A-52	—

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

Actuator Specifications

Item	Description
Drive method	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 degrees
Allowable load/allowable torque at end of rod	Refer to the page on the right.
Load 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)



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RCP4W-RA7C

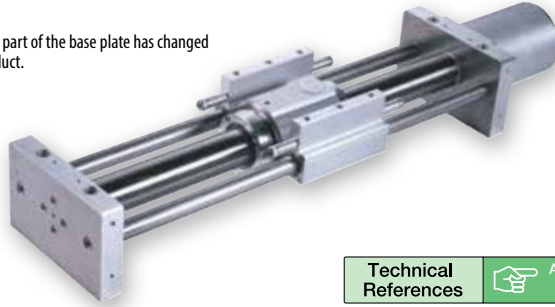
RCP2W-SA16C

ROBO Cylinder, Water-Proof Slider Type, Actuator Width 158mm, Pulse Motor, Coupled

Model Specification Items	RCP2W — SA16C — I — 86P — <input type="checkbox"/> — <input type="checkbox"/> — P4 — <input type="checkbox"/> — <input type="checkbox"/>
Series	Type — Encoder type — Motor type — Lead — Stroke — Applicable controller — Cable length — Options
	I: Incremental 86P: Pulse motor, 56□ High Output 8 : 8mm 4 : 4mm 50: 50mm ? 600: 600mm (50mm pitch increments) P4: PCON-CFA N: None P: 1m S: 3m M: 5m X□□: Custom Length R□□: Robot cable CO : With cover NM: Non-motor end

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

* Please note that a part of the base plate has changed on the actual product.



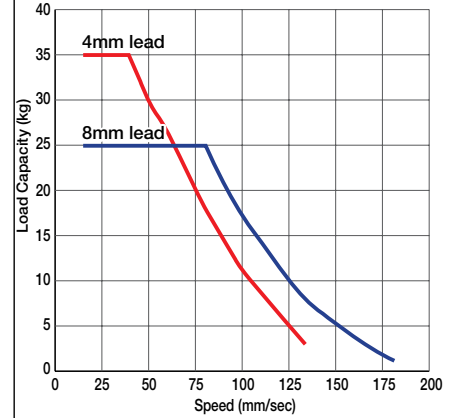
Technical References Appendix P.5

POINT
Notes on selection

- The actuator is limited to being installed horizontally. Please note that it cannot be horizontally wall mounted, vertically mounted, or ceiling mounted. (The same goes for storage.)
- When the stroke increases, the maximum speed 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.
- Since the RCP2 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.
- The load capacity is based on operation at an acceleration of 0.2G. 0.2G is the upper limit for the acceleration.
- Push motion operation is not supported by this actuator.
- The cable joint connector is not splash-proof; secure it in a place that is not prone to water spills.

Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the RCP2 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



Actuator Specifications

Lead and Payload

(Note 1) Please note that the maximum load capacity decreases as the speed increases.

Model number	Lead (mm)	Max. Load Capacity (Note 1)		Stroke (mm)
		Horizontal (kg)	Vertical (kg)	
RCP2W-SA16C-I-86P-8-①-P4-②-③	8	~25	Not Allowed	50~600 (every 50mm)
RCP2W-SA16C-I-86P-4-①-P4-②-③	4	~35		

Stroke and Maximum Speed

Lead	Stroke	50~600 (every 50mm)
		8
4		133

(Unit: mm/s)

Code explanation ① Stroke ② Cable length ③ Options *Push motion operation is not supported by this actuator.

① Stroke

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

③ Options

Name	Option code	See page	Standard price
With cover	CO	→ A-43	—
Non-motor end specification	NM	→ A-52	—

② 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)	—

* See page A-59 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball screw, ø12mm, rolled C10
Positioning repeatability	±0.08mm
Lost Motion	0.7mm or less
Guide	ø20 Non-lubricated linear sliding guide
Allowable static load moment	20.0N-m
Allowable overhang	Ma direction 200mm or less
Protective structure	IP67
Ambient operating temperature/humidity	0 to 40°C, 85% RH max. (Non-condensing)

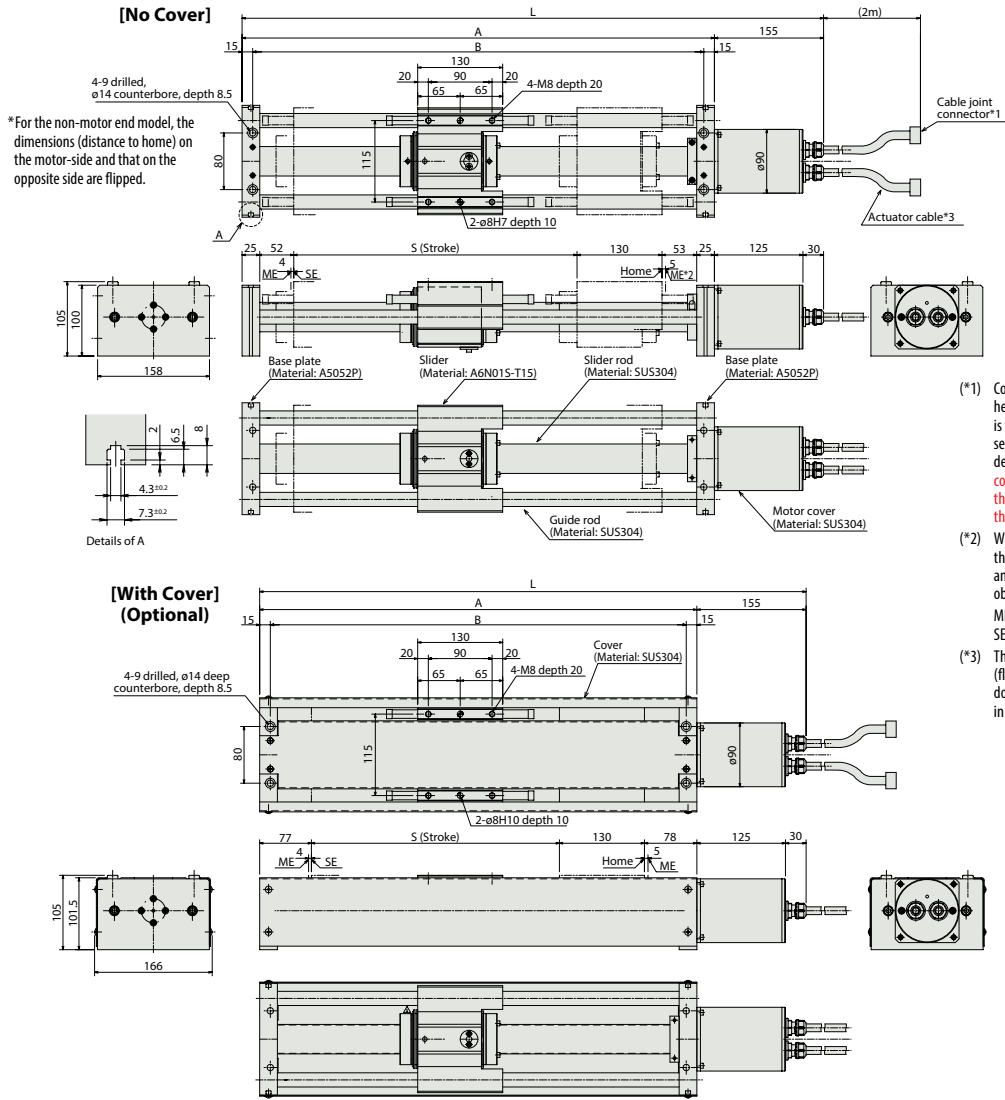
Note

A dynamic moment isn't applicable for the SA16C for structural reasons. When an object is to be mounted on the slider, please fix it in a manner so that no moment load is applied in the direction Mb or Mc, and so that the load is distributed evenly.

505 RCP2W-SA16C

Dimensional Drawings

For Special Orders Appendix P.15



- (*1) Connect the motor and encoder cables here. Please note that the motor cable is the same as the one in the RCP2 series, but that the encoder cable is a dedicated type. *The cable joint connector is not splash-proof; therefore, please secure it in a place that is not prone to water spills.
- (*2) When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end
SE: Stroke end
- (*3) The actuator cable is not a robot cable (flex resistant cable); therefore, please don't use it for movable parts such as in a cable track.

■ Dimensions and Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600
L	490	540	590	640	690	740	790	840	890	940	990	1040
A	335	385	435	485	535	585	635	685	735	785	835	885
B	305	355	405	455	505	555	605	655	705	755	805	855
S	50	100	150	200	250	300	350	400	450	500	550	600
Weight without cover (kg)	9	9.4	9.9	10.4	10.9	11.3	11.8	12.3	12.7	13.2	13.7	15.1
Weight with cover (kg)	10.5	11.1	11.8	12.5	13.2	13.8	14.6	15.3	15.9	16.6	17.3	18.9

Applicable Controllers

The controller for the RCP2W-SA16C type is a dedicated controller.

Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power supply capacity	Standard price	Reference page
Positioner Type		PCON-CFA-86PI-①-2-0	Positioning is possible for up to 512 points	512 points	DC24V	6A max.	—	→ P607

*① indicates I/O type.

Note: • Please note that the encoder cable is a dedicated CFA-type cable. (See page A-59.)
• Note that a simple absolute unit cannot be used.

IAI

RCP2W-SA16C

506

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sales@electromate.com

Slider Type

Mini

Standard

Controllers Integrated

Rod Type

Mini

Standard

Controllers 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

RCP2W-RA4C

ROBO Cylinder, Splash-Proof Rod Type, Actuator Width 45mm, Pulse Motor, Coupled

Model Specification Items	RCP2W — RA4C — I — 42P — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/>
Series — Type	Encoder type — Motor type — Lead — Stroke — Applicable controller — Cable length — Options
I: Incremental * The Simple absolute encoder is also considered type "I".	42P: Pulse motor, 42□ size 10 : 10mm 5 : 5mm 2.5 : 2.5mm 50: 50mm ? 300: 300mm (50mm pitch increments) P1: PCON-PL/PO/SE PSEL P3: PCON-CA MSEP PMEC/PSEP N: None P: 1m S: 3m M: 5m X□□: Custom Length R□□: Robot cable B : Brake FL : With flange FT : With foot bracket NM : Non-motor end

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

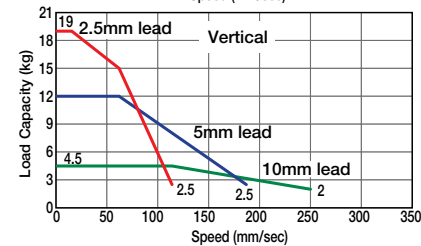
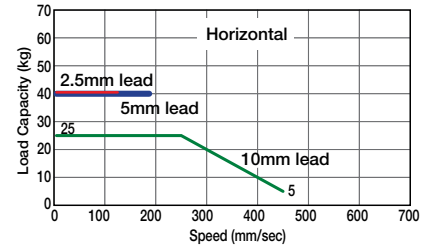


Technical References Appendix P.5

- POINT**
Notes on selection
- When the stroke increases, the maximum speed 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.
 - Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph on the above right to see if your desired speed and load capacity are supported.
 - The load capacity is based on operation at an acceleration of 0.2G. 0.2G is the upper limit for the acceleration.
 - The horizontal payload is calculated by assuming that an external guide is also used.
 - The cable joint connector is not splash-proof; secure it in a place that is not prone to water spills.
 - See page A-71 for details on push motion.

Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the RCP2 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



Actuator Specifications

Lead and Payload

(Note 1) Please note that the maximum load capacity decreases as the speed increases.

Model number	Lead (mm)	Max. Load Capacity (Note 1)		Maximum Push Force (N) (Note 2)	Stroke (mm)
		Horizontal (kg)	Vertical (kg)		
RCP2W-RA4C-I-42P-10-①-②-③-④	10	~25	~4.5	150	50~300 (every 50mm)
RCP2W-RA4C-I-42P-5-①-②-③-④	5	40	~12	284	
RCP2W-RA4C-I-42P-2.5-①-②-③-④	2.5	40	~19	358	

Stroke and Maximum Speed

Stroke Lead	50~200 (every 50mm)	250	300
	10	450 <250>	450 <250>
5	190	190	175
2.5	125 <115>	115	85

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

*The values enclosed in < > apply to vertical settings. (Unit: mm/s)

① Stroke

① Stroke (mm)	Standard price
50	—
100	—
150	—
200	—
250	—
300	—

③ 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)	—
Robot Cable	R01 (1m) ~ R03 (3m)	—
	R04 (4m) ~ R05 (5m)	—
	R06 (6m) ~ R10 (10m)	—
	R11 (11m) ~ R15 (15m)	—
	R16 (16m) ~ R20 (20m)	—

* See page A-59 for cables for maintenance.

④ Options

Name	Option code	See page	Standard price
With cover	B	→ A-42	—
With flange	FL	→ A-45	—
With foot bracket	FT	→ A-48	—
Non-motor end specification	NM	→ A-52	—

Actuator Specifications

Item	Description
Drive System	Ball screw, ø8mm, rolled C10
Positioning repeatability	±0.02mm
Lost Motion	0.1mm or less
Rod diameter	ø22mm
Rod non-rotational accuracy	±1.5 degrees
Protective structure	IP65
Ambient operating temperature/humidity	0 to 40°C, 85% RH max. (Non-condensing)

507

RCP2W-RA4C

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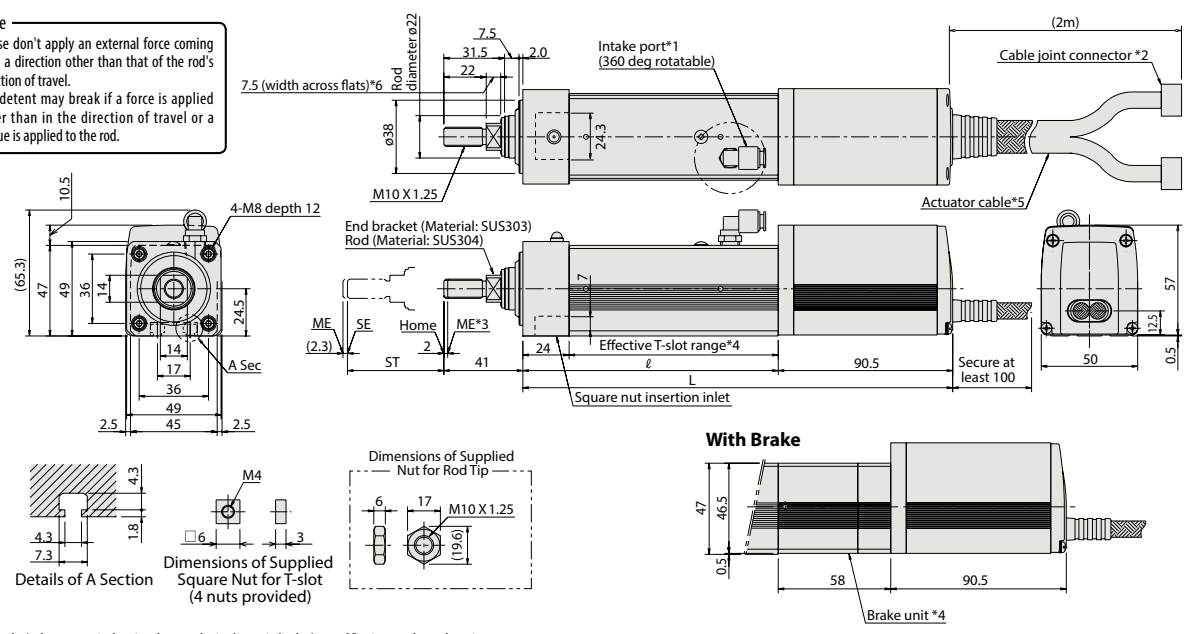
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sales@electromate.com

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers 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

Dimensional Drawings

For Special Orders Appendix P.15

Note
Please don't apply an external force coming from a direction other than that of the rod's direction of travel.
The detent may break if a force is applied other than in the direction of travel or a torque is applied to the rod.



- (*1) Intake/exhaust port is the air exhaust tube in the main body. Insert $\phi 6$ mm tube and use it extended to a place that is not prone to water spills or intake.
- (*2) Connect the motor and encoder cables here. See page A-59 for details on cables.
The cable joint connector is not splash-proof; therefore, please secure it in a place that is not prone to water spills.
- (*3) When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical End
SE: Stroke end
The dimensions enclosed in "()" are reference dimensions.
- (*4) Please note that there is no T-slot in the bottom of brake unit.
- (*5) The actuator cable is not a robot cable (flex resistant cable); therefore, please don't use it for movable parts such as cable track.
- (*6) The orientation of the bolt varies depending on the product.

*Adding a brake increases overall length by 58mm and its weight by 0.4kg.

■ Dimensions and Weight by Stroke

Stroke	50	100	150	200	250	300
ℓ	132.5	182.5	232.5	282.5	332.5	382.5
L	223	273	323	373	423	473
Weight (kg)	1.9	2.1	2.2	2.5	2.9	3.1

② Applicable Controllers

RCP2W series actuators can be operated with the controllers indicated below. Select the type according to your intended application.

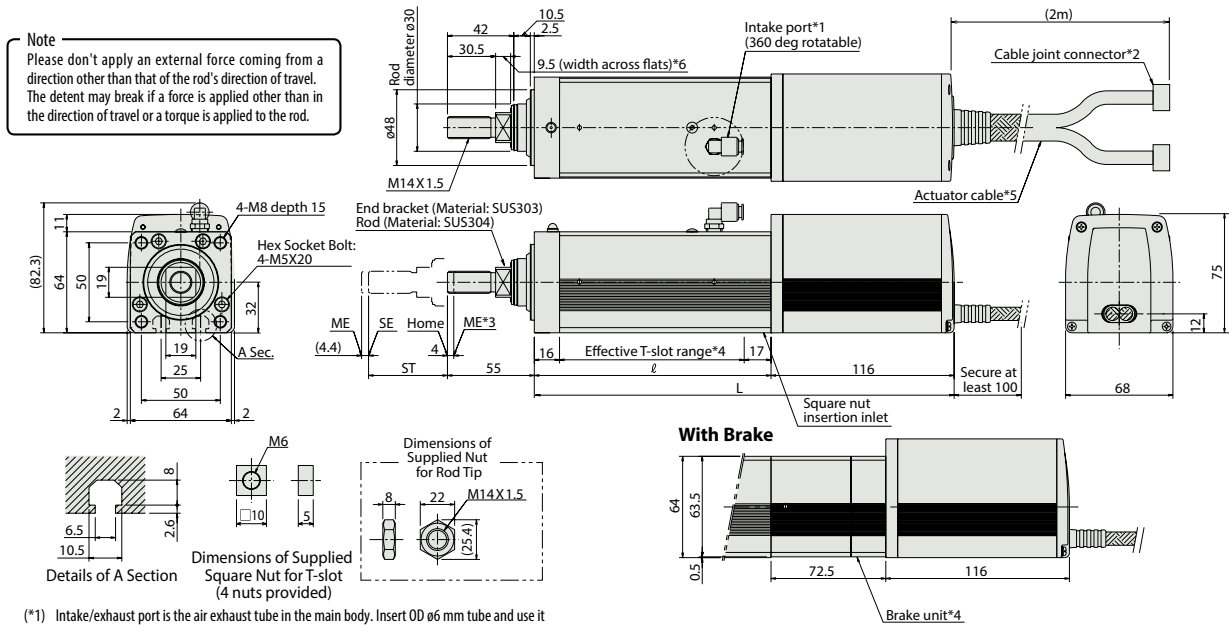
Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Reference page
Solenoid Valve Type		PMEC-C-42PI-(1)-2-(1)	Easy-to-use controller, even for beginners	3 points	AC100V AC200V	Refer to P541	—	→ P537
		PSEP-C-42PI-(1)-2-0	Simple controller operable with the same signal as a solenoid valve			Refer to P555	—	→ P547
Solenoid valve multi-axis type PIO specification		MSEP-C-(1)-(1)-2-0	Positioner type based on PIO control, allowing up to 8 axes to be connected	256 points	DC24V	Refer to P572	—	→ P563
Solenoid valve multi-axis type Network specification		MSEP-C-(1)-(V)-0-0	Field network-ready positioner type, allowing up to 8 axes to be connected					
Positioner type High-output specification		PCON-CA-42PI-(1)-2-0	Equipped with a high-output driver Positioner type based on PIO control	512 points	DC24V	Refer to P618	—	→ P607
Pulse-train type High-output specification		PCON-CA-42PI-PL-(1)-2-0	Equipped with a high-output driver Pulse-train input type	(—)				
Field network type High-output specification		PCON-CA-42PI-(V)-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-(1)-2-0	Pulse train input type with differential line driver support	(—)	DC24V	Refer to P628	—	→ P623
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-(1)-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-42PI-N-0-0	Dedicated Serial Communication	64 points	DC24V	Refer to P671	—	→ P665
Program Control Type		PSEL-CS-1-42PI-(1)-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points	DC24V	Refer to P671	—	→ P665

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

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers 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

Dimensional Drawings

For Special Orders Appendix P.15



Note
Please don't apply an external force coming from a direction other than that of the rod's direction of travel. The detent may break if a force is applied other than in the direction of travel or a torque is applied to the rod.

- (*)1 Intake/exhaust port is the air exhaust tube in the main body. Insert ØD 06 mm tube and use it extended to a place that is not prone to water spills or intake.
- (*)2 Connect the motor and encoder cables here. See page A-59 for details on cables.
The cable joint connector is not splash-proof; therefore, please secure it in a place that is not prone to water spills.
- (*)3 When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical End
SE: Stroke end
The dimensions enclosed in "()" are reference dimensions.
- (*)4 Please note that there is no T-slot in the bottom of brake unit.
- (*)5 The actuator cable is not a robot cable (flex resistant cable); therefore, please don't use it for movable parts such as cable track.
- (*)6 The orientation of the bolt varies depending on the product.

*Adding a brake increases overall length by 72.5mm and its weight by 0.9kg.

■ Dimensions and Weight by Stroke

Stroke	50	100	150	200	250	300
ℓ	1350	200	250	300	350	400
L	266	316	366	416	466	516
Weight (kg)	3.5	4.0	4.5	5.0	5.5	6.0

② Applicable Controllers

RCP2W 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-56PI-(1)-2-(1)	Easy-to-use controller, even for beginners	3 points	AC100V AC200V	Refer to P541	—	→ P537
		PSEP-C-56PI-(1)-2-0	Simple controller operable with the same signal as a solenoid valve			Refer to P555	—	→ P547
Solenoid valve multi-axis type PIO specification		MSEP-C-(1)-(1)-2-0	Positioner type based on PIO control, allowing up to 8 axes to be connected	256 points	DC24V	Refer to P572	—	→ P563
Solenoid valve multi-axis type Network specification		MSEP-C-(1)-(V)-0-0	Field network-ready positioner type, allowing up to 8 axes to be connected					
Positioner type High-output specification		PCON-CA-56PI-(1)-2-0	Equipped with a high-output driver Positioner type based on PIO control	512 points	DC24V	Refer to P618	—	→ P607
Pulse-train type High-output specification		PCON-CA-56PI-PL□-2-0	Equipped with a high-output driver Pulse-train input type	(—)				
Field network type High-output specification		PCON-CA-56PI-(V)-0-0	Equipped with a high-output driver Supporting 7 major field networks	768 points				
Pulse Train Input Type (Differential Line Driver)		PCON-PL-56PI-(1)-2-0	Pulse train input type with differential line driver support	(—)	DC24V	Refer to P628	—	→ P623
Pulse Train Input Type (Open Collector)		PCON-PO-56PI-(1)-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-56PI-N-0-0	Dedicated Serial Communication	64 points	DC24V	Refer to P671	—	→ P665
Program Control Type		PSEL-CS-1-56PI-(1)-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points	DC24V	Refer to P671	—	→ P665

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

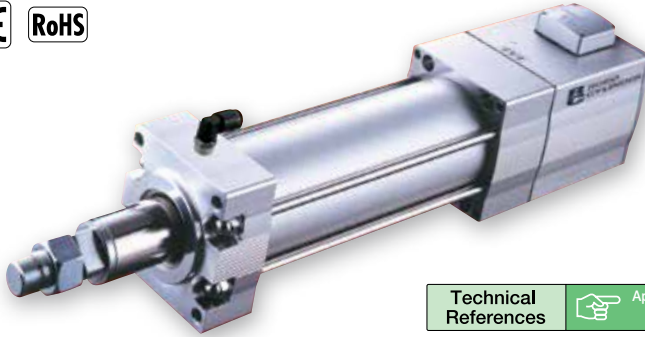
- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm/Flat Type
- Mini
- Standard
- Gripper/Rotary Type
- Linear Servo Type
- Clean-room Type
- Splash-Proof Type
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (200V)
- Linear Servo Motor

RCP2W-RA10C

ROBO Cylinder, High-Thrust Dust-Proof Rod Type, Actuator Width 100mm, Pulse Motor, Coupled

Model Specification Items	RCP2W — RA10C — I — 86P — □ — □ — P4 — □ — □
Series	Type — Encoder type — Motor type — Lead — Stroke — Applicable controller — Cable length — Options
	I: Incremental Type 86P: Pulse motor, 86□ size 10: 10mm 5: 5mm 2.5: 2.5mm 50: 50mm ? 300: 300mm (50mm pitch increments) P4: PCON-CFA N: None P: 1m S: 3m M: 5m A1~A3: Connector Cable Cable outlet direction changed B: Brake FL: With flange FT: With foot bracket X□□: Custom Length R□□: Robot cable

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

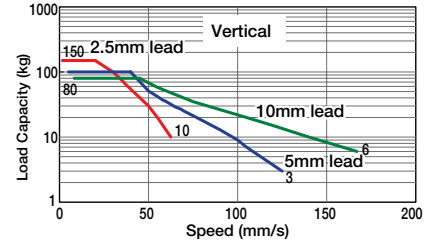
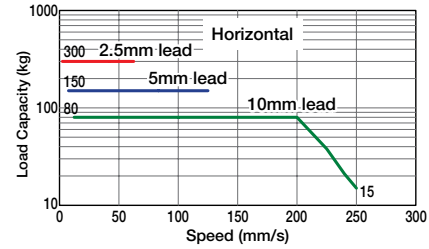


Technical References Appendix P.5

- POINT** Notes on selection
- Minimum speed is set for each lead. (Lead 10: 10mm/s, Lead 5: 5mm/s, Lead 2.5: 1mm/s) Please note that vibration etc. may occur when operated at the minimum speed.
 - Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check the Speed vs. Load Capacity on the right hand graph to see if your desired speed and load capacity are supported.
 - The load capacity is based on operation at lead 10: 0.04G, lead 5: 0.02G and lead 2.5: 0.01G. These values are the upper limits for the acceleration. Also, this is when the load capacity is attached to the external guide. The rotation stopper may break if an external force coming from a direction other than that of rod's direction of travel is applied.
 - The cable joint connector is not splash-proof; secure it in a place that is not prone to water spills.
 - See page A-71 for details on push motion.

Speed vs. Load Capacity

Due to the characteristics of the pulse motor, the RCP2 series' load capacity decreases at high speeds. In the table below, check if your desired speed and load capacity are supported.



Actuator Specifications

Lead and Payload

(Note 1) Please note that the maximum load capacity decreases as the speed increases.

Model number	Lead (mm)	Max. Load Capacity (Note 1)		Maximum Push Force (N) (Note 2)	Stroke (mm)
		Horizontal (kg)	Vertical (kg)		
RCP2W-RA10C-I-86P-10-①-P4-②-③	10	~80	~80	1500	50~300 (every 50mm)
RCP2W-RA10C-I-86P-5-①-P4-②-③	5	150	~100	3000	
RCP2W-RA10C-I-86P-2.5-①-P4-②-③	2.5	300	~150	6000	

Stroke and Maximum Speed

Stroke Lead	50~300 (every 50mm)
10	250 <167>
5	125
2.5	63

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

*The values enclosed in < > apply to vertical settings. (Unit: mm/s)

① Stroke

① Stroke (mm)	Standard price
50	—
100	—
150	—
200	—
250	—
300	—

② 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)	—

* See page A-59 for cables for maintenance.

③ Options

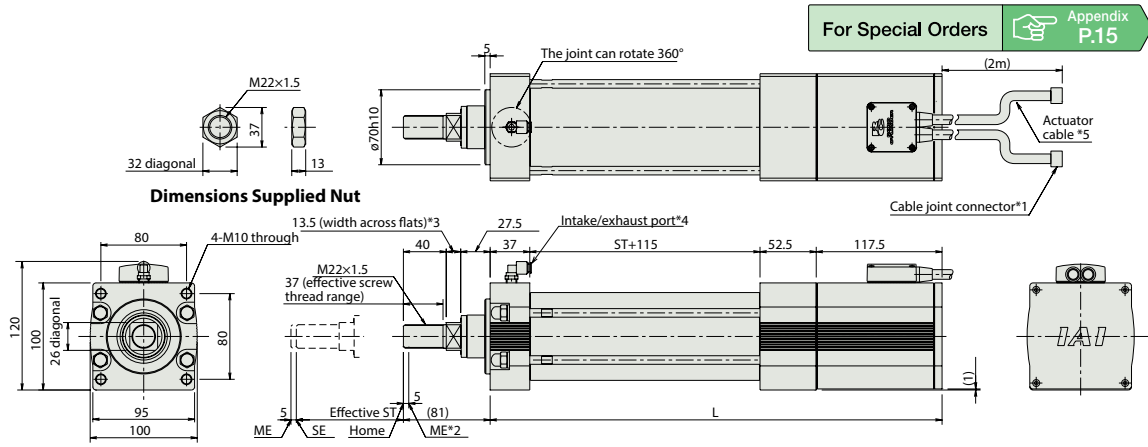
Name	Option code	See page	Standard price
Connector cable outlet direction changed	A1~A3	→ A-41	—
Brake	B	→ A-42	—
With flange	FL	→ A-46	—
With foot bracket	FT	→ A-48	—

Actuator Specifications

Item	Description
Drive System	Ball screw, rolled C10
Positioning repeatability	±0.02mm
Lost Motion	0.1mm or less
Rod diameter	φ40mm
Rod non-rotational accuracy	±1.0 degrees
Protective structure	IP54
Ambient operating temperature/humidity	0 to 40°C, 85% RH max. (Non-condensing)

511 RCP2W-RA10C

Dimensional Drawings



For Special Orders Appendix P.15

* Please note that reversed home position is unavailable for the RA10C type for structural reasons.

- (*1) Connect the motor and encoder cables here. Please note that motor cable is the same as the one in the RCP2 series, but that the encoder cable is a dedicated type. See page A-59 for details on cables. The cable joint connector is not splash-proof; therefore, please secure it in a place that is not prone to water spills.
- (*2) When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects. ME: Mechanical end SE: Stroke end The dimensions enclosed in "(L)" are reference dimensions.
- (*3) The direction of bolt will vary depending on the product.
- (*4) Intake/exhaust port is the air exhaust tube in the main body. Insert OD 6 mm tube and use it extended to a place that is not prone to water spills or intake.
- (*5) The actuator cable is not a robot cable (flex resistant cable); therefore, please don't use it for movable parts such as cable track.

* Compared to the standard model, the brake-equipped model is longer by 45.5mm and heavier by 1.5kg.

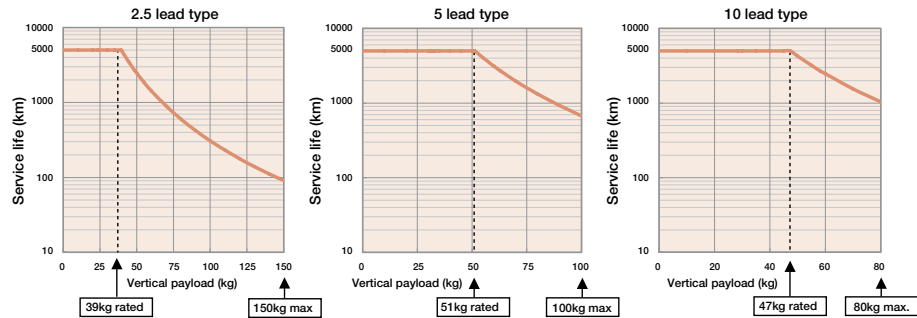
Dimensions of the Brake Section

Dimensions and Weights by Stroke

Stroke	50	100	150	200	250	300
L	372	422	472	522	572	622
Weight (kg)	9	9.5	10	10.5	11	11.5

Vertical Payload and Service Life

- The service life of a rod-type ROBO Cylinder is 5,000km. However, since the RCP2W-RA10C has a larger maximum thrust compared to other types, its service life will largely depend on the load capacity and pushing force used. Therefore, when selecting your product using the Speed vs. Load Capacity, or Pushing Force vs. Current Limit graphs, check the service life using the Load Capacity vs. Load Capacity graphs.



Note: The rated value is the maximum value that can meet a service life of 5,000km. The maximum value is the value at which it is still operable. Please note that operation with values exceeding the rated value will result in a decrease in the service life, as shown in the graphs.

Applicable Controllers

The controller for the RCP2W-RA10C type is a dedicated controller.

Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power supply capacity	Standard price	Reference page
Positioner Type		PCON-CFA-86PI-①-2-0	Positioning is possible for up to 512 points	512 points	DC24V	6A max.	—	→ P607

* ① indicates I/O type.

Note: • Please note that the encoder cable is a dedicated CFA-type cable. (See page A-59.)
• Note that a simple absolute unit cannot be used.

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers 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

RCP2W-GRSS ROBO Cylinder, 2-Finger Gripper, Mini Slider Type, Actuator Width 42mm, Pulse Motor

Model Specification Items	RCP2W — GRSS — I — 20P — 30 — 8 — — —
Series — Type	Encoder type — Motor type — Deceleration Ratio — Stroke — Applicable controller — Cable length — Options
I: Incremental * The Simple absolute encoder is also considered type "I".	20P: Pulse motor, 20□ size 30: 1/30 deceleration ratio 8: 8mm (4mm per side) P1: PCON-PL/PO/SE PSEL P3: PCON-CA MSEP PMEC/PSEP
	N: None P: 1m S: 3m M: 5m X□□: Custom Length
	NM: Non-motor end FB : Flange bracket SB : Shaft bracket

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

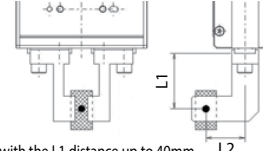


Technical References Appendix P.5

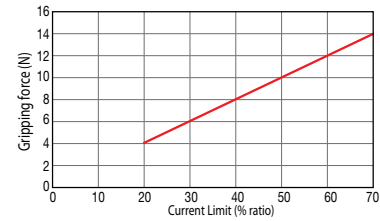
- POINT**
Notes on selection
- (1) The maximum opening/closing speed indicates the operating speed on one side. The relative operating speed is twice this value.
 - (2) The maximum gripping force is the sum of the gripping forces of both fingers, at a gripping point where there is no offset or overhang distance. The work piece weight that can be actually moved depends on the friction coefficient between the gripper fingers and the work piece, as well as on the shape of the work piece. As a rough guide, a work piece's weight should not exceed 1/10 to 1/20 of the gripping force. (See page A-86 for details.)
 - (3) The rated acceleration while moving is 0.3G.
 - (4) Please note that the product has no splash-proof function.

Gripping Force Adjustment

The gripping (pushing) force can be adjusted freely within the range of current limits of 20% to 70%.



- * Operate with the L1 distance up to 40mm.
- * The gripping force value in the graph below is when both L1 and L2 are at 0 mm. (For gripping force reference per L1 distance, see page A-87.) The gripping force value is the sum of gripping forces of both fingers.



* The gripping force graph above shows the number of references. Please allow margins up to ± 15%.

* Please note that, when gripping (pushing), the speed is fixed at 5mm/s.

Actuator Specifications

Lead and Payload

Model number	Deceleration Ratio	Maximum Gripping Force (N)	Stroke (mm)
RCP2W-GRSS-I-20P-30-8-①-②-③	30	14 (7 per side)	8 (4 per side)

Code explanation ① Applicable controller ② Cable length ③ Options

Stroke and Maximum Speed

Deceleration ratio	Stroke	8 (mm)
	30	78

(Unit: mm/s)

Stroke

Stroke (mm)	Standard price
8	—

② 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-encoder integrated robot cable.
* See page A-59 for cables for maintenance.

③ Options

Name	Option code	See page	Standard price
Non-motor end specification	NM	→ A-52	—
Flange bracket	FB	→ A-43	—
Shaft bracket	SB	→ A-55	—

Actuator Specifications

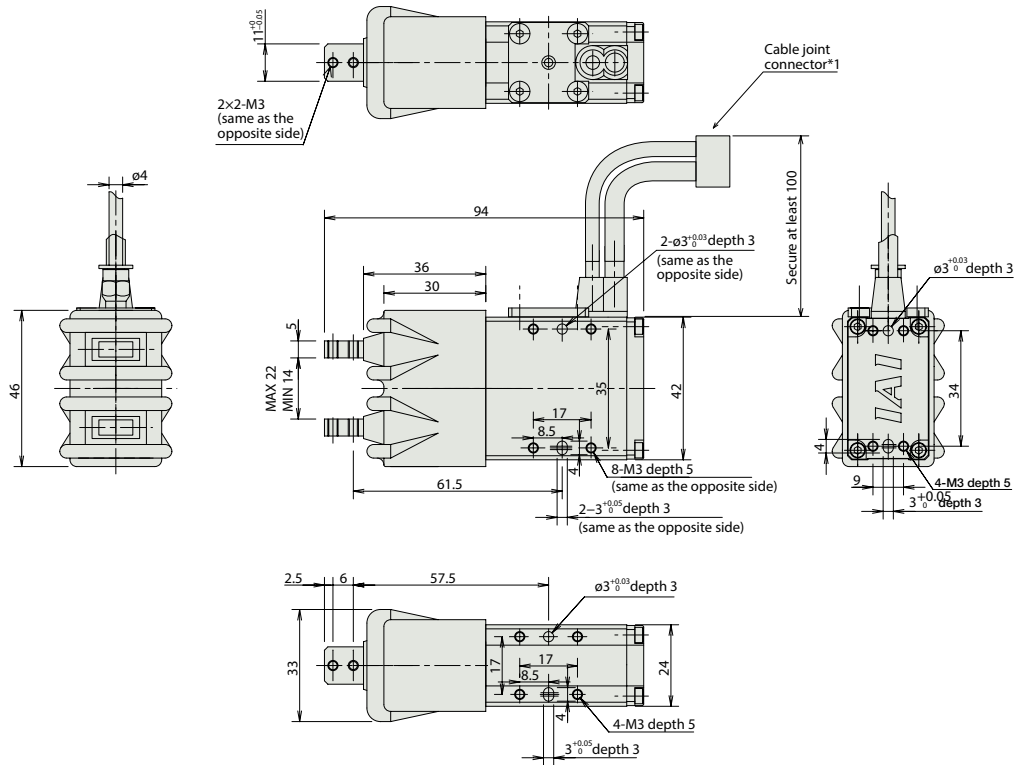
Item	Description
Drive System	Worm gear + helical gear + helical rack
Positioning repeatability	±0.01mm
Backlash	0.2mm or less per side (constantly pressed out by a spring)
Lost motion	0.05mm or less per side
Guide	Linear guide
Allowable static load moment	Ma: 0.5 N·m, Mb: 0.5 N·m, Mc: 1.5 N·m
Weight	0.2kg
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

513 RCP2W-GRSS

Dimensional Drawings

For Special Orders Appendix P.15

* The opening side of the slider is the home position.
 (*1) Connect the motor-encoder integrated cable here.
 See page A-59 for details on cables.



Weight (kg) 0.2

① Applicable Controllers

RCP2W 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-20PI-(I)-2-(II)	Easy-to-use controller, even for beginners	3 points	DC24V	AC100V AC200V	Refer to P541	— → P537
		PSEP-C-20PI-(I)-2-0	Simple controller operable with the same signal as a solenoid valve			Refer to P555	— → P547	
Solenoid valve multi-axis type PIO specification		MSEP-C-(III)~(I)-2-0	Positioner type based on PIO control, allowing up to 8 axes to be connected	256 points		Refer to P572	— → P563	
Solenoid valve multi-axis type Network specification		MSEP-C-(III)~(V)-0-0	Field network-ready positioner type, allowing up to 8 axes to be connected			Refer to P618	— → P607	
Positioner type High-output specification		PCON-CA-20PI-(I)-2-0	Equipped with a high-output driver Positioner type based on PIO control	512 points		Refer to P628	— → P623	
Pulse-train type High-output specification		PCON-CA-20PI-PL□-2-0	Equipped with a high-output driver Pulse-train input type	(—)			— → P665	
Field network type High-output specification		PCON-CA-20PI-(V)-0-0	Equipped with a high-output driver Supporting 7 major field networks	768 points			— → P623	
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-(I)-2-0	Pulse train input type with differential line driver support	(—)		Refer to P671	— → P665	
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-(I)-2-0	Pulse train input type with open collector support		— → P623			
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated Serial Communication	64 points	Refer to P671	— → P665		
Program Control Type		PSEL-CS-1-20PI-(I)-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points		— → P665		

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



RCP2W-GRSS **514**

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers 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

RCP2W-GRLS

ROBO Cylinder, 2-Finger Gripper, Mini Lever Type, Actuator Width 42mm, Pulse Motor,

Model Specification Items	RCP2W	GRLS	I	20P	30	180	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Series	Type	Encoder type	Motor type	Deceleration Ratio	Stroke	Applicable controller	Cable length	Options
			I: Incremental * The Simple absolute encoder is also considered type "I".	20P: Pulse motor, 20□ size	30: 1/30 deceleration ratio	180: 180 degrees (90 degrees per side)	P1: PCON-PL/PO/SE PSEL P3: PCON-CA PMEC/PSEP MSEP	N: None P: 1m S: 3m M: 5m X□□: Custom Length	NM: Non-motor end FB: Flange bracket SB: Shaft bracket

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



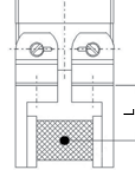
Technical References Appendix P.5



- (1) The maximum opening/closing speed indicates the operating speed on one side. The relative operating speed is twice this value.
- (2) The maximum gripping force is the sum of the gripping forces of both fingers, at a gripping point where there is no offset or overhang distance. The work piece weight that can be actually moved depends on the friction coefficient between the gripper fingers and the work piece, as well as on the shape of the work piece. As a rough guide, a work piece's weight should not exceed 1/10 to 1/20 of the gripping force. (See page A-86 for details.)
- (3) The rated acceleration while moving is 0.3G.
- (4) Please note that the product has no splash-proof function.

Gripping Force Adjustment

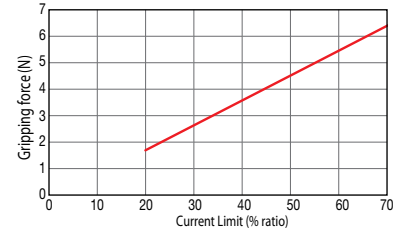
The gripping (pushing) force can be adjusted freely within the range of current limits of 20% to 70%.



* The gripping force of the graph below is measured on the top face of the lever. The actual gripping force drops in inverse proportion to the distance from the opening/closing fulcrum. Calculate the effective gripping force using the formula below.

$$\text{Effective gripping force (GRLS)} = F \times 15.5 / (L + 15.5)$$

* In the graph below, the gripping force value is the sum of gripping forces of both fingers.



* The gripping force graph above shows the number of references. Please allow margins up to ± 15%.

* Please note that, when gripping (pushing), the speed is fixed at 5 degrees/s.

Actuator Specifications

Lead and Payload

Model number	Deceleration Ratio	Maximum Gripping Force (N)	Stroke (degrees)
RCP2W-GRLS-I-20P-30-180-①-②-③	30	6.4 (3.2 per side)	180 (90 per side)

Code explanation ① Applicable controller ② Cable length ③ Options

Stroke and Maximum Speed

Stroke Deceleration ratio	180 (degrees)
	600

(Unit: degree/s)

Stroke

Stroke (degrees)	Standard price
180	—

② 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-encoder integrated robot cable.
* See page A-59 for cables for maintenance.

③ Options

Name	Option code	See page	Standard price
Non-motor end specification	NM	→ A-52	—
Flange bracket	FB	→ A-43	—
Shaft bracket	SB	→ A-55	—

Actuator Specifications

Item	Description
Drive System	worm gear + helical gear
Positioning repeatability	±0.1mm
Backlash	1 degree or less per side (constantly pressed out by a spring)
Lost motion	0.1 deg (per side) or less
Guide	—
Allowable static load moment	—
Weight	0.2kg
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

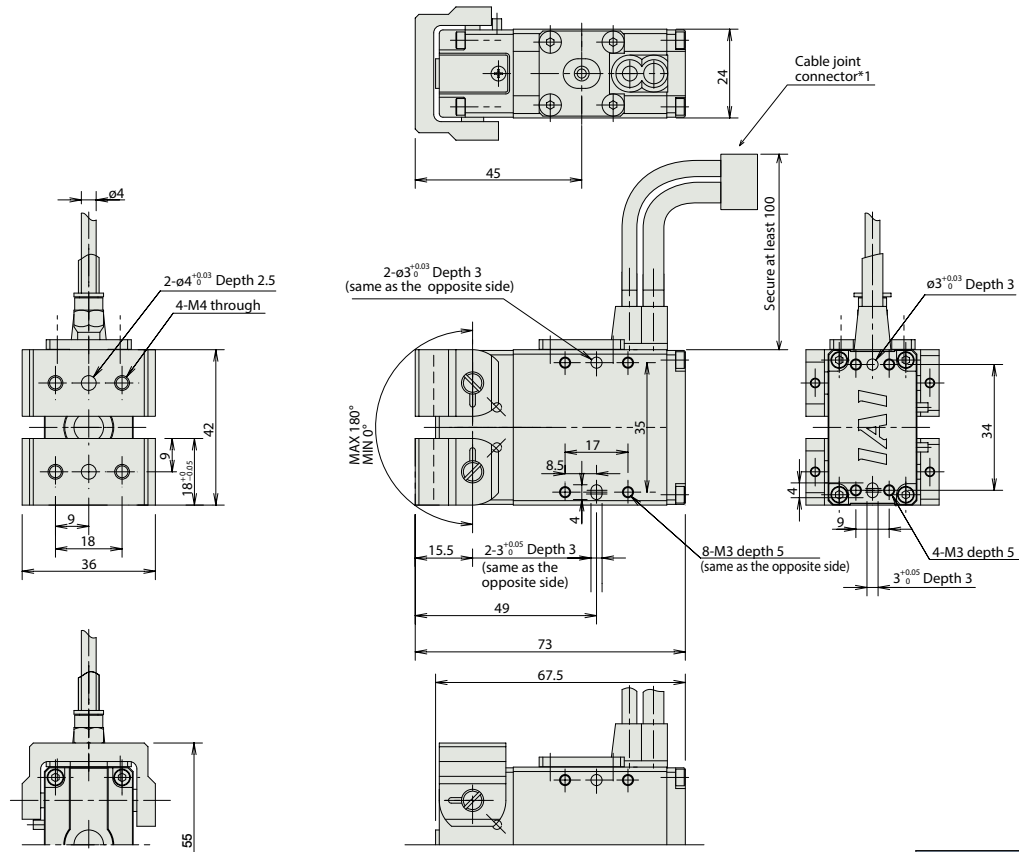
515

RCP2W-GRLS

Dimensional Drawings

For Special Orders Appendix P.15

* The opening side of the slider is the home position.
 (*1) Connect the motor-encoder integrated cable here.
 See page A-59 for details on cables.



Weight (kg) 0.2

① Applicable Controllers

RCP2W 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-20PI-(I)-2-(II)	Easy-to-use controller, even for beginners	3 points	AC100V AC200V	Refer to P541	—	→ P537
		PSEP-C-20PI-(I)-2-0	Simple controller operable with the same signal as a solenoid valve			Refer to P555	—	→ P547
Solenoid valve multi-axis type PIO specification		MSEP-C-(III)~(I)-2-0	Positioner type based on PIO control, allowing up to 8 axes to be connected	256 points	DC24V	Refer to P572	—	→ P563
Solenoid valve multi-axis type Network specification		MSEP-C-(III)~(V)-0-0	Field network-ready positioner type, allowing up to 8 axes to be connected					
Positioner type High-output specification		PCON-CA-20PI-(I)-2-0	Equipped with a high-output driver Positioner type based on PIO control	512 points	DC24V	Refer to P618	—	→ P607
Pulse-train type High-output specification		PCON-CA-20PI-PL□-2-0	Equipped with a high-output driver Pulse-train input type	(—)				
Field network type High-output specification		PCON-CA-20PI-(V)-0-0	Equipped with a high-output driver Supporting 7 major field networks	768 points				
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-(I)-2-0	Pulse train input type with differential line driver support	(—)	DC24V	Refer to P628	—	→ P623
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-(I)-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated Serial Communication	64 points	DC24V	Refer to P671	—	→ P665
Program Control Type		PSEL-CS-1-20PI-(I)-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points	DC24V	Refer to P671	—	→ P665

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

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers 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



RCP2W-GRLS **516**

RCAW-RA3C/RA3D/RA3R

Robo Cylinder, Splash-Proof Rod Type, ø32mm Diameter, 24V Servo Motor, Coupled/Built-In/Side-Mounted Motor Specification

Model Specification Items	RCAW — <input type="checkbox"/> — I — 20 — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/>
	Series — Type — Encoder type — Motor type — Lead — Stroke — Applicable controller — Cable length — Options
	RA3C: Coupled type I: Incremental 20: 20W Servo 10: 10mm 50: 50mm A1: ACON N: None See Options below. RA3D: Built-in *The Simple absolute encoder is also considered type "I". 200: 200mm (50mm pitch increments) A3: AMEC ASEP MSEP P: 1m S: 3m M: 5m X <input type="checkbox"/> : Custom Length R <input type="checkbox"/> : Robot Cable
	* See page Pre-47 for details on the model descriptions.



Power-saving



Technical References Appendix P.5

- POINT** Notes on selection
- (1) 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.
 - (2) The load capacity is based on operating the standard and power-saving models at 0.3G (0.2G for 2.5mm lead model). These values are the upper limits for the acceleration.
 - (3) Please use external guide combination for horizontal load capacity; the value is for when no external force coming from a direction other than that of rod's direction of travel is applied.
 - (4) The cable joint connector is not splash-proof; secure it in a place that is not prone to water spills.
 - (5) See page A-71 for details on push motion.

*Please note that the bellows shape has some change from the photo above.

Actuator Specifications						
Lead and Payload				Stroke and Maximum Speed		
Model number	Motor output (W)	Lead (mm)	Max. Load Capacity Horizontal (kg) / Vertical (kg)	Rated thrust (N)	Stroke (mm)	Stroke / Lead
RCAW-①-I-20-10-②-③-④-⑤	20	10	4 / 1.5	36.2	50~200 (every 50mm)	500
RCAW-①-I-20-5-②-③-④-⑤		5	9 / 3	72.4		250
RCAW-①-I-20-2.5-②-③-④-⑤		2.5	18 / 6.5	144.8		125

Code explanation ① Type ② Stroke ③ Applicable controller ④ Cable length ⑤ Options *See page A-71 for details on push motion. (Unit: mm/s)

② Stroke (mm)	Standard price		
	RA3C	RA3D	RA3R
50	—	—	—
100	—	—	—
150	—	—	—
200	—	—	—

Type	④ Cable Length	
	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)	—
	—	—
Robot Cable	R01 (1m) ~ R03 (3m)	—
	R04 (4m) ~ R05 (5m)	—
	R06 (6m) ~ R10 (10m)	—
	R11 (11m) ~ R15 (15m)	—
	R16 (16m) ~ R20 (20m)	—

* See page A-59 for cables for maintenance.

⑤ Options			
Name	Option code	See page	Standard price
Brake (*1)	B	→ A-42	—
Flange bracket	FL	→ A-45	—
Foot bracket (front)	FT	→ A-49	—
Home sensor (*2)	HS	→ A-50	—
Power-saving	LA	→ A-52	—
Knuckle joint	NJ	→ A-53	—
Non-motor end specification (*2)	NM	→ A-52	—
Clevis bracket (*3)	QR	→ A-53	—
Rear mounting plate (*3)	RP	→ A-54	—
Trunnion bracket (front) (*4)	TRF	→ A-57	—
Trunnion bracket (rear) (*4)	TRR	→ A-58	—

(*1) No brake option for RA3D.
 (*2) The home sensor (HS) cannot be used on the Non-motor end models (NM).
 (*3) Clevis bracket and rear mounting plate only available for RA3R.
 (*4) Trunnion bracket (rear) only available for RA3C/RA3D.

Actuator Specifications	
Item	Description
Drive System	Ball screw, ø8mm, rolled C10
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum, white alumite treated
Rod diameter	ø16mm
Non-rotating accuracy of rod	±1.0 deg
Protection structure	IP54
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

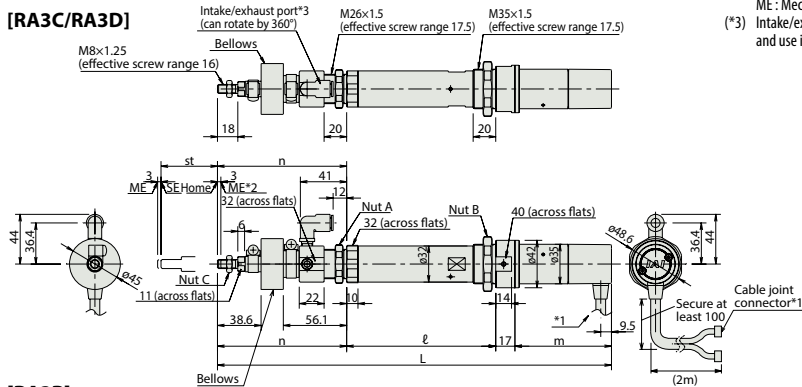
517 RCAW-RA3C/RA3D/RA3R

Dimensional Drawings

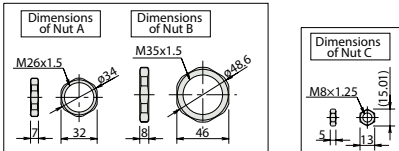
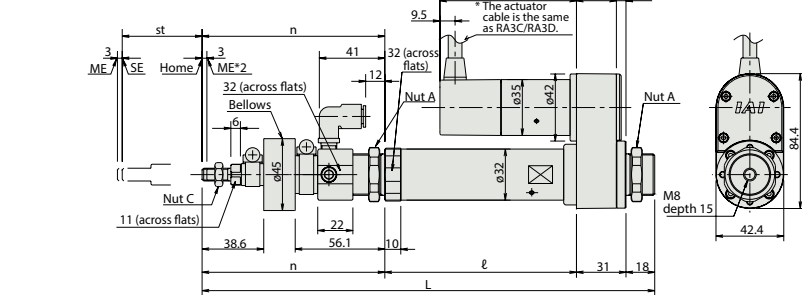
For Special Orders Appendix P.15

(Note) No 3D CAD data for RA3D type.

[RA3C/RA3D]



[RA3R]



- (*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) Intake/exhaust port is the air exhaust tube in the main body. Insert OD ϕ 10 mm tube and use it extended to a place that is not prone to water spills or intake.

Note
 Please don't apply an external force coming from a direction other than that of the rod's direction of travel.
 The detent may break if a force is applied other than in the direction of travel or a torque is applied to the rod.

■ Dimensions and Weight by Stroke

RCAW-RA3C/RA3D/RA3R (without brake)

Stroke	50	100	150	200	
L	RA3C	348.9	408.9	468.9	528.9
	RA3D	329.9	389.9	449.9	509.9
	RA3R	283.4	343.4	403.4	463.4
ℓ	RA3C	132	182	232	282
	RA3D	132	182	232	282
	RA3R	120	170	220	270
m	RA3C	85.5			
	RA3D	66.5			
	RA3R	85.5			
n	RA3C	114.4	124.4	134.4	144.4
	RA3D	114.4	124.4	134.4	144.4
	RA3R	114.4	124.4	134.4	144.4
Weight (kg)	RA3C	1.0	1.1	1.2	1.3
	RA3D	1.0	1.1	1.2	1.3
	RA3R	1.1	1.2	1.3	1.4

RCAW-RA3C/RA3D/RA3R (with brake)

Stroke	50	100	150	200	
L	RA3C	387.9	447.9	507.9	567.9
	RA3D	No brake-equipped model.			
	RA3R	283.4	343.4	403.4	463.4
ℓ	RA3C	132	182	232	282
	RA3D	No brake-equipped model.			
	RA3R	120	170	220	270
m	RA3C	124.5			
	RA3D	No brake-equipped model.			
	RA3R	124.5			
n	RA3C	114.4	124.4	134.4	144.4
	RA3D	No brake-equipped model.			
	RA3R	114.4	124.4	134.4	144.4
Weight (kg)	RA3C	1.2	1.3	1.4	1.5
	RA3D	1.2	1.3	1.4	1.5
	RA3R	1.3	1.4	1.5	1.6

③ Applicable Controllers

RCAW 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-20SI(①-②)-2-1	Easy-to-use controller, even for beginners	3 points	AC100V	2.4A rated	—	→ P537									
		ASEP-C-20SI(①-②)-2-0	Simple controller operable with the same signal as a solenoid valve														
Solenoid valve multi-axis type PIO specification		MSEP-C-③-④-2-0	Positioner type based on PIO control, allowing up to 8 axes to be connected	256 points					DC24V	(Standard) 1.7A rated 5.1A max.	—						
Solenoid valve multi-axis type Network specification		MSEP-C-③-④-0-0	Field network-ready positioner type, allowing up to 8 axes to be connected														
Positioner type		ACON-C-20SI(①-②)-2-0	Positioning is possible for up to 512 points	512 points								(Power-saving) 1.7A rated 3.4A max.	—	→ P631			
Safety-Compliant Positioner Type		ACON-CG-20SI(①-②)-2-0															
Pulse Train Input Type (Differential Line Driver)		ACON-PL-20SI(①-②)-2-0	Pulse train input type with differential line driver support	(—)											—	—	→ P675
Pulse Train Input Type (Open Collector)		ACON-PO-20SI(①-②)-2-0	Pulse train input type with open collector support														
Serial Communication Type		ACON-SE-20SI(①-N)-0-0	Dedicated Serial Communication	64 points													
Program Control Type		ASEL-CS-1-20SI(①-②)-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points													

* This is for the single-axis ASEL.
 * ① indicates I/O type (NP/PN).
 * Enter the code "LA" in ① when the power-saving specification is specified.
 * ③ indicates number of axes (1 to 8).
 * ④ indicates field network specification symbol.

Slider Type

Mini

Standard

Controllers Integrated

Rod Type

Mini

Standard

Controllers 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)

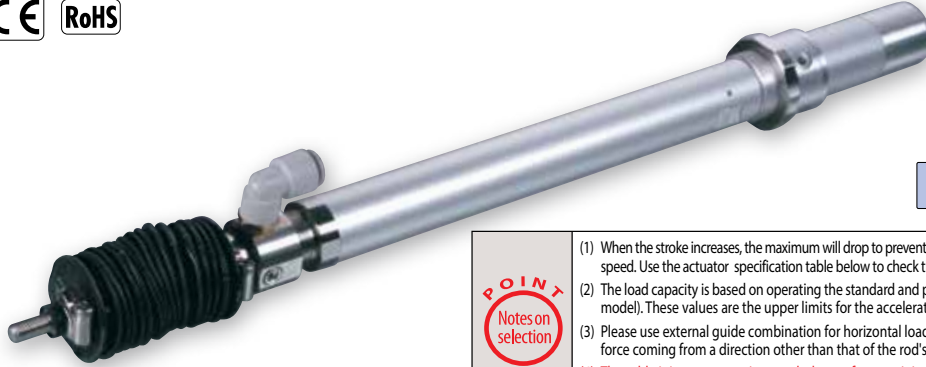
Linear Servo Motor

RCAW-RA4C/RA4D/RA4R

Robo Cylinder, Splash-Proof Rod Type, ø37mm Diameter, 24V Servo Motor, Coupled/Built-In/Side-Mounted Motor Specification

Model Specification Items	RCAW Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
	RA4C: Coupled type RA4D: Built-in RA4R: Side-mounted motor	I: Incremental A: Absolute	20: 20W Servo motor 30: 30W Servo motor	12: 12mm 6: 6mm 3: 3mm	50: 50mm 300: 300mm (50mm pitch increments)	A1: ACON ASEL A3: AMEC ASEP MSEP	N: None P: 1m S: 3m M: 5m X□□: Custom Length R□□: Robot Cable	See Options below.	

* See page Pre-47 for details on the model descriptions.
* The absolute models are only compatible with ASEL. Simple absolute encoders are considered incremental.



Power-saving

Technical References Appendix P.5

- Notes on selection**
- (1) 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.
 - (2) The load capacity is based on operating the standard and power-saving models at 0.3G (0.2G for 3mm-lead model). These values are the upper limits for the acceleration.
 - (3) Please use external guide combination for horizontal load capacity; the value is for when no external force coming from a direction other than that of the rod's direction of travel is applied.
 - (4) The cable joint connector is not splash-proof; secure it in a place that is not prone to water spills.
 - (5) See page A-71 for details on push motion.

*Please note that the bellows shape has some change from the photo above.

Actuator Specifications

Lead and Payload

Model number	Motor output (W)	Lead (mm)	Max. Load Capacity		Rated thrust (N)	Stroke (mm)
			Horizontal (kg)	Vertical (kg)		
RCAW-①-②-20-12-③-④-⑤-⑥	20	12	3.0	1.0	18.9	50~300 (every 50mm)
RCAW-①-②-20-6-③-④-⑤-⑥		6	6.0	2.0	37.7	
RCAW-①-②-20-3-③-④-⑤-⑥		3	12.0	4.0	75.4	
RCAW-①-②-30-12-③-④-⑤-⑥	30	12	4.0	1.5	28.3	
RCAW-①-②-30-6-③-④-⑤-⑥		6	9.0	3.0	56.6	
RCAW-①-②-30-3-③-④-⑤-⑥		3	18.0	6.5	113.1	

Stroke and Maximum Speed

Stroke Lead	50~300 (every 50mm)	
	Stroke	50~300 (every 50mm)
12	600	
6	300	
3	150	

(Unit: mm/s)

Code explanation ① Type ② Encoder ③ Stroke ④ Applicable controller ⑤ Cable Length ⑥ Options *See page A-71 for details on push motion.

② Encoder/ ③ Stroke

③ Stroke (mm)	Standard price							
	RA4C/RA4D				RA4R			
	② Encoder Type		② Encoder Type		② Encoder Type		② Encoder Type	
	Incremental	Absolute	Incremental	Absolute	Incremental	Absolute	Incremental	Absolute
	Motor power output		Motor power output		Motor power output		Motor power output	
	20W	30W	20W	30W	20W	30W	20W	30W
50	—	—	—	—	—	—	—	—
100	—	—	—	—	—	—	—	—
150	—	—	—	—	—	—	—	—
200	—	—	—	—	—	—	—	—
250	—	—	—	—	—	—	—	—
300	—	—	—	—	—	—	—	—

⑤ 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.

⑥ Options

Name	Option code	See page	Standard price
Brake (*1)	B	→ A-42	—
Flange bracket	FL	→ A-45	—
Foot bracket (front)	FT	→ A-49	—
Home sensor (*2)	HS	→ A-50	—
Power-saving	LA	→ A-52	—
Knuckle joint	NJ	→ A-53	—
Non-motor end specification (*2)	NM	→ A-52	—
Clevis bracket (*3)	QR	→ A-53	—
Rear mounting plate (*3)	RP	→ A-54	—
Trunnion bracket (front) (*4)	TRF	→ A-57	—
Trunnion bracket (rear) (*4)	TRR	→ A-58	—

(*1) No brake option for RA4D.
(*2) The home sensor (HS) cannot be used on the Non-motor end models (NM).
(*3) Clevis bracket and rear mounting plate only available for RA4R.
(*4) Trunnion bracket (rear) only available for RA4C/RA4D.

Actuator Specifications

Item	Description
Drive System	Ball screw, ø10mm, rolled C10
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum, white alumite treated
Rod diameter	ø20mm
Non-rotating accuracy of rod	±1.0 deg
Protection structure	IP54
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

519

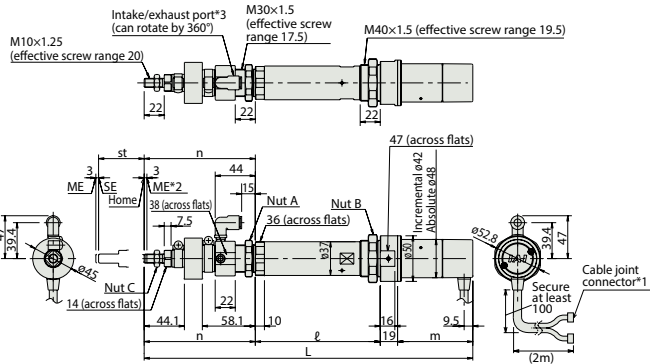
RCAW-RA4C/RA4D/RA4R

Dimensional Drawings

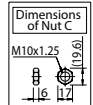
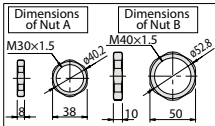
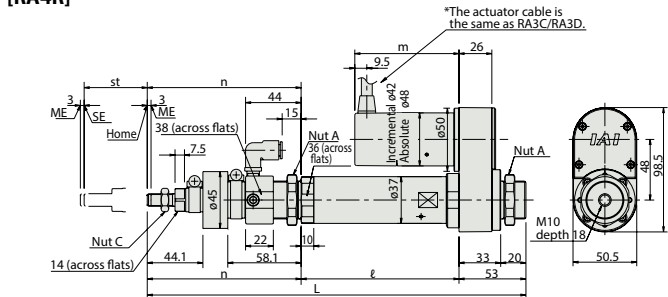
For Special Orders Appendix P.15

- (Note) No 3D CAD data for RA4D type. (*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) Intake/exhaust port is the air exhaust tube in the main body. Insert OD $\phi 10$ mm tube and use it extended to a place that is not prone to water spills or intake.

[RA4C/RA4D]



[RA4R]



Note:
 Please don't apply an external force coming from a direction other than that of the rod's direction of travel. The detent may break if a force is applied other than in the direction of travel or a torque is applied to the rod.

Dimensions and Weight by Stroke RCAW-RA4C/RA4D/RA4R (without brake)

Stroke	Type	Incremental/Absolute	Weight (kg)						
			50	100	150	200	250	300	
L	RA4C	20W	345.4	405.4	465.4	525.4	586.4	647.4	
		30W	360.4	420.4	480.4	540.4	601.4	662.4	
	RA4D	20W	323.4	383.4	443.4	503.4	564.4	625.4	
		30W	336.4	396.4	456.4	516.4	577.4	638.4	
	RA4R	20W	338.4	398.4	458.4	518.4	579.4	640.4	
		30W	351.4	411.4	471.4	531.4	592.4	653.4	
	l	RA4C	20W	299.9	359.9	419.9	479.9	540.9	601.9
			30W	299.9	359.9	419.9	479.9	540.9	601.9
		RA4D	20W	137	187	237	287	337	387
			30W	137	187	237	287	337	387
		RA4R	20W	137	187	237	287	337	387
			30W	125	175	225	275	325	375
m	RA4C	20W	67.5	80.5	82.5	95.5	45.5	58.5	
		30W	67.5	80.5	82.5	95.5	60.5	73.5	
	RA4D	20W	67.5	80.5	82.5	95.5	67.5	80.5	
		30W	67.5	80.5	82.5	95.5	67.5	80.5	
	RA4R	20W	121.9	131.9	141.9	151.9	162.9	173.9	
		30W	121.9	131.9	141.9	151.9	162.9	173.9	
n	RA4C	20W	1.4	1.5	1.7	1.8	2.0	2.1	
		30W	1.3	1.5	1.6	1.8	1.9	2.1	
	RA4D	20W	1.4	1.5	1.7	1.8	2.0	2.1	
		30W	1.3	1.5	1.6	1.8	1.9	2.1	
	RA4R	20W	1.4	1.5	1.7	1.8	2.0	2.1	
		30W	1.3	1.5	1.6	1.8	1.9	2.1	

* Adding a brake increases the RA4C type's overall length by 43mm. Adding a brake also increases the RA4R type's motor portion length by 43mm. However, the overall length does not change because the type is a Side-Mounted type. No brake setting for the RA4D type. Also the weight increases by 0.2kg for all types.

④ Applicable Controllers

RCAW 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-20I①②③-2-1 AMEC-C-30I①②③-2-1	Easy-to-use controller, even for beginners	3 points	AC100V	2.4A rated	—	→ P537
		ASEP-C-20I①②③-2-0 ASEP-C-30I①②③-2-0	Simple controller operable with the same signal as a solenoid valve					→ P547
Solenoid valve multi-axis type PIO specification		MSEP-C-④⑤⑥⑦⑧-2-0	Positioner type based on PIO control, allowing up to 8 axes to be connected	256 points	DC24V	(Standard) 20W 1.3A rated 4.4A max. 30W 1.3A rated 4.4A max.	—	→ P563
Solenoid valve multi-axis type Network specification		MSEP-C-④⑤⑥⑦⑧-0-0	Field network-ready positioner type, allowing up to 8 axes to be connected					
Positioner type		ACON-C-20I①②③-2-0 ACON-C-30I①②③-2-0	Positioning is possible for up to 512 points	512 points	DC24V	(Power-saving) 20W 1.3A rated 2.5A max. 30W 1.3A rated 2.2A max.	—	—
Safety-Compliant Positioner Type		ACON-CG-20I①②③-2-0 ACON-CG-30I①②③-2-0	Positioning is possible for up to 512 points					
Pulse Train Input Type (Differential Line Driver)		ACON-PL-20I①②③-2-0 ACON-PL-30I①②③-2-0	Pulse train input type with differential line driver support	—	DC24V	(Power-saving) 20W 1.3A rated 2.5A max. 30W 1.3A rated 2.2A max.	—	→ P631
Pulse Train Input Type (Open Collector)		ACON-PO-20I①②③-2-0 ACON-PO-30I①②③-2-0	Pulse train input type with open collector support					
Serial Communication Type		ACON-SE-20I①②③-N-0-0 ACON-SE-30I①②③-N-0-0	Dedicated Serial Communication	64 points	DC24V	(Power-saving) 20W 1.3A rated 2.5A max. 30W 1.3A rated 2.2A max.	—	—
Program Control Type		ASEL-CS-1-20I①②③-2-0 ASEL-CS-1-30I①②③-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points	DC24V	(Power-saving) 20W 1.3A rated 2.5A max. 30W 1.3A rated 2.2A max.	—	→ P675

* This is for the single-axis ASEL.
 * ① indicates I/O type (NP/PN).

* ① indicates encoder type (I: incremental, A: absolute)
 * ④⑤⑥⑦⑧ indicates number of axes (1 to 8).

* Enter the code "LA" in ① when the power-saving option is specified.
 * ④⑤ indicates field network specification symbol.

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers 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

RCS2W-RA4C/RA4D/RA4R

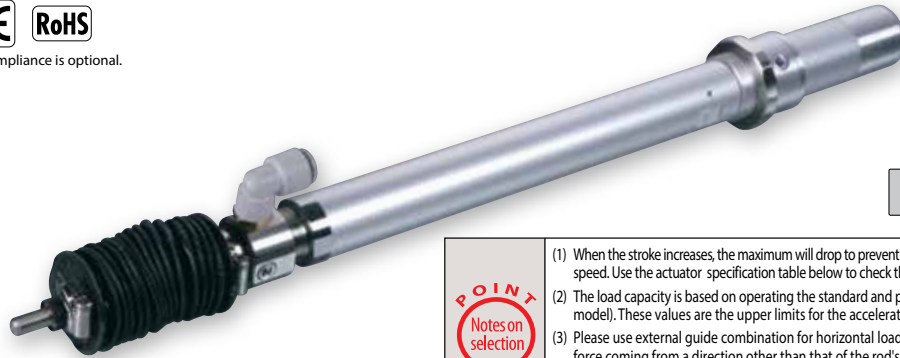
Robo Cylinder, Splash-Proof Rod Type, ø37mm Diameter, 200V Servo Motor, Coupled/Built-In/Side-Mounted Motor Specification

Model Specification Items	RCS2W	Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
		RA4C: Coupled type RA4D: Built-in RA4R: Side-mounted motor	I: Incremental A: Absolute	20: 20W Servo motor 30: 30W Servo motor	12: 12mm 6: 6mm 3: 3mm	50: 50mm 300: 300mm (50mm pitch increments)	T1: XSEL-J/K T2: SCON MSCON SSEL XSAL-P/Q XSAL-R/S	N: None P: 1m S: 3m M: 5m X□□: Custom Length R□□: Robot Cable	See Options below.	

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



*CE compliance is optional.



Technical References Appendix P.5

- POINT** Notes on selection
- (1) 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.
 - (2) The load capacity is based on operating the standard and power-saving models at 0.3G (0.2G for 3mm-lead model). These values are the upper limits for the acceleration.
 - (3) Please use external guide combination for horizontal load capacity; the value is for when no external force coming from a direction other than that of the rod's direction of travel is applied.
 - (4) The cable joint connector is not splash-proof; secure it in a place that is not prone to water spills.
 - (5) See page A-71 for details on push motion.

*Please note that the bellows shape has some change from the photo above.

Actuator Specifications						
Lead and Payload				Stroke and Maximum Speed		
Model number	Motor output (W)	Lead (mm)	Max. Load Capacity	Rated thrust (N)	Stroke (mm)	Stroke / Lead
			Horizontal (kg) / Vertical (kg)			50~300 (every 50mm)
RCS2W-①-②-20-12-③-④-⑤-⑥	20	12	3.0 / 1.0	18.9	50~300 (every 50mm)	12 / 600
RCS2W-①-②-20-6-③-④-⑤-⑥		6	6.0 / 2.0	37.7		6 / 300
RCS2W-①-②-20-3-③-④-⑤-⑥		3	12.0 / 4.0	75.4		3 / 150
RCS2W-①-②-30-12-③-④-⑤-⑥	30	12	4.0 / 1.5	28.3		(Unit: mm/s)
RCS2W-①-②-30-6-③-④-⑤-⑥		6	9.0 / 3.0	56.6		
RCS2W-①-②-30-3-③-④-⑤-⑥		3	18.0 / 6.5	113.1		

Code explanation ① Type ② Encoder ③ Stroke ④ Applicable controller ⑤ Cable Length ⑥ Options *See page A-71 for details on push motion.

③ Stroke (mm)	Standard price							
	RA4C/RA4D				RA4R			
	② Encoder Type		② Encoder Type		② Encoder Type		② Encoder Type	
	Incremental	Absolute	Incremental	Absolute	Incremental	Absolute	Incremental	Absolute
	20W	30W	20W	30W	20W	30W	20W	30W
50	—	—	—	—	—	—	—	—
100	—	—	—	—	—	—	—	—
150	—	—	—	—	—	—	—	—
200	—	—	—	—	—	—	—	—
250	—	—	—	—	—	—	—	—
300	—	—	—	—	—	—	—	—

⑤ 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)	—
Robot Cable	R01 (1m) ~ R03 (3m)	—
	R04 (4m) ~ R05 (5m)	—
	R06 (6m) ~ R10 (10m)	—
	R11 (11m) ~ R15 (15m)	—
	R16 (16m) ~ R20 (20m)	—
	R20 (20m)	—

* See page A-59 for cables for maintenance.

⑥ Options			
Name	Option code	See page	Standard price
Brake (*1)	B	→ A-42	—
CE compliance	CE	→ A-42	—
Flange bracket	FL	→ A-45	—
Foot bracket (front)	FT	→ A-49	—
Home sensor (*2)	HS	→ A-50	—
Knuckle joint	NJ	→ A-53	—
Non-motor end specification (*2)	NM	→ A-52	—
Clevis bracket (*3)	QR	→ A-53	—
Rear mounting plate (*3)	RP	→ A-54	—
Trunnion bracket (front) (*4)	TRF	→ A-57	—
Trunnion bracket (rear) (*4)	TRR	→ A-58	—

(*1) No brake option for RA4D.
 (*2) The home sensor (HS) cannot be used on the Non-motor end models (NM).
 (*3) Clevis bracket and rear mounting plate only available for RA4R.
 (*4) Trunnion bracket (rear) only available for RA4C/RA4D.

Actuator Specifications	
Item	Description
Drive System	Ball screw, ø10mm, rolled C10
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum, white alumite treated
Rod diameter	ø20mm
Non-rotating accuracy of rod	±1.0 deg
Protection structure	IP54
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

521 RCS2W-RA4C/RA4D/RA4R

Dimensional Drawings

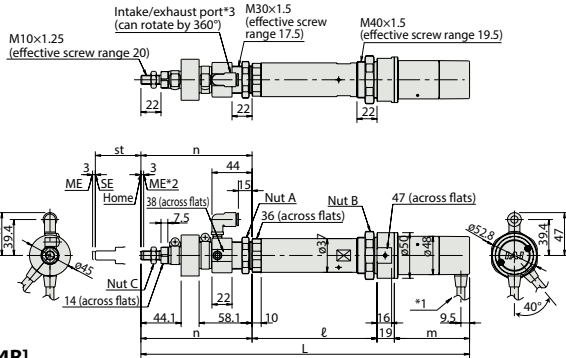
(Note) No 3D CAD data for RA4D type.

For Special Orders

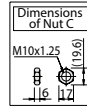
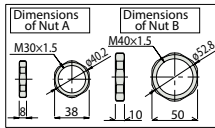
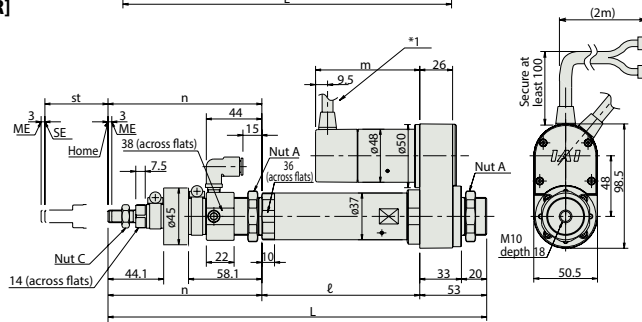


- (*1) Connect the motor and encoder cables here. See page A-59 for details on cables.
- (*2) After homing, the slider moves to the ME, therefore, please watch for any interference with surrounding objects.
ME : Mechanical end SE : Stroke end
- (*3) Intake/exhaust port is the air exhaust tube in the main body. Insert $\phi 10$ mm tube and use it extended to a place that is not prone to water spills or intake.

[RA4C/RA4D]



[RA4R]



Note:
Please don't apply an external force coming from a direction other than that of the rod's direction of travel. The detent may break if a force is applied other than in the direction of travel or a torque is applied to the rod.

■ Dimensions and Weight by Stroke

RCS2W-RA4C/RA4D/RA4R (without brake)

Stroke	50						100						150						200						250						300					
	RA4C		RA4D		RA4R		RA4C		RA4D		RA4R		RA4C		RA4D		RA4R		RA4C		RA4D		RA4R		RA4C		RA4D		RA4R							
L	20W		358.4		418.4		478.4		538.4		599.4		660.4		721.4		782.4		843.4		904.4		965.4		1026.4		1087.4		1148.4							
	30W		373.4		433.4		493.4		553.4		614.4		675.4		736.4		797.4		858.4		919.4		980.4		1041.4		1102.4		1163.4							
	20W		336.4		396.4		456.4		517.4		578.4		639.4		700.4		761.4		822.4		883.4		944.4		1005.4		1066.4		1127.4							
	30W		351.4		411.4		471.4		531.4		591.4		651.4		711.4		771.4		831.4		891.4		951.4		1011.4		1071.4		1131.4							
	20W		299.9		359.9		419.9		479.9		539.9		599.9		659.9		719.9		779.9		839.9		899.9		959.9		1019.9		1079.9							
	30W		299.9		359.9		419.9		479.9		539.9		599.9		659.9		719.9		779.9		839.9		899.9		959.9		1019.9		1079.9							
ℓ	20W		137		187		237		287		337		387		437		487		537		587		637		687		737									
	30W		137		187		237		287		337		387		437		487		537		587		637		687		737									
	20W		137		187		237		287		337		387		437		487		537		587		637		687		737									
	30W		137		187		237		287		337		387		437		487		537		587		637		687		737									
	20W		125		175		225		275		325		375		425		475		525		575		625		675		725									
	30W		125		175		225		275		325		375		425		475		525		575		625		675		725									
m	20W								80.5																											
	30W								95.5																											
	20W								58.5																											
	30W								73.5																											
	20W								80.5																											
	30W								95.5																											
n	20W		121.9		131.9		141.9		151.9		162.9		173.9		184.9		195.9		206.9		217.9		228.9		239.9		250.9									
	30W		121.9		131.9		141.9		151.9		162.9		173.9		184.9		195.9		206.9		217.9		228.9		239.9		250.9									
	20W		121.9		131.9		141.9		151.9		162.9		173.9		184.9		195.9		206.9		217.9		228.9		239.9		250.9									
	30W		121.9		131.9		141.9		151.9		162.9		173.9		184.9		195.9		206.9		217.9		228.9		239.9		250.9									
	20W		121.9		131.9		141.9		151.9		162.9		173.9		184.9		195.9		206.9		217.9		228.9		239.9		250.9									
	30W		121.9		131.9		141.9		151.9		162.9		173.9		184.9		195.9		206.9		217.9		228.9		239.9		250.9									
Weight (Kg)	RA4C 20W/30W		1.4		1.5		1.7		1.8		2.0		2.1		2.3		2.5		2.7		2.9		3.1		3.3											
	RA4D 20W/30W		1.3		1.5		1.6		1.8		1.9		2.1		2.2		2.4		2.5		2.7		2.8		3.0											
	RA4R 20W/30W		1.5		1.7		1.8		2.0		2.1		2.3		2.4		2.6		2.7		2.9		3.0		3.2											

RCS2W-RA4C/RA4D/RA4R (with brake)

Stroke	50						100						150						200						250						300					
	RA4C		RA4D		RA4R		RA4C		RA4D		RA4R		RA4C		RA4D		RA4R		RA4C		RA4D		RA4R		RA4C		RA4D		RA4R							
L	20W		401.4		461.4		521.4		581.4		642.4		703.4		764.4		825.4		886.4		947.4		1008.4		1069.4		1130.4									
	30W		416.4		476.4		536.4		596.4		657.4		718.4		779.4		840.4		901.4		962.4		1023.4		1084.4		1145.4									
	20W										No brake-equipped model																									
	30W										No brake-equipped model																									
	20W		299.9		359.9		419.9		479.9		540.9		601.9		662.9		723.9		784.9		845.9		906.9		967.9		1028.9									
	30W		299.9		359.9		419.9		479.9		540.9		601.9		662.9		723.9		784.9		845.9		906.9		967.9		1028.9									
ℓ	20W		137		187		237		287		337		387		437		487		537		587		637		687		737									
	30W		137		187		237		287		337		387		437		487		537		587		637		687		737									
	20W										No brake-equipped model																									
	30W										No brake-equipped model																									
	20W		125		175		225		275		325		375		425		475		525		575		625		675		725									
	30W		125		175		225		275		325		375		425		475		525		575		625		675		725									
m	20W								123.5																											
	30W								138.5																											
	20W								No brake-equipped model																											
	30W								No brake-equipped model																											
	20W								123.5																											
	30W								138.5																											
n	20W		121.9		131.9		141.9		151.9		162.9		173.9		184.9		195.9		206.9		217.9		228.9		239.9											
	30W		121.9		131.9		141.9		151.9		162.9		173.9		184.9		195.9		206.9		217.9		228.9		239.9											
	20W										No brake-equipped model																									
	30W										No brake-equipped model																									
	20W		121.9		131.9		141.9		151.9		162.9		173.9		184.9		195.9		206.9		217.9		228.9		239.9											
	30W		121.9		131.9		141.9		151.9		162.9		173.9		184.9		195.9		206.9		217.9		228.9		239.9											
Weight (Kg)	RA4C 20W/30W		1.6		1.7		1.9		2.0		2.2		2.3		2.5		2.7		2.9		3.1		3.3		3.5											
	RA4D 20W/30W		1.6		1.7		1.9		2.0		2.2		2.3		2.5		2.7		2.9		3.1		3.3		3.5											
	RA4R 20W/30W		1.7		1.9		2.0		2.2		2.3		2.5		2.7		2.9		3.1		3.3		3.5		3.7											

④ Applicable Controllers

RCS2W-series actuators can be operated with the following controllers. Select an appropriate controller type according to your application.

Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power supply capacity	Standard price	Reference page
Positioner mode		SCON-CA-20①-NP-2-②③ SCON-CA-30D①-NP-2-②③	Up to 512 positioning points are supported.	512 points	Single-phase 100VAC	126 VA max. * Power supply capacity will vary depending on the controller, so please refer to the instruction manual for details.	—	→ P643
Solenoid valve mode			Actuators can be operated through the same control used for solenoid valves.	7 points				
Field network type			Movement by numerical specification is supported.	768 points				
Pulse-train input control type			Dedicated pulse-train input type	(—)	Single-phase 200VAC			
Positioner multi-axis, network type		MSCON-C-1-20①-④-⑤-⑥⑦⑧ MSCON-C-1-30D①-④-⑤-⑥⑦⑧	Up to 6 axes can be operated. Movement by numerical specification is supported.	256 points	3-phase 200VAC (XSEL-P/Q/R/S ONLY)		—	→ P655
Program control type, 1 to 2 axes		SSEL-CS-1-20①-NP-2-②③ SSEL-CS-1-30D①-NP-2-②③	Program operation is supported. Up to 2 axes can be operated.	20,000 points			—	→ P685
Program control type, 1 to 8 axes		XSEL-④⑤-1-20①-N1-EEE-2-⑥⑦⑧ XSEL-④⑤-1-30D①-N1-EEE-2-⑥⑦⑧	Program operation is supported. Up to 8 axes can be operated.	Varies depending on the number of axes connected			—	→ P695

* This is for the single-axis MSCON, SSEL, and XSEL.

* ① indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V).

* ②③ indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).

* ④ indicates the encoder type (I: Incremental / A: Absolute).

* ⑤⑥⑦⑧ indicates the XSEL type (J / K / P / Q / R / S).

* ⑨ indicates field network specification symbol.