

# **Dust-proof/Splash-proof Type**

# RCP4W RCAW RCP2W RCS2W







# **Dust-proof/Splash-proof Type**

RCP4W	Slider Type	Coupled	55mm Width	RCP4W-SA5C	495
			62mm Width	RCP4W-SA6C	497
series			77mm Width	RCP4W-SA7C	499
Pulse Motor	Rod Type		65mm Width	RCP4W-RA6C	501
Туре			75mm Width	RCP4W-RA7C	503
	Slider Type	Coupled	158mm Width	RCP2W-SA16C	505
RCP2W	Rod Type	Coupled	45mm Width	RCP2W-RA4C	507
series			64mm Width	RCP2W-RA6C	509
		High-Thrust Type	100mm Width	RCP2W-RA10C	511
Pulse Motor Type	Gripper Type	Mini Slider Type	42mm Width	RCP2W-GRSS	513
.,,,,		Mini Lever Type	42mm Width	RCP2W-GRLS	515
	Rod Type	Coupled	ø32mm	RCAW-RA3C	
<b>RCAW</b>		Built-in	ø32mm	RCAW-RA3D	517
series		Side-Mounted Motor	ø32mm	RCAW-RA3R	
24 Servo	Rod Type	Coupled	ø37mm	RCAW-RA4C	
Motor Type		Built-in	ø37mm	RCAW-RA4D	519
		Side-Mounted Motor	ø37mm	RCAW-RA4R	
RCS2W	Rod Type	Coupled	ø37mm	RCS2W-RA4C	
		Built-in	ø37mm	RCS2W-RA4D	521
series		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.		
IFO7	Water	Even when the equipment is submerged in water, water does not enter the equipment.	Rod type Slider type RCP4W-RA RCP2W-SA16C
IP65	Solid objects	Fully protected against the entry of powder dust into the equipment.	Slider type ISWA/ISPWA RCP4W-SA
IPOS	Water	The equipment receives no harmful effect even when directly hit by water jets from any direction.	Pulse motor rod type RCP2W-RA4C/RA6C SCARA robot IX-NNW
	Solid objects	Dust that would affect the operation of the equipment does not enter the equipment.	
IP54	Water	The equipment receives no harmful effect even when contacted by water splashes from any direction.	24-V servo motor rod type RCAW-RA3/RA4 High-thrust rod type RCP2W-RA10C  200-V servo motor rod type RCS2W-RA4
IP50	Solid objects	Dust that would affect the operation of the equipment does not enter the equipment.	
	Water	The equipment is not protected against water.	Small gripper (dust-proof type) RCP2W-GR

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

# P4W-SA5C

**P3** 

Model Specification Items RCP4W - SA5C -- 35P 

encoder is also

considered type "I".

— Encoder type — Motor type — I: Incremental 35P: Pulse motor, The Simple absolute

10:10mm

Stroke 100: 100mm

500: 500mm (50mm pitch increments)

Applicable controller P3: PCON-CA

\* The RCP4W can be operated only with the PCON-CA

P: 1m S: 3m M:5m X□□: Custom length R□□: Robot cable

Cable length

- Options

See options below.

■ Payload by Acceleration/Deceleration

N: None

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]

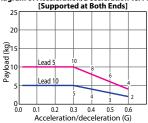
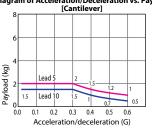


Diagram of Acceleration/Deceleration vs. Payload [Cantilever]



 $\epsilon$ RoHS Technical References

> (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
- (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.

#### Actuator Specifications

#### ■ Lead and Payload

selection

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

#### ■ Stroke and Maximum Speed

Stroke Lead	100~500 (every 50mm)
10	330
5	165

(Unit: mm/s)

①Stroke	
Stroke (mm)	Standard price
100	_
150	_
200	_
250	_
300	_
350	_
400	_
450	_
500	

#### ③ Options

3 - F			
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	_

#### ② Cable Length

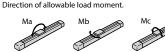
© cable zengan		
Type	Cable symbol	Standard Price
	<b>P</b> (1m)	_
Standard	<b>S</b> (3m)	_
	<b>M</b> (5m)	_
	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_
Special length	X11 (11m) ~ X15 (15m)	_
	X16 (16m) ~ X20 (20m)	_
	R01 (1m) ~ R03 (3m)	_
	R04 (4m) ~ R05 (5m)	_
Robot Cable	<b>R06</b> (6m) ~ <b>R10</b> (10m)	_
	R11 (11m) ~ R15 (15m)	_
	R16 (16m) ~ R20 (20m)	_

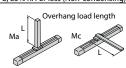
\* See page A-59 for cables for maintenance.

#### Actuator Specifications

	Item	Description
Drive system		Ball screw ø8 mm, rolled C10
Positioning repeatal	bility	±0.02mm
Lost motion		0.1 mm or less
Allowable static	Supported on both ends	Ma: 5.9 N•m Mb: 8.4 N•m Mc: 13.7 N•m
moment	Cantilever	Ma: 2.9 N•m Mb: 4.2 N•m Mc: 6.8 N•m
Allowable dynamic	Supported on both ends	Ma: 3.4 N•m Mb: 4.9 N•m Mc: 8.0 N•m
moment (*) ´	Cantilever	Ma: 1.7 N·m Mb: 2.5 N·m Mc: 4.0 N·m
Overhang load	Supported on both ends	125mm or less
length	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.





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(\*1) Connect the motor-encoder integrated cable here.

any interference with surrounding objects. (\*3) Reference position for calculating the moments.

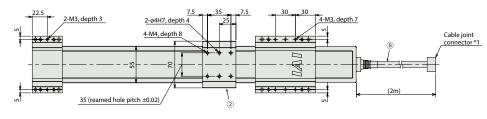
After homing, the slider moves to the ME, therefore, please watch for

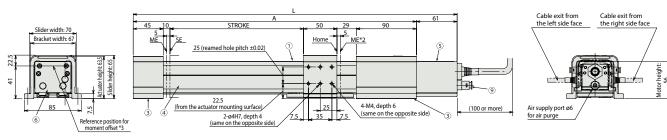
for the ceiling mount specification See Page A-10 for the dimensional drawing for the wall mount specification.

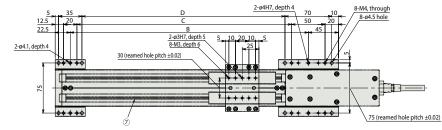
\*See Page A-9 for the dimensional drawing **Materials of Main Components** 

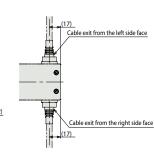
_			
1	Base	Extruded aluminum (A6063)	Surface treatment: Alumite coating
2	Table	Extruded aluminum (A6063)	Surface treatment: Alumite coating (excluding machined areas)
3	Mounting bracket (front/rear)	Extruded aluminum (A6063)	Surface treatment: Alumite coating (excluding machined areas)
4	Side cover	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)	
	· · · · · · · · · · · · · · · · · · ·		

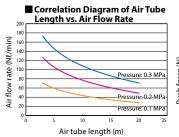
<sup>\*</sup> Alumite coating has been removed in the machined areas of the table ②and mounting bracket ③. To add alumite coating to these areas, specify the "Additional alumite coating (code: AL)" option.

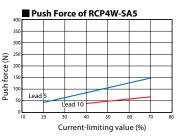












#### Note on Push-motion Operation

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.

#### • 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 Ne/min or more (clean dry air).

### ■ 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
Α	324	374	424	474	524	574	624	674	724
В	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 (Note) These actuators cannot be operated with controllers other than the PCON-CA RCP4W series actuators can be operated with the controllers indicated below. Select the type according to your intended application Equipped with a high-output driver Positioner type based on PIO control PCON-CA-35PI-①-2-0 Positioner type 512 points Equipped with a high-output driver Pulse-train input type Refer to PCON-CA-35PI-PL-□-2-0 DC24V Pulse-train type → P607 P618 Equipped with a high-output driver Supporting 7 major field networks Field network type PCON-CA-35PI-(II)-0-0 768 points \* ① indicates I/O type (NP/PN). \* 🗆 indicates N (NPN specification) or P (PNP specification) symbol \* ① indicates field network specification symbol.

RCP4W-SA5C 496

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

# P4W-SA6C

**P3** 

Model Specification Items

RCP4W-SA6C-Series — Type

ı

The Simple absolute

considered type "I".

encoder is also

I: Incremental

— 42P

42P: Pulse motor,

42□ size

— Encoder type — Motor type —

12:12mm

6: 6mm

Stroke

600:600mm

(50mm pitch increments)

Applicable controller — 100: 100mm P3: PCON-CA

\* The RCP4W can be operated only with the PCON-CA

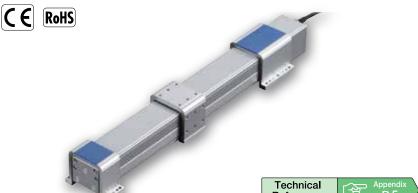
N: None P: 1m S: 3m

M:5m X□□: Custom length R□□: Robot cable

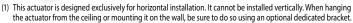
See options below.

Cable length

■ Payload by Acceleration/Deceleration







- (2) The payload varies depending on the acceleration/deceleration. The upper limit of acceleration/deceleration (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.

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]

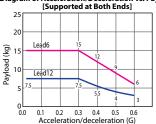
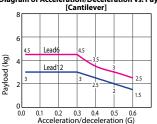


Diagram of Acceleration/Deceleration vs. Payload [Cantilever]



#### Actuator Specifications

### ■ Lead and Payload

selection

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

#### ■ Stroke and Maximum Speed

Stroke Lead	100~600 (every 50mm)
12	400
6	200

(Unit: mm/s)

U Stroke	
Stroke (mm)	Standard price
100	_
150	_
200	_
250	_
300	_
350	_
400	_
450	<u> </u>
500	_
550	<u> </u>
600	_

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	А3	→ 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	_

TFR

→ A-57

### ②Cable Length

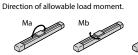
Type	Cable symbol	Standard Price
	<b>P</b> (1m)	_
Standard	<b>S</b> (3m)	_
	<b>M</b> (5m)	_
	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_
Special length	X11 (11m) ~ X15 (15m)	_
	X16 (16m) ~ X20 (20m)	_
	R01 (1m) ~ R03 (3m)	_
	R04 (4m) ~ R05 (5m)	_
Robot Cable	R06 (6m) ~ R10 (10m)	_
	R11 (11m) ~ R15 (15m)	_
	R16 (16m) ~ R20 (20m)	_

\* See page A-59 for cables for maintenance.

#### Actuator Specifications

	Item	Description
Drive system		Ball screw ø10 mm, rolled C10
Positioning repeatal	bility	±0.02mm
Lost motion		0.1 mm or less
Allowable static	Supported on both ends	Ma: 8.5 N·m Mb: 12.2 N·m Mc: 19.9 N·m
moment	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
moment (*) ´		Ma: 2.4 N·m Mb: 3.4 N·m Mc: 5.5 N·m
Overhang load	Supported on both ends	150mm or less
length 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.

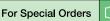






Wall mount sideways on the right

## CAD drawings can be downloaded www.intelligentactuator.com









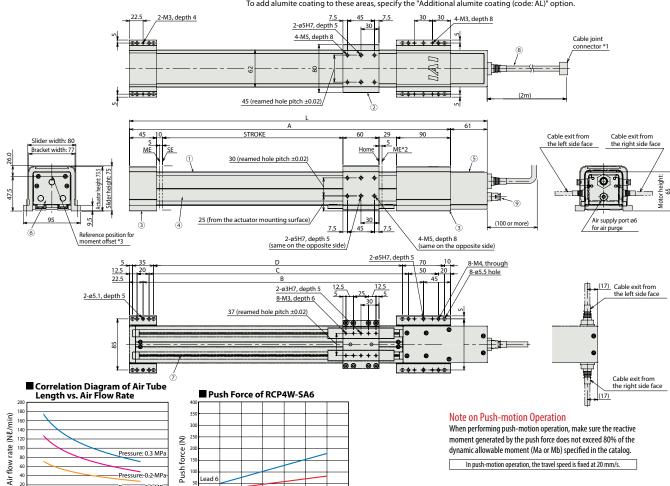
\*See Page A-9 for the dimensional drawing 

Materials of Main Components 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. After homing, the slider moves to the ME, therefore, please watch for any interference with surrounding objects.
- Reference position for calculating the moments.

	D	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
(	3	Motor cover	Die-cast aluminum (ADC12)	Surface treatment: Alumite coating + Paint
(	6	Front cover	Die-cast aluminum (ADC12)	Surface treatment: Alumite coating + Paint
	D	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.



- 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.)

Air tube length (m)

-Pressure:-0:2-MPa

Pressure: 0.1 MPa

Lead 12

Current-limiting value (%)

Air

· 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 Ne/min or more (clean dry air).

### ■ Dimensions and Weight by Stroke

Stroke	100	150	200	250	300	350	400	450	500	550	600
L	395	445	495	545	595	645	695	745	795	845	895
Α	334	384	434	484	534	584	634	684	734	784	834
В	266.5	316.5	366.5	416.5	466.5	516.5	566.5	616.5	666.5	716.5	766.5
С	231.5	281.5	331.5	381.5	431.5	481.5	531.5	581.5	631.5	681.5	731.5
D	214	264	314	364	414	464	514	564	614	664	714
Weight (kg)	3.9	4.1	4.3	4.5	4.7	4.9	5.1	5.3	5.5	5.8	6.0

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

# P4W-SA7C

**P3** 

Applicable controller

Model Specification Items

RCP4W - SA7C -

ı

The Simple absolute

considered type "I".

I: Incremental

encoder is also

56P — Encoder type — Motor type

56P: Pulse motor,

56□ size

Stroke 16:16mm 8: 8mm

100: 100mm 700: 700mm

(50mm pitch increments)

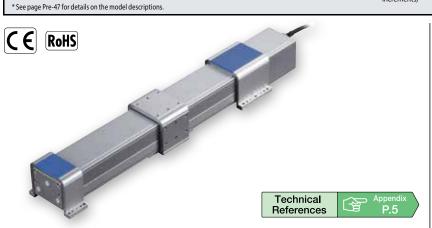
P3: PCON-CA

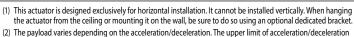
\* The RCP4W can be operated only with the PCON-CA

P: 1m S: 3m M:5m X□□: Custom length R□□: Robot cable

Cable length

See options below.





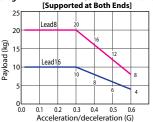
- (3) The cable joint connector is not splash-proof, so install the connector in a location where it will not come in
- contact with water. (4) Refer to the page at right for the air tube length and air flow rate when implementing air purge.
- (5) See page A-71 for details on push motion.

#### ■ Payload by Acceleration/Deceleration

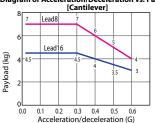
N: None

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

selection

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

#### 

#### ■ Stroke and Maximum Speed

Stroke Lead	100~700 (every 50mm)
16	530
8	265

(Unit: mm/s)

### ①Stroke

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

#### 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	_

### ②Cable Length

Type	Cable symbol	Standard Price
Standard	<b>P</b> (1m)	_
(Robot Cables)	<b>S</b> (3m)	_
(NODOL Cables)	<b>M</b> (5m)	_
	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_
Special length	X11 (11m) ~ X15 (15m)	_
	X16 (16m) ~ X20 (20m)	_
	R01 (1m) ~ R03 (3m)	_
	R04 (4m) ~ R05 (5m)	_
Robot Cable	R06 (6m) ~ R10 (10m)	_
	R11 (11m) ~ R15 (15m)	_
	R16 (16m) ~ R20 (20m)	_

<sup>\*</sup> See page A-59 for cables for maintenance.

#### Actuator Specifications

	Item	Description			
Drive system		Ball screw ø12 mm, rolled C10			
Positioning repeatal	oility	±0.02mm			
Lost motion		0.1 mm or less			
Allowable static	Supported on both ends	Ma: 11.7 N·m Mb: 16.6 N·m Mc: 31.8 N·m			
moment	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			
moment (*) '	Cantilever	Ma: 3.1 N•m Mb: 4.4 N•m Mc: 8.4 N•m			
Overhang load	Supported on both ends	175mm or less			
length	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.







#### Dimensional Drawings

## CAD drawings can be downloaded www.intelligentactuator.com

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(\*1) Connect the motor-encoder integrated cable here.

any interference with surrounding objects. Reference position for calculating the moments.

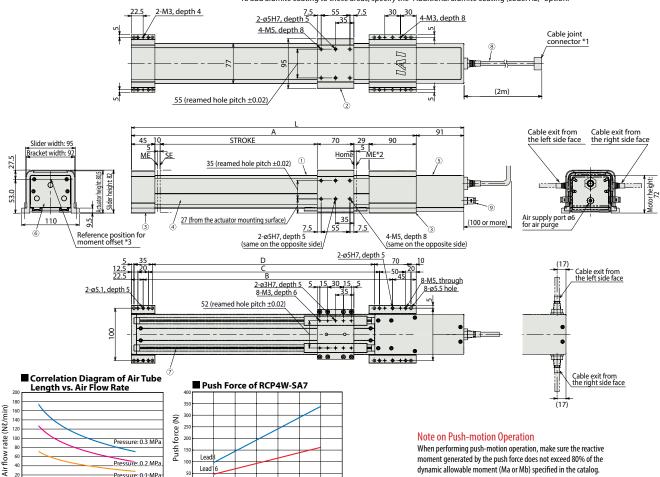
(\*2) After homing, the slider moves to the ME, therefore, please watch for

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

\*See Page A-9 for the dimensional drawing **Materials of Main Components** 

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

<sup>\*</sup> 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.



· 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.)

Air tube length (m)

-Pressure: 0:1-MPa

· 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 NE/min or more (clean dry air).

#### Current-limiting value (%) ■ 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
Α	344	394	444	494	544	594	644	694	744	794	844	894	944
В	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
С	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

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

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

RCP4W-SA7C **500** 

# **4W-RA6C**

**P3** 

Model Specification Items RCP4W - RA6C -— Type

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

— 42P ı — Encoder type — Motor type — I: Incremental

42P: Pulse motor,

pulse motor, size 42 □

42SP: High-thrust

12:12mm 6: 6mm

50: 50mm 3: 3mm

400: 400mm (50mm pitch increments)

Stroke

Applicable controller P3: PCON-CA

N: None P: 1m S: 3m

Cable length — Options See Options below. \* If the high-thrust pulse motor is selected, the actuator comes standard with option B (Brake).

M:5m X□□:Custom length R□□:Robot cable

(Built-in Guide Mechanism)



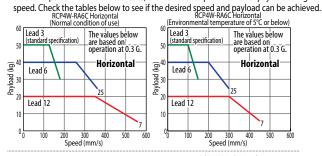
References

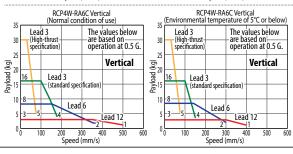


- (1) The maximum payload is the value when operated horizontally and vertically at 0.3G and 0.5G, respectively. Note that raising the acceleration causes the payload to drop. (Refer to page A-108 for the maximum payload by acceleration.)
- (2) The horizontal payload is calculated by assuming that an external guide is also
- (3) 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





#### Actuator Specifications

#### ■ Lead and Payload

	Model number			Vertical (kg)	Maximum push force (N)	Positioning repeatabili- ty (mm)	Stroke (mm)
Standard specification	RCP4W-RA6C-I-42P-12-①-P3-②-③ RCP4W-RA6C-I-42P-6-①-P3-②-③		20	3	93		
			40	8	185		50 to 400
Specification.	RCP4W-RA6C-I-42P-3-①-P3-②-③	3	50	16	370	±0.02	(Every 50mm)
High-thrust specification	RCP4W-RA6C-I-42SP-3-①-P3-②-③-B	3	_	30	590		,

Standard price

Code explanation ① Stroke ② Cable length ③ Options

#### ■ Stroke and Maximum Speed (Unit: mm/s)

100 ~ 400 (Every 50mm)	
560 <500> [450 <400>]	

Lead 500 [450 <400> 12 6 360 [300] 3 180 [150] 3 <70> [<70>]

50 (mm)

\*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.

### ①Stroke

③ Options

Brake

With flange

With foot bracket

Name Cable exit from the left side face

Cable exit from the right side face

Cable exit from the top face

Non-motor side specification

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

Option code

A1

А3

ΑT

В

FL

FT

→ A-41

→ A-41

→ A-41

→ A-42

→ A-45

→ A-48

→ A-52

## ②Cable Length

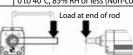
Туре	Cable symbol	Standard Price
	<b>P</b> (1m)	_
Standard	<b>S</b> (3m)	_
	<b>M</b> (5m)	_
	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_
Special length	<b>X11</b> (11m) ~ <b>X15</b> (15m)	_
	X16 (16m) ~ X20 (20m)	_
	R01 (1m) ~ R03 (3m)	_
	R04 (4m) ~ R05 (5m)	_
Robot Cable	<b>R06</b> (6m) ~ <b>R10</b> (10m)	_
	R11 (11m) ~ R15 (15m)	_
	R16 (16m) ~ R20 (20m)	_

<sup>\*</sup> See page A-59 for cables for maintenance.

#### Actuator Specifications

Metaator Specifications	
ltem	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)



RCP4W-RA6C

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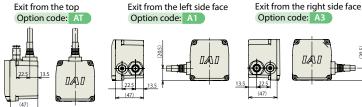
- Connect the motor-encoder integrated cable here.
- The rod moves to the ME during home return, so pay attention to possible contact with surrounding structures and objects.
- The orientation of the bolt varies from one product to another.
- When installing the actuator using the front housing or flange, make sure the actuator does not receive any external force.

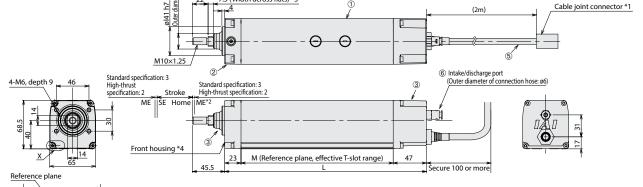
7.5 (Width across flats) \*3

**■** Materials of Key Components

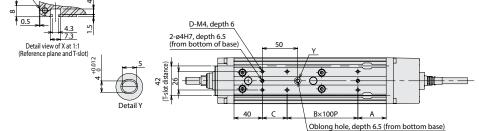
1	Frame	Aluminum extrusion material (A6063SS-T5 or equivalent) with white alumite coating
2	Front bracket	Aluminum die-cast
3	Rear cover	Aluminum die-cast
4	Rod	Stainless steel pipe (SUS304 or equivalent), polished + hard chrome plated
(5)	Actuator cable	Polyvinyl chloride (PVC)
6	Intake/exhaust port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

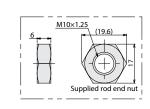
<Cable Exit Direction Option>



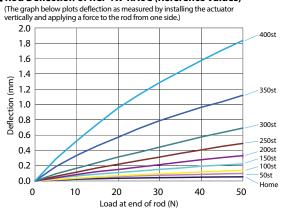


(1)





#### ■ Rod Deflection of RCP4W-RA6C (Reference Values)



#### ■ Dimensions and Weight by Stroke

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

NCF4W Series actuators (	NCF4W 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			1			
Pulse-train type		PCON-CA-42OI-PL-□-2-0	Equipped with a high-output driver Pulse-train input type	_	DC24V	Refer to P618	-	→ P607		
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. \* O indicates P (Standard specification) or SP (High-thrust specification) symbol.

RCP4W-RA6C 502

# 4W-RA7C

**P3** 

Applicable controller

Model Specification Items RCP4W - RA7C -

ı 56P — Type — Encoder type — Motor type

I: Incremental 56P: Pulse motor, size 56□

16:16mm 8: 8mm 56SP: High-thrust 4. 4mm pulse motor, size 56□

Stroke 50: 50mm 500: 500mm

P3: PCON-CA P4: PCON-CFA \* The PCON-CFA is designed exclusively for the high-thrust (50mm pitch increments) specification.

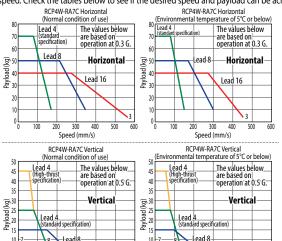
N: None P: 1m S: 3m M:5m X□□:Custom length R□□:Robot cable

See Options below. \* If the high-thrust pulse motor is selected, the actuator comes standard with option B (Brake).

Cable length — Options

■ 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.



\* See page Pre-47 for details on the model descriptions (Built-in Guide Mechanism) RoHS Technical

References (1) The maximum payload is the value when operated horizontally and vertically at selection

- 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.)
- (2) The horizontal payload is calculated by assuming that an external guide is also used.
- (3) The high-thrust specification is designed exclusively for vertical operation. It comes standard with a brake.

#### Actuator Specifications

#### ■ Lead and Payload

Model number		Lead (mm)	Maximum pa Horizontal (kg)	ayload (kg) Vertical (kg)	Maximum push force (N)	Positioning repeatability (mm)	Stroke (mm)
6	RCP4W-RA7C-I-56P-16-①-P3-②-③	16	40	7	219		
Standard specification	RCP4W-RA7C-I-56P-8-①-P3-②-③	8	50	15	437		50 to 500
Specimento.	RCP4W-RA7C-I-56P-4-①-P3-②-③	4	70	25	875	±0.02	(Every 50mm)
High-thrust specification	RCP4W-RA7C-I-56SP-4-①-P4-②-③-B	4	_	45	1030		,

Code explanation ① Stroke ② Cable length ③ Options

= Stroke all	Stroke and Maximum Speed (Unit: mm/s)						
Stroke Lead	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> [<80>]						

Lead-16

300

Speed (mm/s)

\* 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

Lead-16

300

Speed (mm/s)

#### Standard price Stroke (mm) Standard specification High-thrust specification 50 100 150 200 250 300 350 400 450

## 500 ③ Options

①Stroke

Name	Option code		Standard price
Cable exit from the left side face	A1	→ A-41	_
Cable exit from the right side face	А3	→ A-41	_
Cable exit from the top face	AT	→ A-41	_
Brake	В	→ 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.

## ②Cable Length

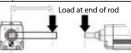
S cable beligiti		
Туре	Cable symbol	Standard Price
	<b>P</b> (1m)	_
Standard	<b>S</b> (3m)	_
	<b>M</b> (5m)	_
	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_
Special length	X11 (11m) ~ X15 (15m)	_
	X16 (16m) ~ X20 (20m)	_
	<b>R01</b> (1m) ~ <b>R03</b> (3m)	<u>—</u>
	R04 (4m) ~ R05 (5m)	<u> </u>
Robot Cable	<b>R06</b> (6m) ~ <b>R10</b> (10m)	
	R11 (11m) ~ R15 (15m)	_
	R16 (16m) ~ R20 (20m)	_

\* See page A-59 for cables for maintenance.

#### Actuator Specifications

Actuator Specifications	
ltem	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)



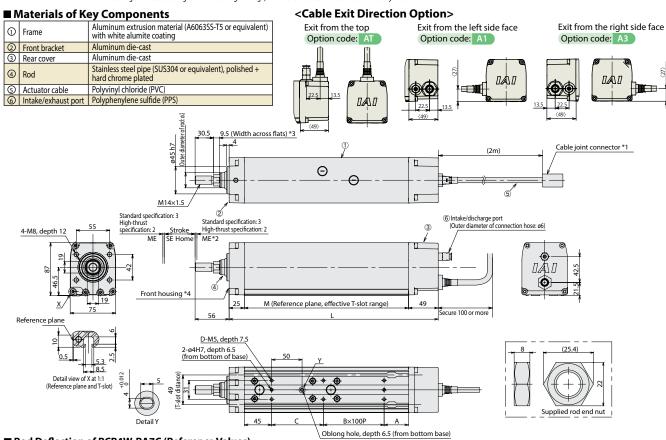
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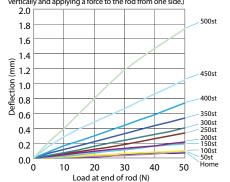


- Connect the motor-encoder integrated cable here.
  - The rod moves to the ME during home return, so pay attention to possible contact with surrounding structures and objects.
- \*3 The orientation of the bolt varies from one product to another.
- When installing the actuator using the front housing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



#### ■ Rod Deflection of RCP4W-RA7C (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	450	500
- 1	Without brake	344	394	444	494	544	594	644	694	744	794
L	With brake (*)	399	449	499	549	599	649	699	749	799	849
Α	Without brake	40	40	40	40	40	40	40	40	40	40
A	With brake (*)	95	95	95	95	95	95	95	95	95	95
	В	1	1	2	2	3	3	4	4	5	5
	С	85	135	85	135	85	135	85	135	85	135
	D	6	6	8	8	10	10	12	12	14	14
М	Without brake	270	320	370	420	470	520	570	620	670	720
IVI	With brake	325	375	425	475	525	575	625	675	725	775
Allowabl	e static load at end of rod (N)	112.7	91.5	76.7	65.7	57.2	50.4	44.8	40.2	36.2	32.7
Allowable	dynamic Load offset 0 mm	49.0	37.4	29.9	24.5	20.4	17.1	14.5	12.3	10.3	8.6
load at en	d of rod (N) Load offset 100 mm	38.7	31.0	25.5	21.4	18.1	15.4	13.2	11.2	9.5	8.0
Allowable static torque at end of rod (N•m)		m) 11.4	9.3	7.9	6.8	6.0	5.4	4.9	4.5	4.1	3.8
Allowable dynamic torque at end of rod (N·m)		•m) 3.9	3.1	2.5	2.1	1.8	1.5	1.3	1.1	1.0	0.8
Weight	Without brake	5.6	6.1	6.6	7.2	7.7	8.2	8.7	9.2	9.7	10.2
(kg)	With brake	6.4	6.9	7.4	7.9	8.4	9.0	9.5	10.0	10.5	11.0

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

Applicable Controller								
RCP4W series actuato	rs can be op	perated with the controller indicated b	elow. 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-56PI-①-2-0	Equipped with a high-output driver Positioner type based on PIO control	512 points			-	
Pulse-train type		PCON-CA-56PI-PL□-2-0	Equipped with a high-output driver Pulse-train input type	_	DC24V	Refer to P618	-	Refer to P607
Field network type		PCON-CA-56PI-III-0-0	Equipped with a high-output driver Supporting 7 major field networks	768 points			-	
Positioner type	1 .	PCON-CFA-56SPI-①-2-0	High-thrust specification Positioner type based on PIO control	512 points			-	
Pulse-train type		PCON-CFA-56SPI-PL□-2-0	High-thrust specification Pulse-train input type	_	DC24V	Refer to P618	-	Refer to P607
Field network type		PCON-CFA-56SPI-①-0-0	High-thrust specification Supporting 7 major field networks	768 points			-	
* ① indicates I/O type	(NP/PN). *	<sup>†</sup> □ indicates N (NPN specification	n) or P (PNP specification) symbol * (  ) indicates field	network specificat	ion symb	ol.		

RCP4W-RA7C **504** 

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

# **2W-SA16C**

**P4** 

Applicable controller

Model Specification Items RCP2W - SA16C -86P

Series — Type Encoder type — Motor type

I: Incremental 86P: Pulse motor, 8:8mm 56□ High Output 4:4mm

Stroke 50: 50mm

600: 600mm (50mm pitch increments)

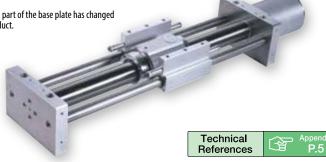
P4: PCON-CFA

CO: With cover

N: None CO:
P: 1m NM:
S: 3m
M:5m
X□□: Custom Length
R□□: Robot cable

Cable length

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



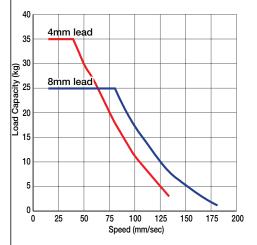
(1) The actuator is limited to being installed horizontally. Please note that it cannot be horizontally wall mounted, vertically mounted, or ceiling mounted. (The same goes for storage.)

(2) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical Use the actuator specification table below to check the maximum speed at the stroke you desire.

- (3) 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.
- (4) The load capacity is based on operation at an acceleration of 0.2G. 0.2G is the upper limit for the acceleration.
- (5) Push motion operation is not supported by this actuator.
- (6) 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

① Stroke

500

550

600

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

Model number	Lead	Max. Load Ca	pacity (Note 1)	Stroke
Model number	(mm)	Horizontal (kg)	Vertical (kg)	(mm)
RCP2W-SA16C-I-86P-8-①-P4-②-③	8	~25	Not Allowed 50~60	
RCP2W-SA16C-I-86P-4-①-P4-②-③	4	~35	Not Allowed	(every 50mm)

■ Stroke and Maximum Speed

Stroke Lead	50~600 (every 50mm)
8	180
4	133

Code explanation ① Stroke ③ Cable length ④ Options \*Push motion operation is not supported by this actuator.

(Unit: mm/s)

⊕Stroke	Standard price				
(mm)	Without cover	With cover			
50	_	_			
100	_	-			
150	_	_			
200	_	_			
250	_	_			
300	_	_			
350	_	_			
400	_	_			
450	_	_			

③ Options			
Name	Option code	See page	Standard price
With cover	со	→ A-43	_
Non-motor end specification	NM	→ A-52	_

### ②Cable Length

Type	Cable symbol	Standard Price
	<b>P</b> (1m)	_
Standard	<b>S</b> (3m)	_
	<b>M</b> (5m)	_
	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_
Special length	X11 (11m) ~ X15 (15m)	_
	X16 (16m) ~ X20 (20m)	_
	R01 (1m) ~ R03 (3m)	_
	R04 (4m) ~ R05 (5m)	_
Robot Cable	R06 (6m) ~ R10 (10m)	_
	R11 (11m) ~ R15 (15m)	_
	R16 (16m) ~ R20 (20m)	_

\* See page A-59 for cables for maintenance.

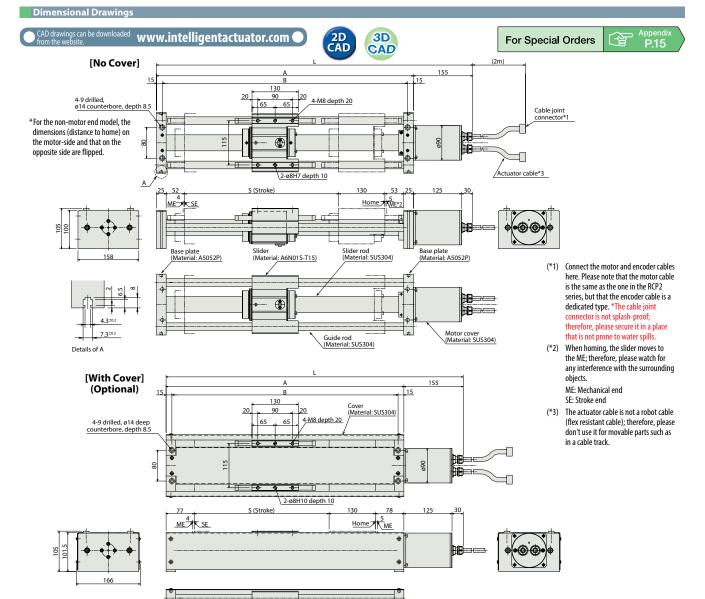
#### Actuator Specifications

ltem	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.



■ Dimensions and Weight by Stroke

	9	-,										
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
Α	335	385	435	485	535	585	635	685	735	785	835	885
В	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

The controller	for the RCP2W-SA	16C type is a dedicated contr	oller.					
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

Note: • Please note that the encoder cable is a dedicated CFA-type cable. (See page A-59.)

**(1)** 

· Note that a simple absolute unit cannot be used.

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

# W-RA4C

Model Specification Items

RCP2W - RA4C -

ı

42P — Encoder type — Motor type

42P: Pulse motor,

42□ size

10: 10mm 5 : 5mm 25 · 25mm

Stroke 50: 50mm

Applicable controller P1: PCON-PL/PO/SE PSEL 300: 300mm P3: PCON-CA (50mm pitch increments)

MSEP PMEC/PSEP

Cable length

N: None E P: 1m F S: 3m F M:5m N X□□: Custom Length R□□: Robot cable : With flange : With foot bracket

NM: Non-motor end



I: Incremental

encoder is also

The Simple absolute

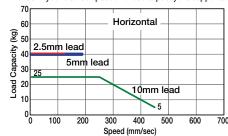
considered type "I".

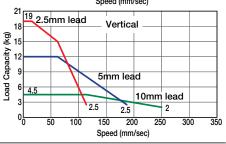
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- (1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke
- (2) Since the RCP2 series use 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.
- (3) The load capacity is based on operation at an acceleration of 0.2G. 0.2G is the upper limit for the acceleration.
- (4) The horizontal payload is calculated by assuming that an external guide is also used.
- (5) The cable joint connector is not splash-proof; secure it in a place that is not prone to water spills.
- (6) 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 Pavload (Note 1) Please note that the maximum load capacity decreases as the speed increases

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

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	<b>3</b> 110	ĸe	anıu	IVIA	KIIIIU	IIII 3	Deed

Stroke Lead	50~200 (every 50mm)	250	300
10	450 <250>	450 <250>	350 <250>
5	190	190	175
2.5	125 <115>	115	85

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

<b>4</b> Options			
Name	Option code	See page	Standard price
With cover	В	→ A-42	_
With flange	FL	→ A-45	_
With foot bracket	FT	→ A-48	_
Non-motor end specification	NM	→ A-52	_

## **3Cable Length**

Туре	Cable symbol	Standard Price
	<b>P</b> (1m)	_
Standard	<b>S</b> (3m)	_
	<b>M</b> (5m)	_
	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_
Special length	X11 (11m) ~ X15 (15m)	_
	X16 (16m) ~ X20 (20m)	_
	R01 (1m) ~ R03 (3m)	_
	R04 (4m) ~ R05 (5m)	_
Robot Cable	R06 (6m) ~ R10 (10m)	_
	R11 (11m) ~ R15 (15m)	_
	R16 (16m) ~ R20 (20m)	_

\* See page A-59 for cables for maintenance.

#### Actuator Specifications

ltem	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)



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For Special Orders





(65.3)

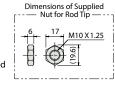
Note Please don't apply an external force coming from a direction other than that of the rod's direction of travel.

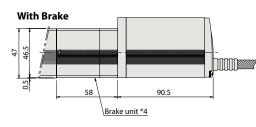
The detent may break if a force is applied other than in the direction of travel or a torque is applied to the rod.

(2m) Intake port\*1 31.5 2.0 Cable joint connector \*2 (360 deg rotatable) 7.5 (width across flats)\*6 ø38 -0 M10 X 1.25 Actuator cable\*5 4-M8 depth 12 End bracket (Material: SUS303) Rod (Material: SUS304) ME\*3 ME Home Effective T-slot range\*4 24 50 90.5 Secure at least 100 Square nut insertion inlet









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

- (\*1) Intake/exhaust port is the air exhaust tube in the main body. Insert OD ø6 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.
- The actuator cable is not a robot cable (flex resistant cable); therefore, please don't use it for movable parts such as cable track.
- The orientation of the bolt varies depending on the product.

#### ■ Dimensions and Weight by Stroke

<b>—</b> Dilliciisi	- Dimensions and Weight by Stroke								
Stroke	50	100	150	200	250	300			
e e	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) A n	nlicable	Contro	Orc
$\mathcal{L}_{\mathbf{n}}$	PIICADIE	COILLIO	HEI 5

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	Referen page
Colonaid Valva Tuna	***	PMEC-C-42PI-①-2-⑪	Easy-to-use controller, even for beginners		AC100V AC200V	Refer to P541	_	→ P53
Solenoid Valve Type		PSEP-C-42PI-①-2-0	Simple controller operable with the same signal as a solenoid valve	3 points		Refer to P555	_	→ P54
Solenoid valve multi-axis type PIO specification	Acres 6	MSEP-C	Positioner type based on PIO control, allowing up to 8 axes to be connected			Refer to		→ P56
Solenoid valve multi-axis type Network specification		MSEP-C	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points		P572	_	→ P30
Positioner type High-output specification	á	PCON-CA-42PI-①-2-0	Equipped with a high-output driver Positioner type based on PIO control	512 points			_	
Pulse-train type High-output specification	1	PCON-CA-42PI-PL□-2-0	Equipped with a high-output driver Pulse-train input type	(—)	DC24V	Refer to P618	_	→ P6
Field network type High-output specification		PCON-CA-42PI-Ŵ-0-0	Equipped with a high-output driver Supporting 7 major field networks	768 points	DC24V		_	
Pulse Train Input Type (Differential Line Driver)	Ó	PCON-PL-42PI-①-2-0	Pulse train input type with differential line driver support	(—)			_	
Pulse Train Input Type (Open Collector)		PCON-PO-42PI-①-2-0	Pulse train input type with open collector support	()		Refer to P628	_	→ P6
Serial Communication Type		PCON-SE-42PI-N-0-0	Dedicated Serial Communication	64 points			_	
Program Control Type		PSEL-CS-1-42PI-①-2-0	Programmed operation is possible. Can operate up to 2 axes	1, 500 points		Refer to P671	_	→ P6

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

RCP2W-RA4C **508** 



Model Specification Items

RCP2W - RA6C -

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I: Incremental

The Simple absolute

considered type "I".

encoder is also

**56P** — Encoder type — Motor type

56□ size

56P: Pulse motor, 16:16mm

4: 4mm

Stroke 8:8mm

50: 50mm 300: 300mm

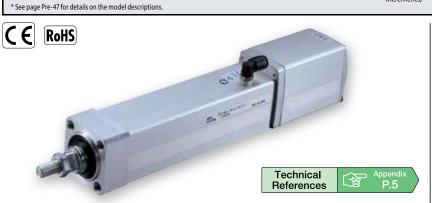
Applicable controller P1: PCON-PL/PO/SE PSEL P3: PCON-CA (50mm pitch increments)

MSEP

Cable length

: With flange : With foot bracket NM: Non-motor end

PMEC/PSEP

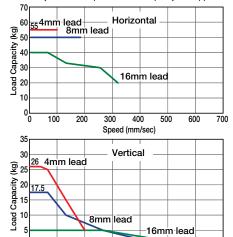


(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke (2) Since the RCP2 series use a pulse motor, the load capacity decreases at high speeds. Check in the Speed vs. Load Capacity graph on the above right to see if your desired speed and load capacity are supported.

- (3) The load capacity is based on operation at an acceleration of 0.2G. 0.2G is the upper limit for the acceleration.
- (4) The horizontal payload is calculated by assuming that an external guide is also used.
- (5) The cable joint connector is not splash-proof; secure it in a place that is not prone to water spills.
- (6) 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

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■ Lead and Pavload

= Lead and Layload	Note i) i lease no	te triat the maxim	um load capacity	decreases as the sp	reed increases.
Model number	Lead (mm)	Max. Load Cap Horizontal (kg)	oacity (Note 1) Vertical (kg)	Maximum Push Force (N) (Note 2)	Stroke (mm)
RCP2W-RA6C-I-56P-16-①-②-③-④	16	~40	~5	240	
RCP2W-RA6C-I-56P-8-①-②-③-④	8	50	~17.5	470	50~300 (every 50mm)
RCP2W-RA6C-I-56P-4-①-②-③-④	4	55	~26	800	

and Maximum	Speed

Stroke Lead	50~300 (every 50mm)
16	320 <265>
8	200
4	100

200

Speed (mm/sec)

250

300

c	ode explanation	① Strok	e ② Applicable	controller ③ C	able length 4	Options *See :	page A-71 for details on	push motion

. *The values	s enclosed in <	> apply to	vertical setti	ngs. (Unit: m	m/s)
---------------	-----------------	------------	----------------	---------------	------

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

<b>4</b> Options			
Name	Option code	See page	Standard price
With cover	В	→ A-42	_
With flange	FL	→ A-45	_
With foot bracket	FT	→ A-48	_
Non-motor end specification	NM	→ A-52	_
	•		

③Cable Length		
Туре	Cable symbol	Standard Price
	<b>P</b> (1m)	_
Standard	<b>S</b> (3m)	_
	<b>M</b> (5m)	_
	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_
Special length	X11 (11m) ~ X15 (15m)	_
	X16 (16m) ~ X20 (20m)	_
	R01 (1m) ~ R03 (3m)	_
	<b>R04</b> (4m) ~ <b>R05</b> (5m)	_
Robot Cable	<b>R06</b> (6m) ~ <b>R10</b> (10m)	_
	R11 (11m) ~ R15 (15m)	_
	R16 (16m) ~ R20 (20m)	_

50 100

# Actuator Specifications

ltem	Description
Drive System	Ball screw, ø12mm, rolled C10
Positioning repeatability	±0.02mm
Lost Motion	0.1mm or less
Rod diameter	ø30mm
Rod non-rotational accuracy	±1.0 degrees
Protective structure	IP65
Ambient operating temperature/humidity	0 to 40°C, 85% RH max. (Non-condensing)

<sup>\*</sup> See page A-59 for cables for maintenance.

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### CAD drawings can be downloaded www.intelligentactuator.com

For Special Orders

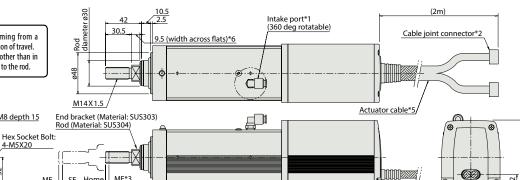
Secure at



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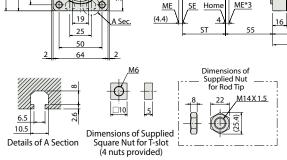


Note Please don't apply an external force coming from a direction other than that of the rod's direction of travel. The detent may break if a force is applied other than in the direction of travel or a torque is applied to the rod.



. 17

Effective T-slot range\*4



4-M8 depth 15

4-M5X20

(\*1) Intake/exhaust port is the air exhaust tube in the main body. Insert OD  $\emptyset$ 6 mm tube and use it extended to a place that is not prone to water spills or intake.

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

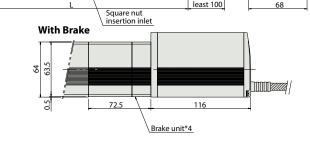
SE: Stroke end

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.



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\*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
Ł	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

#### ②Applicable Controllers

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

External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Reference page
No.	PMEC-C-56PI-①-2-⑪	Easy-to-use controller, even for beginners		AC100V AC200V	Refer to P541	_	→ P537
<b>I</b>	PSEP-C-56PI-①-2-0	Simple controller operable with the same signal as a solenoid valve	3 points		Refer to P555	_	→ P547
line	MSEP-C	Positioner type based on PIO control, allowing up to 8 axes to be connected			Refer to P572		, DEC
iiii	MSEP-C-(11)-~-(10)-0-0	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points			_	→ P563
á	PCON-CA-56PI-①-2-0	Equipped with a high-output driver Positioner type based on PIO control	512 points			_	
	PCON-CA-56PI-PL□-2-0	Equipped with a high-output driver Pulse-train input type	(—)	DC24V	Refer to P618	_	→ P607
	PCON-CA-56PI-ℚ-0-0	Equipped with a high-output driver Supporting 7 major field networks	768 points			_	
eil.	PCON-PL-56PI-①-2-0	Pulse train input type with differential line driver support	( )		Refer to P628	_	
	PCON-PO-56PI-①-2-0	Pulse train input type with open collector support	(—)			_	→ P623
	PCON-SE-56PI-N-0-0	Dedicated Serial Communication	64 points			_	
	PSEL-CS-1-56PI-①-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points		Refer to P671	_	→ P66
	view	PMEC-C-56PI-①-2-①  PSEP-C-56PI-①-2-0  MSEP-C-①①-2-0  MSEP-C-①①-2-0  PCON-CA-56PI-①-2-0  PCON-CA-56PI-①-2-0  PCON-PL-56PI-①-2-0  PCON-PO-56PI-①-2-0  PCON-SE-56PI-①-2-0	PMEC-C-56PI-①-2-① Easy-to-use controller, even for beginners  Simple controller operable with the same signal as a solenoid valve  MSEP-C-⑪-~-①-2-0 Positioner type based on PIO control, allowing up to 8 axes to be connected  PCON-CA-56PI-①-2-0 Equipped with a high-output driver Positioner type based on PIO control Equipped with a high-output driver Positioner type based on PIO control  PCON-CA-56PI-①-2-0 Equipped with a high-output driver Pulse-train input type  PCON-CA-56PI-①-0-0 Equipped with a high-output driver Supporting 7 major field networks  PCON-PL-56PI-①-2-0 Pulse train input type with differential line driver support  PCON-SE-56PI-①-2-0 Pulse train input type with open collector support  PCON-SE-56PI-N-0-0 Dedicated Serial Communication	PMEC-C-56PI-①-2-① Easy-to-use controller, even for beginners    PMEC-C-56PI-①-2-① Simple controller operable with the same signal as a solenoid valve	PMEC-C-56PI-①-2-① Easy-to-use controller, even for beginners  PSEP-C-56PI-①-2-0 Simple controller operable with the same signal as a solenoid valve  MSEP-C-⑩①-2-0 Positioner type based on PIO control, allowing up to 8 axes to be connected  MSEP-C-⑪②-0-0 Field network-ready positioner type, allowing up to 8 axes to be connected  PCON-CA-56PI-①-2-0 Equipped with a high-output driver Positioner type based on PIO control  PCON-CA-56PI-①-2-0 Equipped with a high-output driver Pulse-train input type  PCON-CA-56PI-①-0-0 Equipped with a high-output driver Supporting 7 major field networks  PCON-PL-56PI-①-2-0 Pulse train input type with differential line driver support  PCON-PO-56PI-①-2-0 Pulse train input type with open collector support  PCON-SE-56PI-N-0-0 Dedicated Serial Communication  Programmed operation is possible.  1 500 points	PMEC-C-56PI-①-2-① Easy-to-use controller, even for beginners  PSEP-C-56PI-①-2-0 Simple controller operable with the same signal as a solenoid valve  MSEP-C-⑩①-2-0 Positioner type based on PIO control, allowing up to 8 axes to be connected  MSEP-C-⑪②-0 Field network-ready positioner type, allowing up to 8 axes to be connected  PCON-CA-56PI-①-2-0 Equipped with a high-output driver Positioner type based on PIO control  PCON-CA-56PI-①-2-0 Equipped with a high-output driver Positioner type based on PIO control  PCON-CA-56PI-①-2-0 Equipped with a high-output driver Pulse-train input type  PCON-PD-56PI-①-2-0 Pulse train input type with differential line driver support  PCON-PO-56PI-①-2-0 Pulse train input type with open collector support  PCON-SE-56PI-N-0-0 Dedicated Serial Communication  PCON-SE-56PI-N-0-0 Programmed operation is possible.  1 500 points  Refer to P628	PMEC-C-56PI-①-2-① Easy-to-use controller, even for beginners  PSEP-C-56PI-①-2-① Simple controller operable with the same signal as a solenoid valve  Positioner type based on PIO control, allowing up to 8 axes to be connected  PCON-CA-56PI-①-2-0 Equipped with a high-output driver Positioner type based on PIO control  PCON-CA-56PI-①-2-0 Equipped with a high-output driver Positioner type based on PIO control  PCON-CA-56PI-①-2-0 Equipped with a high-output driver Positioner type based on PIO control  PCON-CA-56PI-①-2-0 Pulse-train input type  PCON-CA-56PI-①-2-0 Pulse-train input type  PCON-PL-56PI-①-2-0 Pulse train input type with differential line driver support  PCON-PO-56PI-①-2-0 Pulse train input type with open collector support  PCON-SE-56PI-N-0-0 Dedicated Serial Communication 64 points  PSEL-CS-1.56PI-①-2-0 Programmed operation is possible. 1.500 points  Refer to P555 —  Refer to P555 —  Refer to P555 —  PCON-DO-56PI-①-2-0 Programmed operation is possible. 1.500 points

RCP2W-RA6C 510

# 2W-RA10C

Model Specification Items

RCP2W - RA10C -Series — Type — Encoder type — Motor type

ı

I: Incremental

86P

86P: Pulse motor,

86□ size

10:10mm 5: 5mm

2.5:2.5mm

Stroke Applicable controller 50: 50mm

(50mm pitch increments)

300: 300mm

P4: PCON-CFA

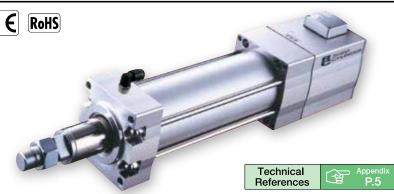
**P4** 

N: None A1~A3: Connector Cable P: 1m S: 3m M: 5m X□□: Custom Length R□□: Robot cable

— Cable length — Options

Cable outlet direction changed B: Brake FL: With flange FT: With foot bracket

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



(1) 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.

(2) 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.

(3) 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.

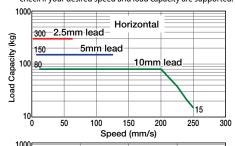
Also, this is when the load capacity is attached to the external guide. The rotation stopper may break if an external force coming from a direction other than that of rod's direction of travel is applied.

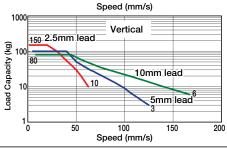
(4) The cable joint connector is not splash-proof; secure it in a place that is not prone to water spills.

(5) See page A-71 for details on push motion.

#### ■ 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. 

Stroke and Maximum Speed

Model number	Lead (mm)	Max. Load Cap Horizontal (kg)		Maximum Push Force (N) (Note 2)	Stroke (mm)
	(111111)	Horizontai (kg)	Vertical (kg)	roice (N) (Note 2)	(111111)
RCP2W-RA10C-I-86P-10-①-P4-②-③	10	~80	~80	1500	
RCP2W-RA10C-I-86P-5-①-P4-②-③	5	150	~100	3000	50~300 (every 50mm)
RCP2W-RA10C-I-86P-2.5-①-P4-②-③	2.5	300	~150	6000	
Code explanation ① Stroke ② Cable ler	ngth ③Option	ons *See page A-	71 for details on pu	sh motion.	

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

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

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

③ Options			
Name	Option code	See page	Standard price
Connector cable outlet direction changed	A1~A3	→ A-41	_
Brake	В	→ A-42	_
With flange	FL	→ A-46	_
With foot bracket	FT	→ A-48	_
With foot bracket	FT	→ A-48	_

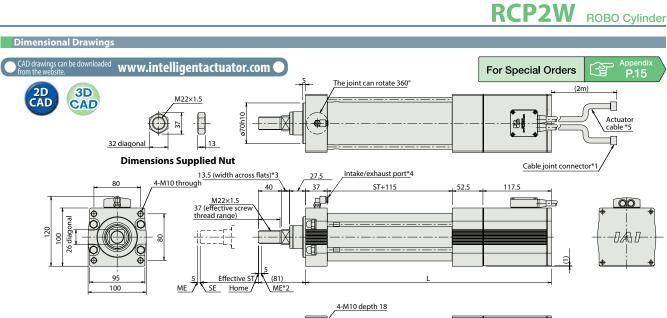
#### ②Cable Length

Туре	Cable symbol	Standard Price
	<b>P</b> (1m)	_
Standard	<b>S</b> (3m)	_
	<b>M</b> (5m)	_
	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_
Special length	X11 (11m) ~ X15 (15m)	_
	X16 (16m) ~ X20 (20m)	_
	R01 (1m) ~ R03 (3m)	_
	R04 (4m) ~ R05 (5m)	_
Robot Cable	R06 (6m) ~ R10 (10m)	_
	R11 (11m) ~ R15 (15m)	_
	R16 (16m) ~ R20 (20m)	_

\* See page A-59 for cables for maintenance.

#### Actuator Specifications

•	
ltem	Description
Drive System	Ball screw, rolled C10
Positioning repeatability	±0.02mm
Lost Motion	0.1mm or less
Rod diameter	ø40mm
Rod non-rotational accuracy	±1.0 degrees
Protective structure	IP54
Ambient operating temperature/humidity	0 to 40°C, 85% RH max. (Non-condensing)



Ф

Φ

**Dimensions of the Brake Section** 

■ Dimensions and Weights by Stroke

422 472 10

50 | 100 | 150 | 200 | 250 | 300

ST+60

\* Compared to the standard model,

the brake-equipped model is longer by 45.5mm and heavier by 1.5kg.

\* 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 "(  $\,$  )" are reference dimensions.

(\*3) The direction of bolt will vary depending on the product.

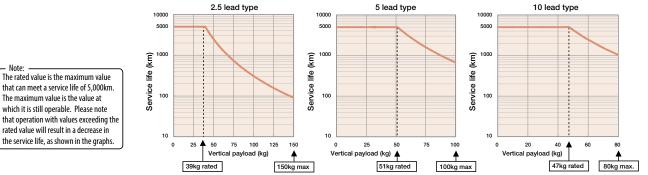
Intake/exhaust port is the air exhaust tube in the main body. Insert OD ø6 mm tube and use it extended to a place that is not prone to water spills or intake.

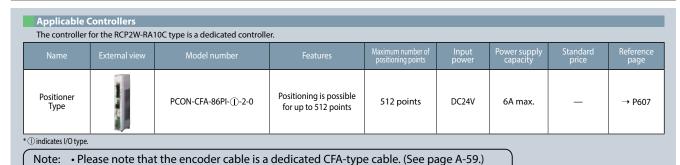
(\*5) The actuator cable is not a robot cable (flex resistant cable); therefore, please don't use it for movable parts such as cable track.

### 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, and Pushing Force vs. Load Capacity graphs.

End bracket (Material: SUS303)





· Note that a simple absolute unit cannot be used.

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

# W-GRSS

Model Specification Items

RCP2W - GRSS -

- 20P ı

I: Incremental

The Simple absolute

considered type "I".

encoder is also

30

30: 1/30

ratio

20P: Pulse motor,

20□ size

**- 8 -**

8: 8mm

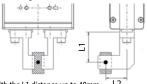
— Encoder type — Motor type — Deceleration Ratio — Stroke — Applicable controller — P1: PCON-PL/PO/SE deceleration (4mm per side) PSEL

Cable length NM: Non-motor end SB: Shaft bracket

P3: PCON-CA **MSEP** PMEC/PSEP N: None P: 1m S: 3m M:5m X□□: Custom Length

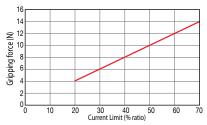
**■** Gripping Force Adjustment

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



- L2 \* 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

 $\epsilon$ RoHS



Technical References

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.

#### Actuator Specifications

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

See page | Standard price

→ A-52

→ A-43

→ A-55

■ Stroke and Maximum Speed

(mm) Deceleration ratio 30 78

(Unit: mm/s)

③ Options

Flange bracket

Shaft bracket

Stroke (mm)	Standard price
8	_

Option code

NM

FB

SB

© cable Leligtii		
Туре	Cable symbol	Standard price
Standard	<b>P</b> (1m)	_
(Robot Cables)	<b>S</b> (3m)	_
(NODOL Cables)	<b>M</b> (5m)	_
	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_
Special length	<b>X11</b> (11m) ~ <b>X15</b> (15m)	_
	X16 (16m) ~ X20 (20m)	_

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

Actuator Specification
------------------------

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)

Name

Non-motor end specification

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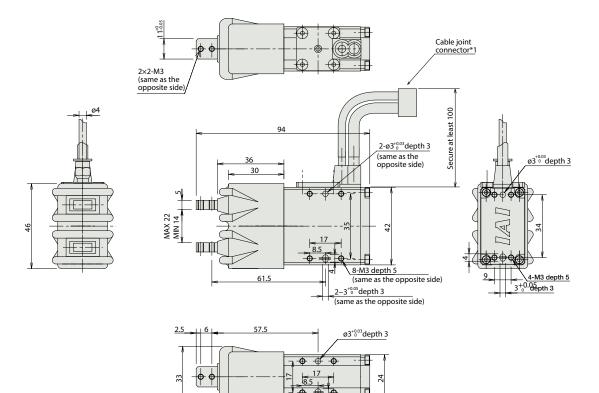
For Special Orders







\* 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
PCP3W series actuators can be a

erated with the controllers indicated below. Select the type according to your intended application

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		
Calanaid Value Tura		PMEC-C-20PI-①-2-⑪	Easy-to-use controller, even for beginners		AC100V AC200V	Refer to P541	_	→ P537		
Solenoid Valve Type	1	PSEP-C-20PI-①-2-0	Simple controller operable with the same signal as a solenoid valve	3 points		Refer to P555	_	→ P547		
Solenoid valve multi-axis type PIO specification	lune.	MSEP-C-(  )-~-()-2-0	Positioner type based on PIO control, allowing up to 8 axes to be connected			Refer to		→ P563		
Solenoid valve multi-axis type Network specification	iiii	MSEP-C-(11)-~-(1V)-0-0	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points				P572		7 2303
Positioner type High-output specification		PCON-CA-20PI-①-2-0	Equipped with a high-output driver Positioner type based on PIO control	512 points			1			
Pulse-train type High-output specification		PCON-CA-20PI-PL□-2-0	Equipped with a high-output driver Pulse-train input type	(—)	DC24V	Refer to P618	_	→ P607		
Field network type High-output specification		PCON-CA-20PI-Ŵ-0-0	Equipped with a high-output driver Supporting 7 major field networks	768 points	DCZ4V		1			
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-①-2-0	Pulse train input type with differential line driver support	(—)		Refer to P628	-			
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-①-2-0	Pulse train input type with open collector support	(—)			_	→ P623		
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated Serial Communication	64 points						
Program Control Type		PSEL-CS-1-20PI-①-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points		Refer to P671	_	→ P665		

4-M3 depth 5

3<sup>+0.05</sup>depth 3

\*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). \* ② indicates field network specification symbol. \* □ indicates N (NPN specification) or P (PNP specification) symbol.

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

Model Specification Items

RCP2W - GRLS -

ı

I: Incremental

encoder is also

The Simple absolute

considered type "I".

**20P** -

**- 180 -**30

— Encoder type — Motor type — Deceleration Ratio — Stroke — Applicable controller 20P: Pulse motor, 30: 1/30 deceleration ratio

180: 180 dearees (90 degrees per side)

P1: PCON-PL/PO/SE **PSEL** 

P3: PCON-CA PMEC/PSEP MSEP

Cable length — Options N: None

NM: Non-motor end P: 1m S: 3m FB: Flange bracket SB: Shaft bracket M:5m X□□:Custom Length

## **■** Gripping Force Adjustment

References

20□ size

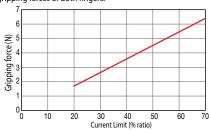
The gripping (pushing) force can be adjusted freely within the range of current limits of 20% to 70%.



\* 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.

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



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.

## Actuator Specifications

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

→ A-55

Code explanation ① Applicable controller ② Cable length ③ Options

#### ■ Stroke and Maximum Speed

Stroke Deceleration ratio	180 (degrees)
30	600

(Unit: degree/s)

#### Stroke Stroke Standard price (degrees) 180

## ②Cable Length

Туре	Cable symbol	Standard price
Standard (Robot Cables)	<b>P</b> (1m)	_
	<b>S</b> (3m)	_
	<b>M</b> (5m)	_
	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_
Special length	<b>X11</b> (11m) ~ <b>X15</b> (15m)	_
	X16 (16m) ~ X20 (20m)	_

The standard cable is the motor-encoder integrated robot cable.

③ Options			
Name	Option code	See page	Standard price
Non-motor end specification	NM	→ A-52	_
Flange bracket	FB	→ A-43	_

Actuator Specifications	
Item	Description
Drive System	worm gear + helical gear
Positioning repeatability	±0.01mm
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)

Shaft bracket

# CAD drawings can be downloaded www.intelligentactuator.com

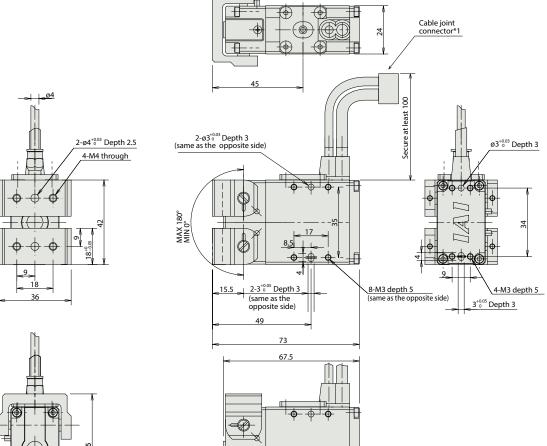
For Special Orders







\* 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

Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Referenc page		
Color (1)(A) or Torre		PMEC-C-20PI-①-2-⑪	Easy-to-use controller, even for beginners		AC100V AC200V	Refer to P541	_	→ P537		
Solenoid Valve Type		PSEP-C-20PI-①-2-0	Simple controller operable with the same signal as a solenoid valve	3 points		Refer to P555	_	→ P547		
Solenoid valve multi-axis type PIO specification	line	MSEP-C-(  )-~-( )-2-0	Positioner type based on PIO control, allowing up to 8 axes to be connected			Refer to		. DEC		
Solenoid valve multi-axis type Network specification		MSEP-C-(11)-~-(10)-0-0	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points				P572	_	→ P563
Positioner type High-output specification	á	PCON-CA-20PI-①-2-0	Equipped with a high-output driver Positioner type based on PIO control	512 points		Refer to P618	_			
Pulse-train type High-output specification		PCON-CA-20PI-PL□-2-0	Equipped with a high-output driver Pulse-train input type	(—)	DC24V		_	→ P60		
Field network type High-output specification		PCON-CA-20PI-௵-0-0	Equipped with a high-output driver Supporting 7 major field networks	768 points	DC24V		_			
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-①-2-0	Pulse train input type with differential line driver support	(—)		Refer to P628	_			
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-①-2-0	Pulse train input type with open collector support	(—)			_	→ P62		
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated Serial Communication	64 points			_			
Program Control Type		PSEL-CS-1-20PI-①-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points		Refer to P671	_	→ P66		

IAI

\*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). \* ② indicates field network specification symbol. \* □ indicates N (NPN specification) or P (PNP specification) symbol.

RCP2W-GRLS 516

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

RoHS

# 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** — Encoder type — Motor type

RA3C: Coupled type | I: Incremental RA3D:Built-in \* The Simple absolute RA3R: Side-mounted encoder is also

considered type "I".

20: 20W Servo

20

10: 10mm 5: 5mm 2.5:2.5mm

Stroke 50: 50mm 200: 200mm

Applicable controller (50mm pitch increments)

ASEL A3:AMEC ASEP

N: None A1:ACON

P: 1m S: 3m M:5m X□□: Custom Length

Cable length

R□□: Robot Cable

**Power-saving** 

See Options below.

Technical References



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.

(1) When the stroke increases, the maximum will drop to prevent the ball screw from reaching the critical rotational

(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.

Actuator Specifications ■ Lead and Pavload

the photo above.

Please note that the bellows shape has some change from

= 1caa ana i ayicaa							
Model number	Motor output (W)	Lead (mm)	Max. Load Horizontal (kg)	Capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)	
RCAW-①-I-20-10-②-③-④-⑤		10	4	1.5	36.2		
RCAW-①-I-20-5-②-③-④-⑤	20	5	9	3	72.4	50~200 (every 50mm)	
RCAW-①-I-20-2.5-②-③-④-⑤		2.5	18	6.5	144.8		

■ Stroke and Maximum Speed

Cable symbol

X06 (6m) ~ X10 (10m) X11 (11m) ~ X15 (15m)

X16 (16m) ~ X20 (20m) **R01** (1m) ~ **R03** (3m) R04 (4m) ~ R05 (5m)

R06 (6m) ~ R10 (10m) R11 (11m) ~ R15 (15m) R16 (16m) ~ R20 (20m)

**P** (1m) **S** (3m)

M (5m)

Stroke Lead	50~200 (every 50mm)
10	500
5	250
2.5	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)

Standard Price

#### Encoder / ②Stroke

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

(F)	0-	40	P

(5) Options			
Name	Option code	See page	Standard price
Brake (*1)	В	→ 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 (H5) 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.

(5) Options			
N.			C
Name	Option code	See page	Standard price
Brake (*1)	В	→ 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	_

**4** Cable Length

Standard

Special length

**Robot Cable** 

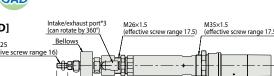
\* See page A-59 for cables for maintenance.

Actuator Specifications					
ltem	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)				

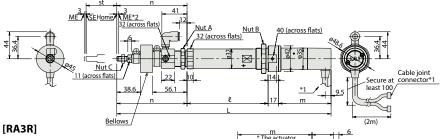
## www.intelligentactuator.com

3D CAD

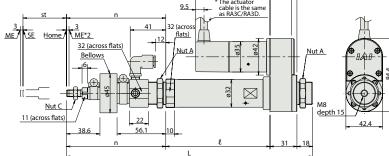
(Note) No 3D CAD data for RA3D type.

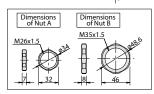


M35×1.5 (effective screw range 17.5) [RA3C/RA3D] M8×1 25



20







### For Special Orders

P.15

(\*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 ø10 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		100	150	200			
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			
RA3C	132	182	232	282			
RA3D	132	182	232	282			
RA3R	120	170	220	270			
RA3C		85	5.5				
RA3D	66.5						
RA3R	85.5						
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			
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			
	RA3C RA3D RA3R RA3C RA3D RA3R RA3C RA3D RA3R RA3C RA3D RA3R RA3C RA3D RA3R	RA3C 348.9 RA3D 329.9 RA3R 283.4 RA3C 132 RA3D 132 RA3C RA3C RA3C RA3C RA3C RA3D I14.4 RA3D 114.4 RA3D 114.4 RA3D 114.4 RA3D 114.4 RA3D 110 RA3D 1.0	RA3C 348.9 408.9 RA3D 329.9 389.9 RA3R 283.4 343.4 RA3C 132 182 RA3D 132 182 RA3R 120 170 RA3C 85 RA3D 66 RA3R 85 RA3C 114.4 124.4 RA3D 114.4 124.4 RA3D 114.4 124.4 RA3D 1.0 1.1 RA3D 1.0 1.1	RA3C         348.9         408.9         468.9           RA3D         329.9         389.9         449.9           RA3R         283.4         343.4         403.4           RA3C         132         182         232           RA3D         132         182         232           RA3R         120         170         220           RA3C         85.5         83.5           RA3B         188.5         85.5           RA3C         114.4         124.4         134.4           RA3D         114.4         124.4         134.4           RA3B         114.4         124.4         134.4           RA3C         1.0         1.1         1.2           RA3D         1.0         1.1         1.2			

#### RCAW-RA3C/RA3D/RA3R (with brake)

RCAW-RA3C/RA3D/RA3R (With brake)								
Stro	ke	50	100	150	200			
	RA3C	387.9	447.9	507.9	567.9			
L	RA3D	No bra	ke-equ	ipped r	nodel.			
	RA3R	283.4	343.4	403.4	463.4			
	RA3C	132	182	232	282			
l	RA3D	No bra	ke -equ	iipped i	model.			
	RA3R	120	170	220	270			
	RA3C		12	4.5				
m	RA3D	No bra	ke-equ	ipped r	nodel.			
	RA3R	124.5						
	RA3C	114.4	124.4	134.4	144.4			
n	RA3D	No bra	ke -equ	iipped i	model.			
	RA3R	114.4	124.4	134.4	144.4			
\A/=:= =+	RA3C	1.2	1.3	1.4	1.5			
Weight (kg)	RA3D	1.2	1.3	1.4	1.5			
(kg)	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	State of the state	AMEC-C-20SI①-⑪-2-1	Easy-to-use controller, even for beginners		AC100V	2.4A rated	_	→ P537	
Solenola valve type	1	ASEP-C-20SI①-⑪-2-0	Simple controller operable with the same signal as a solenoid valve	3 points			_	→ P547	
Solenoid valve multi-axis type PIO specification	and a	MSEP-C	Positioner type based on PIO control, allowing up to 8 axes to be connected					→ P563	
Solenoid valve multi-axis type Network specification		MSEP-C	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points	DC24V		_	7 7 303	
Positioner type		ACON-C-20SI①-⑪-2-0	Positioning is possible for up to 512	512 points		(Standard) 1.7A rated	1.7A rated	_	
Safety-Compliant Positioner Type		ACON-CG-20SI①-①-2-0	points			5.1A max. (Power-saving) 1.7A rated 3.4A max.	_		
Pulse Train Input Type (Differential Line Driver)		ACON-PL-20SI①-⑪-2-0	Pulse train input type with differential line driver support				_	→ P631	
Pulse Train Input Type (Open Collector)	è	ACON-PO-20SI ①-①-2-0	Pulse train input type with open collector support	(—)			_		
Serial Communication Type		ACON-SE-20SI①-N-0-0	Dedicated Serial Communication	64 points			_		
Program Control Type		ASEL-CS-1-20SI①-①-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points			_	→ P675	

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

\*Enter the code "LA" in ① when the power-saving specification is specified.
\*⑩ indicates number of axes (1 to 8).
\*⑫ indicates field network specification symbol.

RCAW-RA3C/RA3D/RA3R 518

[**C** €]

RoHS

# 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** Type - Encoder type -Motor type

RA4C: Coupled type | I: Incremental RA4D:Built-in A: Absolute \* The absolute models are only compatible with ASEL. Simple absolute encoders are considered incremental. RA4R: Side-mounted \* See page Pre-47 for details on the model descriptions.

20: 20W Servo motor 30:30W Servo

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

300: 300mm

Stroke Applicable controller A1:ACON 50: 50mm

ASEL A3:AMEC ASEP

Cable length N: None P: 1m S: 3m

See Options below.

M:5m X□□: Custom Length R□□: Robot Cable

> Technical References

**Power-saving** 

(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.

#### Actuator Specifications

Please note that the bellows shape has some change from

#### ■ Lead and Payload

Model number	output (W)	(mm)	Horizontal (kg)	Vertical (kg)	thrust (N)	(mm)
RCAW-①-②-20-12-③-④-⑤-⑥		12	3.0	1.0	18.9	
RCAW-1-2-20-6-3-4-6-6	20	6	6.0	2.0	37.7	
RCAW-1-2-20-3-3-4-6-6		3	12.0	4.0	75.4	50~300
RCAW-①-②-30-12-③-④-⑤-⑥		12	4.0	1.5	28.3	(every 50mm)
RCAW-①-②-30-6-③-④-⑤-⑥	30	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)
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.

#### ②Encoder/ ③Stroke

		Standard price										
		RA4C/RA4D				RA	4R					
③Stroke	©Encoder Type				②Encoder Type							
(mm)	Incremental		Abso	olute	Incren	nental	Absolute					
	Motor pov	ver output	Motor power output		Motor power output		Motor power outpu					
	20W	30W	20W	30W	20W	30W	20W	30W				
50	_	_	_	_	_		_	_				
100	_	_		_	_	_	_	_				
150	_	_		_	_	_	_	_				
200	_	_		_		_	_					
250	_	_	_	_	_	_	_	_				
300	_	_	_	_	_	_	_	_				

Type	Cable symbol	Standard Price
	<b>P</b> (1m)	_
Standard	<b>S</b> (3m)	_
	<b>M</b> (5m)	_
	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_
Special length	X11 (11m) ~ X15 (15m)	_
	<b>X16</b> (16m) ~ <b>X20</b> (20m)	_
	<b>R01</b> (1m) ~ <b>R03</b> (3m)	_
	R04 (4m) ~ R05 (5m)	_
Robot Cable	<b>R06</b> (6m) ~ <b>R10</b> (10m)	_
	<b>R11</b> (11m) ~ <b>R15</b> (15m)	_
	R16 (16m) ~ R20 (20m)	_

<sup>\*</sup> See page A-59 for cables for maintenance.

Name	Option code	See page	Standard price
Brake (*1)	В	→ 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	
ltem	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)

Dimensional Drawings

## www.intelligentactuator.com

For Special Orders





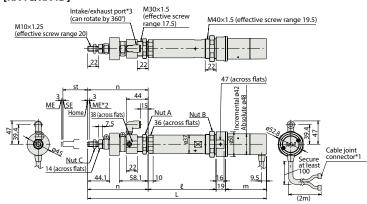


(Note) No 3D CAD data for RA4D type.

- (\*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 thank.
- 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 ø10 mm tube and use it extended to a place that is not prone to water spills or intake.

#### [RA4C/RA4D]

[RA4R]

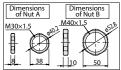


# ■ Dimensions and Weight by Stroke RCAW-RA4C/RA4D/RA4R (without brake)

Stroke			50	100	150	200	250	300				
							230	300				
	20W	Incremental	345.4	405.4	465.4	525.4	586.4	647.4				
RA4C	30W	Absolute	358.4	418.4	478.4	538.4	599.4	660.4				
KA4C	2014/	Incremental	360.4	420.4	480.4	540.4	601.4	662.4				
	3000	Absolute	373.4	433.4	493.4	553.4	614.4	675.4				
	2014/	Incremental	323.4	383.4	443.4	503.4	564.4	625.4				
DA 4D	2000	Absolute	336.4	396.4	456.4	516.4	577.4	638.4				
KA4U	2014/	Incremental	338.4	398.4	458.4	518.4	579.4	640.4				
	3000	Absolute	351.4	411.4	471.4	531.4	592.4	653.4				
	2014/	Incremental	299.9	359.9	419.9	479.9	540.9	601.9				
DA 4D	2000	Absolute	299.9	359.9	419.9	479.9	540.9	601.9				
KA4K	2014/	Incremental	299.9	359.9	419.9	479.9	540.9	601.9				
	3000	Absolute	299.9	359.9	419.9	479.9	540.9	601.9				
DA 4C	20W		137	187	237	287	337	387				
KA4C	30W		137	187	237	287	337	387				
DA 4D	20W	Incremental	137	187	237	287	337	387				
KA4D	30W		137	187	237	287	337	387				
DA 4D	20W	Common			225		325	375				
KA4K	30W			175	225	275	325	375				
	2014/	Incremental					0_0					
DA 46	2000	Absolute			80	.5						
		KA4C		2014/	20144	Incremental	82.5					
	3000	Absolute										
	2014/	Incremental										
24.42	2000	Absolute			58	.5						
KA4D	2014/	Incremental										
	3000	Absolute										
	2014/	Incremental			67	.5						
DA 4D	2000	Absolute										
KA4K	2014/	Incremental			82	.5						
	3000	Absolute			95	.5						
DA 4C	20W		121.9	131.9	141.9	151.9	162.9	173.9				
RA4C	30W		121.9	131.9	141.9	151.9	162.9	173.9				
DA 4D	20W		121.9	131.9	141.9	151.9	162.9	173.9				
KA4U	30W 20W		121.9	131.9	141.9	151.9	162.9	173.9				
DA 4D		Common	121.9	131.9	141.9	151.9	162.9	173.9				
RA4R 30W	30W		121.9	131.9	141.9	151.9	162.9	173.9				
RA4C	20W	/30W	1.4	1.5	1.7	1.8	2.0	2.1				
			1.5	1.6	1.8	1.9	2.1					
RA4D	20W	/30W	1.3	1 1.5								
	RA4D RA4C RA4C RA4C RA4C RA4C RA4C RA4C RA4C	RA4D RA4C RA4C RA4C RA4C RA4C RA4C RA4C RA4C	RA4D	RA4D	RA4D RA4C RA4C RA50lute RA4C RA4C RA50lute RA4C RA4C RA50lute RA4C RA4C RA4C RA4C RA4C RA4C RA4C RA4C	RA4D RA4D RA4D RA4D RA4D RA4D RA4D RA4D	RA4D	RA4D RA4D RA4D RA4D RA4D RA4D RA4D RA4D				

- 84 248 ME

38 (across flats) Home 7.5 Nut 0 44.1 14 (across flats)/





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.

\*The actuator cable is \_the same as RA3C/RA3D.

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.

### 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	THE STATE OF THE S	AMEC-C-20I(  )-(  )-2-1 AMEC-C-30I(  )-(  )-2-1	Easy-to-use controller, even for beginners		AC100V	2.4A rated	_	→ P537
Solehold valve Type	3	ASEP-C-20I(  )-(  )-2-0 ASEP-C-30I(  )-(  )-2-0	Simple controller operable with the same signal as a solenoid valve	3 points			_	→ P547
Solenoid valve multi-axis type PIO specification	A STATE OF	MSEP-C-(\(\varphi\)-~-(\(\pi\)-2-0	Positioner type based on PIO control, allowing up to 8 axes to be connected			(6111)		→ P563
Solenoid valve multi-axis type Network specification		MSEP-C-(\(\varphi\)-~-(\(\varphi\)-0-0	Field network-ready positioner type, 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.	_	→ P303
Positioner type		ACON-C-20I(  )-(  )-2-0 ACON-C-30I(  )-(  )-2-0	Positioning is possible for up to 512 points	512 points			_	
Safety-Compliant Positioner Type		ACON-CG-20I(  )-(  )-2-0 ACON-CG-30I(  )-(  )-2-0					_	
Pulse Train Input Type (Differential Line Driver)		ACON-PL-20I (  ) - (  ) - 2 - 0 ACON-PL-30I (  ) - (  ) - 2 - 0	Pulse train input type with differential line driver support	(—)		20W 1.3A rated 2.5A max.	_	→ P631
Pulse Train Input Type (Open Collector)	è	ACON-PO-20I(  )-(  )-2-0 ACON-PO-30I(  )-(  )-2-0	Pulse train input type with open collector support	(—)		2.5A max. 30W 1.3A rated 2.2A max.	_	
Serial Communication Type		ACON-SE-20I - N-0-0 ACON-SE-30I - N-0-0	Dedicated Serial Communication	64 points		Z.ZA IIIdX.	_	
Program Control Type	Table 1	ASEL-CS-1-20 (1) -(1) -2-0 ASEL-CS-1-30 (1) -(1) -2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points			_	→ P675

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

- \* ① indicates encoder type (I: incremental, A: absolute)
  \* ⑩ indicates number of axes (1 to 8).
- \* Enter the code "LA" in (j) when the power-saving option is specified. \* (v) indicates field network specification symbol.

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

RoHS \*CE compliance is optional.

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

Notes on selection \*Please note that the bellows shape has some change from the photo above.

(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.

### Actuator Specifications

#### ■ Lead and Payload

Model number	output (W)	(mm)	Horizontal (kg)	Vertical (kg)	thrust (N)	(mm)
RCS2W-①-②-20-12-③-④-⑤-⑥		12	3.0	1.0	18.9	
RCS2W-①-②-20-6-③-④-⑤-⑥	20	6	6.0	2.0	37.7	
RCS2W-①-②-20-3-③-④-⑤-⑥		3	12.0	4.0	75.4	50~300
RCS2W-①-②-30-12-③-④-⑤-⑥		12	4.0	1.5	28.3	(every 50mm)
RCS2W-①-②-30-6-③-④-⑤-⑥	30	6	9.0	3.0	56.6	
RCS2W-①-②-30-3-③-④-⑤-⑥		3	18.0	6.5	113.1	

#### ■ Stroke and Maximum Speed

Technical References

Stroke Lead	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.

#### ②Encoder & ③Stroke

		Standard price									
③Stroke (mm)		RA4C	RA4D		RA4R						
		@Encod	der Type		②Encoder Type						
	Incren	nental	Absolute		Incremental		Absolute				
	Motor pov	ver output	Motor power output		Motor power output		Motor power output				
	20W	30W	20W	30W	20W	30W	20W	30W			
50	_	_		_	_	_	_	_			
100	_	_				-		_			
150	_	_	_	_	_	_	_	_			
200		I	I	I	I	I	-	_			
250	_	_					_	_			
300	_	_	_	_	_	I		_			

### ⑤ Cable Length

Туре	Cable symbol	Standard Price
	<b>P</b> (1m)	_
Standard	<b>S</b> (3m)	_
	<b>M</b> (5m)	_
	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_
Special length	X11 (11m) ~ X15 (15m)	_
	X16 (16m) ~ X20 (20m)	_
	R01 (1m) ~ R03 (3m)	_
	R04 (4m) ~ R05 (5m)	_
Robot Cable	R06 (6m) ~ R10 (10m)	_
	R11 (11m) ~ R15 (15m)	_
	R16 (16m) ~ R20 (20m)	_

<sup>\*</sup> See page A-59 for cables for maintenance.

#### Option code | See page | Standard price Brake (\*1) B → A-42 CE compliance CF → A-42 Flange bracket FL → A-45 Foot bracket (front) FT → A-49 Home sensor (\*2) HS → A-50 NJ

Knuckle joint → A-53 Non-motor end specification (\*2) NM → A-52 Clevis bracket (\*3) OR → A-53 Rear mounting plate (\*3) RP → A-54 TRF Trunnion bracket (front) (\*4 → A-57 TRR Trunnion bracket (rear) (\*4) → A-58

**© Options** 

(\*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							
ltem	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)						

## CAD drawings can be downloaded www.intelligentactuator.com





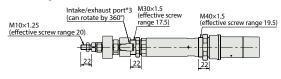
(Note) No 3D CAD data for RA4D type.

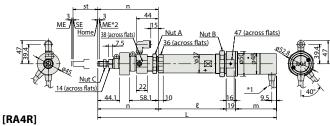


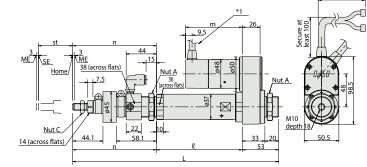


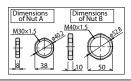
 (\*1) Connect the motor and encoder cables here. See page A-59 for details on cables.
 (\*2) After homing, the slider moves to the ME, therefore, please watch for any interference with surrounding objects. SE: Stroke end ME: Mechanical end

(\*3) Intake/exhaust port is the air exhaust tube in the main body. Insert OD ø10 mm tube [RA4C/RA4D] and use it extended to a place that is not prone to water spills or intake.











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)

				,	ut bi u	,		
	Stroke		50	100	150	200	250	300
	RA4C	20W	358.4	418.4	478.4	538.4	599.4	660.4
	KA4C	30W	373.4	433.4	493.4	553.4	614.4	675.4
L	RA4D	20W	336.4	396.4	456.4	151.9	577.4	638.4
L	KA4D	30W	351.4	411.4	471.4	516.4	592.4	653.4
	RA4R	20W	299.9	359.9	419.9	479.9	540.9	601.9
	KA4K	30W	299.9	359.9	419.9	479.9	540.9	601.9
	RA4C	20W	137	187	237	287	337	387
	KA4C	30W	137	187	237	287	337	387
£.	DAAD	20W	137	187	237	287	337	387
Ł	RA4D	30W	137	187	237	287	337	387
	RA4R	20W	125	175	225	275	325	375
	nA4n	30W	125	175	225	275	599.4 614.4 577.4 592.4 540.9 540.9 337 337 337 337	375
	RA4C	20W		125 175 225 23	.5			
	KA4C	30W			95.5			
m	RA4D	20W			58	.5		
1111	NA4D	30W			73	.5		
	RA4R	20W			80	.5		
	nA4n	30W			95	.5		
	RA4C	20W	121.9	131.9	141.9	151.9	162.9	173.9
	INA4C	30W	121.9	131.9	141.9	151.9		173.9
n	RA4D	20W	121.9	131.9	141.9	151.9	162.9	173.9
- 11	NA4D	30W	121.9	131.9	141.9	151.9	162.9	173.9
	RA4R	20W	121.9	131.9	141.9	151.9	162.9	173.9
	nA4n	30W	121.9	131.9	141.9	151.9	162.9	173.9
Weight	RA4C	20W/30W	1.4	1.5	1.7	1.8	2.0	2.1
	RA4D	20W/30W	1.3	1.5	1.6	1.8	1.9	2.1
(Kg)	RA4R	20W/30W	1.5	1.7	1.8	2.0	21	2.3

#### RCS2W-RA

	Stroke		50	100	150	200	250	300
	RA4C	20W	401.4	461.4	521.4	581.4	642.4	703.4
	KA4C	30W	416.4	476.4	536.4	596.4	657.4	718.4
L	RA4D	20W		461.4 521.4 581.4 642.4				
L .	NA4D	30W		INO DI a	ike-equ	ippeu	model	
	RA4R	20W	299.9	359.9	419.9	479.9	540.9	601.9
	NA4N	30W	299.9	359.9	419.9	479.9	540.9	601.9
	RA4C	20W	137	187	237	287	337	387
	NA4C	30W	137	187	237	287	337	387
l e	RA4D	20W		No bra	ko ogu	innad	modal	
(	NA4D	30W			ke-equ	ippeu	mouei	
	RA4R	20W	125					375
	IV/ <del>1</del> IV	30W	125	175	225	275	325	375
	RA4C	20W	20W 123.5 30W 138.5					
	T T	30W			138	225   275   325 225   275   325 123.5 138.5 e-equipped model		
m	RA4D	20W		No bra	ko-onii	inned	model	
- 111	IIATD	30W		INO DIA	ike equ	тррси	model	
	RA4R	20W						
	11/1-111	30W						
	RA4C	20W	121.9					173.9
	IIATC	30W	121.9	131.9	141.9	151.9	162.9	173.9
n	RA4D	20W		No bra	123.5 138.5 o brake-equipped model 123.5 138.5 31.9   141.9   151.9   162.9 31.9   141.9   151.9   162.9 o brake-equipped model 31.9   141.9   151.9   162.9			
''	IIATD	30W						
m n	RA4R	20W	121.9					173.9
		30W	121.9					173.9
Weight	RA4C	20W/30W	1.6	1.7	1.9	2.0	2.2	2.3
(Kg)	RA4D	20W/30W						
(rig)	RA4R	20W/30W	1.7	1.9	2.0	2.2	2.3	2.5

#### **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			Up to 512 positioning points are supported.	512 points				
Solenoid valve mode	iii	SCON-CA-20①-NP-2-⑪	Actuators can be operated through the same control used for solenoid valves.	7 points			_	→ P643
Field network type		SCON-CA-30D①-NP-2-⑪	Movement by numerical specification is supported.	768 points	Single-phase 100VAC	126 VA max. * Power supply	_	7 1043
Pulse-train input control type			Dedicated pulse-train input type	(—)	Single-phase 200VAC	capacity will vary depending on the controller,	_	
Positioner multi-axis, network type	用器	MSCON-C-1-20①-②-0-⑪ MSCON-C-1-30D①-②-0-⑪	Up to 6 axes can be operated. Movement by numerical specification is supported.	256 points	3-phase 200VAC (XSEL-P/Q/R/S 0NLY)	so please refer to the instruction manual for details.	_	→ P655
Program control type, 1 to 2 axes	1	SSEL-CS-1-20①-NP-2-⑪ SSEL-CS-1-30D①-NP-2-⑪	Program operation is supported. Up to 2 axes can be operated.	20,000 points			_	→ P685
Program control type, 1 to 8 axes	Pilita	XSEL-(1)-1-20(1)-N1-EEE-2-(1) XSEL-(1)-1-30D(1)-N1-EEE-2-(1)	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).

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

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

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

	2011	121.7	131.2		131.2	102.7	1 , , , , ,	1		
۹4C	30W	121.9	131.9	141.9	151.9	162.9	173.9		(0	
44D	20W	121.9	131.9	141.9	151.9	162.9	173.9		l lr	
44D	30W	121.9	131.9	141.9	151.9	162.9	173.9			
44R	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			
44C	20W/30W	1.4	1.5	1.7	1.8	2.0	2.1			
۹4D	20W/30W	1.3	1.5	1.6	1.8	1.9	2.1			
۹4R	20W/30W	1.5	1.7	1.8	2.0	2.1	2.3			
				_						
A4C/RA4D/RA4R (with brake)										
oke		50	100	150	200	250	300		Λ	
۹4C	20W	401.4	461.4	521.4	581.4	642.4	703.4			
44C	30W	416.4	476.4	536.4	596.4	657.4	718.4			
۹4D	20W			S						
740	30W		INO DI a	ke-equ	ipped i	illouei				
44R	20W	299.9	359.9	419.9	479.9	540.9	601.9			
7411	30W	299.9	359.9	419.9	479.9	540.9	601.9			
۹4C	20W	137	187	237	287	337	387			
740	30W	137	187	237	287	337	387			
۹4D	20W		No bra	ko ogu	ipped i	madal				
740	30W		INO DIA	ke-equ	ippedi	nouei				
44R	20W	125	175	225	275	325	375			
¬+∩	30W	125	175	225	275	325	375			