

RCP4W-SA7C

ROBO Cylinder
Pulse motor

Splash-proof slider type
Coupling specification

Actuator width: 77 mm

Model
Specification
Items

RCP4W

SA7C

I

56P

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Series

Type

Encoder
type

Motor type

Lead

Stroke

Applicable
controller

Cable length

Options

I: Incremental
specification

56P: Pulse motor
size 56

16: 16mm
8: 8mm

100 : 100mm
700 : 700mm
(Can be set in
50-mm
increments.)

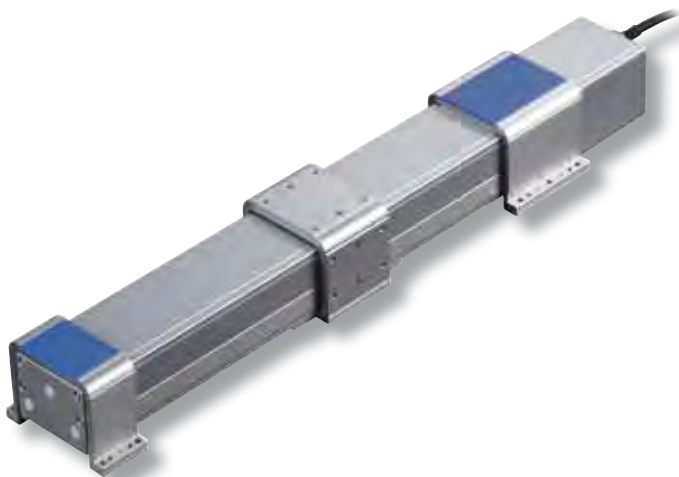
P3:PCON/MSEL
P5:RCON/RSEL

N: None
P: 1 m
S: 3 m
M: 5 m

X ☐ : Length designation
R ☐ : Robot cable

Refer to the option
list below.

* Also select code "I"
for the simple absolute
specification.



POINT
Notes
on
selection

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

■ Payload by Acceleration/Deceleration

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

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

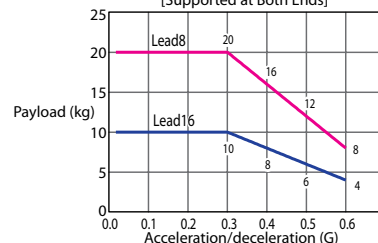
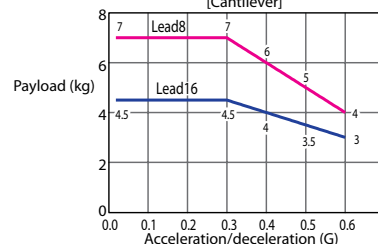


Diagram of Acceleration/Deceleration vs. Payload
[Cantilever]



Actuator Specifications

■ Leads and Payloads

Model number	Lead (mm)	Maximum horizontal payload (kg)		Maximum push force (N)	Positioning repeatability (mm)	Stroke (mm)
		Supported on both ends	Cantilever			
RCP4W-SA7C-I-56P-16-①-P3-②-③	16	10	4.5	209	±0.02	100 to 700 (in 50-mm increments)
RCP4W-SA7C-I-56P-8-①-P3-②-③	8	20	7	418		

Legend ① Stroke ② Cable length ③ Options

■ Stroke and Maximum Speed

Lead	Stroke	100 to 700 (in 50-mm increments)
16		530
8		265

(unit: mm/s)

① Stroke

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

③ Options

Name	Option code	See page
Cable exit from the left side face	A1	→P4
Cable exit from the right side face	A3	→P4
Additional alumite coating	AL	→P4
Designated grease specification	G1/G3/G4	→P4
Food grade grease (edible grease)	GE	→P4
Non-motor side specification	NM	→P4
Ceiling mount (bracket mounted on the left)	HFL	→P4
Ceiling mount (bracket mounted on the right)	HFR	→P4
Wall mount sideways on the left	TFL	→P4
Wall mount sideways on the right	TFR	→P4

② Cable length

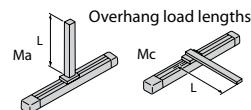
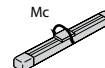
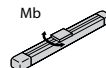
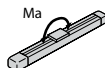
Type	Cable symbol	Standard price
Standard type	P(1m)	-
	S(3m)	-
	M(5m)	-
Special length	X06(6m) ~ X10(10m)	-
	X11(11m) ~ X15(15m)	-
	X16(16m) ~ X20(20m)	-
	X21(21m) ~ X25(25m)	-
Robot cable	R01(1m) ~ R03(3m)	-
	R04(4m) ~ R05(5m)	-
	R06(6m) ~ R10(10m)	-
	R11(11m) ~ R15(15m)	-
	R16(16m) ~ R20(20m)	-
	R21(21m) ~ R25(25m)	-

Actuator Specifications

Item	Description
Drive system	Ball screw φ12 mm, rolled C10
Positioning repeatability	±0.02mm
Lost motion	0.1 mm or less
Static allowable moment	Supported on both ends Ma: 11.7N·m Mb: 16.6 N·m Mc: 31.8 N·m Cantilever Ma: 5.8 N·m Mb: 8.3 N·m Mc: 15.9 N·m
Dynamic allowable moment (*)	Supported on both ends Ma: 6.1 N·m Mb: 8.8 N·m Mc: 16.8 N·m Cantilever Ma: 3.1 N·m Mb: 4.4 N·m Mc: 8.4 N·m
Overhang load length	Supported on both ends 175 mm or less Cantilever 105 mm or less
Protective structure	IP65 (with air purge)
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

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

Allowable load moment directions



Dimensional Drawings

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



* See P11 for the dimensional drawing for the ceiling mount specification. See P12 for the dimensional drawing for the wall mount specification.

*1 Connect the motor and encoder cables.

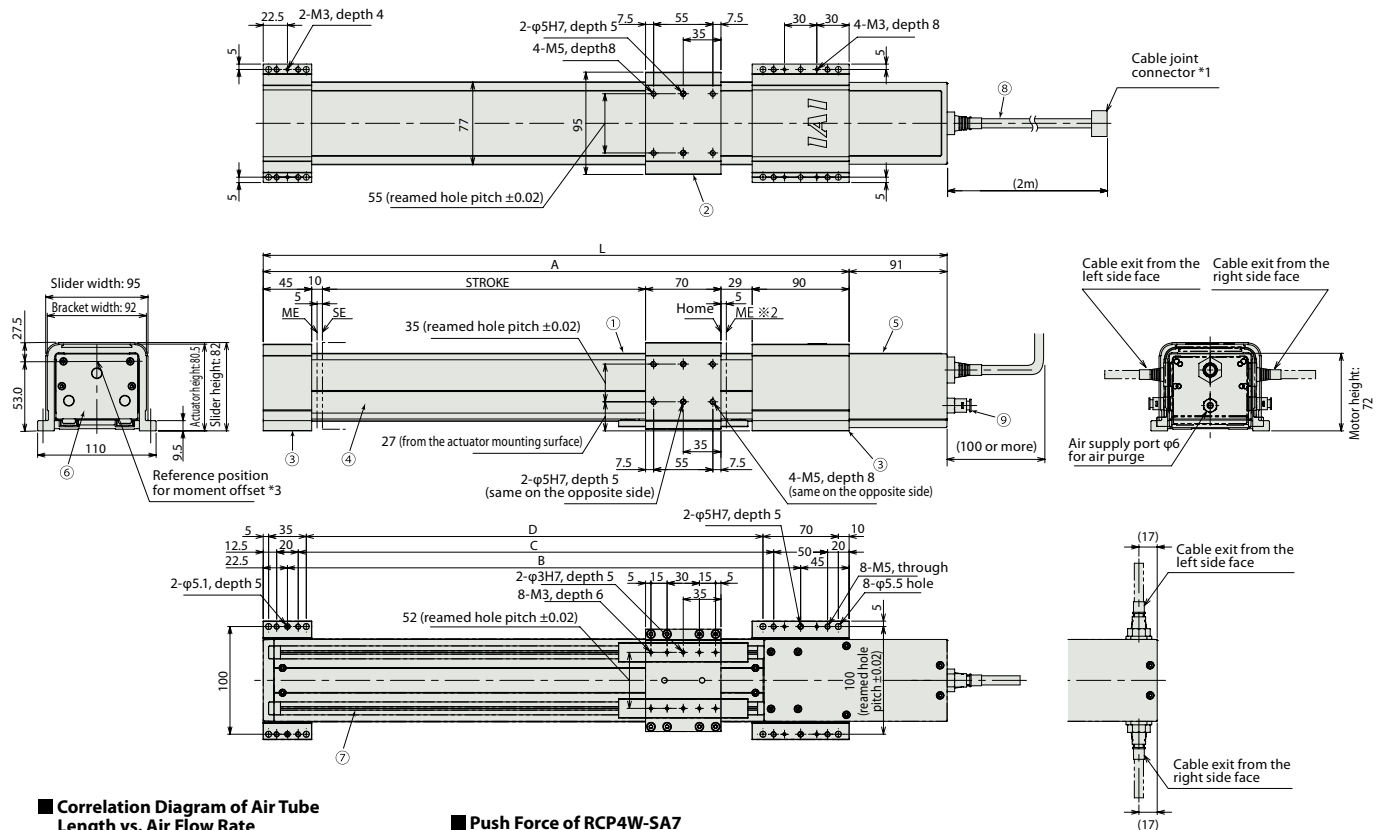
*2 During home return, be careful to avoid interference from peripheral objects because the slider travels until the mechanical end.

*3 Reference position for calculating moments.

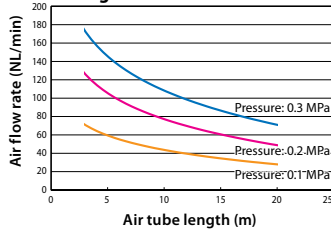
Materials of Main Components

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

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



Correlation Diagram of Air Tube Length vs. Air Flow Rate



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

Push Force of RCP4W-SA7

* Please refer graphs on the next page for updated information.

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 (M_a or M_b) specified in the catalog.

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

Dimensions and Mass by Stroke

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700
L	435	485	535	585	635	685	735	785	835	885	935	985	1035
A	344	394	444	494	544	594	644	694	744	794	844	894	944
B	276.5	326.5	376.5	426.5	476.5	526.5	576.5	626.5	676.5	726.5	776.5	826.5	876.5
C	241.5	291.5	341.5	391.5	441.5	491.5	541.5	591.5	641.5	691.5	741.5	791.5	841.5
D	224	274	324	374	424	474	524	574	624	674	724	774	824
Mass (kg)	5.9	6.2	6.5	6.8	7.1	7.4	7.6	7.9	8.2	8.5	9.8	9.0	9.3

Applicable Controller

* Controller for RCP4W series is PCON, MSEL, RCON or RSEL.
Please refer our Controller General Catalog and/or contact IAI.

Correlation of Push force of RCP4W-SA7 and current limits

