

# **Gripper Type / Rotary Type**

# RCP2 RCS2







**RCP2-GRLS** 



**RCP2-GRS** 



**RCP2-GRM** 



**RCP2-GRST** 



RCP2-GRHM



**RCP2-GRHB** 



**RCP2-GR3LS** 



**RCP2-GR3SS** 



RCS2-GR8



RCP2-RTBS/RTBSL



RCP2-RTB/RTBL



RCP2-RTBB/RTBBL



RCP2-RTCS/RTCSL



RCP2-RTC/RTCL



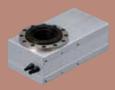
RCP2-RTCB/RTCBL



RCS2-RTC8L/RTC8HL



RCS2-RTC10L



RCS2-RTC12L



RCS2-RT6

## **Gripper Type / Rotary Type**

				7 7 7	
	2-Finger Gripper	Mini Slider Type	42mm Width	RCP2-GRSS	373
		Mini Lever Type	42mm Width	RCP2-GRLS	375
		Small Slider Type	69mm Width	RCP2-GRS	377
D. 6.D.		Medium Slider Type	74mm Width	RCP2-GRM	379
RCP2		Long Stroke Slider Type	130mm Width	RCP2-GRST	381
series			100 \\" \\\"		
Pulse		Madium High force Crimpor	190mm Width	DCD2 CDUIA	202
Motor		Medium High-force Gripper	116mm Width	RCP2-GRHM	383
Туре	2.5	Large High-force Gripper	131mm Width	RCP2-GRHB	385
	3-Finger Gripper	Lever Type	62mm Width	RCP2-GR3LS	387
			80mm Width	RCP2-GR3LM	389
		Slider Type	62mm Width	RCP2-GR3SS	391
			80mm Width	RCP2-GR3SM	393
RCS2	2-Finger Gripper	Long Stroke Slider Type	104mm Width ≀	RCS2-GR8	395
series			284mm Width		
200V Servo Motor Type					
	Rotary	Small Vertical Type	45mm Width	RCP2-RTBS/RTBSL	397
RCP2	Í	Small Flat Type	72mm Width	RCP2-RTCS/RTCSL	399
series		Medium Vertical Type	50mm Width	RCP2-RTB/RTBL	401
		Medium Flat Type	88mm Width	RCP2-RTC/RTCL	403
Pulse Motor Type		Large Vertical Type	76mm Width	RCP2-RTBB/RTBBL	405
Motor Type		Large Flat Type	124mm Width	RCP2-RTCB/RTCBL	407
DCC	Hollow Rotary	Small Type	85mm Width	RCS2-RTC8L/RTC8HL	409
RCS2		Medium Type	99mm Width	RCS2-RTC10L	411
series		Large Type	123mm Width	RCS2-RTC12L	413
200V Servo	Rotary	Straight Motor Type	64mm Width	RCS2-RT6	415
Motor Type					

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

# 2-GRSS

Model Specification Items

RCP2 - GRSS -

— Encoder type — Motor type — Deceleration Ratio — Stroke — Applicable controller —

\* The Simple absolute

considered type "I".

I: Incremental

encoder is also

20P -

20□ size

30

20P: Pulse motor, 30:1/30 deceleration (4mm per side) ratio

8: 8mm

8

P1: PCON-PL/PO/SE **PSEL** P3: PCON-CA

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

NM: Non-motor end FB: Flange bracket SB: Shaft bracket

M:5m X□□: Custom Length PMEC/PSEP **MSEP** 





Technical References

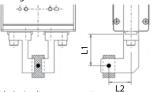


Notes or selection

- (1) The maximum opening/closing speed indicates the operating speed on one side. The relative operating speed
- (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.

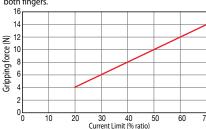
#### ■ Gripping Force vs. Current Limit

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



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

The gripping force value is the sum of gripping forces of both fingers.



- \* The gripping force graph above shows reference numbers. Please allow margins up to  $\pm$  15%.
- Please note that, when gripping (pushing), the speed is fixed at

#### Actuator Specifications

#### ■ Lead and Pavload

Model number	Deceleration Ratio	Maximum Gripping Force (N)	Stroke (mm)		
RCP2-GRSS-I-20P-30-8-①-②-③	30	14 (7 per side)	8 (4 per side)		

#### ■ Stroke and Max. Opening/Closing Speed

Stroke Deceleration ratio	8 (mm)
30	78 (per side)

Code explanation ① Applicable Controller ② Cable length ③ Options

(Unit: mm/s)

#### Stroke

Stroke (mm)	Standard price
8	_

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

#### ② Cable Length

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

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

ltem	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)			

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

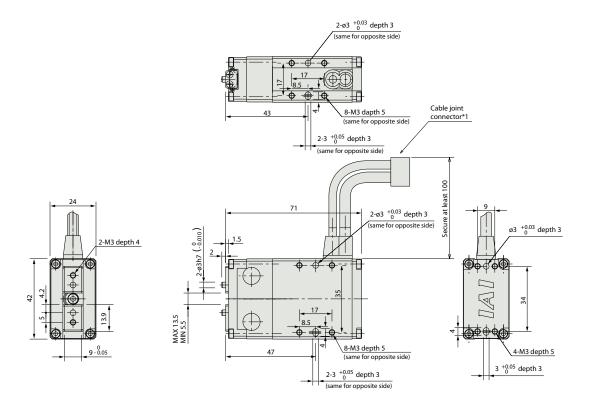
For Special Orders



2D CAD

\*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

Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Referen page
Calamaid Valua Tuma	*	PMEC-C-20PI-①-2-⑪	Easy-to-use controller, even for beginners		AC100V AC200V	Refer to P541	_	→ P53
Solenoid Valve Type	8	PSEP-C-20PI-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	diam'r	MSEP-C	Positioner type based on PIO control, allowing up to 8 axes to be connected			Refer to		. 054
Solenoid valve multi-axis type Network specification	HH	MSEP-C	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points		P572	_	→ P56
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			_	
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	_	→ P60
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	DC24V		_	
Pulse Train Input Type (Differential Line Driver)	É	PCON-PL-20PI-①-2-0	Pulse train input type with differential line driver support	( )			_	
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-①-2-0	Pulse train input type with open collector support	(—)		Refer to P628	_	→ P62
Serial Communication Type	Ĩ	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

RCP2-GRSS **374** 

Туре

Mini

Standard

Integrated

Rod ype

Mini

Controllers

able/ Arm/ Flat Type

Gripper/ Rotary

Linear Servo Type

> Cleanoom

plash Proof ype

> ulse lotor

ervo lotor (4V)

Servo Motor (200V)

> Servo Motor

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

# P2-GRLS

Model Specification Items

RCP2 - GRLS -

ı

\* The Simple absolute

considered type "I".

I: Incremental

encoder is also

20P - 30

20□ size

**– 180** –

— Encoder type — Motor type — Deceleration Ratio — Stroke — Applicable controller — Cable length — Options

20P: Pulse motor, 30: 1/30 deceleration ratio per side)

180: 180 dearees (90 degrees

P1: PCON-PL/PO/SE **PSEL** P3: PCON-CA

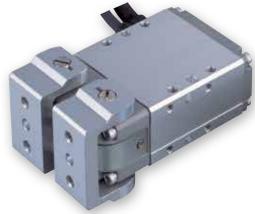
MSEP

N: None P: 1m S: 3m

NM: Non-motor end FB: Flange bracket SB: Shaft bracket

M:5m X□□: Custom Length PMEC/PSEP





Technical References

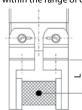


Notes on selection

- (1) The maximum opening/closing speed indicates the operating speed on one side. The relative operating speed is twice this value.
- (2) The maximum gripping force is the sum of the gripping forces of both fingers, at a gripping point where there is no offset or overhang distance. The work piece weight that can be actually moved depends on the friction coefficient between the gripper fingers and the work piece, as well as on the shape of the work piece. As a rough quide, 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.

#### ■ Gripping Force vs. Current Limit

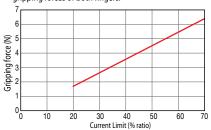
The gripping (pushing) force can be adjusted freely within the range of current limits of 20% to 70%.



- \* 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.
- \* Operate with the L distance up to 40mm.

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 reference numbers. Please allow margins up to  $\pm$  15%.
- Please note that, when gripping (pushing), the speed is fixed at 5 degrees/s.

#### Actuator Specifications

#### ■ Lead and Payload

Model number	Deceleration Ratio	Maximum Gripping Force (N)	Stroke (deg)
RCP2-GRLS-I-20P-30-180-①-②-③	30	6.4 (3.2 per side)	180 (90 per side)

■ Stroke and Max. Opening/Closing Speed Stroke (deg) Deceleration ratio 600 30 (per side)

(Unit: degree/s)

#### Stroke

Stroke (deg)	Standard price			
180	_			

#### ③ Options

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

#### ②Cable Length

Type	Cable symbol	Standard price
Standard	<b>P</b> (1m)	_
(Robot Cables)	<b>S</b> (3m)	_
(Nobol Cables)	<b>M</b> (5m)	_
	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_
Special length	ecial 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.

ltem	Description
Drive System	Worm gear + helical gear
Positioning repeatability	±0.01deg.
Backlash	1 degree or less per side (constantly pressed out by a spring)
Lost motion	1 degree or less
Guide	_
Allowable static load moment	_
Weight	0.2kg
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

#### Dimensional Drawings

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

For Special Orders





\*The opening side of the slider is the home position. 2-ø3 <sup>+0.03</sup> depth 3 (\*1) Connect the motor-encoder integrated cable here. See page A-59 for details on cables. (same for opposite side) 8-M3 depth 5 Cable joint (same for opposite side) 2-3 +0.05 depth 3 (same for opposite side) 2-ø3 +0.03 depth 3 (same for opposite side) 2-ø4 +0.03 depth 2.5 ø3 <sup>+0.03</sup> depth 3 4-M4 through MAX 180° MIN 0° 9 4-M3 depth 5 15.5 8-M3 depth 5 2-3 +0.05 depth 3 (same for opposite side) 3 <sup>+0.05</sup> depth 3 49 (same for opposite side)

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	Referen page
Calamaid Valua Tuma	***************************************	PMEC-C-20PI-①-2-⑪	Easy-to-use controller, even for beginners		AC100V AC200V	Refer to P541	_	→ P53
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	_	→ P54
Solenoid valve multi-axis type PIO specification	Acres 1	MSEP-C	Positioner type based on PIO control, allowing up to 8 axes to be connected		12 points (—) DC24V	Refer to P572		<ul><li>— → P563</li><li>— → P607</li></ul>
Solenoid valve multi-axis type Network specification		MSEP-C	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points			_	
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		Refer to P618	_	
Pulse-train type High-output specification	1	PCON-CA-20PI-PL□-2-0	Equipped with a high-output driver Pulse-train input type	(—)			_	
Field network type High-output specification		PCON-CA-20PI-W-0-0	Equipped with a high-output driver Supporting 7 major field networks	768 points			_	
Pulse Train Input Type (Differential Line Driver)	Ó	PCON-PL-20PI-①-2-0	Pulse train input type with differential line driver support	(—)			_	
Pulse Train Input Type (Open Collector)	-	PCON-PO-20PI-①-2-0	Pulse train input type with open collector support		Refer to P628	_	→ 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

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

Model Specification Items

RCP2 - GRS -

ı

\* The Simple absolute

considered type "I".

encoder is also

I: Incremental

- 20P - 1

ratio

20P: Pulse motor, 1: 1/1

20□ size

10 -

— Encoder type — Motor type — Deceleration Ratio — Stroke — Applicable controller — Cable length

10: 10mm deceleration (5mm per side) **PSEL** 

P1: PCON-PL/PO/SE P3: PCON-CA

N: None P: 1m S: 3m

SB: Shaft bracket FB: Flange bracket

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

PMEC/PSEP **MSEP** 





Technical References

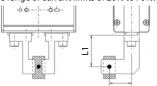




- (1) The maximum opening/closing speed indicates the operating speed on one side. The relative operating speed is twice this value.
- $(2) \ \ The maximum gripping force is the sum of the gripping forces of both fingers, at a gripping point where there$ is no offset or overhang distance. The work piece 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.

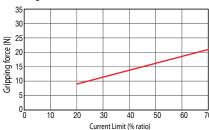
#### ■ Gripping Force vs. Current Limit

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



- \* Operate with the L1 distance up to 50mm. L2
- \*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 reference numbers. Please allow margins up to  $\pm$  15%.
- \* Please note that, when gripping (pushing), the speed is fixed at

#### Actuator Specifications

#### ■ Lead and Payload

= Ecua una i ayioua						
Model number	Deceleration Ratio	Maximum Gripping Force (N)	Stroke (mm)			
RCP2-GRS-I-20P-1-10-①-②-③	1	21 (10.5 per side)	10 (5 per side)			

#### ■ Stroke and Max. Opening/Closing Speed

Stroke  Deceleration ratio	10 (mm)
1	33.3 (per side)

Code explanation ① Applicable Controller ② Cable length ③ Options

(Unit: mm/s)

Stroke	
Stroke (mm)	Standard price
10	_

2	Cabl	le L	.eng	ıth

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)	_
	<b>R01</b> (1m) ~ <b>R03</b> (3m)	_
	<b>R04</b> (4m) ~ <b>R05</b> (5m)	_
Robot Cable	<b>R06</b> (6m) ~ <b>R10</b> (10m)	_
	R11 (11m) ~ R15 (15m)	<u> </u>
	R16 (16m) ~ R20 (20m)	_

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

#### ③ Options

Name	Option code	See page	Standard price
Flange bracket	FB	→ A-43	_
Shaft bracket	SB	→ A-55	_

Actuator specifications	
ltem	Description
Drive System	Timing belt + trapezoidal screw (1.5 lead)
Positioning repeatability	±0.01mm
Backlash	0.15mm or less per side (constantly pressed out by a spring)
Lost motion	0.1mm or less per side
Guide	Cross roller guide
Allowable static load moment	Ma: 6.3 N·m, Mb: 6.3 N·m, Mc: 7.0 N·m
Weight	0.36kg
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

Dimensional Drawings

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

For Special Orders

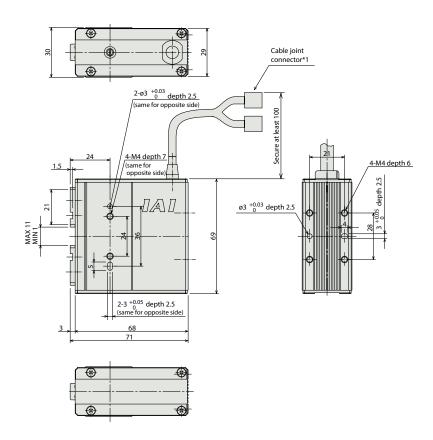






\*The opening side of the slider is the home position.

(\*1) Connect the motor and encoder cables here. See page A-59 for details on cables.



2-M4 depth 8

Note:

The holes in the slider shown above, other than tapped holes, are used to install the slider onto the actuator. They cannot be used as finger positioning holes. Use the key slots to position the fingers.

Weight (kg) 0.36

Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Referenc page		
Colon oid Volus Turo	No.	PMEC-C-20PI-①-2-⑪	Easy-to-use controller, even for beginners		6 points	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	line	MSEP-C-(1)-~-(1)-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 j	MSEP-C-((1)-~-((V)-0-0	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points		P572	_	, 1,000		
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			_			
Pulse-train type High-output specification		PCON-CA-20PI-PL□-2-0	Equipped with a high-output driver Pulse-train input type	(—)		Refer to P618	_	→ P607		
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)	Ü	PCON-PL-20PI-①-2-0	Pulse train input type with differential line driver support	(—)			_			
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-①-2-0	Pulse train input type with open collector support	(—)		Refer to P628	_	→ P623		
Serial Communication Type	ĺ	PCON-SE-20PI-N-0-0	Dedicated Serial Communication	64 points			_			
Program Control Type	, i	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

RCP2-GRS **378** 

Controller Integrated

> od ype

Mini

Standard

Integrated

Arm/ Flat Type

IVIIII

Standar

Gripper/ Rotary Type

Linear Servo Type

> Clean room Type

> > plash Proof vpe

> > > ulse lotor

ervo lotor (4V)

Servo Motor (200V)

> ervo Motor

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

# 2-GRM

Model Specification Items

RCP2 - GRM -

28P - 1 — Encoder type — Motor type — Deceleration Ratio — Stroke — Applicable controller — Cable length

28P: Pulse motor, 1: 1/1

ratio

28□ size

**- 14 -**

14: 14mm deceleration (7mm per side)

P1: PCON-PL/PO/SE **PSEL** P3: PCON-CA

N: None P: 1m S: 3m

SB: Shaft bracket FB: Flange bracket

M:5m X□□: Custom Length R□□: Robot cable PMEC/PSEP **MSEP** 





I: Incremental

\* The Simple absolute

considered type "I".

encoder is also

Technical References

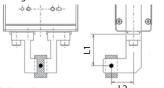


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- (1) The maximum opening/closing speed indicates the operating speed on one side. The relative operating speed
- (2) The maximum gripping force is the sum of the gripping forces of both fingers, at a gripping point where there is no offset or overhang 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.

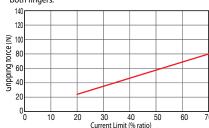
#### ■ Gripping Force vs. Current Limit

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



- \* Operate with the L1 distance up to 80mm.
- \*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 reference numbers. Please allow margins up to  $\pm$  15%.
- \* Please note that, when gripping (pushing), the speed is fixed at

#### Actuator Specifications

#### ■ Lead and Payload

Model number	Deceleration Ratio	Maximum Gripping Force (N)	Stroke (mm)			
RCP2-GRM-I-28P-1-14-①-②-③	1	80 (40 per side)	14 (7 per side)			
Code explanation ① Applicable Controller ② Cable length ④ Options						

#### ■ Stroke and Max. Opening/Closing Speed

Stroke  Deceleration ratio	14 (mm)					
1	36.7 (per side)					

(Unit: mm/s)

Stroke	
Stroke (mm)	Standard price
14	_

#### ②Cable Length

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

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

ltem	Description
Drive System	Timing belt + trapezoidal screw (1.5 lead)
Positioning repeatability	±0.01mm
Backlash	0.15mm or less per side (constantly pressed out by a spring)
Lost motion	0.1mm or less per side
Guide	Cross roller guide
Allowable static load moment	Ma: 6.3 N·m, Mb: 6.3 N·m, Mc: 8.3 N·m
Weight	0.5kg
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

③ Options			
Name	Option code	See page	Standard price
Flange bracket	FB	→ A-43	_
Shaft bracket	SB	→ A-55	_

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For Special Orders

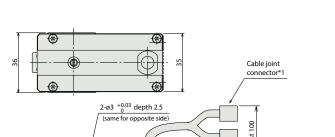


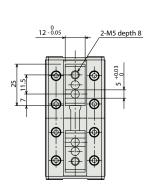




\*The opening side of the slider is the home position.

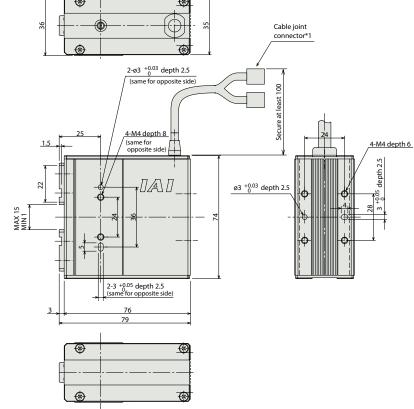
(\*1) Connect the motor and encoder cables here. See page A-59 for details on cables.





Note: The holes in the slider shown above, other than tapped holes, are used to install the slider onto the actuator. They cannot be used as finger positioning holes. Use the key slots to position the fingers.

① Applicable Controllers



i			
	(A)		
$\overline{}$			

Weight (kg)	0.5

	0.5	
		_
_		

RCP2 series actuators can be operated with the controllers indicated below. Select the type according to your intended application.								
Name	External view	Model number	Features		Input power	Power-supply capacity	Standard price	F

Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Reference page
Solenoid Valve Type	**	PMEC-C-28PI-①-2-⑪	Easy-to-use controller, even for beginners		AC100V AC200V	Refer to P541	_	→ P537
Solenoid valve Type		PSEP-C-28PI-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	Total Control	MSEP-C	Positioner type based on PIO control, allowing up to 8 axes to be connected			Refer to		→ 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	256 points		_	→ P563
Positioner type High-output specification	all a	PCON-CA-28PI-①-2-0	Equipped with a high-output driver Positioner type based on PIO control	512 points			_	
Pulse-train type High-output specification		PCON-CA-28PI-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-28PI-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-28PI-①-2-0	Pulse train input type with differential line driver support	( )			_	
Pulse Train Input Type (Open Collector)		PCON-PO-28PI-①-2-0	Pulse train input type with open collector support	(—)		Refer to P628	_	→ P623
Serial Communication Type	Ĩ	PCON-SE-28PI-N-0-0	Dedicated Serial Communication	64 points			_	
Program Control Type		PSEL-CS-1-28PI-①-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points		Refer to P671	_	→ P665

\*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.

RCP2-GRM **380** 

# P2-GRST

Pulse Motor

Model Specification Items

RCP2 — GRST —

- 20P -

20□ size



ratio

Standard Type

20P: Pulse motor, 1: 1/1 deceleration 40: 40mm ratio
High-Speed Type
2: 1/2 deceleration 60: 60mm 80: 80mm 100:100mm

P1: PCON-PL/PO/SE **PSEL** P3: PCON-CA PMEC/PSEP

**MSEP** 

N: None P: 1m S: 3m

Applicable controller — Cable length — Options

See Options below. Be sure to specify the side from which you want the cable to exit (A0 or A1).

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

CE RoHS



I: Incremental

encoder is also

\* The Simple absolute

considered type "I".

(1) The maximum opening/closing speed indicates the operating speed on one side. The relative operating speed is twice this value.

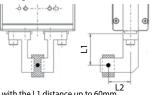
(2) The maximum gripping force is the sum of the gripping forces of both fingers, at a gripping point where there is no offset or overhang distance. The work piece weight that can be actually moved depends on the friction coefficient between the gripper fingers and the work piece, as well as on the shape 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.)

References

(3) The rated acceleration while moving is 0.3G.

#### ■ Gripping Force vs. Current Limit

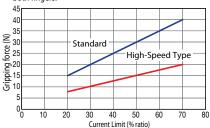
The gripping (pushing) force can be adjusted freely within the range of current limits of 20% to 70%.



\* Operate with the L1 distance up to 60mm.

\* 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 reference numbers. Please allow margins up to  $\pm$  15%.

\* Please note that, when gripping (pushing), the speed is fixed at

#### Actuator Specifications

#### ■ Leads and Payload

Model number	Deceleration Ratio	Maximum Gripping Force (N)	Stroke (mm)	
RCP2-GRST-I-20P-1-①-②-③-④	1	20 (10 per side)	40~100	
RCP2-GRST-I-20P-2-①-②-③-④	2	40 (20 per side)	(every 20mm )	

Stroke 40~100 (mm) celeration ratio 75 1 2 34

■ Stroke and Max. Opening/Closing Speed

Code explanation ① Stroke ② Applicable Controller ③ Cable length ④ Options

(Unit: mm/s)

#### ①Stroke

Notes or

selection

	,
Stroke (mm)	Standard price
40	_
60	_
80	_
100	_

Type	Cable symbol	Standard price
Standard	<b>P</b> (1m)	_
(Robot Cables)	<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)	_
	<b>X16</b> (16m) ~ <b>X20</b> (20m)	_

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

#### **4** Options

Name	Option code	See page	Standard price
Non-motor end specification	NM	→ A-52	_
Cable exiting from bottom	A0	→ A-41	_
Cable exiting from side	A1	→ A-41	

\*Be sure to specify the side from which you want the cable to exit (A0 or A1).

Item	Description
Drive System	Timing belt + worm/rack gear
Positioning repeatability	±0.01mm
Backlash	0.2mm or less per side
Lost motion	_
Guide	Linear guide
Allowable static load moment	Ma: 2.93 N·m, Mb: 2.93 N·m, Mc: 5.0 N·m
Weight	0.51kg (40-stroke) ~ 0.66kg (100-stroke)
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

#### Dimensional Drawings

#### www.intelligentactuator.com

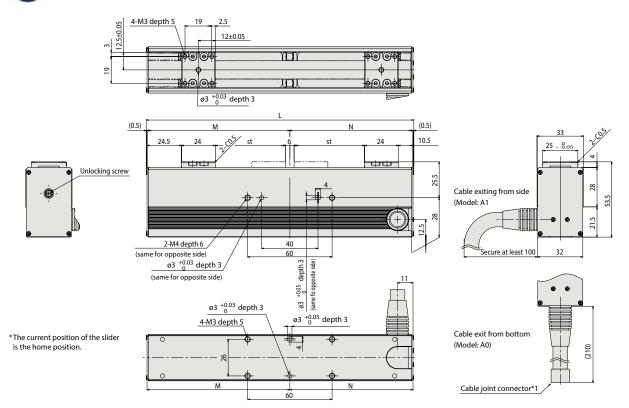
For Special Orders



2D CAD

\*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.



#### ■ Dimensions and Weight by Stroke

			, -	
Stroke	40	60	80	100
L	130	150	170	190
М	71.5	81.5	91.5	101.5
N	57.5	67.5	77.5	87.5
Weight (kg)	0.51	0.56	0.61	0.66

#### ② Applicable Controllers RCP2 series actuators can be operated with the controllers indicated below. Select the type according to your intended application. AC100V Refer to PMEC-C-20PI-(1)-2-(1) Easy-to-use controller, even for beginners → P537 AC200V P541 Solenoid Valve Type Simple controller operable with the same Refer to ۱ PSEP-C-20PI-①-2-0 3 points → P547 signal as a solenoid valve P555 Positioner type based on PIO control, Solenoid valve multi-axis type MSEP-C------2-0 PIO specification allowing up to 8 axes to be connected Refer to → P563 H P572 Field network-ready positioner type, Solenoid valve multi-axis type 256 points Network specification allowing up to 8 axes to be connected Equipped with a high-output driver Positioner type PCON-CA-20PI-①-2-0 512 points High-output specification Positioner type based on PIO control Equipped with a high-output driver Pulse-train type High-output specification Refer to PCON-CA-20PI-PL□-2-0 (—) → P607 Pulse-train input type P618 DC24V Equipped with a high-output driver Field network type High-output specification PCON-CA-20PI-W-0-0 768 points Supporting 7 major field networks Pulse Train Input Type Pulse train input type with differential line PCON-PL-20PI-①-2-0 (Differential Line Driver) driver support (—) Pulse Train Input Type Pulse train input type with open collector Refer to PCON-PO-20PI-(1)-2-0 → P623 (Open Collector) support P628 Serial Communication Type PCON-SE-20PI-N-0-0 **Dedicated Serial Communication** 64 points Programmed operation is possible. Refer to Program PSEL-CS-1-20PI-①-2-0 1,500 points → P665 Control Type Can operate up to 2 axes P671

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

\*  $\textcircled{\parallel}$  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.

RCP2-GRST

# P2-GRHM

P1: PCON-PL/PO/SE

Model Specification Items

RCP2 - GRHM -

I: Incremental

lead 2

35P: Pulse motor, 2: Feed screw

- 35P - 2 - 32 -

32: 32mm

(16mm per side)

— Encoder type — Motor type — Deceleration Ratio — Stroke — Applicable controller — Cable length — Options N: None

See Options below.

**PSEL** P3: PCON-CA PMEC/PSEP **MSEP** 

S: 3m

M:5m X□□: Custom Length



Technical References

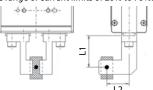


selection

- (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 quide, 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.

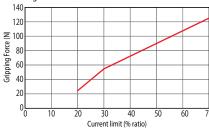
#### ■ Gripping Force vs. Current Limit

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



- \* Operate with the L1 distance up to 90mm.
- \* 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 reference numbers. Please allow margins up to  $\pm$  15%.
- Please note that, when gripping (pushing), the speed is fixed at

#### Actuator Specifications

#### ead and Pavload

Eeda ana i ayloda						
Model number	Deceleration Ratio	Maximum Gripping Force (N)	Stroke (mm)			
RCP2-GRHM-I-35P-2-32-①-②-③	2	125 (62.5 per side)	32 (16 per side)			

#### ■ Stroke and Max. Opening/Closing Speed Stroke

32 (mm) eceleration ratio 100 2 (per side)

(Unit: mm/s)

Stroke (mm)	Standard price
32	_

© Options							
Name	Option code	See page	Standard price				
Cable exit direction (top)	CJT	→ A-42	_				
Cable exit direction (right)	CJR	→ A-42	_				
Cable exit direction (left)	CJL	→ A-42	_				
Cable exit direction (bottom)	CJB	→ A-42	_				
Flange Bracket	FB	→ A-43	_				
Shaft bracket	SB	→ A-55	_				

#### ②Cable Length

Туре	Cable symbol	Standard price
Standard	<b>P</b> (1m)	_
(Robot Cables)	<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.
  \* See page A-59 for cables for maintenance.

#### Actuator Specifications

ltem	Description
Drive System	Timing belt + trapezoidal screw (2 lead)
Positioning repeatability	±0.01mm
Backlash	0.2mm or less per side (constantly pressed out by a spring)
Lost motion	0.15mm or less per side
Guide	Linear guide
Allowable static load moment (*)	Ma: 11.7 N·m, Mb: 16.7 N·m, Mc: 46.5 N·m
Weight	1.14kg
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

(\*) Based on a 5,000km service life.

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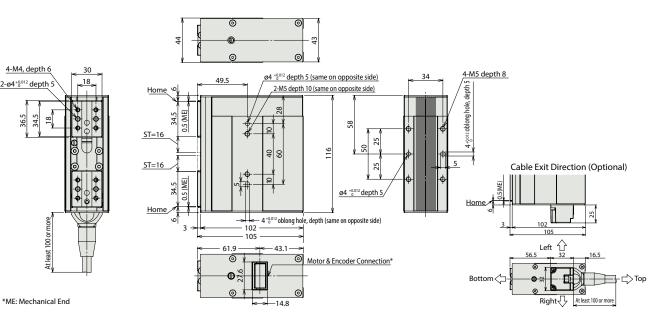
4-M4, depth 6

2-ø4+0.012 depth 5

At least 100 or more



\* Connect the motor-encoder integrated cable here. (See page A-59 for details on cables.)



Weight (kg) 1.14

(1) A	pplica		Camb	walla.	
	0]0] [@P	3   0   [C.	- 0 1 a 1	( ( 0 )   ( )	

RCP2 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
Salanaid Valva Tyna	***	PMEC-C-35PI-①-2-⑪	Easy-to-use controller, even for beginners		AC100V AC200V	Refer to P541	_	→ P537
Solenoid Valve Type		PSEP-C-35PI-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	dina.	MSEP-C	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	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points		P572	_	7 7 7 303
Positioner type High-output specification		PCON-CA-35PI-①-2-0	Equipped with a high-output driver Positioner type based on PIO control	512 points			_	
Pulse-train type High-output specification		PCON-CA-35PI-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-35PI-௵-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-35PI-①-2-0	Pulse train input type with differential line driver support	(—)			_	
Pulse Train Input Type (Open Collector)		PCON-PO-35PI-①-2-0	Pulse train input type with open collector support	(—)		Refer to P628	_	→ P623
Serial Communication Type	Ĩ	PCON-SE-35PI-N-0-0	Dedicated Serial Communication	64 points			_	

Programmed operation is possible.

IAI

Can operate up to 2 axes

Program Control Type

PSEL-CS-1-35PI-①-2-0

\*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.

1,500 points

RCP2-GRHM 384

Refer to P671

→ P665

# P2-GRHB

Model Specification Items

RCP2 — GRHB —

I: Incremental

- 42P - 2 -

lead 2

42P: Pulse motor, 2: Feed screw

40 -

— Encoder type — Motor type — Deceleration Ratio — Stroke — Applicable controller — Cable length 40:40mm (20mm per side)

P1: PCON-PL/PO/SE **PSEL** P3: PCON-CA

N: None S: 3m

See Options below.

M:5m X□□: Custom Length PMEC/PSEP MSEP



**Technical** References

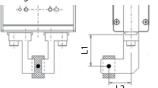


Notes on selection

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

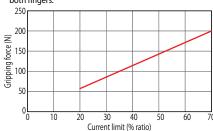
#### ■ Gripping Force vs. Current Limit

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



- \* Operate with the L1 distance up to 90mm. L2
- \*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 reference numbers. Please allow margins up to  $\pm$  15%.
- \* Please note that, when gripping (pushing), the speed is fixed at

#### Actuator Specifications

#### ■ Lead and Payload

Model number	Deceleration Ratio	Maximum Gripping Force (N)	Stroke (mm)
RCP2-GRHB-I-42P-2-40-①-②-③	2	200 (100 per side)	40 (20 per side)

## ■ Stroke and Max. Opening/Closing Speed

Stroke  Deceleration ratio	40 (mm)
2	100 (per side)

Code explanation ① Applicable Controller ② Cable length ④ Options

(Unit: mm/s)

#### Stroke

Stroke (mm)	Standard price
40	_

Type	
E CUDIC	cengui

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)	_

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

#### Actuator Specifications

Actuator Specifications			
ltem	Description		
Drive System	Timing belt + trapezoidal screw (2 lead)		
Positioning repeatability	±0.01mm		
Backlash	0.2mm or less per side (constantly pressed out by a spring)		
Lost motion	0.15mm or less per side		
Guide	Linear guide		
Allowable static load moment (*)	Ma: 15.7 N·m, Mb: 26.4 N·m, Mc: 59.8 N·m		
Weight	1.5kg		
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)		

(\*) Based on a 5,000km service life.

③ Options					
Name	Option code	See page	Standard price		
Cable exit direction top)	CJT	→ A-42	_		
Cable exit direction (right)	CJR	→ A-42	_		
Cable exit direction (left)	CJL	→ A-42	_		
Cable exit direction (bottom)	CJB	→ A-42	_		
Flange Bracket	FB	→ A-43	_		
Shaft bracket	SB	→ A-55	_		

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

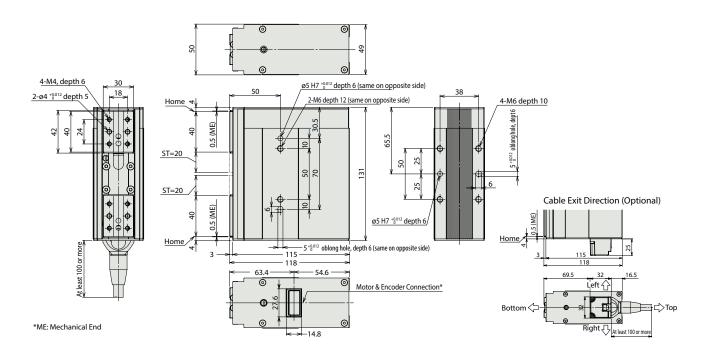
For Special Orders







\* Connect the motor-encoder integrated cable here. (See page A-59 for details on cables.)



Weight (kg)	1.5

	① Applicable Controllers  RCP2 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
Calamaid Valua Tura		PMEC-C-42PI-①-2-⑪	Easy-to-use controller, even for beginners		AC100V AC200V	Refer to P541	_	→ P537
Solenoid Valve Type	1	PSEP-C-42PI-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	day.	MSEP-C	Positioner type based on PIO control, allowing up to 8 axes to be connected		Refer to			
Solenoid valve multi-axis type Network specification	iiii	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		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		PCON-CA-42PI-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-42PI-ℚ-0-0	Equipped with a high-output driver Supporting 7 major field networks	768 points	DC24V		_	
Pulse Train Input Type (Differential Line Driver)	Ď.	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	_	→ P623
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	_	→ P665

\*This is for the single-axis PSEL. \* ① indicates I/O type (NP/PN). \* ① indicates power supply voltage (1:100V / 2:100~240V). \* ① indicates number of axes (1 to 8). \* 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.

# P2-GR3LS

Model Specification Items

RCP2 -GR3LS-

ı

I: Incremental

encoder is also

The Simple absolute

considered type "I".

28P - 30

deceleration

ratio

28P: Pulse motor, 30: 1/30

28□ size

**19** –



P3: PCON-CA

N: None P: 1m S: 3m

FB: Flange bracket SB: Shaft bracket

M:5m X□□: Custom length R□□: Robot cable PMEC/PSEP **MSEP** 

CE RoHS



Technical References





- (1) The maximum opening/closing speed indicates the operating speed on one side. The relative operating speed
- (2) The maximum gripping force is the sum of the gripping forces of all fingers with gripping point distance of 10mm and no overhang distance. For the actual transportable work piece weight, see explanation on the right, or page A-86.
- (3) The rated acceleration while moving is 0.3G.

#### ■ Gripping Force vs. Current Limit

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



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

\*The values in the graph below are gripping forces at 10mm gripping point. The actual gripping force decreases inversely proportional to the distance from the opening/ closing point.

You can calculate the actual gripping force by the following

#### Actual gripping force (GR3LS) = $P \times 24 / (L + 14)$

P = Gripping force on graph

L = Distance from finger mounting surface to the gripping

(Operate with the L1 distance under 50mm.) 30 10 60 70 Current Limit (% ratio)

\*The gripping force graph above shows reference numbers. Please allow margins up to  $\pm$  15%.

#### Actuator Specifications

#### ■ Lead and Payload

Model number	Deceleration Ratio	Maximum Gripping Force (N)	Stroke (deg)	
RCP2-GR3LS-I-28P-30-19-①-②-③	30	18 (6 per side)	19	

■ Stroke and Max. Opening/Closing Speed 19 (deg) 30 200

Code explanation ① Applicable Controller ② Cable length ③ Options

(Unit: degrees/s)

Stı	rol	ke

	Stroke (deg)	Standard price	
- 1	19	_	

#### ②Cable Length

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

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

#### ③ Options

Name	Option code	See page	Standard price
Flange bracket	FB	→ A-43	_
Shaft bracket	SB	→ A-55	_

Item	Description
Drive System	Worm gear + worm wheel gear
Positioning repeatability	±0.01 degrees
Backlash	1degree or less per side (constantly pressed out by a spring)
Lost motion	0.15 degrees or less per side
Weight	0.6kg
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

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

For Special Orders

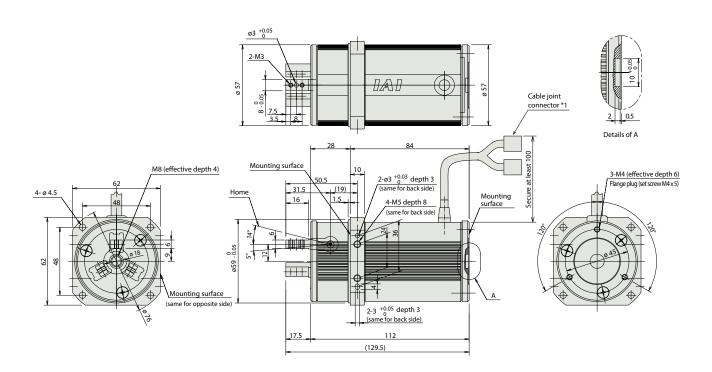






When homing, the actuator swings 1 degree past the home position before returning. Therefore, please watch for any interference with the surrounding objects.

(\*1) Connect the motor and encoder cables here. See page A-59 for details on cables.



Weight (kg)	0.6

① Applicable Contro		d with the controllers indic	ated below. Select the type according to yo	ur intended applica	ition.			
Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Reference page
Calanaid Valva Tuna		PMEC-C-28PI-①-2-⑪	Easy-to-use controller, even for beginners		AC100V AC200V	Refer to P541	_	→ P537
solenoid valve Type	Solenoid Valve Type	PSEP-C-28PI-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	lane	MSEP-C-(1)-~-(1)-2-0	Positioner type based on PIO control, allowing up to 8 axes to be connected		DC24V	Refer to P572	_	→ P563
Solenoid valve multi-axis type Network specification	iiii	MSEP-C-((1)-~-((V)-0-0	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points				
Positioner type High-output specification		PCON-CA-28PI-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-28PI-PL□-2-0	Equipped with a high-output driver Pulse-train input type	(—)			_	→ P607
Field network type High-output specification		PCON-CA-28PI-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-28PI-①-2-0	Pulse train input type with differential line driver support	( )			_	
Pulse Train Input Type (Open Collector)		PCON-PO-28PI-①-2-0	Pulse train input type with open collector support	(—)		Refer to P628	_	→ P623
Serial Communication Type		PCON-SE-28PI-N-0-0	Dedicated Serial Communication	64 points			_	
Program Control Type		PSEL-CS-1-28PI-①-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points		Refer to P671	_	→ P665

IAI

\*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.

RCP2-GR3LS 388

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

# P2-GR3LM

Model Specification Items

RCP2 -GR3LM-

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I: Incremental

encoder is also

The Simple absolute

considered type "I".

- 42P - 30

ratio

19 -

— Encoder type — Motor type — Deceleration Ratio — Stroke — Applicable controller — Cable length — Options 42P: Pulse motor, 30: 1/30 deceleration 42□ size

19: 19 degrees P1: PCON-PL/PO/SE **PSEL** P3: PCON-CA

PMEC/PSEP

N: None P: 1m S: 3m

FB: Flange bracket SB: Shaft bracket

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

**MSEP** 





Technical References





- (1) The maximum opening/closing speed indicates the operating speed on one side. The relative operating speed
- (2) The maximum gripping force is the sum of the gripping forces of all fingers with gripping point distance of 10mm and no overhang distance. For the actual transportable work piece weight, see explanation on the right, or page A-86.
- (3) The rated acceleration while moving is 0.3G.

#### **■** Gripping Force Adjustment

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



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

\*The values in the graph below are gripping forces at 10mm gripping point. The actual gripping force decreases inversely proportional to the distance from the opening/ closing point.

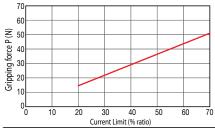
You can calculate the actual gripping force by the following

#### Actual gripping force (GR3LM) = $P \times 28.5 / (L + 18.5)$

P = Gripping force on graph

L = Distance from finger mounting surface to the gripping

(Operate with the L distance up to 80mm.)



\*The gripping force graph above shows reference numbers. Please allow margins up to  $\pm$  15%.

#### Actuator Specifications

#### ■ Lead and Payload

Model number	Deceleration Ratio	Maximum Gripping Force (N)	Stroke (deg)
RCP2-GR3LM-I-42P-30-19-①-②-③	30	51 (17 per side)	19

Code explanation ① Applicable Controller ② Cable length ③ Options

#### ■ Stroke and Max. Opening/Closing Speed

Stroke	19
Deceleration ratio	(deg)
30	200

(Unit: degrees/s)

	Stroke (deg)	Standard price
- 1	19	_

#### ③ Options

Name	Option code	See page	Standard price
Flange bracket	FB	→ A-43	_
Shaft bracket	SB	→ A-55	_

#### 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)	_
	<b>X16</b> (16m) ~ <b>X20</b> (20m)	_
	<b>R01</b> (1m) ~ <b>R03</b> (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)	_

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

ltem	Description
Drive System	Worm gear + worm wheel gear
Positioning repeatability	±0.01 degrees
Backlash	1 degree or less per side (constantly pressed out by a spring)
Lost motion	0.15 degrees or less per side
Weight	1.1kg
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

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

For Special Orders





80



① Applicable Controllers

Control Type

When homing, the actuator swings 1 degree past the home position before returning. Therefore, please watch for any interference with the surrounding objects. (\*1) Connect the motor and encoder cables here. See page A-59 for details on cables.

ø3 +8 2-M4 0.05 IAI 7 Cable joint 2 0.5 connector \*1 Details of A least 100 M8 (effective depth 4) 4- ø 5.5 Mounting surface 12 2-ø3 <sup>+0.03</sup> depth 3 3-M5 (effective depth 7) (same for back side) Flange plug (set screw M5 x 6) 40.5 (23.5) Mounting Home 20 4-M6 depth 12 (same for back side) surface  $\Phi$ ----Mounting surface (same for opposite side) 2-3 +8.05 depth 3 (same for back side)

> 114 (136)

> > Weight (kg) 1.1

RCP2 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 Valua Tima		PMEC-C-42PI-①-2-⑪	Easy-to-use controller, even for beginners		AC100V AC200V	Refer to P541	_	→ P537
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	_	→ P547
Solenoid valve multi-axis type PIO specification	line.	MSEP-C	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)-~-(10)-0-0	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points		P572	_	→ P503
Positioner type High-output specification		PCON-CA-42PI-①-2-0	Equipped with a high-output driver Positioner type based on PIO control	512 points		Refer to P618	_	
Pulse-train type High-output specification		PCON-CA-42PI-PL□-2-0	Equipped with a high-output driver Pulse-train input type	(—)	DC24V		_	→ P607
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	_	→ P623
Serial Communication Type	Ĩ	PCON-SE-42PI-N-0-0	Dedicated Serial Communication	64 points			_	
Program		PSFI-CS-1-42PI-(1)-2-0	Programmed operation is possible.	1,500 points		Refer to		→ P665

PSEL-CS-1-42PI-①-2-0

\*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.

1,500 points

IAI

Can operate up to 2 axes

RCP2-GR3LM 390

P671

→ P665

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

# P2-GR3SS

Model Specification Items

RCP2 - GR3SS -

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- 28P - 30

ratio

28P: Pulse motor, 30: 1/30

28□ size

10 -

10: 10mm

deceleration (5mm per side)

— Encoder type — Motor type — Deceleration Ratio — Stroke — Applicable controller — Cable length — Options P1: PCON-PL/PO/SE **PSEL** P3: PCON-CA

N: None P: 1m S: 3m

FB: Flange bracket SB: Shaft bracket

M:5m X□□: Custom length R□□: Robot cable PMEC/PSEP MSEP





I: Incremental

encoder is also

The Simple absolute

considered type "I".

Technical References

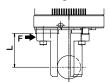




- (1) The maximum opening/closing speed indicates the operating speed on one side. The relative operating speed
- (2) The maximum gripping force is the sum of the gripping forces of all fingers with gripping point distance of 10mm and no overhang distance. For the actual transportable work piece weight, see explanation on the right, or page A-86.
- (3) The rated acceleration while moving is 0.3G.

#### ■ Gripping Force vs. Current Limit

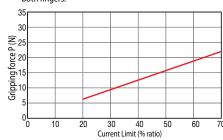
The gripping (pushing) force can be adjusted freely within the range of current limits of 20% to 70%.



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

- \* Operate with the L distance up to 50mm.
- \* The gripping force value in the graph below is when L is at 0 mm. (For gripping force reference per L distance, see page A-87.)

The gripping force value is the sum of gripping forces of both fingers.



\* The gripping force graph above shows reference numbers. Please allow margins up to ± 15%.

#### Actuator Specifications

#### ■ Lead and Payload

Model number	Deceleration Ratio	Maximum Gripping Force (N)	Stroke (mm)
RCP2-GR3SS-I-28P-30-10-①-②-③	30	22 (7.3 per side)	10

## ■ Stroke and Max. Opening/Closing Speed

Stroke  Deceleration ratio	10 (mm)	
30	40	

(Unit: mm/s)

Stroke	
Stroke (mm)	

Stroke (mm)	Standard price
10	-
10	_

Option code	See page	Standard price
FB	→ A-43	_
SB	→ A-55	_
	FB	<b>FB</b> → A-43

	_				
	_ap	le l	Len	gt	n

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	<b>X11</b> (11m) ~ <b>X15</b> (15m)	_
	X16 (16m) ~ X20 (20m)	_
	<b>R01</b> (1m) ~ <b>R03</b> (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)	_

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

Actuator Specifications				
ltem	Description			
Drive System	Worm gear + worm wheel gear			
Positioning repeatability	±0.01mm			
Backlash	0.3mm or less per side (constantly pressed out by a spring)			
Lost motion	0.1mm or less per side			
Guide	Cross roller guide			
Allowable static load moment	Ma: 3.8 N·m, Mb: 3.8 N·m, Mc: 3.0 N·m			
Weight	0.6kg			
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)			

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

For Special Orders







When homing, the actuator swings 0.5mm past the home position before returning. Therefore, please watch for any interference with the surrounding objects. (\*1) Connect the motor and encoder cables here. See page A-59 for details on cables.

Cable ioint connector \*1 0.5 Details of A 100 3-M3 depth 5 3- ø2.5h7 (- 0.010) 2-ø3 + 0.03 depth 3(same for back side) ø9 counterbore, depth 1.5 3-M4 (effective depth 6) Mounting surface M8 (effective depth 6) Flange plug (set screw M4 x 5) 4-M5 depth 8 Mounting S (<del>\</del> 0.05 48 ø59 Mounting surface (same for opposite side) 2-3 +8.05 depth 3 (same for back side) 104 110 3-M3 depth 5 ø9 counterbore, depth 1.5 M8 (effective depth 6) 48 Home

> Weight (kg) 0.6

#### ① Applicable Controllers

Details of B

4~9 ST5

RCP2 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	Referenc page
Calan aid Valua Tura	***	PMEC-C-28PI-①-2-⑪	Easy-to-use controller, even for beginners		AC100V AC200V	Refer to P541	_	→ P537
Solenoid Valve Type	1	PSEP-C-28PI-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	day.	MSEP-C	Positioner type based on PIO control, allowing up to 8 axes to be connected			Refer to P572		→ P563
Solenoid valve multi-axis type Network specification		MSEP-C-(  )-~-( \vec{V}-0-0	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points			_	
Positioner type High-output specification	á	PCON-CA-28PI-①-2-0	Equipped with a high-output driver Positioner type based on PIO control	512 points			_	
Pulse-train type High-output specification		PCON-CA-28PI-PL□-2-0	Equipped with a high-output driver Pulse-train input type	(—)	DC24V	Refer to P618	_	→ P60
Field network type High-output specification		PCON-CA-28PI-⑩-0-0	Equipped with a high-output driver Supporting 7 major field networks	768 points	DC24V		_	
Pulse Train Input Type (Differential Line Driver)		PCON-PL-28PI-①-2-0	Pulse train input type with differential line driver support	(—)			_	
Pulse Train Input Type (Open Collector)		PCON-PO-28PI-①-2-0	Pulse train input type with open collector support	()		Refer to P628	_	→ P62
Serial Communication Type		PCON-SE-28PI-N-0-0	Dedicated Serial Communication	64 points			_	
Program Control Type		PSEL-CS-1-28PI-①-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points		Refer to P671	_	→ P66

\*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.

 $_{\text{RCP2-GR3SS}}~392$ 

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

# P2-GR3SM

Model Specification Items

RCP2 — GR3SM —

ı

The Simple absolute

considered type "I".

I: Incremental

encoder is also

- 42P - 30

ratio

42P: Pulse motor, 30: 1/30

42□ size

14 -

deceleration (7mm per side)

— Encoder type — Motor type — Deceleration Ratio — Stroke — Applicable controller — Cable length — Options 14: 14mm

P1: PCON-PL/PO/SE **PSEL** P3: PCON-CA

> PMEC/PSEP MSEP

N: None P: 1m S: 3m

FB: Flange bracket SB: Shaft bracket

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





Technical References

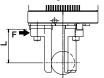




- (1) The maximum opening/closing speed indicates the operating speed on one side. The relative operating speed
- (2) The maximum gripping force is the sum of the gripping forces of all fingers with gripping point distance of 10mm and no overhang distance. For the actual transportable work piece weight, see explanation on the right, or page A-86.
- (3) The rated acceleration while moving is 0.3G.

#### ■ Gripping Force vs. Current Limit

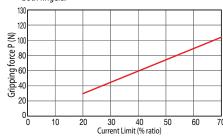
The gripping (pushing) force can be adjusted freely within the range of current limits of 20% to 70%.



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

- \* Operate with the L distance up to 80mm.
- \* The gripping force value in the graph below is when L is at 0 mm. (For gripping force reference per L distance, see page A-87.)

The gripping force value is the sum of gripping forces of both fingers.



\* The gripping force graph above shows reference numbers. Please allow margins up to ± 15%.

#### **Actuator Specifications**

#### ■ Lead and Payload

Model number	Deceleration Ratio	Maximum Gripping Force (N)	Stroke (mm)
RCP2-GR3SM-I-42P-30-14-①-②-③	30	102 (34 per side)	14

#### ■ Stroke and Max. Opening/Closing Speed

Stroke  Deceleration ratio	14 (mm)			
30	50			

Code explanation ① Applicable Controller ② Cable length ③ Options

(Unit: mm/s)

Stroke	
Stroke (mm)	Standard price
14	_

$\sim$				
•	9.1	210	-	

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)	_
	<b>R01</b> (1m) ~ <b>R03</b> (3m)	_
	<b>R04</b> (4m) ~ <b>R05</b> (5m)	_
Robot Cable	<b>R06</b> (6m) ~ <b>R10</b> (10m)	_
	R11 (11m) ~ R15 (15m)	_
	$R16 (16m) \sim R20 (20m)$	_

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

#### ③ Options

Name	Option code	See page	Standard price
Flange bracket	FB	→ A-43	_
Shaft bracket	SB	→ A-55	_

Actuator Specifications	
ltem	Description
Drive System	Worm gear + worm wheel gear
Positioning repeatability	±0.01mm
Backlash	0.3mm or less per side (constantly pressed out by a spring)
Lost motion	0.1mm or less per side
Guide	Cross roller guide
Allowable static load moment	Ma: 6.3 N·m, Mb: 6.3 N·m, Mc: 5.7 N·m
Weight	1.2kg
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

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

For Special Orders

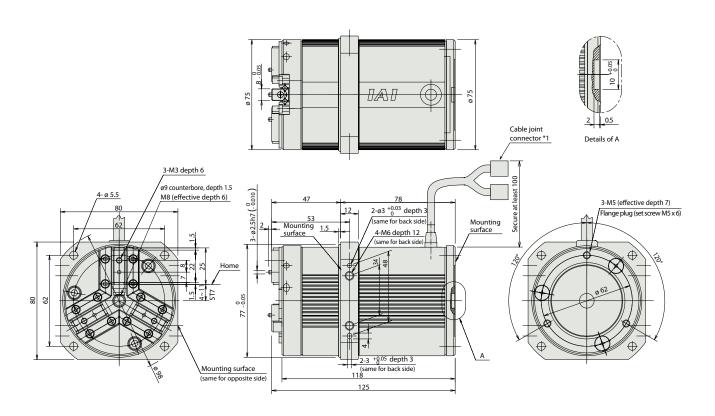






When homing, the actuator swings 0.5mm past the home position before returning. Therefore, please watch for any interference with the surrounding objects.

(\*1) Connect the motor and encoder cables here. See page A-59 for details on cables.



Woight (kg)	1 2

① Applicable Contro								
RCP2 series actuators car	n be operate	d with the controllers indic	ated below. Select the type according to yo	ur intended applica	tion.			
Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Reference page
Solenoid Valve Type	***************************************	PMEC-C-42PI-①-2-⑪	Easy-to-use controller, even for beginners		AC100V AC200V	Refer to P541	_	→ P537
Solenoid valve Type		PSEP-C-42PI-①-2-0	Simple controller operable with the same signal as a solenoid valve	3 points	ints	Refer to P555	_	→ P547
Solenoid valve multi-axis type PIO specification	lane.	MSEP-C-(1)-~-(1)-2-0	Positioner type based on PIO control, allowing up to 8 axes to be connected			Refer to		. D.S.C.2
Solenoid valve multi-axis type Network specification	iiii	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	áil.	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		PCON-CA-42PI-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-42PI-ℚ-0-0	Equipped with a high-output driver Supporting 7 major field networks	768 points	DC24V		_	
Pulse Train Input Type (Differential Line Driver)	Ď.	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	_	→ P623
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	_	→ P665

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.

RCP2-GR3SM **394** 

Type

Mini

Standard

Controllers Integrated

> Roc Type

Min

Standard

Integrated

Table/ Arm/ Flat Type

Mini

Standard

Rotary Type

> Servo Type

Cleanroom Type

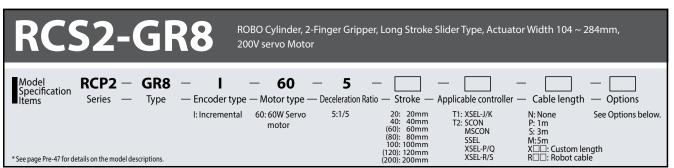
Splash Proo Type

> Pulse Moto

Servo Moto (24V

Servo Motor (200V)

Linear Servo Motor









- (1) Stroke values enclosed in "( )" are (60, 80, 120, 200) are semi-standard models.
- (2) The maximum gripping force is the sum of both fingers.

#### Actuator Specifications

#### ■ Lead and Payload

- 3		,								
	Model number	Motor Output (W)	tput Deceleration Ratio Gripping force at a stop (N) (Note 1) Rated gripping force at a travel (N) (Note 2)		Stroke (mm)					
	RCS2-GR8-I-60-5-①-②-③-④	60	1/5	22.5 (11.25 per side)	31.3 (15.65 per side)	20, 40, (60), (80), 100, (120), (200)				

Code explanation ① Stroke ② Applicable controller ③ Cable length ④ Options

(Note 1) The value of allowable load at a stop (Note 2) The value of allowable load when fingers are traveling

#### ①Stroke

①Stroke (mm)	Standard price
20	_
40	_
(60)	_
(80)	_
100	_
(120)	_
(200)	_

#### **4** Options

0			
Name	Option code	See page	Standard price
CE compliance	CE	→ A-42	_

#### **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	<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.

ltem	Description
Drive System	Rack and pinion
Positioning repeatability	±0.04mm
Lost motion	0.7mm or less per side
Base	Material: Aluminum, white alumite treated
Allowable static load moment	Ma: 5.1 N·m, Mb: 5.1 N·m, Mc: 10.4 N·m
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

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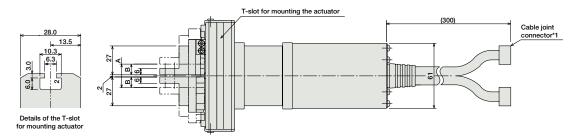
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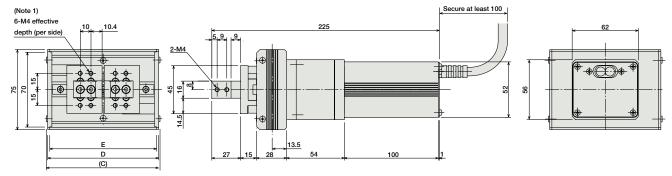






\*The opening side of the slider is the home position.





(\*1) Connect the motor and encoder cables here. See page A-59 for details on cables.

(Note 1) The number of tapped holes on the finger mounting plate is for one side. In addition, by default, each finger is secured using 2 tapped holes

#### ■ Dimensions and Weight by Stroke

		, ,		-			
Stroke	20	40	(60)	(80)	100	(120)	(200)
Α	22	42	62	82	102	122	202
В	10	20	30	40	50	60	100
С	106.4	126.4	146.4	166.4	186.4	206.4	286.4
D	104	124	144	164	184	204	284
E	100	120	140	160	180	200	280
Weight (kg)	1.8	1.9	1.9	2.0	2.0	2.1	2.3

<sup>\*1</sup> The strokes enclosed in "( )" are semi-standard configurations, and will require longer delivery time.

#### ② Applicable Controllers

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	H	SCON-CA-60I-NP-2-(ĵ)		Actuators can be operated through the same control used for solenoid valves.	7 points			_	→ P643
Field network type		SCON-CA-001-NF-2-()	Movement by numerical specification is supported.	768 points	Single-phase 100VAC	*Power supply capacity will vary depending on the controller, so please refer to the instruction manual for	_	→ P043	
Pulse-train input control type			Dedicated pulse-train input type	(-)	Single-phase 200VAC 3-phase		_		
Positioner multi-axis, network type	開報	MSCON-C-1-60	Up to 6 axes can be operated. Movement by numerical specification is supported.	256 points	200VAC (XSEL-P/Q/R/S ONLY)		_	→ P655	
Program control type, 1 to 2 axes		SSEL-CS-1-60I-NP-2-①	Program operation is supported. Up to 2 axes can be operated.	20,000 points		details.	_	→ P685	
Program control type, 1 to 8 axes	e illita	XSEL-(()-1-60I-N1-EEE-2-(())	Program operation is supported. Up to 8 axes can be operated.	Varies depending on the number of axis connected			_	→ P695	

<sup>\*</sup>This is for the single-axis MSCON, SSEL, and XSEL.

\* ① indicates the XSEL type (J/K/P/Q/R/S).

\* ② indicates field network specification symbol.

<sup>\*</sup> ① indicates the power-supply voltage type (1: 100 V / 2: Single-phase 200 V).
\* ⑩ indicates the power-supply voltage type (1: 100 V / 2: Single-phase 200 V / 3: Three-phase 200 V).

# P2-RTBS/RTBSL

Model Specification Items RCP2 -Type

RTBS: 330-deg |: Incremental rotation RTBSL: Multiple rotation \* See page Pre-47 for details on the model descriptions

20P: Pulse motor, \* The Simple absolute 20□ size encoder is also considered type "I".

ı

— Encoder type — Motor type — Deceleration Ratio — Oscillation Angle — 30: 1/30 deceleration ratio 45: 1/45 deceleration

ratio

20P -

330: 330-degrees (RTBS only) 360: 360-degrees (RTBSL only)

**PSEL** 

P1: PCON-PL/PO/SE P3: PCON-CA PMEC/PSEP **MSEP** 

N: None P: 1m S: 3m

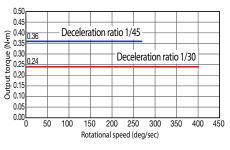
NM: Non-motor end SA: Shaft adapter TA: Table adapter

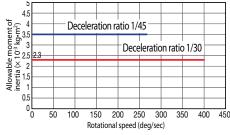
M:5m X□□:Custom length

Applicable controller — Cable length

■ 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.





# Technical References



C € RoHS

- (1) The output torque decreases as the rotational speed increases. Check the Output Torque graph on the right to see whether the speed required for your desired motion is supported.
- (2) The allowable moment of inertia of the rotated work piece varies with the rotational speed. Check the Allowable Moment of Inertia graph on the right to see if the moment of inertia required for your desired motion is within the allowable range.
- (3) The rated acceleration while moving is 0.2G.
- (4) Please note that the PMEC/PSEP controllers cannot be used when performing infinite rotation with the multiple rotation type.

#### Actuator Specifications

#### ■ Leads and Payload

Model number	Deceleration Ratio	Max. Torque (N·m)	Allowable Movement of Inertia (kg · m²)	Oscillation Angle (deg)
RCP2-RTBS-I-20P-30-330-①-②-③	1/30	0.24	0.0023	330
RCP2-RTBS-I-20P-45-330-①-②-③	1/45	0.36	0.0035	330
RCP2-RTBSL-I-20P-30-360-①-②-③	1/30	0.24	0.0023	360
RCP2-RTBSL-I-20P-45-360-①-②-③	1/45	0.36	0.0035	300

#### ■ Deceleration Ratio and Max. Speed

Stroke Deceleration ratio	330/360 (deg)
1/30	400
1/45	266
	(Unit: degrees/s)

Code explanation ① Applicable Controller ② Cable Length ③ Options

Туре	Oscillation Angle (deg)	Standard price
RTBS	330	_
RTBSL	360	_

#### ③ Options

© 0 pulsus						
Name	Option code	See page	Standard price			
Reversed-rotation	NM	→ A-52	_			
Shaft adapter	SA	→ A-54	_			
Table adapter	TA	→ A-56	_			

#### ②Cable Length

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

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

Actuator Specifications	
ltem	Description
Drive System	Hypoid gear
Positioning repeatability	±0.05 degrees
Homing accuracy	±0.05 degrees
Lost motion	±0.1 degrees
Allowable thrust load	30N
Allowable load moment	3.6 N·m
Weight	0.52kg
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

Dimensional Drawings

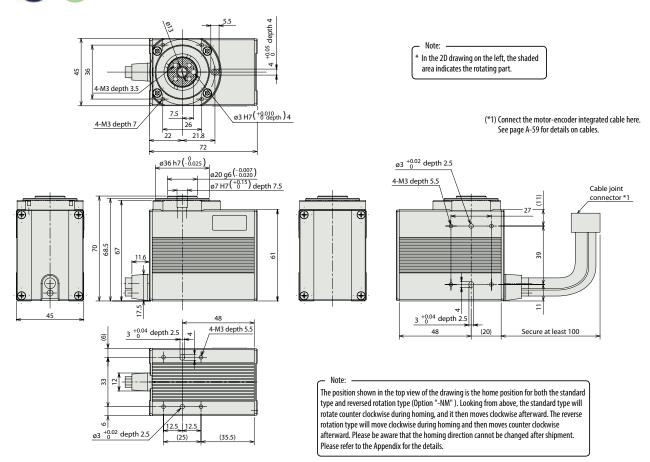
CAD drawings can be downloaded www.intelligentactuator.com

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Weight (kg)	0.52

(I) Ann	lian b	la Ca	a two H	

Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Reference page
5 L T	100	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	line i	MSEP-C	Positioner type based on PIO control, allowing up to 8 axes to be connected			Refer to		→ P56
olenoid valve multi-axis type Network specification		MSEP-C	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points		P572	_	→ P50
Positioner type High-output specification	- 6	PCON-CA-20PI-①-2-0	Equipped with a high-output driver Positioner type based on PIO control	512 points			_	
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	_	→ P60
Field network type High-output specification		PCON-CA-20PI-W-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	(—)			_	
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-①-2-0	Pulse train input type with open collector support	(—)		Refer to P628	_	→ 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

- \*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.

# P2-RTCS/RTCSL

Model Specification Items RCP2 -20P ı Type — Encoder type — Motor type — Deceleration Ratio — Oscillation Angle — Applicable controller —

RTCS: 330-deg |: Incremental \* The Simple absolute rotation encoder is also RTCSI : Multiple considered type "I". rotation \* See page Pre-47 for details on the model descriptions

20P: Pulse motor, 30: 1/30

330: 330-degrees deceleration ratio 45: 1/45 (RTCS only) 360: 360-degrees (RTCSL only) deceleration

PSEL P3: PCON-CA

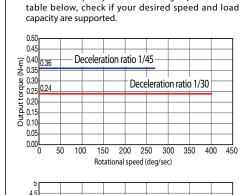
P1: PCON-PL/PO/SE PMEC/PSEP MSEP

Cable length N: None NM: Non-motor end P: 1m SA: Shaft adapter S: 3m TA: Table adapter

M:5m X□□:Custom length

■ Speed vs. Load Capacity CE RoHS Due to the characteristics of the pulse motor, the RCP2 series' load capacity decreases at high speeds. In the





Deceleration ratio 1/45 Deceleration ratio 1/30 50 100 150 200 250 300 350 400 Rotational speed (deg/sec)

400 450

selection

- (1) The output torque decreases as the rotational speed increases. Check the Output Torque graph on the right to see whether the speed required for your desired motion is supported.
- (2) The allowable moment of inertia of the rotated work piece varies with the rotational speed. Check the Allowable Moment of Inertia graph on the right to see if the moment of inertia required for your desired motion is within the allowable range.
- (3) The rated acceleration while moving is 0.2G.
- (4) Please note that the PMEC/PSEP controllers cannot be used when performing infinite rotation with the multiple rotation type.

#### Actuator Specifications

#### ■ Leads and Payload

Model number	Deceleration Ratio	Max. Torque (N·m)	Allowable Movement of Inertia (kg·m²)	Oscillation Angle (deg)
RCP2-RTCS-I-20P-30-330-①-②-③	1/30	0.24	0.0023	330
RCP2-RTCS-I-20P-45-330-①-②-③	1/45	0.36	0.0035	330
RCP2-RTCSL-I-20P-30-360-①-②-③	1/30	0.24	0.0023	360
RCP2-RTCSL-I-20P-45-360-①-②-③	1/45	0.36	0.0035	300

#### ■ Deceleration Ratio and Max. Speed

Stroke Deceleration ratio	330/360 (deg)
1/30	400
1/45	266
	(Unit: degrees/s)

Code explanation ① Applicable Controller ② Cable Length ③ Options

Type Oscillation Angle (deg)		Standard price
RTCS	330	_
RTCSL	360	_

#### ②Cable Length

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

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

ltem	Description
Drive System	Hypoid gear
Positioning repeatability	±0.05 degrees
Homing accuracy	±0.05 degrees
Lost motion	±0.1 degrees
Allowable thrust load	30N
Allowable load moment	3.6 N·m
Weight	0.48kg
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

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Name	Option code	See page	Standard price
Reversed-rotation	NM	→ A-52	_
Shaft adapter	SA	→ A-54	_
Table adapter	TA	→ A-56	_

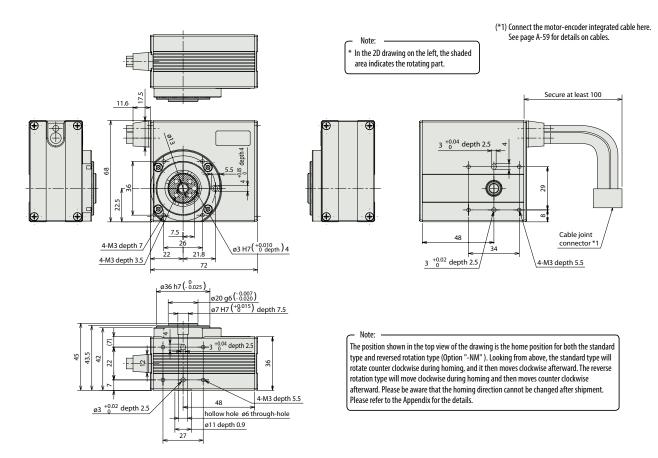
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#### Dimensional Drawings

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







Weight (kg)	0.48

① A	pplicab	le Con	trollers
UA	ppiicabi	ie Coli	trollers

Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Reference page
Calanaid Valua Tima	No.	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	lane.	MSEP-C	Positioner type based on PIO control, allowing up to 8 axes to be connected			Refer to		→ 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		P572	_	7 7503
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			_	
Pulse-train type High-output specification	1	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	DC24V		_	
Pulse Train Input Type (Differential Line Driver)	Ü	PCON-PL-20PI-①-2-0	Pulse train input type with differential line driver support	(—)			_	
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-①-2-0	Pulse train input type with open collector support	(—)		Refer to P628	_	→ 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	_	→ P66

\*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.

CE

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# P2-RTB/RTBL

Model Specification Items RCP2 —

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

Type RTB: 330-deg | I: Incremental rotation

RTBL: Multiple

rotation

— Encoder type — Motor type — Deceleration Ratio — Oscillation Angle — 28P: Pulse motor, 20: 1/20 \* The Simple absolute encoder is also considered type "I".

ı

- **28P** -

deceleration ratio 30: 1/30 deceleration

330: 330-degrees (RTB only) 360: 360-degrees (RTBL only)

P1: PCON-PL/PO/SE **PSEL** P3: PCON-CA PMEC/PSEP

 Applicable controller — Cable length — Options N: None P: 1m S: 3m NM: Non-motor end SA: Shaft adapter TA: Table adapter M:5m X□□: Custom length

MSEP R□□: Robot cable



(1) The output torque decreases as the rotational speed increases. Check the Output Torque graph on the right to see whether the speed required for your desired motion is supported.

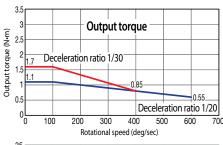
(2) The allowable moment of inertia of the rotated work piece varies with the rotational speed. Check the Allowable Moment of Inertia graph on the right to see if the moment of inertia required for your desired motion is within the allowable range.

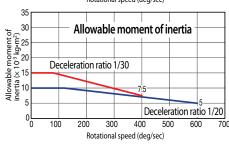
(3) The rated acceleration while moving is 0.3G.

(4) Please note that the PMEC/PSEP controllers cannot be used when performing infinite rotation with the multiple rotation type.

#### ■ 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

#### ■ Leads and Payload

Model number	Deceleration Ratio	Max. Torque (N·m)	Allowable Movement of Inertia (kg·m²)	Oscillation Angle (deg)
RCP2-RTB-I-28P-20-330-①-②-③	1/20	1.1	0.01	330
RCP2-RTB-I-28P-30-330-①-②-③	1/30	1.7	0.015	330
RCP2-RTBL-I-28P-20-360-①-②-③	1/20	1.1	0.01	360
RCP2-RTBL-I-28P-30-360-①-②-③	1/30	1.7	0.015	300
Code explanation   Applicable Controller   Cable Length   Options				

#### ■ Deceleration Ratio and Max. Speed

	•
Stroke  Deceleration ratio	330/360 (deg)
1/20	600
1/30	400
	/II % 1 / /

(Unit: degrees/s)

Stroke		
Туре	Oscillation Angle (deg)	Standard price
RTB	330	_
RTBL	360	_

#### 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)	_

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

#### ③ Options

Name	Option code	See page	Standard price
Reversed-rotation	NM	→ A-52	_
Shaft adapter	SA	→ A-54	
Table adapter	TA	→ A-56	

ltem	Description
Drive System	Hypoid gear
Positioning repeatability	±0.01 degrees
Homing accuracy	±0.01 degrees (RTB) / ±0.05 (RTBL)
Lost motion	±0.1 degrees
Allowable thrust load	50N
Allowable load moment	3.9 N·m
Weight	0.86kg
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

Cable joint

For Special Orders

## Dimensional Drawings

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



CAD

 In the 2D drawing below, the shaded area indicates the rotating part. 5-M3 depth 6 ø3H7 depth 4 4-M4 depth 7

Note: The position shown in the top view of the drawing is the home position for both the standard The position shown in the top view of the drawing is the nome position for both the standard type and reversed rotation type (Option "-NM"). Looking from above, the standard type will rotate counter clockwise during homing, and it then moves clockwise afterward. The reverse rotation type will move clockwise during homing and then moves counter clockwise afterward. Please be aware that the homing direction cannot be changed after shipment. Please refer to the Appendix for the details.

connector \*1 ø45h7 ø4 <sup>+0.03</sup> depth 2.5 ø11H7 depth 10 []A][ 11/A\11 83.5 4 <sup>+0.05</sup> depth 2.5 56 4 <sup>+0.05</sup> depth 2.5 (5.5)Secure at least 100 4-M4 depth 8

> (\*1) Connect the motor and encoder cables here. See page A-59 for details on cables.

\* The bend radius R of the cable is the same as other models

ø4 <sup>+0.03</sup> depth 2.5

Weight (kg) 0.86

#### ① Applicable Controllers

Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Referenc page
Calamaid Valua Tuma		PMEC-C-28PI-①-2-⑪	Easy-to-use controller, even for beginners		AC100V AC200V	Refer to P541	_	→ P537
Solenoid Valve Type	1	PSEP-C-28PI-①-2-0	Simple controller operable with the same signal as a solenoid valve	3 points		Refer to P555	_	→ P547
olenoid valve multi-axis type PIO specification	lane.	MSEP-C-(  )-~-( )-2-0	Positioner type based on PIO control, allowing up to 8 axes to be connected			Refer to		. DEC
olenoid 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-28PI-①-2-0	Equipped with a high-output driver Positioner type based on PIO control	512 points			_	→ P607
Pulse-train type High-output specification Field network type High-output specification	1	PCON-CA-28PI-PL□-2-0	Equipped with a high-output driver Pulse-train input type	(—)	Refer to P618	_		
		PCON-CA-28PI-⑩-0-0	Equipped with a high-output driver Supporting 7 major field networks	768 points	DC24V	44	_	
Pulse Train Input Type (Differential Line Driver)	Ü	PCON-PL-28PI-①-2-0	Pulse train input type with differential line driver support	(—)			_	
Pulse Train Input Type (Open Collector)		PCON-PO-28PI-①-2-0	Pulse train input type with open collector support	(—)		Refer to P628	_	→ P62
Serial Communication Type		PCON-SE-28PI-N-0-0	Dedicated Serial Communication	64 points			_	
Program Control Type		PSEL-CS-1-28PI-①-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points		Refer to P671	_	→ P66

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

# P2-RTC/RTC

Model Specification Items

RCP2 —

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

Type Encoder type — Motor type — Deceleration Ratio — Oscillation Angle -RTC: 330-deg | I: Incremental The Simple absolute rotation encoder is also RTCI · Multiple considered type "I". rotation

28P: Pulse motor, 20: 1/20 28□ size

28P -

deceleration ratio 30: 1/30 deceleration ratio

330: 330-degrees (RTC only) 360: 360-degrees (RTCL only)

- Applicable controller — P1: PCON-PL/PO/SE **PSEL** P3: PCON-CA PMEC/PSEP

MSEP

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

NM: Non-motor end SA: Shaft adapter TA: Table adapter

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

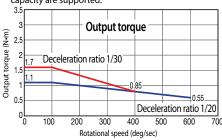


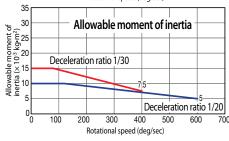
Notes or selection

- (1) The output torque decreases as the rotational speed increases. Check the Output Torque graph on the right to see whether the speed required for your desired motion is supported.
- (2) The allowable moment of inertia of the rotated work piece varies with the rotational speed. Check the Allowable Moment of Inertia graph on the right to see if the moment of inertia required for your desired motion is within the allowable range.
- (3) The rated acceleration while moving is 0.3G.
- (4) Please note that the PMEC/PSEP controllers cannot be used when performing infinite rotation with the multiple

#### ■ 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

#### ■ Leads and Payload

Model number	Deceleration Ratio	Max. Torque (N·m)	Allowable Movement of Inertia (kg·m²)	Oscillation Angle (deg)	
RCP2-RTC-I-28P-20-330-①-②-③	1/20	1.1	0.01	330	
RCP2-RTC-I-28P-30-330-①-②-③	1/30	1.7	0.015	330	
RCP2-RTCL-I-28P-20-360-①-②-③	1/20	1.1	0.01	360	
RCP2-RTCL-I-28P-30-360-①-②-③	1/30	1.7	0.015	300	

#### ■ Deceleration Ratio and Max. Speed

	·
Stroke  Deceleration ratio	330/360 (deg)
1/20	600
1/30	400
	(Unit: degrees/s)

Туре	Oscillation Angle (deg)	Standard price
RTC	330	_
RTCL	360	_

#### 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	<b>X11</b> (11m) ~ <b>X15</b> (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.

#### ③ Options

Name	Option code	See page	Standard price			
Reversed-rotation	NM	→ A-52	_			
Shaft adapter	SA	→ A-54	_			
Table adapter	TA	→ A-56	_			

Item	Description
Drive System	Hypoid gear
Positioning repeatability	±0.01 degrees
Homing accuracy	±0.01 degrees (RTC) / ±0.05 (RTCL)
Lost motion	±0.1 degrees
Allowable thrust load	50N
Allowable load moment	3.9 N·m
Weight	0.92kg
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

Dimensional Drawings

3D CAD

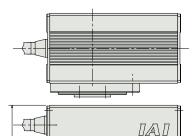
CAD drawings can be downloaded www.intelligentactuator.com

For Special Orders

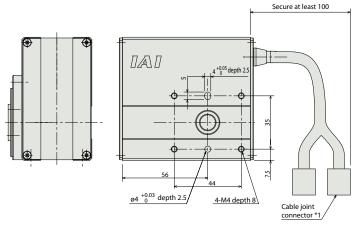




Note: f In the 2D drawing on the right, the shaded area indicates the rotating part.



(\*1) Connect the motor and encoder cables here. See page A-59 for details on cables.



5-M3 depth 6 4-M4 depth 7 ø3H7 depth 4 88 ø24h7 ø11H7 depth 10 4 +0.05 depth 2.5 4-M4 depth 8 ø4 <sup>+0.03</sup> depth 2.5 hollow hole ø10 through-hole ø15.4 depth 5.5

The position shown in the top view of the drawing is the home position for both the standard type and reversed rotation type (Option "-NM"). Looking from above, the standard type will rotate counter clockwise during homing, and it then moves clockwise afterward. The reverse rotation type will move clockwise during homing and then moves counter clockwise afterward. Please be aware that the homing direction cannot be changed after shipment. Please refer to the Appendix for the details.

\*The bend radius R of the cable is the same as other models.

Weight (kg) 0.92

① Applicable Contro	llers

Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Referen page
Calamaid Valua Tuma	***	PMEC-C-28PI-①-2-⑪	Easy-to-use controller, even for beginners		AC100V AC200V	Refer to P541	_	→ P53
Solenoid Valve Type	8	PSEP-C-28PI-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	diam'r	MSEP-C	Positioner type based on PIO control, allowing up to 8 axes to be connected			Refer to		— → 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		P572	_	
Positioner type High-output specification		PCON-CA-28PI-①-2-0	Equipped with a high-output driver Positioner type based on PIO control	512 points			_	
Pulse-train type High-output specification		PCON-CA-28PI-PL□-2-0	Equipped with a high-output driver Pulse-train input type	(—) DC24V		Refer to P618	_ →	→ P60
Field network type High-output specification		PCON-CA-28PI-①-0-0	Equipped with a high-output driver Supporting 7 major field networks	768 points	DC24V		_	
Pulse Train Input Type (Differential Line Driver)	O	PCON-PL-28PI-①-2-0	Pulse train input type with differential line driver support	( )			_	
Pulse Train Input Type (Open Collector)		PCON-PO-28PI-①-2-0	Pulse train input type with open collector support	(—)		Refer to P628	_	→ P62
Serial Communication Type	Ī	PCON-SE-28PI-N-0-0	Dedicated Serial Communication	64 points			_	
Program Control Type		PSEL-CS-1-28PI-①-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points		Refer to P671	_	→ P66

Note:

IAI

RCP2-RTC/RTCL 404

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

# P2-RTBB/RTBBL

rotation

ROBO Cylinder, Rotary, Large Vertical Type, Actuator Width 76mm, Pulse Motor

Model Specification Items

RCP2 — Type RTBB:330-deg

— Encoder type — Motor type — Deceleration Ratio — Oscillation Angle I: Incremental \* The Simple absolute rotation encoder is also RTBBL: Multiple considered type "I".

ı

35P: Pulse motor, 20: 1/20 35□ size

- 35P -

deceleration ratio 30: 1/30 deceleration

ratio

330: 330-degrees (RTBB only) 360: 360-degrees (RTBBL only)

P1: PCON-PL/PO/SE **PSEL** P3: PCON-CA PMEC/PSEP **MSEP** 

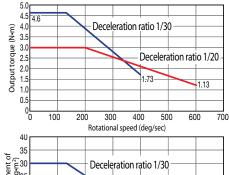
- Applicable controller — Cable length — Options N: None P: 1m S: 3m

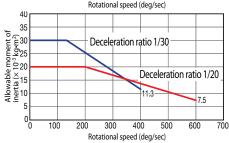
NM: Non-motor end SA: Shaft adapter TA: Table adapter

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

■ 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.





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Notes or selection

- (1) The output torque decreases as the rotational speed increases. Check the Output Torque graph on the right to see whether the speed required for your desired motion is supported.
- (2) The allowable moment of inertia of the rotated work piece varies with the rotational speed. Check the Allowable Moment of Inertia graph on the right to see if the moment of inertia required for your desired motion is within the allowable range.
- (3) The rated acceleration while moving is 0.3G.
- (4) Please note that the PMEC/PSEP controllers cannot be used when performing infinite rotation with the multiple

#### Actuator Specifications

#### ■ Leads and Payload

Model number	Deceleration Ratio	Max. Torque (N·m)	Allowable Movement of Inertia (kg · m²)	Oscillation Angle (deg)
RCP2-RTBB-I-35P-20-330-①-②-③	1/20	3.0	0.02	330
RCP2-RTBB-I-35P-30-330-①-②-③	1/30	4.6	0.03	330
RCP2-RTBBL-I-35P-20-360-①-②-③	1/20	3.0	0.02	360
RCP2-RTBBL-I-35P-30-360-①-②-③	1/30	4.6	0.03	300

#### ■ Deceleration Ratio and Max. Speed

Stroke  Deceleration ratio	330/360 (deg)
1/20	600
1/30	400
	(Unit- degrees/s)

Type Oscillation Angle (deg)		Standard price	
RTBB	330	_	
RTBBL	360	_	

#### ②Cable Length

Туре	Cable symbol	Standard Price
	<b>P</b> (1m)	_
Standard	<b>S</b> (3m)	_
	<b>M</b> (5m)	<del>-</del>
	<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.

#### ③ Options

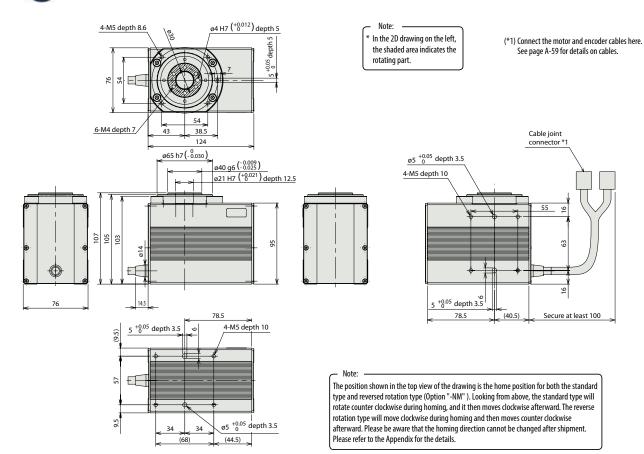
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Name	Option code	See page	Standard price
Reversed-rotation	NM	→ A-52	_
Shaft adapter	SA	→ A-54	_
Table adapter	TA	→ A-56	_

Item	Description
Drive System	Hypoid gear
Positioning repeatability	±0.01 degrees
Homing accuracy	±0.01 degrees (RTBB) / ±0.03 (RTBBL)
Lost motion	±0.1 degrees
Allowable thrust load	200N
Allowable load moment	17.7 N·m
Weight	2.3kg
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

Dimensional Drawings

CAD drawings can be downloaded www.intelligentactuator.com

For Special Orders



Weight (kg)	2.3

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Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Reference page
Colored Miles Torre	100	PMEC-C-35PI-①-2-⑪	Easy-to-use controller, even for beginners		AC100V AC200V	Refer to P541	_	→ P537
Solenoid Valve Type	1	PSEP-C-35PI-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	A COLUMN	MSEP-C-(-)-2-0	Positioner type based on PIO control, allowing up to 8 axes to be connected			Refer to		→ P56
olenoid valve multi-axis type Network specification		MSEP-C-((1)-~-((V)-0-0	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points		P572	_	→ P50
Positioner type High-output specification	á	PCON-CA-35PI-①-2-0	Equipped with a high-output driver Positioner type based on PIO control	512 points			_	
Pulse-train type High-output specification		PCON-CA-35PI-PL□-2-0	Equipped with a high-output driver Pulse-train input type	(—)	DC24V	Refer to P618	-	→ P60
Field network type High-output specification		PCON-CA-35PI-⑩-0-0	Equipped with a high-output driver Supporting 7 major field networks	768 points	DC24V		-	
Pulse Train Input Type (Differential Line Driver)		PCON-PL-35PI-①-2-0	Pulse train input type with differential line driver support	(—)			-	
Pulse Train Input Type (Open Collector)		PCON-PO-35PI-①-2-0	Pulse train input type with open collector support	(—)		Refer to P628	ı	→ P62
Serial Communication Type		PCON-SE-35PI-N-0-0	Dedicated Serial Communication	64 points			_	
Program Control Type		PSEL-CS-1-35PI-①-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points		Refer to P671	_	→ P66

- \*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.

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

# P2-RTCB/RTCBI

Model Specification Items RCP2 -35P — Type — Encoder type — Motor type — Deceleration Ratio — Oscillation Angle — Applicable controller — Cable length

> RTCB: 330-deg |: Incremental The Simple absolute rotation encoder is also RTCRI : Multiple considered type "I". rotation

35P: Pulse motor, 20: 1/20 deceleration ratio 30: 1/30 35□ size deceleration ratio

330: 330-degrees (RTCB only) 360: 360-degrees (RTCBL only)

P1: PCON-PL/PO/SE **PSEL** P3: PCON-CA PMEC/PSEP

MSEP

N: None P: 1m S: 3m

NM: Non-motor end TA: Table adapter

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

RoHS Technical References

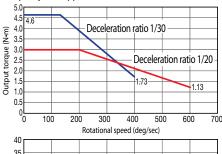


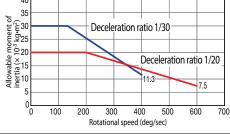
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- (1) The output torque decreases as the rotational speed increases. Check the Output Torque graph on the right to see whether the speed required for your desired motion is supported.
- (2) The allowable moment of inertia of the rotated work piece varies with the rotational speed. Check the Allowable Moment of Inertia graph on the right to see if the moment of inertia required for your desired motion is within the allowable range.
- (3) The rated acceleration while moving is 0.3G.
- (4) Please note that the PMEC/PSEP controllers cannot be used when performing infinite rotation with the multiple

#### ■ 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

#### ■ Leads and Payload

Model number	Deceleration Ratio	Max. Torque (N·m)	Allowable Movement of Inertia (kg · m²)	Oscillation Angle (deg)
RCP2-RTCB-I-35P-20-330-①-②-③	1/20	3.0	0.02	330
RCP2-RTCB-I-35P-30-330-①-②-③	1/30	4.6	0.03	330
RCP2-RTCBL-I-35P-20-360-①-②-③	1/20	3.0	0.02	360
RCP2-RTCBL-I-35P-30-360-①-②-③	1/30	4.6	0.03	300

#### ■ Deceleration Ratio and Max. Speed

Stroke  Deceleration ratio	330/360 (deg)
1/20	600
1/30	400
	(Unit: degrees/s)

Option code

NM

SA

TA

See page

→ A-52

→ A-54

→ A-56

Standard price

③ Options

Reversed-rotation

Shaft adapter

Table adapter

Туре	Oscillation Angle (deg)	Standard price
RTCB	330	_
RTCBL	360	_

#### ②Cable Length

Type	Cable symbol	Standard Price
	<b>P</b> (1m)	<del>-</del>
Standard	<b>S</b> (3m)	_
	<b>M</b> (5m)	<del>-</del>
	<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)	_

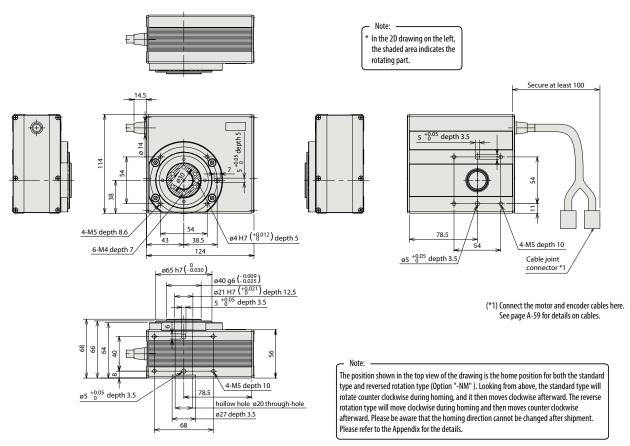
<sup>\*</sup> See page A-59 for cables for maintenance.

ltem	Description
Drive System	Hypoid gear
Positioning repeatability	±0.01 degrees
Homing accuracy	±0.01 degrees (RTCB) / ±0.03 (RTCBL)
Lost motion	±0.1 degrees
Allowable thrust load	200N
Allowable load moment	17.7 N·m
Weight	2.2kg
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

For Special Orders







Woight (kg)	าา

(1) A p	nlicahl	e Con	trollers
UAD		e com	UOHEIS

Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Referen page
Calamaid Valua Tuma	***	PMEC-C-35PI-①-2-⑪	Easy-to-use controller, even for beginners		AC100V AC200V	Refer to P541	_	→ P53
Solenoid Valve Type	8	PSEP-C-35PI-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	diam'r	MSEP-C	Positioner type based on PIO control, allowing up to 8 axes to be connected			Refer to		. DE
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	256 points		_	→ P563
Positioner type High-output specification		PCON-CA-35PI-①-2-0	Equipped with a high-output driver Positioner type based on PIO control	512 points			_	
Pulse-train type High-output specification		PCON-CA-35PI-PL□-2-0	Equipped with a high-output driver Pulse-train input type	(—)	DC24V	Refer to P618	_	→ P60
Field network type High-output specification		PCON-CA-35PI-௵-0-0	Equipped with a high-output driver Supporting 7 major field networks	768 points	DC24V		_	
Pulse Train Input Type (Differential Line Driver)	Ĉ.	PCON-PL-35PI-①-2-0	Pulse train input type with differential line driver support	( )			_	
Pulse Train Input Type (Open Collector)		PCON-PO-35PI-①-2-0	Pulse train input type with open collector support	- (—)		Refer to P628	ı	→ P62
Serial Communication Type		PCON-SE-35PI-N-0-0	Dedicated Serial Communication	64 points			_	
Program Control Type		PSEL-CS-1-35PI-①-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points		Refer to P671	_	→ P66

S2-RTC8|

ROBO Cylinder, Hollow Rotary, Small Standard Type, Actuator Width 85mm, 200V servo Motor

ROBO Cylinder, Hollow Rotary, Small High Output Type, Actuator Width 85mm, 200V servo Motor

**T2** 

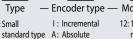
Model Specification Items

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

RCS2 Series Type RTC8L: Small

RTC8HL: Small high

output type



 Motor type 12: 12W Servo motor 20: 20W Servo motor

Deceleration Ratio — Oscillation Angle — Applicable controller — 15: 1/15 deceleration ratio 24: 1/24 deceleration ratio

360: 360-degrees (multiple rotation)

**- 360** 

T2: SCON MSCON SSEL XSEL-P/Q XSEL-R/S

N: None See C P: 1m S: 3m M:5m X□□:Custom length R□□:Robot cable See Options below.

Cable length

Options

CE RoHS \*CE compliance is optional.



Technical References

Notes or selectio

(1) The rated and maximum acceleration is 0.3G.

(2) Positioning mode can move between 0 to 9,999.99 deg (0 to 7,670.99 deg with reduction ratio of 1/24). Index rotation mode can move from 0 to 359.99 deg. (Once the

actuator moves beyond 359.99 deg, it resets to 0 without having to rotate back to home.)

(3) Actuator may vibrate as it moves if the speed is lower than 100 deg/s. Please drive the unit at or above 100mm/s.

#### Actuator Specifications

#### ■ Leads and Payload

Model number	Motor Output (N)	Deceleration Ratio	Max. Torque (N·m)	Allowable Movement of Inertia (kg·m²)	Oscillation Angle (deg)
RCS2-RTC8L-①-12-24-360-T2-②-③	12	1/24	0.55	0.011	
RCS2-RTC8HL-①-20-15-360-T2-②-③	20	1/15	0.53	0.01	360 (*)
RCS2-RTC8HL-①-20-24-360-T2②-③	20	1/24	0.85	0.017	
Code explanation © Encoder type ② Cable length ③ Options *Refer to "POINT Notes on Selection" above.					

#### ■ Deceleration Ratio and Max. Speed

Stroke  Deceleration ratio	360 (deg)
1/15	1200
1/24	750

(Unit: degrees/s)

#### ①Encoder Type

③ Options

CE compliance

Reversed-rotation

Brake

Туре	Standard price			
	①Encoder Type			
	Incremental	Absolute		
RTC8L	_	_		
RTC8HL				

Option code

B

CE

L

NM

#### 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)	_

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

#### Actuator Specifications

See page Standard price

→ A-42

→ A-42

→ A-51

→ A-52

ltem	Description
Drive System	Timing belt drive system + hypoid gear
Positioning repeatability	±0.005 degrees
Backlash	±0.05 degrees or less
Allowable thrust load	400N
Allowable load moment	5 N·m
Brake retention torque	0.42 N·m
Weight	2.3kg
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

Name

Limit switch (standard feature)

### www.intelligentactuator.com

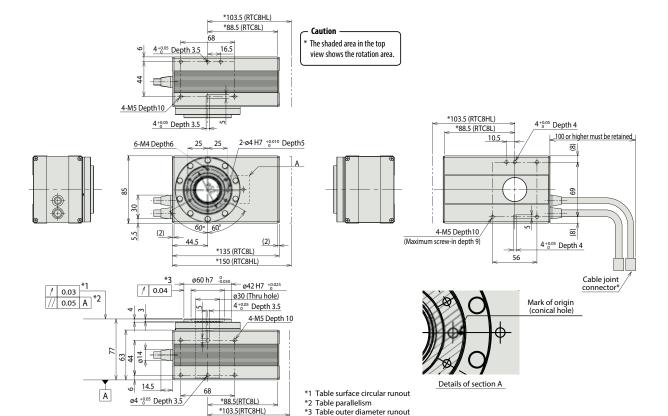
For Special Orders







\* Connect the motor and encoder cables here. (See page A-59 for details on cables.)



Note:

The position in the detail A drawing above is the homing location for both standard type/ reversed rotation type (Option "-NM" ). Looking from the above, the standard type will rotate counter clockwise during homing, and it moves clockwise afterward. Reverse rotation type will move clockwise during homing and moves counter clockwise afterward.

#### Applicable Controllers

RCS2-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	H	SCON-CA-12①-NP-2-①	Actuators can be operated through the same control used for solenoid valves.	7 points		106 VA max.	_	→ P643
Field network type		SCON-CA-20①-NP-2-⑪	Movement by numerical specification is supported.	768 points	Single-phase 100VAC	*Power supply capacity will	_	7 7043
Pulse-train input control type			Dedicated pulse-train input type	(—)	Single-phase 200VAC 3-phase	vary depending on the controller, so	_	
Positioner multi-axis, network type	自持	MSCON-C-1-12①-‹②-0-⑪ MSCON-C-1-20①-‹②-0-⑪	Up to 6 axes can be operated. Movement by numerical specification is supported.	256 points	200VAC (XSEL-P/Q/R/S ONLY) please refer to the instruction manual for details.	_	→ P655	
Program control type, 1 to 2 axes		SSEL-CS-1-12①-NP-2-⑪ SSEL-CS-1-20①-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-@-1-12①-N1-EEE-2-® XSEL-@-1-20①-N1-EEE-2-®	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: 100 V / 2: Single-phase 200V / 3: Three-phase 200V).

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

Slider Type

Mini

Standard

Integrated

Roc Type

Min

Standard

Integrated

Table/ Arm/ Flat Type

Min

Rotary Type

> Servo Type

roon Typ

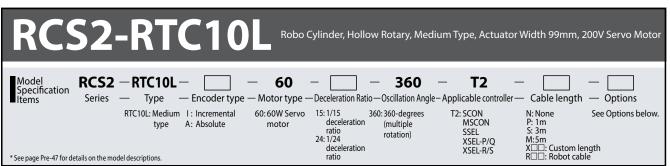
Splash Proo Type

> Puls Moto

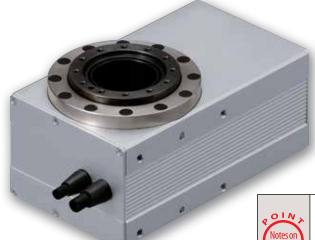
Servo Moto (24V

Servo Motor (200V)

Linear Servo Motor



RoHS
\*CE compliance is optional.



Technical References Ap

- (1) The rated and maximum acceleration is 0.3G.
- (2) Positioning mode can move between 0 to 9,999.99 deg (0 to 7,670.99 deg with reduction ratio of 1/24). Index rotation mode can move from 0 to 359.99 deg. (Once the actuator moves beyond 359.99 deg, it resets to 0 without having to rotate back to home.)
- (3) Actuator may vibrate as it moves if the speed is lower than 100 deg/s. Please drive the unit at or above 100mm/s.

#### Actuator Specifications

#### ■ Leads and Payload

Model number	Motor Output (W)	Deceleration Ratio	Max. Torque (N·m)	Allowable Movement of Inertia (kg · m²)	Oscillation Angle (deg)
RCS2-RTC10L-①-60-15-360-T2-②-③	60	1/15	1.7	0.033	360
RCS2-RTC10L-①-60-24-360-T2-②-③	00	1/24	2.8	0.054	(*)

Code explanation ① Encoder type ② Cable length ③ Options

\* Refer to "POINT Notes on Selection" above.

selectio

Stroke  Deceleration ratio	360 (deg)
1/15	1200
1/24	750

(Unit: degrees/s)

■ Deceleration Ratio and Max. Speed

① Encoder Type

③ Options

Brake

	Standar	d price
Туре	①Encoder Type	
	Incremental	Absolute
RTC10L	_	_

Option code

В

CE

NM

See page

→ A-42

→ A-42

→ A-51

→ A-52

Standard price

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)	_

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

#### Actuator Specifications

ltem	Description
Drive System	Timing belt drive system + hypoid gear
Positioning repeatability	±0.005 degrees
Backlash	±0.05 degrees or less
Allowable thrust load	600N
Allowable load moment	10 N·m
Brake retention torque	0.45 N·m
Weight	3.5kg
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

Name

**CE-compliant specification** 

Limit switch (standard)

Reversed-rotation

#### Dimensional Drawings

#### www.intelligentactuator.com

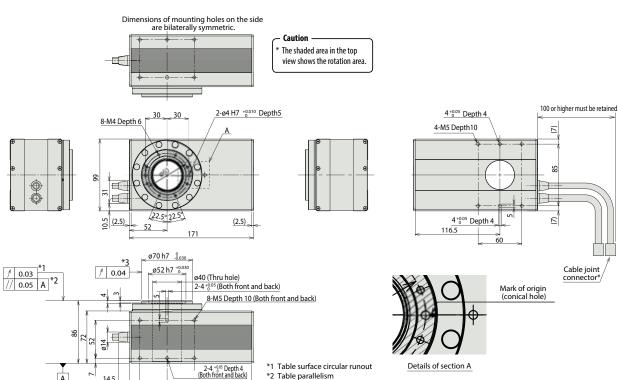
For Special Orders







Connect the motor and encoder cables here. (See page A-59 for details on cables.)



Note:

\*2 Table parallelism \*3 Table outer diameter runout

The position in the detail A drawing above is the homing location for both standard type/ reversed rotation type (Option "-NM"). Looking from the above, the standard type will rotate counter clockwise during homing, and it moves clockwise afterward. Reverse rotation type will move clockwise during homing and moves counter clockwise afterward.

#### Applicable Controllers

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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	H	SCON-CA-60(1)-NP-2-(11)	Actuators can be operated through the same control used for solenoid valves.	7 points		218 VA max.	_	→ P643
Field network type		SCON-CA-00()-INF-2-()	Movement by numerical specification is supported.	768 points	Single-phase 100VAC	*Power supply capacity will	_	7 1043
Pulse-train input control type			Dedicated pulse-train input type	(—)	Single-phase 200VAC 3-phase	vary depending on the controller, so	_	
Positioner multi-axis, network type	田林	MSCON-C-1-60①-②-0-⑪	Up to 6 axes can be operated. Movement by numerical specification is supported.	256 points	200VAC (XSEL-P/Q/R/S ONLY) please refer to the instruction manual for details.		_	→ P655
Program control type, 1 to 2 axes		SSEL-CS-1-60①-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-(II)-1-60(I)-N1-EEE-2-(IV)	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.

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

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

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

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

- \* ① indicates the encoder type (I: Incremental / A: Absolute).

Туре

Mini

Standard

Controllers Integrated

> Roc Type

Min

Standard

Controllers Integrated

> Table/ Arm/ Flat Type

> > Mini

Jianuaru

Gripper/ Rotary Type

> Linear Servo Type

roor Typ

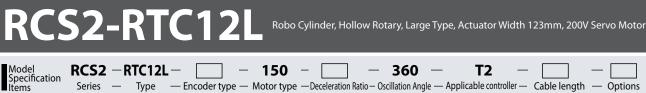
Splash Proo Type

> Puls Moto

Servo Moto (24V

Servo Motor (200V)

Linear Servo Motor



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

RTC12L: Large



I: Incremental

A: Absolute

Technical References

Appendix P.5

(Unit: degrees/s)

The rated and maximum acceleration is 0.3G.
 Positioning mode can move between 0 to 9,999.99 deg (0 to 6,140.99 deg with reduction ratio of 1/30).
 Index rotation mode can move from 0 to 359.99 deg. (Once the actuator moves beyond 359.99 deg, it resets to 0 without having to rotate back to home.)

(3) Actuator may vibrate as it moves if the speed is lower than 100 deg/s. Please drive the unit at or above 100mm/s.

#### Actuator Specifications

#### ■ Leads and Payload

Model number	Motor Output (W)	Deceleration Ratio	Max. Torque (N·m)	Allowable Movement of Inertia (kg · m²)	Oscillation Angle (deg)
RCS2-RTC12L-①-150-18-360-T2-②-③	150	1/18	5.2	0.1	360
RCS2-RTC12L-①-150-30-360-T2-②-③		1/30	8.6	0.17	(*)

See page Standard price

→ A-42

→ A-42

→ A-51

→ A-52

Code explanation ① Encoder type ② Cable length ③ Options

\* Refer to "POINT Notes on Selection" above.

#### ■ Deceleration Ratio and Max. Speed

Stroke  Deceleration ratio	360 (deg)
1/18	800
1/30	600

① Encoder Type

③ Options

Brake

	Standard price		
Туре	①Encoder Type		
	Incremental	Absolute	
RTC12L	_	_	

Option code

B

CE

L

NM

#### ② 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)	_
Robot Cable	R04 (4m) ~ R05 (5m)	_
	<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

ltem	Description
Drive System	Timing belt drive system + hypoid gear
Positioning repeatability	±0.005 degrees
Backlash	±0.05 degrees or less
Allowable thrust load	800N
Allowable load moment	25 N·m
Brake retention torque	1.0 N·m
Weight	6.5kg
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

413 RCS2-RTC12L

Name

CE-compliant specification

Limit switch (standard)

Reversed-rotation

#### Dimensional Drawings

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

For Special Orders



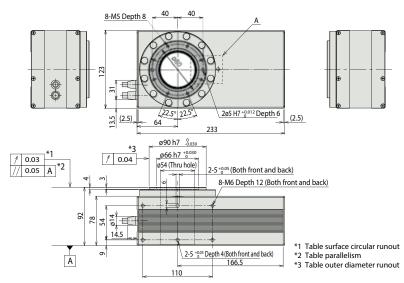




Connect the motor and encoder cables here. (See page A-59 for details on cables.)

Dimensions of mounting holes on the side are bilaterally symmetric.

Caution The shaded area in the top view shows the rotation area.



ø5+0.05 Depth 4 100 or higher must be retained 108  $\blacksquare$ 4-M6 Depth12 Ø5+0.05 Depth 4 (7.5) Cable joint connector\*

Mark of origin (conical hole) Details of section A

The position in the detail A drawing above is the homing location for both standard type/ reversed rotation type (Option "-NM" ). Looking from the above, the standard type will rotate counter clockwise during homing, and it moves clockwise afterward. Reverse rotation type will move clockwise during homing and moves counter clockwise afterward.

#### Applicable Controllers

RCS2-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	W	SCON-CA-150()-NP-2-(ii)	Actuators can be operated through the same control used for solenoid valves.	7 points		408 VA max.	_	→ P643
Field network type		3CON-CA-130()-NF-2-()	Movement by numerical specification is supported.	768 points	Single-phase 100VAC	*Power supply capacity will	_	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
Pulse-train input control type			Dedicated pulse-train input type	(—)	Single-phase 200VAC 3-phase	vary depending on the controller, so	_	
Positioner multi-axis, network type	田林	MSCON-C-1-150①-②-0-⑪	Up to 6 axes can be operated. Movement by numerical specification is supported.	256 points	200VAC please refer to the instruction 0NLY) manual for		_	→ P655
Program control type, 1 to 2 axes		SSEL-CS-1-150①-NP-2-①	Program operation is supported. Up to 2 axes can be operated.	20,000 points		details.	_	→ P685
Program control type, 1 to 8 axes	Pilita	XSEL	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

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

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

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

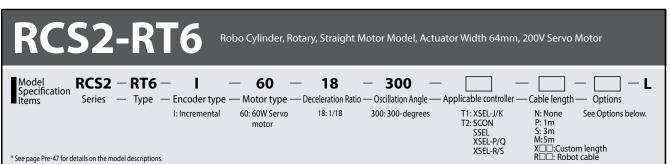
\*(iii) indicates the power-supply voltage type (1: 100 V / 2: Single-phase 200 V).

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

RCS2-RTC12L 414

IAI





 $C \in$ RoHS \*CE compliance is optional.



**Technical** References

(1) The thrust load is the mechanical strength of the output axis at rest. When selecting, take into account the load moment and the load inertia. (2) The rated acceleration while moving is 0.3G.

Actuator Specifications

■ Lead and Payload

a ceua una i ayioua						
Model number	Motor Output (W)	Deceleration Ratio	Rated Torque (N•m)	Allowable Moment of Inertia (kg•m²)	Oscillation Angle (deg)	
RCS2-RT6-I-60-18-300-①-②-③-L	60	1/18	2.4	2.5 x 10 <sup>-2</sup> or less	300	

■ Deceleration Ratio and Max. Speed

	•
Oscillation Angle  Deceleration ratio	300 (deg)
1/18	500

Stroke				
	S	tr	o	ke

Oscillation Angle (deg)	Standard price
300	_

② Cable Length

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

Options			
Name	Option code	See page	Standard price
CE compliance	CE	→ A-42	_
Limit switch (standard)	L	→ A-51	_

ltem	Description		
Drive System	Ball speed reducer		
Positioning repeatability	±0.02 degrees		
Lost motion	0.1degrees or less		
Base	Material: Aluminum, white alumite treated		
Allowable load moment	Ma: 6.8 N·m or less		
Thrust load	100N or less		
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)		

#### Dimensional Drawings

3D CAD

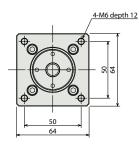
CAD drawings can be downloaded www.intelligentactuator.com

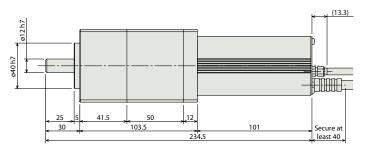
For Special Orders

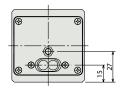




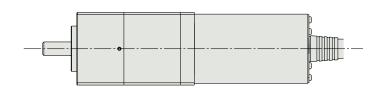
(200) Cable joint connector \*1 







(\*1) The motor cable, encoder cable, and limit switch cable are connected here. See page A-59 for details on cables.



Weight (kg)	1.9

(1) A	m li an		- water	ollers
UAD	DIIGO	DIE U	COLLINE	oners

Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power supply capacity	Standard price	Reference page
Positioner mode		SCON-CA-60I-NP-2-①	Up to 512 positioning points are supported.	512 points	Single-phase 100VAC Single-phase 200VAC 3-phase	100VAC *Power supply capacity will single-phase vary depending	_	- → P643
Solenoid valve mode	H		Actuators can be operated through the same control used for solenoid valves.	7 points				
Field network type			Movement by numerical specification is supported.	768 points			_	
Pulse-train input control type			Dedicated pulse-train input type	(-)			_	
Positioner multi-axis, network type	图器	MSCON-C-1-60	Up to 6 axes can be operated. Movement by numerical specification is supported.	256 points	200VAC (XSEL-P/Q/R/S		_	→ P655
Program control type, 1 to 2 axes		SSEL-CS-1-60I-NP-2-①	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)-1-60I-N1-EEE-2-(11)	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 XSEL type (J/K/P/Q/R/S).

\* ② indicates field network specification symbol.

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