

RCP2-RTBS/RTBSL

ROBO Cylinder, Rotary, Small Vertical Type, Actuator Width 45mm, Pulse Motor

Model Specification Items	RCP2 — <input type="checkbox"/> — I — 20P — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/>
	Series — Type — Encoder type — Motor type — Deceleration Ratio — Oscillation Angle — Applicable controller — Cable length — Options
	RTBS: 330-deg rotation RTBSL: Multiple rotation
	I: Incremental rotation * The Simple absolute encoder is also considered type "I".
	20P: Pulse motor, 20□ size
	30: 1/30 deceleration ratio 45: 1/45 deceleration ratio
	330: 330-degrees (RTBS only) 360: 360-degrees (RTBSL only)
	P1: PCON-PL/PO/SE PSEL P3: PCON-CA PMEC/PSEP MSEP
	N: None P: 1m S: 3m M: 5m X□□: Custom length
	NM: Non-motor end SA: Shaft adapter TA: Table adapter

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



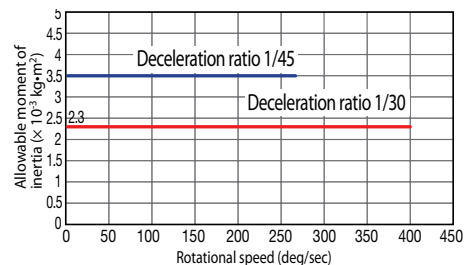
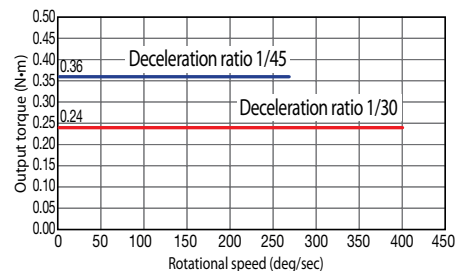
Technical References Appendix P.5



- (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.

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·m ²)	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	
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	

Deceleration Ratio and Max. Speed

Stroke	330/360 (deg)
Deceleration ratio 1/30	400
Deceleration ratio 1/45	266

(Unit: degrees/s)

Code explanation ① Applicable Controller ② Cable Length ③ Options

Stroke

Type	Oscillation Angle (deg)	Standard price
RTBS	330	—
RTBSL	360	—

② Cable Length

Type	Cable symbol	Standard Price
Standard (Robot Cables)	P (1m)	—
	S (3m)	—
	M (5m)	—
Special length	X06 (6m) ~ X10 (10m)	—
	X11 (11m) ~ X15 (15m)	—
	X16 (16m) ~ X20 (20m)	—
	—	—

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

③ Options


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

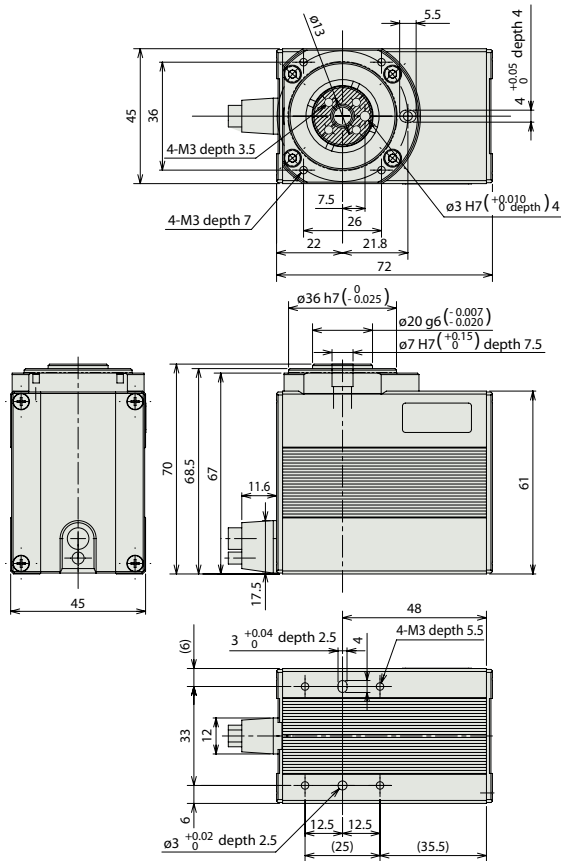
Actuator Specifications

Item	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

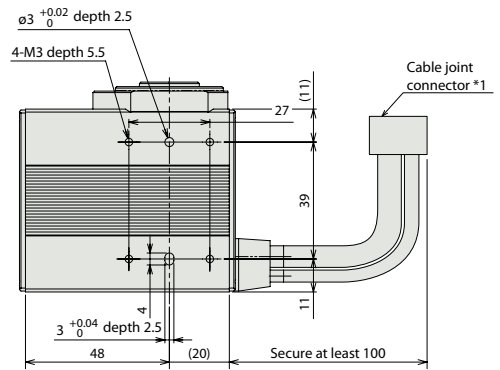
CAD drawings can be downloaded from the website. www.intelligentactuator.com

For Special Orders  Appendix P.15



Note:
* In the 2D drawing on the left, the shaded area indicates the rotating part.

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



Note:
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.

Weight (kg) 0.52

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
Solenoid Valve Type		PMEC-C-20PI-①-2-②	Easy-to-use controller, even for beginners	3 points	DC24V	AC100V	Refer to P541	→ P537
		PSEP-C-20PI-①-2-0	Simple controller operable with the same signal as a solenoid valve			Refer to P555	→ P547	
Solenoid valve multi-axis type PIO specification		MSEP-C-①①①-①-2-0	Positioner type based on PIO control, allowing up to 8 axes to be connected	256 points		Refer to P572	→ P563	
Solenoid valve multi-axis type Network specification		MSEP-C-①①①-④-0-0	Field network-ready positioner type, allowing up to 8 axes to be connected					
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	→ P607	
Pulse-train type High-output specification		PCON-CA-20PI-PL□-2-0	Equipped with a high-output driver Pulse-train input type	(—)				
Field network type High-output specification		PCON-CA-20PI-④-0-0	Equipped with a high-output driver Supporting 7 major field networks	768 points				
Pulse Train Input Type (Differential Line Driver)		PCON-PL-20PI-①-2-0	Pulse train input type with differential line driver support	(—)		Refer to P628	→ P623	
Pulse Train Input Type (Open Collector)		PCON-PO-20PI-①-2-0	Pulse train input type with open collector support					
Serial Communication Type		PCON-SE-20PI-N-0-0	Dedicated Serial Communication	64 points	Refer to P671	→ P665		
Program Control Type		PSEL-CS-1-20PI-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). * ④ indicates power supply voltage (1: 100V / 2: 100~240V). * ①①① indicates number of axes (1 to 8). * ④ indicates field network specification symbol. * □ indicates N (NPN specification) or P (PNP specification) symbol.