RCL-RA1L

ROBO Cylinder, Rod Type, Mini Slim Type, Main unit diameter: 16mm, Linear Servo Motor

Model Specification Items

RCL	RA1L	I	2	N	25	□	□	□
Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
		I: Incremental specification	2: Linear servo motor 2W	N: No screw	25: 25mm	A1: ACON ASEL A3: AMEC ASEP MSEP	N: None P: 1m S: 3m M: 5m X□□: Custom Length	B: Brake (with brake box) BN: Brake (without brake box)

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

RoHS

Technical References Appendix P.5

POINT Notes on selection

(1) The payload is determined by the acceleration and duty.
Verify the payload in the payload (horizontal) and acceleration chart at right.
The duty is $\frac{\text{Operating time}}{\text{Operating time + stop time}}$ x 100 per cycle.

(2) If the actuator is operated vertically, use the optional brake specification.

(3) Please use an external guide to avoid a horizontal or rotational load applied to the rod.

(4) The pushing force fluctuation increases when the current limit is low.

(5) Simple absolute unit cannot be used with the RCL series.

■ Relation between payload (horizontal) and acceleration

Maximum Acceleration (G)	Load Capacity (kg)			
	Continuous operation (Duty is 100%)		Duty is 70% or less	
	Holizontal	Vertical	Holizontal	Vertical
0.1	0.5	0.1	0.5	0.1
0.3				
0.5	0.42			
1	0.2		0.25	
1.5	0.11	—	0.15	—
2	0.07	—	0.1	—

■ Pushing force guidelines

Pushing operation is possible within the range of numeric values listed below.

(N)

Electric current limit	30%	40%	50%	60%	70%	80%
Pushing force	0.75	1	1.25	1.5	1.75	2

* The pushing forces listed above are for horizontal usage. If facing vertically upward, subtract 0.5N from the numeric values listed above, but if facing vertically downward, add 0.5N.

Actuator Specifications

■ Lead and Payload

Model number	Motor output(W)	Maximum payload		Rated thrust (N)	Instantaneous maximum thrust (N)	Maximum acceleration (G)	Positioning repeatability (mm)	Stroke (mm)
		Horizontal (kg)	Vertical (kg)					
RCL-RA1L-I-2-N-25-①-②-③	2	See chart above	See chart above	2.5	10	Holizontal 2G Vertical 1G	±0.1	25 (Fixed)

Code explanation ① Applicable controller ② Cable length ③ Options

■ Stroke and Maximum Speed

Stroke / Lead	25 (mm)
(no screw)	300

(Unit: mm/s)

Stroke

Stroke (mm)	Standard price
25	—

②Cable Length

Type	Cable symbol	Standard price	
		with Brake	without Brake
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 for the RCL is the robot cable.
* See page A-59 for the cable for non-brake specification.
* See page 438 for the cable for brake specification.
(All prices represent the total of an integrated motor/encoder/brake cable.)

③Options

Title	Option code	See page	Standard Price
Brake (with brake box)	**B**	→ P438	—
Brake (without brake box)	**BN**	→ P438	—

* The brake box and cable with brake is needed to use the brake. If only the actuator with brake is needed for a repair, specify the BN (specification without brake box).

Actuator Specifications

Item	Description
Drive System	Linear servo motor
Encoder resolution	0.042mm
Pipe	Material: Nickel-plated carbon steel tube
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)
Service life	10 million cycles

Dimensional Drawings

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

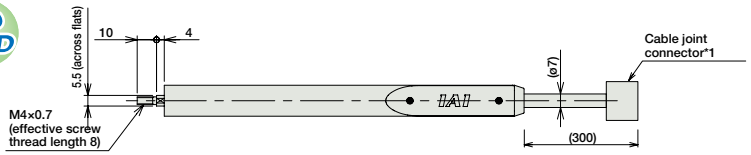
2D CAD 3D CAD

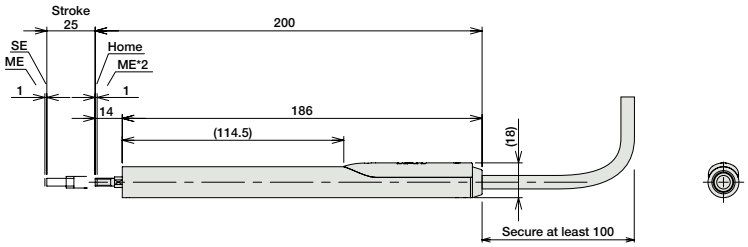
For Special Orders Appendix P.15

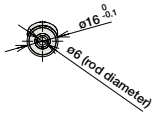
(*1) Connect the motor-encoder integrated cable here. See page A-59 for details on cables.
(*2) During home return, the slider travels until the mechanical end, so be careful to avoid interference from peripheral objects.

Note: Please refer to page A-12 for the actuator mounting instruction.

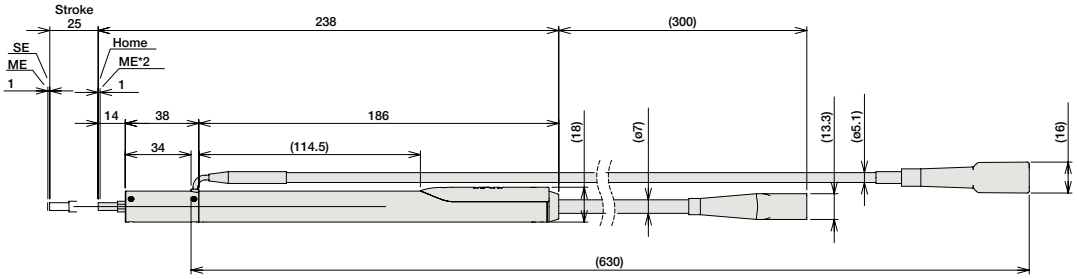
(No brake)

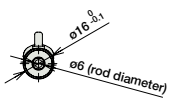




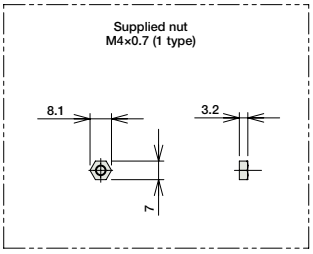


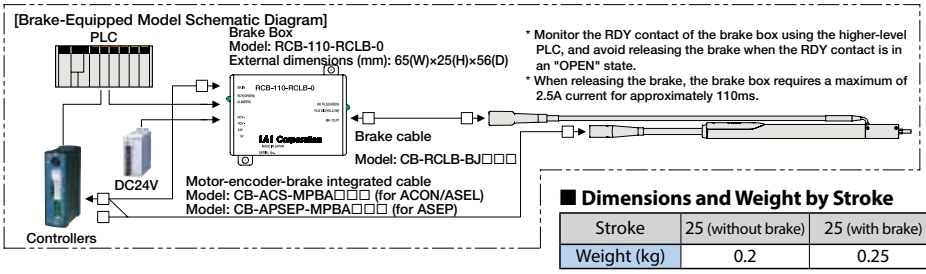
(With brake)





ME : Mechanical end
SE : Stroke end





Dimensions and Weight by Stroke

Stroke	25 (without brake)	25 (with brake)
Weight (kg)	0.2	0.25

①Applicable Controllers

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

Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Reference page
Solenoid Valve Type		AMEC-C-2I-①-2-1	Easy-to-use controller, even for beginners	3 points	AC100V	2.4A rated	—	→ P537
		ASEP-C-2I-①-2-0	Simple controller operable with the same signal as a solenoid valve		DC24V	0.8A rated 4.6A max.	—	→ P547
Solenoid valve multi-axis type PIO specification		MSEP-C-ⅱ-~~-①-2-0	Positioner type based on PIO control, allowing up to 8 axes to be connected				—	→ P563
Solenoid valve multi-axis type Network specification		MSEP-C-ⅱ-~~-ⅲ-0-0	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points				
Positioner type		ACON-C-2I-①-2-0	Positioning is possible for up to 512 points	512 points			—	→ P631
Safety-Compliant Positioner Type		ACON-CG-2I-①-2-0					—	
Pulse Train Input Type (Differential Line Driver)		ACON-PL-2I-①-2-0	Pulse train input type with differential line driver support	(—)			—	
Pulse Train Input Type (Open Collector)		ACON-PO-2I-①-2-0	Pulse train input type with open collector support				—	
Serial Communication Type		ACON-SE-2I-①-N-0-0	Dedicated Serial Communication	64 points			—	
Program Control Type		ASEL-CS-1-2I-①-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points			—	→ P675

* This is for the single-axis ASEL. * ① indicates I/O type (NP/PN). * ⅲ indicates number of axes (1 to 8). * ⅲ indicates field network specification symbol.