

RCL-RA3L

ROBO Cylinder Rod Type Mini-Slim Type ø25mm Diameter Linear Servo Motor

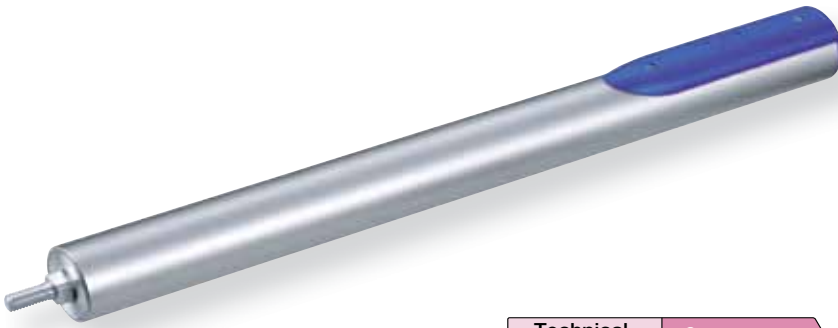
■ Configuration: **RCL** — **RA3L** — **I** — **10** — **N** — **40** — — —

Series — Type — Encoder — Motor — Lead — Stroke — Compatible Controllers — Cable Length — Option

I: Incremental 10: 10W linear servo motor N: No screw 40: 40mm

A1: ACON RACON ASEL A3: AMEC ASEP N: None P: 1m S: 3m M: 5m X : Custom B: Brake (with brake box) BN: Brake (without brake box)

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5

- Notes on Selection**
- The load capacity is determined by the acceleration and the duty. Check the load capacity on the Load Capacity (Horizontal) vs. Acceleration graph on the right. The duty is $\frac{\text{Operating time}}{\text{Operating time} + \text{stationary time}} \times 100$ per cycle.
 - If you will be operating the actuator vertically, please use the optional brake.
 - Please use an external guide to avoid horizontal or rotational load on the rod.
 - The pushing force will fluctuate significantly at low electrical limits.
 - Please note that an absolute unit cannot be used.

Load Capacity (Horizontal) vs. Acceleration

| Max. Acceleration (G) | Load Capacity (kg) | | | |
|-----------------------|----------------------------------|----------|--------------------|----------|
| | Continuous Operation (100% duty) | | (70% or less duty) | |
| | Horizontal | Vertical | Horizontal | Vertical |
| 0.1 | 2 | 0.4 | 2 | 0.4 |
| 0.3 | | | | |
| 0.5 | 1.6 | | 1 | |
| 1 | 0.78 | | | |
| 1.5 | 0.46 | – | 0.6 | – |
| 2 | 0.3 | – | 0.4 | – |

Pushing Force Guideline

The pushing motion is possible within the values below. (N)

| Electrical Limit | 30% | 40% | 50% | 60% | 70% | 80% |
|------------------|-----|-----|-----|-----|-----|-----|
| Pushing Force | 3 | 4 | 5 | 6 | 7 | 8 |

(Note) The above pushing force is applicable to horizontal usage. For vertical upward motions, subtract 1.8N from the above value, and for downward motions, add 1.8N.

Actuator Specifications

Lead and Load Capacity

| Model | Motor Output (W) | Max. Load Capacity | | Rated Thrust (N) | Max. Momentary Thrust (N) | Max. Acceleration (G) | Positioning Repeatability (mm) | Stroke (mm) |
|--------------------------|------------------|--------------------|-----------------|------------------|---------------------------|------------------------------|--------------------------------|-------------|
| | | Horizontal (kg) | Vertical (kg) | | | | | |
| RCL-RA3L-I-10-N-40-①-②-③ | 10 | See table above | See table above | 10 | 30 | Horizontal 2G Vertical 1G | ±0.1 | 40 (Fixed) |

Legend ① Compatible controller ② Cable length ③ Options

Stroke and Maximum Speed

| Stroke | 40 (mm) |
|-----------------|---------|
| Lead | 40 |
| (No lead screw) | 450 |

(Unit: mm/s)

Stroke List

| Stroke (mm) | Standard Price |
|-------------|----------------|
| 40 | – |

② Cable List

| Type | Cable Symbol | Standard Price | |
|------------------------------|-----------------------|----------------|------------|
| | | No Brake | With Break |
| Standard Type (Robot Cables) | P (1m) | – | – |
| | S (3m) | – | – |
| | M (5m) | – | – |
| Special Lengths | X06 (6m) ~ X10 (10m) | – | – |
| | X11 (11m) ~ X15 (15m) | – | – |
| | X16 (16m) ~ X20 (20m) | – | – |
| | | – | – |

* The RCL comes standard with a robot cable.
* See page A-39 for cables for the brake-less model.
* See page 396 for cables for the brake-equipped model.

③ Option Price List

| Name | Option Code | See Page | Standard Price |
|---------------------------|-------------|----------|----------------|
| Brake (with brake box) | B | → P396 | – |
| Brake (without brake box) | BN | → P396 | – |

* To use the brake, a brake box and a dedicated cable for the brake-equipped model are required. If you just need the brake-equipped actuator itself for maintenance, please specify option "BN" (no brake box).

Actuator Specifications

| Item | Description |
|----------------------------------|---|
| Drive System | Linear servo motor |
| Encoder Resolution | 0.042mm |
| Base | Material: Carbon steel tube (nickel-plated) |
| Ambient Operating Temp./Humidity | 0~40°C, 85% RH or less (non-condensing) |
| Service Life | 10 million round trip cycles |

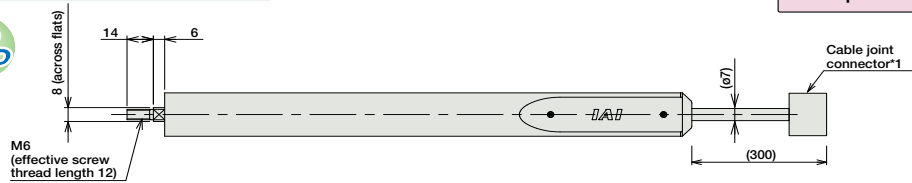
Dimensions

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

For Special Orders P. A-9



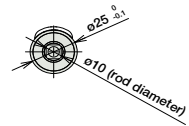
(No brake)



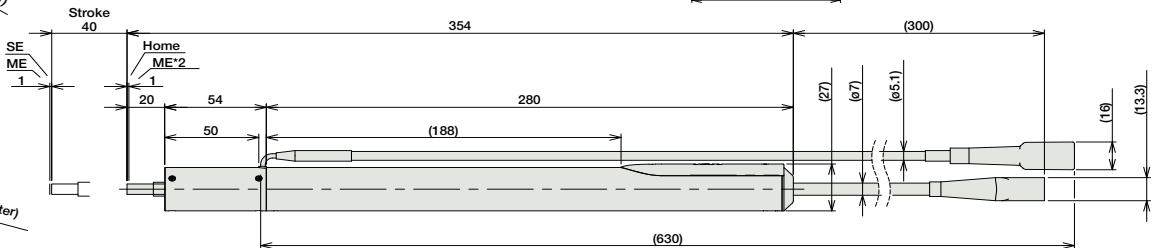
*1 The motor-encoder cable is connected here. See page A-39 for details on cables.

*2 When homing, the slider moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.

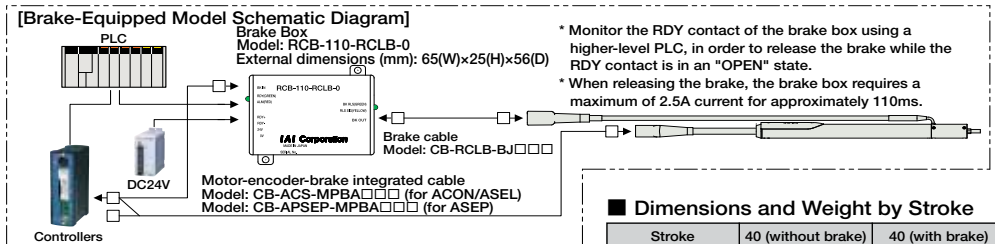
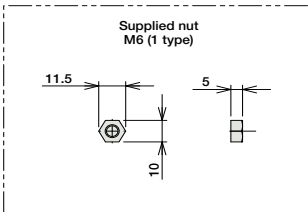
See page A-45 for methods of securing the actuator.



(With brake)



ME : Mechanical end
SE : Stroke end



■ Dimensions and Weight by Stroke

| Stroke | 40 (without brake) | 40 (with brake) |
|-------------|--------------------|-----------------|
| Weight (kg) | 0.6 | 0.77 |

① Compatible Controllers

The RCL series actuators can operate with the controllers below. Select the controller according to your usage.

| Name | External View | Model | Description | Max. Positioning Points | Input Voltage | Power Supply Capacity | Standard Price | See Page |
|---|---------------|---------------------|---|-------------------------|---------------|-----------------------|----------------|----------|
| Solenoid Valve Type | | AMEC-C-10I-NP-2-1 | Easy-to-use controller, even for beginners | 3 points | AC100V | 2.4A rated | - | → P477 |
| | | ASEP-C-10I-NP-2-0 | Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type. | | | | | |
| Splash-Proof Solenoid Valve Type | | ASEP-CW-10I-NP-2-0 | | | | | | → P487 |
| Positioner Type | | ACON-C-10I-NP-2-0 | Positioning is possible for up to 512 points | 512 points | DC24V | 6.4A max. | - | |
| Safety-Compliant Positioner Type | | ACON-CG-10I-NP-2-0 | | | | | | |
| Pulse Train Input Type (Differential Line Driver) | | ACON-PL-10I-NP-2-0 | Pulse train input type with differential line driver support | (-) | DC24V | 6.4A max. | - | → P535 |
| Pulse Train Input Type (Open Collector) | | ACON-PO-10I-NP-2-0 | Pulse train input type with open collector support | | | | | |
| Serial Communication Type | | ACON-SE-10I-N-0-0 | Dedicated to serial communication | 64 points | | | | |
| Field Network Type | | RACON-10 | Dedicated to field network | 768 points | | | | → P503 |
| Program Control Type | | ASEL-C-1-10I-NP-2-0 | Programmed operation is possible. Operation is possible on up to 2 axes | 1500 points | | | | → P567 |

* This is for the single-axis ASEL.