

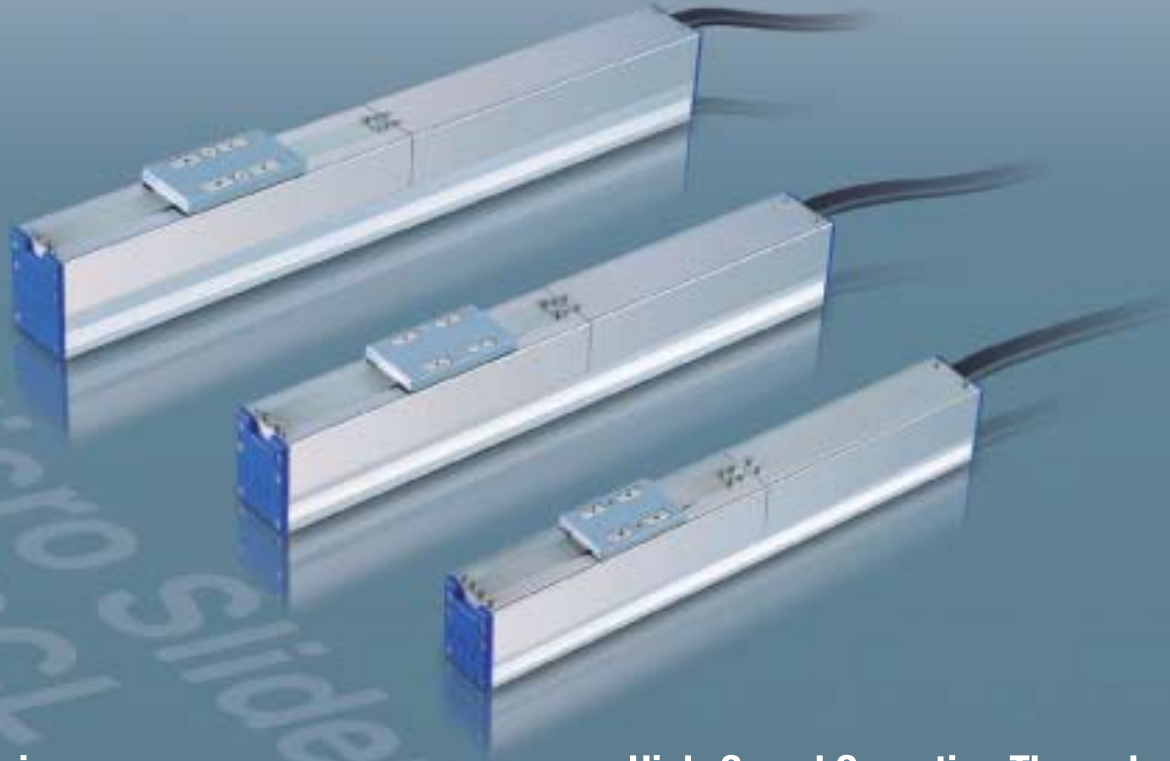
Micro Slider **RCL-SA**

**ROBO  
CYLINDER**



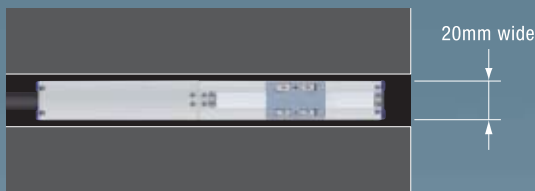


# Space-saving, high speed/high acceleration & deceleration, quiet operation A New 20mm wide ultra compact linear servo slider optimal for high-speed load transfer



## 1 Space Saving, Ultra compact Linear Servo Slider

The 20mm width facilitates installation in a narrow space (SA1L type). The built-in motor coil eliminates the need for a cable track, so there is no cable disconnection.



## 2 High-Speed Operation Through the Linear Motor Method

The linear motor method, which has no rotational speed reduction mechanism, makes the slider smaller in size and able to operate at higher speed



## 3 Smooth, quiet movement

The sine wave drive of the three-phase coil enables the slider movement without cogging. Moreover, it virtually has no magnetism leak.

## 5 Controllers appropriate to each application

Three types of controllers:  
ASEL for program operations, SCON for position settings and ROBOTNET for the field network.  
ACON has a standard type, electromagnetic type, pulse-train input type and serial communication type.  
The optimal controller can be used for each application and purpose.

## 4 Multi-point positioning achieved with a built-in linear encoder

An integrated linear encoder allows positioning at up to 512 points in combination with a small, low-cost ACON controller.

ACON



Position Controller

ROBO NET



Network Controller

ASEL



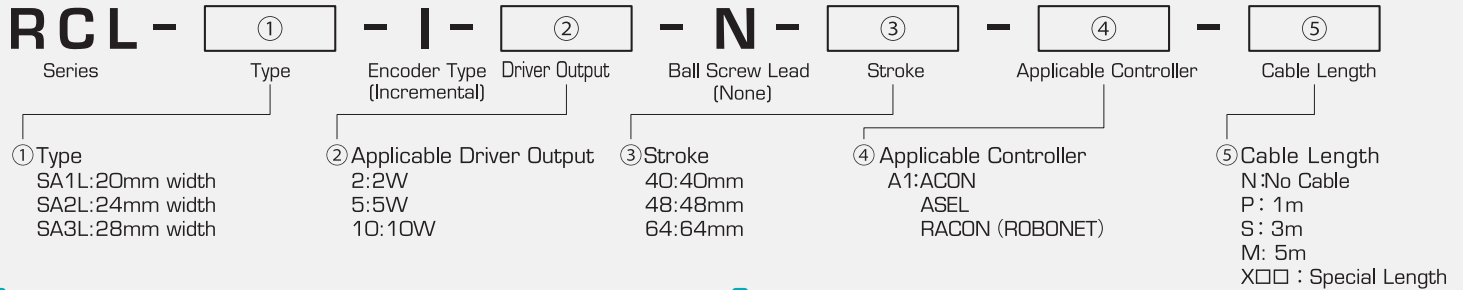
Program Controller

## Lineup / Specifications

| Type | Cross-section dimension W x H (mm) | Stroke (mm) | Max Speed (mm/s) | Max Payload (kg)       |            |          | Rated Thrust (N) | Max Momentary Thrust (N) | Max Acceleration (G)       | Encoder     | Controller Input Power |
|------|------------------------------------|-------------|------------------|------------------------|------------|----------|------------------|--------------------------|----------------------------|-------------|------------------------|
|      |                                    |             |                  | Acceleration Condition | Horizontal | Vertical |                  |                          |                            |             |                        |
| SA1L | 20x30                              | 40          | 420              | 0.3G                   | 0.5        | -        | 2                | 10                       | Horizontal acceleration 2G | Incremental | DC24V                  |
|      |                                    |             |                  | max acceleration (2G)  | 0.15       | -        |                  |                          |                            |             |                        |
| SA2L | 24x36                              | 48          | 460              | 0.3G                   | 1          | -        | 4                | 18                       |                            |             |                        |
|      |                                    |             |                  | max acceleration (2G)  | 0.3        | -        |                  |                          |                            |             |                        |
| SA3L | 28x42                              | 64          | 600              | 0.3G                   | 2          | -        | 8                | 30                       |                            |             |                        |
|      |                                    |             |                  | max acceleration (2G)  | 0.5        | -        |                  |                          |                            |             |                        |

The maximum load capacity decreases when the acceleration is increased. (For details, refer to the operation condition on the back cover.) The term "at maximum acceleration" refers to the horizontal acceleration of 2G (vertical acceleration is not operable). Even when the maximum acceleration is set to 0.3G or less, the maximum load capacity is 0.3G.

## Application Examples



## Types

| Width  | Stroke | Model                   |
|--------|--------|-------------------------|
| 20(mm) | 40(mm) | RCL-SA1L-I-2-N-40-A1- □ |
| 24(mm) | 48(mm) | RCL-SA2L-I-5-N-48-A1- □ |
| 28(mm) | 64(mm) | RCL-SA3L-I-10-N-64-A- □ |

In the above model names, □ indicates the cable length symbol. (Refer to the chart on the right)

## Specifications

| Item                      | Description                      |
|---------------------------|----------------------------------|
| Drive System              | Linear Servo                     |
| Positioning Repeatability | ± 0.1mm                          |
| Encoder Resolution        | 0.042mm                          |
| Base                      | Exclusive Aluminum Push Material |
| Ambient air temp/humidity | 0~40°C, 85% RH or less           |
| Running Life              | 5000km                           |

| Item                          | Type | Ma        | Mb       | Mc   |
|-------------------------------|------|-----------|----------|------|
| Dynamic Allowable Load Moment | SA1L | 0.13      | 0.12     | 0.21 |
|                               | SA2L | 0.2       | 0.17     | 0.25 |
|                               | SA3L | 1.22      | 1.08     | 0.34 |
| Overhang Load Length          | SA1L | Below 50  |          |      |
|                               | SA2L | Below 60  |          |      |
|                               | SA3L | Below 120 | Below 80 |      |

## Cable Lengths

| Type                        | Cable Length Code   |
|-----------------------------|---------------------|
| Standard Type (Robot Cable) | P (1m)              |
|                             | S (3m)              |
|                             | M (5m)              |
| Special Length              | X06(6m) ~ X10(10m)  |
|                             | X11(11m) ~ X15(15m) |
|                             | X16(16m) ~ X20(20m) |

The robot cable is the standard RCL cable.

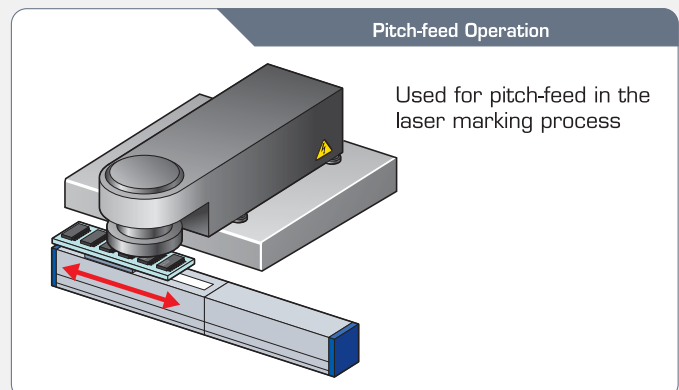
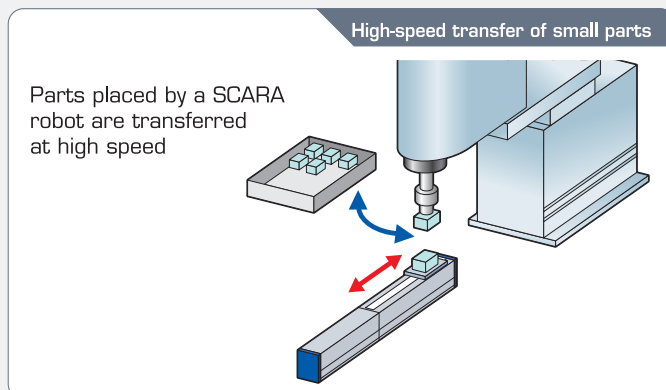
## Controllers

|                                   | Model               |
|-----------------------------------|---------------------|
| Positioner Type                   | ACON-C- □I-NP-2-0   |
| Safety Category Type              | ACON-CG- □I-NP-2-0  |
| Solenoid Valve Type               | ACON-CY- □I-NP-2-0  |
| Pulse-Train Type (Differential)   | ACON-PL- □I-NP-2-0  |
| Pulse-Train Type (Open Collector) | ACON-PO- □I-NP-2-0  |
| Serial Type                       | ACON-SE- □I-N-0-0   |
| Field Network Type*               | RACON- □            |
| Program Control Type              | ASEL-C-1- □I-NP-2-0 |

□ indicates the driver output number.

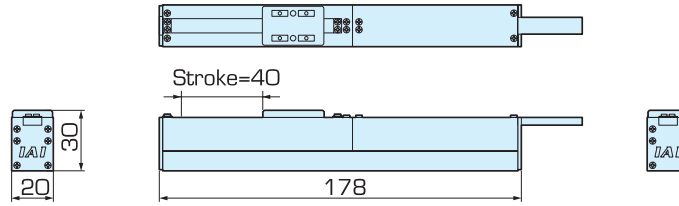
\*When using a field network type, a separate gateway R unit is necessary.

## Application Examples

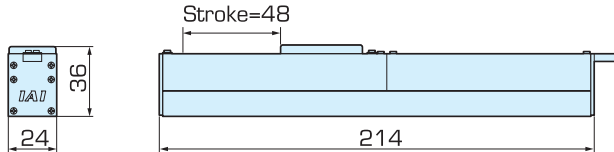


## External Dimensions

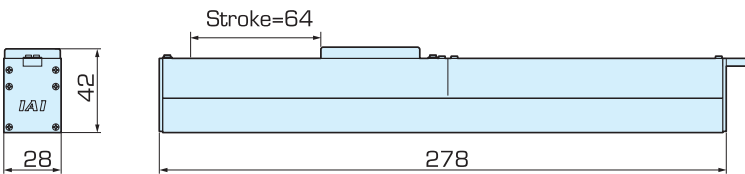
RCL-SA1L



RCL-SA2L



RCL-SA3L



## Operating Conditions

### Setting the acceleration

The acceleration is determined by the load capacity and duty. If the duty is over 70% but not more than 100%, set an appropriate acceleration at which continuous operation is possible (duty = 100%). If the duty is 70% or less, set the acceleration based on a load of 70%.

Load capacity (horizontal) and acceleration

| Acceleration (G) | Load Capacity (kg)   |          |                      |          |                      |          |
|------------------|----------------------|----------|----------------------|----------|----------------------|----------|
|                  | SA1L                 |          | SA2L                 |          | SA3L                 |          |
|                  | Continuous Operation | Duty 70% | Continuous Operation | Duty 70% | Continuous Operation | Duty 70% |
| 0.1              | 0.5                  | 0.5      | 1                    | 1        | 2                    | 2        |
| 0.3              |                      |          | 0.85                 |          | 1.8                  |          |
| 0.5              | 0.42                 | 0.32     | 0.5                  | 0.6      | 1                    | 1.2      |
| 1                | 0.25                 | 0.24     | 0.36                 | 0.45     | 0.65                 | 0.8      |
| 1.5              | 0.18                 | 0.2      | 0.3                  | 0.36     | 0.5                  | 0.6      |
| 2                | 0.15                 |          |                      |          |                      |          |

$$\text{Duty} = \frac{\text{Operating Time}}{\text{Operating Time} + \text{Stationary Time}} \times 100$$

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Due to product improvements, specifications subject to change without notice

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