



# Linear Servo Type

## RCL



RCL-SA1L



RCL-SA2L



RCL-SA3L



RCL-SA4L



RCL-SA5L



RCL-SA6L



RCL-SM4L



RCL-SM5L



RCL-SM6L



RCL-RA1L



RCL-RA2L



RCL-RA3L

Air-Oil Systems, Inc. [www.airoil.com](http://www.airoil.com)

**RCL**  
*series*  
Linear Servo  
Motor Type

Slider Type	Mini Slim Model	20mm Width	RCL-SA1L	<b>373</b>	
		24mm Width	RCL-SA2L	<b>375</b>	
		28mm Width	RCL-SA3L	<b>377</b>	
	Mini Long Stroke Type	40mm Width	RCL-SA4L	<b>379</b>	
		48mm Width	RCL-SA5L	<b>383</b>	
		58mm Width	RCL-SA6L	<b>387</b>	
	Mini Multi-Slider Type	40mm Width	RCL-SM4L	<b>381</b>	
		48mm Width	RCL-SM5L	<b>385</b>	
		58mm Width	RCL-SM6L	<b>389</b>	
	Rod Type	Mini Slim Type	ø16mm	RCL-RA1L	<b>391</b>
			ø20mm	RCL-RA2L	<b>393</b>
			ø25mm	RCL-RA3L	<b>395</b>

Air-Oil Systems, Inc. [www.airoil.com](http://www.airoil.com)

Slider Type

Mini

Standard

Controllers Integrated

Rod Type

Mini

Standard

Controllers Integrated

Table/Arm /Flat Type

Mini

Standard

Gripper/ Rotary Type

Linear Servo Type

Cleanroom Type

Splash Proof

Controllers

PMEC /AMEC

PSEP /ASEP

ROBO NET

ERC2

PCON

ACON

SCON

PSEL

ASEL

SSEL

XSEL

Pulse Motor

Servo Motor (24V)

Servo Motor (200V)

Linear Servo Motor

# RCL-SA1L

ROBO Cylinder Slider Type Mini-Slim Type 20mm Width Linear Servo Motor

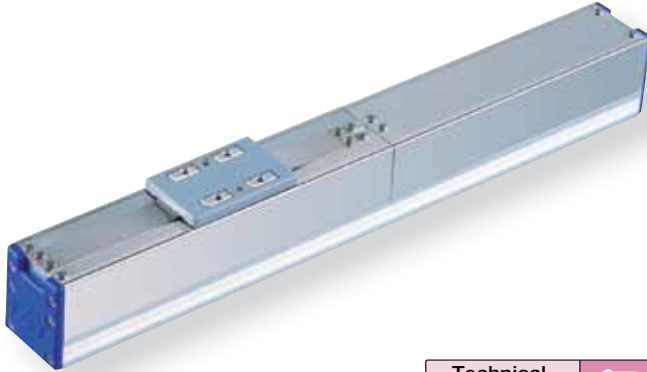
■ Configuration: **RCL** — **SA1L** — **I** — **2** — **N** — **40** —  —

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

I: Incremental      2: 2W linear servo motor      N: No screw      40: 40mm

A1: ACON      N: None  
 RACON      P: 1m  
 ASEL      S: 3m  
 A3: AMEC      M: 5m  
 ASEP      X : Custom

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



Technical References P. A-5

### ■ Load Capacity (Horizontal) vs. Acceleration

Max. Acceleration (G)	Load Capacity (kg)	
	Continuous Operation (100% duty)	(70% or less duty)
0.1	0.5	0.5
0.3		
0.5	0.42	0.32
1	0.25	
1.5	0.18	0.24
2	0.15	0.2

- POINT**  
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.
  - The mounting orientation is horizontal only. When operated vertically, please use caution, as the slider will fall when the power is turned OFF.
  - Please note that an absolute unit cannot be used.

### 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-SA1L-I-2-N-40-①-②	2	See table above	-	2	10	2	±0.1	40 (Fixed)

Legend: ① Compatible controller    ② Cable length

#### ■ Stroke and Maximum Speed

Stroke	40 (mm)
Lead	-
(No lead screw)	420

(Unit: mm/s)

#### Stroke List

Stroke (mm)	Standard Price
40	-

#### ② Cable List

Type	Cable Symbol	Standard Price
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 maintenance.

### Actuator Specifications

Item	Description
Drive System	Linear servo motor
Encoder Resolution	0.042mm
Base	Material: Aluminum (white alumite treated)
Allowable Dynamic Moment (Note)	Ma: 0.13N-m Mb: 0.12N-m Mc: 0.21N-m
Overhang Load Length	50mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

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

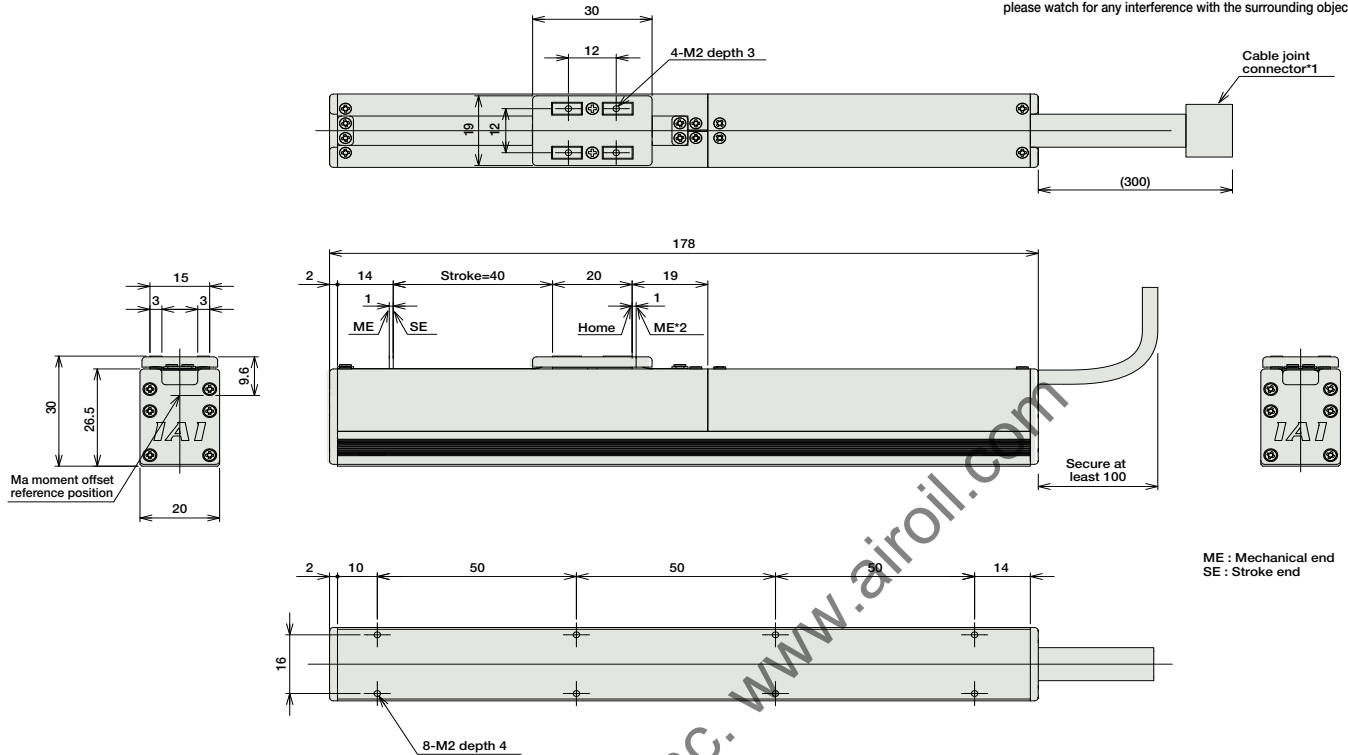
Dimensions

CAD drawings can be downloaded from IAI website. [www.intelligentactuator.com](http://www.intelligentactuator.com)



For Special Orders P. A-9

- \*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.



■ Dimensions and Weight by Stroke

Stroke	40
Weight (kg)	0.28

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-2I-NP-2-1	Easy-to-use controller, even for beginners	3 points	AC100V	2.4A rated	-	→ P477	
Splash-Proof Solenoid Valve Type		ASEP-C-2I-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.				-	→ P487	
		ASEP-CW-2I-NP-2-0					-		
Positioner Type		ACON-C-2I-NP-2-0	Positioning is possible for up to 512 points	512 points	DC24V	4.6A max.	-		
Safety-Compliant Positioner Type		ACON-CG-2I-NP-2-0							
Pulse Train Input Type (Differential Line Driver)		ACON-PL-2I-NP-2-0	Pulse train input type with differential line driver support	(-)			-		→ P535
Pulse Train Input Type (Open Collector)		ACON-PO-2I-NP-2-0	Pulse train input type with open collector support				-		
Serial Communication Type		ACON-SE-2I-N-0-0	Dedicated to serial communication	64 points			-		
Field Network Type		RACON-2	Dedicated to field network	768 points			-		→ P503
Program Control Type		ASEL-C-1-2I-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.

# RCL-SA2L

ROBO Cylinder Slider Type Mini-Slim Type 24mm Width Linear Servo Motor

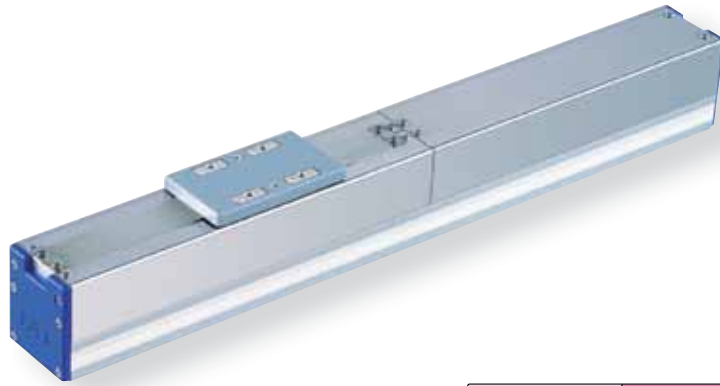
■ Configuration: **RCL** — **SA2L** — **I** — **5** — **N** — **48** —  —

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

I: Incremental    5: 5W linear servo motor    N: No screw    48: 48mm

A1: ACON    N: None  
 RACON    P: 1m  
 ASEL    S: 3m  
 A3: AMEC    M: 5m  
 ASEP    X   : Custom

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



Technical References P. A-5

■ Load Capacity (Horizontal) vs. Acceleration

Max. Acceleration (G)	Load Capacity (kg)	
	Continuous Operation (100% duty)	(70% or less duty)
0.1	1	1
0.3		
0.5	0.85	
1	0.5	0.6
1.5	0.36	0.45
2	0.3	0.36

- POINT**  
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.
  - The mounting orientation is horizontal only. When operated vertically, please use caution, as the slider will fall when the power is turned OFF.
  - Please note that an absolute unit cannot be used.

**Actuator Specifications**

■ Lead and Load Capacity								■ Stroke and Maximum Speed		
Model	Motor Output (W)	Max. Load Capacity		Rated Thrust (N)	Max. Momentary Thrust (N)	Max. Acceleration (G)	Positioning Repeatability (mm)	Stroke (mm)	Stroke	
		Horizontal (kg)	Vertical (kg)						Lead	48 (mm)
RCL-SA2L-I-5-N-48-①-②	5	See table above	-	4	18	2	±0.1	48 (Fixed)	(No lead screw)	460

Legend: ① Compatible controller    ② Cable length    (Unit: mm/s)

**Stroke List**

Stroke (mm)	Standard Price
48	-

**② Cable List**

Type	Cable Symbol	Standard Price
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 maintenance.

**Actuator Specifications**

Item	Description
Drive System	Linear servo motor
Encoder Resolution	0.042mm
Base	Material: Aluminum (white alumite treated)
Allowable Dynamic Moment (Note)	Ma: 0.2N·m Mb: 0.17N·m Mc: 0.25N·m
Overhang Load Length	60mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

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

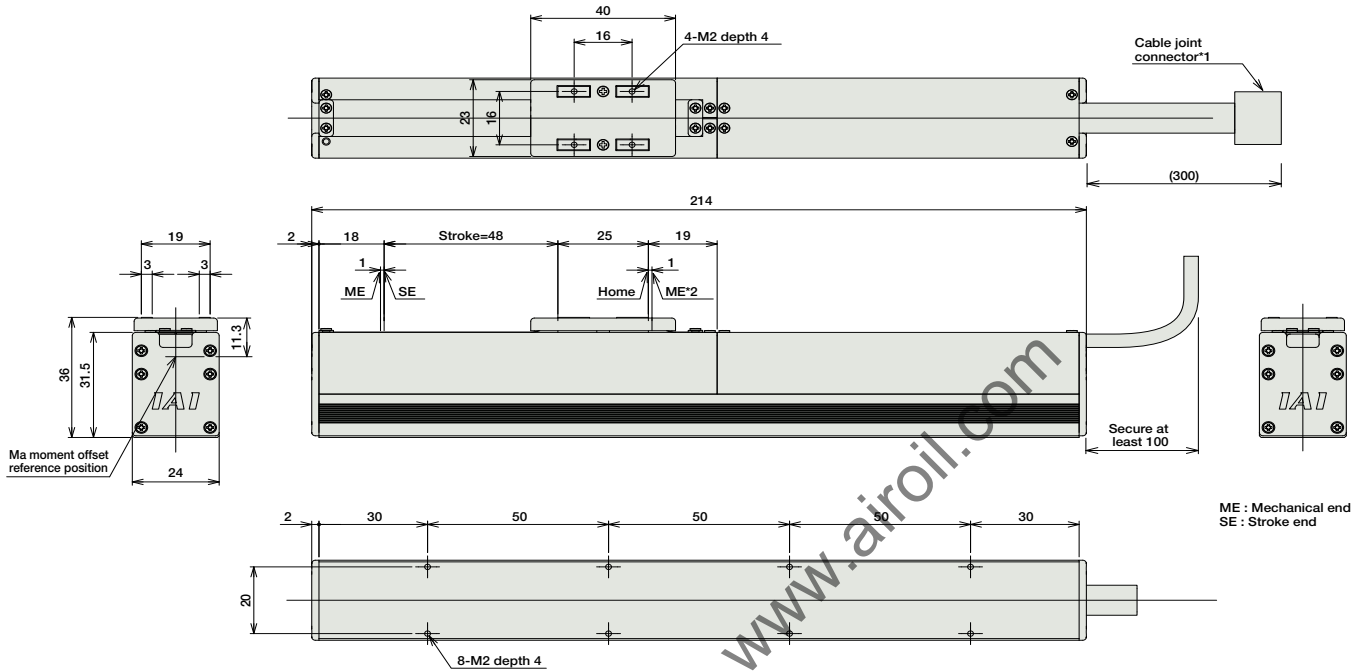
Dimensions

CAD drawings can be downloaded from IAI website. [www.intelligentactuator.com](http://www.intelligentactuator.com)



For Special Orders P. A-9

- \*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.



■ Dimensions and Weight by Stroke

Stroke	48
Weight (kg)	0.45

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-SI-NP-2-1	Easy-to-use controller, even for beginners	3 points	DC24V	6.4A max.	-	→ P477
		ASEP-C-SI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.				-	→ P487
Splash-Proof Solenoid Valve Type		ASEP-CW-SI-NP-2-0		-				
Positioner Type		ACON-C-SI-NP-2-0	Positioning is possible for up to 512 points	512 points			-	
Safety-Compliant Positioner Type		ACON-CG-SI-NP-2-0					-	
Pulse Train Input Type (Differential Line Driver)		ACON-PL-SI-NP-2-0	Pulse train input type with differential line driver support	(-)			-	→ P535
Pulse Train Input Type (Open Collector)		ACON-PO-SI-NP-2-0	Pulse train input type with open collector support				-	
Serial Communication Type		ACON-SE-SI-N-0-0	Dedicated to serial communication	64 points			-	
Field Network Type		RACON-5	Dedicated to field network	768 points			-	→ P503
Program Control Type		ASEL-C-1-SI-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.

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm/Flat Type
- Mini
- Standard
- Gripper/Rotary Type
- Linear Servo Type
- Cleanroom Proof
- Splash Proof
- Controllers
- PMEC/AMEC
- PSEP/ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (200V)
- Linear Servo Motor

# RCL-SA3L

ROBO Cylinder Slider Type Mini-Slim Type 28mm Width Linear Servo Motor

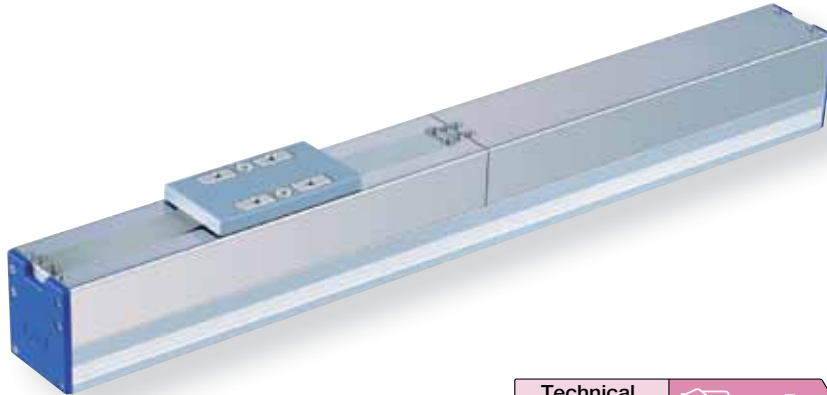
■ Configuration: **RCL** — **SA3L** — **I** — **10** — **N** — **64** —  —

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

I: Incremental    10: 10W linear servo motor    N: No screw    64: 64mm

A1: ACON    N: None  
 RACON    P: 1m  
 ASEL    S: 3m  
 A3: AMEC    M: 5m  
 ASEP    X   : Custom

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



Technical References P. A-5

### ■ Load Capacity (Horizontal) vs. Acceleration

Max. Acceleration (G)	Load Capacity (kg)	
	Continuous Operation (100% duty)	(70% or less duty)
0.1	2	2
0.3		
0.5	1.8	
1	1	1.2
1.5	0.65	0.8
2	0.5	0.6

- POINT** 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.
  - The mounting orientation is horizontal only. When operated vertically, please use caution, as the slider will fall when the power is turned OFF.
  - Please note that an absolute unit cannot be used.

### 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-SA3L-I-10-N-64-①-②	10	See table above	-	8	30	2	±0.1	64 (Fixed)

Legend: ① Compatible controller    ② Cable length

#### ■ Stroke and Maximum Speed

Stroke	64 (mm)
	Lead
(No lead screw)	600

(Unit: mm/s)

#### Stroke List

Stroke (mm)	Standard Price
64	-

#### ② Cable List

Type	Cable Symbol	Standard Price
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 maintenance.

### Actuator Specifications

Item	Description
Drive System	Linear servo motor
Encoder Resolution	0.042mm
Base	Material: Aluminum (white alumite treated)
Allowable Dynamic Moment (Note)	Ma: 1.22N·m Mb: 1.08N·m Mc: 0.34N·m
Overhang Load Length	Ma direction: 120mm or less Mb, Mc direction: 80mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

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

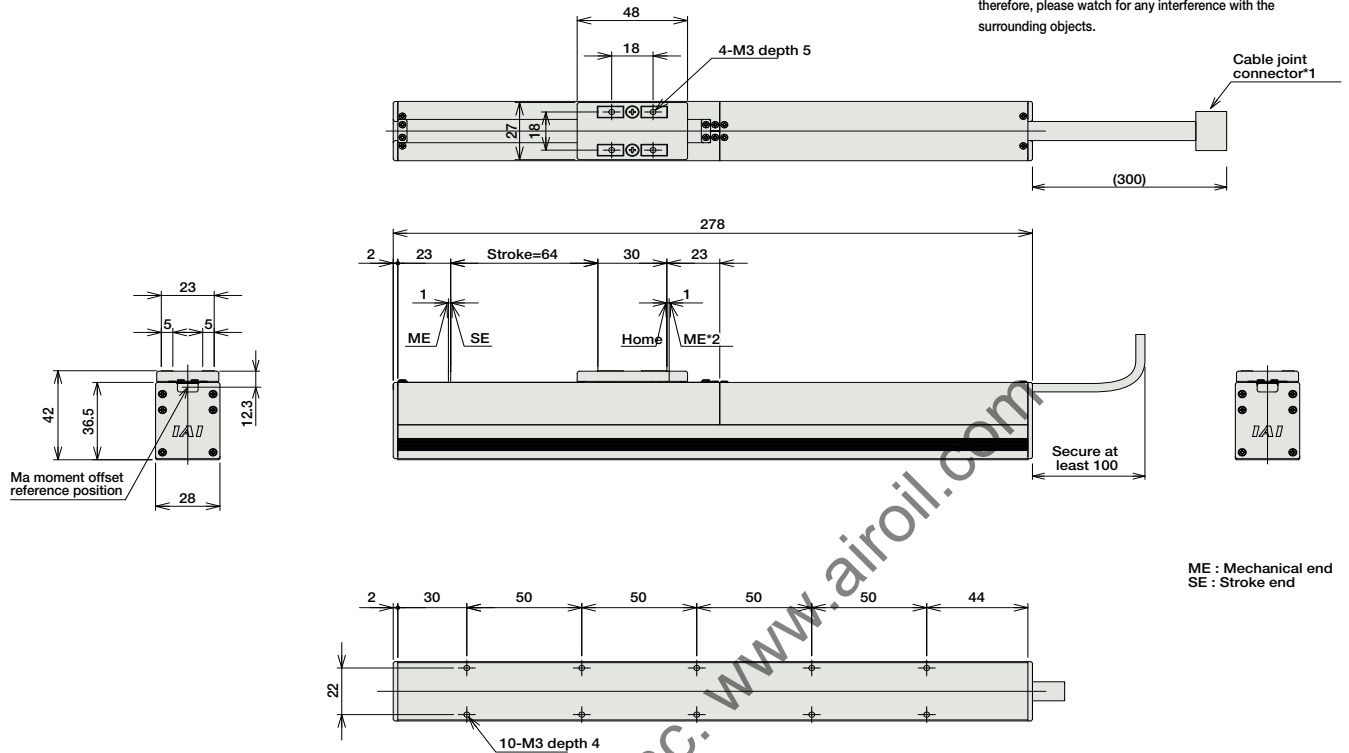
Dimensions

CAD drawings can be downloaded from IAI website. [www.intelligentactuator.com](http://www.intelligentactuator.com)



For Special Orders P. A-9

- \*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.



ME : Mechanical end  
SE : Stroke end

■ Dimensions and Weight by Stroke

Stroke	64
Weight (kg)	0.82

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.				-	→ P487
Splash-Proof Solenoid Valve Type		ASEP-CW-10I-NP-2-0					-	
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.



# RCL-SA4L

ROBO Cylinder Slider Type Mini Long-Stroke Type 40mm Width Linear Servo Motor

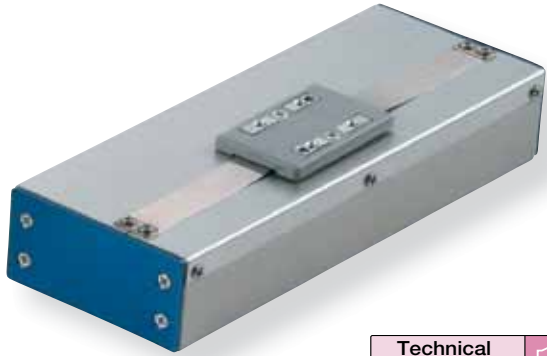
■ Configuration: **RCL** — **SA4L** — **I** — **2** — **N** —  —  —  —

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

I: Incremental    2: 2W linear servo motor    N: No screw    30: 30mm  
 180: 180mm (30mm pitch increments)

A1: ACON    N: None  
 RACON    P: 1m  
 ASEL    S: 3m  
 A3: AMEC    M: 5m  
 ASEP    X   : Custom

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



Technical References P. A-5

■ Load Capacity (Horizontal) vs. Acceleration

Max. Acceleration (G)	Load Capacity (kg)	
	Continuous Operation (100% duty)	
0.1	0.8	
0.3		
0.5	0.5	
1	0.25	
1.5	0.18	
2	0.14	

- POINT**  
Notes on Selection
- Please note that this type has magnetic flux leakage. (If magnetism is a problem, please use SA1L, SA2L, or SA3L)
  - 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.
  - The mounting orientation is horizontal only. When operated vertically, please use caution, as the slider will fall when the power is turned OFF.
  - Please note that an absolute unit cannot be used.

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-SA4L-I-2-N-①-②-③-④	2	See table above	-	2.5	10	2	±0.1	30~180 (30mm increments)

Legend: ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke and Maximum Speed

Stroke / Lead	30 ~ 180 (30mm increments)	
	(No lead screw)	1200

(Unit: mm/s)

① Stroke List

Stroke (mm)	Standard Price
30	-
60	-
90	-
120	-
150	-
180	-

③ Cable List

Type	Cable Symbol	Standard Price
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 maintenance.

④ Option List

Name	Option Code	See Page	Standard Price
Reversed-home	NM	→ A-33	-

Actuator Specifications

Item	Description
Drive System	Linear servo motor
Encoder Resolution	0.042mm
Base	Material: Aluminum (white alumite treated)
Allowable Dynamic Moment (Note)	Ma: 0.2N·m Mb: 0.17N·m Mc: 0.25N·m
Overhang Load Length	Ma direction: 60mm or less Mb, Mc direction: 80mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

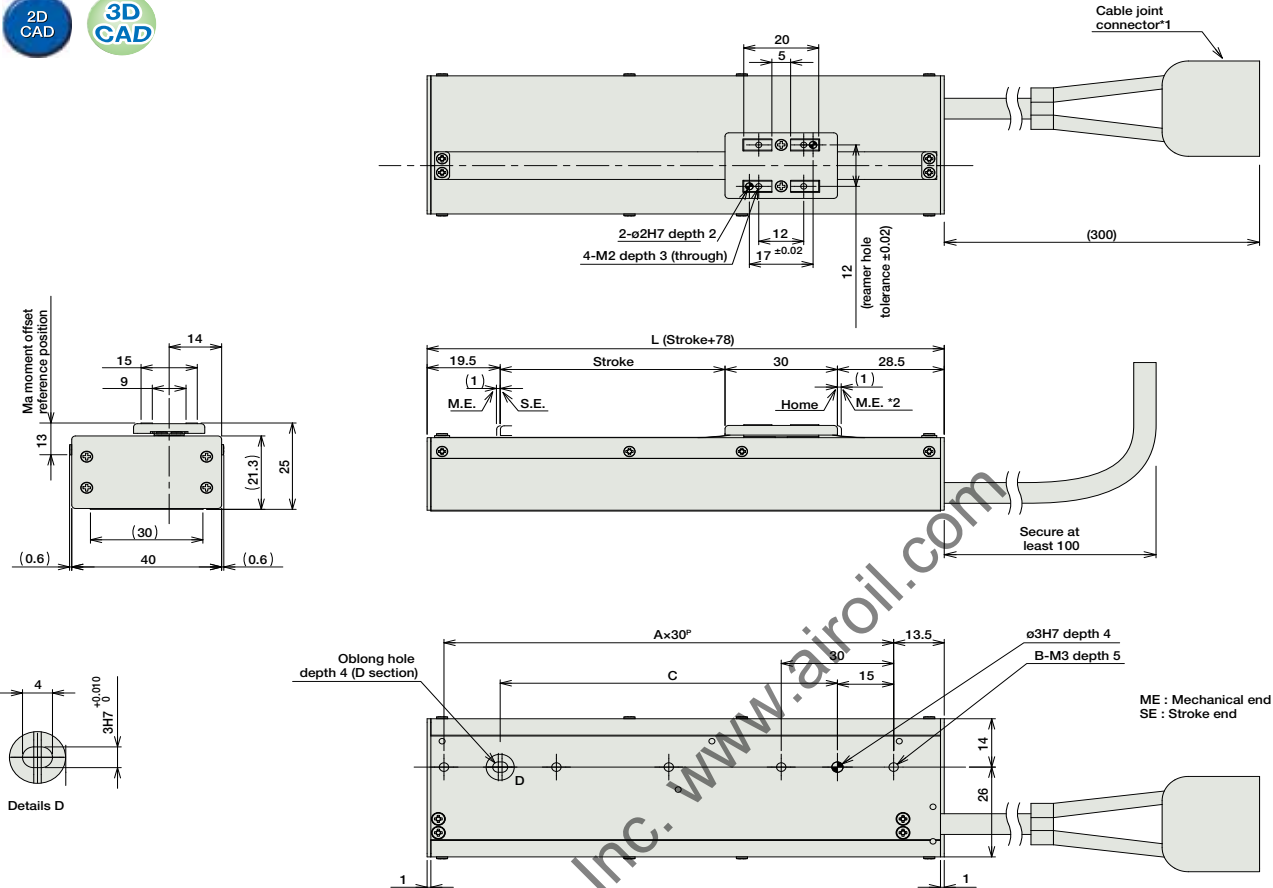
(Note) Based on a 5,000km service life.

Dimensions

CAD drawings can be downloaded from IAI website. [www.intelligentactuator.com](http://www.intelligentactuator.com)



For Special Orders P. A-9



- \*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.

■ Dimensions and Weight by Stroke

Stroke	30	60	90	120	150	180
L	108	138	168	198	228	258
A	3	4	5	6	7	8
B	4	5	6	7	8	9
C	60	90	120	150	180	210
Weight (kg)	0.21	0.25	0.29	0.32	0.36	0.4

② Compatible controller

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-2I-NP-2-1	Easy-to-use controller, even for beginners	3 points	AC100V	2.4A rated	-	→ P477
		ASEP-C-2I-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-2I-NP-2-0						→ P487
Positioner Type		ACON-C-2I-NP-2-0	Positioning is possible for up to 512 points	512 points	DC24V	4.6A max.	-	
Safety-Compliant Positioner Type		ACON-CG-2I-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		ACON-PL-2I-NP-2-0	Pulse train input type with differential line driver support	(-)	DC24V	4.6A max.	-	→ P535
Pulse Train Input Type (Open Collector)		ACON-PO-2I-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		ACON-SE-2I-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RACON-2	Dedicated to field network	768 points				→ P503
Program Control Type		ASEL-C-1-2I-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.

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm/Flat Type
- Mini
- Standard
- Gripper/Rotary Type
- Linear Servo Type
- Cleanroom Proof
- Splash Proof
- Controllers
- PMEC/AMEC
- PSEP/ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (200V)
- Linear Servo Motor

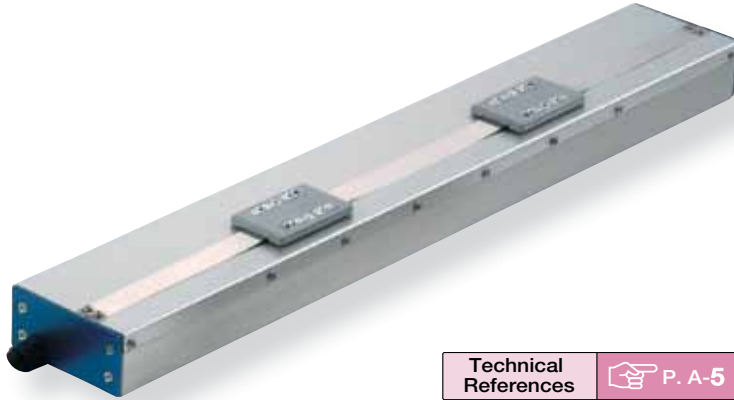
# RCL-SM4L

ROBO Cylinder Slider Type Mini Multi-Slider Type 40mm Width Linear Servo Motor

■ Configuration: **RCL** — **SM4L** — **I** — **2** — **N** —  —  —

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length
		I: Incremental	2: 2W linear servo motor	N: No screw	30: 30mm 120: 120mm (30mm pitch increments)	A1: ACON RACON ASEL A3: AMEC ASEP	N: None P: 1m S: 3m M: 5m X <input type="checkbox"/> <input type="checkbox"/> : Custom

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



Technical References P. A-5

### ■ Load Capacity (Horizontal) vs. Acceleration

Max. Acceleration (G)	Load Capacity (kg)	
	Continuous Operation (100% duty)	
0.1	0.8	
0.3		
0.5	0.5	
1	0.25	
1.5	0.18	
2	0.14	

- POINT**  
Notes on Selection
- Please note that this type has magnetic flux leakage. (If magnetism is a problem, please use SA1L, SA2L, or SA3L)
  - 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.
  - The mounting orientation is horizontal only. When operated vertically, please use caution, as the slider will fall when the power is turned OFF.
  - Please note that an absolute unit cannot be used.

### 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-SM4L-I-2-N-①-②-③	2	See table above	-	2.5	10	2	±0.1	30~120 (30mm increments)

Legend: ① Stroke ② Compatible controller ③ Cable length

#### ■ Stroke and Maximum Speed

Stroke / Lead	30 ~ 120 (30mm increments)	
	(No lead screw)	1200

(Unit: mm/s)

#### ① Stroke List

Stroke (mm)	Standard Price
30	-
60	-
90	-
120	-

#### ③ Cable List

Type	Cable Symbol	Standard Price
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 maintenance.

### Actuator Specifications

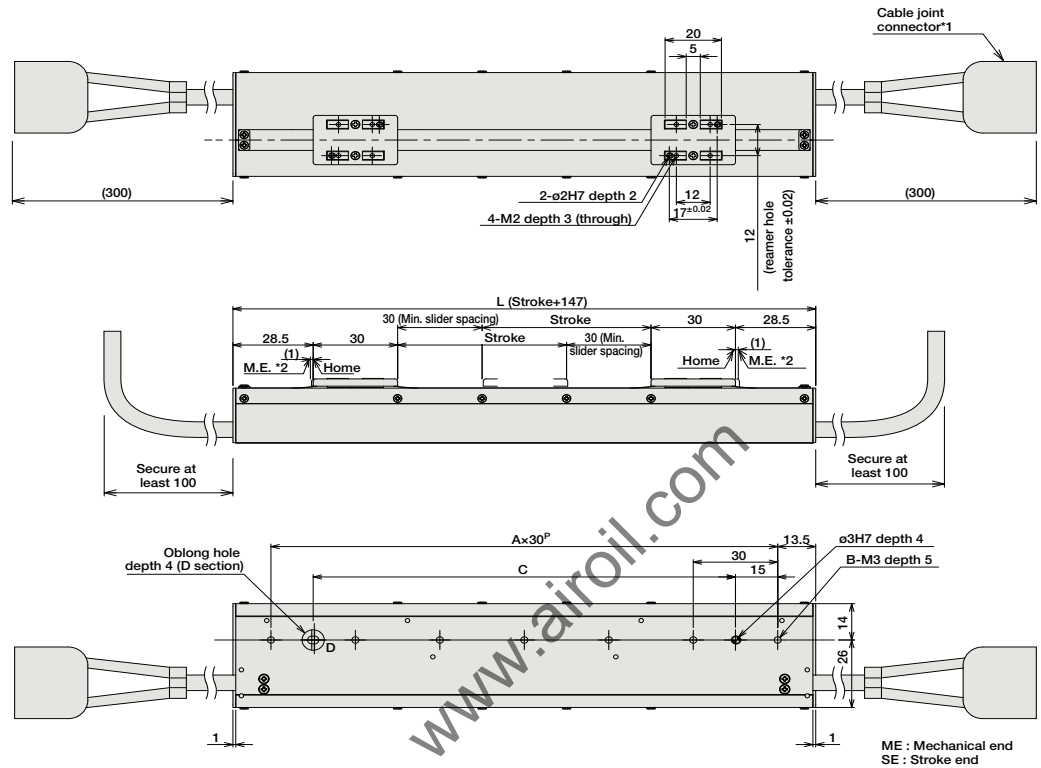
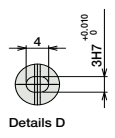
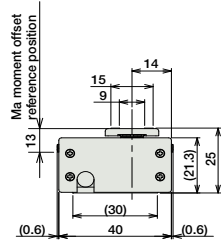
Item	Description
Drive System	Linear servo motor
Encoder Resolution	0.042mm
Base	Material: Aluminum (white alumite treated)
Allowable Dynamic Moment (Note)	Ma: 0.2N·m Mb: 0.17N·m Mc: 0.25N·m
Overhang Load Length	Ma direction: 60mm or less Mb, Mc direction: 80mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

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

Dimensions

CAD drawings can be downloaded from IAI website. [www.intelligentactuator.com](http://www.intelligentactuator.com)

For Special Orders P. A-9



- \*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.

**Note:**  
A controller is required for each slider.  
(or, one unit of 2-axis controller is required.)

■ Dimensions and Weight by Stroke

Stroke	30	60	90	120
L	177	207	237	267
A	5	6	7	8
B	6	7	8	9
C	120	150	180	210
Weight (kg)	0.37	0.4	0.44	0.48

② Compatible controller

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-2I-NP-2-1	Easy-to-use controller, even for beginners	3 points	AC100V	2.4A rated	-	→ P477
		ASEP-C-2I-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-2I-NP-2-0						→ P487
Positioner Type		ACON-C-2I-NP-2-0	Positioning is possible for up to 512 points	512 points	DC24V	4.6A max.	-	
Safety-Compliant Positioner Type		ACON-CG-2I-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		ACON-PL-2I-NP-2-0	Pulse train input type with differential line driver support	(-)	DC24V	4.6A max.	-	→ P535
Pulse Train Input Type (Open Collector)		ACON-PO-2I-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		ACON-SE-2I-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RACON-2	Dedicated to field network	768 points				→ P503
Program Control Type		ASEL-C-1-2I-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.

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm/Flat Type
- Mini
- Standard
- Gripper/Rotary Type
- Linear Servo Type
- Cleanroom Proof
- Splash Proof
- Controllers
- PMEC/AMEC
- PSEP/ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (200V)
- Linear Servo Motor

# RCL-SA5L

ROBO Cylinder Slider Type Mini Long-Stroke Type 48mm Width Linear Servo Motor

■ Configuration: **RCL** — **SA5L** — **I** — **5** — **N** —  —  —  —

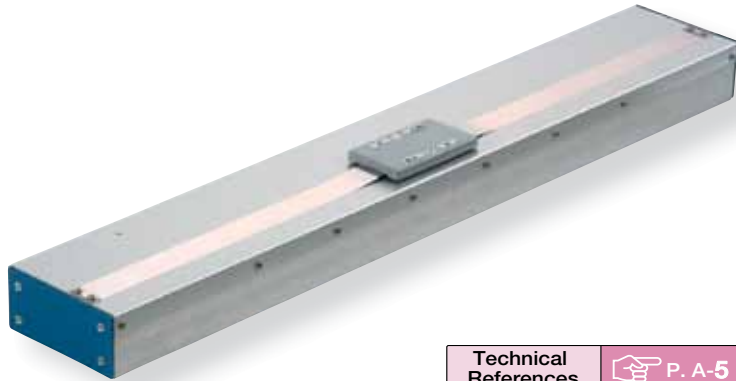
Series — Type — Encoder — Motor — Lead — Stroke — Compatible Controllers — Cable Length — Option

I: Incremental    5: 5W linear servo motor    N: No screw    36: 36mm  
216: 216mm (36mm pitch increments)

A1: ACON    N: None  
RACON    P: 1m  
ASEL    S: 3m  
A3: AMEC    M: 5m  
ASEP    X   : Custom

NM: Reversed-home

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



Technical References P. A-5

■ Load Capacity (Horizontal) vs. Acceleration

Max. Acceleration (G)	Load Capacity (kg)	
	Continuous Operation (100% duty)	
0.1	1.6	
0.3		
0.5	1.0	
1	0.5	
1.5	0.35	
2	0.25	

- POINT**  
Notes on Selection
- Please note that this type has magnetic flux leakage. (If magnetism is a problem, please use SA1L, SA2L, or SA3L)
  - 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.
  - The mounting orientation is horizontal only. When operated vertically, please use caution, as the slider will fall when the power is turned OFF.
  - Please note that an absolute unit cannot be used.

**Actuator Specifications**

■ Lead and Load Capacity								■ Stroke and Maximum Speed		
Model	Motor Output (W)	Max. Load Capacity		Rated Thrust (N)	Max. Momentary Thrust (N)	Max. Acceleration (G)	Positioning Repeatability (mm)	Stroke (mm)	Stroke and Maximum Speed	
		Horizontal (kg)	Vertical (kg)						Lead	36 ~ 216 (36mm increments)
RCL-SA5L-I-5-N-①-②-③-④	5	See table above	-	5	18	2	±0.1	36~216 (36mm increments)	(No lead screw)	1400

Legend: ① Stroke ② Compatible controller ③ Cable length ④ Options (Unit: mm/s)

① Stroke List

Stroke (mm)	Standard Price
36	-
72	-
108	-
144	-
180	-
216	-

③ Cable List

Type	Cable Symbol	Standard Price
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 maintenance.

④ Options List

Name	Option Code	See Page	Standard Price
Reversed-home	NM	→ A-33	-

Actuator Specifications

Item	Description
Drive System	Linear servo motor
Encoder Resolution	0.042mm
Base	Material: Aluminum (white alumite treated)
Allowable Dynamic Moment (Note)	Ma: 0.49N·m Mb: 0.41N·m Mc: 0.72N·m
Overhang Load Length	Ma direction: 80mm or less Mb, Mc direction: 100mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

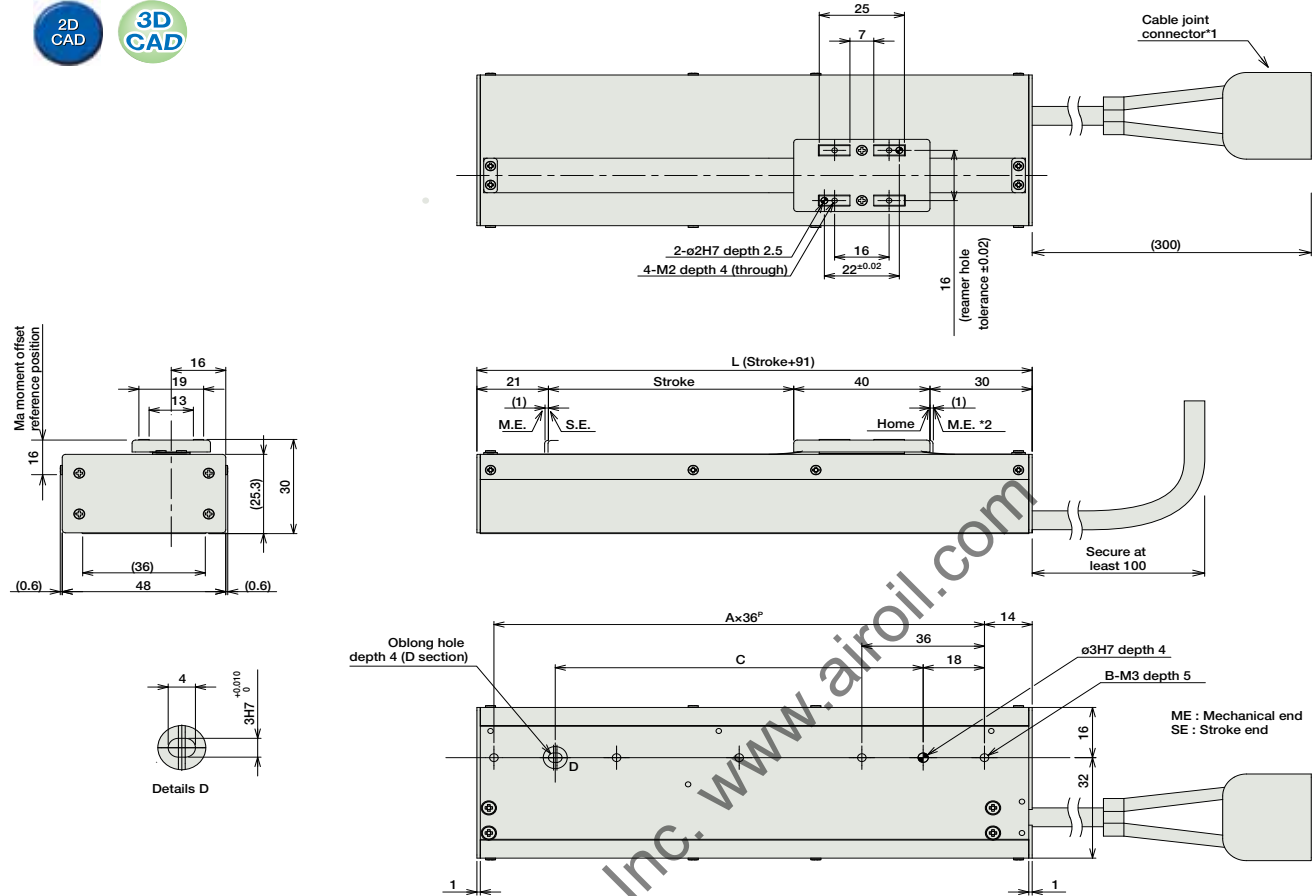
(Note) Based on a 5,000km service life.

Dimensions

CAD drawings can be downloaded from IAI website. [www.intelligentactuator.com](http://www.intelligentactuator.com)



For Special Orders P. A-9



- \*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.

Dimensions and Weight by Stroke

Stroke	36	72	108	144	180	216
L	127	163	199	235	271	307
A	3	4	5	6	7	8
B	4	5	6	7	8	9
C	72	108	144	180	216	252
Weight (kg)	0.35	0.42	0.48	0.55	0.62	0.68

2 Compatible controller

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-SI-NP-2-1	Easy-to-use controller, even for beginners	3 points	AC100V	2.4A rated	-	→ P477
		ASEP-C-SI-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-SI-NP-2-0						→ P487
Positioner Type		ACON-C-SI-NP-2-0	Positioning is possible for up to 512 points	512 points	DC24V	6.4A max.	-	→ P535
Safety-Compliant Positioner Type		ACON-CG-SI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		ACON-PL-SI-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-SI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		ACON-SE-SI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RACON-5	Dedicated to field network	768 points				→ P503
Program Control Type		ASEL-C-1-SI-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.

# RCL-SM5L

ROBO Cylinder Slider Type Mini Multi-Slider Type 48mm Width Linear Servo Motor

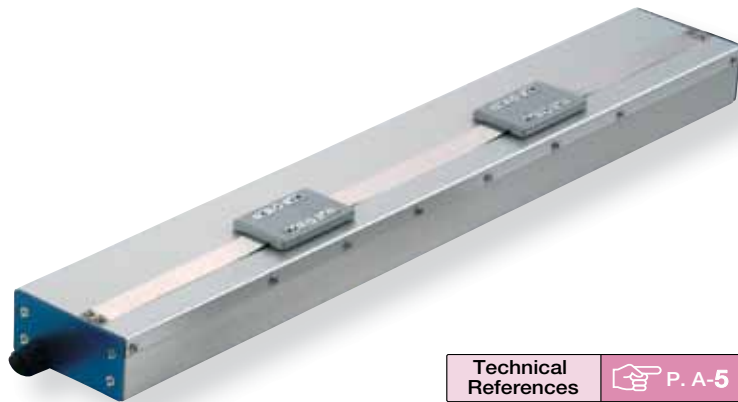
■ Configuration: **RCL** — **SM5L** — **I** — **5** — **N** —  —  —

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

I: Incremental    5: 5W linear servo motor    N: No screw    36: 36mm  
144: 144mm (36mm pitch increments)

A1: ACON    N: None  
RACON    P: 1m  
ASEL    S: 3m  
A3: AMEC    M: 5m  
ASEP    X   : Custom

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



Technical References P. A-5

### ■ Load Capacity (Horizontal) vs. Acceleration

Max. Acceleration (G)	Load Capacity (kg)	
	Continuous Operation (100% duty)	
0.1	1.6	
0.3		
0.5	1.0	
1	0.5	
1.5	0.35	
2	0.25	

- POINT**  
Notes on Selection
- Please note that this type has magnetic flux leakage. (If magnetism is a problem, please use SA1L, SA2L, or SA3L)
  - 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.
  - The mounting orientation is horizontal only. When operated vertically, please use caution, as the slider will fall when the power is turned OFF.
  - Please note that an absolute unit cannot be used.

### 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-SM5L-I-5-N-①-②-③	5	See table above	-	5	18	2	±0.1	36~144 (36mm increments)

Legend: ① Stroke ② Compatible controller ③ Cable length

#### ■ Stroke and Maximum Speed

Stroke	36 ~ 144 (36mm increments)
Lead	
(No lead screw)	1400

(Unit: mm/s)

#### ① Stroke List

Stroke (mm)	Standard Price
36	-
72	-
108	-
144	-

#### ③ Cable List

Type	Cable Symbol	Standard Price
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 maintenance.

### Actuator Specifications

Item	Description
Drive System	Linear servo motor
Encoder Resolution	0.042mm
Base	Material: Aluminum (white alumite treated)
Allowable Dynamic Moment (Note)	Ma: 0.49N·m Mb: 0.41N·m Mc: 0.72N·m
Overhang Load Length	Ma direction: 80mm or less Mb, Mc direction: 100mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

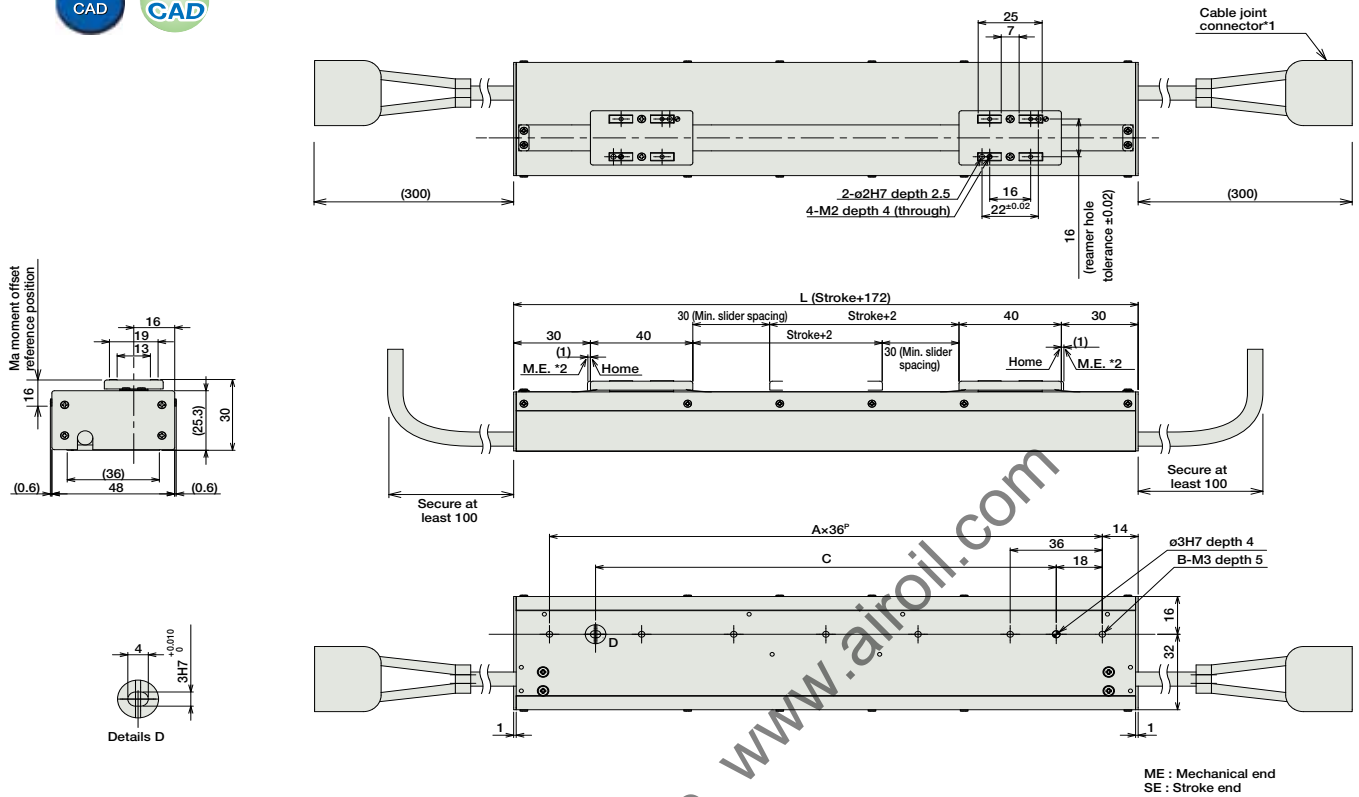
(Note) Based on a 5,000km service life.

Dimensions

CAD drawings can be downloaded from IAI website. [www.intelligentactuator.com](http://www.intelligentactuator.com)



For Special Orders P. A-9



- \*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.

**Note:**  
A controller is required for each slider.  
(or, one unit of 2-axis controller is required.)

**■ Dimensions and Weight by Stroke**

Stroke	36	72	108	144
L	208	244	280	316
A	5	6	7	8
B	6	7	8	9
C	144	180	216	252
Weight (kg)	0.62	0.69	0.75	0.82

② Compatible controller

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-SI-NP-2-1	Easy-to-use controller, even for beginners	3 points	AC100V	2.4A rated	-	→ P477
		ASEP-C-SI-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-SI-NP-2-0						→ P487
Positioner Type		ACON-C-SI-NP-2-0	Positioning is possible for up to 512 points	512 points	DC24V	6.4A max.	-	→ P535
Safety-Compliant Positioner Type		ACON-CG-SI-NP-2-0						
Pulse Train Input Type (Differential Line Driver)		ACON-PL-SI-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-SI-NP-2-0	Pulse train input type with open collector support					
Serial Communication Type		ACON-SE-SI-N-0-0	Dedicated to serial communication	64 points				
Field Network Type		RACON-5	Dedicated to field network	768 points				→ P503
Program Control Type		ASEL-C-1-SI-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.

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm/Flat Type
- Mini
- Standard
- Gripper/Rotary Type
- Linear Servo Type
- Cleanroom Proof
- Splash Proof
- Controllers
- PMEC/AMEC
- PSEP/ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (200V)
- Linear Servo Motor



# RCL-SA6L

ROBO Cylinder Slider Type Mini Long-Stroke Type 58mm Width Linear Servo Motor

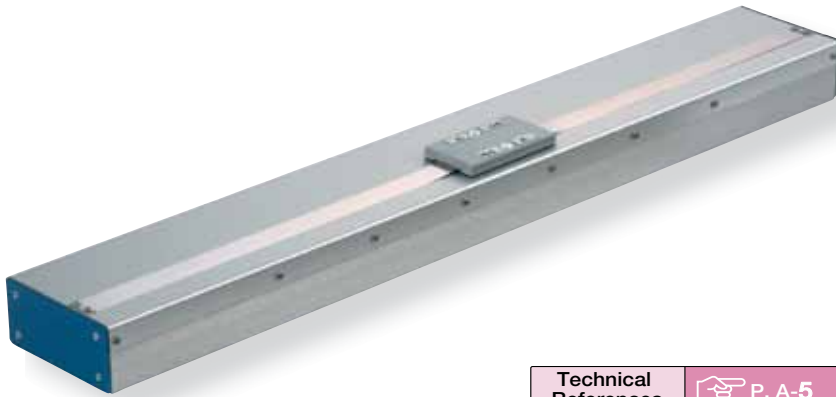
■ Configuration: **RCL** — **SA6L** — **I** — **10** — **N** —  —  —  —

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

I: Incremental    10: 10W linear servo motor    N: No screw lead    48: 48mm  
288: 288mm (48mm pitch increments)

A1: ACON    N: None  
RACON    P: 1m  
ASEL    S: 3m  
A3: AMEC    M: 5m  
ASEP    X   : Custom

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



Technical References P. A-5

■ Load Capacity (Horizontal) vs. Acceleration

Max. Acceleration (G)	Load Capacity (kg)	
	Continuous Operation (100% duty)	
0.1	3.2	
0.3		
0.5	2	
1	1	
1.5	0.65	
2	0.5	

- POINT** Notes on Selection
- Please note that this type has magnetic flux leakage. (If magnetism is a problem, please use SA1L, SA2L, or SA3L)
  - 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.
  - The mounting orientation is horizontal only. When operated vertically, please use caution, as the slider will fall when the power is turned OFF.
  - Please note that an absolute unit cannot be used.

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-SA6L-I-10-N-①-②-③-④	10	See table above	-	10	30	2	±0.1	48~288 (48mm increments)

Legend: ① Stroke ② Compatible controller ③ Cable length ④ Options

■ Stroke and Maximum Speed

Stroke / Lead	48 ~ 288 (48mm increments)	
	(No lead screw)	1600

(Unit: mm/s)

① Stroke List

Stroke (mm)	Standard Price
48	-
96	-
144	-
192	-
240	-
288	-

③ Cable List

Type	Cable Symbol	Standard Price
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 maintenance.

④ Options List

Name	Option Code	See Page	Standard Price
Reversed-home	NM	→ A-33	-

Actuator Specifications

Item	Description
Drive System	Linear servo motor
Encoder Resolution	0.042mm
Base	Material: Aluminum (white alumite treated)
Allowable Dynamic Moment (Note)	Ma: 0.87N·m Mb: 0.75N·m Mc: 1.22N·m
Overhang Load Length	Ma direction: 80mm or less Mb-Mc direction: 120mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

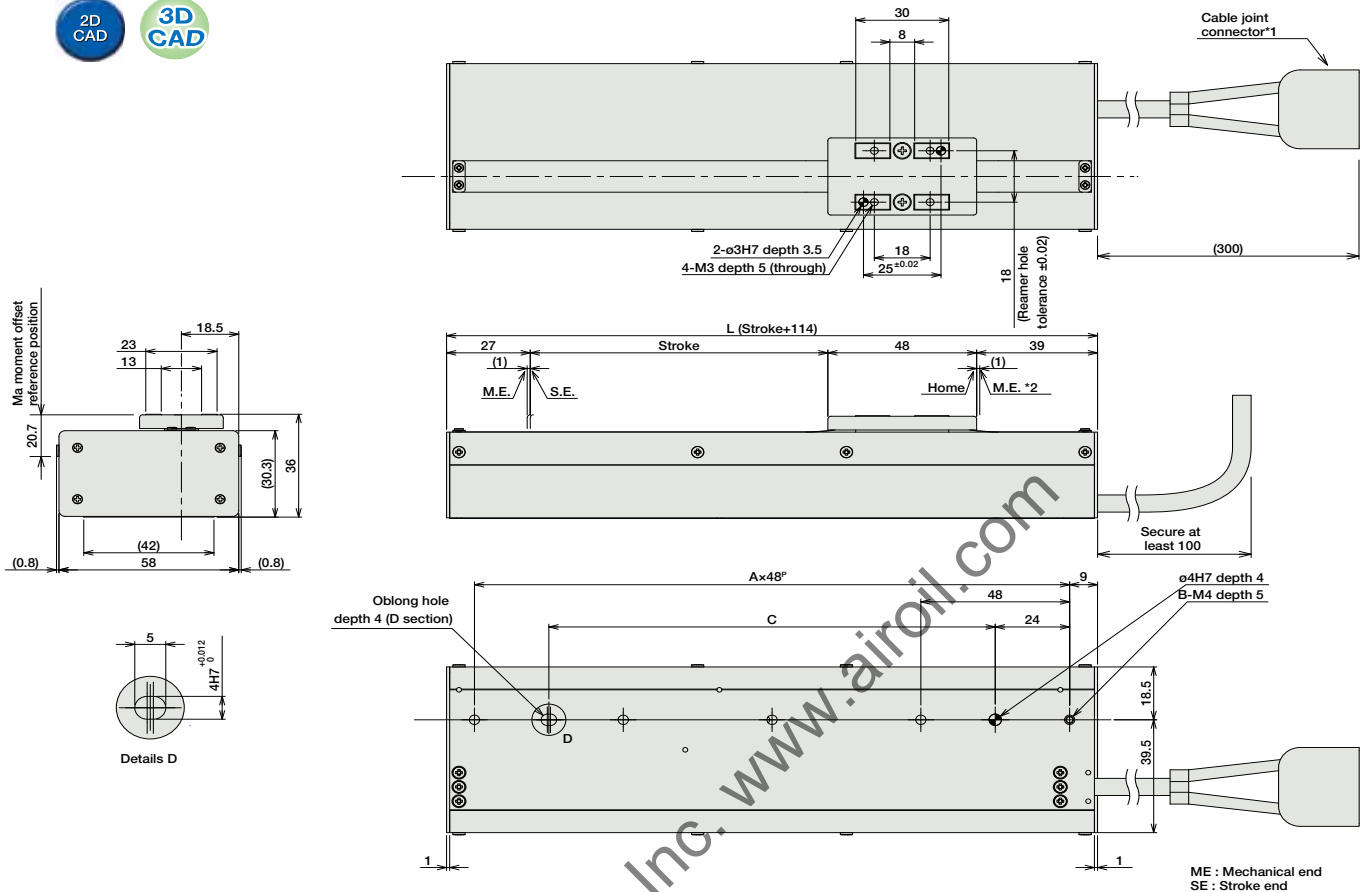
(Note) Based on a 5,000km service life.

Dimensions

CAD drawings can be downloaded from IAI website. [www.intelligentactuator.com](http://www.intelligentactuator.com)



For Special Orders P. A-9



- \*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.

Dimensions and Weight by Stroke

Stroke	48	96	144	192	240	288
L	162	210	258	306	354	402
A	3	4	5	6	7	8
B	4	5	6	7	8	9
C	96	144	192	240	288	336
Weight (kg)	0.67	0.8	0.93	1.07	1.2	1.34

2 Compatible controller

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.	-	→ P535
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.

# RCL-SM6L

ROBO Cylinder Slider Type Mini Multi-Slider Type 58mm Width Linear Servo Motor

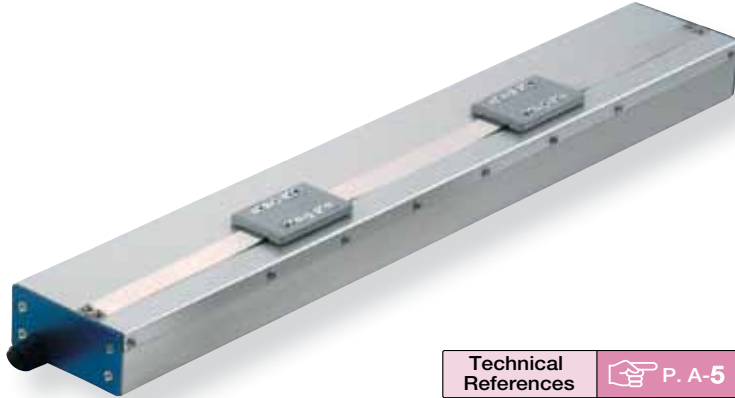
■ Configuration: **RCL** — **SM6L** — **I** — **10** — **N** —  —  —

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

I: Incremental    10: 10W linear servo motor    N: No screw    48: 48mm  
 192: 192mm (48mm pitch increments)

A1: ACON    N: None  
 RACON    P: 1m  
 ASEL    S: 3m  
 A3: AMEC    M: 5m  
 ASEP    X   : Custom

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



Technical References P. A-5

### ■ Load Capacity (Horizontal) vs. Acceleration

Max. Acceleration (G)	Load Capacity (kg)	
	Continuous Operation (100% duty)	
0.1	3.2	
0.3		
0.5	2	
1	1	
1.5	0.65	
2	0.5	

- POINT**  
Notes on Selection
- Please note that this type has magnetic flux leakage. (If magnetism is a problem, please use SA1L, SA2L, or SA3L)
  - 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.
  - The mounting orientation is horizontal only. When operated vertically, please use caution, as the slider will fall when the power is turned OFF.
  - Please note that an absolute unit cannot be used.

### 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-SM6L-I-10-N-①-②-③	10	See table above	-	10	30	2	±0.1	48~192 (48mm increments)

Legend: ① Stroke ② Compatible controller ③ Cable length

#### ■ Stroke and Maximum Speed

Stroke / Lead	48 ~ 192 (48mm increments)	
	(No lead screw)	1600

(Unit: mm/s)

#### ① Stroke List

Stroke (mm)	Standard Price
48	-
96	-
144	-
192	-

#### ③ Cable List

Type	Cable Symbol	Standard Price
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 maintenance.

### Actuator Specifications

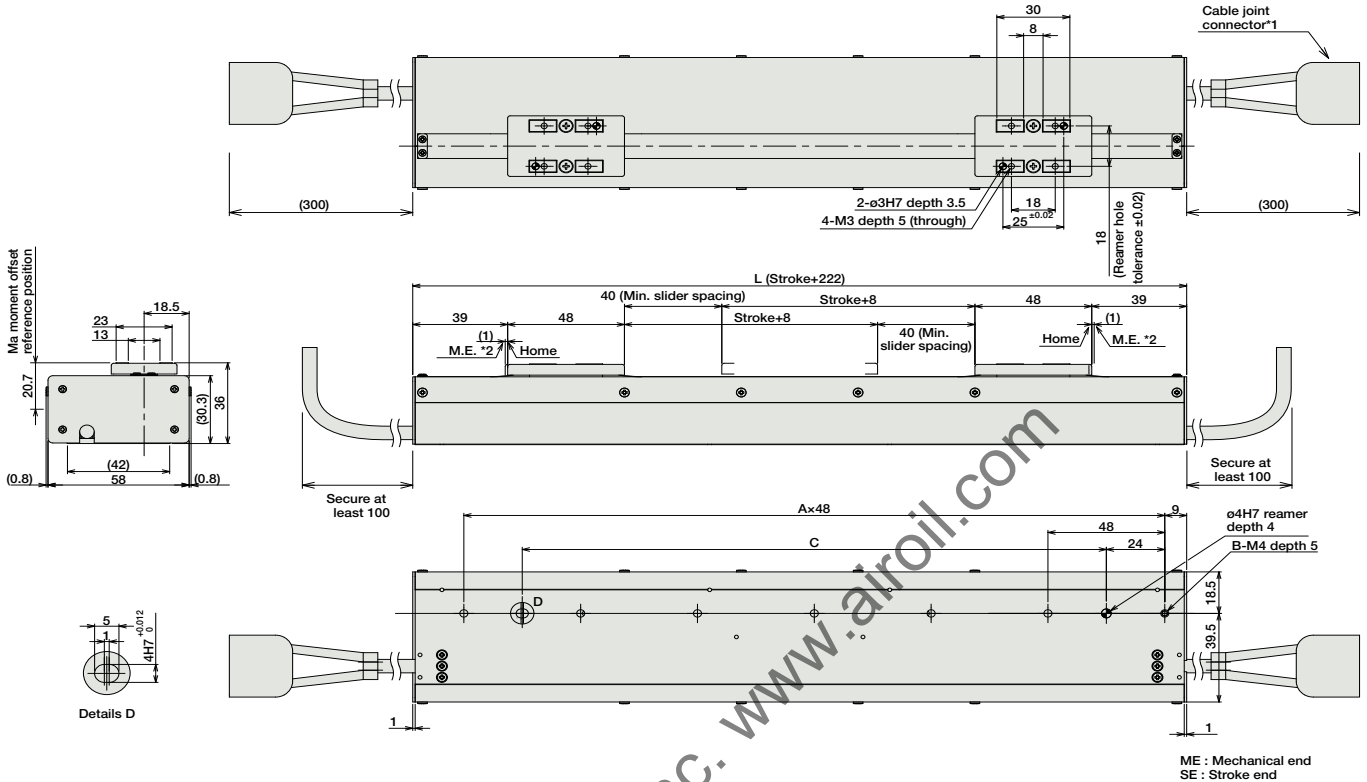
Item	Description
Drive System	Linear servo motor
Encoder Resolution	0.042mm
Base	Material: Aluminum (white alumite treated)
Allowable Dynamic Moment (Note)	Ma: 0.87N·m Mb: 0.75N·m Mc: 1.22N·m
Overhang Load Length	Ma direction: 80mm or less Mb-Mc direction: 120mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

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

Dimensions

CAD drawings can be downloaded from IAI website. [www.intelligentactuator.com](http://www.intelligentactuator.com)

For Special Orders P. A-9



- \*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.

**Note:**  
A controller is required for each slider.  
(or, one unit of 2-axis controller is required.)

■ Dimensions and Weight by Stroke

Stroke	48	96	144	192
L	270	318	366	414
A	5	6	7	8
B	6	7	8	9
C	192	240	288	336
Weight (kg)	1.17	1.31	1.44	1.58

② Compatible controller

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.				-	→ P487
Splash-Proof Solenoid Valve Type		ASEP-CW-10I-NP-2-0					-	
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.

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm/Flat Type
- Mini
- Standard
- Gripper/Rotary Type
- Linear Servo Type
- Cleanroom Proof
- Splash Proof
- Controllers
- PMEC/AMEC
- PSEP/ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (200V)
- Linear Servo Motor

# RCL-RA1L

ROBO Cylinder Rod Type Mini-Slim Type ø16mm Diameter Linear Servo Motor

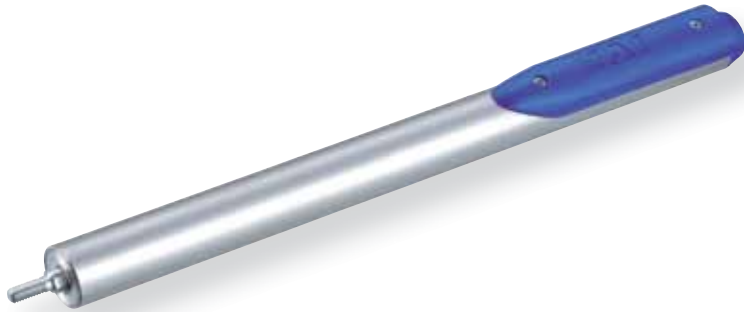
■ Configuration: **RCL** — **RA1L** — **I** — **2** — **N** — **25** —  —  —

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

I: Incremental    2: 2W linear servo motor    N: No screw    25: 25mm

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	0.5	0.1	0.5	0.1
0.3				
0.5	0.42		0.25	
1	0.2			
1.5	0.11	-	0.15	-
2	0.07	-	0.1	-

### Pushing Force Guideline

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

Electrical Limit	30%	40%	50%	60%	70%	80%
Pushing Force	0.75	1	1.25	1.5	1.75	2

(Note) The above pushing force is applicable to horizontal usage. For vertical upward motions, subtract 0.5N from the above value, and for downward motions, add 0.5N.

Actuator Specifications							
Lead and Load Capacity				Stroke and Maximum Speed			
Model	Motor Output (W)	Max. Load Capacity Horizontal (kg) / Vertical (kg)	Rated Thrust (N)	Max. Momentary Thrust (N)	Max. Acceleration (G)	Positioning Repeatability (mm)	Stroke (mm)
RCL-RA1L-I-2-N-25-①-②-③	2	See table above	2.5	10	Horizontal 2G Vertical 1G	±0.1	25 (Fixed)

Legend ① Compatible controller ② Cable length ③ Options (Unit: mm/s)

### Stroke List

Stroke (mm)	Standard Price
25	-

### 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 392 for cables for the brake-equipped model.

### ③ Option Price List

Name	Option Code	See Page	Standard Price
Brake (with brake box)	B	→ P392	-
Brake (without brake box)	BN	→ P392	-

\* 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

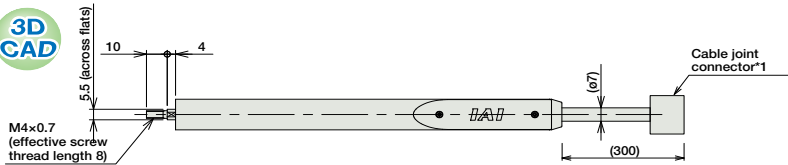
Dimensions

CAD drawings can be downloaded from IAI website. [www.intelligentactuator.com](http://www.intelligentactuator.com)

For Special Orders P. A-9



(No brake)

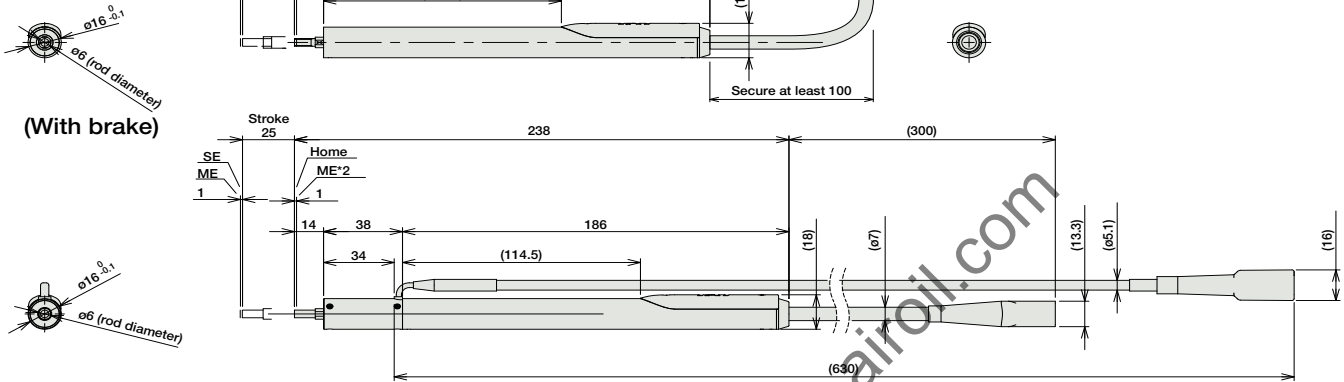


\*1 The motor-encoder cable is connected here. See page A-39 for details on cables.

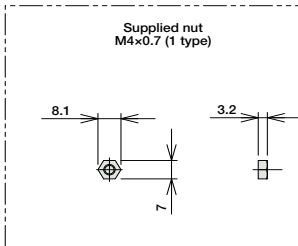
\*2 When homing, the slider moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.

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

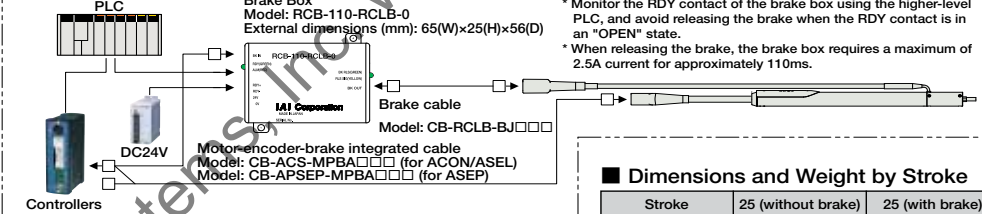
(With brake)



ME : Mechanical end  
SE : Stroke end



[Brake-Equipped Model Schematic Diagram]



**Dimensions and Weight by Stroke**

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

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-2I-NP-2-1	Easy-to-use controller, even for beginners	3 points	AC100V	2.4A rated	-	→ P477
		ASEP-C-2I-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.				-	→ P487
Splash-Proof Solenoid Valve Type		ASEP-CW-2I-NP-2-0					-	
Positioner Type		ACON-C-2I-NP-2-0	Positioning is possible for up to 512 points	512 points	DC24V	4.6A max.	-	
Safety-Compliant Positioner Type		ACON-CG-2I-NP-2-0		-				
Pulse Train Input Type (Differential Line Driver)		ACON-PL-2I-NP-2-0	Pulse train input type with differential line driver support	(-)	DC24V	4.6A max.	-	→ P535
Pulse Train Input Type (Open Collector)		ACON-PO-2I-NP-2-0	Pulse train input type with open collector support				-	
Serial Communication Type		ACON-SE-2I-N-0-0	Dedicated to serial communication	64 points			-	
Field Network Type		RACON-2	Dedicated to field network	768 points			-	→ P503
Program Control Type		ASEL-C-1-2I-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.

# RCL-RA2L

ROBO Cylinder Rod Type Mini-Slim Type ø20mm Diameter Linear Servo Motor

■ Configuration: **RCL** — **RA2L** — **I** — **5** — **N** — **30** —  —  —

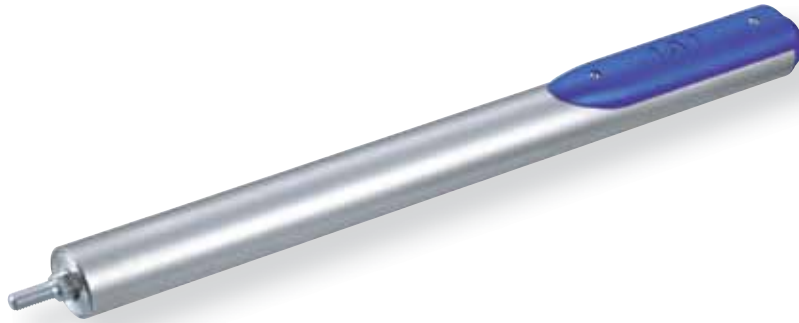
Series — Type — Encoder — Motor — Lead — Stroke — Compatible Controllers — Cable Length — Option

I: Incremental    5: 5W linear servo motor    N: No screw    30: 30mm

A1: ACON    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	1	0.2	1	0.2
0.3				
0.5	0.85		0.5	
1	0.4			
1.5	0.24	-	0.3	-
2	0.15	-	0.2	-

### Pushing Force Guideline

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

Electrical Limit	30%	40%	50%	60%	70%	80%
Pushing Force	1.5	2	2.5	3	3.5	4

(Note) The above pushing force is applicable to horizontal usage. For vertical upward motions, subtract 1N from the above value, and for downward motions, add 1N.

Actuator Specifications								
Lead and Load Capacity				Stroke and Maximum Speed				
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-RA2L-I-5-N-30-①-②-③	5	See table above	See table above	5	18	Horizontal 2G Vertical 1G	±0.1	30 (Fixed)
Legend ① Compatible controller ② Cable length ③ Options								

Stroke	30 (mm)
Lead	
(No lead screw)	340

(Unit: mm/s)

### Stroke List

Stroke (mm)	Standard Price
30	-

### 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 394 for cables for the brake-equipped model.

### ③ Option Price List

Name	Option Code	See Page	Standard Price
Brake (with brake box)	B	→ P394	-
Brake (without brake box)	BN	→ P394	-

\* 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).

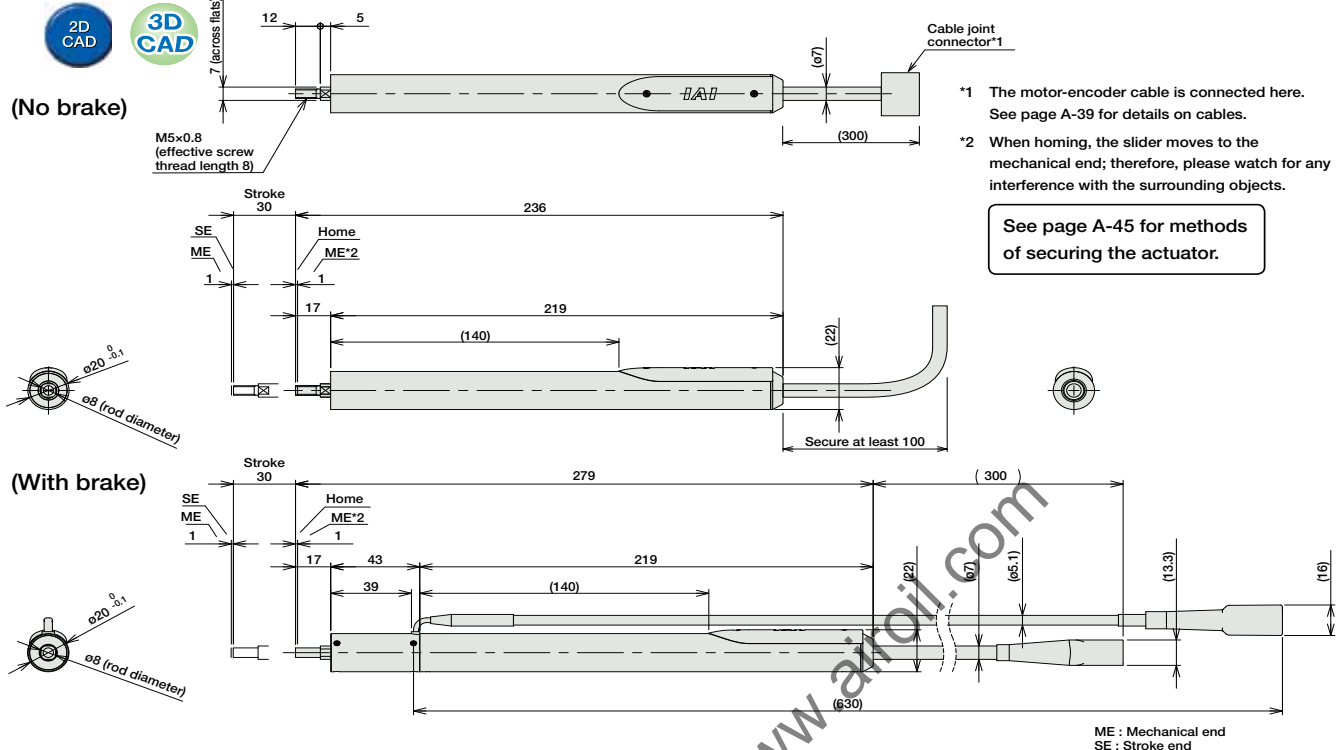
### Actuator Specifications

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

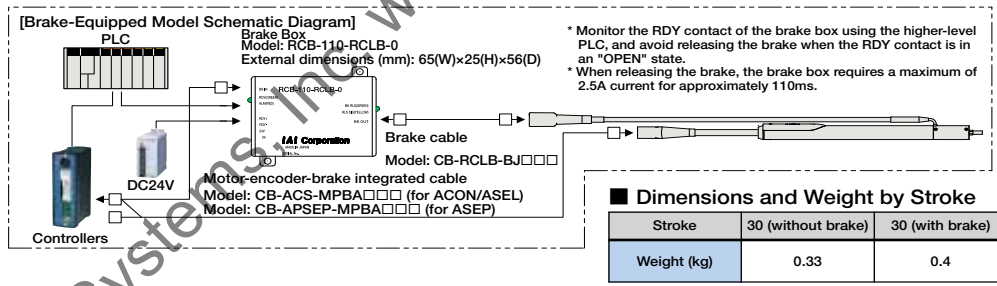
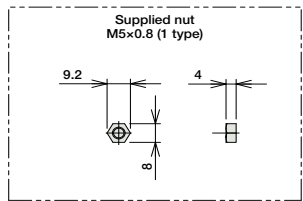
CAD drawings can be downloaded from IAI website. [www.intelligentactuator.com](http://www.intelligentactuator.com)

For Special Orders P. A-9



- \*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.



**■ Dimensions and Weight by Stroke**

Stroke	30 (without brake)	30 (with brake)
Weight (kg)	0.33	0.4

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-SI-NP-2-1	Easy-to-use controller, even for beginners	3 points	AC100V	2.4A rated	-	→ P477
		ASEP-C-SI-NP-2-0	Operable with same signal as solenoid valve. Supports both single and double solenoid types. No homing necessary with simple absolute type.				-	→ P487
Splash-Proof Solenoid Valve Type		ASEP-CW-SI-NP-2-0					-	
Positioner Type		ACON-C-SI-NP-2-0	Positioning is possible for up to 512 points	512 points	DC24V	6.4A max.	-	
Safety-Compliant Positioner Type		ACON-CG-SI-NP-2-0					-	
Pulse Train Input Type (Differential Line Driver)		ACON-PL-SI-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-SI-NP-2-0	Pulse train input type with open collector support				-	
Serial Communication Type		ACON-SE-SI-N-0-0	Dedicated to serial communication	64 points			-	
Field Network Type		RACON-5	Dedicated to field network	768 points			-	→ P503
Program Control Type		ASEL-C-1-SI-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.



# RCL-RA3L

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

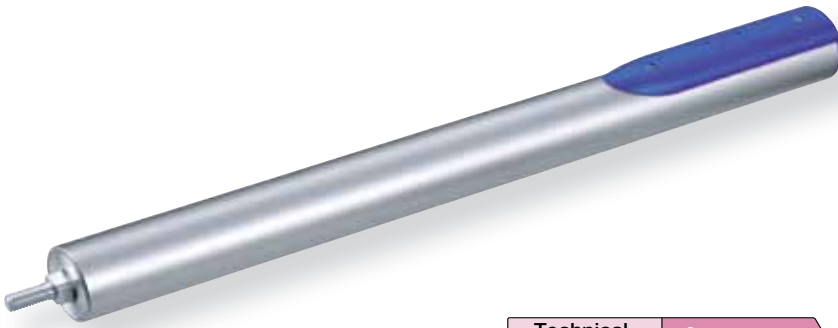
■ Configuration: **RCL** — **RA3L** — **I** — **10** — **N** — **40** —  —  —

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	450
(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

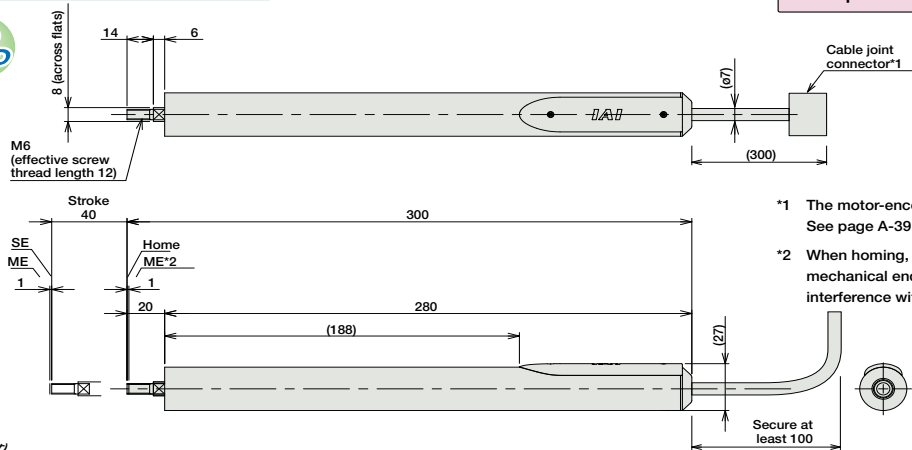
Dimensions

CAD drawings can be downloaded from IAI website. [www.intelligentactuator.com](http://www.intelligentactuator.com)

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(No brake)

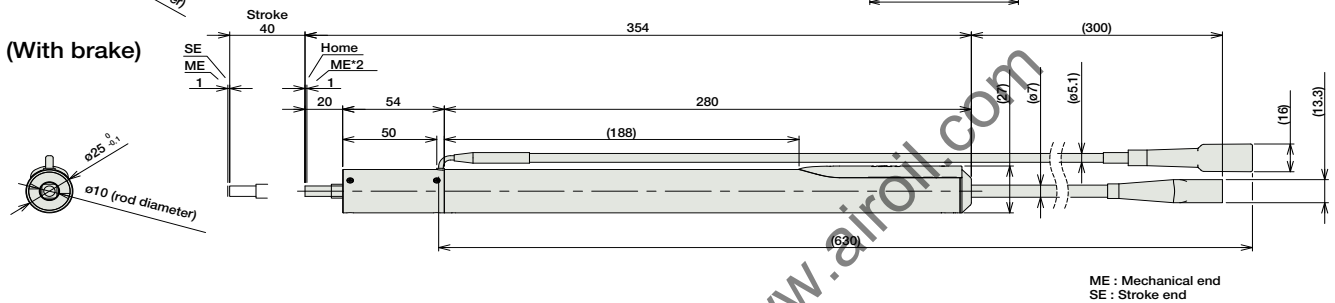


\*1 The motor-encoder cable is connected here. See page A-39 for details on cables.

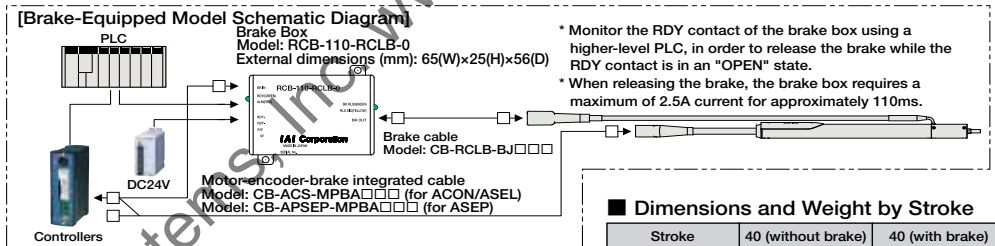
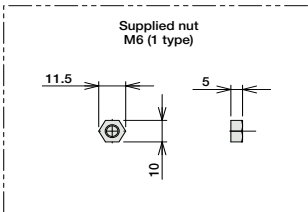
\*2 When homing, the slider moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.

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

(With brake)



ME : Mechanical end  
SE : Stroke end



\* Monitor the RDY contact of the brake box using a higher-level PLC, in order to release the brake while the RDY contact is in an "OPEN" state.  
\* When releasing the brake, the brake box requires a maximum of 2.5A current for approximately 110ms.

■ 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.