

# **Linear Servo Type**

## **RCL**





### **Linear Servo Type**

	Slider Type	Mini Slim Type	20mm Width	RCL-SA1L	419
			24mm Width	RCL-SA2L	421
RCL			28mm Width	RCL-SA3L	423
series		Mini Long Stroke Type	40mm Width	RCL-SA4L	425
			48mm Width	RCL-SA5L	427
Linear Servo			58mm Width	RCL-SA6L	429
Motor		Mini Multi-Slider Type	40mm Width	RCL-SM4L	431
Туре			48mm Width	RCL-SM5L	433
			58mm Width	RCL-SM6L	435
	Rod Type	Mini Slim Type	ø16mm	RCL-RA1L	437
			ø20mm	RCL-RA2L	439
			ø25mm	RCL-RA3L	441

Slider Type

Mini

Standar

Controller Integrated

Rod Type

Mini

Controller Integrated

> Table/ Arm/ Flat Type

Mini

Standard

Gripper/ Rotary Type

Servo Type

Cleanroom Type

Splash-Proof Type

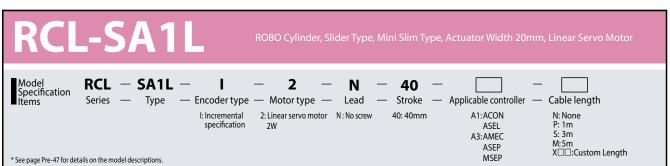
> ulse lotor

Servo Motor (24V)

> Servo Motor 200V)

Linear Servo Motor

RoHS



# Technical

#### ■ Relation between payload (horizontal) and acceleration

Maximum	Load Capacity (kg)				
Acceleration (G)	Continuous operation (Duty is 100%)	Duty is 70% or less			
0.1	0.5				
0.3	0.5	0.5			
0.5	0.42				
1	0.25	0.32			
1.5	0.18	0.24			
2	0.15	0.2			

References



(1) The payload is determined by the acceleration and duty. Verify the payload in the payload (horizontal) and acceleration chart at right.

Operating time x 100 per cycle. Operating time + stop time

- (2) The mounting position is horizontal-only. Please take care because the slider will drop down with power OFF when operating vertically.
- (3) Simple absolute unit cannot be used with the RCL series.

#### ■ Stroke and Maximum Speed

Model number	Motor output(W)	Maximum Horizontal (kg)	. ,	Rated thrust (N)	Instantaneous maximum thrust (N)	Maximum acceleration (G)	Positioning repeatability (mm)	Stroke (mm)	Stroke Lead	40 (mm)
RCL-SA1L-I-2-40-N-①-②	2	See chart above	_	2	10	2	±0.1	40 (Fixed)	(no screw)	420
										(1 lm lb

Code explanation ① Applicable Controller ② Cable length

(Unit: mm/s)

Stroke					
Stroke (mm)	Standard price				
40	_				

②Cable Length						
Туре	Cable symbol	Standard price				
Standard	<b>P</b> (1m)	_				
(Robot Cables)	<b>S</b> (3m)	_				
(Nobol Cables)	<b>M</b> (5m)	_				
	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_				
Special length	X11 (11m) ~ X15 (15m)	_				
	X16 (16m) ~ X20 (20m)	_				

- \* The standard cable for the RCL is the robot cable.
- \* See page A-59 for cables for maintenance.

#### Actuator Specifications

ltem	Description
Drive System	Linear servo motor
Encoder resolution	0.042mm
Base	Material: Aluminum, white alumite treated
Allowable dynamic moment (*)	Ma: 0.13 N·m, Mb: 0.12 N·m, Mc: 0.21 N·m
Overhung load length	50mm or less
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

(\*) Based on 5,000km of traveling life

Actuator Specifications ■ Lead and Payload

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For Special Orders

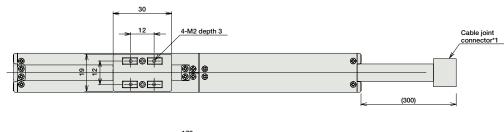


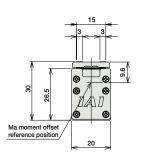


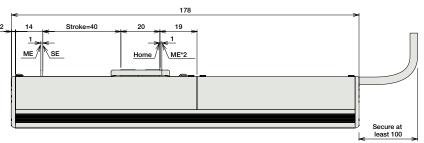


(\*1) Connect the motor-encoder integrated cable here. See page A-59 for details on cables.

(\*2) During home return, the slider travels until the mechanical end, so be careful to avoid interference from peripheral objects.

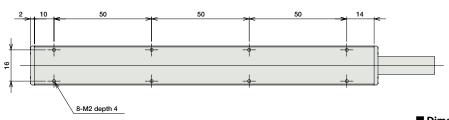








ME : Mechanical end SE : Stroke end



#### ■ Dimensions and Weight by Stroke Stroke 40 Weight (kg) 0.28

#### 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	- T	AMEC-C-2I-①-2-1	Easy-to-use controller, even for beginners		AC100V	2.4A rated	_	→ P537
Solellold valve Type	1	ASEP-C-2I-①-2-0	Simple controller operable with the same signal as a solenoid valve	3 points			_	→ P547
Solenoid valve multi-axis type PIO specification		MSEP-C	Positioner type based on PIO control, allowing up to 8 axes to be connected					→ P563
Solenoid valve multi-axis type Network specification		MSEP-C	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points			_	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
Positioner type		ACON-C-2I-①-2-0	Positioning is possible for up to 512 512 poin				_	
Safety-Compliant Positioner Type		ACON-CG-2I-①-2-0	points	312 points	DC24V	0.8A rated 4.6A max.	_	
Pulse Train Input Type (Differential Line Driver)		ACON-PL-2I-①-2-0	Pulse train input type with differential line driver support	(—)			_	→ P631
Pulse Train Input Type (Open Collector)	è	ACON-PO-2I-①-2-0	Pulse train input type with open collector support	(—)			_	
Serial Communication Type		ACON-SE-2I-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

IAI

\*This is for the single-axis ASEL. \* ① indicates I/O type (NP/PN). \* ① indicates number of axes (1 to 8). \* ⑩ indicates field network specification symbol.

RCL-SA1L **420** 

Standard

Controllers Integrated

> Roc Type

Mini

Standard

Controllers Integrated

Table/ Arm/ Flat Type

Mini

Gripper

Linear Servo Type

Cleanroom Type

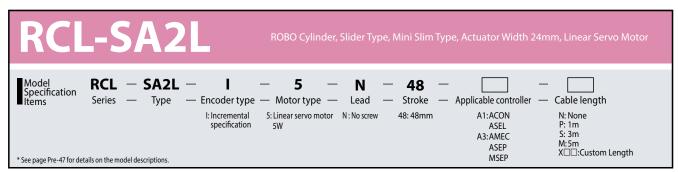
Splash Proc Typ

> Puls Moto

Serve Moto (24V

Servo Motor

Linear Servo Motor





#### ■ Relation between payload (horizontal) and acceleration

Maximum	Load Capacity (kg)					
Acceleration (G)	Continuous operation (Duty is 100%)	Duty is 70% or less				
0.1	1					
0.3	1	1				
0.5	0.85					
1	0.5	0.6				
1.5	0.36	0.45				
2	0.3	0.36				

(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  $\frac{\text{Operating time}}{\text{Operating time} + \text{stop time}} \times 100 \text{ per cycle.}$ 

- (2) The mounting position is horizontal-only. Please take care because the slider will drop down with power OFF when operating vertically.
- (3) Simple absolute unit cannot be used with the RCL series.

#### ■ Stroke and Maximum Speed

Model number	Motor		Maximum payload		Instantaneous maximum	Maximum	Positioning repeatability	Stroke
Model Hambel	output(W)	Horizontal (kg)	Vertical (kg)	thrust (N)	thrust (N)	acceleration (G)	(mm)	(mm)
RCL-SA2L-I-5-N-48-①-②	5	See chart above	-	4	18	2	±0.1	48 (Fixed)

Stroke Lead	48 (mm)
(no screw)	460

Code explanation ① Applicable Controller ② Cable length

(Unit: mm/s)

Stroke			
Stroke (mm)	Standard price		
48	_		

②Cable Length						
Type	Cable symbol	Standard price				
Standard	<b>P</b> (1m)	_				
(Robot Cables)	<b>S</b> (3m)	_				
(Nobol Cables)	<b>M</b> (5m)	_				
	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_				
Special length	X11 (11m) ~ X15 (15m)	_				
	<b>X16</b> (16m) ~ <b>X20</b> (20m)	_				

- \* The standard cable for the RCL is the robot cable.
- \* See page A-59 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 (*)	Ma: 0.2 N·m, Mb: 0.17 N·m, Mc: 0.25 N·m
Overhung load length	60mm or less
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

(\*) Based on 5,000km of traveling life

Actuator Specifications

Lead and Payload

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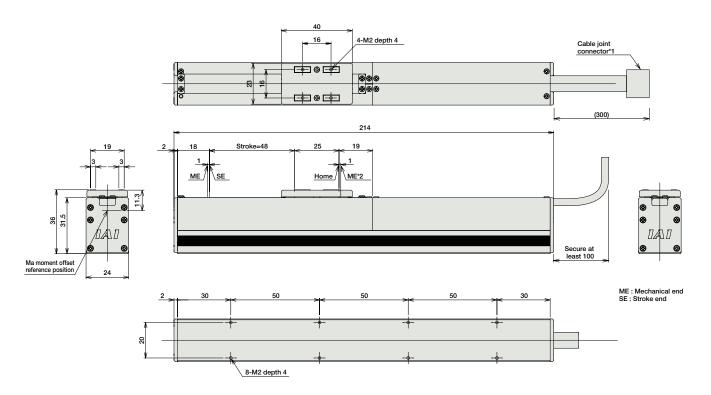
For Special Orders







- (\*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.



#### ■ Dimensions and Weight by Stroke

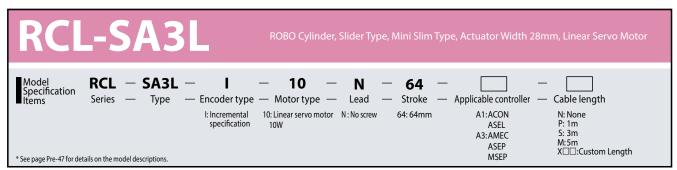
Stroke	48
Weight (kg)	0.45

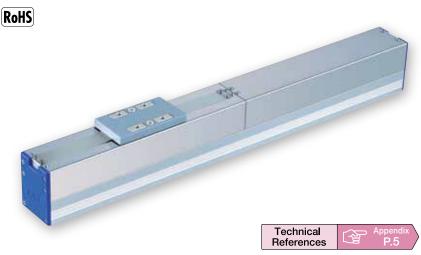
①Applicable Controllers  RCL series actuators can be operated with the controllers indicated below. Select the type according to your intended application.								
Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Reference page
Solenoid Valve Type		AMEC-C-5I-①-2-1	Easy-to-use controller, even for beginners		AC100V	2.4A rated	_	→ P537
Solenolu valve Type	1	ASEP-C-5I-①-2-0	Simple controller operable with the same signal as a solenoid valve	3 points		1.0A rated 6.4A max.	_	→ P54
Solenoid valve multi-axis type PIO specification	1	MSEP-C-(  )-~-( )-2-0	Positioner type based on PIO control, allowing up to 8 axes to be connected				_	→ P563
Solenoid valve multi-axis type Network specification	iiii	MSEP-C	Field network-ready positioner type, allowing up to 8 axes to be connected					
Positioner type		ACON-C-5I-①-2-0	Positioning is possible for up to 512	512 points  (—)  64 points	DC24V		_	→ P631
Safety-Compliant Positioner Type		ACON-CG-5I-①-2-0	points				_	
Pulse Train Input Type (Differential Line Driver)	C.	ACON-PL-5I-①-2-0	Pulse train input type with differential line driver support				_	
Pulse Train Input Type (Open Collector)	ė	ACON-PO-5I-①-2-0	Pulse train input type with open collector support				_	
Serial Communication Type		ACON-SE-5I-N-0-0	Dedicated Serial Communication				_	
Program Control Type		ASEL-CS-1-5I-①-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points				→ P67

\*This is for the single-axis ASEL. \* ① indicates I/O type (NP/PN). \* ① indicates number of axes (1 to 8). \* ⑩ indicates field network specification symbol.

IAI

RCL-SA2L **422** 





#### ■ Relation between payload (horizontal) and acceleration

Maximum	Load Cap	acity (kg)			
Acceleration (G)	Continuous operation (Duty is 100%)	Duty is 70% or less			
0.1	2				
0.3	2	2			
0.5	1.8				
1	1	1.2			
1.5	0.65	0.8			
2	0.5	0.6			

(1) The payload is determined by the acceleration and duty. Verify the payload in the payload (horizontal) and acceleration chart at right.

Operating time - x 100 per cycle. Operating time + stop time

- (2) The mounting position is horizontal-only. Please take care because the slider will drop down with power OFF when operating vertically.
- (3) Simple absolute unit cannot be used with the RCL series.

#### ■ Stroke and Maximum Speed

#### ■ Lead and Payload Motor Maximum payload output(W) Horizontal (kg) Vertical (kg) Maximum payload Rated thrust (N) nstantaneou: maximum thrust (N) Stroke Model number (mm) See chart 64 RCL-SA3L-I-10-N-64-1 - 2 ±0.1 10 8 30 2 above (Fixed)

	Stroke Lead	64 (mm)
	(no screw)	600

Code explanation ① Applicable Controller ② Cable length

(Unit: mm/s)

Stroke	
Stroke (mm)	Standard price
64	_

②Cable Length				
Type	Cable symbol	Standard price		
Standard	<b>P</b> (1m)	_		
(Robot Cables)	<b>S</b> (3m)	_		
(RODOL Cables)	<b>M</b> (5m)	_		
	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_		
Special length	X11 (11m) ~ X15 (15m)	_		
	X16 (16m) ~ X20 (20m)	_		

<sup>\*</sup> The standard cable for the RCL is the robot cable. \* See page A-59 for cables for maintenance.

Actuat	or Spec	ifications	

ltem	Description
Drive System	Linear servo motor
Encoder resolution	0.042mm
Base	Material: Aluminum, white alumite treated
Allowable dynamic moment (*)	Ma: 1.22 N·m, Mb: 1.08 N·m, Mc: 0.34 N·m
Overhung load length	Ma direction: 120mm or less Mb and Mc directions: 80mm or less
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

(\*) Based on 5,000km of traveling life

Actuator Specifications

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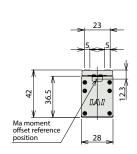


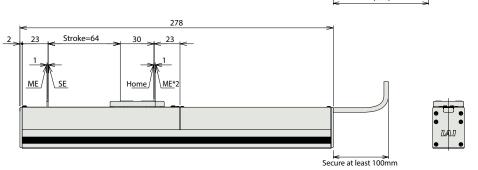




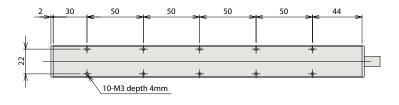
- (\*1) Connect the motor-encoder integrated cable here. See page A-59 for details on cables.
  (\*2) During home return, the slider travels until the mechanical end, so be careful to avoid interference from peripheral objects.

48 4-M3 depth 5mm Cable joint connector \*1 (300) 278





ME: Mechanical end SE: Stroke end



#### **■** Dimensions and Weight by Stroke

Stroke	64
Weight (kg)	0.82

#### ①Applicable Controllers

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

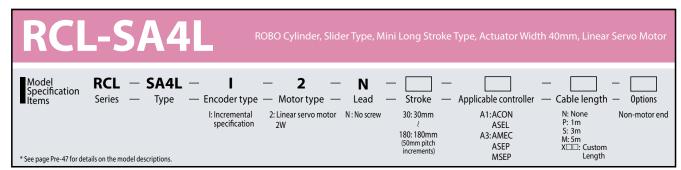
Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Reference page
Solenoid Valve Type	W.	AMEC-C-10I-①-2-1	Easy-to-use controller, even for beginners		AC100V	2.4A rated	-	→ P537
Solenoid valve Type	3	ASEP-C-10I-①-2-0	Simple controller operable with the same signal as a solenoid valve	3 points			_	→ P547
Solenoid valve multi-axis type PIO specification		MSEP-C-①-~-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	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points			_	7 2003
Positioner type		ACON-C-10I-①-2-0	Positioning is possible for up to 512	512 points			_	
Safety-Compliant Positioner Type		ACON-CG-10I-①-2-0	points	312 points	DC24V	1.3A rated 6.4A max.	1	
Pulse Train Input Type (Differential Line Driver)	O.	ACON-PL-10I-①-2-0	Pulse train input type with differential line driver support	(—)			_	→ P631
Pulse Train Input Type (Open Collector)	ė	ACON-PO-10I-①-2-0	Pulse train input type with open collector support	(—)			_	
Serial Communication Type		ACON-SE-10I-N-0-0	Dedicated Serial Communication	64 points			_	
Program Control Type		ASEL-CS-1-10I-①-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points			_	→ P675

IAI

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

RCL-SA3L **424** 

RoHS



# Technical References

#### ■ Relation between payload (horizontal) and acceleration

Maximum Acceleration	Load Capacity (kg)
(G)	Continuous operation (Duty is 100%)
0.1	0.8
0.3	0.0
0.5	0.5
1	0.25
1.5	0.18
2	0.14

(1) Please take care because this type has magnetic flux leakage. (If magnetism is a problem, use SA1L/SA2L/SA3L)

(2) The payload is determined by the acceleration and duty. Verify the payload in the payload (horizontal) and acceleration chart at right.

> Motor Maximum payload
> output(W) Horizontal (kg) Vertical (kg) Maximum payload

> > See chart

above

Rated thrust (N)

2.5

stantaneous

10

Maximum acceleratio

2

±0.1

Operating time The duty is Operating time + stop time x 100 per cycle.

- (3) The mounting position is horizontal-only. Please take care because the slider will drop down with power OFF when operating vertically.(4) Simple absolute unit cannot be used with the RCL series.

#### Stroke and Maximum Speed

#### Stroke 30~180 (Every 30mm) Lead (no screw) 1200

(Unit: mm/s)

<b>UStroke</b>					
①Stroke (mm) Standard price					
30	_				
60	_				
90	_				
120	_				
150	_				
180	_				

ı	<b>4</b> Options			
İ	Title	Option code	See page	Standard Price
İ	Non-motor end specification	NM	→ A-52	_

③Cable Length					
Type	Cable symbol	Standard price			
Standard	<b>P</b> (1m)	_			
(Robot Cables)	<b>S</b> (3m)	_			
(Nobol Cables)	(RODOT Cables)  M (5m)	_			
	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_			
Special length	<b>X11</b> (11m) ~ <b>X15</b> (15m)	_			
	X16 (16m) ~ X20 (20m)	_			

\* The standard cable for the RCL is the robot cable. \* See page A-59 for cables for maintenance.

(mm) 30~180

(Every

30mm)

#### Actuator Specifications

ltem	Description
Drive System	Linear servo motor
Encoder resolution	0.042mm
Base	Material: Aluminum, white alumite treated
Allowable dynamic moment (*)	Ma: 0.2 N·m, Mb: 0.17 N·m, Mc: 0.25 N·m
Overhung load length	Ma direction: 60mm or less Mb and Mc directions: 80mm or less
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

(\*) Based on 5,000km of traveling life

Actuator Specifications Lead and Payload

Model number

RCL-SA4L-I-2-N-1 - 2 - 3 - 4

Cable joint connector \*1

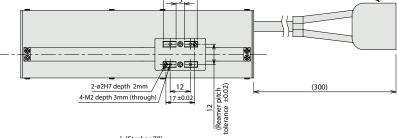
For Special Orders

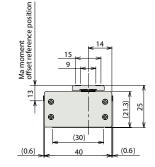
CAD drawings can be downloaded www.intelligentactuator.com

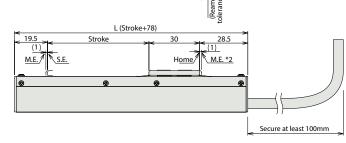
3D CAD 2D CAD

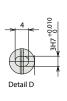
Dimensional Drawings

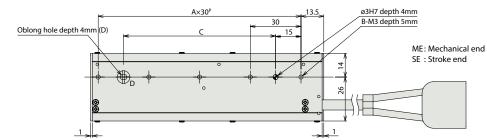
- (\*1) Connect the motor-encoder integrated cable here. See page A-59 for details on cables.
- (\*2) During home return, the slider travels until the mechanical end, so be careful to avoid interference from peripheral objects.











#### ■ Dimensions and Weight by Stroke

Stroke	30	60	90	120	150	180
L	108	138	168	198	228	258
Α	3	4	5	6	7	8
В	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
rreight (kg)	0.21	0.23	0.27	0.52	0.50	U.T

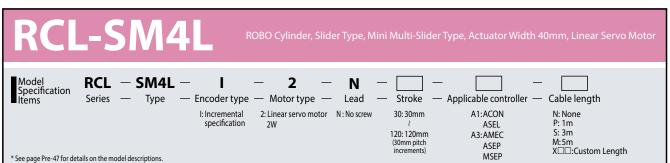
#### ②Applicable Controllers

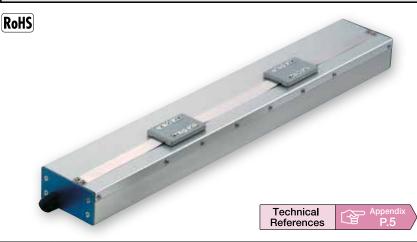
RCL series actuators can be operated with the controllers indicated below. Select the type according to your intended application.

Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Reference page
Solenoid Valve Type	W.	AMEC-C-2I-①-2-1	D-2-1 Easy-to-use controller, even for beginners AC100V 2.4A rated		_	→ P537		
Soleriola valve Type	1	ASEP-C-2I-①-2-0	Simple controller operable with the same signal as a solenoid valve	3 points			_	→ P547
Solenoid valve multi-axis type PIO specification		MSEP-C-(  )-~-( )-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	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points			_	→ P303
Positioner type		ACON-C-2I-①-2-0	Positioning is possible for up to 512	512 points	DC24V	0.8A rated 4.6A max.	_	
Safety-Compliant Positioner Type		ACON-CG-2I-①-2-0	points				_	
Pulse Train Input Type (Differential Line Driver)	e A	ACON-PL-2I-①-2-0	Pulse train input type with differential line driver support	differential line driver support			_	→ P631
Pulse Train Input Type (Open Collector)	è	ACON-PO-2I-①-2-0	Pulse train input type with open collector support				_	
Serial Communication Type		ACON-SE-2I-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). \* ① indicates number of axes (1 to 8). \* ⑩ indicates field network specification symbol.

RCL-SA4L **426** 





#### ■ Relation between payload (horizontal) and acceleration

Maximum Acceleration	Load Capacity (kg)
(G)	Continuous operation (Duty is 100%)
0.1	0.8
0.3	0.8
0.5	0.5
1	0.25
1.5	0.18
2	0.14

(1) Please take care because this type has magnetic flux leakage. (If magnetism is a problem, use SA1L/SA2L/SA3L)

(2) The payload is determined by the acceleration and duty. Verify the payload in the payload (horizontal) and acceleration chart at right.

Operating time The duty is Operating time + stop time x 100 per cycle.

- (3) The mounting position is horizontal-only. Please take care because the slider will drop down with power OFF when operating vertically.(4) Simple absolute unit cannot be used with the RCL series.

#### ■ Stroke and Maximum Speed

#### ■ Lead and Payload Motor Maximum payload output(W) Horizontal (kg) Vertical (kg) Maximum payload Rated thrust (N) nstantaneous Model number (mm) 30~120 See chart RCL-SM4L-I-2-N-①-②-③ 2 2.5 10 2 ±0.1 (Every above 30mm)

Stroke Lead	30~120 (Every 30mm)
(no screw)	1200

Code explanation ① Stroke ② Applicable controller ③ Cable length

(Unit: mm/s)

UStroke	
①Stroke (mm)	Standard price
30	_
60	_
90	_
120	_

③Cable Length						
Туре	Cable symbol	Standard price				
Standard	<b>P</b> (1m)	_				
(Robot Cables)	<b>S</b> (3m)	_				
(NODOL Cables)	M (5m)	_				
	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_				
Special length	X11 (11m) ~ X15 (15m)	_				
	X16 (16m) ~ X20 (20m)	_				

- The standard cable for the RCL is the robot cable.
- \* See page A-59 for cables for maintenance.

#### Actuator Specifications

ltem	Description
Drive System	Linear servo motor
Encoder resolution	0.042mm
Base	Material: Aluminum, white alumite treated
Allowable dynamic moment (*)	Ma: 0.2 N·m, Mb: 0.17 N·m, Mc: 0.25 N·m
Overhung load length	Ma direction: 60mm or less Mb and Mc directions: 80mm or less
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

(\*) Based on 5,000km of traveling life

Actuator Specifications

For Special Orders



#### www.intelligentactuator.com

3D CAD

Dimensional Drawings

2D CAD

(30)

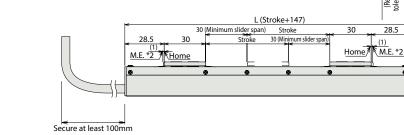
Detail D

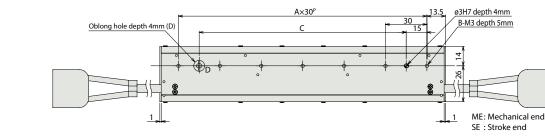
Ma moment offset reference position

(0.6)

(\*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.

Cable joint connector \*1 **6** ⊕ ⊕ (300) (300) 2-ø2H7 depth 2mm 4-M2 depth 3mm (through)





Note: One controller is required for each slider. (Or, one 2-axis controller is required.)

#### ■ Dimensions and Weight by Stroke

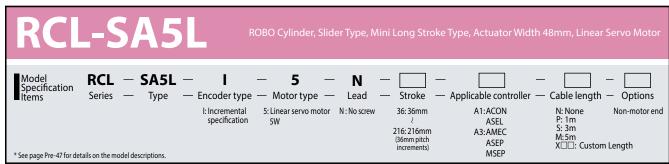
= Dimensions and mengine by buroke							
Stroke	30	60	90	120			
L	177	207	237	267			
Α	5	6	7	8			
В	6	7	8	9			
C	120	150	180	210			
Weight (kg)	0.37	0.4	0.44	0.48			

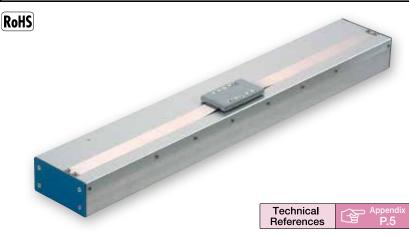
Secure at least 100mm

#### ②Applicable 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	Batter	AMEC-C-2I-①-2-1	Easy-to-use controller, even for beginners		AC100V	2.4A rated	_	→ P537
Solenoid valve type	3	ASEP-C-2I-①-2-0	Simple controller operable with the same signal as a solenoid valve	3 points			_	→ P547
Solenoid valve multi-axis type PIO specification		MSEP-C	Positioner type based on PIO control, allowing up to 8 axes to be connected		DC24V			→ P563
Solenoid valve multi-axis type Network specification		MSEP-C	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points			_	, 1303
Positioner type		ACON-C-2I-①-2-0	Positioning is possible for up to 512	512 points			_	
Safety-Compliant Positioner Type		ACON-CG-2I-①-2-0	points	312 points		0.8A rated 4.6A max.	_	
Pulse Train Input Type (Differential Line Driver)	cil.	ACON-PL-2I-①-2-0	Pulse train input type with differential line driver support	(—)			_	→ P631
Pulse Train Input Type (Open Collector)	è	ACON-PO-2I-①-2-0	Pulse train input type with open collector support	(—)			_	
Serial Communication Type		ACON-SE-2I-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). \* ① indicates number of axes (1 to 8). \* ⑩ indicates field network specification symbol.





#### ■ Relation between payload (horizontal) and acceleration

Maximum Acceleration	Load Capacity (kg)
(G)	Continuous operation (Duty is 100%)
0.1	1.6
0.3	1.0
0.5	1.0
1	0.5
1.5	0.35
2	0.25

- (1) Please take care because this type has magnetic flux leakage. (If magnetism is a problem, use SA1L/SA2L/SA3L)
- (2) The payload is determined by the acceleration and duty. Verify the payload in the payload (horizontal) and acceleration chart at right.

Operating time The duty is Operating time x 100 per cycle.

- (3) The mounting position is horizontal-only. Please take care because the slider will drop down with power OFF when operating vertically.(4) Simple absolute unit cannot be used with the RCL series.

#### ■ Stroke and Maximum Speed

#### Actuator Specifications Lead and Payload

Mandal acceptant			Instantaneous	Maximum Positioning acceleration repeatability		Stroke		
Model number	output(W)	Horizontal (kg)	Vertical (kg)	thrust (N)	maximum thrust (N)	acceleration (G)	(mm)	(mm)
RCL-SA5L-I-5-N-①-②-③-④	5	See chart above	_	5	18	2	±0.1	36~216 (Every 36mm)

Stroke Lead	36~216 (Every 36mm)
(no screw)	1400

Code explanation ① Stroke ② Applicable controller ③ Cable length ④ Options

(Unit: mm/s)

U Stroke					
①Stroke (mm)	Standard price				
36	_				
72	_				
108	_				
144	_				
180	_				
216	_				

<b>4</b> Options			
Title	Option code	See page	Standard Price
Non-motor end specification	NM	→ A-52	_

③Cable Length							
Туре	Cable symbol	Standard price					
Standard (Robot Cables)	<b>P</b> (1m)	_					
	<b>S</b> (3m)	_					
(Nobol Cables)	<b>M</b> (5m)	_					
	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_					
Special length	X11 (11m) ~ X15 (15m)	_					
	X16 (16m) ~ X20 (20m)	_					

- \*The standard cable for the RCL is the robot cable.
- \* See page A-59 for cables for maintenance.

#### Actuator Specifications

Actuator Specifications	
ltem	Description
Drive System	Linear servo motor
Encoder resolution	0.042mm
Base	Material: Aluminum, white alumite treated
Allowable dynamic moment (*)	Ma: 0.49 N·m, Mb: 0.41 N·m, Mc: 0.72 N·m
Overhung load length	Ma direction: 80mm or less Mb and Mc directions: 100mm or less
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

(\*) Based on 5,000km of traveling life

180

0.55

216

0.62

252

0.68

144

0.48

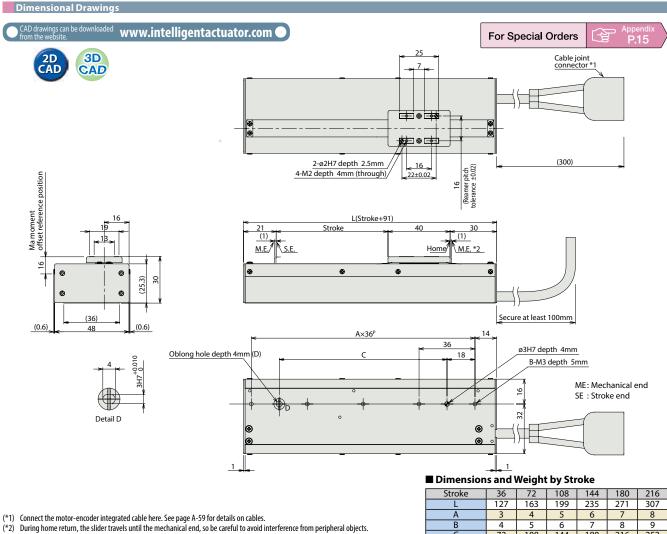
72

0.35

Weight (kg)

108

0.42



RCL series actuators can be t	operated wit	h the controllers indicate	d below. Select the type according to yo	ur intended applic	ation.			
Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Reference page
Salanaid Valva Tyna		AMEC-C-5I-①-2-1	Easy-to-use controller, even for beginners		AC100V	2.4A rated	_	→ P53
Solenoid Valve Type	1	ASEP-C-5I-①-2-0	Simple controller operable with the same signal as a solenoid valve	3 points		_	→ P54	
Solenoid valve multi-axis type PIO specification	lance	MSEP-C-①-~-①-2-0	Positioner type based on PIO control, allowing up to 8 axes to be connected					→ P56
Solenoid valve multi-axis type Network specification	## J	MSEP-C-(  )-~-(   )-0-0	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points		1.0A rated 6.4A max.	_ / /	, 130
Positioner type	E .	ACON-C-5I-①-2-0	Positioning is possible for up to 512	512 points			_	
Safety-Compliant Positioner Type		ACON-CG-5I-①-2-0	points	312 points	DC24V		_	
Pulse Train Input Type (Differential Line Driver)		ACON-PL-5I-①-2-0	Pulse train input type with differential line driver support	(—)			_	→ P63
Pulse Train Input Type (Open Collector)	ė	ACON-PO-5I-①-2-0	Pulse train input type with open collector support	(—)			_	
Serial Communication Type		ACON-SE-5I-N-0-0	Dedicated Serial Communication	64 points			_	
Program Control Type		ASEL-CS-1-5I-①-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points			_	→ P67

Mini

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Roc

Standard

Controllers Integrated

Table/ Arm/ Flat Type

Min

0.1

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OIN

. Notes or

Actuator Specifications

Lead and Payload

Servo Type

Cleanroom Type

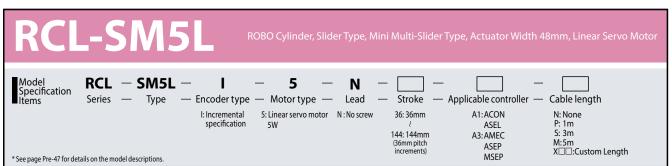
Splash Proo Type

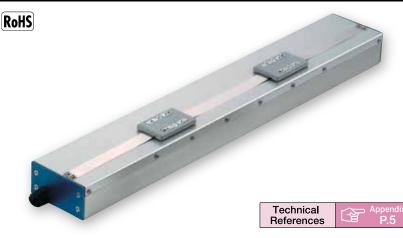
> Pulse Moto

Servo Moto (24V

Servo Motor (200V)

Linear Servo Motor





#### Relation between payload (horizontal) and acceleration

Maximum Acceleration	Load Capacity (kg)
(G)	Continuous operation (Duty is 100%)
0.1	1.6
0.3	1.0
0.5	1.0
1	0.5
1.5	0.35
2	0.25

(1) Please take care because this type has magnetic flux leakage. (If magnetism is a problem, use SA1L/SA2L/SA3L)

(2) The payload is determined by the acceleration and duty. Verify the payload in the payload (horizontal) and acceleration chart at right.

The duty is Operating time - x 100 per cycle.

Operating time + stop time

- (3) The mounting position is horizontal-only. Please take care because the slider will drop down with power OFF when operating vertically.
- (4) Simple absolute unit cannot be used with the RCL series.

#### ■ Stroke and Maximum Speed

#### Motor Maximum payload output(W) Horizontal (kg) Vertical (kg) Maximum payload Rated thrust (N) nstantaneous Model number (mm) 36~144 See chart RCL-SM5L-I-5-N-1 - 2 - 3 5 5 18 2 ±0.1 (Every above 36mm)

Stroke Lead	36~144 (Every 36mm)
(no screw)	1400

Code explanation ① Stroke ② Applicable controller ③ Cable length

(Unit: mm/s)

(UStroke					
①Stroke (mm)	Standard price				
36	_				
72	_				
108	_				
144	_				

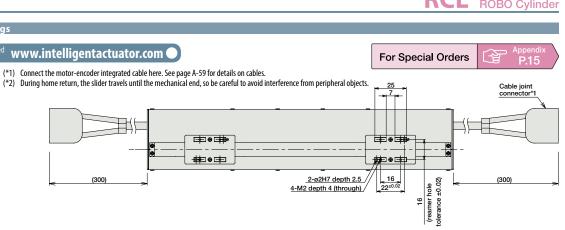
③Cable Length		
Type	Cable symbol	Standard price
Standard (Robot Cables)	<b>P</b> (1m)	_
	<b>S</b> (3m)	_
	<b>M</b> (5m)	_
	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_
Special length	X11 (11m) ~ X15 (15m)	_
	X16 (16m) ~ X20 (20m)	_

- \* The standard cable for the RCL is the robot cable.
- \* See page A-59 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 (*)	Ma: 0.49 N·m, Mb: 0.41 N·m, Mc: 0.72 N·m
Overhung load length	Ma direction: 80mm or less Mb and Mc directions: 100mm or less
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

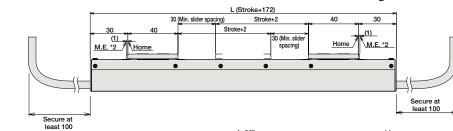
(\*) Based on 5,000km of traveling life



Dimensional Drawings

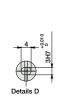
2D CAD

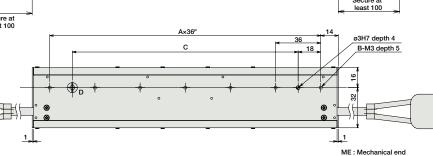
www.intelligentactuator.com



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ME : Mechanical end SE : Stroke end ■ Dimensions and Weight by Stroke

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

#### ②Applicable Controllers

Note:

One controller is required for each slider. (Or, one 2-axis controller is required.)

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-5I-①-2-1	Easy-to-use controller, even for beginners		AC100V	2.4A rated	_	→ P537
Soleriold valve Type	1	ASEP-C-5I-①-2-0	Simple controller operable with the same signal as a solenoid valve	3 points		1.0A rated 6.4A max.	_	→ P547
Solenoid valve multi-axis type PIO specification		MSEP-C	Positioner type based on PIO control, allowing up to 8 axes to be connected					→ P563
Solenoid valve multi-axis type Network specification	1111	MSEP-C	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points			_	7 7 303
Positioner type		ACON-C-5I-①-2-0	Positioning is possible for up to 512	512 points			_	
Safety-Compliant Positioner Type		ACON-CG-5I-①-2-0	points	312 points	DC24V		_	
Pulse Train Input Type (Differential Line Driver)	O.	ACON-PL-5I-①-2-0	Pulse train input type with differential line driver support	(—)			_	→ P631
Pulse Train Input Type (Open Collector)	ė	ACON-PO-5I-①-2-0	Pulse train input type with open collector support	(—)			_	
Serial Communication Type		ACON-SE-5I-N-0-0	Dedicated Serial Communication	64 points			_	
Program Control Type		ASEL-CS-1-5I-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). \* ① indicates number of axes (1 to 8). \* ⑩ indicates field network specification symbol.

Standard

Controllers Integrated

> Rod Type

Min

Standard

Controllers Integrated

Table Arm Flat Type

Mini

Rotary Type

OIN

. Notes or

Actuator Specifications

Servo Type

Cleanroom Type

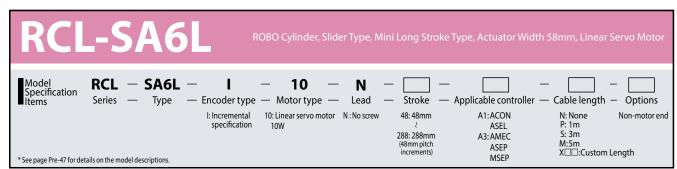
Splash Proo Type

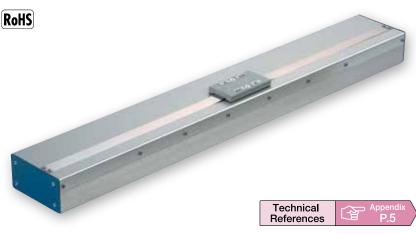
> Pulse Motor

Servo Motor (24V

Servo Motor (200V)

Linear Servo Motor





#### Relation between payload (horizontal) and acceleration

Maximum Acceleration (G)	Load Capacity (kg)  Continuous operation (Duty is 100%)	
0.1	22	
0.3	3.2	
0.5	2	
1	1	
1.5	0.65	
2	0.5	

(1) Please take care because this type has magnetic flux leakage. (If magnetism is a problem, use SA1L/SA2L/SA3L)

(2) The payload is determined by the acceleration and duty. Verify the payload in the payload (horizontal) and acceleration chart at right.

The duty is Operating time - x 100 per cycle.

Operating time + stop time

- (3) The mounting position is horizontal-only. Please take care because the slider will drop down with power OFF when operating vertically.
- (4) Simple absolute unit cannot be used with the RCL series.

#### ■ Stroke and Maximum Speed

#### ■ Lead and Payload Motor output(W) Maximum payload nstantaneous maximum thrust (N) Stroke (mm) Rated Model number Horizontal (kg) Vertical (kg) thrust (N) 48~288 See chart RCL-SA6L-I-10-N-10-2-3-4 10 10 30 2 ±0.1 (Every above 48mm)

Stroke Lead	48~288 (Every 48mm)
(no screw)	1600

Code explanation ① Stroke ② Applicable controller ③ Cable length ④ Options

(Unit: mm/s)

<b>UStroke</b>	
①Stroke (mm)	Standard price
48	_
96	_
144	_
192	_
240	_
288	_

<b>4</b> Options			
Title	Option code	See page	Standard Price
Non-motor end specification	NM	→ A-52	_

③Cable Length		
Type	Cable symbol	Standard price
Standard (Robot Cables)	<b>P</b> (1m)	_
	<b>S</b> (3m)	_
	<b>M</b> (5m)	_
	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_
Special length	X11 (11m) ~ X15 (15m)	_
	X16 (16m) ~ X20 (20m)	_

- \* The standard cable for the RCL is the robot cable.
- \* See page A-59 for cables for maintenance.

#### Actuator Specifications

ltem	Description
Drive System	Linear servo motor
Encoder resolution	0.042mm
Base	Material: Aluminum, white alumite treated
Allowable dynamic moment (*)	Ma: 0.87 N·m, Mb: 0.75 N·m, Mc: 1.22 N·m
Overhung load length	Ma direction: 80mm or less Mb and Mc directions: 120mm or less
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

(\*) Based on 5,000km of traveling life

(\*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.

■ Dilliensions and Weight by Stroke								
Stroke	48	96	144	192	240	288		
L	162	210	258	306	354	402		
Α	3	4	5	6	7	8		
В	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		

Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Referenc page
Solenoid Valve Type	W.	AMEC-C-10I-①-2-1	Easy-to-use controller, even for beginners		AC100V	2.4A rated	_	→ P537
Soletiola valve Type		ASEP-C-10I-①-2-0	Simple controller operable with the same signal as a solenoid valve	3 points			_	→ P54
Solenoid valve multi-axis type PIO specification		MSEP-C-(  )-~-( )-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-(  )-~-(  )-0-0	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points			_	
Positioner type	E I	ACON-C-10I-①-2-0	Positioning is possible for up to 512	512 mainta			_	
Safety-Compliant Positioner Type		ACON-CG-10I-①-2-0	points	512 points	DC24V	1.3A rated 6.4A max.	_	
Pulse Train Input Type (Differential Line Driver)	Ó	ACON-PL-10I-①-2-0	Pulse train input type with differential line driver support	(—)			_	→ P63
Pulse Train Input Type (Open Collector)	e	ACON-PO-10I①-2-0	Pulse train input type with open collector support	()			_	
Serial Communication Type		ACON-SE-10I-N-0-0	Dedicated Serial Communication	64 points			_	
Program Control Type		ASEL-CS-1-10I-①-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points			_	→ P67

RCL-SA6L **434** 

\*This is for the single-axis ASEL. \* ① indicates I/O type (NP/PN). \* ① indicates number of axes (1 to 8). \* ⑩ indicates field network specification symbol.

Controllers Integrated

> Rod Type

Min

Standard

Controllers Integrated

> Table/ Arm/ Flat Type

Min

0.1

Туре

Clean

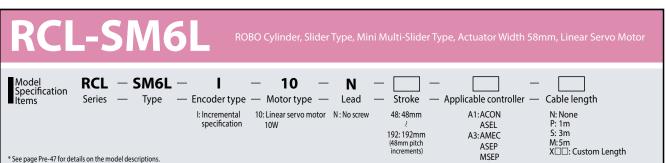
Splash Proo Type

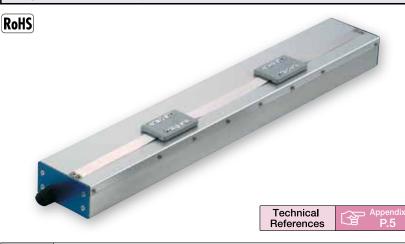
> Pulse Moto

Servo Moto (24V

Servo Motor (200V)

Linear Servo Motor





#### Relation between payload (horizontal) and acceleration

Maximum Acceleration	Load Capacity (kg)					
(G)	Continuous operation (Duty is 100%)					
0.1	3.2					
0.3	3.2					
0.5	2					
1	1					
1.5	0.65					
2	0.5					

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Actuator Specifications

OIN

Notes on

- (1) Please take care because this type has magnetic flux leakage. (If magnetism is a problem, use SA1L/SA2L/SA3L)
- (2) The payload is determined by the acceleration and duty. Verify the payload in the payload (horizontal) and acceleration chart at right.

The duty is Operating time x 100 per cycle.

- (3) The mounting position is horizontal-only. Please take care because the slider will drop down with power OFF when operating vertically.
- (4) Simple absolute unit cannot be used with the RCL series.

#### ■ Stroke and Maximum Speed

#### ■ Lead and Payload Motor output(W) Maximum payload Rated thrust (N) nstantaneous maximum thrust (N) Stroke (mm) Model number Horizontal (kg) | Vertical (kg) 48~192 See chart RCL-SM6L-I-10-N-①-②-③ 10 10 30 2 ±0.1 (Every above 48mm)

Stroke Lead	48~192 (Every 36mm)
(no screw)	1600

Code explanation ① Stroke ② Applicable controller ③ Cable length

(Unit: mm/s)

①Stroke	
①Stroke (mm)	Standard price
48	_
96	_
144	_
100	

③Cable Length							
Type	Cable symbol	Standard price					
Standard	<b>P</b> (1m)						
(Robot Cables)	<b>S</b> (3m)	_					
(Robot Cables)	<b>M</b> (5m)	_					
	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_					
Special length	X11 (11m) ~ X15 (15m)	_					
	<b>X16</b> (16m) ~ <b>X20</b> (20m)	_					

- \* The standard cable for the RCL is the robot cable.
- \* See page A-59 for cables for maintenance.

#### Actuator Specifications

ltem	Description
Drive System	Linear servo motor
Encoder resolution	0.042mm
Base	Material: Aluminum, white alumite treated
Allowable dynamic moment (*)	Ma: 0.87 N·m, Mb: 0.75 N·m, Mc: 1.22 N·m
Overhung load length	Ma direction: 80mm or less Mb and Mc directions: 120mm or less
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)

(\*) Based on 5,000km of traveling life

- Note: One controller is required for each slider. (Or, one 2-axis controller is required.)

40 (Minimum slider span)

L (Stroke+222) Stroke+8 40 (Mi

A×48<sup>P</sup>

Stroke+8

■ Dimensions and Weight by Stroke

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

ME: Mechanical end SE: Stroke end

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

Dimensional Drawings

2D CAD

Ma moment offset reference position

20.7

(42)

Detail D

3D CAD

(\*2) During home return, the slider travels until the mechanical end, so be careful to avoid interference from peripheral objects.

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39

M.E. \*2

(300)

Secure at least 100mm

**+ ₩** 

48

Home

② Applicable 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	Batter	AMEC-C-10I-①-2-1	Easy-to-use controller, even for beginners		AC100V	2.4A rated	_	→ P537	
Solellold valve Type	1	ASEP-C-10I-①-2-0	Simple controller operable with the same signal as a solenoid valve	3 points			_	→ P547	
Solenoid valve multi-axis type PIO specification		MSEP-C-(  )-~-( )-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	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points	DC24V	1.3A rated 6.4A max.	_	, 1303	
Positioner type		ACON-C-10I-①-2-0	Positioning is possible for up to 512	512 points			_		
Safety-Compliant Positioner Type		ACON-CG-10I-①-2-0	points				_		
Pulse Train Input Type (Differential Line Driver)		ACON-PL-10I-①-2-0	Pulse train input type with differential line driver support	(—)			_	→ P631	
Pulse Train Input Type (Open Collector)	t	ACON-PO-10I-①-2-0	Pulse train input type with open collector support	(—)			_		
Serial Communication Type		ACON-SE-10I-N-0-0	Dedicated Serial Communication	64 points			_		
Program Control Type		ASEL-CS-1-10I-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). \* ① indicates number of axes (1 to 8). \* ⑩ indicates field network specification symbol.

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

Model Specification Items RCL - RA1L -2 25 Type Encoder type — Motor type Lead Stroke Applicable controller Cable length Options I: Incremental 2: Linear servo motor N: No screw

specification

A1:ACON 25: 25mm ASEL

A3:AMEC ASEP

N: None P: 1m S: 3m B: Brake (with brake box) BN· Brake (without brake box)

M:5m X□□: Custom MSEP Length

RoHS



References



(1) The payload is determined by the acceleration and duty.

Verify the payload in the payload (horizontal) and acceleration chart at right. Operating time - x 100 per cycle. The duty is Operating time + stop time (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	Load Capacity (kg)						
Acceleration (G)	Continuous (Duty is		Duty is 70% or less				
(0)	Holizontal	Vertical	Holizontal	Vertical			
0.1	0.5						
0.3	0.5	0.1	0.5	0.1			
0.5	0.42	0.1		0.1			
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.

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

	Matan	Maximum	navload	Rated	Instantaneous	Maximum	Positioning	Stroke
Model number	Motor output(W)	Horizontal (kg)	<u> </u>		maximum thrust (N)	acceleration (G)	repeatability (mm)	(mm)
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)

#### ■ Stroke and Maximum Speed

Stroke Lead	25 (mm)
(no screw)	300

(Unit: mm/s)

(N)

Stroke (mm)	Standard price
25	_

#### ②Cable Length

Time	Cable symbol	Standa	rd price
Type	Cable symbol	with Brake	without Brake
Standard	<b>P</b> (1m)	_	_
(Robot Cables)	<b>S</b> (3m)	_	_
	<b>M</b> (5m)	_	_
	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_	_
Special length	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.)

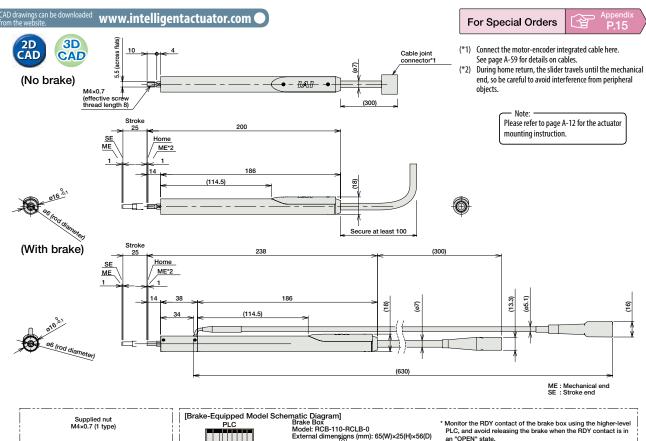
#### ③ Options

Title	Option code	See page	Standard Price
Brake (with brake box)	В	→ P438	_
Brake (without brake box)	BN	→ P438	_

<sup>\*</sup>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

ltem	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)			
Carvica lifa	10 million cycles			



Dimensional Drawings

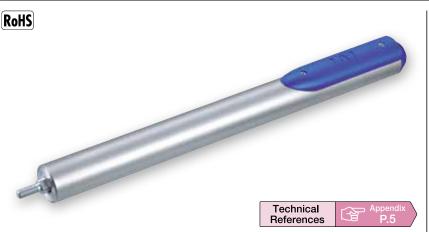
ī		[Brake-Equipped Mode	Schematic Diagram				
	Supplied nut M4×0.7 (1 type)	PLC	Brake Box Model: RCB-110-RCLB-0 External dimensions (mm): 65(W)×25(H)×56(D)	PLC an " * Whe	C, and avoid releasing OPEN" state. on releasing the brake	of the brake box using the brake when the R e, the brake box require	DY contact is in
į	3.2		### Marke cable  Model: CB-RCLB-BJ		A current for approxin	nately 110ms.	
į	<b>*</b>	DC24V ◆□	Motor-encoder-brake integrated cable Model: CB-ACS-MPBA□□□ (for ACON/ASEL) Model: CB-APSEP-MPBA□□□ (for ASEP)	H	■ Dimension	s and Weight I	oy Stroke
i	i i	Controllers		' i	Stroke	25 (without brake)	25 (with brake)
					Weight (kg)	0.2	0.25

Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Reference page
Solenoid Valve Type	NA.	AMEC-C-2I-①-2-1	Easy-to-use controller, even for beginners		AC100V	2.4A rated	_	→ P537
Soletiola valve type	1	ASEP-C-2I-①-2-0	Simple controller operable with the same signal as a solenoid valve	3 points			_	→ P547
Solenoid valve multi-axis type PIO specification	1	MSEP-C-(  )-~-( )-2-0	Positioner type based on PIO control, allowing up to 8 axes to be connected					→ P56
Solenoid valve multi-axis type Network specification		MSEP-C	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points		0.8A rated 4.6A max.		71303
Positioner type		ACON-C-2I-(1)-2-0	Positioning is possible for up to 512	512 points			_	
Safety-Compliant Positioner Type		ACON-CG-2I-①-2-0	points				_	
Pulse Train Input Type (Differential Line Driver)	Ó	ACON-PL-2I-①-2-0	Pulse train input type with differential line driver support	fferential line driver support			_	→ P63
Pulse Train Input Type (Open Collector)	è	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). \* ① indicates number of axes (1 to 8). \* ⑩ indicates field network specification symbol.

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

#### Model Specification Items RCL - RA2L -5 30 Type Encoder type Motor type Lead Stroke Applicable controller Cable length Options I: Incremental 5: Linear servo motor N: No screw 30: 30mm A1:ACON N: None P: 1m S: 3m B: Brake specification ASEL (with brake box) BN· Brake A3: AMEC M:5m X□□: Custom (without brake box) ASEP



OIN Notes on

- (1) The payload is determined by the acceleration and duty. Verify the payload in the payload (horizontal) and acceleration chart at right. Operating time x 100 per cycle. The duty is Operating time + stop time
- (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

Length

Maximum		Load Cap		
Acceleration (G)		Continuous operation (Duty is 100%)		0% or less
(G)	Holizontal	Vertical	Holizontal	Vertical
0.1	1			
0.3	'	0.2	1	0.2
0.5	0.85	0.2		0.2
1	0.4		0.5	
1.5	0.24	_	0.3	_
2	0.15	_	0.2	_

#### ■ Pushing force guidelines

MSEP

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

numeric values listed below. (N)							
Electric current limit	30%	40%	50%	60%	70%	80%	
Pushing force	1.5	2	2.5	3	3.5	4	

The pushing forces listed above are for horizontal usage. If facing vertically upward, subtract 1N from the numeric values listed above, but if facing vertically downward,

#### Actuator Specifications

#### Lead and Payload

<u> </u>								
Model number	Motor	Maximum	payload	Rated	Instantaneous	Maximum	Positioning	Stroke
Model number	output(W)	Horizontal (kg)	Vertical (kg)	thrust (N)	maximum thrust (N)	acceleration (G)	repeatability (mm)	(mm)
RCL-RA2L-I-5-N-30-①-②-③	5	See chart above	See chart above	5	18	Holizontal 2G Vertical 1G	±0.1	30 (Fixed)

#### ■ Stroke and Maximum Speed

Stroke Lead	30 (mm)
(no screw)	340

Code explanation ① Applicable controller ② Cable length ③ Options

(Unit: mm/s)

Stroke (mm)	Standard price
20	

Time	Cable symbol	Standa	rd price
Type	Cable symbol	with Brake	without Brake
Ctandard	<b>P</b> (1m)	_	_
Standard (Robot Cables)	<b>S</b> (3m)	_	
	<b>M</b> (5m)	_	_
	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_	_
Special length	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 440 for the cable for brake specification.
  (All prices represent the total of an integrated motor/encoder/brake cable.)

#### Actuator Specifications

ltem	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

- ③ Options Title Option code See page Standard Price Brake (with brake box) В → P440 Brake (without brake box
- \*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).

Cable joint connector \*1

(300)

(ø5.1)

(04)

(300)

Secure at least 100mm

(22)

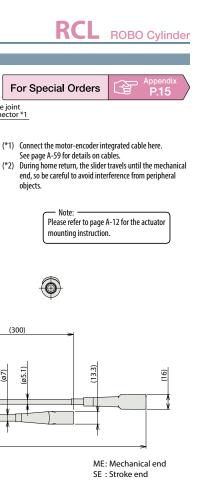
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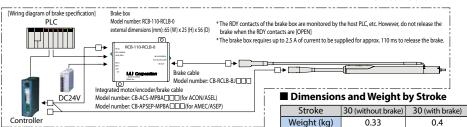
219

(140)

219

(140)





(630)

①Applicable Contro	Hove

Dimensional Drawings

3D CAD

(Without Brake)

<u>. 020-8.1</u>

(With Brake)

98(Rod diameter)

2D CAD

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Home

ME \*2

<u>Hom</u>e ME \*2

1

43

39

7 (Width across flats)

Stroke 30

Stroke

M5x0.8 (Effective scew thread

ME

ME

Accessory nut M5x0.8 (Type 1)

length 8mm)

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

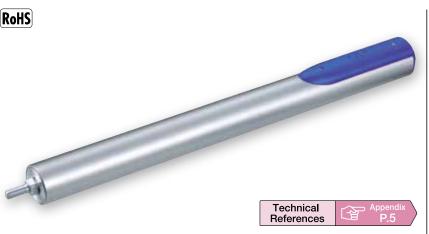
			1					
Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Reference page
Solenoid Valve Type	No.	AMEC-C-5I-①-2-1	Easy-to-use controller, even for beginners		AC100V	2.4A rated	_	→ P537
Solenoid valve type	1	ASEP-C-5I-①-2-0	Simple controller operable with the same signal as a solenoid valve	3 points			_	→ P547
Solenoid valve multi-axis type PIO specification			Positioner type based on PIO control, allowing up to 8 axes to be connected					→ P563
Solenoid valve multi-axis type Network specification		MSEP-C	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points	DC24V		_	→ r303
Positioner type	E .	ACON-C-5I-①-2-0	Positioning is possible for up to 512	512 points		4V 1.0A rated 6.4A max.	_	
Safety-Compliant Positioner Type		ACON-CG-5I-①-2-0	points				_	
Pulse Train Input Type (Differential Line Driver)	C.	ACON-PL-5I-①-2-0	Pulse train input type with differential line driver support	( )			_	→ P631
Pulse Train Input Type (Open Collector)	è	ACON-PO-5I-①-2-0	Pulse train input type with open collector support	(—)			_	
Serial Communication Type		ACON-SE-5I-N-0-0	Dedicated Serial Communication	64 points			_	
Program Control Type		ASEL-CS-1-5I-①-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points			_	→ P675

<sup>\*</sup>This is for the single-axis ASEL. \* ① indicates I/O type (NP/PN). \* ① indicates number of axes (1 to 8). \* ⑩ indicates field network specification symbol.

RCL-RA2L **440** 

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

#### Model Specification Items 10 RCL - RA3L -40 Type Encoder type Motor type Lead Stroke Applicable controller Cable length Options I: Incremental 10: Linear servo motor N: No screw A1:ACON N: None P: 1m S: 3m 40: 40mm B: Brake specification ASEL (with brake box) 10W BN· Brake A3:AMEC M:5m X□□: Custom (without brake box) ASEP



- (1) The payload is determined by the acceleration and duty.

  Verify the payload in the payload (horizontal) and acceleration chart at right. Operating time - x 100 per cycle. The duty is Operating time + stop time
- (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

Length

MSEP

Maximum	Load Capacity (kg)					
Acceleration (G)	Continuous (Duty is		Duty is 70% or less			
(d)	Holizontal	Vertical	Holizontal	Vertical		
0.1	2					
0.3	2	0.4	2	0.4		
0.5	1.6	0.4		0.4		
1	0.78		1			
1.5	0.46	_	0.6	_		
2	0.3	ı	0.4	ı		

#### ■ Pushing force guidelines

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

Electric current limit	30%	40%	50%	60%	70%	80%
Pushing force	3	4	5	6	7	8

<sup>\*</sup> The pushing forces listed above are for horizontal usage. If facing vertically upward, subtract 1.8N from the numeric values listed above, but if facing vertically downward, add 1.8N.

#### Actuator Specifications

#### Leads and Payload

Model number	Motor	Maximum payload		Rated	Instantaneous	Maximum acceleration	Positioning repeatability	Stroke	
Moder Humber	output(W)	Horizontal (kg)	Vertical (kg)	thrust (N)	maximum thrust (N)	(G)	(mm)	(mm)	
RCL-RA3L-I-10-N-40-①-②-③	10	See chart above	See chart above	10	30	Holizontal 2G Vertical 1G	±0.1	40 (Fixed)	

#### ■ Stroke and Maximum Speed

Stroke Lead	40 (mm)
(no screw)	450

(Unit: mm/s)

(N)

Stroke (mm)	Standard price
40	_

#### ③ Options Title Standard Price Option code See page Brake (with brake box) → P442 Brake (without brake box) → P442

2	Cab	le	Leng	gth

© Cable Leligtii	© Cable Leligtii							
Type	Cable symbol	Standard price						
1,700	Cubic symbol	without Brake	with Brake					
Standard	<b>P</b> (1m)	_	_					
(Robot Cables)	<b>S</b> (3m)	_	_					
(Nobot Cables)	<b>M</b> (5m)	-						
	<b>X06</b> (6m) ~ <b>X10</b> (10m)	-	-					
Special length	X11 (11m) ~ X15 (15m)	_						
	<b>X16</b> (16m) ~ <b>X20</b> (20m)	1						

- \* The standard cable for the RCL is the robot cable.
- \* See page A-59 for the cable for non-brake specification.

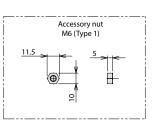
  \* See page 442 for the cable for brake specification.

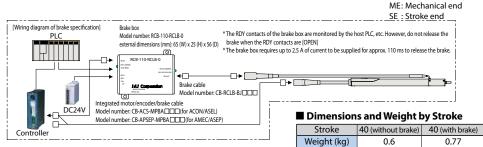
  (All prices represent the total of an integrated motor/encoder/brake cable.)

#### Actuator Specifications

ltem	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

<sup>\*</sup>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).





(630)

(0)

(27)

-11.A\11

300

280

354

(188)

(188)

1) Applicable Controller	•

Dimensional Drawings

(Without Brake)

(With Brake)

2D CAD

3D CAD

M6 (Effective scew thread

length 12mm) Stroke

SE

ME

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Home ME \*2

Home ME \*2

1

20

Stroke 40

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	W.	AMEC-C-10I-①-2-1	Easy-to-use controller, even for beginners		AC100V	2.4A rated	_	→ P537
Solenoid valve Type	lu vaive type	ASEP-C-10I-①-2-0	Simple controller operable with the same signal as a solenoid valve	3 points			_	→ P547
Solenoid valve multi-axis type PIO specification		MSEP-C-①-~-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	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points	DC24V			→ F303
Positioner type		ACON-C-10I-①-2-0	Positioning is possible for up to 512	512 points			_	
Safety-Compliant Positioner Type		ACON-CG-10I-①-2-0	points			1.3A rated 6.4A max.	_	
Pulse Train Input Type (Differential Line Driver)		ACON-PL-10I-①-2-0	Pulse train input type with differential line driver support				_	→ P631
Pulse Train Input Type (Open Collector)	ė	ACON-PO-10I-①-2-0	Pulse train input type with open collector support	(—)			_	
Serial Communication Type		ACON-SE-10I-N-0-0	Dedicated Serial Communication	64 points			_	
Program Control Type		ASEL-CS-1-10I-①-2-0	Programmed operation is possible. Can operate up to 2 axes	1,500 points			_	→ P675

<sup>\*</sup>This is for the single-axis ASEL. \* ① indicates I/O type (NP/PN). \* ① indicates number of axes (1 to 8). \* ⑩ indicates field network specification symbol.