## **Linear Servo Type**



## **Linear Servo Type**

## **RCL**



417 Linear Servo Type



## **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

Standard

Controller Integrated

> Rod Type

Mini

Controllers

Table/ Arm/ Flat Type

Mini

Standard

Gripper/ Rotary Type

Linear Servo Type

Cleanroom Type

Splash-Proof Type

> Pulse Motor

Servo Motor 24V)

Servo Motor (200V)

inear Servo

Linear Servo Type 418





Standard

Controllers Integrated

> Rod Type

Mini

RoHS

Notes or

Actuator Specifications

Standard

Table

Flat Type

Standard

Gripper/ Rotary Type

Linear Servo Type

> Cleanroom Type

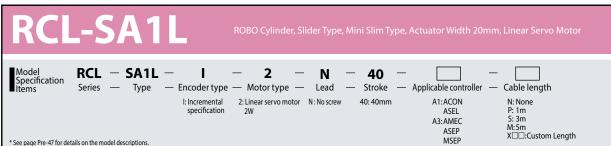
Splash-Proof Type

Motor

Servo Motor (24V)

Servo Moto (200V

> near ervo otor



Technical References P.5

## ■ 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	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		

(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 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 output(W) Maximum payload Rated thrust (N) nstantaneou maximum thrust (N) Stroke (mm) Model number Horizontal (kg) Vertical (kg) See chart above 40 RCL-SA1L-I-2-40-N-10-2 2 10 2 ±0.1 (Fixed)

	Stroke Lead	40 (mm)
	(no screw)	420
		(Unit: mm/s)

Code explanation ① Applicable Controller ② Cable length

Stroke	
Stroke (mm)	Standard price

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

- \* 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: 0.13 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)

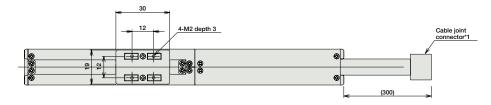
(\*) Based on 5,000km of traveling life

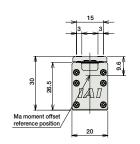
 $419_{\text{RCL-SA1L}}$ 

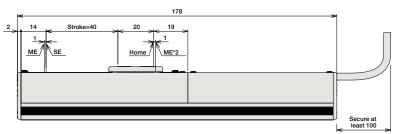




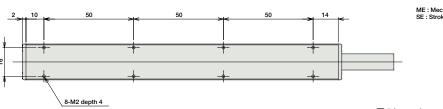
(\*1) Connect the motor-encoder integrated cable here. See page A-59 for details on cables.
 (\*2) During home return, the slider travels until the mechanical end, so be careful to avoid interference from peripheral objects.











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

Stroke	40
Weight (kg)	0.28

Applicable Controllers
C. I. P. P. C.

Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Reference page
Solenoid Valve Type	Name of the last	AMEC-C-2I-①-2-1	Easy-to-use controller, even for beginners		AC100V	2.4A rated	_	→ P537
Solenoid valve Type	1	ASEP-C-2I-①-2-0	Simple controller operable with the same signal as a solenoid valve	3 points			_	→ P547
olenoid 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	6 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				_	→ P631
Pulse Train Input Type (Differential Line Driver)	Ć.	ACON-PL-2I-①-2-0	Pulse train input type with differential line driver support	(—)			_	
Pulse Train Input Type (Open Collector)	i	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). \* ① indicates field network specification symbol.

IAI

RCL-SA1L **420** 





**MSEP** 

48 Specification Items Stroke Series Type — Encoder type — Motor type Lead Applicable controller Cable length N: None P: 1m S: 3m M:5m X : Custom Length l: Incremental specification 5: Linear servo motor N: No screw 48: 48mm A1:ACON **ASEL** 5W A3:AMEC ASEP

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

## ■ Relation between payload (horizontal) and



References

Notes or

(1) 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.

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.

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

Actuator Specifications

■ Lead and Payload

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

■ Stroke and Maximum Speed

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

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

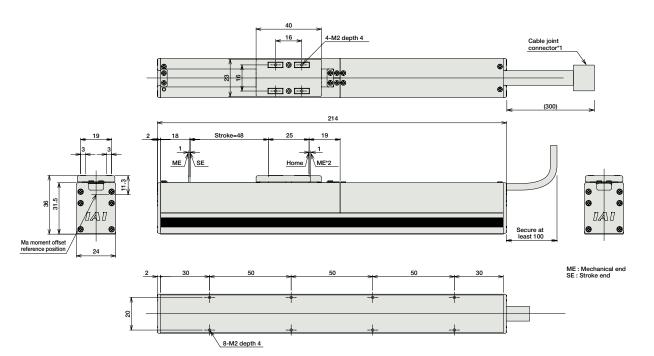




For Special Orders



(\*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

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
Solehold valve Type	1	ASEP-C-5I-①-2-0	Simple controller operable with the same signal as a solenoid valve	3 points			_	→ P547
olenoid 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
olenoid 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	ı	ACON-C-5I-①-2-0	Positioning is possible for up to 512	512 points	DC24V	1.0A rated 6.4A max.	_	
Safety-Compliant Positioner Type		ACON-CG-5I-①-2-0	points				_	
Pulse Train Input Type (Differential Line Driver)	Ć.	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			_	→ P675

IAI

RCL-SA2L **422** 





SA<sub>3</sub>L **RCL** 

10

Cable length

Specification Items

Series Type — Encoder type — Motor type —

Stroke Lead — 64: 64mm

64

 Applicable controller A1:ACON

l: Incremental specification

10: Linear servo motor N: No screw 10W

**ASEL** A3:AMEC ASEP

**MSEP** 

N: None P: 1m S: 3m M:5m X : Custom Length

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

RoHS

Notes or

Actuator Specifications

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

(2) The mounting position is horizontal-only. Please take care because the slider will drop down with power OFF when operating vertically.

Technical References

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

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

Maximum	Load Capacity (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			

(horizontal) and acceleration chart at right.

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

Operating time + stop time

#### ■ Stroke and Maximum Speed

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

	Stroke Lead	64 (mm)
	(no screw)	600

Code explanation ① Applicable Controller ② Cable length

(Unit: mm/s)

			-	
-	11	O	77	ο
			-	6

Stroke (mm)	Standard price
64	_

-	=
②Cable Length	

Type	Cable symbol	Standard price	
Standard (Robot Cables)	<b>P</b> (1m)	_	
	<b>S</b> (3m)	_	
	<b>M</b> (5m)	_	
Special length	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_	
	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: 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

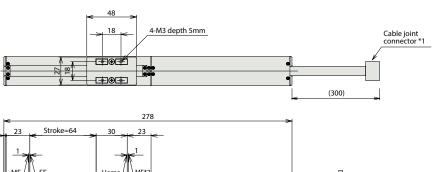
 $423_{\text{RCL-SA3L}}$ 

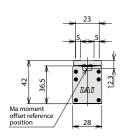


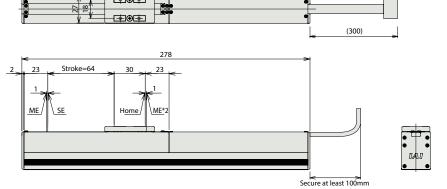


(\*1) Connect the motor-encoder integrated cable here. See page A-59 for details on cables.

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







50

#### ■ Dimensions and Weight by Stroke

Stroke	64
Weight (kg)	0.82

ME: Mechanical end  $\mathsf{SE}:\mathsf{Stroke}\,\mathsf{end}$ 

	① 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	W.	AMEC-C-10I-①-2-1	Easy-to-use controller, even for beginners		AC100V	2.4A rated	_	→ P537		
		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	The state of	MSEP-C	Positioner type based on PIO control,							

10-M3 depth 4mm

Solenoid 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-①-~-①-2-0	Positioner type based on PIO control, allowing up to 8 axes to be connected					. D562	
Solenoid valve multi-axis type Network specification		MSEP-C	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points			_	→ P563	
Positioner type		ACON-C-10I-①-2-0	Positioning is possible for up to 512	512 points			ı		
Safety-Compliant Positioner Type		ACON-CG-10I-①-2-0	points	312 points	DC24V	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)	ě	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	

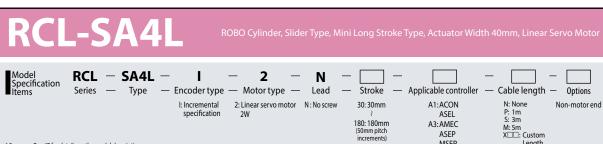
\*This is for the single-axis ASEL. \* ① indicates I/O type (NP/PN). \* ① indicates number of axes (1 to 8). \* ⑩ indicates field network specification symbol.

RCL-SA3L **424** 

IAI

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

RoHS



# Technical References

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

Length

**MSEP** 

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.

Operating time 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 | Horizontal (kg) | Vertical (kg) Rated thrust (N) Model number See chart above RCL-SA4L-I-2-N-①-②-③-④ 2.5

intaneous aximum irust (N)	Maximum acceleration (G)	Positioning repeatability (mm)	Stroke (mm)	Stroke Lead	30~180 (Every 30mm)
10	2	±0.1	30~180 (Every 30mm)	(no screw)	1200

(Unit: mm/s)

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

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

<b>SCable Length</b>		
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	
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	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

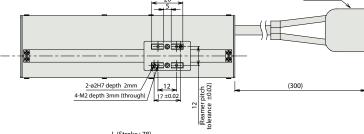
425 RCL-SA4L

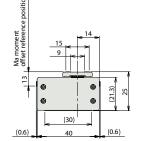
Actuator Specifications

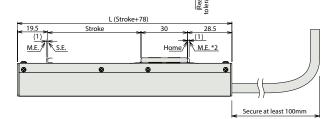


(\*1) Connect the motor-encoder integrated cable here.
See page A-59 for details on cables.
(\*2) During home return, the slider travels until the mechanical end,

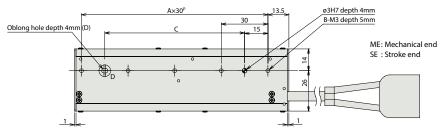
so be careful to avoid interference from peripheral objects.











#### ■ 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				

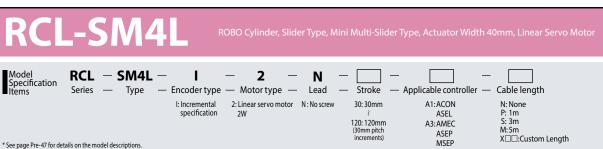
#### ②Applicable Controllers

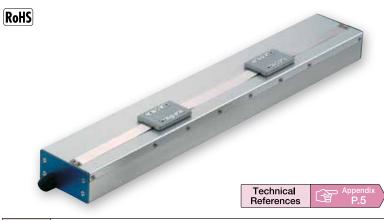
RCL series actuators can be operated with the controllers indicated below. Select the type according to your intended application.									
Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Reference page	
Solenoid Valve Type	W	AMEC-C-2I-①-2-1	Easy-to-use controller, even for beginners		AC100V	2.4A rated	_	→ P537	
Soletiola 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					→ 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					→ P563
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	DC24V	0.8A rated 4.6A max.	_		
Pulse Train Input Type (Differential Line Driver)	Ó	ACON-PL-2I-①-2-0	Pulse train input type with differential line driver support	( )			_	→ P63	
Pulse Train Input Type (Open Collector)	ė	ACON-PO-2I-①-2-0	Pulse train input type with open collector support	(—)			_		
Serial Communication Type	1	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			_	→ 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.

RCL-SA4L **426** 

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#### ■ 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)

See chart above

Rated thrust (N)

2.5

10

2

Operating time 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

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

Code explanation ① Stroke ② Applicable controller ③ Cable length

(Unit: mm/s)

① Stroke		
①Stroke (mm)	Standard price	
30	_	
60	_	
00		

©Cable 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.

±0.1

#### 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

 $427_{\tiny \mathsf{RCL-SM4L}}$ 

Actuator Specifications ■ Lead and Payload

Model number

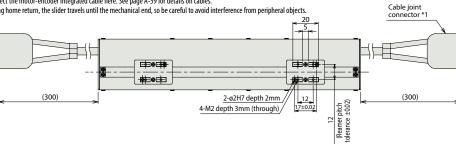
RCL-SM4L-I-2-N-①-②-③

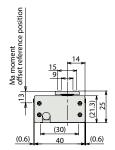
120

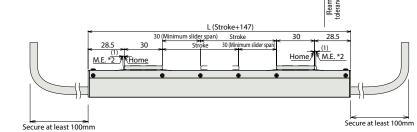


(\*1) Connect the motor-encoder integrated cable here. See page A-59 for details on cables.

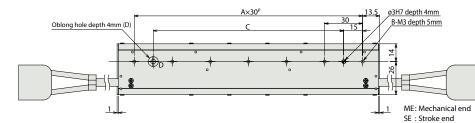
(\*2) During home return, the slider travels until the mechanical end, so be careful to avoid interference from peripheral objects.











#### ■ Dimensions and Weight by Stroke

		-	•	
Stroke	30	60	90	120
L	177	207	237	267
Α	5	6	7	8
В	6	7	8	9
С	120	150	180	210
Weight (kg)	0.37	0.4	0.44	0.48

#### ②Applicable Controllers

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

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	NA I	AMEC-C-2I-①-2-1	Easy-to-use controller, even for beginners		AC100V	2.4A rated	_	→ P537
Soleriola valve Type		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				7 130.
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	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	(—)			_	→ P63
Pulse Train Input Type (Open Collector)	1	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			_	→ P67

IAI

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

RCL-SM4L **428** 

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Specification Items

SA5L **RCL** Type Series

5 — Encoder type — Motor type Lead

5: Linear servo motor N: No screw

5W

Stroke - Applicable controller A1:ACON

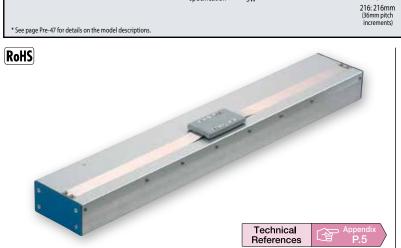
**ASEL** 

36: 36mm

Cable length — Options Non-motor end

N: None P: 1m S: 3m

A3:AMEC M:5m X□□: Custom Length ASEP MSEP



I: Incremental

specification

#### ■ 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.

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

Model number	output(W)	Horizontal (kg)	,	thrust (N)	maximum thrust (N)	acceleration (G)	repeatability (mm)	(mm)
RCL-SA5L-I-5-N-①-②-③-④	5	See chart above	1	5	18	2	±0.1	36~216 (Every 36mm)

	Stroke Lead	36~216 (Every 36mm)
	(no screw)	1400
		(11 th (1)

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

(Unit: mm/s)

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

_
е

© Cable Length						
Туре	Cable symbol	Standard price				
Standard	<b>P</b> (1m)	_				
(Robot Cables)	<b>S</b> (3m)	_				
(Nobol Cables)	<b>M</b> (5m)	_				
	X06 (6m) ~ X10 (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

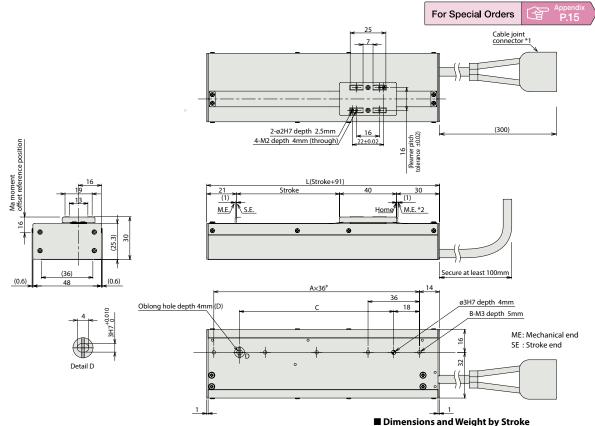
ltem	Description
Drive System	Linear servo motor
Encoder resolution	0.042mm
Base	Material: Aluminum, white alumite treated
Allowable dynamic moment (*)	Ma: 0.49 N·m, Mb: 0.41 N·m, Mc: 0.72 N·m
Overhung load length	Ma direction: 80mm or less Mb and Mc directions: 100mm or less
Ambient operating temperature,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

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

Actuator Specifications

①Stroke





(\*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.

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

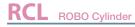
		Controllers	
(2) Y 1	nnlicable	( ontrollers	
	pplicable	Controllers	

Name	External view	Model number	Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Referenc page
Colonaid Valva Tyna	W.	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
olenoid 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			_	→ P363
Positioner type	I.	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	1.0A rated 6.4A max.	_	
Pulse Train Input Type (Differential Line Driver)	O.	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	e ACON-SE-5I-N-0-0 Dedi	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

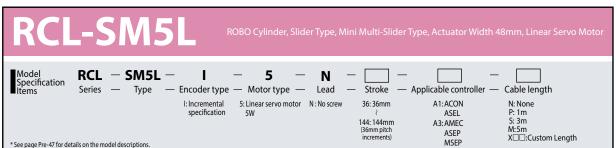
\*This is for the single-axis ASEL. \* ① indicates I/O type (NP/PN). \* ① indicates number of axes (1 to 8). \* ① indicates field network specification symbol.

IAI

RCL-SA5L **430** 







## RoHS Technical References

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

Maximum Acceleration (G)	Load Capacity (kg)
	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.

Operating time

#### ■ Stroke and Maximum Speed

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

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

Code explanation ① Stroke ② Applicable controller ③ Cable length

(Unit: mm/s)

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

©Cable 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)	_					
	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: 0.49 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

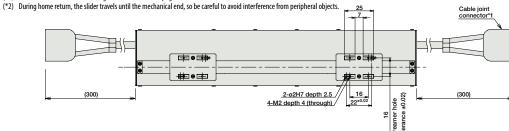
Actuator Specifications

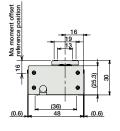
144



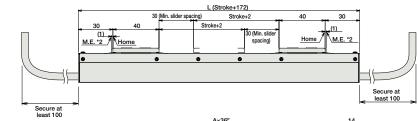
For Special Orders

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

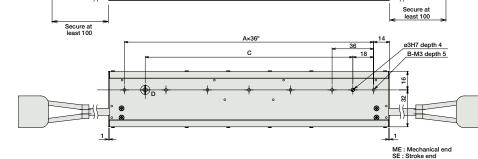




Dimensional Drawings







#### ■ 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				

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

②Applicable Controllers
RCL series actuators can be operated with the controllers indicated below

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	No.	AMEC-C-5I-①-2-1	Easy-to-use controller, even for beginners		AC100V	2.4A rated	_	→ P537
Solellold valve type		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		MSEP-C	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			7 750.	
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 1.0A rated 6.4A max.		_	
Pulse Train Input Type (Differential Line Driver)		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	4-SE-51-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

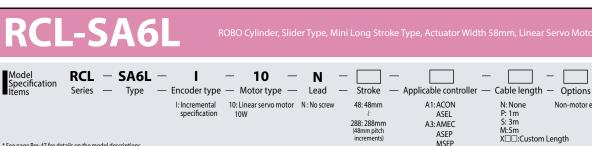
IAI

\*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-SM5L **432** 

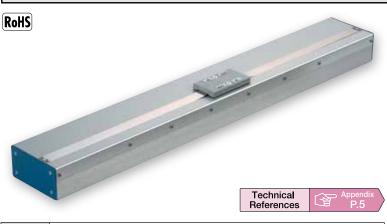
sales@electromate.com

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



288: 288mm (48mm pitch increments)

10W



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

A3: AMEC ASEP MSEP Non-motor end

Maximum Acceleration (G)	Load Capacity (kg)
	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

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

- (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 Stroke (mm) Model number Horizontal (kg) | Vertical (kg) | thrust (N) 48~28 See chart above RCL-SA6L-I-10-N-①-②-③-④ 10 10 30 2 ±0.1 (Every 48mm)

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

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

(Unit: mm/s)

UStroke	
①Stroke (mm)	Standard price
48	_
96	_
144	_
192	_
240	_
288	_

48	<del>-</del>
96	_
144	_
192	_
240	_
288	_

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

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

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

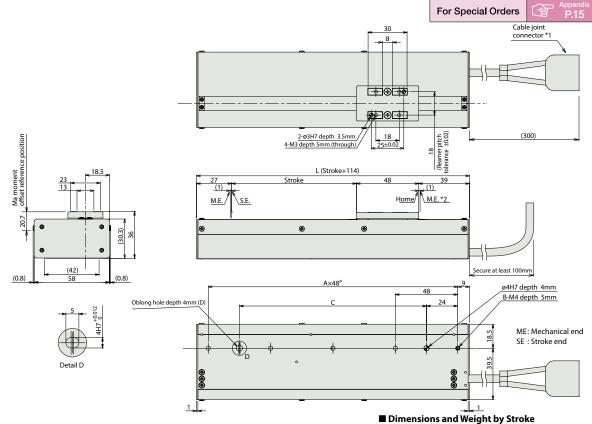
#### Actuator Specifications

Item	Description
Drive System	Linear servo motor
Encoder resolution	0.042mm
Base	Material: Aluminum, white alumite treated
Allowable dynamic moment (*)	Ma: 0.87 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

Actuator Specifications

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.

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
С	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	Referen page
Calamaid Valua Tuma		AMEC-C-10I-①-2-1	Easy-to-use controller, even for beginners		AC100V	2.4A rated	_	→ P53
Solenoid Valve Type	3	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-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		MSEP-C-(  )-~-(  )-0-0	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points				
Positioner type		ACON-C-10I-①-2-0	Positioning is possible for up to 512	512			_	
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	( )	nts		_	→ P6
Pulse Train Input Type (Open Collector)	ė	ACON-PO-10I①-2-0	Pulse train input type with open collector support	(—)			_	1
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			_	→ P6

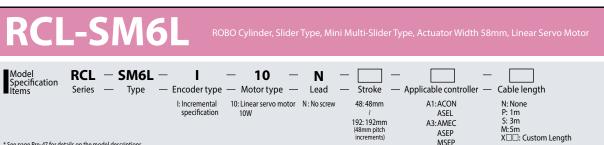
IAI

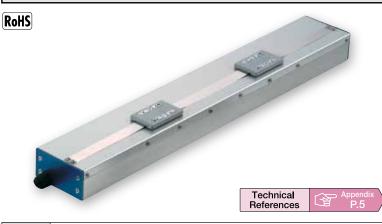
RCL-SA6L **434** 



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







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

**MSEP** 

Load Capacity (kg)
Continuous operation (Duty is 100%)
3.2
3.2
2
1
0.65
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.

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

- (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.

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

#### ■ Stroke and Maximum Speed

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

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

Code explanation ① Stroke ② Applicable controller ③ Cable length

(Unit: mm/s)

①Stroke	
①Stroke (mm)	Standard price
48	_
96	_
111	

©Cable Length						
Туре	Cable symbol	Standard price				
Standard (Robot Cables)	<b>P</b> (1m)	_				
	<b>S</b> (3m)	_				
(NODOL Capies)	<b>M</b> (5m)	_				
	X06 (6m) ~ X10 (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: 0.87 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)

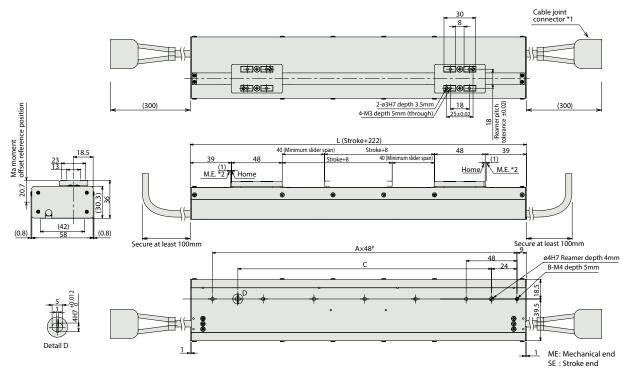
(\*) Based on 5,000km of traveling life

Actuator Specifications

192







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

#### ■ 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
С	192	240	288	336
Weight (kg)	1 17	1 31	1 44	1 58

(\*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.

#### ②Applicable Controllers

Name	External view	Model number	Features	Maximum number of	Input	Power-supply	Standard	Reference
	View	AMEC-C-10I-①-2-1	Easy-to-use controller, even for beginners	positioning points	AC100V	2.4A rated	price —	page → P537
Solenoid Valve Type		ASEP-C-10I-①-2-0	Simple controller operable with the same signal as a solenoid valve	3 points			_	→ P547
olenoid valve multi-axis type PIO specification		MSEP-C	Positioner type based on PIO control, allowing up to 8 axes to be connected					, DE63
Solenoid valve multi-axis type Network specification		MSEP-C	Field network-ready positioner type, allowing up to 8 axes to be connected	256 points	256 points		_	→ P563
Positioner type	E .	ACON-C-10I-①-2-0	Positioning is possible for up to 512	512 mainta	DC24V	1.3A rated 6.4A max.	_	
Safety-Compliant Positioner Type		ACON-CG-10I-①-2-0	points	512 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)	ė	ACON-PO-10I-①-2-0	Pulso train input typo with open	(—)			_	
Serial Communication Type		ACON-SE-10I-N-0-0	Dedicated Serial Communication	64 points	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). \* ① indicates field network specification symbol.

IAI

RCL-SM6L **436** 

Mode

2 **RCL** RA1L 25 N Specification Items Series Type Encoder type Motor type Lead Stroke Applicable controller Cable length Options N: None P: 1m S: 3m M:5m X□□: Custom Length B: Brake (with brake box) I: Incremental 2: Linear servo motor N: No screw 25: 25mm A1:ACON specification 2W ASEL BN: Brake A3: AMEC (without brake box) ASEP MSEP \* See page Pre-47 for details on the model descriptions

# RoHS Technical

- (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 Operating time x 100 per cycle. The duty is Operating time + stop time x 100 per cycle.
- (2) If the actuator is operated vertically, use the optional brake specification.
- (3) Please use an external guide to avoid a horizontal or rotational load applied to the rod.

References

- (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

acciciation							
	Load Capacity (kg)						
Maximum Acceleration (G)	Continuous operation (Duty is 100%)		Duty is 70	0% 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	ı	0.1	-			

■ Pushing force guidelines

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%	ı
Pushing force	0.75	1	1.25	1.5	1.75	2	ı

\* 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.

■ Stroke and Maximum Speed

#### Actuator Specifications ■ Lead and Payload

#### Motor Maximum payload output(W) Horizontal (kg) Vertical (kg) Rated thrust (N) Stroke (mm) Model number Holizonta

2G Vertical See chart See chart 25 RCL-RA1L-I-2-N-25-①-②-③ 2 2.5 10 ±0.1 above above (Fixed) 1G

Standard Price

See page

→ P438

→ P438

Stroke	25
Lead	(mm)
(no screw)	300

Code explanation ① Applicable controller ② Cable length ③ Options

(Unit: mm/s)

③ Options

Brake (with brake box)

Brake (without brake box)

Title

Stroke (mm)	Standard price
25	_

#### ②Cable Length

Type	Cable symbol	Standard price		
туре	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.)

#### 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

BN \*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).

Option code

R

**437** RCL-RA1L



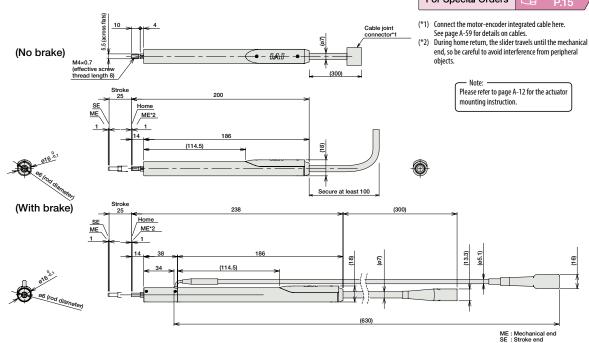




end, so be careful to avoid interference from peripheral

**RCL-RA1L** 438

→ P675

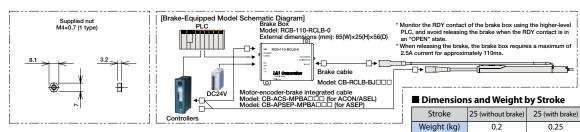


Dimensional Drawings

Serial Communication Type

Program

Control Type



#### ①Applicable Controllers RCL series actuators can be operated with the controllers indicated below. Select the type according to your intended application Easy-to-use controller, even for AMEC-C-2I-①-2-1 AC100V 2.4A rated → P537 beginners Solenoid Valve Type Simple controller operable with the ASEP-C-2I-(1)-2-0 3 points → P547 same signal as a solenoid valve Positioner type based on PIO control, Solenoid valve multi-axis type PIO specification allowing up to 8 axes to be connected → P563 Solenoid valve multi-axis type Field network-ready positioner type, 256 points Network specification allowing up to 8 axes to be connected ACON-C-2I-1)-2-0 Positioner type Positioning is possible for up to 512 512 points points Safety-Compliant Positioner Type 0.8A rated 4.6A max. ACON-CG-2I-①-2-0 DC24V Pulse Train Input Type (Differential Line Driver) Pulse train input type with ACON-PL-2I-①-2-0 → P631 differential line driver support (--) Pulse Train Input Type (Open Collector) Pulse train input type with open ACON-PO-2I-①-2-0 collector support

\*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.

ACON-SE-2I-①-N-0-0

ASEL-CS-1-2I-(1)-2-0

IAI

**Dedicated Serial Communication** 

Programmed operation is possible.

Can operate up to 2 axes

64 points

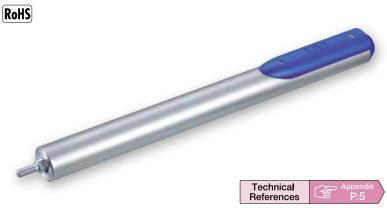
1,500 points

sales@electromate.com





- RA2L **RCL** 30 Specification Items Stroke Series Type Encoder type Motor type Lead Applicable controller Cable length Options N: None P: 1m S: 3m M:5m XDD: Custom Length I: Incremental specification B: Brake (with brake box) 5: Linear servo motor N: No screw 30: 30mm A1:ACON ASEL 5W BN: Brake A3:AMEC ASEP MSEP \* See page Pre-47 for details on the model descriptions



(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 \_\_\_\_\_ Operating time \_\_\_\_\_ x 100 per cycle. The duty is Operating time x 100 per cycle.

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

	Load Capacity (kg)					
Maximum Acceleration (G)	Continuous operation (Duty is 100%) Holizontal Vertical		Duty is 70	0% or less		
(G)			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

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, add 1N.

#### ■ Stroke and Maximum Speed

②Cable Length

Model number	Motor	Maximum	payload	Rated	Instantaneous	Maximum acceleration	Positioning repeatability	Stroke
Model number	output(W)	Horizontal (kg)	Vertical (kg)	thrust (N)	maximum thrust (N)	(G)	(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)

imum eration G)	Positioning repeatability (mm)	Stroke (mm)	Stroke Lead	30 (mm)	
zontal 2G tical IG	±0.1	30 (Fixed)	(no screw)	340	
				(Unit: mm/s)	

Code explanation ① Applicable controller ② Cable length ③ Optic	ns
---	----

Stroke	
Stroke (mm)	Standard price
30	_

Туре	Cablaayaabal	Standard price		
	Cable symbol	with Brake	without Brake	
Standard (Robot Cables)	<b>P</b> (1m)	_	_	
	<b>S</b> (3m)	_	_	
	<b>M</b> (5m)	_	_	
Special length	<b>X06</b> (6m) ~ <b>X10</b> (10m)	_	_	
	X11 (11m) ~ X15 (15m)	_	_	
	X16 (16m) ~ X20 (20m)	_	_	

- \* The standard cable for the RCL is the robot cable.

  \* See page A-59 for the cable for non-brake specification.

  \* See page 440 for the cable for brake specification.

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

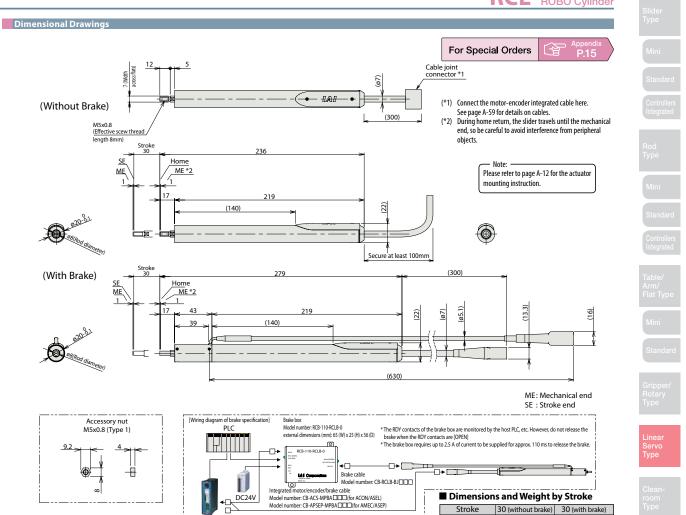
③Options			
Title	Option code	See page	Standard Price
Brake (with brake box)	В	→ P440	_
Brake (without brake box)	BN	→ P440	_

*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 boy)

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

Actuator Specifications ■ Lead and Payload





①Applicable Controllers
-------------------------

Controller

RCL series actuators can be operated with the controllers indicated below. Select the type according to your intended application.										
Name	External Model number		Features	Maximum number of positioning points	Input power	Power-supply capacity	Standard price	Reference page		
Solenoid Valve Type	Sat 1	AMEC-C-5I-①-2-1	Easy-to-use controller, even for beginners		AC100V	2.4A rated	_	→ P537		
Solenola valve Type	3	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	A CONTRACT	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 7 303		
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	1.0A rated 6.4A max.	_			
Pulse Train Input Type (Differential Line Driver)		ACON-PL-5I-①-2-0	Pulse train input type with differential line driver support	(—)			_	→ P631		
Pulse Train Input Type (Open Collector)	ě	ACON-PO-5I-①-2-0 Pulse train input type with open collector support	()			_				
Serial Communication Type		ACON-SE-SI-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		

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-RA2L **440** 

Weight (kg)

0.33

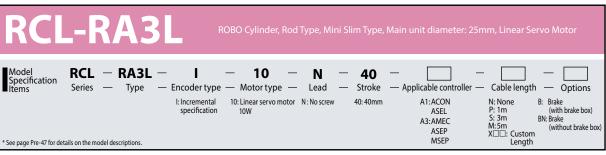
0.4

sales@electromate.com



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





## RoHS Technical References

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

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 Acceleration (G)	Load Capacity (kg)						
	Continuou: (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	_	0.4	_			

■ Pushing force guidelines

MSEP

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	

\*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.

#### ■ Stroke and Maximum Speed

40

Model number	Motor	Maximum	1 . 7	nateu	Instantaneous maximum	Maximum acceleration	Positioning repeatability	Stroke
Model Hambel	output(W)	Horizontal (kg)	Vertical (kg)	thrust (N)	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)

Model number	Motor	Maximum payloau		Rated	maximum	acceleration	repeatability	Stroke
Model number	output(W)	Horizontal (kg)	Vertical (kg)	thrust (N)	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)
C. d		. 🗟 🗸		@ O	4.			

Ш	Model number	Motor Maximum payload Rated Instantaneou maximum					Maximum	Positioning repeatability	Stroke	
	Model number	output(W)	Horizontal (kg)	Vertical (kg)	thrust (N)	thrust (N)	(G)			
	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)	
	Code explanation ① Applicable controller ② Cable length ③ Options									

(G)	(mm)	(mm)	Lead	(11111)
olizontal 2G Vertical 1G	±0.1	40 (Fixed)	(no screw)	450
				(Unit: mm/s)

Stroke

Stroke	
Stroke (mm)	Standard price
40	_

③Options			
Title	Option code	See page	Standard Price
Brake (with brake box)	В	→ P442	_

BN Brake (without brake box) → P442 \*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).

2 Cable Length			
Tuno	Cable cumbel	Standa	rd price
туре	Type Cable symbol		with Brake
Standard	<b>P</b> (1m)	_	_
(Robot Cables)	<b>S</b> (3m)	_	_
(NODOL 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 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

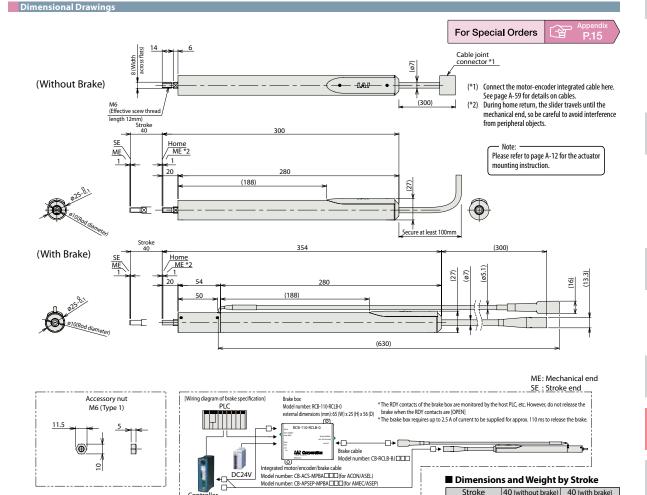
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Item	Description
Drive System	Linear servo motor
Encoder resolution	0.042mm
Pipe	Material: Nickel-plated carbon steel tube
Ambient operating temperature, humidity	0 to 40°C, 85% RH or less (Non-condensing)
Service life	10 million cycles

Actuator Specifications ■ Leads and Payload







① 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	W.	AMEC-C-10I-①-2-1	Easy-to-use controller, even for beginners		AC100V	2.4A rated	_	→ P537
Solenoid 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	type	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			_	→ P303
Positioner type	Positioner type A	ACON-C-10I-①-2-0	Positioning is possible for up to 512	512 mainte			_	
Safety-Compliant Positioner Type			points	512 points	DC24V	1.3A rated 6.4A max.	_	

Pulse train input type with

collector support

differential line driver support

Pulse train input type with open

**Dedicated Serial Communication** 

Programmed operation is possible.

Can operate up to 2 axes

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

ACON-PL-10I-(1)-2-0

ACON-PO-10I-①-2-0

ACON-SE-10I-N-0-0

ASEL-CS-1-10I-①-2-0

Pulse Train Input Type (Differential Line Driver)

Pulse Train Input Type (Open Collector)

Serial Communication Type

Program Control Type

(---)

64 points

1,500 points

Weight (kg)

0.6

0.77

RCL-RA3L **442** 

→ P631

→ P675

Rod Type Mini Standard

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