ROSIER Mécatronique

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Quality and Innovation

Product Overview
24 VDC Pulse/Servo/Linear Motor & 230 VAC Servo Motor Mini RoboCylinder for dedicated Controller P-/A-/D-SEP, P-MEC, P-/A-/S-CON & P-/A-/S-/X-SEL

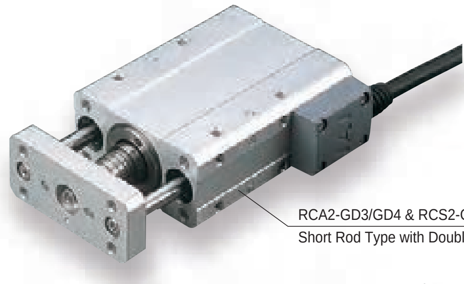
GB

RoboCylinder Miniature Models

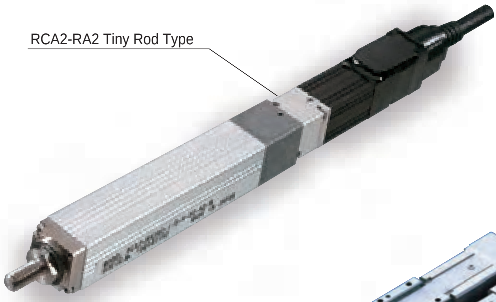
3rd Revised Edition

ROBO CYLINDER

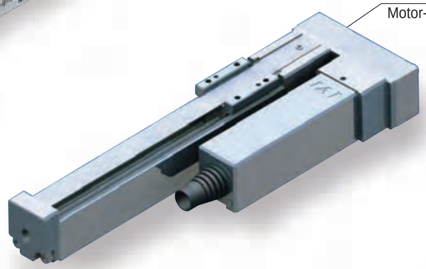
New RCS2 Micro Cylinder



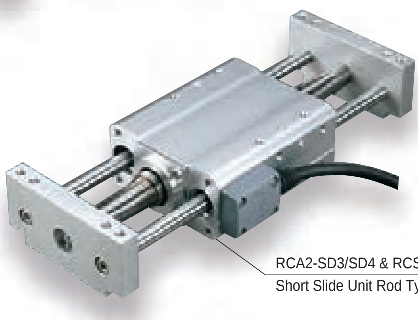
RCA2-GD3/GD4 & RCS2-GD5
Short Rod Type with Double Guide



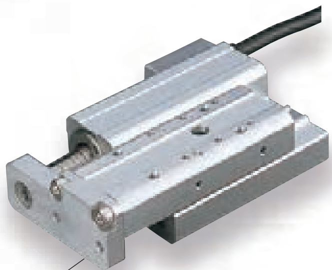
RCA2-RA2 Tiny Rod Type



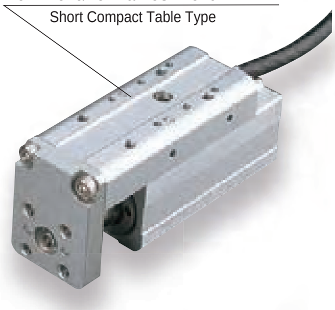
RCP3-SA2R Tiny Slider Type
Motor-reversing specification



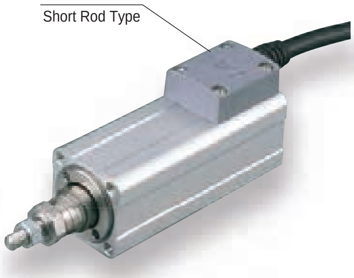
RCA2-SD3/SD4 & RCS2-SD5
Short Slide Unit Rod Type with Double Guide



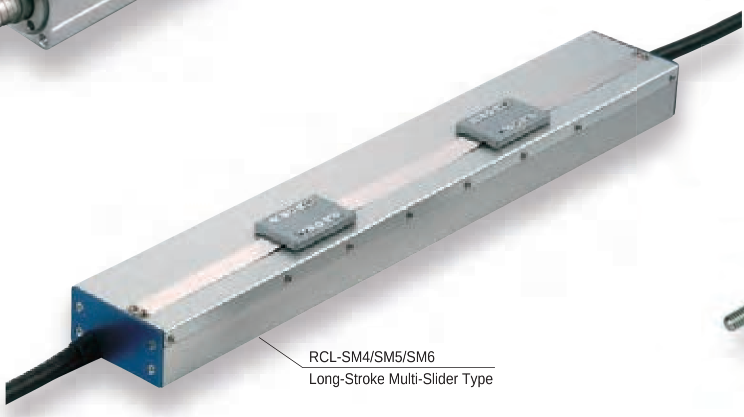
RCA2-TFA3/TFA4 & RCS2-TFA5
Short Flat Table Type



RCA2-TCA3/TCA4 & RCS2-TCA5
Short Compact Table Type

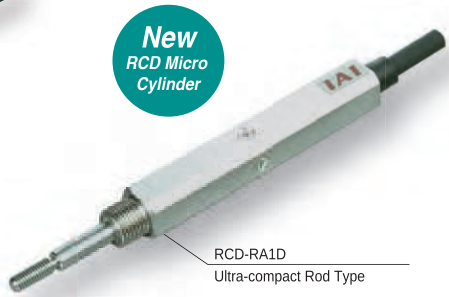


RCA2-RP3/RP4
& RCS2-RP5
Short Rod Type



RCL-SM4/SM5/SM6
Long-Stroke Multi-Slider Type

New RCD Micro Cylinder



RCD-RA1D
Ultra-compact Rod Type

RCP3 | RCA2 | RCS2 | RCL | RCD

green automation
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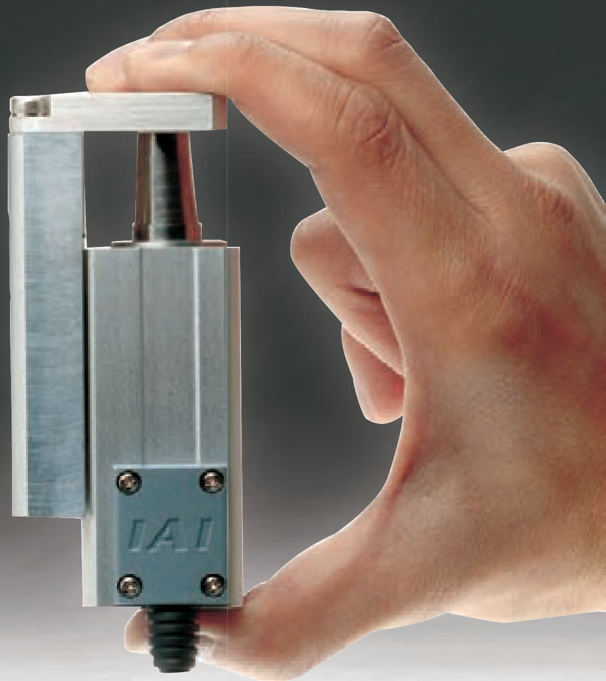
The compact, next-generation

Electric Actuator

Mini-RoboCylinder

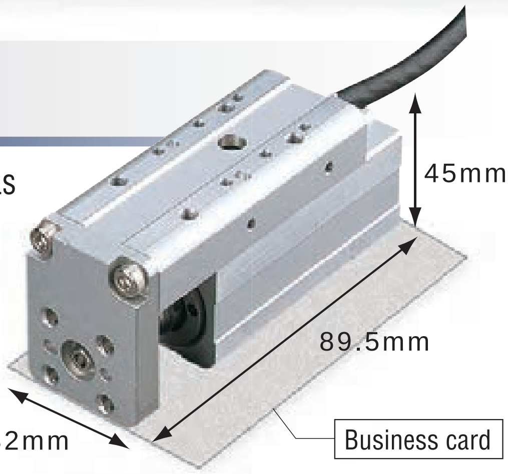


ROBO CYLINDER

Space Saving

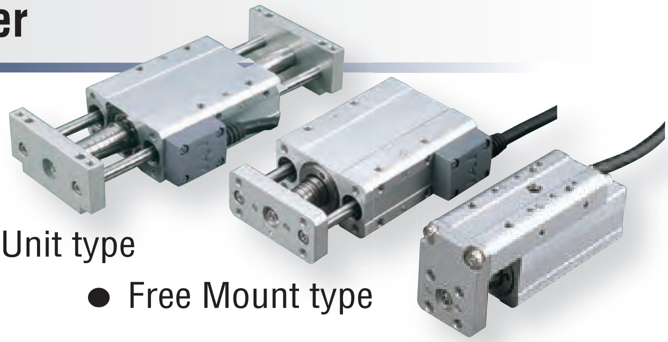
Incorporating a newly developed motor, the Mini-RoboCylinder has achieved smaller size with significantly reduced overall length, width and height which are comparable to air cylinders.
Systems that could only use air cylinders previously due to size constraints, can now benefit from IAI's electromechanical solution.

The mini table type RCA2-TCA3NA has a footprint smaller than a business card.



Shape & Usability like an Air Cylinder

The Mini-RoboCylinder is available in shapes similar to that of air cylinders.
Users who are comfortable with the handling and operation of pneumatic systems are now able to switch to RoboCylinder effortlessly.

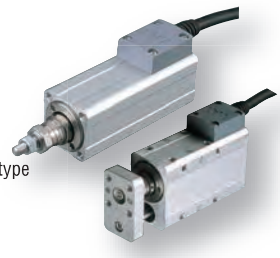


- Slide Unit type
- Free Mount type
- Table type

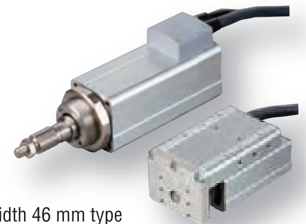
Expanded Variations

New models have been added, including slim type with contracted actuator width and high-payload, long-stroke types of 46 mm in actuator width, to support greater applications.

Slim BLDC Motor type
RCD-RA1D



Short ball screw type
RCA2-□□3NA
RCA2-□□4NA
50 mm stroke



Actuator width 46 mm type
RCS2-□□5N

Mini Slider Type

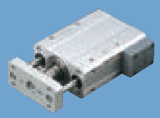
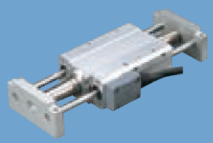
Motor Unit	Type Description	Model		Encoder Type	Motor		Feed Screw	Lead (mm)	Rated Thrust (N)	Max. Load Capacity (kg)		Max. Speed (mm/s)	Stroke (mm)	Repeat-ability (mm)	Width (mm)
		Series	Type		Motor Type	Motor Size				Horizontal	Vertical				
Separate Motor (Removable)	Tiny Coupling Slider Type  SA2AC	RCP3	SA2AC SA2AR	Incremental	Pulse Motor	20□	Lead Screw	4	—	0.25	—	200	25~100 (25-mm steps)	±0.05	22
								2	—	0.5	—	100			
								1	—	1	—	50			
	Tiny Motor-reversing Slider Type  SA2A(B)R		SA2BC SA2BR					6	—	0.25	—	300	25~150 (25-mm steps)		28
								4	—	0.5	—	200			
								2	—	1	—	100			
		RCA2	SA2AC SA2AR		Servo Motor	5W	Ball Screw	4	21.4	0.5	0.25	200	25~100 (25-mm steps)	±0.02	20
								2	42.3	1	0.5	100			
								1	85.5	2	1	50			

Mini Rod Type

Motor Unit	Type Description	Model		Encoder Type	Motor		Feed Screw	Lead (mm)	Rated Thrust (N)	Max. Load Capacity (kg)		Max. Speed (mm/s)	Stroke (mm)	Repeat-ability (mm)	Width (mm)
		Series	Type		Motor Type	Motor Size				Horizontal	Vertical				
Separate Motor (Removable)	Tiny Coupling Rod Type  RA2AC	RCP3	RA2AC RA2AR	Incremental	Pulse Motor	20□	Lead Screw	4	—	0.25	0.125	200	25~100 (25-mm steps)	±0.05	22
								2	—	0.5	0.25	100			
								1	—	1	0.5	50			
							Ball Screw	4	—	0.5	0.2	200		±0.02	
								2	—	1	0.375	100			
								1	—	2	0.75	50			
						20□ High-load		4	—	1	0.325	200			
								2	—	2	0.625	100			
								1	—	4	1.25	50			
	Tiny Motor-reversing Rod Type  RA2A(B)R		RA2BC RA2BR			20□	Lead Screw	6	—	0.25	0.125	300	25~150 (25-mm steps)	±0.05	28
								4	—	0.5	0.25	200			
								2	—	1	0.5	100			
							Ball Screw	6	—	0.5	0.2	300		±0.02	
								4	—	1	0.375	200			
								2	—	2	0.75	100			
								1	—	4	1.5	50			
						20□ High-load		6	—	1	0.325	300			
								4	—	2	0.625	200			
								2	—	4	1.25	100			
								1	—	8	2.5	50			
		RCA2	RA2AC RA2AR		Servo Motor	5W	Ball Screw	4	21.4	0.5	0.25	200	25~100 (25-mm steps)	±0.02	18
								2	42.3	1	0.5	100			
								1	85.5	2	1	50			
Built-in Motor (Direct-coupled)	Short Fixed Nut Rod Type  RN3(4)(5)N(A)	RCA2	RN3NA RP3NA	Incremental	Servo Motor (24 V)	10W	Lead Screw	4	25.1	0.25	0.125	200	30 50 New	±0.05	28
								2	50.3	0.5	0.25	100			
								1	100.5	1	0.5	50			
							Ball Screw	4	42.7	0.75	0.25	200		±0.02	
								2	85.5	1.5	0.5	100			
								1	170.9	3	1	50			
	Short Tapped Hole Rod Type  RP3(4)(5)N(A)		RN4NA RP4NA			20W	Lead Screw	6	19.9	0.25	0.125	300	30 50 New	±0.05	34
								4	29.8	0.5	0.25	200			
								2	59.7	1	0.5	100			
							Ball Screw	6	33.8	2	0.5	300		±0.02	
								4	50.7	3	0.75	200			
								2	101.5	6	1.5	100			
		New RCS2	RN5N RP5N		Servo Motor (230 V)	60W	Ball Screw	10	89	5	1.5	380<330>	50 75	±0.02	46
								5	178	10	3	250			
								2.5	356	20	6	125			

*The value inside < > indicates vertical usage.

Mini Rod Type

Motor Unit	Type Description	Model: Series	Model: Type	Encoder Type	Motor: Motor Type	Motor: Motor Size	Feed Screw	Lead (mm)	Rated Thrust (N)	Max. Load Capacity (kg): Horizontal	Max. Load Capacity (kg): Vertical	Max. Speed (mm/s)	Stroke (mm)	Repeat-ability (mm)	Width (mm)
Built-in Motor (Direct-coupled)	Short Free Mount Rod Type with Single-Guide 	RCA2	GS3NA	Incremental	Servo Motor (24 V)	10W	Lead Screw	4	25.1	0.25	0.125	200	30 50 New	±0.05	28
								2	50.3	0.5	0.25	100			
								1	100.5	1	0.5	50			
							Ball Screw	4	42.7	0.75	0.25	200		±0.02	
								2	85.5	1.5	0.5	100			
								1	170.9	3	1	50			
			GS4NA			20W	Lead Screw	6	19.9	0.25	0.125	220	30 50 New	±0.05	34
								4	29.8	0.5	0.25	200			
								2	59.7	1	0.5	100			
							Ball Screw	6	33.8	2	0.5	270〈220〉		±0.02	
								4	50.7	3	0.75	200			
								2	101.5	6	1.5	100			
		New RCS2	GS5N		Servo Motor (230 V)	60W	Ball Screw	10	89	5	1.5	380〈330〉	50 75	±0.02	46
								5	178	10	3	250			
								2.5	356	20	6	125			
	Short Free Mount Rod Type with Double-Guide 	RCA2	GD3NA		Servo Motor (24 V)	10W	Lead Screw	4	25.1	0.25	0.125	200	30 50 New	±0.05	28
								2	50.3	0.5	0.25	100			
								1	100.5	1	0.5	50			
							Ball Screw	4	42.7	0.75	0.25	200		±0.02	
								2	85.5	1.5	0.5	100			
								1	170.9	3	1	50			
			GD4NA			20W	Lead Screw	6	19.9	0.25	0.125	220	30 50 New	±0.05	34
								4	29.8	0.5	0.25	200			
								2	59.7	1	0.5	100			
							Ball Screw	6	33.8	2	0.5	270〈220〉		±0.02	
								4	50.7	3	0.75	200			
								2	101.5	6	1.5	100			
		New RCS2	GD5N		Servo Motor (230 V)	60W	Ball Screw	10	89	5	1.5	380〈330〉	50 75	±0.02	46
								5	178	10	3	250			
								2.5	356	20	6	125			
	Short Slide Unit Rod Type with Double-Guide 	RCA2	SD3NA		Servo Motor (24 V)	10W	Lead Screw	4	25.1	0.25	0.125	200	25 50	±0.05	60
								2	50.3	0.5	0.25	100			
								1	100.5	1	0.5	50			
							Ball Screw	4	42.7	0.75	0.25	200		±0.02	
								2	85.5	1.5	0.5	100			
								1	170.9	3	1	50			
			SD4NA			20W	Lead Screw	6	19.9	0.25	0.125	300	25 50 75	±0.05	72
								4	29.8	0.5	0.25	200			
								2	59.7	1	0.5	100			
							Ball Screw	6	33.8	2	0.5	300		±0.02	
								4	50.7	3	0.75	200			
								2	101.5	6	1.5	100			
		New RCS2	SD5N		Servo Motor (230 V)	60W	Ball Screw	10	89	5	1.5	380〈330〉	50 75	±0.02	94
								5	178	10	3	250			
								2.5	356	20	6	125			

*The value inside < > indicates vertical usage.

Mini Slider Type

Features

- The motor can easily perform switching operations for the unit model.
- Select from Side-Mounted Motor type with a reduced total length and Tiny Straight type (Coupling type).

Usage

Used for jig and workpiece positioning, table travel, etc

Mini Rod Type

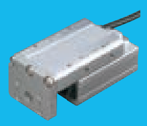
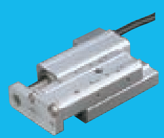
Features

- Select from Tiny Motor Unit types and Short Length types having greatly reduced overall length.
- Select from Guide types with highly rigid/linear built-in guides and those without guides having drastically miniaturized main body sizes.

Usage

Used for raising/lowering products and jigs, pushing, clamping, etc.

Mini Table Type

Motor Unit	Type Description	Model: Series	Model: Type	Encoder Type	Motor: Motor Type	Motor: Motor Size	Feed Screw	Lead (mm)	Rated Thrust (N)	Max. Load Capacity (kg): Horizontal	Max. Load Capacity (kg): Vertical	Max. Speed (mm/s)	Stroke (mm)	Repeatability (mm)	Width (mm)
Built-in Motor (Direct-coupled)	Short Compact Table Type 	RCA2	TCA3NA	Incremental	Servo Motor (24 V)	10W	Lead Screw	4	25.1	0.25	0.125	200	30 50 New	±0.05	32
								2	50.3	0.5	0.25	100			
								1	100.5	1	0.5	50			
							Ball Screw	4	42.7	0.75	0.25	200		±0.02	
								2	85.5	1.5	0.5	100			
								1	170.9	3	1	50			
			TCA4NA			20W	Lead Screw	6	19.9	0.25	0.125	220	30 50 New	±0.05	36
								4	29.8	0.5	0.25	200			
								2	59.7	1	0.5	100			
							Ball Screw	6	33.8	2	0.5	270⟨220⟩		±0.02	
								4	50.7	3	0.75	200			
								2	101.5	6	1.5	100			
		New RCS2	TCA5N		Servo Motor (230 V)	60W	Ball Screw	10	89	5	1.5	380⟨330⟩	50 75	±0.02	48
								5	178	10	3	250			
								2.5	356	20	6	125			
	Short Wide Table Type 	RCA2	TWA3NA		Servo Motor (24 V)	10W	Lead Screw	4	25.1	0.25	0.125	200	30 50 New	±0.05	50
								2	50.3	0.5	0.25	100			
								1	100.5	1	0.5	50			
							Ball Screw	4	42.7	0.75	0.25	200		±0.02	
								2	85.5	1.5	0.5	100			
								1	170.9	3	1	50			
			TWA4NA			20W	Lead Screw	6	19.9	0.25	0.125	220	30 50 New	±0.05	58
								4	29.8	0.5	0.25	200			
								2	59.7	1	0.5	100			
							Ball Screw	6	33.8	2	0.5	270⟨220⟩		±0.02	
								4	50.7	3	0.75	200			
								2	101.5	6	1.5	100			
		New RCS2	TWA5N		Servo Motor (230 V)	60W	Ball Screw	10	89	5	1.5	380⟨330⟩	50 75	±0.02	80
								5	178	10	3	250			
								2.5	356	20	6	125			
	Short Flat Table Type 	RCA2	TFA3NA		Servo Motor (24 V)	10W	Lead Screw	4	25.1	0.25	0.125	200	30 50 New	±0.05	61
								2	50.3	0.5	0.25	100			
								1	100.5	1	0.5	50			
							Ball Screw	4	42.7	0.75	0.25	200		±0.02	
								2	85.5	1.5	0.5	100			
								1	170.9	3	1	50			
			TFA4NA			20W	Lead Screw	6	19.9	0.25	0.125	220	30 50 New	±0.05	71
								4	29.8	0.5	0.25	200			
								2	59.7	1	0.5	100			
							Ball Screw	6	33.8	2	0.5	270⟨220⟩		±0.02	
								4	50.7	3	0.75	200			
								2	101.5	6	1.5	100			
		New RCS2	TFA5N		Servo Motor (230 V)	60W	Ball Screw	10	89	5	1.5	380⟨330⟩	50 75	±0.02	95
								5	178	10	3	250			
								2.5	356	20	6	125			

*The value inside < > indicates vertical usage.

Mini Table Type

Features
- Comes equipped with an integrated guide that keeps overhung loads balanced.
- Select from Compact, Short Length types and Separate Motor Unit types.

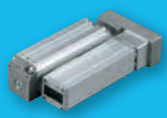
Usage
Used for raising/lowering products and jigs, horizontal moving, and pushing (handles overhung loads from the main unit).

Mini Linear & BLDC Motor Type

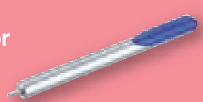
Features
- Equipped with a high acceleration/deceleration linear / brushless DC motor capable of operation at up to 2G / 1G.
- Available in Slider type and Rod type.
- The Multi-slider type comes with two sliders on one actuator that can be independently operated.

Usage
Used for transfers requiring short cycle times, etc.

Mini Table Type

Motor Unit	Type Description	Model: Series	Model: Type	Encoder Type	Motor: Motor Type	Motor: Motor Size	Feed Screw	Lead (mm)	Rated Thrust (N)	Max. Load Capacity (kg): Horizontal	Max. Load Capacity (kg): Vertical	Max. Speed (mm/s)	Stroke (mm)	Repeatability (mm)	Width (mm)
Separate Motor (Removable)	**Coupling Table Type** 	RCP3	TA3C	Incremental	Pulse Motor	20□	Ball Screw	6	-	~0.7	~0.3	300 <200>	20~100 (10-mm steps)	±0.02	36
								4	-	~1.4	~0.6	200 <133>			
								2	-	~2	~1	100 <67>			
			TA4C			28□		6	-	~1	~0.5	300			40
								4	-	~2	~1	200			
								2	-	~3	~1.5	100			
		RCA2	TA4C		Servo Motor	10W		6	-	1	0.5	300			40
								4	-	2	1	200			
								2	-	3	1.5	100			
	Motor-reversing Table Type 	RCP3	TA3R		Pulse Motor	20□	Ball Screw	6	-	~0.7	~0.3	300 <200>			72
								4	-	~1.4	~0.6	200 <133>			
								2	-	~2	~1	100 <67>			
			TA4R			28□		6	-	~1	~0.5	300			81
								4	-	~2	~1	200			
								2	-	~3	~1.5	100			
		RCA2	TA4R		Servo Motor	10W		6	-	1	0.5	300			81
								4	-	2	1	200			
								2	-	3	1.5	100			

Mini Linear & BLDC Motor Type

Motor Unit	Type Description	Model: Series	Model: Type	Encoder Type	Motor: Motor Type	Motor: Motor Size	Feed Screw	Lead (mm)	Rated Thrust (N)	Max. Load Capacity (kg): Horizontal	Max. Load Capacity (kg): Vertical	Max. Speed (mm/s)	Stroke (mm)	Repeatability (mm)	Width (mm)
Combined Motor-to-Body System (Micro Slider)	**Slim Linear Motor Slider Type** 	RCL	SA1L	Incremental	Linear Motor	2W	-	-	2	0.5	-	420	40	±0.1	20
			SA2L			5W		-	4	1	-	460	48		24
			SA3L			10W		-	8	2	-	600	64		28
	Long-stroke Linear Motor Slider Type 		SA4L			2W		-	2.5	0.8	-	1200	30~180 (30-mm steps)		40
			SM4L					-					30~120 (30-mm steps)		40
			SA5L			5W		-	5	1.6	-	1400	36~216 (36-mm steps)		48
			SM5L					-					36~114 (36-mm steps)		48
			SA6L			10W		-	10	3.2	-	1600	48~288 (48-mm steps)		58
			SM6L					-					48~192 (48-mm steps)		58
Combined Motor-to-Body System (Micro Cylinder)	**Slim Linear Motor Rod Type** 	RCL	RA1L			2W		-	2.5	0.5	0.1	300	25		ø16
			RA2L			5W		-	5	1	0.2	340	30		ø20
			RA3L			10W		-	10	2	0.4	450	40		ø25
	Slim Brushless DC Motor Rod Type 	New RCD	RA1D		BLDC Servo Motor	2.5W	Lead Screw	2	4.2	0.7	0.3	300	10 20 30	±0.05	ø12

* < > : Max. speed of vertical application

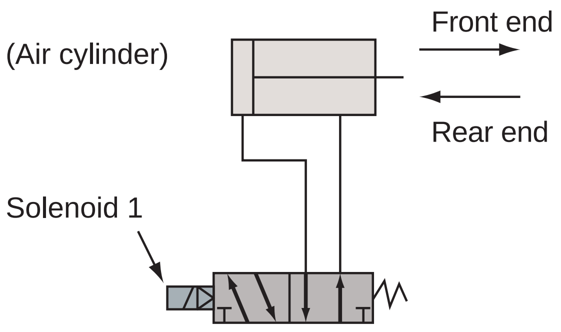
Operate using the same Signals used for Air Cylinder Solenoid Valves

MEC & SEP Operating Methods

MEC and SEP controllers (24VDC/230VAC) can be operated with the same signals used for air cylinder solenoid valves.
Solenoid valves come in two types: Single solenoids and Double solenoids.
The PMEC and PSEP/ASEP/DSEP support signals for both.

■ When using an air cylinder solenoid valve:

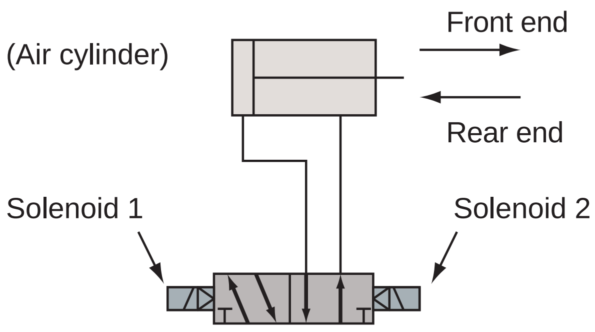
<Single solenoid>



(Solenoid valve)

Signal to solenoid 1	Rod movement
ON	Front end
OFF	Rear end

<Double solenoid>

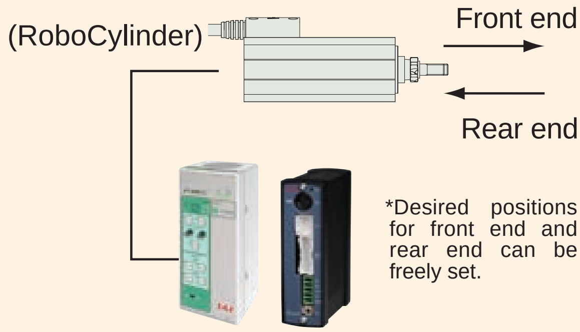


(Solenoid valve)

Signal to solenoid 1	Signal to solenoid 2	Rod movement
ON	OFF	Front end
OFF	ON	Rear end

■ PMEC, PSEP/ASEP/DSEP:

<Replacement of single solenoid>

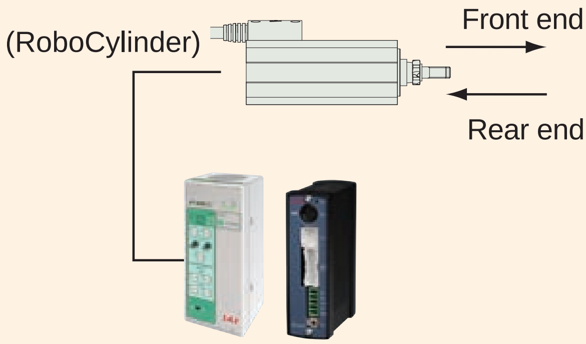


*Desired positions for front end and rear end can be freely set.

(PMEC, PSEP/ASEP/DSEP)

Signal to controller Input 0	Rod movement
ON	Front end
OFF	Rear end

<Replacement of double solenoid>



(PMEC, PSEP/ASEP/DSEP)

Signal to controller Input 1	Signal to controller Input 0	Rod movement
ON	OFF	Front end
OFF	ON	Rear end

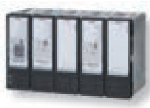
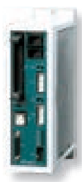
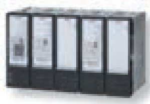
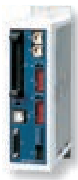
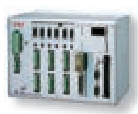
* The actuator can also be moved among 3 points by switching the parameters

Lineup of Controllers meeting various Applications, from 3-point Positioning Types controlled like Solenoid Valves to Network Types

You can choose a desired controller from those of various control methods, such as 3-point positioning types whose teaching and trial operation can be done using the controller's operation panel, multi-point positioning types supporting up to 512 positioning points, and network types that can be connected to various networks.

Since 3-point positioning types (3 position controller) can be operated with the same signal as the ones of solenoid valves, the device with the currently used air can be changed to an electric cylinder.

Refer to the table below for the various actuator models (series) and controllers that can be connected.

Type of controller	Positioner type		Network type	Program type
	3-position controller	512-position controller		
Features	● Easy to operate, as the actuator can be operated simply by turning signals ON/OFF. ● Can be operated using the same signals used for solenoid valves.	● Multi-point positioning to 512 points is possible. ● Pulse-train control is also supported.	● Directly connectable to key field networks. ● Coordinate values can be specified directly using numeric values to move the actuator. ● The current position and axis condition can be checked with a host device.	● Standalone operation is possible without using a PLC or other host device. ● Simultaneous control of up to 2 axes (PSEL, ASEL, SSEL) or six axes (XSEL) is possible.
 RCP3 	 PMEC  PSEP	 PCON-CA PCON-C	 PCON-C  RPCON	 PSEL
 RCA2 RCL 	 ASEP	 ACON-C	 ACON-C  RACON	 ASEL
 RCS2 		 SCON-CA	 SCON-CA	 SSEL  XSEL
RCD 	 DSEP			