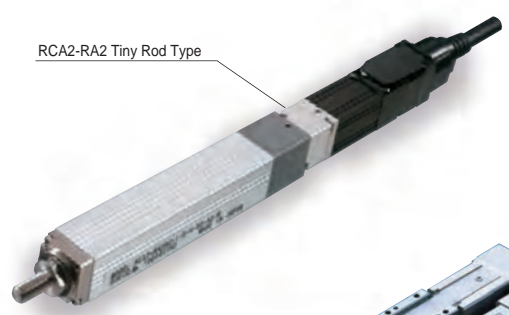


RoboCylinder Miniature Models

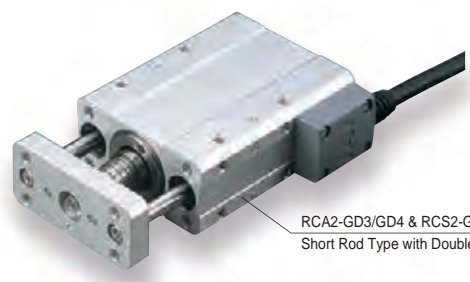
3rd Revised Edition



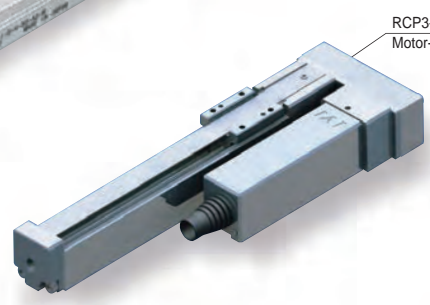
New
RCS2 Micro Cylinder



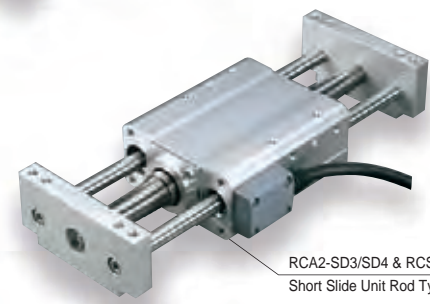
RCA2-RA2 Tiny Rod Type



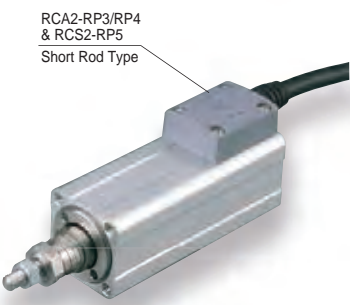
RCA2-GD3/GD4 & RCS2-GD5 Short Rod Type with Double Guide



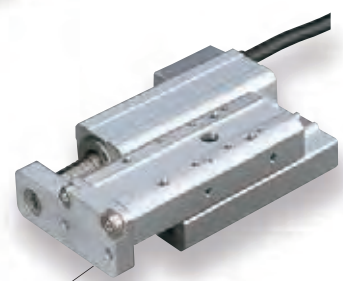
RCP3-SA2R Tiny Slider Type Motor-reversing specification



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



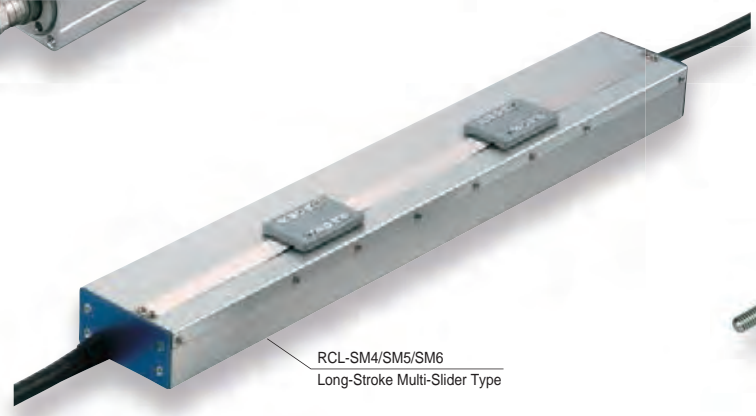
RCA2-RP3/RP4 & RCS2-RP5 Short Rod Type



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

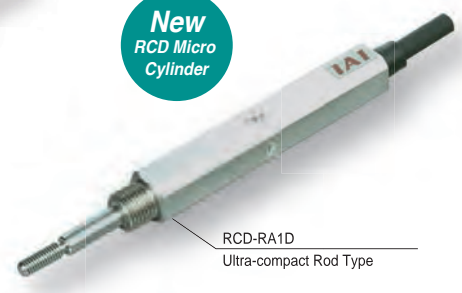


RCA2-TCA3/TCA4 & RCS2-TCA5 Short Compact Table Type



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

New
RCD Micro Cylinder



RCD-RA1D Ultra-compact Rod Type

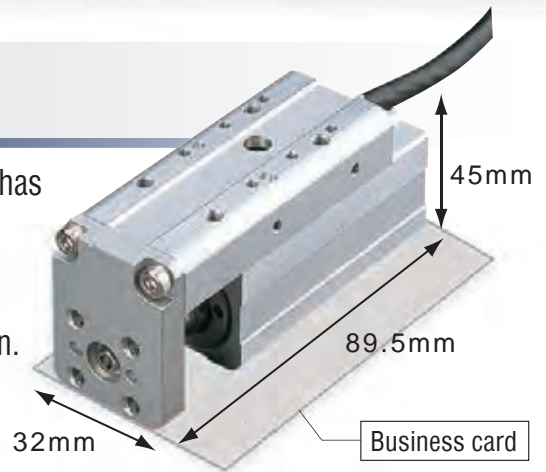
The compact, next-generation Electric Actuator Mini-RoboCylinder



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.

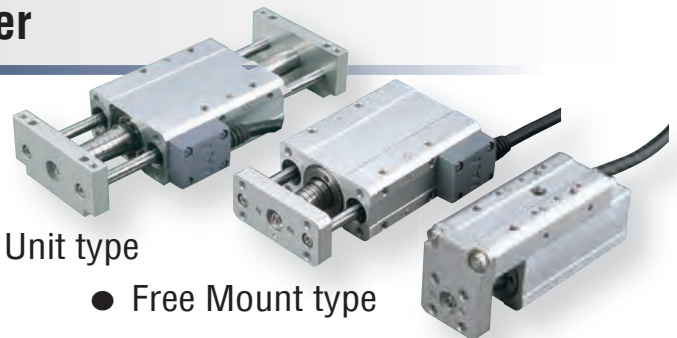
The mini table type RCA2-TCA3NA has a footprint smaller than a business card.



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

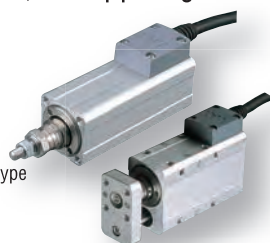


Expanded Variations

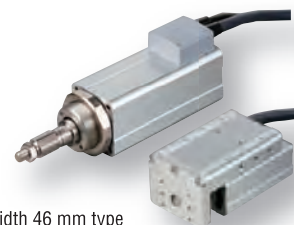
New models have been added, including slim type with contracted actuator width and high-payload, long-stroke types of 46 mm in actuator width, to support greater applications.





Slim BLDC Motor type
RCD-RA1D





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

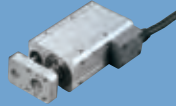




Actuator width 46 mm type
RCS2-□□5N

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 	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			
								6	—	0.25	—	300			
								4	—	0.5	—	200			
	Tiny Motor-reversing Slider Type 	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 	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					
								20□ High-load	Ball Screw	4	—	0.5				0.2	200
										1	—	2				0.75	50
						4				—	1	0.325		200			
						20□		Lead Screw	6	—	0.25	0.125		300		25-150 (25-mm steps)	±0.05
									4	—	0.5	0.25		200			
									2	—	1	0.5		100			
									20□ High-load	Ball Screw	6	—		0.5			
	4	—	1		0.375		200										
	2	—	2		0.75	100											
	20□	Ball Screw	1		—	4	1.5	50	±0.02								
			6		—	1	0.325	300									
			4		—	2	0.625	200									
			2		—	4	1.25	100									
			1		—	8	2.5	50									
	Tiny Motor-reversing Rod Type 	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					

*The value inside < > indicates vertical usage.

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						
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							
						2	85.5	1.5	0.5	100							
						1	170.9	3	1	50							
		GS4NA	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											
		4	50.7	3	0.75	200											
		2	101.5	6	1.5	100											
	New RCS2	GS5N	Ball Screw	Servo Motor (230 V)	60W	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	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							
						2	85.5	1.5	0.5	100							
						1	170.9	3	1	50							
		GD4NA	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												
	4	50.7	3	0.75	200												
	2	101.5	6	1.5	100												
New RCS2	GD5N	Ball Screw	Servo Motor (230 V)	60W	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	Incremental	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								
					2	85.5	1.5	0.5	100								
					1	170.9	3	1	50								
	SD4NA	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												
	4	50.7	3	0.75	200												
	2	101.5	6	1.5	100												
New RCS2	SD5N	Ball Screw	Servo Motor (230 V)	60W	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


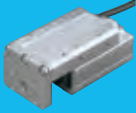

- Features**
- The motor can easily perform switching operations for the unit model.
 - Select from Side-Mounted Motor type with a reduced total length and Tiny Straight type (Coupling type).

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		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								
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	±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	50 New	±0.02							
						2	85.5	1.5	0.5	100									
						1	170.9	3	1	50									
		TCA4NA	Lead Screw		6	19.9	0.25	0.125	220	30	±0.05								
					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	50 New		±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	±0.02	48					
							5	178	10	3	250								
							2.5	356	20	6	125								
	Short Wide Table Type 	RCA2			TWA3NA	Incremental	Servo Motor (24 V)	10W	Lead Screw	4	25.1		0.25		0.125	200	30	±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	50 New	±0.02							
				2	85.5			1.5	0.5	100									
				1	170.9			3	1	50									
		TWA4NA	Lead Screw	6	19.9		0.25	0.125	220	30	±0.05								
				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	50 New		±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	±0.02	80						
					5		178	10	3	250									
					2.5		356	20	6	125									
Short Flat Table Type 	RCA2		TFA3NA	Incremental	Servo Motor (24 V)		10W	Lead Screw	4	25.1		0.25		0.125	200	30	±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	50 New	±0.02								
			2			85.5	1.5	0.5	100										
			1			170.9	3	1	50										
	TFA4NA	Lead Screw	6		19.9	0.25	0.125	220	30	±0.05									
			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	50 New		±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	±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).


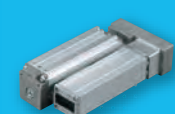
Mini Linear & BLDC Motor Type



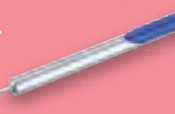

Features

- 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		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)	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
			TA4C					4	-	~1.4	~0.6	200 <133>			
			TA4C					2	-	~2	~1	100 <67>			
		RCA2	TA4C		6	-		~1	~0.5	300					
					4	-		~2	~1	200					
					2	-		~3	~1.5	100					
	Motor-reversing Table Type 	RCP3	TA3R	Incremental	Pulse Motor	20□	Ball Screw	6	-	~0.7	~0.3	300 <200>			
			TA4R					4	-	~1.4	~0.6	200 <133>			
			TA4R					2	-	~2	~1	100 <67>			
		RCA2	TA4R		6	-		~1	~0.5	300					
					4	-		~2	~1	200					
					2	-		~3	~1.5	100					

Mini Linear & BLDC Motor 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					
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
			SA4L					2W	-	2.5	0.8	-	1200		30~180 (30-mm steps)	40
	SM4L		30~120 (30-mm steps)						40							
	Long-stroke Linear Motor Slider Type 		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 	RA1L	RCL	Incremental	Linear Motor	2W		-	-
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

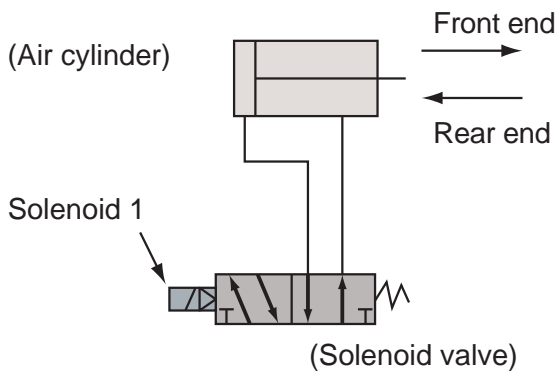
MEC and SEP controllers (24VDC/230VAC) can be operated with the same signals used for air cylinder solenoid valves.

Solenoid valves come in two types: Single solenoids and Double solenoids.

The P MEC and PSEP/ASEP/DSEP support signals for both.

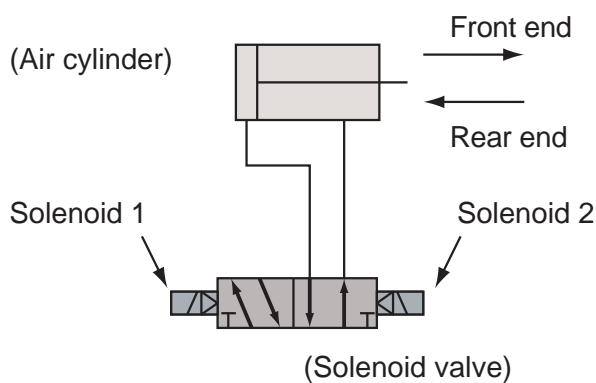
■ When using an air cylinder solenoid valve:

<Single solenoid>



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

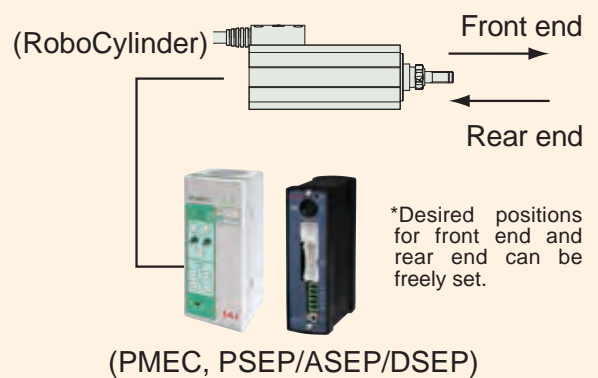
<Double solenoid>



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

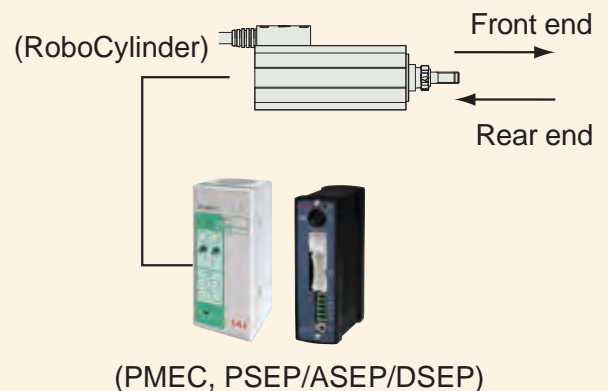
■ P MEC, PSEP/ASEP/DSEP:

<Replacement of single solenoid>



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

<Replacement of double solenoid>



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	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Multi-point positioning to 512 points is possible. Pulse-train control is also supported. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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.
<p>RCP3</p>	<p>PMEC PSEP</p>	<p>PCON-CA PCON-C</p>	<p>PCON-C RPCON</p>	<p>PSEL</p>
<p>RCA2 RCL</p>	<p>ASEP</p>	<p>ACON-C</p>	<p>ACON-C RACON</p>	<p>ASEL</p>
<p>RCS2</p>	/	<p>SCON-CA</p>	<p>SCON-CA</p>	<p>SSEL XSEL</p>
<p>RCD</p>	<p>DSEP</p>	/	/	/