

IK3: 3-axis Cartesian Robot

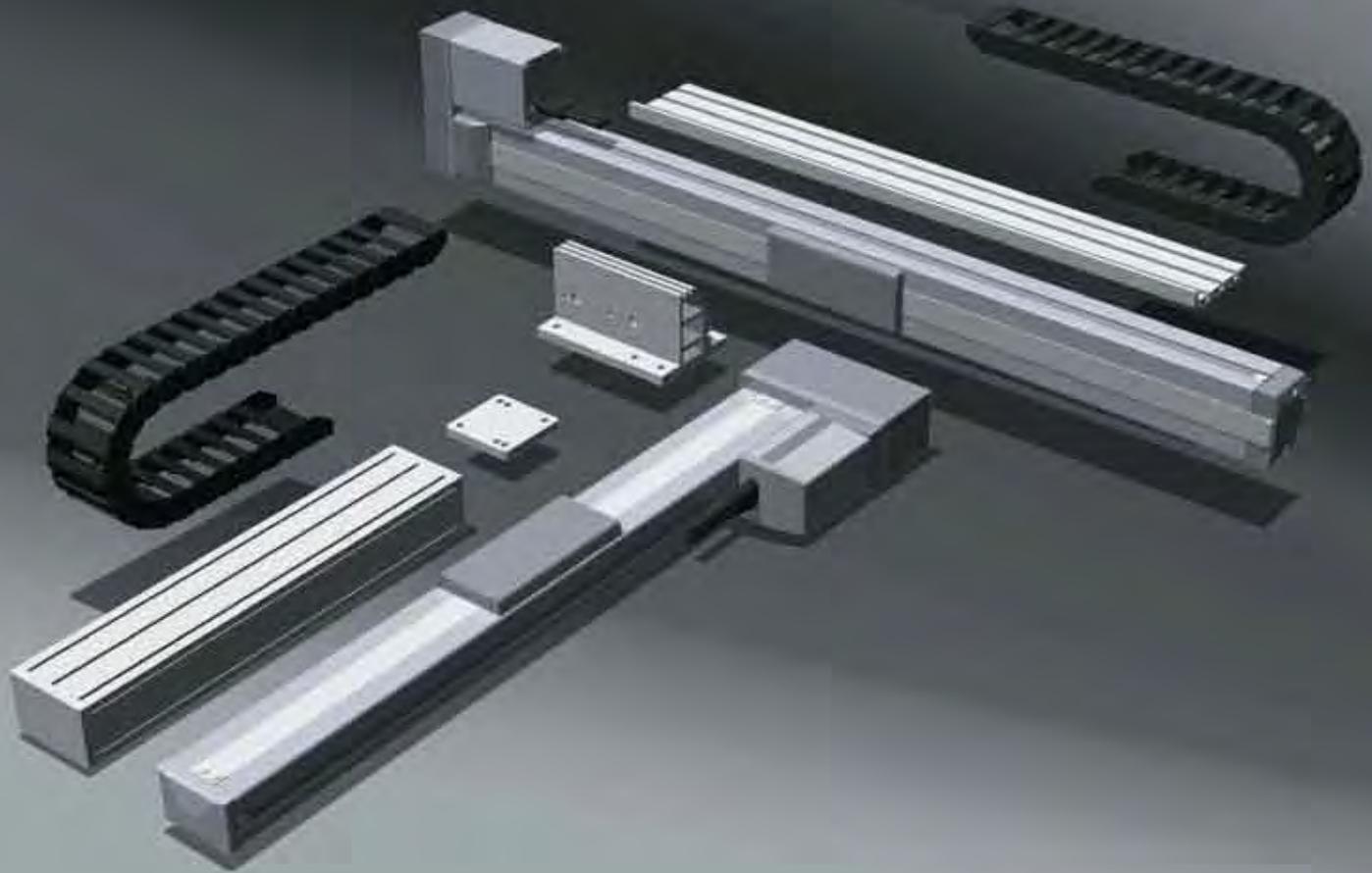
- RCP2: 24V Stepper
- RCS2: 230V Servo

ROBO Cylinder IK Series Catalog



ROBO Cylinder IK Series

IK Series: Components



1. Wide Variation

The engineers at IAI have worked extensively to produce the highest quality products at affordable prices. The new IK Series lineup offers many variations and can be easily integrated and prepared to your specific needs.

2. Motor Options

The IK Series is offered in both pulse and servo motors. Choose the pulse motor for applications requiring high thrust at low speeds. Choose the servo motor for applications requiring constant thrust regardless of the operating speed.

3. Easy Assembly

The ROBO Cylinder IK Series multi-axes kit includes everything needed for fast and easy assembly.

Components



Assembled



Multi-Axes Systems

IK Series: Assembled



4. High Functionality

Combined with the PCON/PSEL/SCON/SSEL/XSEL controllers, complex programming is made easy.



5. Quality and Innovation

We at IAI are always working to offer high quality and innovative solutions tailored for your specific application. Whenever you need support, IAI's experienced teams of technical support engineers are available to help you diagnose and troubleshoot IAI products. When you require innovative and high quality robots, excellent service and support for your unique needs, demand IAI!

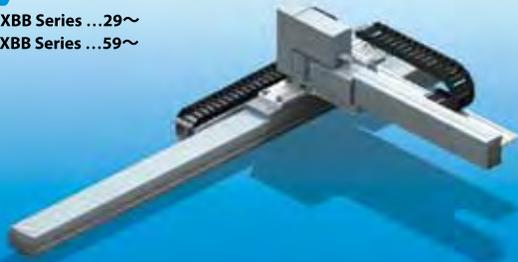


IK2-P Series / IK3-P Series ROBO Cylinder RCP2 combinations based on pulse motor

IK2-S Series / IK3-S Series ROBO Cylinder RCS2 combinations based on servo motor

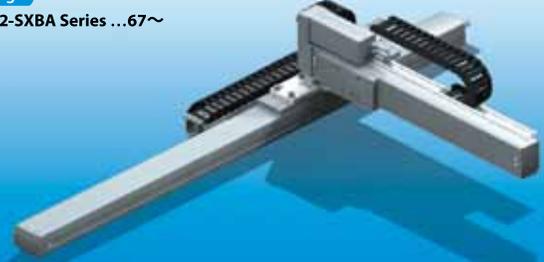
Page

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IK2-SXBB Series ...59~



Page

IK2-SXBA Series ...67~



•IK2-PXBB Series •IK2-SXBB Series

		Maximum X-axis stroke	Maximum Y-axis stroke	Load capacity at maximum Y-axis stroke
Single-slider	High-speed type	1,000mm	300mm	6.0kg
	Medium-speed type	1,000mm	300mm	8.0kg
Double-slider	High-speed type	800mm	400mm	5.5kg
	Medium-speed type	800mm	400mm	10.5kg

•IK2-SXBA Series

		Maximum X-axis stroke	Maximum Y-axis stroke	Load capacity at maximum Y-axis stroke
Single-slider	High-speed type	1,000mm	350mm	7.0kg
	Medium-speed type	1,000mm	200mm	12.5kg
Double-slider	High-speed type	800mm	400mm	10.0kg
	Medium-speed type	800mm	400mm	11.5kg

3-axis type (XYB+Z, base mount)

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•IK3 Series

		Maximum X-axis stroke	Maximum Y-axis stroke	Maximum Z-axis stroke	Load capacity at maximum Y-axis stroke
Single-slider	X high-speed/Y high-speed/Z high-speed type	1,000mm	300mm	200mm	1.0kg
	X high-speed/Y high-speed/Z medium-speed type	1,000mm	300mm	200mm	2.0kg
	X high-speed/Y high-speed/Z low-speed type	1,000mm	300mm	200mm	4.0kg
Double-slider	X high-speed/Y high-speed/Z high-speed type	800mm	400mm	200mm	1.0kg
	X high-speed/Y high-speed/Z medium-speed type	800mm	400mm	200mm	2.0kg
	X high-speed/Y high-speed/Z low-speed type	800mm	400mm	200mm	4.0kg

2-axis combination – Axis configurations

	Axis 1	Axis 2
IK2-PXBD	RCP2-SS7□	RCP2-SA5R
IK2-SXBD	RCS2-SS7□	RCS2-SA5R
IK2-PXBC	RCP2-SS7□	RCP2-SA6R
IK2-SXBC	RCS2-SS7□	RCS2-SA6R
IK2-PXBB	RCP2-SS8□	RCP2-SA7R
IK2-SXBB	RCS2-SS8□ (100W)	RCS2-SA7R
IK2-SXBA	RCS2-SS8□ (150W)	RCS2-SS8R (100W)
IK2-PXZB	RCP2-SS8□	RCP2-SA7R
IK2-SXZB	RCS2-SS8□ (100W)	RCS2-SA7R
IK2-PYBB	RCP2-SS8□	RCP2-SA7R
IK2-SYBB	RCS2-SS8□ (100W)	RCS2-SA7R

3-axis combination – Axis configurations

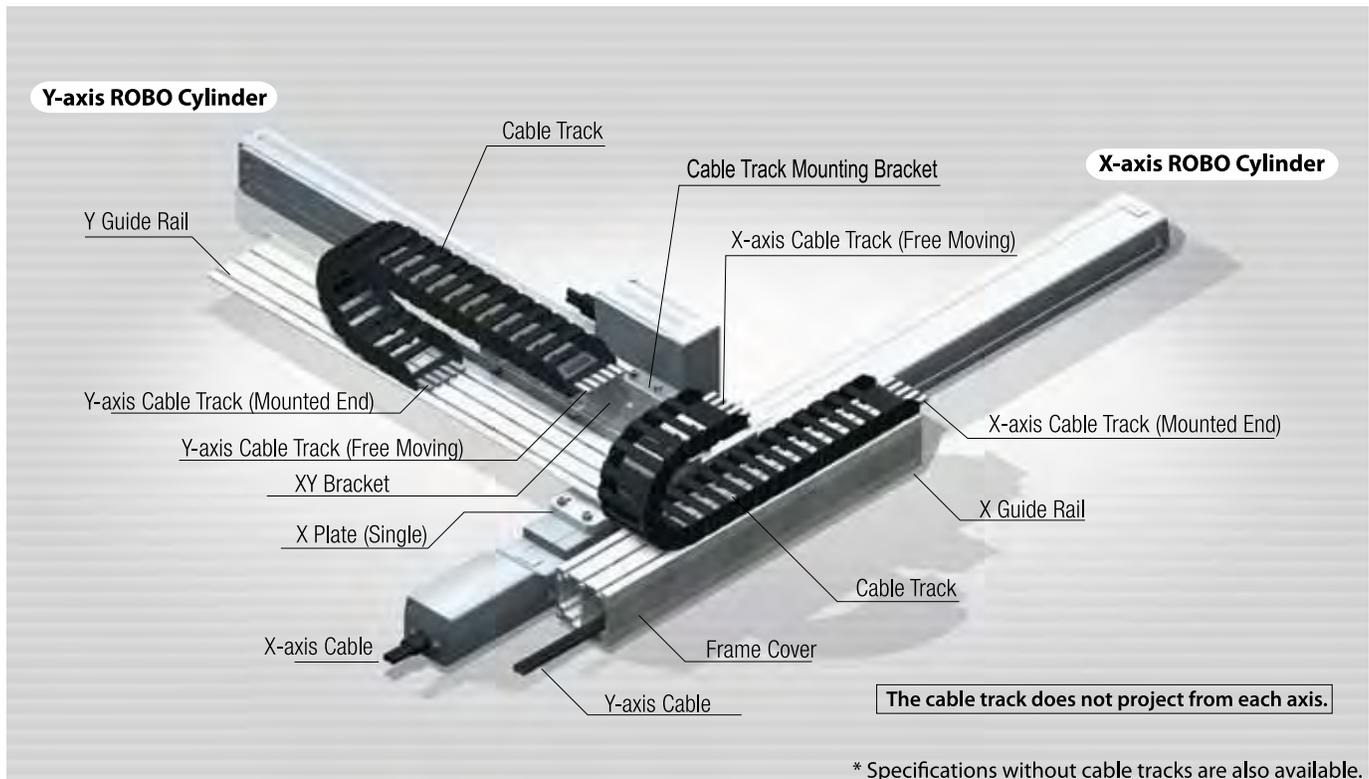
	X axis	Y axis	Z axis
IK3	RCP2-SS8□	RCP2-SA7R	RCP2-SA6R
	RCS2-SS8□ (100W)	RCS2-SA7R	RCS2-SA6R

IK Series

The IK Series is a set that includes the following components needed to assemble the cartesian robot.



Note: The above images are provided for reference purposes only. The actual components may vary depending on the combination type, direction, etc.



RCP2 Combination Unit List for 3-axis Configuration (XYB+Z-axes, base mount) (□ in the model names indicates a value from 1 to 4 specifying the combination direction. For the combination directions, refer to P. 10.)

Page	Combination model	Combined shape	X axis				Y axis	
			Type	Motor size	Lead (mm)	Maximum speed (mm/sec)	Stroke (mm)	Type
81	IK3-PBBG1□HHHS	XYB+Z, base mount	SS8R Reversed, single-slider	56□	20	220	50-1000	SA7R Reversed
	IK3-PBBG1□HHMS							
	IK3-PBBG1□HHLS							
83	IK3-PBBG1□HHHD		SS8R Reversed, double-slider				50-800	
	IK3-PBBG1□HHMD							
	IK3-PBBG1□HHLD							

RCS2 Combination Unit List for 3-axis Configuration (XYB+Z-axes, base mount) (□ in the model names indicates a value from 1 to 4 specifying the combination direction. For the combination directions, refer to P. 10.)

Page	Combination model	Combined shape	X axis				Y axis	
			Type	Motor output (W)	Lead (mm)	Maximum speed (mm/sec)	Stroke (mm)	Type
85	IK3-SBBG1□HHHS	XYB+Z, base mount	SS8R (100W) Reversed, single-slider	100	20	1000	50-1000	SA7R Reversed
	IK3-SBBG1□HHMS							
	IK3-SBBG1□HHLS							
88	IK3-SBBG1□HHHD		SS8R (100W) Reversed, double-slider				50-800	
	IK3-SBBG1□HHMD							
	IK3-SBBG1□HHLD							

Tips on Selection

1. Differences between RCP2 and RCS2

Features of RCP2

- [1] Adopting a pulse motor.
- [2] Characterized by high thrust at low speed.
- [3] Less expensive than the RCS2.

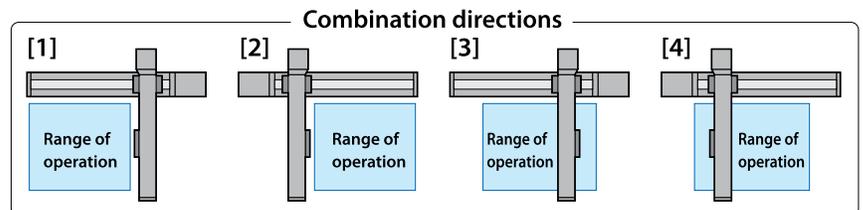
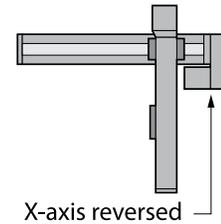
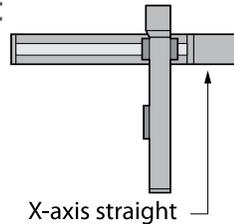


Features of RCS2

- [1] Adopting a servo motor.
- [2] Able to operate at a constant thrust regardless of the speed.
- [3] Able to move at higher speeds than the RCP2.

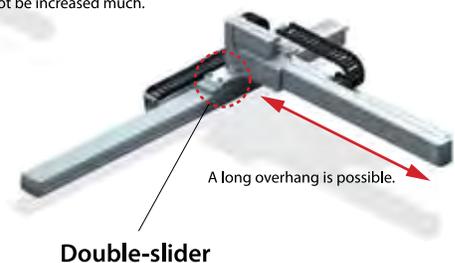
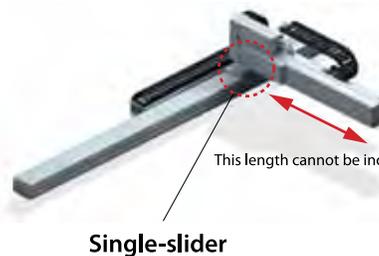
2. Differences between X-axis Straight and Reversed Types

The X-axis reversed type can have a shorter dimension in the X-axis direction. When the 150-watt RCS2-SS8C (straight) and 150-watt SS8R (reversed) are compared, for example, the SS8R is shorter by 130 mm. Note, however, that the reversed type does not support configurations based on combination directions [3] and [4].



3. Differences between Single-slider and Double-slider Types

A double-slider consists of two sliders connected to each other and has a greater permissible load moment compared to a single-slider type. Accordingly, double-slider units are used as the X-axis in XY configurations with a long overhang. Note, however, that because the double-slider structure naturally has a longer slider section, a double-slider unit has a shorter stroke than a single-slider unit of the same total length.



Controller List

The IA kit supports the following controllers. For details on each controller, refer to the reference page describing the applicable controller.

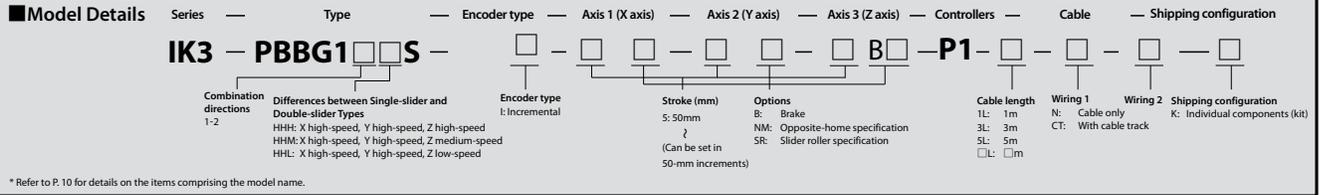
	Exterior view	Features	Maximum number of positioning points	Input power supply	Reference page
PCON		A positioning controller for the RCP2 series. Pulse-train control and serial communication types are also available.	512	DC24V	Refer to the ROBO Cylinder General Catalog
SCON		A positioning controller for the RCS2 series. Field networks are supported.	512	100 VAC Single-phase 200 VAC	Refer to the ROBO Cylinder General Catalog
XSEL-J/K		For the RCS2 series. 3-axis and 4-axis configurations are supported. Two sets of 2-axis combination systems can be controlled. J type: Small size K type: Provides greater expandability because I/Os can be used.	3000	100 VAC Single-phase 200 VAC	P. 93
XSEL-P/Q		For the RCS2 series. 5-axis and 6-axis configurations are supported.	4000	Three-phase 200 VAC	P. 93

IK3-PBBG1□□S

RCP2 3-axis combination (XYB+Z-axis, base mount)

X axis: SS8R (Reversed, Single-slider)

Y axis: SA7R (Reversed) Z axis: SA6R (Reversed)



With cable tracks (Wiring 3 does not come with a cable track.)

Maximum Stroke

X axis 1000 mm Y axis 300 mm Z axis 200 mm

Maximum Speed

	X high-speed, Y high-speed, Z high-speed	X high-speed, Y high-speed, Z medium-speed	X high-speed, Y high-speed, Z low-speed
X axis	220mm/s		
Y axis	420mm/s		
Z axis	500mm/s	250mm/s	125mm/s

Maximum Load Capacity

Y-axis stroke	X high-speed, Y high-speed, Z high-speed	X high-speed, Y high-speed, Z medium-speed	X high-speed, Y high-speed, Z low-speed
50mm	1.0kg	2.0kg	4.0kg
100mm			
150mm			
200mm			
250mm			
300mm			

List by Stroke

Y-axis stroke	Incremental											
	50				100				150			
Z-axis stroke	50	100	150	200	50	100	150	200	50	100	150	200
X-axis stroke 50	-	-	-	-	-	-	-	-	-	-	-	-
100	-	-	-	-	-	-	-	-	-	-	-	-
150	-	-	-	-	-	-	-	-	-	-	-	-
200	-	-	-	-	-	-	-	-	-	-	-	-
250	-	-	-	-	-	-	-	-	-	-	-	-
300	-	-	-	-	-	-	-	-	-	-	-	-
350	-	-	-	-	-	-	-	-	-	-	-	-
400	-	-	-	-	-	-	-	-	-	-	-	-
450	-	-	-	-	-	-	-	-	-	-	-	-
500	-	-	-	-	-	-	-	-	-	-	-	-
550	-	-	-	-	-	-	-	-	-	-	-	-
600	-	-	-	-	-	-	-	-	-	-	-	-
650	-	-	-	-	-	-	-	-	-	-	-	-
700	-	-	-	-	-	-	-	-	-	-	-	-
750	-	-	-	-	-	-	-	-	-	-	-	-
800	-	-	-	-	-	-	-	-	-	-	-	-
850	-	-	-	-	-	-	-	-	-	-	-	-
900	-	-	-	-	-	-	-	-	-	-	-	-
950	-	-	-	-	-	-	-	-	-	-	-	-
1000	-	-	-	-	-	-	-	-	-	-	-	-

Y-axis stroke	Incremental											
	200				250				300			
Z-axis stroke	50	100	150	200	50	100	150	200	50	100	150	200
X-axis stroke 50	-	-	-	-	-	-	-	-	-	-	-	-
100	-	-	-	-	-	-	-	-	-	-	-	-
150	-	-	-	-	-	-	-	-	-	-	-	-
200	-	-	-	-	-	-	-	-	-	-	-	-
250	-	-	-	-	-	-	-	-	-	-	-	-
300	-	-	-	-	-	-	-	-	-	-	-	-
350	-	-	-	-	-	-	-	-	-	-	-	-
400	-	-	-	-	-	-	-	-	-	-	-	-
450	-	-	-	-	-	-	-	-	-	-	-	-
500	-	-	-	-	-	-	-	-	-	-	-	-
550	-	-	-	-	-	-	-	-	-	-	-	-
600	-	-	-	-	-	-	-	-	-	-	-	-
650	-	-	-	-	-	-	-	-	-	-	-	-
700	-	-	-	-	-	-	-	-	-	-	-	-
750	-	-	-	-	-	-	-	-	-	-	-	-
800	-	-	-	-	-	-	-	-	-	-	-	-
850	-	-	-	-	-	-	-	-	-	-	-	-
900	-	-	-	-	-	-	-	-	-	-	-	-
950	-	-	-	-	-	-	-	-	-	-	-	-
1000	-	-	-	-	-	-	-	-	-	-	-	-

Cable track

X-axis stroke	Y-axis stroke	
	50-200	250-300
50-400	-	-
450-600	-	-
650-800	-	-
850-1000	-	-

Note) Both wiring 1 and wiring 2 should have a cable bear, or neither of the two should have a cable track. A cable track cannot be specified for one of the wirings.

List by Cable Length

Name	Option code
Opposite-home specification	NM
Slider roller specification	SR

List by Cable Length

Type	Cable code	Length
Standard type	1L	1m
	3L	3m
	5L	5m

* Axis 1 comes with a standard cable, while axes 2 and 3 come with a robot cable.
 * Refer to P.90 for lengths other than those specified above.

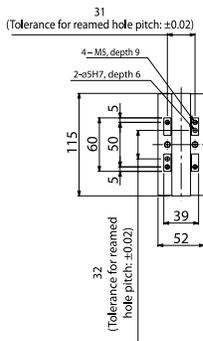
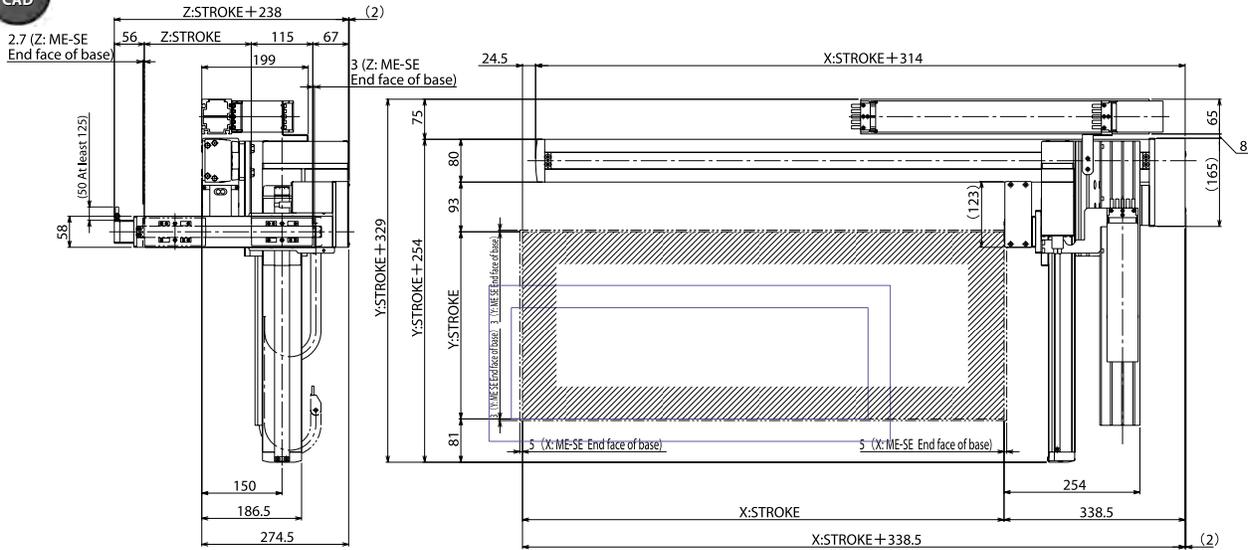
Specifications

Item	X axis	Y axis	Z axis
Axis model	RCP2-SS8R	RCP2-SA7R	RCP2-SA6R
Stroke (Can be set in 50-mm increments)	50-1000mm	50-300mm	50-200mm
Axis 2	High-speed type: 220mm/s	High-speed type: 420mm/s	High-speed type: 500mm/s Medium-speed type: 250mm/s Low-speed type: 125mm/s
Motor size	56-square pulse motor	56-square pulse motor	42-square pulse motor
Ball screw lead	High-speed type: 20mm	High-speed type: 16mm	High-speed type: 12mm Medium-speed type: 6mm Low-speed type: 3mm
Drive method	Ball screw, $\phi 16$ mm, rolled, C10	Ball screw, $\phi 12$ mm, rolled, C10	Ball screw, $\phi 10$ mm, rolled, C10
Positioning repeatability	± 0.02 mm		
Base material	Dedicated alloy steel	Aluminum	
Surrounding air temperature/humidity	0 to 40°C, 85% RH or below (non-condensing)		

Dimensions

You can download CAD drawings from our website. www.intelligentactuator.com

Note 1. The connected position shown in the drawing defines the home.
 Note 2. The drawing below assumes that both wiring 1 and wiring 2 have a cable track.
 Note 3. For details on the cable track, refer to P. 90.

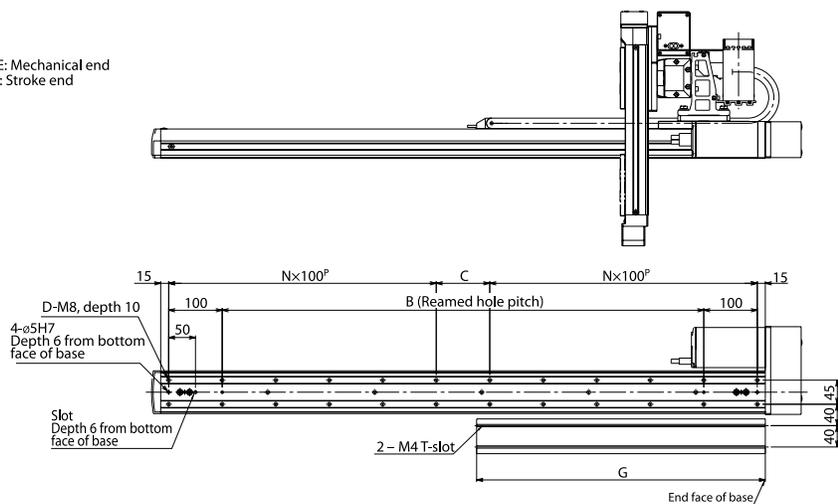


Detail view of Z-axis slider



Detail view of slot in bottom face of X-axis base

ME: Mechanical end
 SE: Stroke end



Detail view of X-axis installation

Dimensions by Stroke

X: Model	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
B	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
C	50	100	150	0	50	100	150	0	50	100	150	0	50	100	150	0	50	100	150	0
D	8	8	8	10	12	12	12	14	16	16	16	18	20	20	20	22	24	24	24	26
N	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6
G	114.5	139.5	164.5	189.5	214.5	239.5	264.5	289.5	314.5	339.5	364.5	389.5	414.5	439.5	464.5	489.5	514.5	539.5	564.5	589.5

Controllers

Applicable controller

Refer to P. 91 for the controllers.

IK3-PBBG1□□D

RCP2 3-axis combination (XYB+Z-axes, base mount)

X axis: SS8R (Reversed, Double-slider)

Y axis: SA7R (Reversed) Z axis: SA6R (Reversed)

Model Details

Series: **IK3** — Type: **PBBG1□□D** — Encoder type: **□** — Axis 1 (X axis): **□** — Axis 2 (Y axis): **□** — Axis 3 (Z axis): **□** — Controllers: **B□** — Cable: **P1** — Shipping configuration: **□**

Combination directions 1-2: HH: X high-speed, Y high-speed, Z high-speed; HHM: X high-speed, Y high-speed, Z medium-speed; HHL: X high-speed, Y high-speed, Z low-speed

Differences between Single-slider and Double-slider Types: HH: X high-speed, Y high-speed, Z high-speed; HHM: X high-speed, Y high-speed, Z medium-speed; HHL: X high-speed, Y high-speed, Z low-speed

Encoder type: I: Incremental

Stroke (mm): S: 50mm; ? (Can be set in 50-mm increments)

Options: B: Brake; NM: Opposite-home specification; SR: Slider roller specification

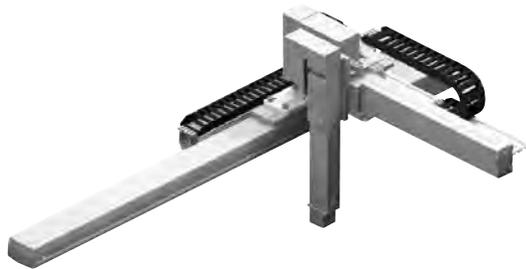
Cable length: 1L: 1m; 3L: 3m; 5L: 5m; □L: □m

Wiring 1: N: Cable only; CT: With cable track

Wiring 2: □

Shipping configuration: K: Individual components (kit)

* Refer to P. 10 for details on the items comprising the model name.



With cable tracks (Wiring 3 does not come with a cable track.)

Maximum Stroke

X axis 800 mm

Y axis 400 mm

Z axis 200 mm

Maximum Speed

	X high-speed, Y high-speed, Z high-speed	X high-speed, Y high-speed, Z medium-speed	X high-speed, Y high-speed, Z low-speed
X axis	220mm/s		
Y axis	420mm/s		
Z axis	500mms	250mm/s	125mm/s

Maximum Load Capacity

Y-axis stroke	X high-speed, Y high-speed, Z high-speed	X high-speed, Y high-speed, Z medium-speed	X high-speed, Y high-speed, Z low-speed
350mm	1.0kg		
400mm	2.0kg		
	4.0kg		

List by Stroke

		Incremental								
		350				400				
Y-axis stroke										
X-axis stroke	Z-axis stroke	50	100	150	200	50	100	150	200	
	50	-	-	-	-	-	-	-	-	-
	100	-	-	-	-	-	-	-	-	-
	150	-	-	-	-	-	-	-	-	-
	200	-	-	-	-	-	-	-	-	-
	250	-	-	-	-	-	-	-	-	-
	300	-	-	-	-	-	-	-	-	-
	350	-	-	-	-	-	-	-	-	-
	400	-	-	-	-	-	-	-	-	-
	450	-	-	-	-	-	-	-	-	-
	500	-	-	-	-	-	-	-	-	-
	550	-	-	-	-	-	-	-	-	-
	600	-	-	-	-	-	-	-	-	-
	650	-	-	-	-	-	-	-	-	-
	700	-	-	-	-	-	-	-	-	-
	750	-	-	-	-	-	-	-	-	-
800	-	-	-	-	-	-	-	-	-	

List by Cable Length

Type	Cable code	Length
Standard type	1L	1m
	3L	3m
	5L	5m

* Axis 1 comes with a standard cable, while axis 2 comes with a robot cable.

* Refer to P. 90 for lengths other than those specified above.

Cable track

		Y-axis stroke
		350-400
X-axis stroke	50-400	-
	450-600	-
	650-800	-

Note) Both wiring 1 and wiring 2 should have a cable bear, or neither of the two should have a cable track. A cable track cannot be specified for one of the wirings.

List by Cable Length

Name	Option code
Opposite-home specification	NM
Slider roller specification	SR

Specifications

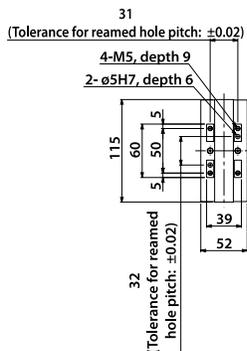
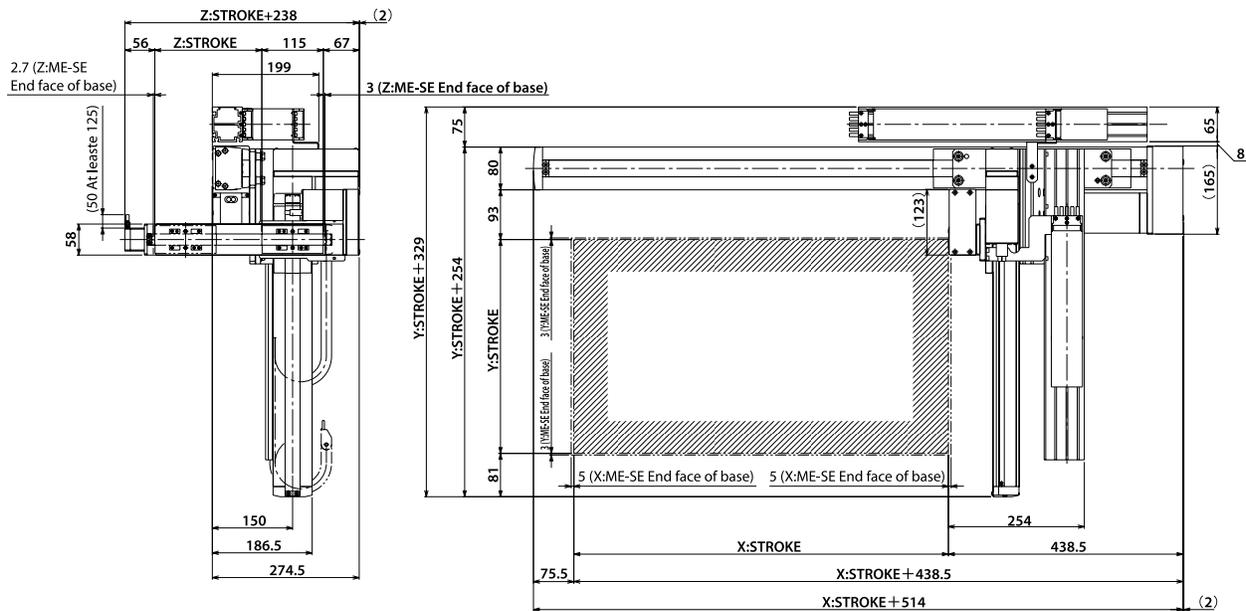
Item	X axis	Y axis	Z axis
Axis model	RCP2-SS8R	RCP2-SA7R	RCP2-SA6R
Stroke (Can be set in 50-mm increments)	50-800mm	350-400mm	50-200mm
Max speed	High-speed type: 220mm/s	High-speed type: 420mm/s	High-speed type: 500mm/s Medium-speed type: 250mm/s Low-speed type: 125mm/s
Motor size	56-square pulse motor	56-square pulse motor	42-square pulse motor
Ball screw lead	High-speed type: 20mm	High-speed type: 16mm	High-speed type: 12mm Medium-speed type: 6mm Low-speed type: 3mm
Drive method	Ball screw, ø16mm, rolled, C10	Ball screw, ø12mm, rolled, C10	Ball screw, ø10mm, rolled, C10
Positioning repeatability	±0.02mm		
Base material	Dedicated alloy steel		Aluminum
Surrounding air temperature/humidity	0 to 40°C, 85% RH or below (non-condensing)		

Dimensions

You can download CAD drawings from our website. www.intelligentactuator.com

2D CAD

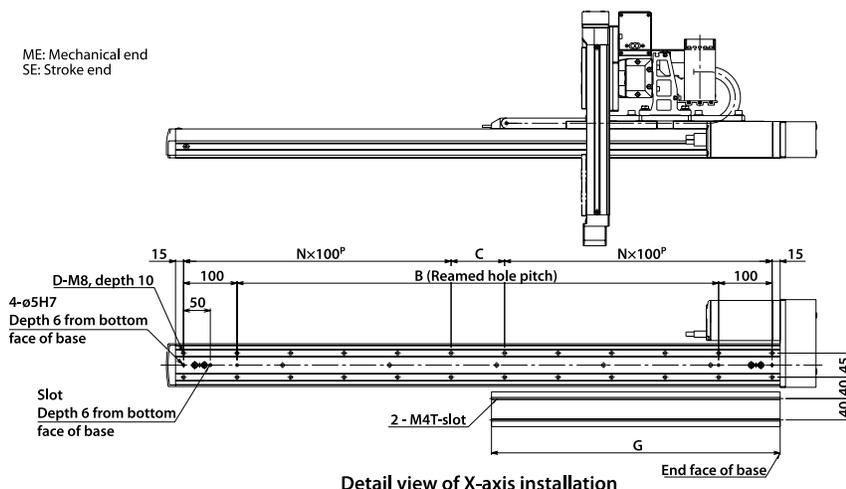
Note 1. The connected position shown in the drawing defines the home.
 Note 2. The drawing below assumes that both wiring 1 and wiring 2 have a cable track.
 Note 3. For details on the cable track, refer to P. 90.



Detail view of Z-axis slider



ME: Mechanical end
 SE: Stroke end



Detail view of X-axis installation

■ Dimensions by Stroke

X: Nominal stroke	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
X: Effective stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
B	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
C	50	100	150	0	50	100	150	0	50	100	150	0	50	100	150	0
D	12	12	12	14	16	16	16	18	20	20	20	22	24	24	24	26
N	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6
G	214.5	239.5	264.5	289.5	314.5	339.5	364.5	389.5	414.5	439.5	464.5	489.5	514.5	539.5	564.5	589.5

Controllers

Applicable controller

☞ Refer to P. 91 for the controllers.

2-axis Combinations R C P 2
 2-axis Combinations R C S 2
 3-axis Combinations R C P 2
 3-axis Combinations R C S 2
 Controllers

IK3-SBBG1□□S

RCS2 3-axis combination (XYB+Z-axes, base mount)
 X axis: SS8R (100W, Reversed, Single-slider)
 Y axis: SA7R (Reversed) Z axis: SA6R (Reversed)

Model Details Series — Type — Encoder type — Axis 1 (X axis) — Axis 2 (Y axis) — Axis 3 (Z axis) — Controllers — Cable — Shipping configuration

IK3 — **SBBG1**□□**S** — □ — □ — □ — □ — □ — □ — □ — □ — □

Combination directions 1-2
 Differences between Single-slider and Double-slider Types
 HHH: X high-speed, Y high-speed, Z high-speed
 HHM: X high-speed, Y high-speed, Z medium-speed
 HHL: X high-speed, Y high-speed, Z low-speed

Encoder type
 I: Incremental
 A: Absolute

Stroke (mm)
 S: 50mm
 ?
 (Can be set in 50-mm increments)

Options
 B: Brake
 NM: Opposite-home specification
 SR: Slider roller specification

Controllers
 T1: XSEL-J/K
 T2: SSEL
 XSEL-P/Q

Cable length
 1L: 1m
 3L: 3m
 5L: 5m
 □L: □m

Wiring 1
 N: Cable only
 CT: With cable track

Wiring 2
 □

Shipping configuration
 K: Individual components (kit)

* Refer to P.10 for details on the items comprising the model name.



With cable tracks (Wiring 3 does not come with a cable track.)

Maximum Stroke

X axis 1000 mm Y axis 300 mm Z axis 200 mm

Maximum Speed

	X high-speed, Y high-speed, Z high-speed	X high-speed, Y high-speed, Z medium-speed	X high-speed, Y high-speed, Z low-speed
X axis	1000mm/s		
Y axis	800mm/s		
Z axis	800mm/s	400mm/s	200mm/s

Maximum Load Capacity

Y-axis stroke	X high-speed, Y high-speed, Z high-speed	X high-speed, Y high-speed, Z medium-speed	X high-speed, Y high-speed, Z low-speed
50mm	1.0kg	2.0kg	4.0kg
100mm			
150mm			
200mm			
250mm			
300mm			

List by Stroke

		Incremental											
Y-axis stroke		50				100				150			
Z-axis stroke		50	100	150	200	50	100	150	200	50	100	150	200
X-axis stroke	50	-	-	-	-	-	-	-	-	-	-	-	-
	100	-	-	-	-	-	-	-	-	-	-	-	-
	150	-	-	-	-	-	-	-	-	-	-	-	-
	200	-	-	-	-	-	-	-	-	-	-	-	-
	250	-	-	-	-	-	-	-	-	-	-	-	-
	300	-	-	-	-	-	-	-	-	-	-	-	-
	350	-	-	-	-	-	-	-	-	-	-	-	-
	400	-	-	-	-	-	-	-	-	-	-	-	-
	450	-	-	-	-	-	-	-	-	-	-	-	-
	500	-	-	-	-	-	-	-	-	-	-	-	-
	550	-	-	-	-	-	-	-	-	-	-	-	-
	600	-	-	-	-	-	-	-	-	-	-	-	-
	650	-	-	-	-	-	-	-	-	-	-	-	-
	700	-	-	-	-	-	-	-	-	-	-	-	-
	750	-	-	-	-	-	-	-	-	-	-	-	-
	800	-	-	-	-	-	-	-	-	-	-	-	-
	850	-	-	-	-	-	-	-	-	-	-	-	-
900	-	-	-	-	-	-	-	-	-	-	-	-	
950	-	-	-	-	-	-	-	-	-	-	-	-	
1000	-	-	-	-	-	-	-	-	-	-	-	-	

		Incremental											
Y-axis stroke		200				250				300			
Z-axis stroke		50	100	150	200	50	100	150	200	50	100	150	200
X-axis stroke	50	-	-	-	-	-	-	-	-	-	-	-	-
	100	-	-	-	-	-	-	-	-	-	-	-	-
	150	-	-	-	-	-	-	-	-	-	-	-	-
	200	-	-	-	-	-	-	-	-	-	-	-	-
	250	-	-	-	-	-	-	-	-	-	-	-	-
	300	-	-	-	-	-	-	-	-	-	-	-	-
	350	-	-	-	-	-	-	-	-	-	-	-	-
	400	-	-	-	-	-	-	-	-	-	-	-	-
	450	-	-	-	-	-	-	-	-	-	-	-	-
	500	-	-	-	-	-	-	-	-	-	-	-	-
	550	-	-	-	-	-	-	-	-	-	-	-	-
	600	-	-	-	-	-	-	-	-	-	-	-	-
	650	-	-	-	-	-	-	-	-	-	-	-	-
	700	-	-	-	-	-	-	-	-	-	-	-	-
	750	-	-	-	-	-	-	-	-	-	-	-	-
	800	-	-	-	-	-	-	-	-	-	-	-	-
	850	-	-	-	-	-	-	-	-	-	-	-	-
900	-	-	-	-	-	-	-	-	-	-	-	-	
950	-	-	-	-	-	-	-	-	-	-	-	-	
1000	-	-	-	-	-	-	-	-	-	-	-	-	

		Incremental											
Y-axis stroke	Z-axis stroke	50				100				150			
		50	100	150	200	50	100	150	200	50	100	150	200
X-axis stroke	50	-	-	-	-	-	-	-	-	-	-	-	-
	100	-	-	-	-	-	-	-	-	-	-	-	-
	150	-	-	-	-	-	-	-	-	-	-	-	-
	200	-	-	-	-	-	-	-	-	-	-	-	-
	250	-	-	-	-	-	-	-	-	-	-	-	-
	300	-	-	-	-	-	-	-	-	-	-	-	-
	350	-	-	-	-	-	-	-	-	-	-	-	-
	400	-	-	-	-	-	-	-	-	-	-	-	-
	450	-	-	-	-	-	-	-	-	-	-	-	-
	500	-	-	-	-	-	-	-	-	-	-	-	-
	550	-	-	-	-	-	-	-	-	-	-	-	-
	600	-	-	-	-	-	-	-	-	-	-	-	-
	650	-	-	-	-	-	-	-	-	-	-	-	-
	700	-	-	-	-	-	-	-	-	-	-	-	-
	750	-	-	-	-	-	-	-	-	-	-	-	-
	800	-	-	-	-	-	-	-	-	-	-	-	-
	850	-	-	-	-	-	-	-	-	-	-	-	-
900	-	-	-	-	-	-	-	-	-	-	-	-	
950	-	-	-	-	-	-	-	-	-	-	-	-	
1000	-	-	-	-	-	-	-	-	-	-	-	-	

		Incremental											
Y-axis stroke	Z-axis stroke	200				250				300			
		50	100	150	200	50	100	150	200	50	100	150	200
X-axis stroke	50	-	-	-	-	-	-	-	-	-	-	-	-
	100	-	-	-	-	-	-	-	-	-	-	-	-
	150	-	-	-	-	-	-	-	-	-	-	-	-
	200	-	-	-	-	-	-	-	-	-	-	-	-
	250	-	-	-	-	-	-	-	-	-	-	-	-
	300	-	-	-	-	-	-	-	-	-	-	-	-
	350	-	-	-	-	-	-	-	-	-	-	-	-
	400	-	-	-	-	-	-	-	-	-	-	-	-
	450	-	-	-	-	-	-	-	-	-	-	-	-
	500	-	-	-	-	-	-	-	-	-	-	-	-
	550	-	-	-	-	-	-	-	-	-	-	-	-
	600	-	-	-	-	-	-	-	-	-	-	-	-
	650	-	-	-	-	-	-	-	-	-	-	-	-
	700	-	-	-	-	-	-	-	-	-	-	-	-
	750	-	-	-	-	-	-	-	-	-	-	-	-
	800	-	-	-	-	-	-	-	-	-	-	-	-
	850	-	-	-	-	-	-	-	-	-	-	-	-
900	-	-	-	-	-	-	-	-	-	-	-	-	
950	-	-	-	-	-	-	-	-	-	-	-	-	
1000	-	-	-	-	-	-	-	-	-	-	-	-	

List by Cable Length

Type	Cable code	Length
Standard type	1L	1m
	3L	3m
	5L	5m

* Axis 1 comes with a standard cable, while axis 2 comes with a robot cable.

* Refer to P. 90 for lengths other than those specified above.

Cable track

		Y-axis stroke	
		50-200	250-300
X-axis stroke	50-400	-	-
	450-600	-	-
	650-800	-	-
	850-1000	-	-

Note) Both wiring 1 and wiring 2 should have a cable bear, or neither of the two should have a cable track. A cable track cannot be specified for one of the wirings.

Options

Name	Option code
Opposite-home specification	NM
Slider roller specification	SR

Specifications

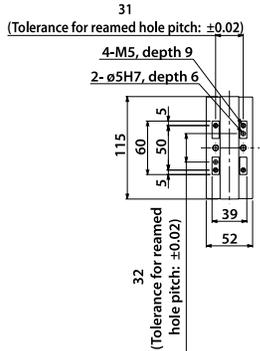
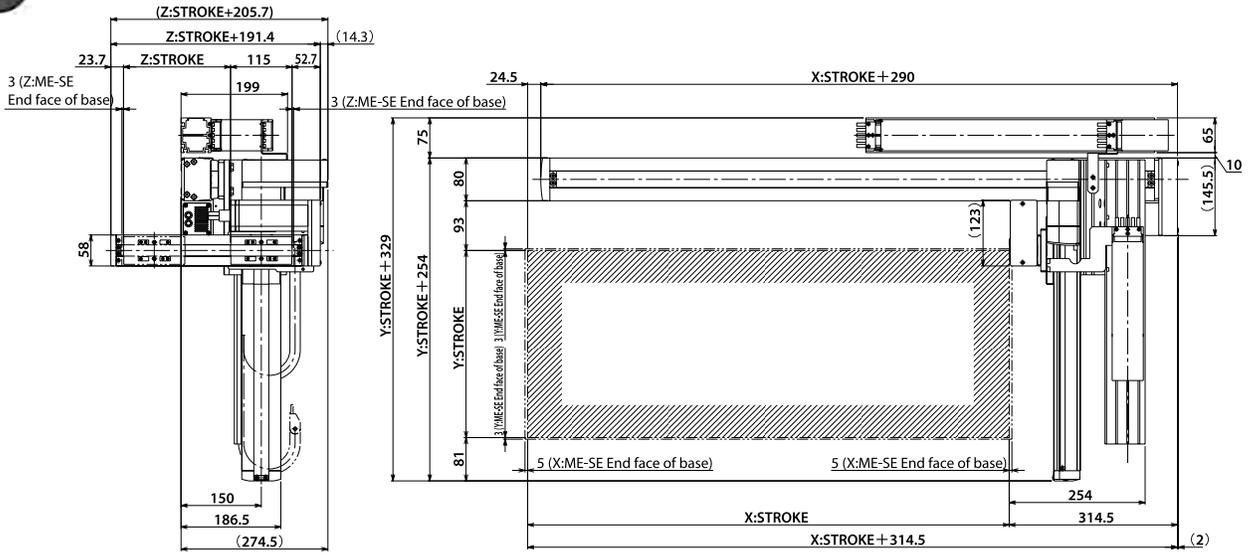
Item	X axis	Y axis	Z axis
Axis model	RCS2-SS8R	RCS2-SA7R	RCS2-SA6R
Stroke (Can be set in 50-mm increments)	50-1000mm	50-300mm	50-200mm
Max speed	High-speed type: 1000mm/s	High-speed type: 800mm/s	High-speed type: 800mm/s Medium-speed type: 400mm/s Low-speed type: 200mm/s
Motor output (W)	100W	60W	30W
Ball screw lead	High-speed type: 20mm	High-speed type: 16mm	High-speed type: 12mm Medium-speed type: 6mm Low-speed type: 3mm
Drive method	Ball screw, ø16mm, rolled, C10	Ball screw, ø12mm, rolled, C10	Ball screw, ø10mm, rolled, C10
Positioning repeatability	±0.02mm		
Base material	Dedicated alloy steel	Aluminum	
Surrounding air temperature/humidity	0 to 40°C, 85% RH or below (non-condensing)		

Dimensions

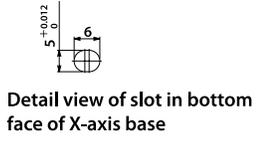
You can download CAD drawings from our website. www.intelligentactuator.com



Note 1. The connected position shown in the drawing defines the home.
 Note 2. The drawing below assumes that both wiring 1 and wiring 2 have a cable track.
 Note 3. For details on the cable track, refer to P. 90.

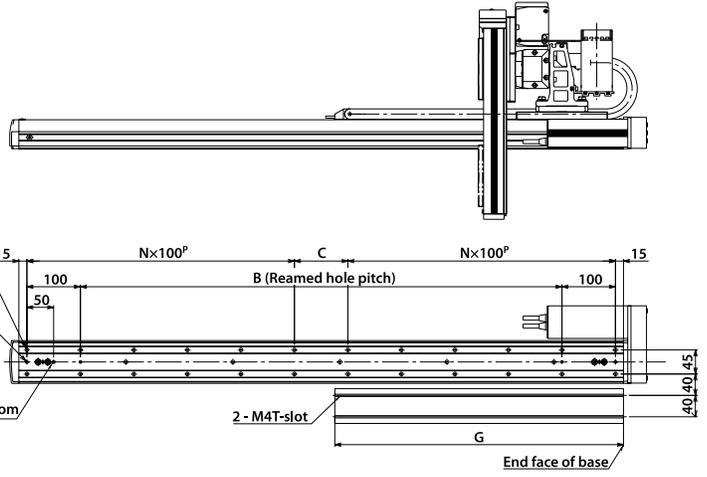


Detail view of Z-axis slider



Detail view of slot in bottom face of X-axis base

ME: Mechanical end
 SE: Stroke end



Detail view of X-axis installation

Dimensions by Stroke

X: Model	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
B	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
C	50	100	150	0	50	100	150	0	50	100	150	0	50	100	150	0	50	100	150	0
D	8	8	8	10	12	12	12	14	16	16	16	18	20	20	20	22	24	24	24	26
N	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6
G	114.5	139.5	164.5	189.5	214.5	239.5	264.5	289.5	314.5	339.5	364.5	389.5	414.5	439.5	464.5	489.5	514.5	539.5	564.5	589.5

Controllers

Applicable controller

Refer to P. 91 for the controllers.

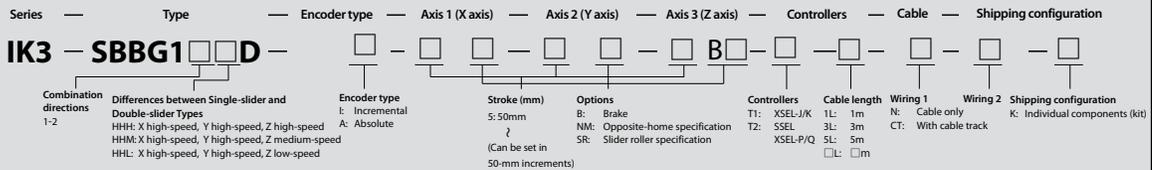
IK3-SBBG1□□D

RCS2 3-axis combination (XYB+Z-axis, base mount)

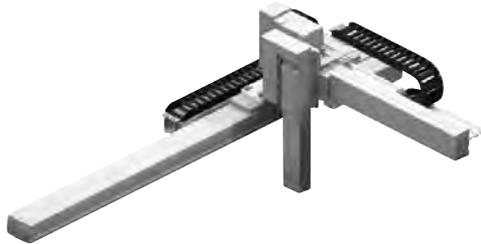
X axis: SS8R (100W, Reversed, Single-slider)

Y axis: SA7R (Reversed) Z axis: SA6R (Reversed)

Model Details



* Refer to P.10 for details on the items comprising the model name.



With cable tracks (Wiring 3 does not come with a cable track.)

Maximum Stroke

X axis 800 mm

Y axis 400 mm

Z axis 200 mm

Maximum Speed

	X high-speed, Y high-speed, Z high-speed	X high-speed, Y high-speed, Z medium-speed	X high-speed, Y high-speed, Z low-speed
X axis	1000mm/s		
Y axis	800mm/s		
Z axis	800mm/s	400mm/s	200mm/s

Maximum Load Capacity

Y-axis stroke	X high-speed, Y high-speed, Z high-speed	X high-speed, Y high-speed, Z medium-speed	X high-speed, Y high-speed, Z low-speed
350mm	1.0kg	2.0kg	4.0kg
400mm			

List by Stroke

Y-axis stroke	Incremental								Absolute							
	350				400				350				400			
Z-axis stroke	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
450	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
550	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
650	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
750	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Cable track

X-axis stroke	Y-axis stroke	
	350-400	400-450
50-400	-	-
450-600	-	-
650-800	-	-

Note) Both wiring 1 and wiring 2 should have a cable bear, or neither of the two should have a cable track. A cable track cannot be specified for one of the wirings.

List by Cable Length

Type	Cable code	Length
Standard type	1L	1m
	3L	3m
	5L	5m

* Axis 1 comes with a standard cable, while axis 2 comes with a robot cable.

* Refer to P. 90 for lengths other than those specified above.

List by Cable Length

Name	Option code
Opposite-home specification	NM
Slider roller specification	SR

Specifications

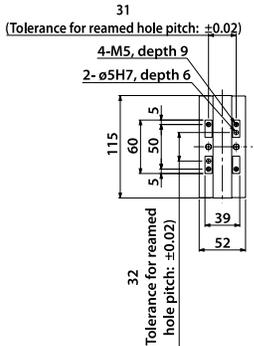
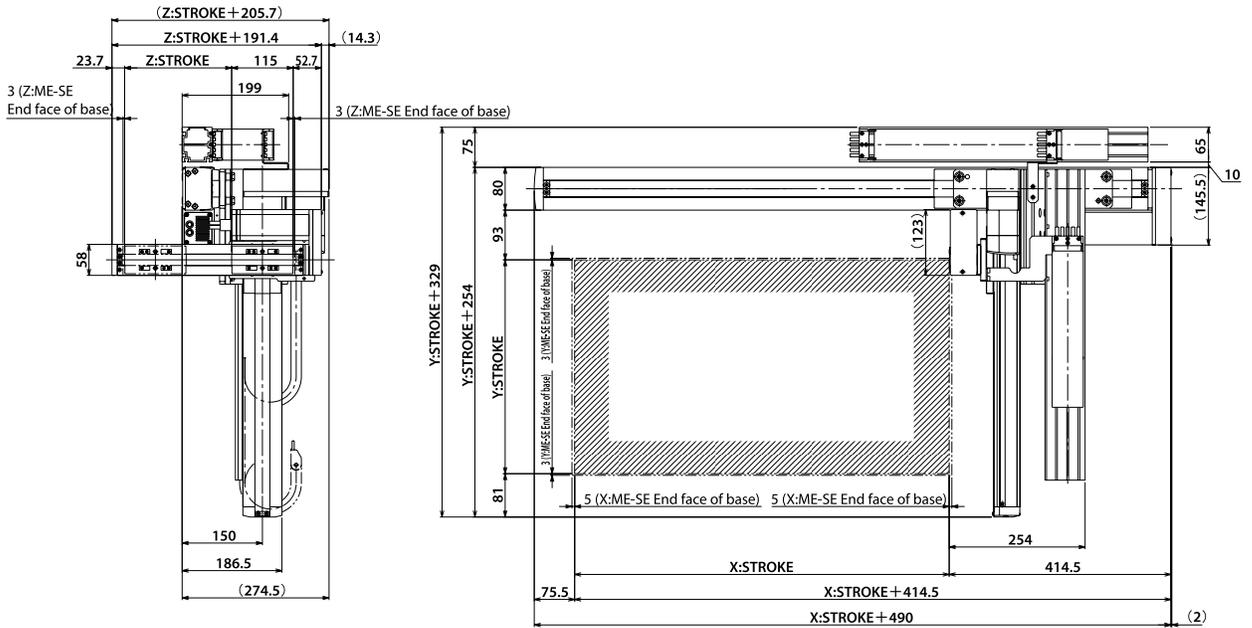
Item	X axis	Y axis	Z axis
Axis model	RCS2-SS8R	RCS2-SA7R	RCS2-SA6R
Stroke (Can be set in 50-mm increments)	50-800mm	350-400mm	50-200mm
Max speed	High-speed type: 1000mm/s	High-speed type: 800mm/s	High-speed type: 800mm/s Medium-speed type: 400mm/s Low-speed type: 200mm/s
Motor output (W)	100W	60W	30W
Ball screw lead	High-speed type: 20mm	High-speed type: 16mm	High-speed type: 12mm Medium-speed type: 6mm Low-speed type: 3mm
Drive method	Ball screw, ϕ 16mm, rolled, C10	Ball screw, ϕ 12mm, rolled, C10	Ball screw, ϕ 10mm, rolled, C10
Positioning repeatability	± 0.02 mm		
Base material	Dedicated alloy steel		Aluminum
Surrounding air temperature/humidity	0 to 40°C, 85% RH or below (non-condensing)		

Dimensions

You can download CAD drawings from our website. www.intelligentactuator.com

2D CAD

Note 1. The connected position shown in the drawing defines the home.
 Note 2. The drawing below assumes that both wiring 1 and wiring 2 have a cable track.
 Note 3. For details on the cable track, refer to P. 90.

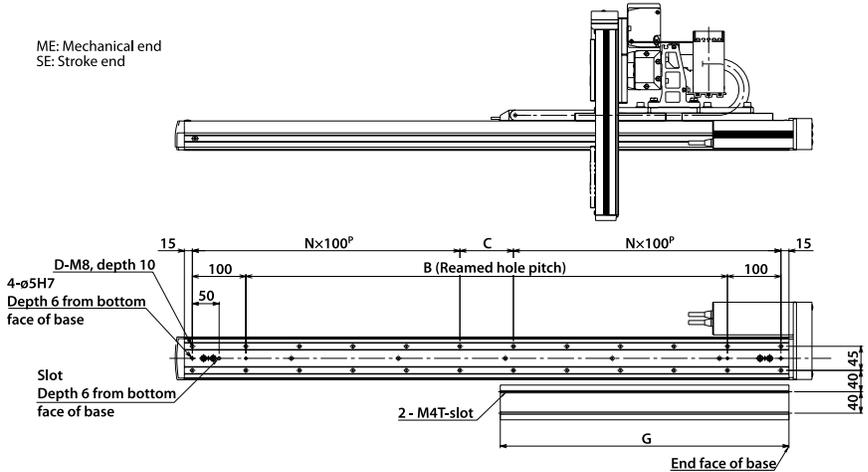


Detail view of Z-axis slider



Detail view of slot in bottom face of X-axis base

ME: Mechanical end
 SE: Stroke end



Detail view of X-axis installation

Dimensions by Stroke

X: Nominal stroke	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
X: Effective stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
B	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
C	50	100	150	0	50	100	150	0	50	100	150	0	50	100	150	0
D	12	12	12	14	16	16	16	18	20	20	20	22	24	24	24	26
N	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6
G	214.5	239.5	264.5	289.5	314.5	339.5	364.5	389.5	414.5	439.5	464.5	489.5	514.5	539.5	564.5	589.5

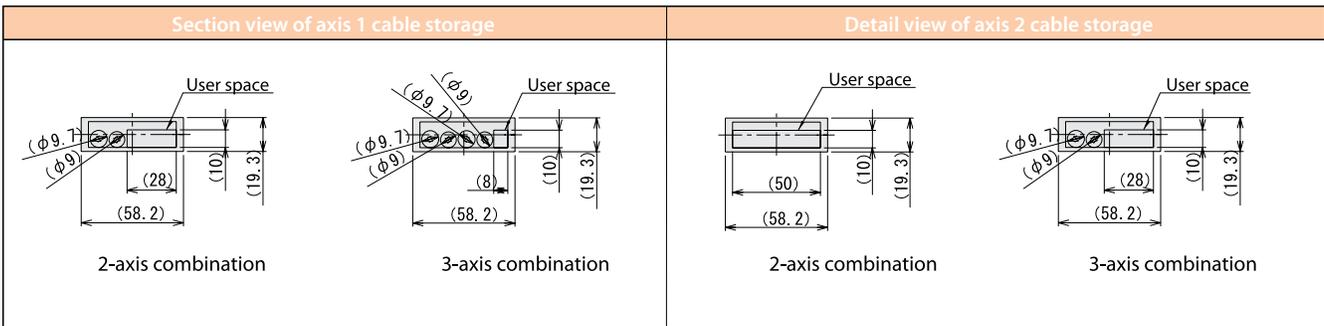
Controllers

Applicable controller

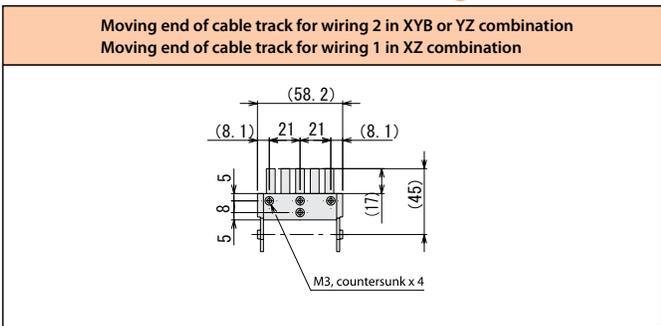
Refer to P. 91 for the controllers.

Reference

Cable Track



Detail View of Bracket on Moving End of Cable Track



List by Cable Length

Cable code	Length	RCP2 2-axis IK2-P	RCS2 2-axis IK2-S	RCP2 3-axis IK3-P	RCS2 3-axis IK3-S
1L	1m	—	—	—	—
2L	2m	—	—	—	—
3L	3m	—	—	—	—
4L	4m	—	—	—	—
5L	5m	—	—	—	—
6L	6m	—	—	—	—
7L	7m	—	—	—	—
8L	8m	—	—	—	—
9L	9m	—	—	—	—
10L	10m	—	—	—	—
11L	11m	—	—	—	—
12L	12m	—	—	—	—
13L	13m	—	—	—	—
14L	14m	—	—	—	—
15L	15m	—	—	—	—
16L	16m	—	—	—	—
17L	17m	—	—	—	—
18L	18m	—	—	—	—
19L	19m	—	—	—	—
20L	20m	—	—	—	—

* Axis 1 comes with a standard cable, while axes 2 and 3 come with a robot cable.

2-axis
Combinations
RCP2

2-axis
Combinations
RCS2

3-axis
Combinations
RCP2

3-axis
Combinations
RCS2



Controllers

Controllers

PSEL	RCP2-series program controller	PSEL-C	93
SSEL	RCS2-series program controller	SSEL-C	103
ROBONET	Field network controller	RPCON/RACON/Gateway units	113
XSEL	RCS2-series multi-axis program controller	X-SEL-J / K / P / Q	125

Model
List

PSEL

SSEL

ROBONET

XSEL

List of Applicable Controllers

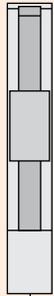
	IA kit model	Applicable controller	
2-axis	IK2-PXBD IK2-PXBC	PSEL-C-2-42PI-42PI-NP-2-0	2-axis controller
		PCON-C-42PI-NP-2-0	1-axis controller
		RPCON-42P	1 unit
	IK2-PXBB IK2-PXZB IK2-PYBB	PSEL-C-2-56PI-56PI-NP-2-0	2-axis controller
		PCON-C-56PI-NP-2-0	1-axis controller
		RPCON-56P	1 unit
	IK2-SXBD	SSEL-C-2-60I-20I-NP-2-[1]	2-axis controller (incremental)
		SSEL-C-2-60A-20A-NP-2-[1]	2-axis controller (absolute)
		SCON-C-60I-NP-2-[1]	1-axis controller (incremental for X-axis)
		SCON-C-60A-NP-2-[1]	1-axis controller (absolute for X-axis)
		SCON-C-20I-NP-2-[1]	1-axis controller (incremental for Y-axis)
		SCON-C-20A-NP-2-[1]	1-axis controller (absolute for Y-axis)
	IK2-SXBC	SSEL-C-2-60I-30I-NP-2-[1]	2-axis controller (incremental)
		SSEL-C-2-60A-30A-NP-2-[1]	2-axis controller (absolute)
		SCON-C-60I-NP-2-[1]	1-axis controller (incremental for X-axis)
		SCON-C-60A-NP-2-[1]	1-axis controller (absolute for X-axis)
		SCON-C-30I-NP-2-[1]	1-axis controller (incremental for Y-axis)
		SCON-C-30A-NP-2-[1]	1-axis controller (absolute for Y-axis)
	IK2-SXBB	SSEL-C-2-100I-60I-NP-2-[1]	2-axis controller (incremental)
		SSEL-C-2-100A-60A-NP-2-[1]	2-axis controller (absolute)
		SCON-C-100I-NP-2-[1]	1-axis controller (incremental for X-axis)
		SCON-C-100A-NP-2-[1]	1-axis controller (absolute for X-axis)
		SCON-C-60I-NP-2-[1]	1-axis controller (incremental for Y-axis)
		SCON-C-60A-NP-2-[1]	1-axis controller (absolute for Y-axis)
	IK2-SXBA	SSEL-C-2-150I-100I-NP-2-[1]	2-axis controller (incremental)
		SSEL-C-2-150A-100A-NP-2-[1]	2-axis controller (absolute)
		SCON-C-150I-NP-2-[1]	1-axis controller (incremental for X-axis)
		SCON-C-150A-NP-2-[1]	1-axis controller (absolute for X-axis)
		SCON-C-100I-NP-2-[1]	1-axis controller (incremental for Y-axis)
		SCON-C-100A-NP-2-[1]	1-axis controller (absolute for Y-axis)
IK2-SXZB	SSEL-C-2-100I-60I-NP-2-[1]	2-axis controller (incremental)	
	SSEL-C-2-100A-60A-NP-2-[1]	2-axis controller (absolute)	
	SCON-C-100I-NP-2-[1]	1-axis controller (incremental for X-axis)	
	SCON-C-100A-NP-2-[1]	1-axis controller (absolute for X-axis)	
	SCON-C-60I-NP-2-[1]	1-axis controller (incremental for Z-axis)	
	SCON-C-60A-NP-2-[1]	1-axis controller (absolute for Z-axis)	
IK2-SYBB	SSEL-C-2-100I-60I-NP-2-[1]	2-axis controller (incremental)	
	SSEL-C-2-100A-60A-NP-2-[1]	2-axis controller (absolute)	
	SCON-C-100I-NP-2-[1]	1-axis controller (incremental for Y-axis)	
	SCON-C-100A-NP-2-[1]	1-axis controller (absolute for Y-axis)	
	SCON-C-60I-NP-2-[1]	1-axis controller (incremental for Z-axis)	
	SCON-C-60A-NP-2-[1]	1-axis controller (absolute for Z-axis)	
3-axis	IK3-PBBG	PSEL-C-2-56PI-42PI-NP-2-0	2-axis controller (for X/Y-axes)
		PCON-C-56PI-NP-2-0	1-axis controller (for X-axis)
		PCON-C-42PI-NP-2-0	1-axis controller (for Y-axis, Z-axis)
		RPCON-56P	1-axis controller (for X-axis)
		RPCON-42P	1-axis controller (for Y-axis, Z-axis)
	IK3-SBBG	SSEL-C-2-100I-60I-NP-2-[1]	2-axis controller (incremental for X/Y-axis)
		SSEL-C-2-100A-60A-NP-2-[1]	2-axis controller (absolute for X/Y-axis)
		SCON-C-100I-NP-2-[1]	1-axis controller (incremental for X-axis)
		SCON-C-100A-NP-2-[1]	1-axis controller (absolute for X-axis)
		SCON-C-60I-NP-2-[1]	1-axis controller (incremental for Y-axis)
		SCON-C-60A-NP-2-[1]	1-axis controller (absolute for Y-axis)
		SCON-C-30I-NP-2-[1]	1-axis controller (incremental for Z-axis)
		SCON-C-30A-NP-2-[1]	1-axis controller (absolute for Z-axis)
		XSEL-J/K/P/Q	Multi-axis controller (incremental or absolute for X/Y/Z-axis)

[1] Power-supply voltage (1: Single-phase 100 VAC / 2: Single-phase 200 VAC)

2-axis Combinations R C P 2
 2-axis Combinations R C S 2
 3-axis Combinations R C P 2
 3-axis Combinations R C S 2
 Controllers
 Model List
 PSEL
 SSEL
 ROBOTNET
 XSEL

Regenerative resistor unit

J (Small Type)/K (General-purpose Type)/KE (CE Type)

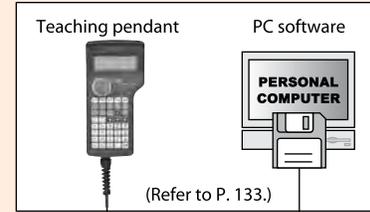


■ Connectable actuators

- High-speed, high-precision type ISPA series
- Standard type ISA series
- Dustproof type ISDA series
- Clean room specification ISDACR series
- Antistatic specification ISDACR ESD
- High-rigidity belt type IF series
- Slim belt type FS series
- Rotational axis RS series
- ROBO Cylinder RCS2 series

■ External devices

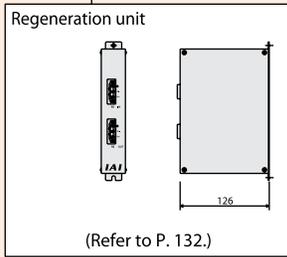
- Parts feeder
- Solenoid valve
- PLC



Standard motor cable, 3 m/5 m (Refer to P. 133.)
Standard encoder cable, 3 m/5 m (Refer to P. 134.)
(Supplied with the actuator)

I/O flat cable, 2 m
(Supplied with the controller)
(Refer to P. 134.)

Regeneration unit cable, 1 m
(Supplied with the regeneration unit)



■ Main power supply

- Single-phase 100 VAC
- Single-phase 200 VAC

■ I/O power supply

- DC24V

■ System I/Os

- Emergency stop
- Enable
- System ready

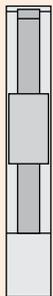
■ Various field networks

- Device Net (Refer to P. 132.)
- CC-Link (Refer to P. 132.)
- Profi Bus
- Ethernet

■ Serial communication unit

- Expansion SIO board (Refer to P. 132.)
RS232C/RS422/RS485

P (Large-capacity Type)/Q (Large-capacity Global Type)



■ Connectable actuators

- High-speed, high-precision type ISPA series
- Standard type ISA series
- Dustproof type ISDA series
- Clean room specification ISDACR series
- Antistatic specification ISDACR ESD
- High-rigidity belt type IF series
- Slim belt type FS series
- Rotational axis RS series
- Linear servo LSA series
- ROBO Cylinder RCS2 series

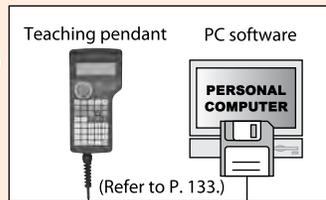
■ External devices

- PLC, etc.

■ Various field networks

- Device Net
- CC-Link
- Profi Bus
- Ethernet

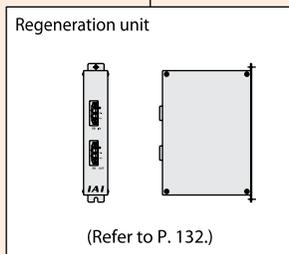
■ Serial communication port 2 channels of standard and RS232



Standard motor cable, 3 m/5 m (Refer to P. 133.)
Standard encoder cable, 3 m/5 m (Refer to P. 134.)
(Supplied with the actuator)

I/O flat cable, 2 m
(Supplied with the controller)
(Refer to P. 134.)

Regeneration unit cable, 1 m
(Supplied with the regeneration unit)



■ Control power supply

- Single-phase 200 VAC

■ Motor-drive power supply

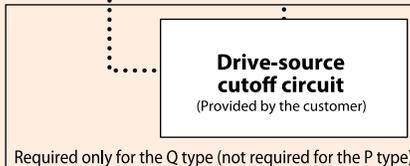
- Three-phase 200 VAC (Q type)

■ System I/Os

- Emergency stop
- Enable
- System ready

■ Expansion I/Os

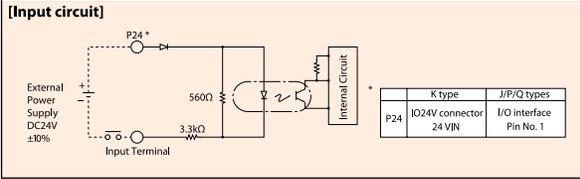
- PIO board
- * If an expansion I/O board is installed on the P or Q type, the controller enclosure will be changed. (Refer to P. 129.)



I/O Wiring

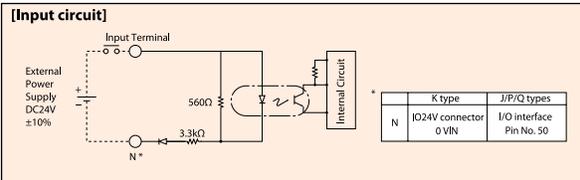
Input External input specifications (NPN specification)

Item	Specification
Input voltage	DC24V ±10%
Input current	7 mA per circuit
ON/OFF voltages	ON voltage --- Min. 16.0VDC / OFF voltage --- Max. 5.0 VDC
Insulation method	Photo-coupler insulation
Externally connected devices	[1] No-voltage contacts (minimum load of approx. 5 VDC/1 mA) [2] Photoelectric/proximity sensors (NPN type) [3] Sequencer transistor outputs (open-collector type) [4] Sequencer contact outputs (minimum load of approx. 5 VDC/1 mA)



Input External input specifications (PNP specification)

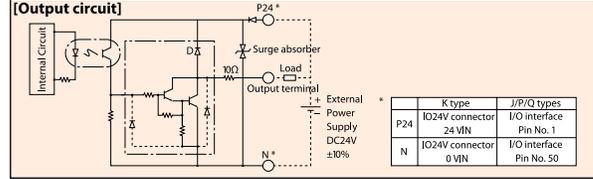
Item	Specification
Input voltage	DC24V ±10%
Input current	7 mA per circuit
ON/OFF voltages	ON voltage --- Min. 8.0 VDC / OFF voltage --- Max. 19.0 VDC
Insulation method	Photo-coupler insulation
Externally connected devices	[1] No-voltage contacts (minimum load of approx. 5 VDC/1 mA) [2] Photoelectric/proximity sensors (PNP type) [3] Sequencer transistor outputs (open-collector type) [4] Sequencer contact outputs (minimum load of approx. 5 VDC/1 mA)



Output External output specifications (NPN specification)

Item	Specification
Load voltage	DC24V
Maximum load current	100 mA per point, 400 mA peak (total current)
Leak current (max.)	Max. 0.1 mA per point
Insulation method	Photo-coupler insulation
Externally connected devices	[1] Miniature relays [2] Sequence input units

TD62084 (or equivalent) is used.

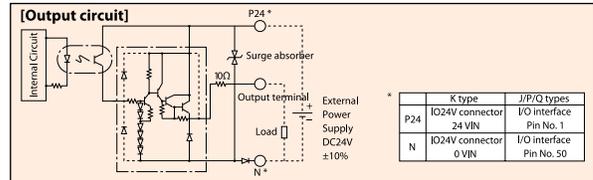


Output External output specifications (PNP specification)

Item	Specification
Load voltage	DC24V
Maximum load current	100 mA per point 400 mA per 8 ports Note)
Leak current (max.)	Max. 0.1 mA per point
Insulation method	Photo-coupler insulation
Externally connected devices	[1] Miniature relays [2] Sequence input units

TD62784 (or equivalent) is used.

Note) The maximum total load current for every eight ports from output port No. 300 is 400 mA. (The maximum total load current of output port Nos. 300+n to 300+n+7 is 400 mA, where n is 0 or a multiple of 8.)



I/O Signal Tables

Standard I/O Signal Table (When N1 or P1 is selected)

Pin No.	Category	Port No.	Standard setting
1		—	I/P/Q types: 24-V connection / K type: NC
2		000	Program start
3		001	General-purpose input
4		002	General-purpose input
5		003	General-purpose input
6		004	General-purpose input
7		005	General-purpose input
8		006	General-purpose input
9		007	Program specification (PRG No. 1)
10		008	Program specification (PRG No. 2)
11		009	Program specification (PRG No. 4)
12		010	Program specification (PRG No. 8)
13		011	Program specification (PRG No. 10)
14		012	Program specification (PRG No. 20)
15		013	Program specification (PRG No. 40)
16	Input	014	General-purpose input
17		015	General-purpose input
18		016	General-purpose input
19		017	General-purpose input
20		018	General-purpose input
21		019	General-purpose input
22		020	General-purpose input
23		021	General-purpose input
24		022	General-purpose input
25		023	General-purpose input
26	024	General-purpose input	
27	025	General-purpose input	
28	026	General-purpose input	
29	027	General-purpose input	
30	028	General-purpose input	
31	029	General-purpose input	
32	030	General-purpose input	
33	031	General-purpose input	
34	Output	300	Alarm output
35		301	Ready output
36		302	Emergency stop output
37		303	General-purpose output
38		304	General-purpose output
39		305	General-purpose output
40		306	General-purpose output
41		307	General-purpose output
42		308	General-purpose output
43		309	General-purpose output
44		310	General-purpose output
45		311	General-purpose output
46		312	General-purpose output
47		313	General-purpose output
48		314	General-purpose output
49		315	General-purpose output
50		—	I/P/Q types: 0-V connection / K type: NC

Expansion I/O Signal Table (When N1 or P1 is selected)

Pin No.	Category	Standard setting
1		I/P/Q types: 24-V connection / K type: NC
2	Input	General-purpose input
3		General-purpose input
4		General-purpose input
5		General-purpose input
6		General-purpose input
7		General-purpose input
8		General-purpose input
9		General-purpose input
10		General-purpose input
11		General-purpose input
12		General-purpose input
13		General-purpose input
14		General-purpose input
15		General-purpose input
16		General-purpose input
17		General-purpose input
18		General-purpose input
19		General-purpose input
20		General-purpose input
21		General-purpose input
22		General-purpose input
23		General-purpose input
24		General-purpose input
25		General-purpose input
26		General-purpose input
27		General-purpose input
28		General-purpose input
29		General-purpose input
30		General-purpose input
31		General-purpose input
32	General-purpose input	
33	General-purpose input	
34	General-purpose output	
35	General-purpose output	
36	General-purpose output	
37	General-purpose output	
38	General-purpose output	
39	General-purpose output	
40	General-purpose output	
41	General-purpose output	
42	General-purpose output	
43	General-purpose output	
44	General-purpose output	
45	General-purpose output	
46	General-purpose output	
47	General-purpose output	
48	General-purpose output	
49	General-purpose output	
50		I/P/Q types: 0-V connection / K type: NC

Expansion I/O Signal Table (When N2 or P2 is selected)

Pin No.	Category	Standard setting
1		I/P/Q types: 24-V connection / K type: NC
2	Input	General-purpose input
3		General-purpose input
4		General-purpose input
5		General-purpose input
6		General-purpose input
7		General-purpose input
8		General-purpose input
9		General-purpose input
10		General-purpose input
11		General-purpose input
12		General-purpose input
13		General-purpose input
14		General-purpose input
15		General-purpose input
16		General-purpose input
17		General-purpose input
18		General-purpose output
19		General-purpose output
20		General-purpose output
21		General-purpose output
22		General-purpose output
23		General-purpose output
24		General-purpose output
25		General-purpose output
26		General-purpose output
27		General-purpose output
28		General-purpose output
29		General-purpose output
30		General-purpose output
31		General-purpose output
32	General-purpose output	
33	General-purpose output	
34	Output	General-purpose output
35		General-purpose output
36		General-purpose output
37		General-purpose output
38		General-purpose output
39		General-purpose output
40		General-purpose output
41		General-purpose output
42		General-purpose output
43		General-purpose output
44		General-purpose output
45		General-purpose output
46		General-purpose output
47		General-purpose output
48		General-purpose output
49		General-purpose output
50		

Specification Table

■ J (Small Type)/K (General-purpose Type)

Item	Description													
Controller series/type	J (small type)						K (general-purpose type)/KE (CE type)							
Connected actuators	RCS2/ISA/ISPA/ISP/ISDA/ISDACR/ISPDACR/IF/FS/RS													
Applicable motor output (W)	20/30/60/100/150/200/300/400/600/750													
Number of connected axes	1	2	3	4	1	2	3	4	1	2	3	4		
Maximum output of connected axes (W)	Max 800 (at power-supply voltage of 200 V) Max 400 (at power-supply voltage of 100 V)				Max 800		Max 1600 (at power-supply voltage of 200 V) Max 800 (at power-supply voltage of 200 V)							
Input power supply	100-V specification: Single-phase 100 to 115 VAC 200-V specification: Single-phase 200 to 230 VAC													
Operating power-supply voltage range	±10%													
Power-supply frequency	50Hz/60Hz													
Power-supply capacity	Max 1670VA		Max 1720VA		Max 1810VA		Max 1670VA		Max 3120VA		Max 3220VA		Max 3310VA	
Position detection method	Incremental encoder (wire-saving type) Multi-rotation data backup absolute encoder (wire-saving type)													
Speed setting	1 mm/sec ~ (The maximum limit varies depending on the actuator.)													
Acceleration setting	0.01 G ~ (The maximum limit varies depending on the actuator.)													
Program language	Super SEL													
Number of programs	64													
Number of program steps	6,000 (total)													
Number of multi-tasking programs	16													
Number of positions	3,000													
Data storage device	Flash ROM + SRAM backup battery													
Data input method	Teaching pendant or PC software													
Standard I/Os	32 points (total of dedicated inputs + general-purpose inputs)/16 points (total of dedicated outputs + general-purpose outputs)													
Expansion I/Os	None		1 unit, 48 points (1 unit can be added)				1 unit, 48 points (Up to 3 units can be added)							
Serial communication function	Standard RS232 port (D-sub, 25-pin)						Standard RS232 port + Expansion SIO board (optional)							
Other I/Os	System I/Os (emergency stop input, enable input, system ready output)													
Protective functions	Motor overcurrent, overload, motor/driver temperature check, overload check, encoder open detection, soft limit overtravel, system error, battery error, etc.													
Surrounding air temperature/humidity	Temperature 0 to 40°C, humidity 30 to 85%													
Surrounding ambience	Free from corrosive gases or significant dust.													
Weight	2.6kg		3.3kg		5.0kg		6.0kg		7.0kg					
Accessory	I/O flat cable													

■ P (Large-capacity Type)/Q (Large-capacity Type Conforming to Safety Category)

Item	Description															
Controller series/type	P (standard) type						Q (global) type									
Connected actuators	RCS2/ISA/ISPA/ISP/ISDA/ISDACR/ISPDACR/IF/FS/RS/LSA															
Applicable motor output	20/30/60/100/150/200/300/400/600/750															
Number of controlled axes	1	2	3	4	5	6	1	2	3	4	5	6				
Maximum output of connected axes (W)	Max2400W (1600 W for single-phase 200-VAC specification)															
Control power input	AC 200/230, single-phase -15%, +10%						AC 200/230, single-phase -15%, +10%									
Motor power input	AC 200/230, single-phase/three-phase -10%, +10%						AC 200/230, single-phase/three-phase -10%, +10%									
Power-supply frequency	50/60Hz															
Insulation resistance	10MΩ or more (at 500 VDC, between the power-supply terminal and each I/O terminal and between all external terminals and the case)															
Withstand voltage	1500 VAC (1 minute)						1500 VAC (1 minute)									
Power-supply capacity (*1)	Max 1744VA	Max 3266VA	Max 4787VA	Max 4878VA	Max 4931VA	Max 4998VA	Max 1744VA	Max 3266VA	Max 4787VA	Max 4878VA	Max 4931VA	Max 4998VA				
Position detection method	Incremental encoder (wire-saving type) Multi-rotation data backup absolute encoder (wire-saving type)															
Safety circuit configuration	Redundancy not supported						Redundancy supported									
Drive-source cutoff method	Internal cutoff relay						External safety circuit									
Enable input	Contact B input (power supplied internally)						Contact B input (power supplied externally, redundant)									
Speed setting	1 mm/sec ~ (The maximum limit varies depending on the actuator.)															
Acceleration setting	0.01 G ~ (The maximum limit varies depending on the actuator.)															
Program language	Super SEL															
Number of programs	64															
Number of program steps	6,000 (total)															
Number of multi-tasking programs	16															
Number of positions	4,000 (total)															
Data storage device	Flash ROM + SRAM backup battery															
Data input method	Teaching pendant or PC															
Standard I/Os	1 of PIO board with 48 I/O points (NPN/PNP) or PIO board with 96 I/O points (NPN/PNP) can be installed.															
Expansion I/Os	Up to 3 of PIO board with 48 I/O points (NPN/PNP) and/or PIO board with 96 I/O points (NPN/PNP) can be installed.															
Serial communication function	Standard teaching port (D-sub, 25-pin) + 2-channel RS232C port (D-sub, 9-pin x 2)															
Protective functions	Motor overcurrent, overload, motor/driver temperature check, overload check, encoder open detection, soft limit overtravel, system error, battery error															
Surrounding air temperature/humidity, ambience	0 to 40°C, 10 to 95% (non-condensing); free from corrosive gases or significant dust.															
Weight (*2)	5.2kg				5.7kg				4.5kg				5kg			
Accessory	I/O flat cable															

*1 When axes corresponding to the maximum wattage are connected.

*2 Including the absolute battery, brake mechanism and expansion I/O box.

External Dimensions

■ J (Small Type)/K (General-purpose Type)

	1-axis specification	2-axis specification	3/4-axis specification	Side view
J type (Small type)				
K type (General-purpose type)	1/2-axis specification 	3/4-axis specification 		

■ P (Large-capacity Standard Type)/Q (Large-capacity Global Type)

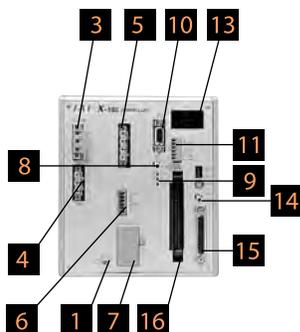
The shapes and dimensions of SEL-P/Q types vary depending on the controller specifications (encoder type, with/without brake, and with/without I/O expansion).

The following four shapes are available. Check the applicable dimensions based on the desired type and number of axes to be connected.

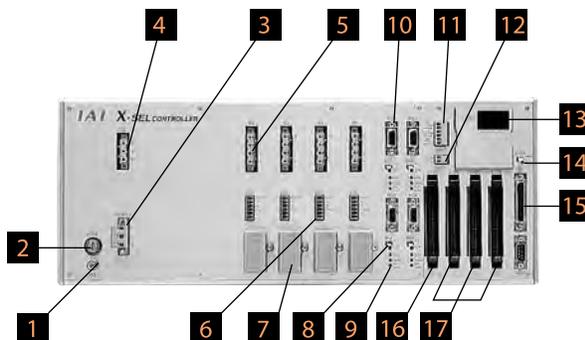
		Base shape (incremental specification)	With brake/absolute unit	With I/O expansion base	With brake/absolute unit + I/O expansion base	Side view
Controller specification	Encoder	Incremental	Absolute	Incremental	Absolute	
	Brake	Not equipped	Equipped	Not equipped	Equipped	
	I/O	Standard only	Standard only	Standard + Expansion	Standard + Expansion	
P type (Large-capacity)	1 to 4-axis specification					
	5 to 6-axis specification					
Q type (Large capacity conforming to safety standard) <small>* The dimensions of single phase 200VAC controllers conform to those of the P type.</small>	1 to 4-axis specification					
	5 to 6-axis specification					

Name of Each Part

J Type (Small)



K Type (General-purpose)



1 FG connection terminal

A connection edge to connect the FG terminal of the enclosure. This terminal is connected to the PE terminal of the AC input part internally through the controller.

2 Fuse holder (K type only)

A half-cut fuse holder for protecting the AC input part from overcurrent.

3 Main-power input connector

A connector for 100/200-VAC single-phase input. (This connector comes with a cable-end plug. Refer to the right page.)

4 Regenerative-resistor unit connector

This connector is used to connect the regenerative resistor unit (optional: REU-1) that may be required if the built-in regenerative connector is not enough due to high acceleration, high load, etc.

5 Motor cable connector

A connector for the motor power cable of the actuator motor.

6 Actuator-sensor input connector

A connector for the LS, CREEP, OT and other axis sensors.

7 Absolute-data backup battery

A battery unit for backing up the absolute encoder if used. This battery is not connected to non-absolute axes.

8 Brake release switch (brake specification only)

An alternate switch with lock for releasing the axis brake. To operate this switch, pull the switch toward you and then tilt it to a desired position. Tilt the switch to the top (RLS) position to forcibly release the brake, or tilt it to the bottom (NOM) position to let the controller control the brake automatically.

9 Axis-driver status LEDs

These LEDs are used to monitor the operating status of the driver CPU that controls the motor drive. The following three LEDs are provided.

Name	Color	Meaning when the LED is lit
ALM	Orange	The driver has detected an error.
SVON	Green	The servo is ON and the motor is being driven.
BATT ALM	Orange	The absolute battery voltage is low.

10 Encoder cable connector

This 15-pin, D-sub connector is used to connect the encoder cable of the actuator.

11 System IO connector

This connector has a total of three I/Os including two inputs for controlling the controller operation and one output regarding the system status. (This connector comes with a cable-end plug. Refer to the right page.)

Name		
EMG	Emergency stop input	Operation is enabled when this signal is ON. An emergency stop is actuated when the signal turns OFF.
ENB	Safety gate input	Operation is enabled when this signal is ON. The servo turns OFF when the signal turns OFF.
RDY	System ready relay output	The controller status is output. Cascade connection is supported. The controller is ready when the output contacts are shorted and not ready when the contacts are open.

12 IO24V power connector (K type only)

If DI/DOs are installed in the IO slots **16**, **17**, this connector is used to supply the I/O power to the insulated part externally.

13 Panel window

The 4-digit 7-segment LED display and five LED lamps indicating the system status can be visually checked.

14 Mode switch

An alternate switch with lock for specifying the operation mode of the controller. To operate this switch, pull the switch toward you and then tilt it to a desired position. The top position indicates the MANU (manual operation) mode, while the bottom position indicates the AUTO (auto operation) mode. Teaching operation can only be performed in the MANU mode, and auto operation using external IOs cannot be performed in the MANU mode.

15 Teaching connector

This D-sub, 25-pin connector is used to connect a teaching pendant or PC to input program positions.

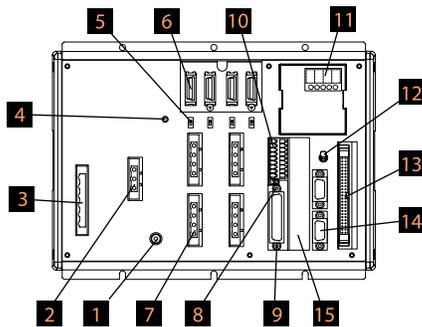
16 Standard I/O slot (slot 1)

The standard PIO board with 32 input points and 16 output points is installed in this slot.

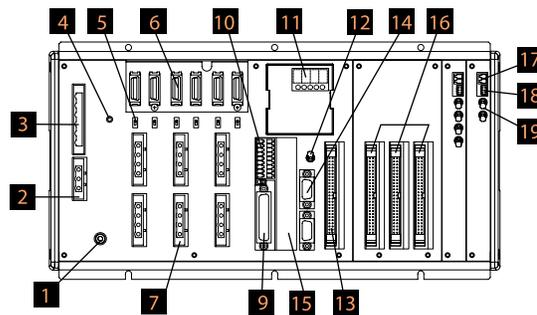
17 Expansion I/O slots (slot 2, slot 3, slot 4)

An expansion IO board (optional) can be installed in each of these slots.

P type (standard, 4-axis)



Q type (with absolute brake unit + expansion base, 6-axis)



1 FG connection terminal

A connection edge to connect the FG terminal of the enclosure. This terminal is connected to the PE terminal of the AC input part internally through the controller.

2 External regeneration unit connector

This connector is used to connect an additional regenerative resistor when the built-in regenerative resistor is not enough due to high acceleration, high load, etc. Whether or not an external regenerative resistor is needed depends on the specifics of the application, such as the axis configuration.

3 AC-power input connector

A connector for 200-VAC three-phase input. This connector consists of six terminals including the motor power-supply, control power-supply and PE terminals.

The standard specification only comes with a terminal block.

Caution To prevent electric shock, do not touch this connector while the power is supplied.

4 Control power-supply monitor LED

A green light is lit while the control power supply is generating the internal controller power properly.

5 Absolute-battery enable/disable switch

This switch is used to enable or disable the encoder backup operation using the absolute battery. The factory setting is to disable the backup. Connect the encoder and axes-sensor cables, turn on the power, and then set this switch to the top position.

6 Encoder/axis-sensor connector

A connector for the actuator encoder and axis sensors such as LS, CREEP and OT. *: LS, CREEP and OT sensors are optional.

7 Motor connector

A connector for driving the motor in the actuator.

8 Teaching-pendant type selector switch

This switch is used to change the type of the teaching pendant connected to the teaching connector **9**. You can switch between IAI's standard teaching pendant and ANSI teaching pendant. Set the switch provided on the front side of the board according to the teaching pendant to be used.

9 Teaching connector

This teaching interface is used to connect IAI's teaching pendant or PC (PC software) to operate, set or otherwise manipulate the system.

10 System I/O connector

This I/O connector controls the safety operations of the controller. With the global specification, this connector can be used, together with an external safety circuit, to configure a safety circuit meeting up to category 4.

11 Panel window

The panel window consists of the 4-digit, 7-segment LED display and five LED lamps indicating the status of the system.

Meanings of 5 LEDs

Name	Condition when the LED is lit
RDY	The CPU is ready (to perform program operation).
ALM	A CPU alarm (system-shutdown level error) or CPU hardware error is present.
EMG	An emergency stop is actuated or CPU hardware error or power-supply hardware error is present.
PSE	A power-supply hardware error is present.
CLK	The system clock is abnormal.

12 Mode switch

An alternate switch with lock for specifying the operation mode of the controller. To operate this switch, pull the switch toward you and then tilt it to a desired position. The top position indicates the MANU (manual operation) mode, while the bottom position indicates the AUTO (auto operation) mode. Teaching operation can only be performed in the MANU mode, and auto operation using external I/Os cannot be performed in the MANU mode.

13 Standard I/O connector

Overview of standard IO interface specifications

Item	Photo-coupler
Connector name	I/O
Applicable connector	Flat connector, 50-pins
Power supply	Power is supplied from connector pin Nos. 1 and 50.
Inputs	32 points (including general-purpose and dedicated inputs)
Outputs	16 points (including general-purpose and dedicated outputs)
Connected to	External PLC, sensor, etc.

14 General-purpose RS232C port connector

This port is used to connect general-purpose RS232C devices. (Two channels are provided.)

15 Field-network board slot

A fieldbus interface module is installed in this slot.

16 Expansion I/O boards (optional)

Optional expansion boards are installed in these slots.

17 Brake-power input connector

A power input connector for driving the brake of the actuator. 24 VDC must be supplied externally. If the specified power is not supplied, the actuator brake cannot be released. Be sure to supply this power to axes with brake. For the brake power cable, use a shielded cable and connect the shield on the 24-V power supply side.

18 Brake-release switch connector

This connector is used to connect a switch that releases the actuator brake from outside the controller. The brake is released when the COM and BKMRL* terminals of this connector are shorted. Use this connector if you want to manually operate the actuator when the controller power is cut off or other abnormality is present.

19 Brake switch

An alternate switch with lock for releasing the axis brake. To operate this switch, pull the switch toward you and then tilt it to a desired position. Tilt the switch to the top (RLS) position to forcibly release the brake, or tilt it to the bottom (NOM) position to let the controller control the brake automatically.

Options

■ Regenerative Resistor Unit

Model **REU-1**

Description

This unit converts to heat the regenerative current produced when the motor decelerates. Although the controller has a built-in regenerative resistor, a regeneration unit or units may be required if its capacity is not enough for the vertical axis load. (Refer to the table on the right.)

Specification

Item	Specification
Dimensions	W34mm×H195mm×D126mm
Weight	0.9kg
Built-in regenerative resistor	220Ω 80W
Accessory	Controller connection cable (model: CB-ST-REU101), 1 m

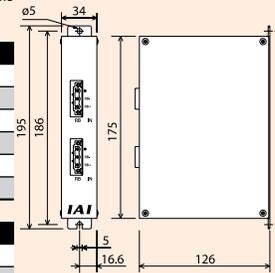
Installation Standards Determine the required number of unit(s) according to the total motor capacity of the connected vertical axes.

Horizontal application

Motor wattage	P/Q type	J type	K type
~200W	Not required	Not required	Not required
~800W	1 unit	Not required	Not required
~1000W	1 unit	-	Not required
~1500W	2 units	-	Not required
~2000W	3 units	-	-
~2400W	4 units	-	-

Vertical application

Motor wattage	P/Q type	J type	K type
~100W	Not required	Not required	Not required
~200W	1 unit	Not required	Not required
~400W	1 unit	1 unit	Not required
~600W	1 unit	1 unit	1 unit
~800W	1 unit	2 units	1 unit
~1200W	2 units	-	2 units
~1600W	3 units	-	Consult IAI.
~2000W	4 units	-	-
~2400W	5 units	-	-



■ Absolute-data Backup Battery (for XSEL-J/K/KE/KT/KET)

Model **IA-XAB-BT**

Features A data backup battery for absolute axes. Replace the battery as soon as the controller generates a battery alarm.

Packing specification

Individually packed. (One battery is required for one axis. Specify an appropriate quantity according to the number of axes to be used.)



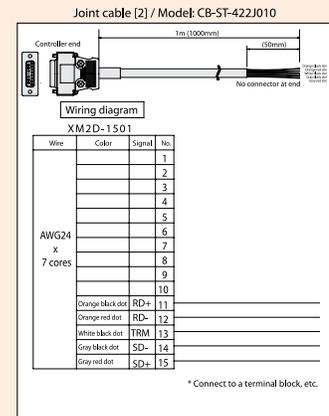
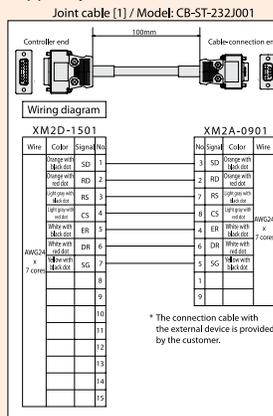
■ Expansion SIO Board (for General-purpose Type Only)

Model Specification

IA-105-X-MW-A (for RS232C connection) (board + joint cable [1] x 2)
 IA-105-X-MW-B (for RS422 connection) (board + joint cable [2] x 1)
 IA-105-X-MW-C (for RS485 connection) (board + joint cable [2] x 1)

Description

This board is used to perform serial communication with external devices. The 2-channel port supports three communication patterns according to the supplied joint cable.



■ Absolute-data Backup Battery

Model **AB-5**

Features This absolute-data backup battery is used when absolute actuators are operated.



■ Expansion PIO Board

Description

This optional board is used to add I/Os (inputs/outputs). On the general-purpose and large-capacity types, up to three expansion PIO boards can be installed in the expansion slots. (On the small type, only one expansion PIO board can be installed in the expansion slot, provided that the controller is of 3 or 4-axis type.)

■ DeviceNet Connection Board

This board is used to connect the XSEL controller to DeviceNet.

Item	Specification			
Number of I/O points	256 input points/256 output points per board * Only one board can be installed.			
Communication protocol	Certified DeviceNet 2.0 interface module (Certification pending)			
	Group 2 only server			
Communication specification	Insulation node of network-power operation type			
	Master-slave connection	Bit strobe		
		Polling		
Cyclic				
Baud rate	500k/250k/125kbps (Switchable via DIP switches)			
Communication cable length	Baud rate	Maximum network length	Maximum branch length	Total branch length
	500kbps	100m	6m	39m
	250kbps	250m		78m
	125kbps	500m		156m
Note) When a thick DeviceNet cable is used.				
Communication power supply	24 VDC (supplied from DeviceNet)			
Current consumption of communication power supply	60 mA or more			
Number of occupied stations	1 node			
Connector	MSTBA2.5/5-G.08AUM by Phoenix Contact (*1)			

(*1) The cable-end connector (SMSTB2.5/5-ST-5.08AU by Phoenix Contact) is a standard accessory.

■ CC-Link Connection Board

This board is used to connect the XSEL controller to CC-Link.

Item	Specification					
Number of I/O points	256 input points/256 output points per board * Only one board can be installed.					
Communication protocol	CC-Link Ver.1.10 (Certified)					
Baud rate	10M/5M/2.5M/625k/156kbps (switchable via a rotary switch)					
Communication method	Broadcast polling method					
Synchronization method	Frame synchronization method					
Encoding method	NRZI					
Transmission path format	Bus format (conforming to EIA RS485)					
Transmission format	Conforming to HDLC					
Error control method	CRC(X ¹⁶ +X ¹² +X ⁵ +1)					
Number of occupied stations	1 to 3 stations (remote device stations)					
Communication cable length	Baud rate (bps)	10M	5M	2.5M	625k	156k
	Cable length (m)	100	160	400	900	1200
Connector (controller end)	MSTBA2.5/5-G.08AUM by Phoenix Contact (*1)					

(*1) The cable-end connector (SMSTB2.5/5-ST-5.08AU by Phoenix Contact) is a standard accessory.

2-axis Combinations RCP2

2-axis Combinations RCS2

3-axis Combinations RCP2

3-axis Combinations RCS2

Controllers

Model List

PSEL

SSEL

ROBONET

XSEL

Options

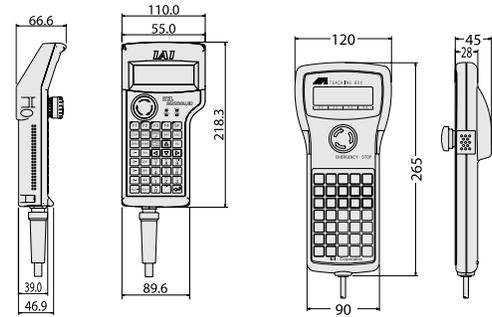
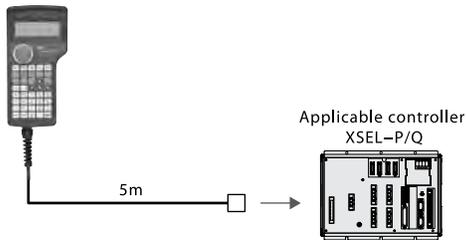
Teaching Pendant

Features A teaching device offering functions for program/position input, test operation, monitoring, and more.

Model/Price

Model	Description
SEL-T	Standard type with connector conversion cable
SEL-TD	Deadman switch type with connector conversion cable

Configuration



Specification

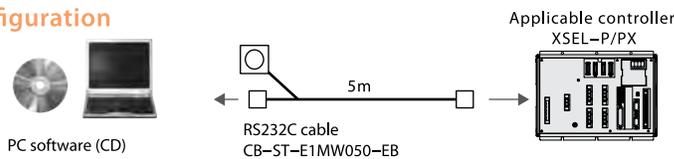
Item	SEL-T-J	SEL-TD-J
3-position enable switch	Not equipped	Equipped
ANSI/UL standard	Not compliant	Compliant
CE mark	Compliant	
Display	20 characters x 4 lines	
Surrounding air temperature/humidity	0-40°C 10-90%RH (non-condensing)	
Protection structure	IP54	
Weight	Approx. 0.4 kg (excluding cables)	

PC Software (Windows only)

Features A software program that assists the initial startup of your system, offering functions for program/position input, test operation, monitoring, and more. The enhanced debugging functions help reduce the startup time.

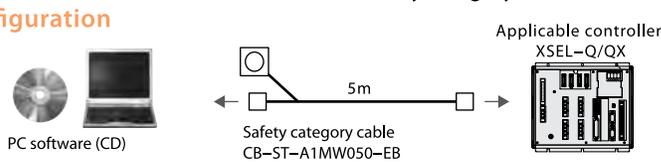
Model IA-101-X-MW (with RS232C cable)

Configuration



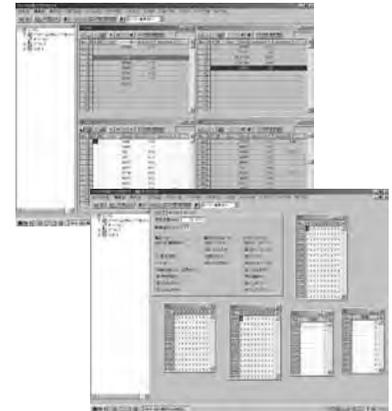
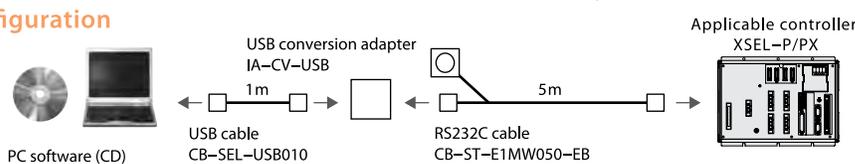
Model IA-101-XA-MW (with safety category 4 cable)

Configuration



Model IA-101-X-USBMW (with USB conversion adapter + cable)

Configuration



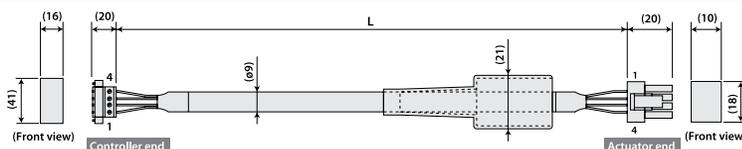
Replacement Parts

If you must order a replacement cable, etc., after the initial purchase of your product, specify the correct model by referring to the information below.

Motor Cable/Robot Motor Cable

Item **CB-RCC-MA** / **CB-RCC-MA** -RB

* [] indicates the cable length (L). A desired length up to 20 m can be specified. Example) 080 = 8 m



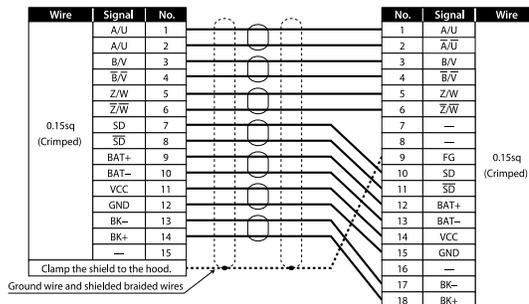
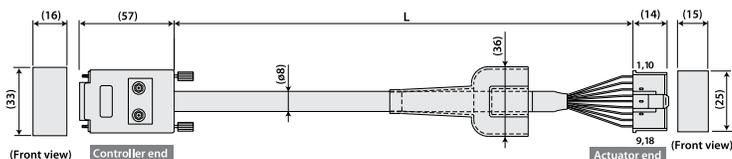
Signal	No.	No.	Signal	Wire
PE	1	1	U	0.75sq (crimped)
U	2	2	V	
V	3	3	W	
W	4	4	PE	

Replacement Parts

Encoder Cable/Robot Encoder Cable (for XSEL-J/K types)

Item **CB-RCBC-PA** [] [] [] / **CB-RCBC-PA** [] [] [] -**RB**

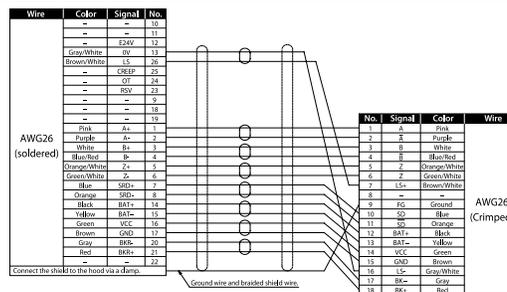
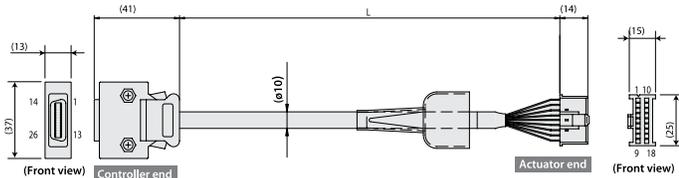
* [] [] [] indicates the cable length (L). A desired length up to 15 m can be specified. Example) 080 = 8 m



Encoder Cable/Robot Encoder Cable (for XSEL-P/Q types)

Item **CB-RCS2-PA** [] [] [] / **CB-X3-PA** [] [] []

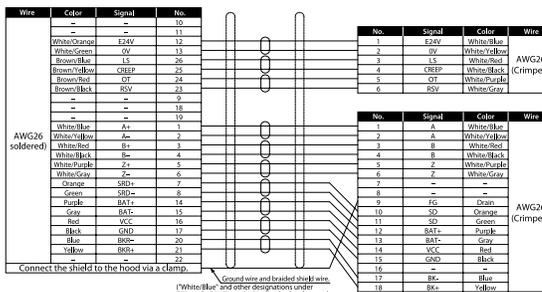
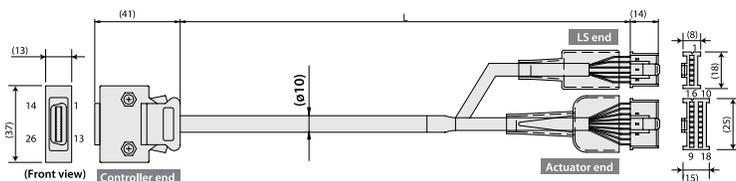
* [] [] [] indicates the cable length (L). A desired length up to 20 m can be specified. Example) 080 = 8 m



Dedicated Encoder Cable/Robot Encoder Cable for Rotary Robots

Item **CB-RCS2-PLA** [] [] [] / **CB-X2-PLA** [] [] []

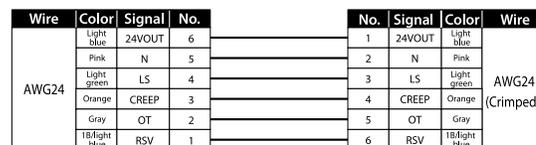
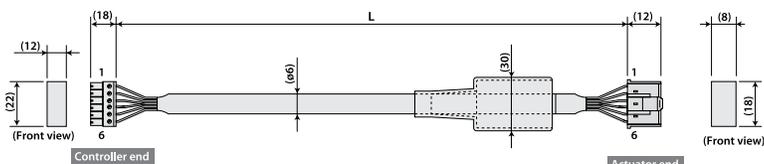
* [] [] [] indicates the cable length (L). A desired length up to 30 m can be specified. Example) 080 = 8 m



Limit Switch Cable (for X-SEL-J/K types)

Item **CB-X-LC** [] [] []

* [] [] [] indicates the cable length (L). A desired length up to 20 m can be specified. Example) 080 = 8 m

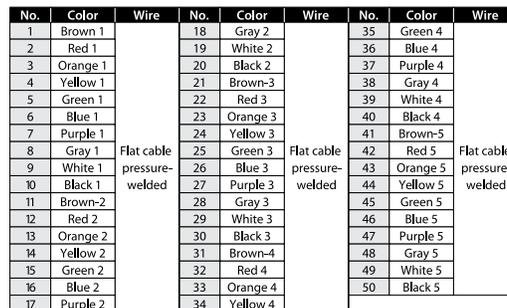
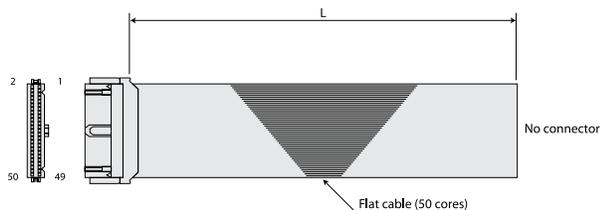


Note) *1B* indicates one black dot.

I/O Flat Cable (XSEL-J/K/P/Q types)

Item **CB-X-PIO** [] [] []

* [] [] [] indicates the cable length (L). A desired length up to 10 m can be specified. Example) 080 = 8 m



[A]		
AB-5	(System-memory backup battery)	101 • 111
AB-5	(Absolute-data backup battery)	111 • 132
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CB-RCC-MA□□□□-RB	(Cable)	112 • 133
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