



230 VAC Servo Motor RCS2

with dedicated controllers
SCON, SSEL and XSEL

Catalogue Extract 4th revised Edition B



RCS2 series	Coupled Type	Aluminum Base	40mm width	RCS2-SA4C	99
			52mm width	RCS2-SA5C	101
			58mm width	RCS2-SA6C	103
		Steel Base	73mm width	RCS2-SA7C	105
			60mm width	RCS2-SS7C	107
			80mm width	RCS2-SS8C	109
	Built-in Type	Aluminum Base	40mm width	RCS2-SA4D	111
			52mm width	RCS2-SA5D	113
			58mm width	RCS2-SA6D	115
	Slider	Side-Mounted Motor Type	Aluminum Base	40mm width	RCS2-SA4R
52mm width				RCS2-SA5R	119
58mm width				RCS2-SA6R	121
73mm width				RCS2-SA7R	123
		Steel Base	60mm width	RCS2-SS7R	125
			80mm width	RCS2-SS8R	127

RCS2 series	Standard Type	Miniature Type	46mm width	RCS2-RN5N	234-1	
			46mm width	RCS2-RP5N	234-3	
			46mm width	RCS2-GS5N	234-5	
			46mm width	RCS2-GD5N	234-7	
			94mm width	RCS2-SD5N	234-9	
	Coupling Type		ø37mm	RCS2-RA4C	235	
			55mm width	RCS2-RA5C	237	
			ø37mm	RCS2-RA4D	239	
	Built-In Type		75mm width	RCS2-SRA7BD	241	
			ø37mm	RCS2-RA4R	243	
	Rod	Single-Guide Type	Coupling Type	55mm width	RCS2-RA5R	245
				130mm width	RCS2-RA13R	247
				ø37mm	RCS2-RGS4C	249
				55mm width	RCS2-RGS5C	251
				ø37mm	RCS2-RGS4D	253
Double-Guide Type		Coupling Type	75mm width	RCS2-SRGS7BD	255	
			ø37mm	RCS2-RGD4C	257	
			55mm width	RCS2-RGD5C	259	
			ø37mm	RCS2-RGD4D	261	
			75mm width	RCS2-SRGD7BD	263	
	Side-Mounted Motor Type	ø37mm	RCS2-RGD4R	265		

RCS2 series	Table	Table Type	Short-Length Compact Model	48mm width	RCS2-TCA5N	322-1
			Short-Length Wide Model	80mm width	RCS2-TWA5N	322-3
			Short-Length Flat Model	95mm width	RCS2-TFA5N	322-5

RCS2 series	Arm / Flat	Arm Type	40mm width	RCS2-A4R	323
			52mm width	RCS2-A5R	325
			58mm width	RCS2-A6R	327
	Flat Type	55mm width	RCS2-F5D	329	

RCS2 series	Gripper	2-Finger Gripper	Long Stroke Slider-Type	104 mm width	RCS2-GR8	351
				284 mm width		

RCS2 series	Rotary	Rotary	Motor Straight Type	64 mm width	RCS2-RT6	365
			Side-mounted Motor Type	64 mm width	RCS2-RT6R	367
			Side-mounted Motor Type (Hollow Shaft)	68 mm width	RCS2-RT7R	369
			Small Flat Type (Hollow Output Shaft)	85 mm width	RCS2-RTC8L/RTC8HL	370-1
			Medium Flat Type (Hollow Output Shaft)	99 mm width	RCS2-RTC10L	370-3
			Large Flat Type (Hollow Output Shaft)	123 mm width	RCS2-RTC12L	370-5

RCS2CR series	Cleanroom	Slider Coupling Type	Aluminum Base	40mm width	RCS2CR-SA4C	425
				52mm width	RCS2CR-SA5C	427
				58mm width	RCS2CR-SA6C	429
				73mm width	RCS2CR-SA7C	431
				60mm width	RCS2CR-SS7C	433
		Slider Built-in Type	Aluminum Base	80mm width	RCS2CR-SS8C	435
				52mm width	RCS2CR-SA5D	437
				58mm width	RCS2CR-SA6D	439

RCS2W series	Damp room	Rod Type	Coupled	ø37mm	RCS2W-RA4C	459
			Built-in	ø37mm	RCS2W-RA4D	
			Motor Side-mounted	ø37mm	RCS2W-RA4R	



- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

RCS2-SA4C RoboCylinder Slider Type 40mm Width 230V Servo Motor Side-Mounted Motor

■ Configuration: **RCS2** - **SA4C** - [] - **20** - [] - [] - [] - []

Series - Type - Encoder - Motor - Lead - Stroke - Compatible Controllers - Cable Length - Option

I : Incremental
A: Absolute

20: 20W Servo motor

10: 10mm
5: 5mm
2.5: 2.5mm

50: 50mm
400: 400mm (50mm pitch increments)

T1: XSEL-KE/KET
T2: SCON
SSEL
XSEL-P/Q

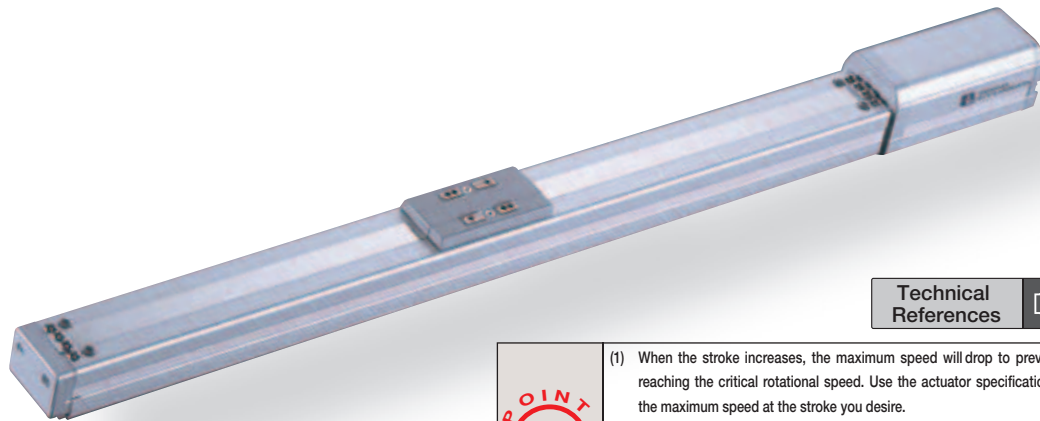
N : None
P : 1m
S : 3m
M : 5m
X [] : Custom Length
R [] : Robot Cable

See Options below

* See page Pre-35 for explanation of each code that makes up the configuration name.

For High Acceleration/Deceleration

(excluding the 2.5-mm lead model)



Technical References P. A-5

- POINT**
Notes on Selection
- When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
 - The load capacity is based on operation of the standard model at 0.3G (0.2G for 2.5mm-lead), and the high acceleration/deceleration model at 1G (excluding the 2.5mm-lead model). (Even when the acceleration/deceleration is dropped, the maximum load capacity values shown in the table below are the upper limits.)

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. Load Capacity		Rated Thrust (N)	Stroke (mm)
			Horizontal (kg)	Vertical (kg)		
RCS2-SA4C-①-20-10-②-③-④-⑤	20	10	4	1	19.6	50~400 (50mm increments)
RCS2-SA4C-①-20-5-②-③-④-⑤		5	6	2.5	39.2	
RCS2-SA4C-①-20-2.5-②-③-④-⑤		2.5	8	4.5	78.4	

Legend ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options

Stroke and Maximum Speed

Stroke Lead	50 ~ 400 (50mm increments)	
	10	665
5	330	
2.5	165	

(Unit: mm/s)

Cable List

Type	Cable Symbol
Standard	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
Robot Cable	R01 (1m) ~ R03 (3m)
	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* For cables for maintenance, see page A-39.

Option List

Name	Option Code	See Page
Brake	B	→ A-25
Foot bracket	FT	→ A-29
For High Acceleration/Deceleration	HA	→ A-32
Home sensor	HS	→ A-32
Reversed-home	NM	→ A-33
Slider Roller	SR	→ A-36
Slider spacer	SS	→ A-36

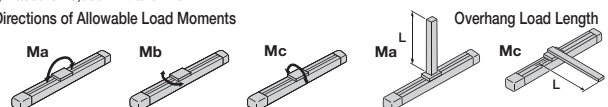
* The high-acceleration/deceleration option and the slider roller option cannot be used together.
* The 2.5mm-lead model cannot be used with the high-acceleration/deceleration option.

Actuator Specifications

Item	Description
Drive System	Ball screw Ø8mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1 mm or less
Base	Material: Aluminum (white alumite treated)
Allowable Static Moment	Ma: 6.9N·m Mb: 9.9N·m Mc: 17.0N·m
Allowable Dynamic Moment (*)	Ma: 2.7N·m Mb: 3.9N·m Mc: 6.8N·m
Overhang Load Length	Ma direction: 120mm or less Mb-Mc direction: 120mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (Non-condensing)

(*) Based on 5,000km travel life.

Directions of Allowable Load Moments



Dimensions

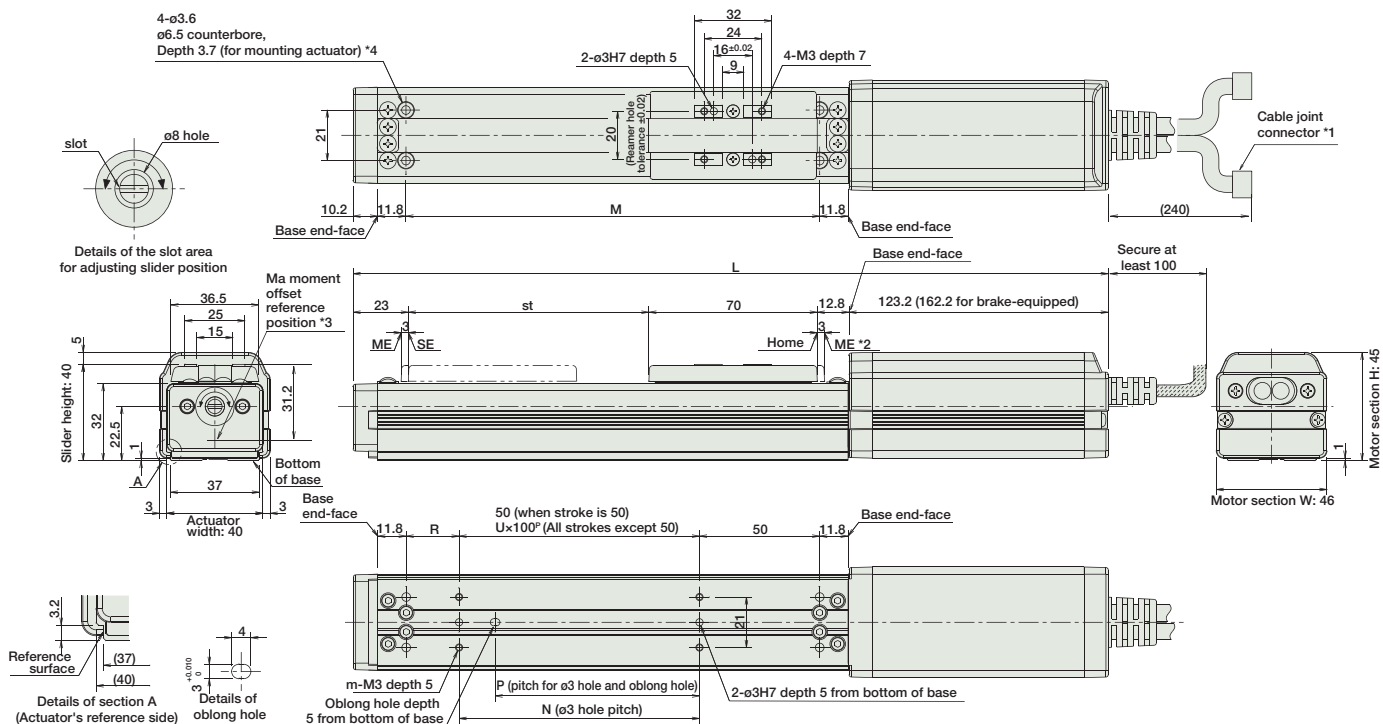
CAD drawings can be downloaded from IAI website. www.robocylinder.de



- *1 A motor-encoder cable is connected here. See page A-39 for details on cables.
- *2 When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end
- *3 Reference position for calculating the moment Ma.

For Special Orders P. A-9

- *4 If the actuator is secured using only the mounting holes provided on the top surface of the base, the base may twist to cause abnormal sliding of the slider, or may produce abnormal noise. Therefore, when using the mounting holes on the top surface of the base, keep the stroke at 200mm or less.



■ Dimensions/Weight by Stroke * Brake-equipped models are heavier by 0.3kg.

Stroke	50	100	150	200	250	300	350	400
L	No Brake	279	329	379	429	479	529	579
	With Brake	318	368	418	468	518	568	618
M	122	172	222	272	322	372	422	472
N	50	100	100	200	200	300	300	400
P	35	85	85	185	185	285	285	385
R	22	22	72	22	72	22	72	22
U	-	1	1	2	2	3	3	4
m	4	4	4	6	6	8	8	10
Weight (kg)	0.7	0.8	0.9	1	1.1	1.2	1.3	1.4

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-20①②-NP-2-③	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	360VA max. * When operating a 150W single-axis model	→ P547
Solenoid Valve Mode			Operable with same controls as solenoid valve.	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to Pulse Train Input	(-)			
Program Control 1-2 Axis Type		SSEL-C-1-20 ①②-NP-2-③	Programmed operation is possible Can operate up to 2 axes	20000 points			→ P577
Program Control 1-6 Axis Type		XSEL-④-1-20①②-N1-EEE-2-⑤	Programmed operation is possible Can operate up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-axis model.
 * ① is a placeholder for the encoder type (I: incremental, A: absolute).
 * ② is a placeholder for the code "HA" when the high acceleration/deceleration option is specified.
 * ③ is a placeholder for the power supply voltage (1: single-phase 115V, 2: single phase 230V).
 * ④ is a placeholder for the XSEL type name (KE, KET, P, Q).
 * ⑤ is a placeholder for the power supply voltage type (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

RCS2-SA5C

RoboCylinder Slider Type 52mm Width 230V Servo Motor Coupled

■ Configuration: **RCS2** -- **SA5C** -- -- **20** -- -- -- -- --

Series -- Type -- Encoder -- Motor -- Lead -- Stroke -- Compatible Controllers -- Cable Length -- Option

I : Incremental
A: Absolute

20: 20W Servo motor

20 : 20mm
12 : 12mm
6 : 6mm
3 : 3mm

50: 50mm
500:500mm (50mm pitch increments)

T1: XSEL-KE/KET
T2: SCON
SSEL
XSEL-P/Q

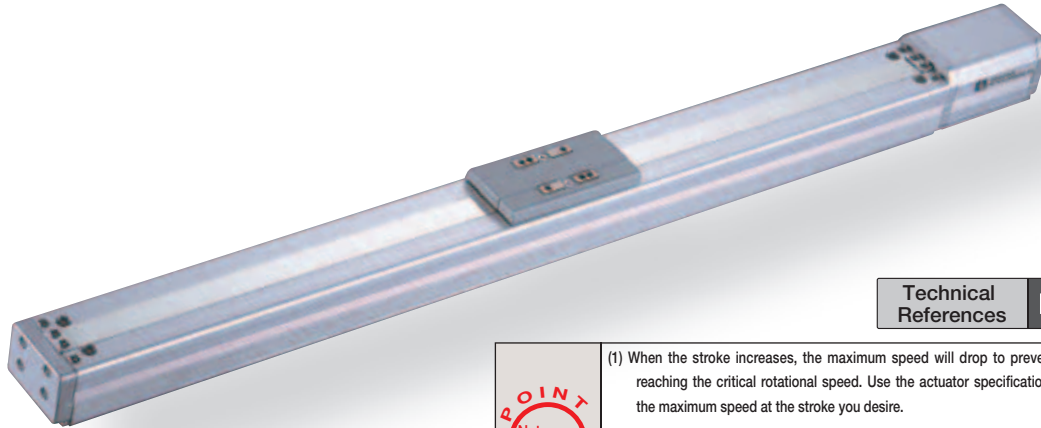
N : None
P : 1m
S : 3m
M : 5m
X : Custom Length
R : Robot Cable

See Options below

* See page Pre-35 for explanation of each code that makes up the configuration name.

For High Acceleration/Deceleration

(excluding the 3-mm lead model)



Technical References P. A-5

- POINT**
Notes on Selection
- When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
 - The load capacity is based on operation of standard model at 0.3G (0.2G for 3mm-lead), and operation of the high acceleration/deceleration model at 0.8G (excluding the 3mm-lead model). (Even when the acceleration/deceleration is dropped, the maximum load capacity values shown in the table below are the upper limits.)

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. Load Capacity		Rated Thrust (N)	Stroke (mm)
			Horizontal (kg)	Vertical (kg)		
RCS2-SA5C-①-20-20-②-③-④-⑤	20	20	2	0.5	9.9	50 ~ 500 (50mm increments)
RCS2-SA5C-①-20-12-②-③-④-⑤		12	4	1	16.7	
RCS2-SA5C-①-20-6-②-③-④-⑤		6	8	2	33.3	
RCS2-SA5C-①-20-3-②-③-④-⑤		3	12	4	65.7	

Stroke and Maximum Speed

Lead	Stroke	50 ~ 450	500
		(50mm increments)	(mm)
20	20	1300	1300
12	12	800	760
6	6	400	380
3	3	200	190

(Unit: mm/s)

Legend ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Option

Cable List

Type	Cable Symbol	
Standard	P (1m)	
	S (3m)	
	M (5m)	
Special Lengths	X06 (6m) ~ X10 (10m)	
	X11 (11m) ~ X15 (15m)	
	X16 (16m) ~ X20 (20m)	
Robot Cable	R01 (1m) ~ R03 (3m)	
	R04 (4m) ~ R05 (5m)	
	R06 (6m) ~ R10 (10m)	
	R11 (11m) ~ R15 (15m)	
	R16 (16m) ~ R20 (20m)	

* For cables for maintenance, see page A-39.

Option List

Name	Option Code	See Page
Brake	B	→ A-25
Foot bracket	FT	→ A-29
For High Acceleration/Deceleration	HA	→ A-32
Home sensor	HS	→ A-32
Reversed-home	NM	→ A-33
Slider Roller	SR	→ A-36

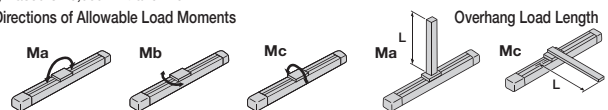
* The high-acceleration/deceleration option and the slider roller option cannot be used together.
* The high acceleration/deceleration option cannot be used on the 3mm-lead model.

Actuator Specifications

Item	Description
Drive System	Ball screw Ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (white alumite treated)
Allowable Static Moment	Ma: 18.6N·m Mb: 26.6N·m Mc: 47.5N·m
Allowable Dynamic Moment (*)	Ma: 4.9N·m Mb: 6.8N·m Mc: 11.7N·m
Overhang Load Length	Ma direction: 150mm or less Mb-Mc direction: 150mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (Non-condensing)

(*) Based on 5,000km travel life.

Directions of Allowable Load Moments



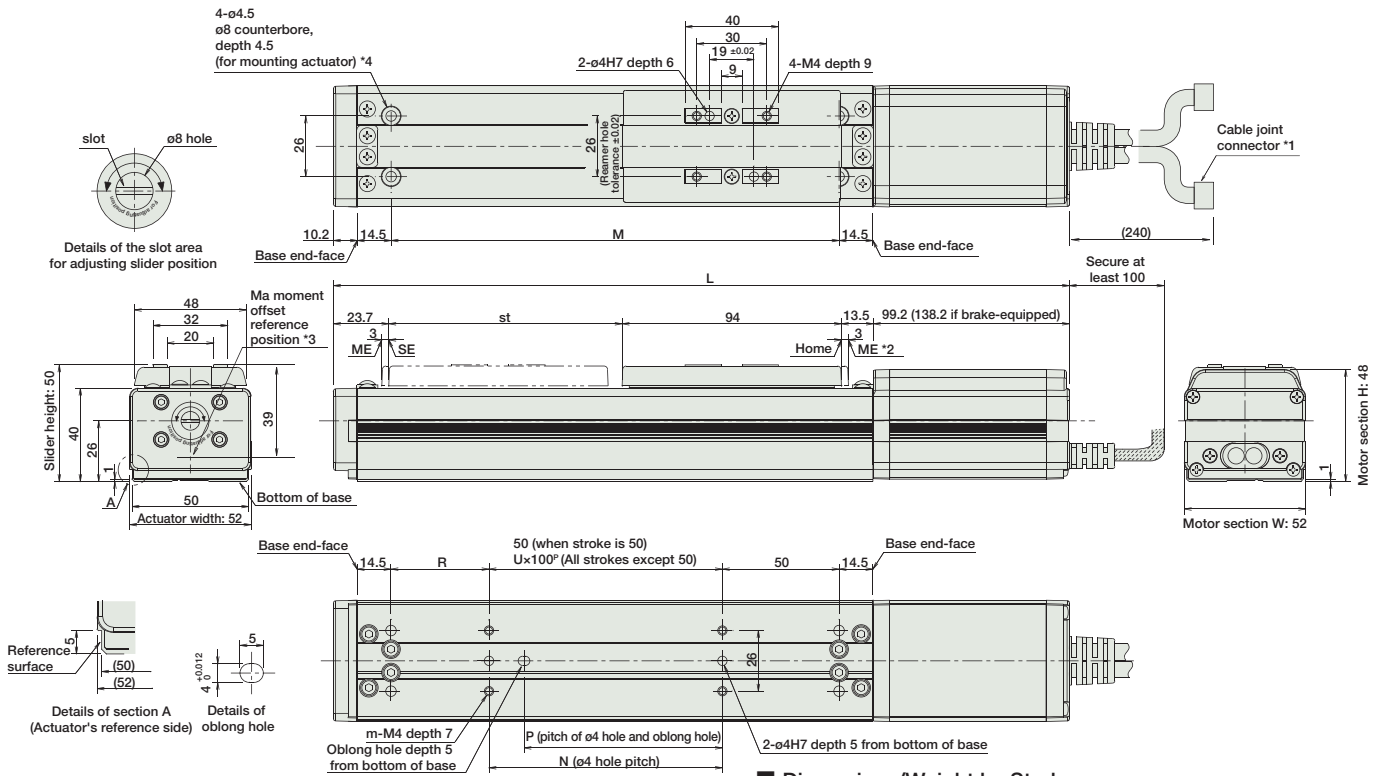
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9



- *1 A motor-encoder cable is connected here. See page A-39 for details on cables.
- *2 When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end
- *3 Reference position for calculating the moment Ma.
- *4 If the actuator is secured using only the mounting holes provided on the top surface of the base, the base may twist to cause abnormal sliding of the slider, or may produce abnormal noise. Therefore, when using the mounting holes on the top surface of the base, keep the stroke at 300mm or less.



■ Dimensions/Weight by Stroke * Brake-equipped models are heavier by 0.3kg.

Stroke	50	100	150	200	250	300	350	400	450	500
L	No Brake	280.4	330.4	380.4	430.4	480.4	530.4	580.4	630.4	730.4
	With Brake	319.4	369.4	419.4	469.4	519.4	569.4	619.4	669.4	769.4
M	142	192	242	292	342	392	442	492	542	592
N	50	100	100	200	200	300	300	400	400	500
P	35	85	85	185	185	285	285	385	385	485
R	42	42	92	42	92	42	92	42	92	42
U	-	1	1	2	2	3	3	4	4	5
m	4	4	4	6	6	8	8	10	10	12
Weight (kg)	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2	2.1	2.2

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-20①②-NP-2-③	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	360VA max. * When operating a 150W single-axis model	→ P547
Solenoid Valve Mode			Operable with same controls as solenoid valve.	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to Pulse Train Input	(-)			
Program Control 1-2 Axis Type		SSEL-C-1-20①②-NP-2-③	Programmed operation is possible Can operate up to 2 axes	20000 points			→ P577
Program Control 1-6 Axis Type		XSEL-④-1-20①②-N1-EEE-2-⑤	Programmed operation is possible Can operate up to 6 axes	20000 points			→ P587

- * For SSEL and XSEL, only applicable to the single-axis model.
- * ① is a placeholder for the encoder type (I: incremental, A: absolute).
- * ② is a placeholder for the code "HA" when the high acceleration/deceleration option is specified.
- * ③ is a placeholder for the power supply voltage (1: single-phase 115V, 2: single phase 230V).
- * ④ is a placeholder for the XSEL type name (KE, KET, P, Q).
- * ⑤ is a placeholder for the power supply voltage type (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

Slider Type

Mini

Standard

Controllers Integrated

Rod Type

Mini

Standard

Controllers Integrated

Table/Arm /Flat Type

Mini

Standard

Gripper/ Rotary Type

Linear Motor Type

Cleanroom Type

Splash-Proof

Controllers

PMEC /AMEC

PSEP /ASEP

ROBO NET

ERC2

PCON

ACON

SCON

PSEL

ASEL

SSEL

XSEL

Pulse Motor

Servo Motor (24V)

Servo Motor (230V)

Linear Motor

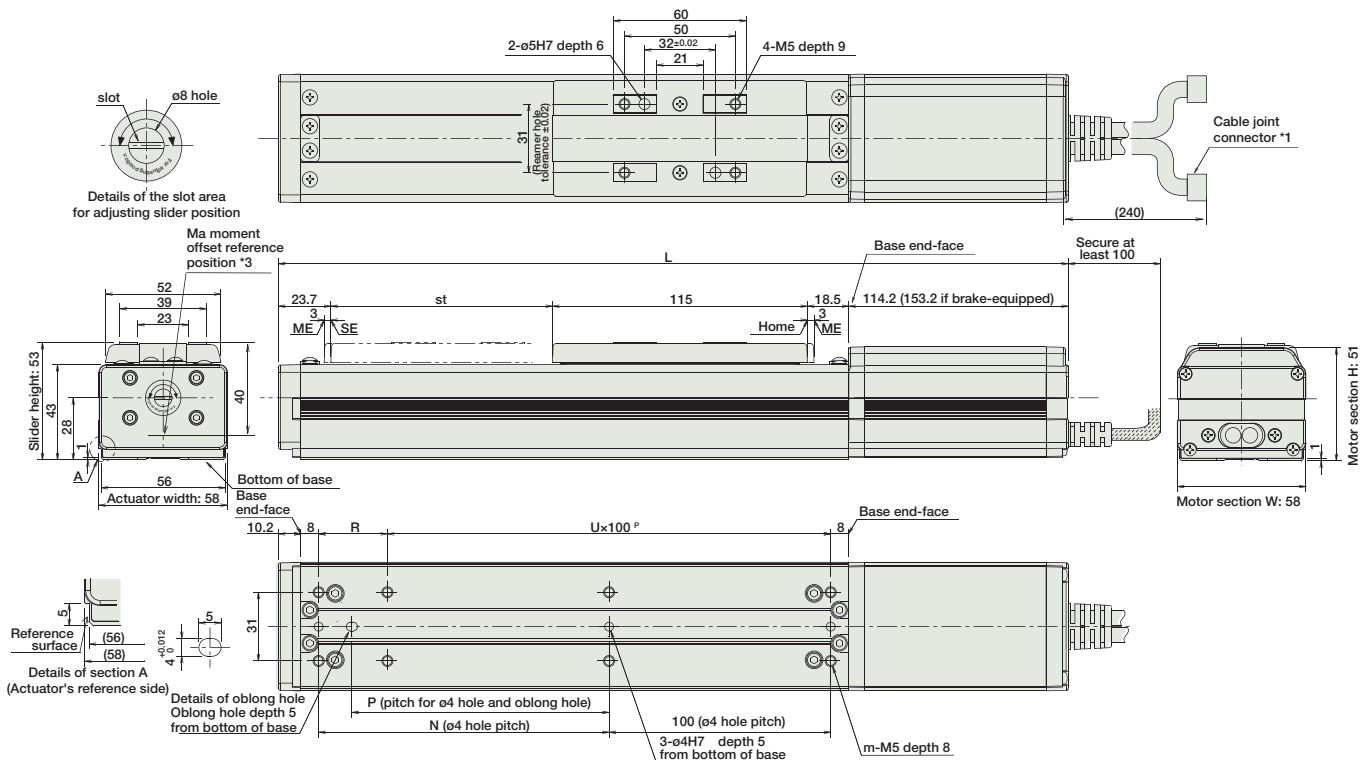
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For Special Orders P. A-9



- *1 A motor-encoder cable is connected here. See page A-39 for details on cables.
- *2 When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end
- *3 Reference position for calculating the moment Ma.



Dimensions/Weight by Stroke

* Brake-equipped models are heavier by 0.3kg.

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	
L	No Brake	321.4	371.4	421.4	471.4	521.4	571.4	621.4	671.4	721.4	771.4	821.4	871.4
	With Brake	360.4	410.4	460.4	510.4	560.4	610.4	660.4	710.4	760.4	810.4	860.4	910.4
N	81	131	181	231	281	331	381	431	481	531	581	631	
P	66	116	166	216	266	316	366	416	466	516	566	616	
R	81	31	81	31	81	31	81	31	81	31	81	31	
U	1	2	2	3	3	4	4	5	5	6	6	7	
m	6	8	8	10	10	12	12	14	14	16	16	18	
Weight (kg)	1.4	1.6	1.8	2	2.2	2.4	2.6	2.8	3	3.2	3.4	3.6	

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-30D ①②-NP-2-③	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	360VA max. * When operating a 150W single-axis model	→ P547
Solenoid Valve Mode			Operable with same controls as solenoid valve.	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to Pulse Train Input	(-)			
Program Control 1-2 Axis Type		SSEL-C-1-30D ①②-NP-2-③	Programmed operation is possible. Can operate up to 2 axes	20000 points			→ P577
Program Control 1-6 Axis Type		XSEL-4-1-30D ①②-N1-EEE-2-⑤	Programmed operation is possible. Can operate up to 6 axes	20000 points			→ P587

- * For SSEL and XSEL, only applicable to the single-axis model.
- * ① is a placeholder for the encoder type (I: incremental, A: absolute).
- * ② is a placeholder for the code "HA" when the high acceleration/deceleration option is specified.
- * ③ is a placeholder for the power supply voltage (1: single-phase 115V, 2: single phase 230V).
- * ④ is a placeholder for the XSEL type name (KE, KET, P, Q).
- * ⑤ is a placeholder for the power supply voltage type (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

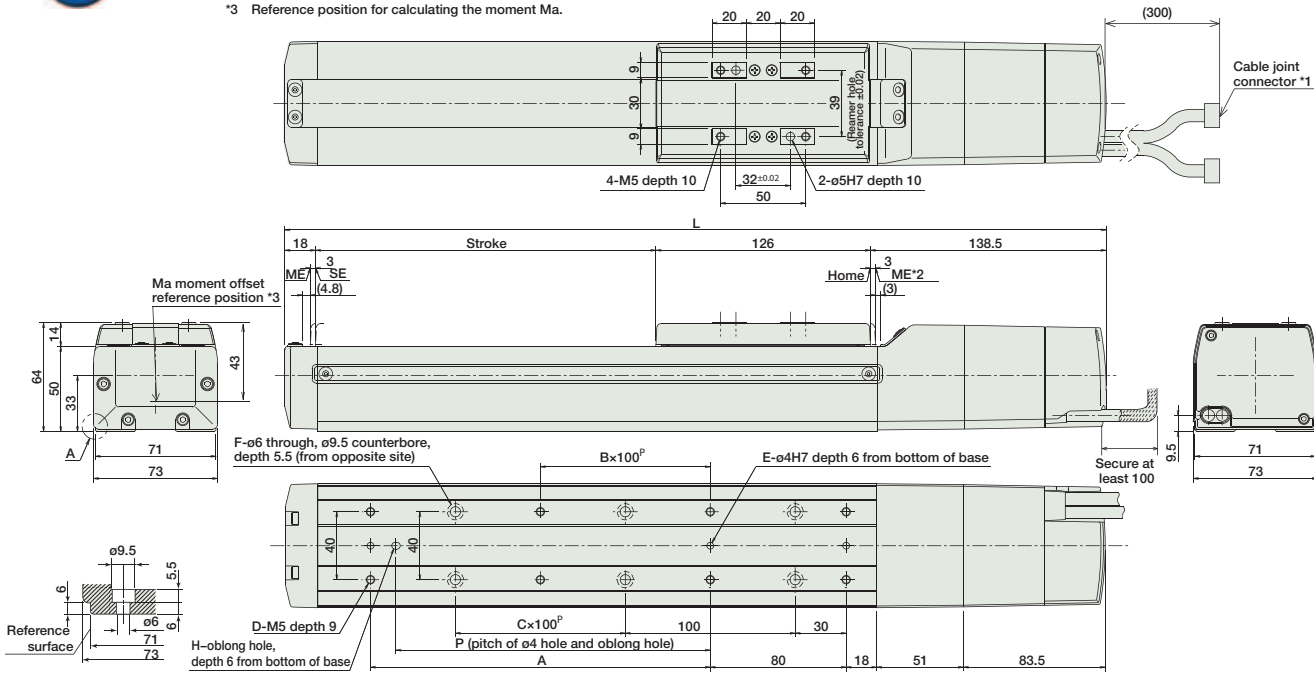
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

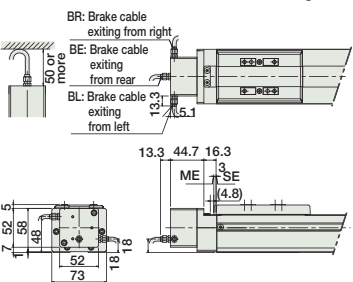


- *1 A motor-encoder cable is connected here. See page A-39 for details on cables.
- *2 When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end
- *3 Reference position for calculating the moment Ma.



Dimensions of the Brake Section

* Adding a brake will increase the actuator's overall length by 43mm (56.3mm with the cable coming out the end), and its weight by 0.6kg.



Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	332.5	382.5	432.5	482.5	532.5	582.5	632.5	682.5	732.5	782.5	832.5	882.5	932.5	982.5	1032.5	1082.5
A	0	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800
B	0	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7
C	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7
D	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20
E	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
F	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18
H	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
P	0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785
Weight (kg)	2.4	2.6	2.8	3.0	3.3	3.5	3.7	3.9	4.2	4.4	4.6	4.8	5.1	5.3	5.5	5.7

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-60①②-NP-2-③	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	360VA max. * When operating a 150W single-axis model	→ P547
Solenoid Valve Mode			Operable with same controls as solenoid valve.	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to Pulse Train Input	(-)			
Program Control 1-2 Axis Type		SSEL-C-1-60①②-NP-2-③	Programmed operation is possible. Can operate up to 2 axes	20000 points			→ P577
Program Control 1-6 Axis Type		XSEL-④-1-60①②-N1-EEE-2-⑤	Programmed operation is possible. Can operate up to 6 axes	20000 points			→ P587

- * For SSEL and XSEL, only applicable to the single-axis model.
- * ① is a placeholder for the encoder type (I: incremental, A: absolute).
- * ② is a placeholder for the code "HA" when the high acceleration/deceleration option is specified.
- * ③ is a placeholder for the power supply voltage (1: single-phase 115V, 2: single phase 230V).
- * ④ is a placeholder for the XSEL type name (KE, KET, P, Q).
- * ⑤ is a placeholder for the power supply voltage type (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

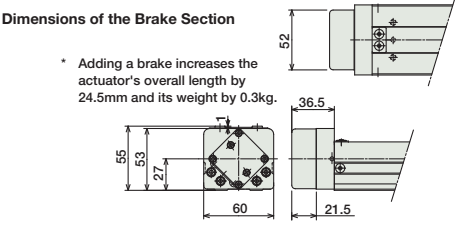
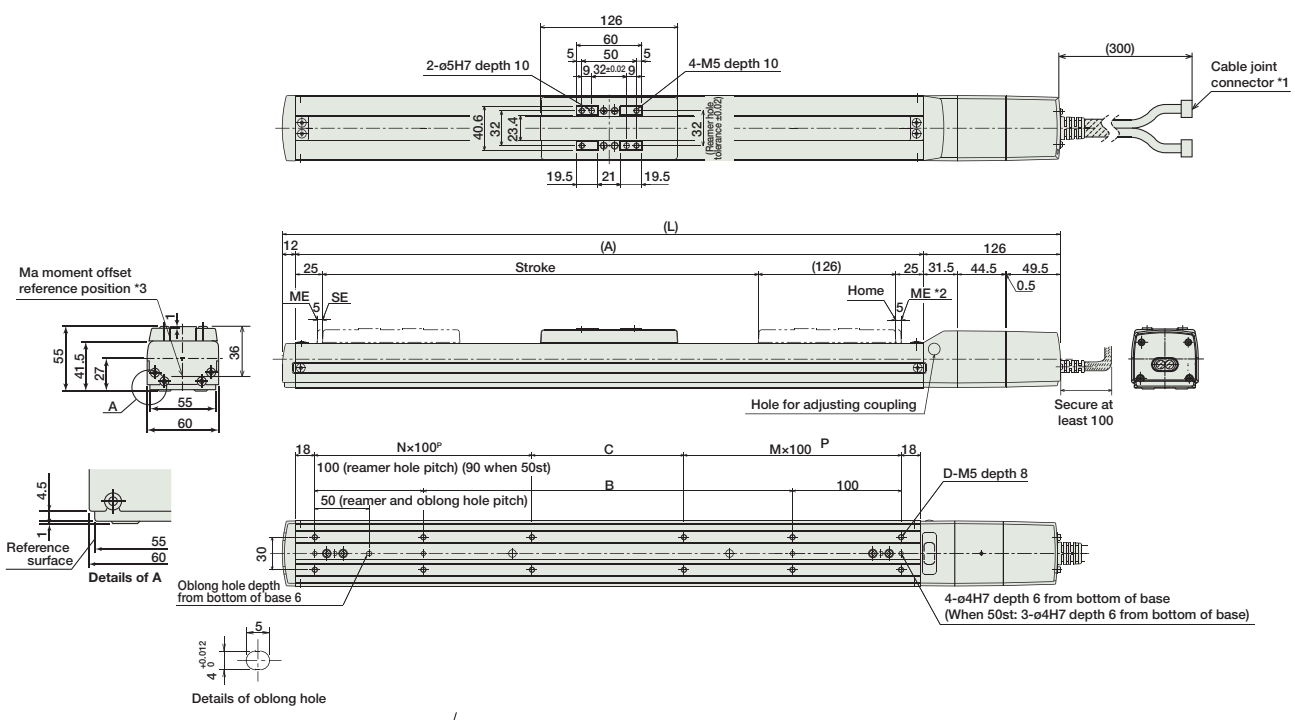
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9



- *1 A motor-encoder cable is connected here. See page A-39 for details on cables.
- *2 When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end
- *3 Reference position for calculating the moment Ma.



* Adding a brake increases the actuator's overall length by 24.5mm and its weight by 0.3kg.

■ Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600
L	364	414	464	514	564	614	664	714	764	814	864	914
A	226	276	326	376	426	476	526	576	626	676	726	776
B	0	40	90	140	190	240	290	340	390	440	490	540
C	90	40	90	140	190	240	290	340	390	440	490	540
D	6	8	8	8	8	12	12	12	12	16	16	16
M	1	1	1	1	1	2	2	2	2	3	3	3
N	0	1	1	1	1	2	2	2	2	3	3	3
Weight (kg)	4.9	3.2	3.5	3.8	4.2	4.5	4.8	5.1	5.5	5.8	6.1	6.4

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-60①-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	360VA max. * When operating a 150W single-axis model	→ P547
Solenoid Valve Mode			Operable with same controls as solenoid valve.	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to Pulse Train Input	(-)			
Program Control 1-2 Axis Type		SSEL-C-1-60①-NP-2-②	Programmed operation is possible Can operate up to 2 axes	20000 points			→ P577
Program Control 1-6 Axis Type		XSEL-③-1-60①-N1-EEE-2-④	Programmed operation is possible Can operate up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-axis model.
 * ① is a placeholder for the encoder type (I: incremental, A: absolute).
 * ② is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
 * ③ is a placeholder for the XSEL type name (KE, KET, P, or Q).
 * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

RCS2-SS8C RoboCylinder Slider Type 80mm Width 230V Servo Motor Coupled Steel Base

■ Configuration: **RCS2** — **SS8C** — [] — [] — [] — [] — [] — [] — []

Series — Type — Encoder — Motor — Lead — Stroke — Compatible Controllers — Cable Length — Option

I : Incremental
A: Absolute

100: 100W Servo motor
150: 150W Servo motor

20: 20mm
10: 10mm

50: 50mm
1000: 1000mm (50mm pitch increments)

T1: XSEL-KE/KET
T2: SCON
SSEL
XSEL-P/Q

N : None
P : 1m
S : 3m
M : 5m
X [] : Custom Length
R [] : Robot Cable

B : Brake
NM : Reversed-home
SR : Slider Roller

* See page Pre-35 for explanation of each code that makes up the configuration name.



Technical References P. A-5

- POINT**
Notes on Selection
- When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
 - The load capacity is based on operation at an acceleration of 0.3G. These values are the upper limits for the acceleration.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. Load Capacity		Rated Thrust (N)	Stroke (mm)
			Horizontal (kg)	Vertical (kg)		
RCS2-SS8C-①-100-20-②-③-④-⑤	100	20	20	4	84.9	50 ~ 1000 (50mm increments)
RCS2-SS8C-①-100-10-②-③-④-⑤		10	40	8	169	
RCS2-SS8C-①-150-20-②-③-④-⑤	150	20	30	6	128	
RCS2-SS8C-①-150-10-②-③-④-⑤		10	60	12	256	

Legend ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options

Stroke and Maximum Speed

Stroke Lead	50 ~ 600 (50mm increments)	~ 700 (mm)	~ 800 (mm)	~ 900 (mm)	~ 1000 (mm)
	20	1000	960	765	625
10	500	480	380	310	255

(Unit: mm/s)

Cable List

Type	Cable Symbol	
Standard	P (1m)	
	S (3m)	
	M (5m)	
Special Lengths	X06 (6m) ~ X10 (10m)	
	X11 (11m) ~ X15 (15m)	
	X16 (16m) ~ X20 (20m)	
Robot Cable	R01 (1m) ~ R03 (3m)	
	R04 (4m) ~ R05 (5m)	
	R06 (6m) ~ R10 (10m)	
	R11 (11m) ~ R15 (15m)	
	R16 (16m) ~ R20 (20m)	

* For cables for maintenance, see page A-39.

Option List

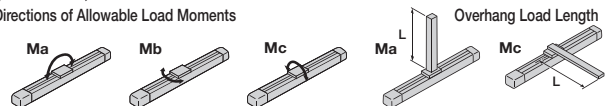
Name	Option Code	See Page
Brake	B	→ A-25
Reversed-home	NM	→ A-33
Slider Roller	SR	→ A-36

Actuator Specifications

Item	Description
Drive System	Ball screw ø16mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Special alloy steel
Allowable Static Moment	Ma: 198.9 N·m Mb: 198.9 N·m Mc: 416.7 N·m
Allowable Dynamic Moment (*)	Ma: 36.3 N·m Mb: 36.3 N·m Mc: 77.4 N·m
Overhang Load Length	Ma direction: 450mm or less Mb-Mc direction: 450mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (Non-condensing)

(*) Based on 10,000km travel life.

Directions of Allowable Load Moments



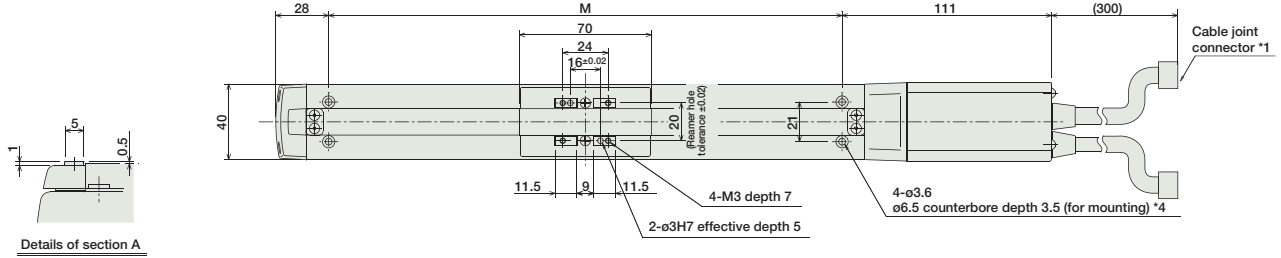
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

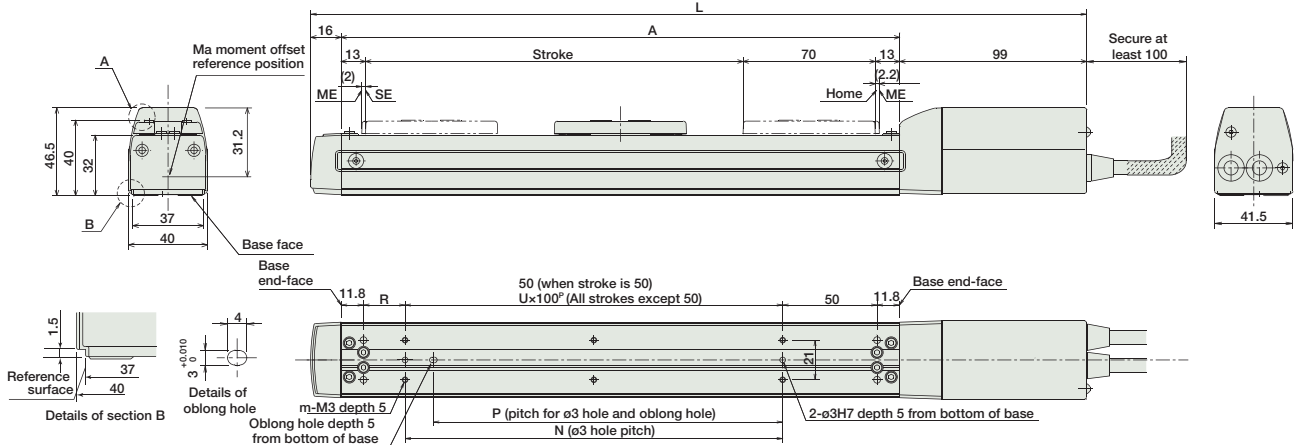


- *1 A motor-encoder cable is connected here. See page A-39 for details on cables.
- *2 When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end
- *3 Reference position for calculating the moment M_a .
- *4 If the actuator is secured using only the mounting holes provided on the top surface of the base, the base may twist to cause abnormal sliding of the slider, or may produce abnormal noise. Therefore, when using the mounting holes on the top surface of the base, keep the stroke at 200mm or less.

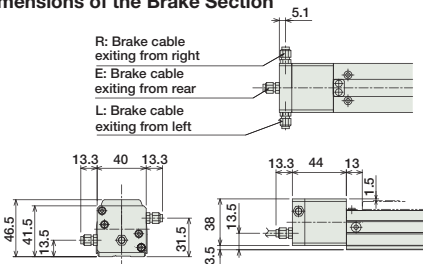
For Special Orders P. A-9



Details of section A



Dimensions of the Brake Section



* Adding a brake increases the actuator's overall length (L) by 28mm (41.3mm with the cable coming out its end), and its weight by 0.2kg.

Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300
L	261	311	361	411	461	511
A	146	196	246	296	346	396
M	122	172	222	272	322	372
N	50	100	100	200	200	300
P	35	85	85	185	185	285
R	22	22	72	22	72	22
U	-	1	1	2	2	3
m	4	4	4	6	6	8
Weight (kg)	0.8	0.9	1.0	1.1	1.2	1.3

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-20①-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	360VA max. * When operating a 150W single-axis model	→ P547
Solenoid Valve Mode			Operable with same controls as solenoid valve.	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to Pulse Train Input	(-)			
Program Control 1-2 Axis Type		SSEL-C-1-20①-NP-2-②	Programmed operation is possible Can operate up to 2 axes	20000 points			→ P577
Program Control 1-6 Axis Type		XSEL-③-1-20①-N1-EEE-2-④	Programmed operation is possible Can operate up to 6 axes	20000 points			→ P587

- * For SSEL and XSEL, only applicable to the single-axis model.
- * ① is a placeholder for the encoder type (I: incremental, A: absolute).
- * ② is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
- * ③ is a placeholder for the XSEL type name (KE, KET, P, or Q).
- * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

Slider Type

Mini

Standard

Controllers Integrated

Rod Type

Mini

Standard

Controllers Integrated

Table/Arm /Flat Type

Mini

Standard

Gripper/ Rotary Type

Linear Motor Type

Cleanroom Type

Splash-Proof

Controllers

PMEC /AMEC

PSEP /ASEP

ROBO NET

ERC2

PCON

ACON

SCON

PSEL

ASEL

SSEL

XSEL

Pulse Motor

Servo Motor (24V)

Servo Motor (230V)

Linear Motor

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

RCS2-SA5D

RoboCylinder Slider Type 52mm Width 230V Servo Motor
Motor Built-In (Direct Coupled)

■ Configuration: **RCS2** - **SA5D** - [] - **20** - [] - [] - [] - []

Series - Type - Encoder - Motor - Lead - Stroke - Compatible Controllers - Cable Length - Option

I : Incremental
A: Absolute

20: 20W Servo motor

12: 12mm
6: 6mm
3: 3mm

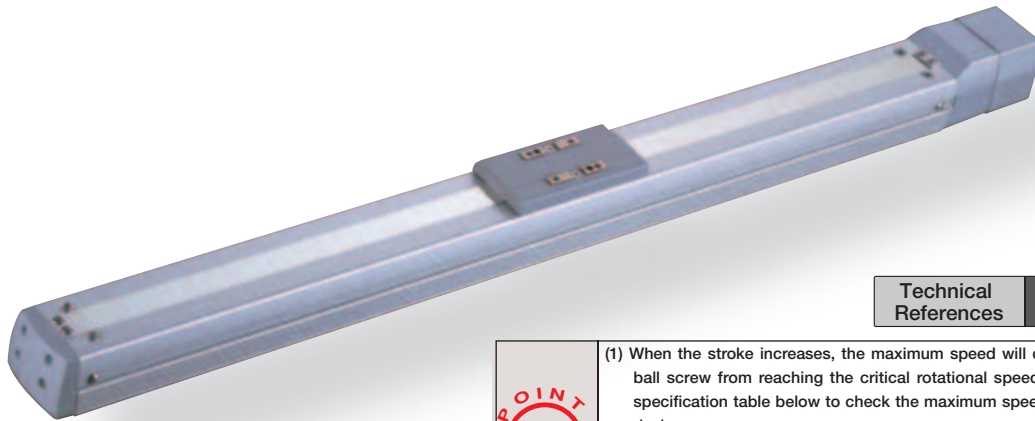
50: 50mm
500: 500mm (50mm pitch increments)

T1: XSEL-KE/KET
T2: SCON
SSEL
XSEL-P/Q

N : None
P : 1m
S : 3m
M : 5m
X [] : Custom Length
R [] : Robot Cable

BE : Brake (Cable exiting end)
BL : Brake (Cable exiting left)
BR : Brake (Cable exiting right)
NM: Reversed-home
SR : Slider Roller

* See page Pre-35 for explanation of each code that makes up the configuration name.



Technical References P. A-5

- POINT**
Notes on Selection
- (1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
 - (2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model). These values are the upper limits for the acceleration.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. Load Capacity		Rated Thrust (N)	Stroke (mm)
			Horizontal (kg)	Vertical (kg)		
RCS2-SA5D-①-20-12-②-③-④-⑤	20	12	4	1	16.7	50 ~ 500 (50mm increments)
RCS2-SA5D-①-20-6-②-③-④-⑤		6	8	2	33.3	
RCS2-SA5D-①-20-3-②-③-④-⑤		3	12	4	65.7	

Legend ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options

Stroke and Maximum Speed

Lead	Stroke	50 ~ 450	500
		(50mm increments)	(mm)
12	12	800	760
6	6	400	380
3	3	200	190

(Unit: mm/s)

Cable List

Type	Cable Symbol
Standard	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
Robot Cable	R01 (1m) ~ R03 (3m)
	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* For cables for maintenance, see page A-39.

Option List

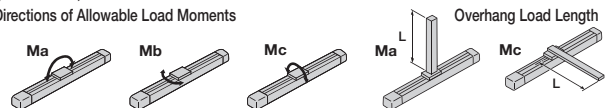
Name	Option Code	See Page
Brake (Cable exiting end)	BE	→ A-25
Brake (Cable exiting left)	BL	→ A-25
Brake (Cable exiting right)	BR	→ A-25
Reversed-home	NM	→ A-33
Slider Roller	SR	→ A-36

Actuator Specifications

Item	Description
Drive System	Ball screw Ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (white alumite treated)
Allowable Static Moment	Ma: 18.6N·m Mb: 26.6N·m Mc: 47.5N·m
Allowable Dynamic Moment (*)	Ma: 4.9N·m Mb: 6.8N·m Mc: 11.7N·m
Overhang Load Length	Ma direction: 150mm or less Mb-Mc direction: 150mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (Non-condensing)

(*) Based on 5,000km travel life.

Directions of Allowable Load Moments

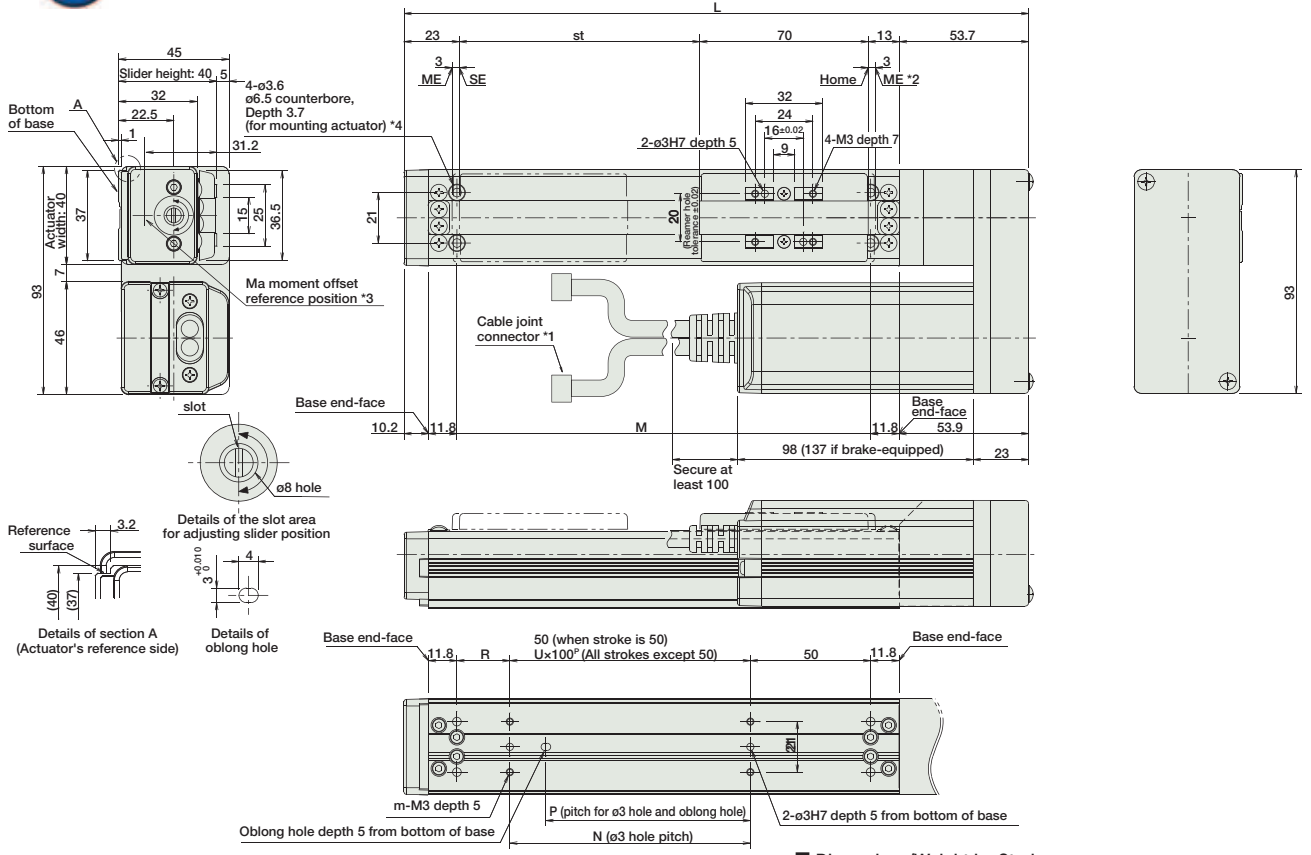


Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD



■ Dimensions/Weight by Stroke * Brake-equipped models are heavier by 0.3kg.

Stroke	50	100	150	200	250	300	350	400
L	209.7	259.7	309.7	359.7	409.7	459.7	509.7	559.7
M	122	172	222	272	322	372	422	472
N	50	100	100	200	200	300	300	400
P	35	85	85	185	185	285	285	385
R	22	22	72	22	72	22	72	22
U	-	1	1	2	2	3	3	4
m	4	4	4	6	6	8	8	10
Weight (kg)	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5

- *1 The motor-encoder cable is connected here. See page A-39 for details on cables.
- *2 When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end
- *3 Reference position for calculating the moment Ma.
- *4 If the actuator is secured using only the mounting holes provided on the top surface of the base, the base may twist to cause abnormal sliding of the slider, or may produce abnormal noise. Therefore, when using the mounting holes on the top surface of the base, keep the stroke at 200mm or less.

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-20①-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	360VA max. * When operating a 150W single-axis model	→ P547
Solenoid Valve Mode			Operable with same controls as solenoid valve.	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to Pulse Train Input	(-)			
Program Control 1-2 Axis Type		SSEL-C-1-20①-NP-2-②	Programmed operation is possible Can operate up to 2 axes	20000 points			→ P577
Program Control 1-6 Axis Type		XSEL-③-1-20①-N1-EEE-2-④	Programmed operation is possible Can operate up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-axis model.
 * ① is a placeholder for the encoder type (I: incremental, A: absolute).
 * ② is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
 * ③ is a placeholder for the XSEL type name (KE, KET, P, or Q).
 * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

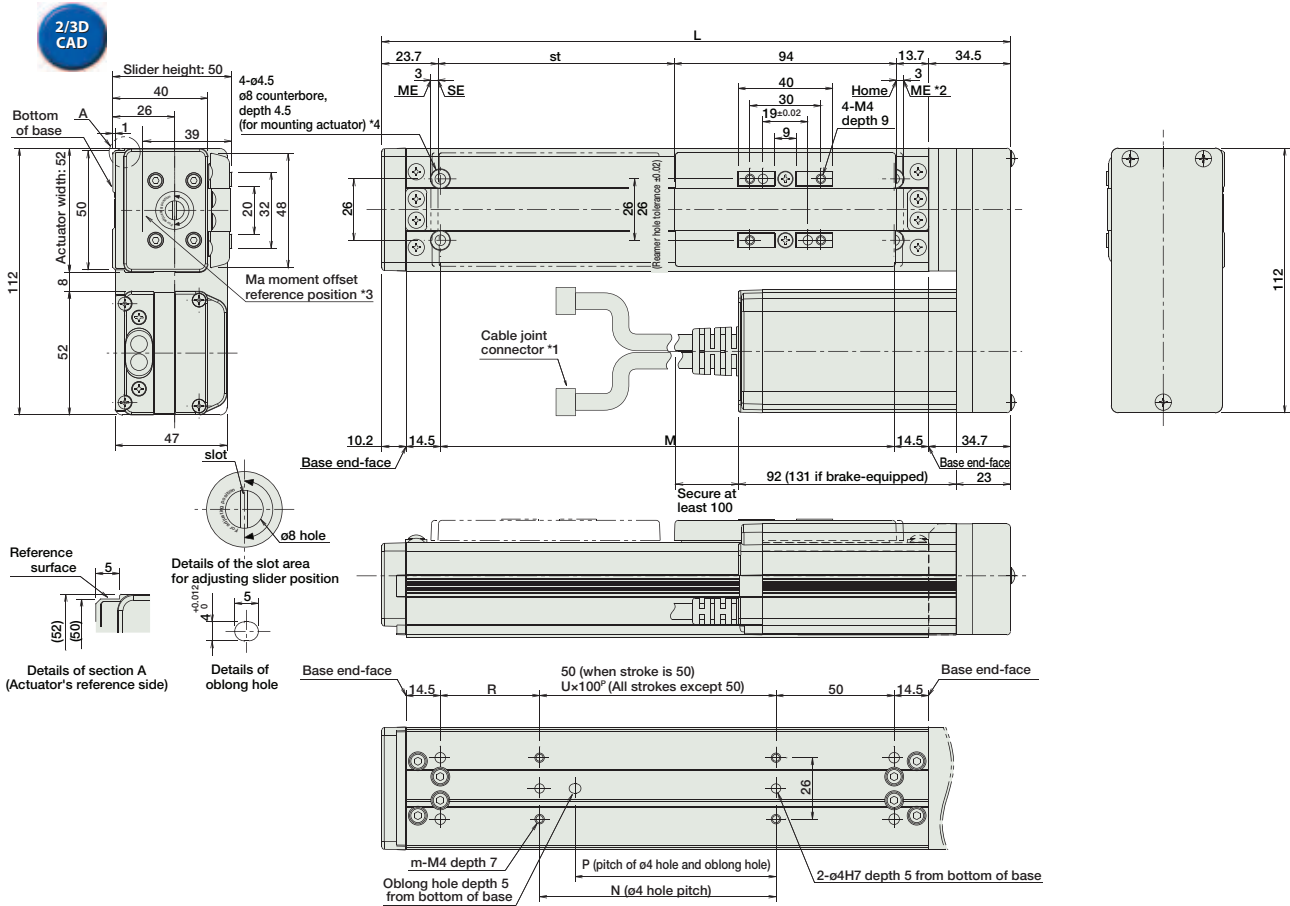
- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders

P. A-9



- *1 The motor-encoder cable is connected here. See page A-39 for details on cables.
- *2 When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end
- *3 Reference position for calculating the moment Ma.
- *4 If the actuator is secured using only the mounting holes provided on the top surface of the base, the base may twist to cause abnormal sliding of the slider, or may produce abnormal noise. Therefore, when using the mounting holes on the top surface of the base, keep the stroke at 300mm or less.

■ Dimensions/Weight by Stroke

* Brake-equipped models are heavier by 0.3kg.

Stroke	50	100	150	200	250	300	350	400	450	500
L	215.9	265.9	315.9	365.9	415.9	465.9	515.9	565.9	615.9	665.9
M	142	192	242	292	342	392	442	492	542	592
N	50	100	100	200	200	300	300	400	400	500
P	35	85	85	185	185	285	285	385	385	485
R	42	42	92	42	92	42	92	42	92	42
U	-	1	1	2	2	3	3	4	4	5
m	4	4	4	6	6	8	8	10	10	12
Weight (kg)	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-20①-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	360VA max. * When operating a 150W single-axis model	→ P547
Solenoid Valve Mode			Operable with same controls as solenoid valve.	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to Pulse Train Input	(-)			
Program Control 1-2 Axis Type		SSEL-C-1-20①-NP-2-②	Programmed operation is possible Can operate up to 2 axes	20000 points			→ P577
Program Control 1-6 Axis Type		XSEL-③-1-20①-N1-EEE-2-④	Programmed operation is possible Can operate up to 6 axes	20000 points			→ P587

- * For SSEL and XSEL, only applicable to the single-axis model.
- * ① is a placeholder for the encoder type (I: incremental, A: absolute).
- * ② is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
- * ③ is a placeholder for the XSEL type name (KE, KET, P, or Q).
- * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

Slider Type

Mini

Standard

Controllers Integrated

Rod Type

Mini

Standard

Controllers Integrated

Table/Arm /Flat Type

Mini

Standard

Gripper/ Rotary Type

Linear Motor Type

Cleanroom Type

Splash-Proof

Controllers

PMEC /AMEC

PSEP /ASEP

ROBO NET

ERC2

PCON

ACON

SCON

PSEL

ASEL

SSEL

XSEL

Pulse Motor

Servo Motor (24V)

Servo Motor (230V)

Linear Motor

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

RCS2-SA6R

RoboCylinder Slider Type 58mm Width 230V Servo Motor Side Mounted Motor

■ Configuration: **RCS2** - **SA6R** - - **30** - - - - -

Series - Type - Encoder - Motor - Lead - Stroke - Compatible Controllers - Cable Length - Option

I : Incremental 30: 30W Servo motor 12: 12mm 50: 50mm T1: XSEL-KE/KET N : None See Options below
 A : Absolute motor 6: 6mm 600: 600mm T2: SCON P : 1m * Be sure to specify which
 3: 3mm (50mm pitch SSEL S : 3m side the motor is to be
 increments) XSEL-P/Q M : 5m mounted (ML/MR).
 X : Custom Length
 R : Robot Cable

* See page Pre-35 for explanation of each code that makes up the configuration name.



Pictured: Left-mounted motor model (ML).

Technical References P. A-5

- POINT**
Notes on Selection
- When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
 - The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model). These values are the upper limits for the acceleration.

Actuator Specifications							Stroke and Maximum Speed				
■ Lead and Load Capacity											
Model	Motor Output (W)	Lead (mm)	Max. Load Capacity		Rated Thrust (N)	Stroke (mm)	Stroke / Lead	50 ~ 450 (50mm increments)	500 (mm)	550 (mm)	600 (mm)
RCS2-SA6R-①-30-12-②-③-④-⑤	30	12	6	1.5	24.2	50 ~ 600 (50mm increments)	12	800	760	640	540
RCS2-SA6R-①-30-6-②-③-④-⑤		6	12	3	48.4		6	400	380	320	270
RCS2-SA6R-①-30-3-②-③-④-⑤		3	18	6	96.8		3	200	190	160	135

Legend ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options (Unit: mm/s)

Type	Cable Symbol
Standard	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
Robot Cable	R01 (1m) ~ R03 (3m)
	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

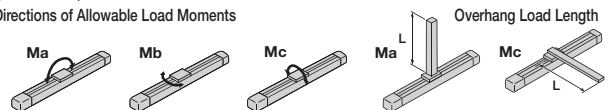
* For cables for maintenance, see page A-39.

Name	Option Code	See Page
Brake	B	→ A-25
Home sensor	HS	→ A-32
Reversed-home	NM	→ A-33
Left-Mounted Motor (Standard)	ML	→ A-33
Right-Mounted Motor	MR	→ A-33
Slider Roller	SR	→ A-36

Item	Description
Drive System	Ball screw Ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (white alumite treated)
Allowable Static Moment	Ma: 38.3N·m Mb: 54.7N·m Mc: 81.0N·m
Allowable Dynamic Moment (*)	Ma: 8.9 N·m Mb: 12.7 N·m Mc: 18.6 N·m
Overhang Load Length	Ma direction: 220mm or less Mb-Mc direction: 220mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (Non-condensing)

(*) Based on 5,000km travel life.

Directions of Allowable Load Moments



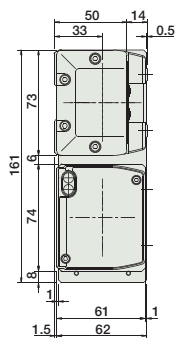
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9



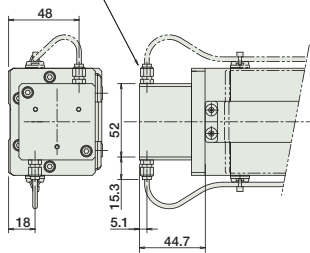
* The reference surface is the same as the SA7C type. (See P106)
 * The offset reference position for the moment Ma is the same as the SA7C type. (See P106)



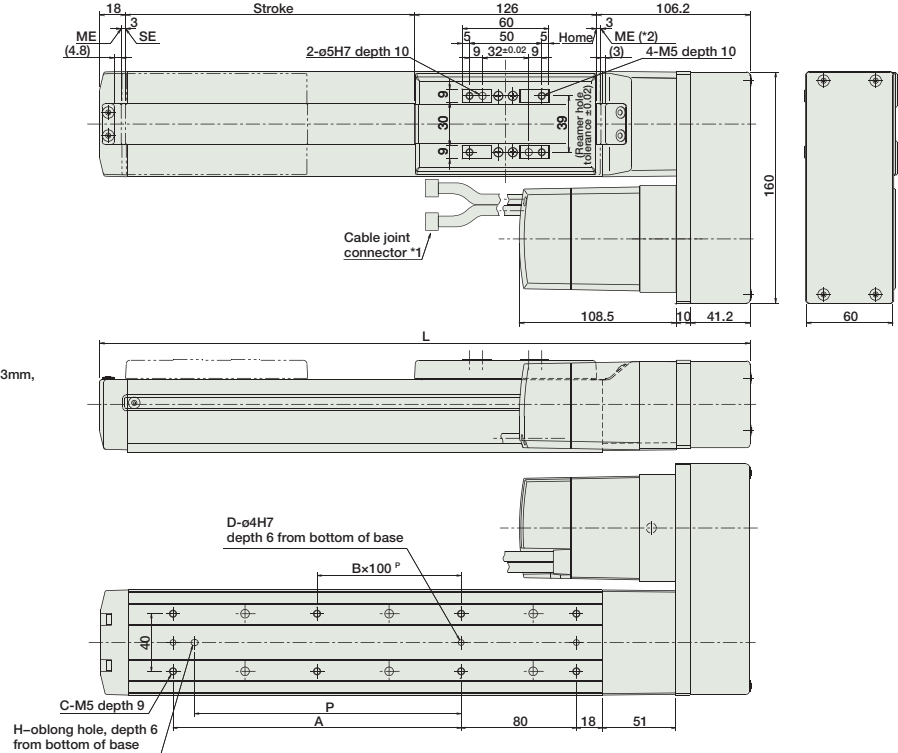
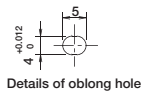
Dimensions of the Brake Section

* Adding a brake will increase the actuator's overall length by 43mm, and its weight by 0.6kg.

Mounting direction: symmetrically opposite



* For brake cable exiting from the side, it can only exit from the motor side.



Memo:
ME: Mechanical end, SE: Stroke end

■ Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	300.2	350.2	400.2	450.2	500.2	550.2	600.2	650.2	700.2	750.2	800.2	850.2	900.2	950.2	1000.2	1050.2
A	0	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800
B	0	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7
C	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20
D	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
H	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
P	0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785
Weight (kg)	4.0	4.2	4.4	4.6	4.9	5.1	5.3	5.5	5.8	6.0	6.2	6.4	6.7	6.9	7.1	7.3

*1 A motor-encoder cable is connected here. See page A-39 for details on cables.
 *2 When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.
 ME: Mechanical end SE: Stroke end

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-60①-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	360VA max. * When operating a 150W single-axis model	→ P547
Solenoid Valve Mode			Operable with same controls as solenoid valve.	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to Pulse Train Input	(-)			
Program Control 1-2 Axis Type		SSEL-C-1-60①-NP-2-①	Programmed operation is possible Can operate up to 2 axes	20000 points			→ P577
Program Control 1-6 Axis Type		XSEL-③-1-60①-N1-EEE-2-④	Programmed operation is possible Can operate up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-axis model.
 * ① is a placeholder for the encoder type (I: incremental, A: absolute).
 * ② is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
 * ③ is a placeholder for the XSEL type name (KE, KET, P, or Q).
 * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

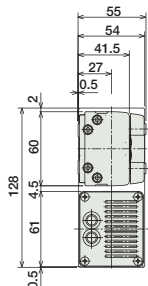
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

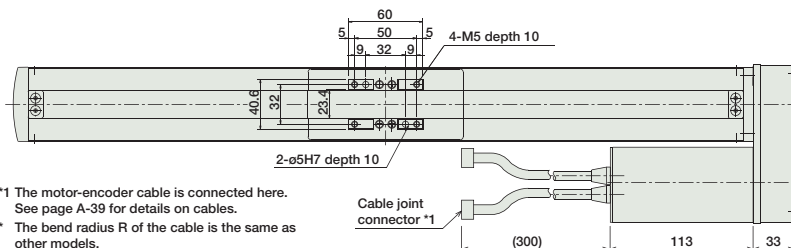
For Special Orders P. A-9



*The reference surface is the same as the SS7C type. (See P108)
 *The offset reference position for the moment Ma is the same as the SS7C type. (See P108)

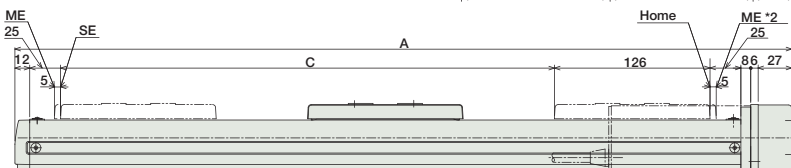


* Note that in order to change the home orientation, arrangements must be made to send in the product to IAI.
 * For the reversed-home model, the dimensions (distance from the ME to home) on the motor-side and that on the opposite side are flipped.

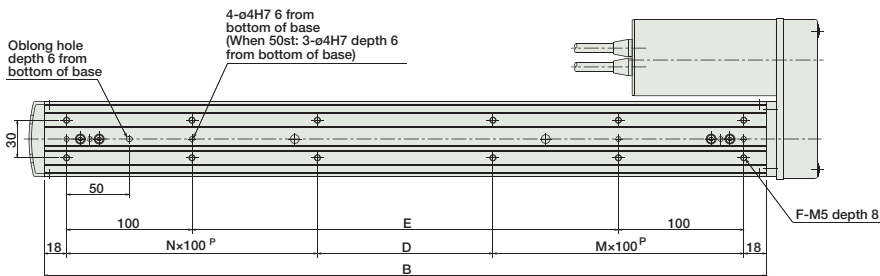
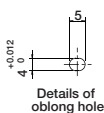


*1 The motor-encoder cable is connected here. See page A-39 for details on cables.
 * The bend radius R of the cable is the same as other models.

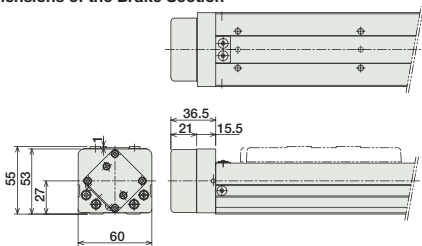
*2 When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects. SE: Stroke end ME: Mechanical end



* Adding a brake increases the actuator's overall length by 24.5mm and its weight by 0.3kg.



Dimensions of the Brake Section



■ Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600
A	279	329	379	429	479	529	579	629	679	729	779	829
B	226	276	326	376	426	476	526	576	626	676	726	776
C	50	100	150	200	250	300	350	400	450	500	550	600
D	90	40	90	140	190	40	90	140	190	40	90	140
E	0	40	90	140	190	240	290	340	390	440	490	540
F	6	8	8	8	8	12	12	12	12	16	16	16
M	1	1	1	1	1	2	2	2	2	3	3	3
N	0	1	1	1	1	2	2	2	2	3	3	3
Weight (kg)	3.7	4.0	4.3	4.6	4.9	5.2	5.5	5.8	6.1	6.4	6.7	7.0

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-60①-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	360VA max. * When operating a 150W single-axis model	→P547
Solenoid Valve Mode			Operable with same controls as solenoid valve.	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to Pulse Train Input	(-)			
Program Control 1-2 Axis Type		SSEL-C-1-60①-NP-2-②	Programmed operation is possible Can operate up to 2 axes	20000 points			→P577
Program Control 1-6 Axis Type		XSEL-③-1-60①-N1-EEE-2-④	Programmed operation is possible Can operate up to 6 axes	20000 points			→P587

* For SSEL and XSEL, only applicable to the single-axis model.
 * ① is a placeholder for the encoder type (I: incremental, A: absolute).
 * ② is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
 * ③ is a placeholder for the XSEL type name (KE, KET, P, or Q).
 * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

RCS2-SS8R

RoboCylinder Slider Type 80mm Width 230V Servo Motor
Side Mounted Motor Steel Base

■ Configuration: **RCS2** — **SS8R** — [] — [] — [] — [] — [] — [] — []

Series — Type — Encoder — Motor — Lead — Stroke — Compatible Controllers — Cable Length — Option

I : Incremental
A : Absolute

100: 100W Servo motor
150: 150W Servo motor

20: 20mm
10: 10mm

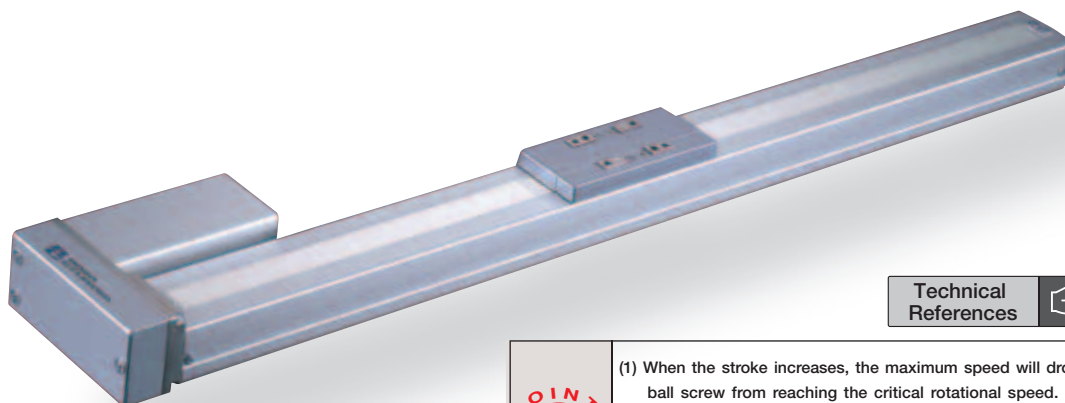
50: 50mm
1000: 1000mm (50mm pitch increments)

T1: XSEL-KE/KET
T2: SCON
SSEL
XSEL-P/Q

N : None
P : 1m
S : 3m
M : 5m
X [] : Custom Length
R [] : Robot Cable

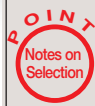
See Options below
* Be sure to specify which side the motor is to be mounted (ML/MR).

* See page Pre-35 for explanation of each code that makes up the configuration name.



Pictured: Left-mounted motor model (ML).

Technical References P. A-5



- (1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
- (2) The load capacity is based on operation at an acceleration of 0.3G. These values are the upper limits for the acceleration.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output	Lead (mm)	Max. Load Capacity		Rated Thrust (N)	Stroke (mm)
			Horizontal (kg)	Vertical (kg)		
RCS2-SS8R-①-100-20-②-③-④-⑤	100	20	20	4	84.9	50 ~ 1000 (50mm increments)
RCS2-SS8R-①-100-10-②-③-④-⑤		10	40	8	169	
RCS2-SS8R-①-150-20-②-③-④-⑤	150	20	30	6	128	
RCS2-SS8R-①-150-10-②-③-④-⑤		10	60	12	256	

Legend ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options

Stroke and Maximum Speed

Stroke Lead	Maximum Speed (mm/s)				
	50 ~ 600 (50mm increments)	~ 700 (mm)	~ 800 (mm)	~ 900 (mm)	~ 1000 (mm)
20	1000	960	765	625	515
10	500	480	380	310	255

(Unit: mm/s)

Cable List

Type	Cable Symbol	
Standard	P (1m)	
	S (3m)	
	M (5m)	
Special Lengths	X06 (6m) ~ X10 (10m)	
	X11 (11m) ~ X15 (15m)	
	X16 (16m) ~ X20 (20m)	
Robot Cable	R01 (1m) ~ R03 (3m)	
	R04 (4m) ~ R05 (5m)	
	R06 (6m) ~ R10 (10m)	
	R11 (11m) ~ R15 (15m)	
	R16 (16m) ~ R20 (20m)	

* For cables for maintenance, see page A-39.

Option List

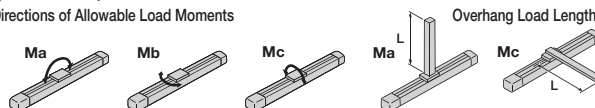
Name	Option Code	See Page
Brake	B	→A-25
Reversed-home	NM	→A-33
Left-Mounted Motor (Standard)	ML	→A-33
Right-Mounted Motor	MR	→A-33
Slider Roller	SR	→A-36

Actuator Specifications

Item	Description
Drive System	Ball screw ø16mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Special alloy steel
Allowable Static Moment	Ma: 198.9N·m Mb: 198.9N·m Mc: 416.7N·m
Allowable Dynamic Moment (*)	Ma: 36.3N·m Mb: 36.3N·m Mc: 77.4N·m
Overhang Load Length	Ma direction: 450mm or less Mb-Mc direction: 450mm or less
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (Non-condensing)

(*) Based on 5,000km travel life.

Directions of Allowable Load Moments



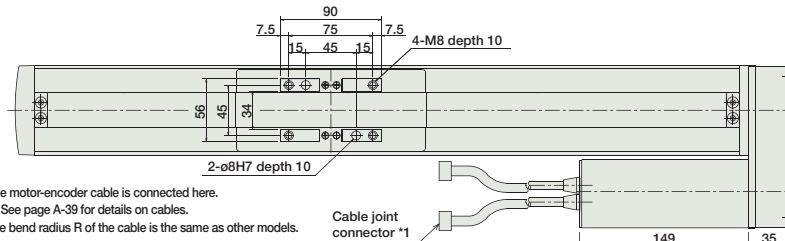
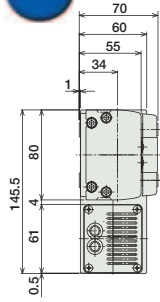
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

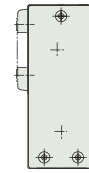
For Special Orders P. A-9

2/3D CAD

*The reference surface is the same as the SS8C type. (See P110)



*1 The motor-encoder cable is connected here. See page A-39 for details on cables.
* The bend radius R of the cable is the same as other models.



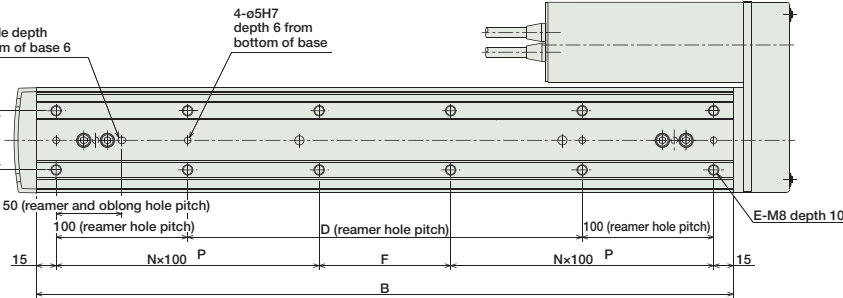
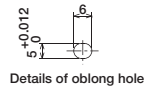
*2 When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects. SE: Stroke end ME: Mechanical end

Dimensions of the Brake Section

* Adding a brake increases the actuator's overall length by 26mm and its weight by 0.5kg.



Oblong hole depth from bottom of base 6
4-øH7 depth 6 from bottom of base



* The offset reference position for the moment Ma is the same as the SS8C type. (See P110)
* Note that in order to change the home orientation, arrangements must be made to send in the product to IAI.
* For the reversed-home model, the dimensions (distance from the ME to home) on the motor-side and that on the opposite side are flipped.

■ Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
A	340	390	440	490	540	590	640	690	740	790	840	890	940	990	1040	1090	1140	1190	1240	1290
B	280	330	380	430	480	530	580	630	680	730	780	830	880	930	980	1030	1080	1130	1180	1230
C	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
D	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
E	8	8	8	10	12	12	12	14	16	16	16	18	20	20	20	22	24	24	24	26
F	50	100	150	0	50	100	150	0	50	100	150	0	50	100	150	0	50	100	150	0
N	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6
Weight (kg)	6.7	7.2	7.7	8.2	8.7	9.2	9.7	10.2	10.7	11.2	11.7	12.2	12.7	13.2	13.7	14.2	14.7	15.2	15.7	16.2

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-100①-NP-2-② SCON-C-150①-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	360VA max. * When operating a 150W single-axis model	→P547
Solenoid Valve Mode			Operable with same controls as solenoid valve.	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to Pulse Train Input	(-)			
Program Control 1-2 Axis Type		SSEL-C-1-100①-NP-2-② SSEL-C-1-150①-NP-2-②	Programmed operation is possible Can operate up to 2 axes	20000 points			→P577
Program Control 1-6 Axis Type		XSEL-③-1-100①-N1-EEE-2-④ XSEL-③-1-150①-N1-EEE-2-④	Programmed operation is possible Can operate up to 6 axes	20000 points			→P587

* For SSEL and XSEL, only applicable to the single-axis model.
* ① is a placeholder for the encoder type (I: incremental, A: absolute).
* ② is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
* ③ is a placeholder for the XSEL type name (KE, KET, P, or Q).
* ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

Slider Type

Mini

Standard

Controllers Integrated

Rod Type

Mini

Standard

Controllers Integrated

Table/Arm /Flat Type

Mini

Standard

Gripper/ Rotary Type

Linear Motor Type

Cleanroom Type

Splash-Proof

Controllers

PMEC /AMEC

PSEP /ASEP

ROBO NET

ERC2

PCON

ACON

SCON

PSEL

ASEL

SSEL

XSEL

Pulse Motor

Servo Motor (24V)

Servo Motor (230V)

Linear Motor

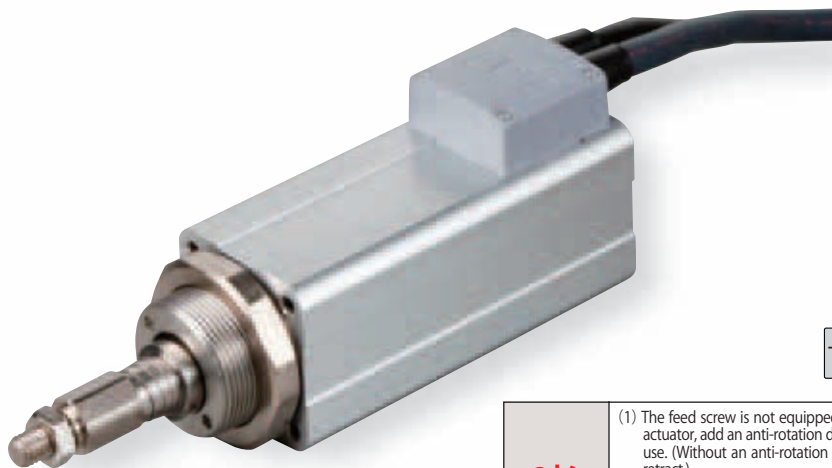
RCS2-RN5N

RoboCylinder Mini Rod Type Short-Length Nut-Mounting Type
46mm Width 230 V Servo Motor Ball Screw

■ Configuration: **RCS2** — **RN5N** — **I** — **60** — — — **T2** — —

Series	Type	Encoder	Motor type	Lead	Stroke	Compatible Controllers	Cable Length	Option
I : Incremental	60 : 60W Servo Motor	10 : 10mm 5 : 5mm 2.5 : 2.5mm	50 : 50mm 75 : 75mm	T2 : SCON SSEL XSEL-P/Q	N : None P : 1m S : 3m M : 5m X <input type="checkbox"/> <input type="checkbox"/> : Custom R <input type="checkbox"/> <input type="checkbox"/> : Robot Cable	K1 : Cable exit direction left K2 : Cable exit direction front K3 : Cable exit direction right		

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5



- (1) The feed screw is not equipped with an anti-rotation device. Therefore, when using the actuator, add an anti-rotation device such as a guide to the end of the feed screw prior to use. (Without an anti-rotation device, the feed screw will rotate, and will not extend or retract.)
- (2) The horizontal payload is the value when used in combination with an external guide.
- (3) The load capacity is based on operation at an acceleration of 0.3G (or 0.2G for the 2.5mm-lead model, or when used vertically). This is the upper limit of the acceleration.
- (4) Do not apply any external force on the rod from any direction other than the direction of the rod's motion.
- (5) If the actuator is used vertically, pay attention to rod contact because the rod will come down when the power is turned off.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Feed Screw	Lead (mm)	Max. Load Capacity		Rated Thrust (N)	Positioning Repeatability (mm)	Stroke (mm)
				Horizontal (kg)	Vertical (kg)			
RCS2-RN5N-I-60-10-①-T2-②-③	60	Ball Screw	10	5	1.5	89	± 0.02	50 75
RCS2-RN5N-I-60-5-①-T2-②-③			5	10	3	178		
RCS2-RN5N-I-60-2.5-①-T2-②-③			2.5	20	6	356		

Legend ① Compatible controller ② Cable length ③ Options

Stroke and Maximum Speed

Lead	Stroke	50 (mm)	75 (mm)
		10	280 <230>
5	250 <230>	250	
2.5	125		

* The value enclosed in < > apply for vertical usage. (Unit: mm/s)

Cable List

Type	Cable Symbol	
Standard	P (1m)	
	S (3m)	
	M (5m)	
Special Lengths	X06 (6m) ~ X10 (10m)	
	X11 (11m) ~ X15 (15m)	
	X16 (16m) ~ X20 (20m)	
	R01 (1m) ~ R03 (3m)	
Robot Cable	R04 (4m) ~ R05 (5m)	
	R06 (6m) ~ R10 (10m)	
	R11 (11m) ~ R15 (15m)	
	R16 (16m) ~ R20 (20m)	

* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball Screw Ø8mm C10 grade
Lost Motion	0.1mm or less (initial value)
Frame	Material: Aluminum (white alumite treated)
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non condensing)
Service Life	5000km or 50million cycles

Option List

Name	Option Code	See Page	
Cable exit from left	K1	A-32	
Cable exit from front	K2	A-32	
Cable exit from right	K3	A-32	

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat-Type
- Min
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom-Type
- Splash Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse motor
- Servo Motor (24 V)
- Servo Motor (230 V)
- Linear Motor

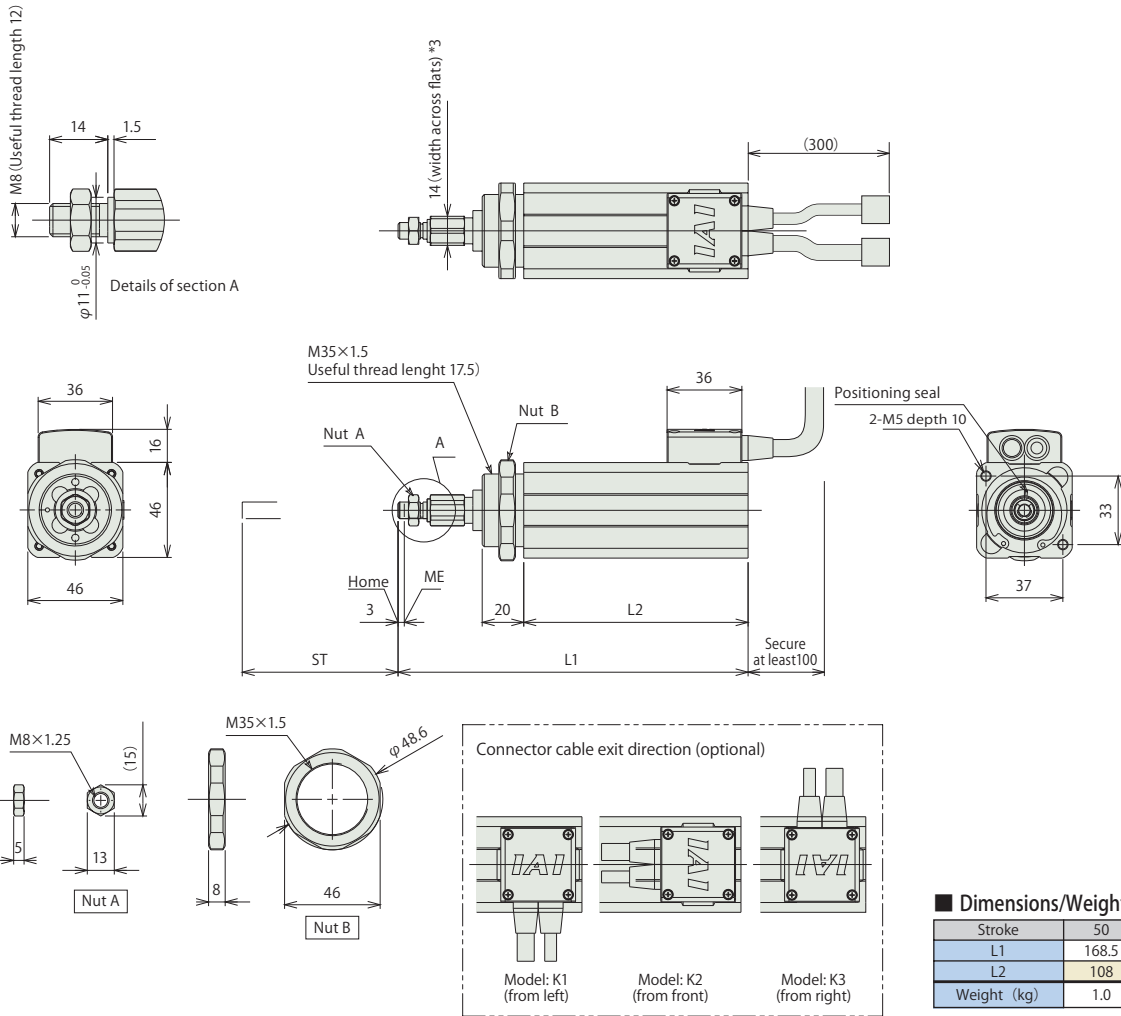
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9



- *1 A motor-encoder cable is connected here. See page A-39 for details on cables.
- *2 When homing, the rod moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end
- *3 The orientation of the bolt will vary depending on the product.



Dimensions/Weight by Stroke

Stroke	50	75
L1	168.5	193.5
L2	108	133
Weight (kg)	1.0	1.1

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External view	Model	Description	Max. Positioning points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-60 I -NP-2-①	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	218VA max. * The power supply capacity vary depending on the controller (refer to the manual).	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve	7 points			
Serial Communication Type			Dedicated to serial communication	(-)			
Pulse Train Input Control Type			Dedicated to pulse train input	768 points			
Program Control 1-2 Axes Type		SSEL-C-1-60 I -NP-2-①	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-②-1-60 I -N1-EEE-2-③	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P578

* For SSEL and XSEL, only applicable to the single-axis model.
 ① is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
 ② is a placeholder for the XSEL type name ("P" or "Q").
 ③ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, or 3: three-phase 230V).

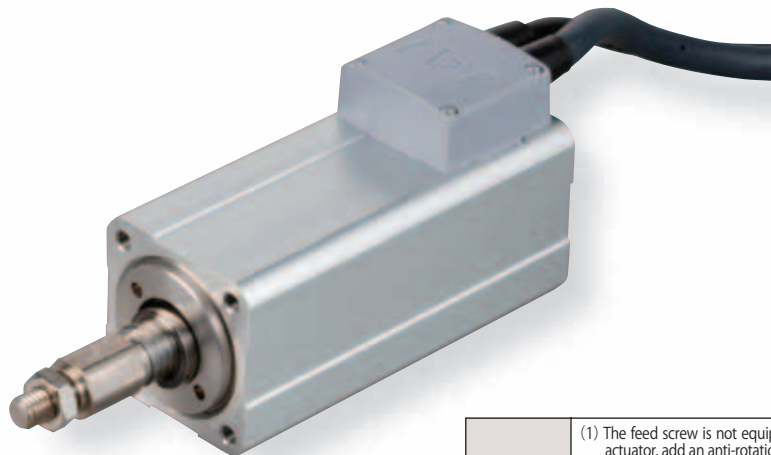
RCS2-RP5N

RoboCylinder Mini Rod Type Short-Length Tapped-Hole Mounting Type
46mm Width 230 V Servo Motor Ball Screw

■ Configuration: **RCS2** — **RP5N** — **I** — **60** — — — **T2** — —

Series	Type	Encoder	Motor type	Lead	Stroke	Compatible Controllers	Cable Length	Option
I : Incremental	60 : 60W Servo Motor	10 : 10mm 5 : 5mm 2.5 : 2.5mm	50 : 50mm 75 : 75mm	T2 : SCON SSEL XSEL-P/Q	N : None P : 1m S : 3m M : 5m X <input type="checkbox"/> <input type="checkbox"/> : Custom R <input type="checkbox"/> <input type="checkbox"/> : Robot Cable	K1 : Cable exit direction left K2 : Cable exit direction front K3 : Cable exit direction right		

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5



- (1) The feed screw is not equipped with an anti-rotation device. Therefore, when using the actuator, add an anti-rotation device such as a guide to the end of the feed screw prior to use. (Without an anti-rotation device, the feed screw will rotate, and will not extend or retract.)
- (2) The horizontal payload is the value when used in combination with an external guide.
- (3) The load capacity is based on operation at an acceleration of 0.3G (or 0.2G for the 2.5mm-lead model, or when used vertically). This is the upper limit of the acceleration.
- (4) Do not apply any external force on the rod from any direction other than the direction of the rod's motion.
- (5) If the actuator is used vertically, pay attention to rod contact because the rod will come down when the power is turned off.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Feed Screw	Lead (mm)	Max. Load Capacity		Rated Thrust (N)	Positioning Repeatability (mm)	Stroke (mm)
				Horizontal (kg)	Vertical (kg)			
RCS2-RP5N-I-60-10-①-T2-②-③	60	Ball Screw	10	5	1.5	89	± 0.02	50 75
RCS2-RP5N-I-60-5-①-T2-②-③			5	10	3	178		
RCS2-RP5N-I-60-2.5-①-T2-②-③			2.5	20	6	356		

Legend ① Compatible controller ② Cable length ③ Options

Stroke and Maximum Speed

Lead	Stroke	50 (mm)	75 (mm)
		10	280 <230>
5	250 <230>	250	
2.5	125		

*The value enclosed in <> apply for vertical usage. (Unit: mm/s)

Cable List

Type	Cable Symbol	
Standard	P (1m)	
	S (3m)	
	M (5m)	
Special Lengths	X06 (6m) ~ X10 (10m)	
	X11 (11m) ~ X15 (15m)	
	X16 (16m) ~ X20 (20m)	
	R01 (1m) ~ R03 (3m)	
Robot Cable	R04 (4m) ~ R05 (5m)	
	R06 (6m) ~ R10 (10m)	
	R11 (11m) ~ R15 (15m)	
	R16 (16m) ~ R20 (20m)	

* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball Screw Ø8mm C10 grade
Lost Motion	0.1mm or less (initial value)
Frame	Material: Aluminum (white alumite treated)
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non condensing)
Service Life	5000km or 50million cycles

Option List

Name	Option Code	See Page	
Cable exit from left	K1	A-32	
Cable exit from front	K2	A-32	
Cable exit from right	K3	A-32	

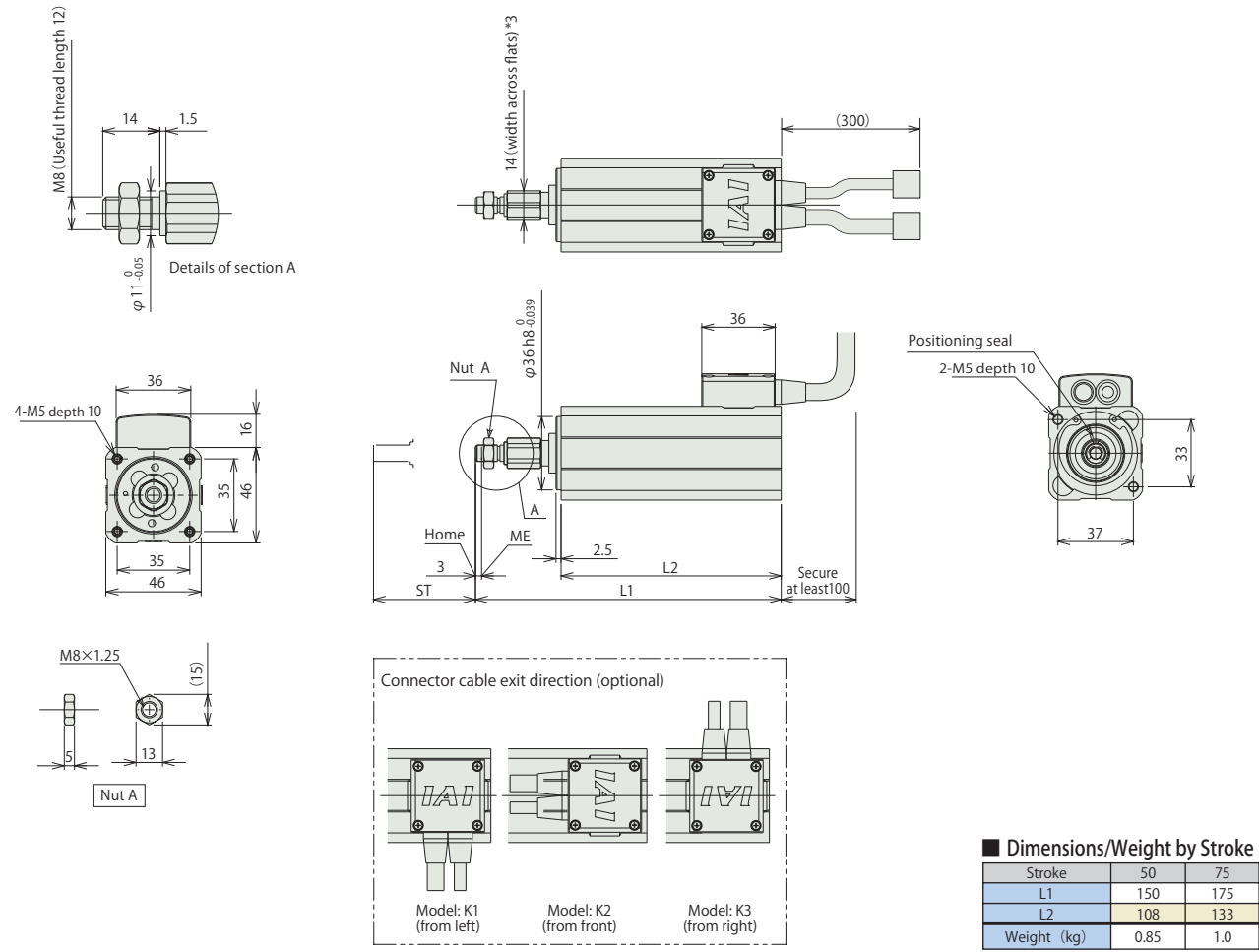
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9



- *1 A motor-encoder cable is connected here. See page A-39 for details on cables.
- *2 When homing, the rod moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end
- *3 The orientation of the bolt will vary depending on the product.



Compatible Controllers


The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External view	Model	Description	Max. Positioning points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-60 I -NP-2-①	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	218VA max. * The power supply capacity vary depending on the controller (refer to the manual).	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve	7 points			
Serial Communication Type			Dedicated to serial communication	(-)			
Pulse Train Input Control Type			Dedicated to pulse train input	768 points			
Program Control 1-2 Axes Type		SSEL-C-1-60 I -NP-2-①	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-②-1-60 I -N1-EEE-2-③	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P578

* For SSEL and XSEL, only applicable to the single-axis model.
 ① is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
 ② is a placeholder for the XSEL type name ("P" or "Q").
 ③ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, or 3: three-phase 230V).

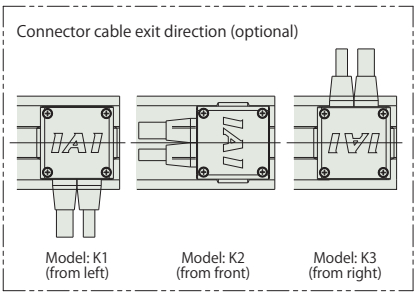
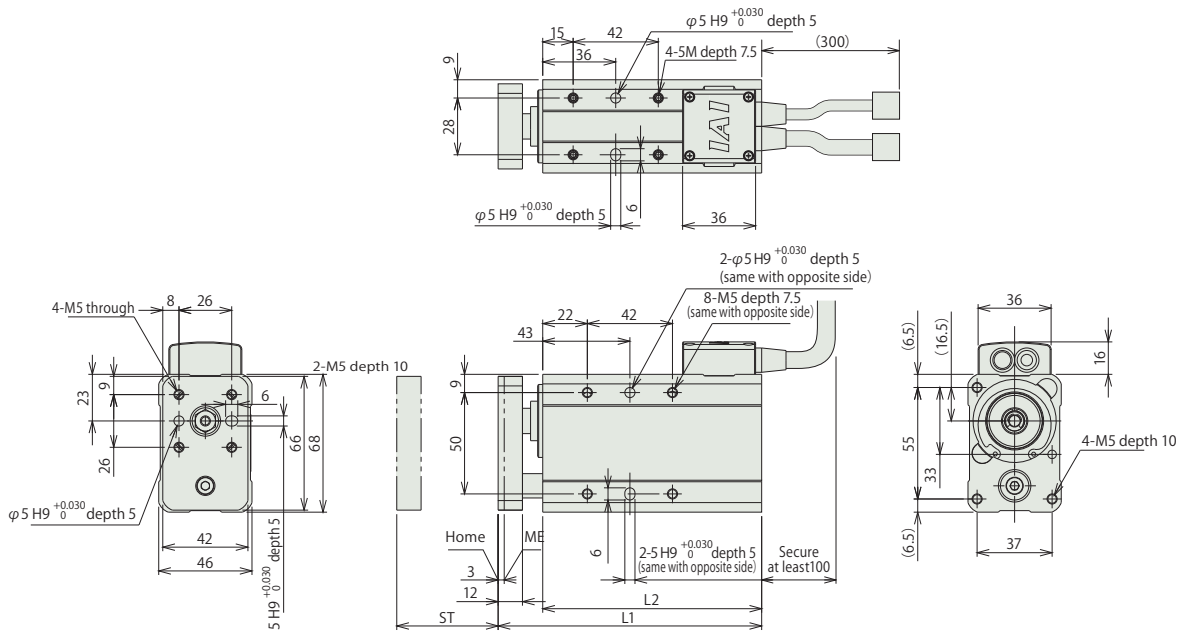
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders  P. A-9



- *1 A motor-encoder cable is connected here. See page A-39 for details on cables.
- *2 When homing, the rod moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end






Dimensions/Weight by Stroke

Stroke	50	75
L1	130	155
L2	108	133
Weight (kg)	1.3	1.4

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External view	Model	Description	Max. Positioning points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-60 I -NP-2-①	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	218VA max. * The power supply capacity vary depending on the controller (refer to the manual).	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve	7 points			
Serial Communication Type			Dedicated to serial communication	(-)			
Pulse Train Input Control Type			Dedicated to pulse train input	768 points			
Program Control 1-2 Axes Type		SSEL-C-1-60 I -NP-2-①	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-②-1-60 I -N1-EEE-2-③	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P578

* For SSEL and XSEL, only applicable to the single-axis model.
 ① is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
 ② is a placeholder for the XSEL type name ("P" or "Q").
 ③ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, or 3: three-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat-Type
- Min
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom-Type
- Splash Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse motor
- Servo Motor (24 V)
- Servo Motor (230 V)
- Linear Motor

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat-Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom-Type
- Splash Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse motor
- Servo Motor (24 V)
- Servo Motor (230 V)
- Linear Motor

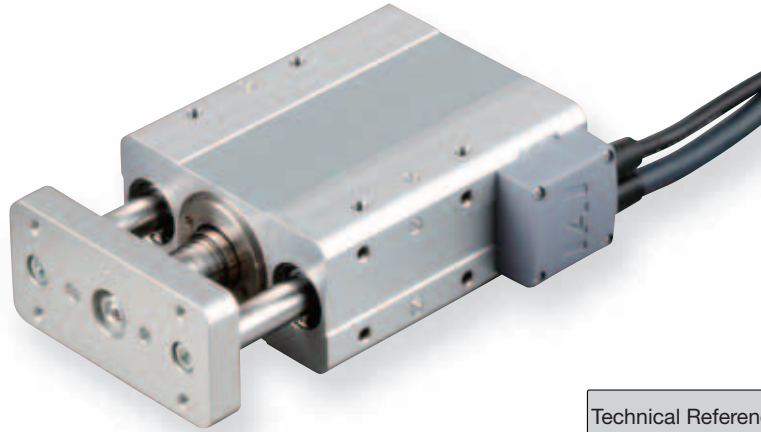
RCS2-GD5N

RoboCylinder Mini Rod Type Short-Length Free Mounting Type with Double Guide
46mm Width 230 V Servo Motor Ball Screw

■ Configuration: **RCS2 – GD5N – I – 60 – [] – [] – T2 – [] – []**

Series	Type	Encoder	Motor type	Lead	Stroke	Compatible Controllers	Cable Length	Option
I : Incremental	60 : 60W Servo Motor	10 : 10mm 5 : 5mm 2.5 : 2.5mm	50 : 50mm 75 : 75mm	T2 : SCON SSEL XSEL-P/Q	N : None P : 1m S : 3m M : 5m X [] : Custom R [] : Robot Cable	K1 : Cable exit direction left K2 : Cable exit direction front K3 : Cable exit direction right		

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5

POINT
Notes on Selection

- The horizontal load capacity is based on the use of a guide to prevent any radial and/or moment load on the rod. If no guide will be installed, see the Tip Load vs. Service Life graph (see page A-82).
- The load capacity is based on operation at an acceleration of 0.3G (or 0.2G for the 2.5mm-lead model, or when used vertically). This is the upper limit of the acceleration.
- If the actuator is used vertically, pay attention to rod contact because the rod will come down when the power is turned off.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Feed Screw	Lead (mm)	Max. Load Capacity		Rated Thrust (N)	Positioning Repeatability (mm)	Stroke (mm)
				Horizontal (kg)	Vertical (kg)			
RCS2-GD5N-I-60-10-①-T2-②-③	60	Ball Screw	10	5	1.5	89	± 0.02	50 75
RCS2-GD5N-I-60-5-①-T2-②-③			5	10	3	178		
RCS2-GD5N-I-60-2.5-①-T2-②-③			2.5	20	6	356		

Legend ① Compatible controller ② Cable length ③ Options

Stroke and Maximum Speed

Lead	Stroke	50 (mm)	75 (mm)
		10	280 <230>
5	250 <230>	250	
2.5	125		

* The value enclosed in < > apply for vertical usage. (Unit: mm/s)

Cable List

Type	Cable Symbol
Standard	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
	R01 (1m) ~ R03 (3m)
Robot Cable	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* See page A-39 for cables for maintenance.

Actuator Specifications


Item	Description
Drive System	Ball Screw Ø8mm C10 grade
Lost Motion	0.1mm or less (initial value)
Frame	Material: Aluminum (white alumite treated)
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non condensing)
Service Life	5000km or 50million cycles

Option List

Name	Option Code	See Page
Cable exit from left	K1	A-32
Cable exit from front	K2	A-32
Cable exit from right	K3	A-32

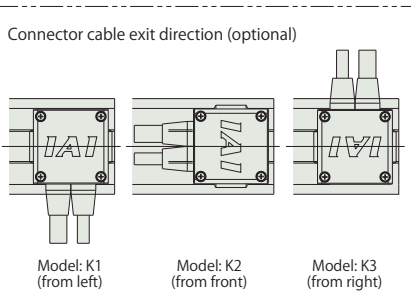
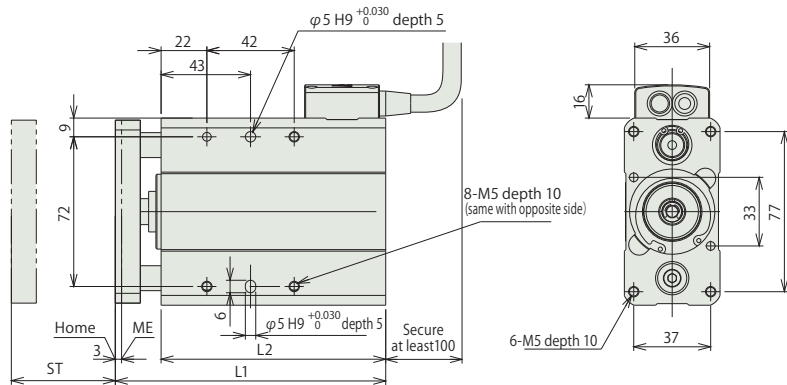
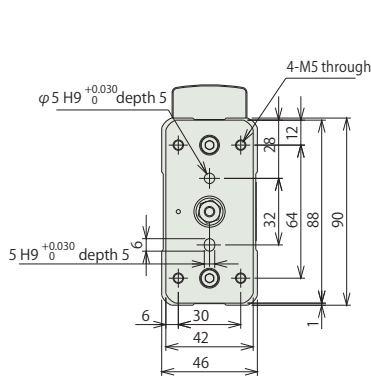
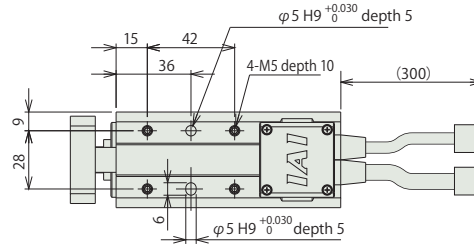
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders  P. A-9



- *1 A motor-encoder cable is connected here. See page A-39 for details on cables.
- *2 When homing, the rod moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end






■ Dimensions/Weight by Stroke

Stroke	50	75
L1	130	155
L2	108	133
Weight (kg)	1.6	1.9

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External view	Model	Description	Max. Positioning points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-60 I -NP-2-①	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	218VA max. * The power supply capacity vary depending on the controller (refer to the manual).	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve	7 points			
Serial Communication Type			Dedicated to serial communication	(-)			
Pulse Train Input Control Type			Dedicated to pulse train input	768 points			
Program Control 1-2 Axes Type		SSEL-C-1-60 I -NP-2-①	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-②-1-60 I -N1-EEE-2-③	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P578

* For SSEL and XSEL, only applicable to the single-axis model.

① is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).


② is a placeholder for the XSEL type name ("P" or "Q").

③ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, or 3: three-phase 230V).

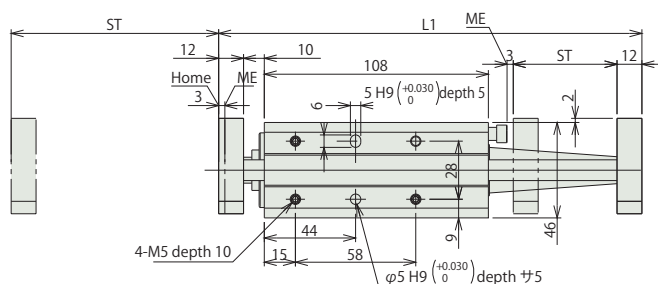
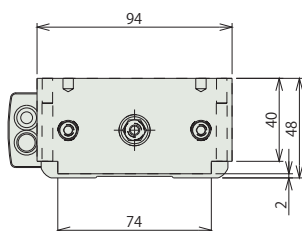
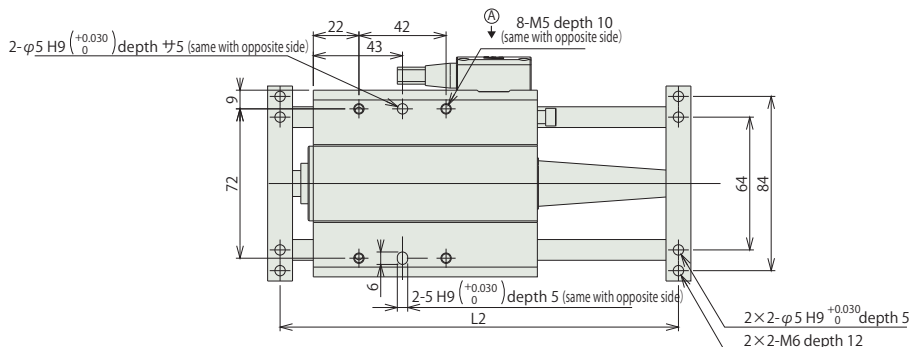
- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat-Type
- Min
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom-Type
- Splash Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse motor
- Servo Motor (24 V)
- Servo Motor (230 V)
- Linear Motor

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

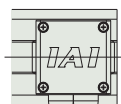
For Special Orders  P. A-9

2/3D
CAD



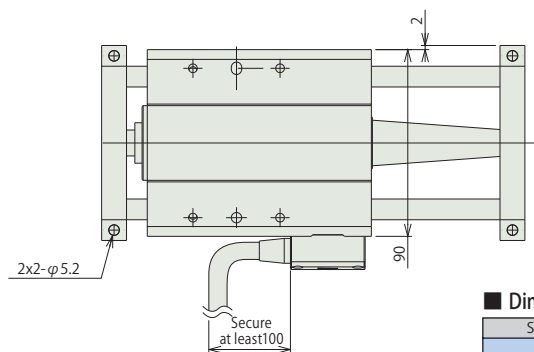
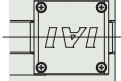
Connector cable exit direction (optional)

Model: K1
(from left)



Details of section
(A)

Model: K3
(from right)






■ Dimensions/Weight by Stroke

Stroke	50	75
L1	204	229
L2	192	217
Weight (kg)	1.9	1.94

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External view	Model	Description	Max. Positioning points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-60 I -NP-2-①	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	218VA max. * The power supply capacity vary depending on the controller (refer to the manual).	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve	7 points			
Serial Communication Type			Dedicated to serial communication	(-)			
Pulse Train Input Control Type			Dedicated to pulse train input	768 points			
Program Control 1-2 Axes Type		SSEL-C-1-60 I -NP-2-①	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-②-1-60 I -N1-EEE-2-③	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P578

* For SSEL and XSEL, only applicable to the single-axis model.

① is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).

② is a placeholder for the XSEL type name ("P" or "Q").

③ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, or 3: three-phase 230V).

Slider Type

Mini

Standard

Controllers Integrated

Rod Type

Mini

Standard

Controllers Integrated

Table/Arm /Flat-Type

Min

Standard

Gripper/ Rotary Type

Linear Motor Type

Cleanroom-Type

Splash Proof

Controllers

PMEC /AMEC

PSEP /ASEP

ROBO NET

ERC2

PCON

ACON

SCON

PSEL

ASEL

SSEL

XSEL

Pulse motor

Servo Motor (24 V)

Servo Motor (230 V)

Linear Motor

RCS2-RA4C

RoboCylinder Rod Type ø37mm Diameter 230V Servo Motor Coupled

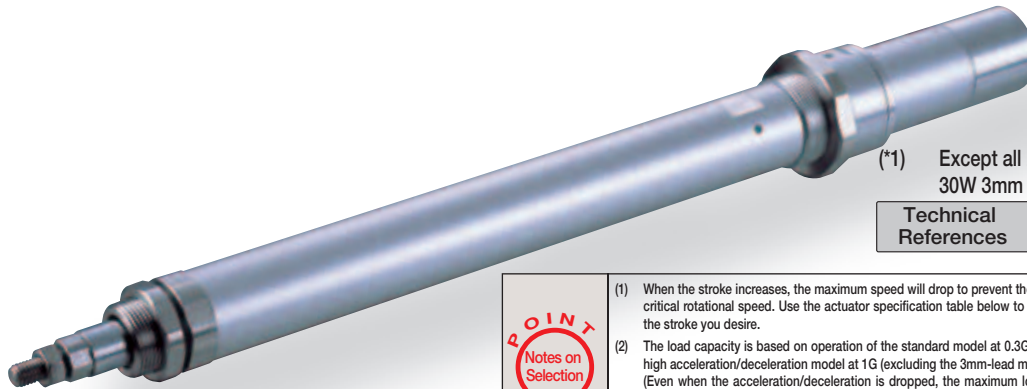
■ Configuration: **RCS2** -- **RA4C** -- [] -- [] -- [] -- [] -- [] -- [] -- []

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
I : Incremental A: Absloute			20 : 20W Servo Motor 30 : 30W Servo Motor	12 : 12mm 6 : 6mm 3 : 3mm	50 : 50mm 300 : 300mm (50mm pitch increments)	T1 : XSEL-KE/KET T2 : SCON SSEL XSEL-P/Q	N : None P : 1m S : 3m M : 5m X [] : Custom R [] : Robot cable	See Options below

* See page Pre-35 for an explanation of the naming convention.

For High Acceleration/Deceleration

(*1)



(*1) Except all 20W models and 30W 3mm lead models

Technical References P. A-5



- When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
- The load capacity is based on operation of the standard model at 0.3G (0.2G for 3mm-lead), and the high acceleration/deceleration model at 1G (excluding the 3mm-lead model). (Even when the acceleration/deceleration is dropped, the maximum load capacity values shown in the table below are the upper limits.)
- The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. Load Capacity		Rated Thrust (N)	Stroke (mm)
			Horizontal (kg)	Vertical (kg)		
RCS2-RA4C-①-20-12-②-③-④-⑤	20	12	3.0	1.0	18.9	50 ~ 300 (50mm increments)
RCS2-RA4C-①-20-6-②-③-④-⑤		6	6.0	2.0	37.7	
RCS2-RA4C-①-20-3-②-③-④-⑤		3	12.0	4.0	75.4	
RCS2-RA4C-①-30-12-②-③-④-⑤	30	12	4.0	1.5	28.3	
RCS2-RA4C-①-30-6-②-③-④-⑤		6	9.0	3.0	56.6	
RCS2-RA4C-①-30-3-②-③-④-⑤		3	18.0	6.5	113.1	

Stroke and Maximum Speed

Stroke Lead	50 ~ 300 (50mm increments)	
	12	600
6	300	
3	150	

(Unit: mm/s)

Legend: ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options

Cable List

Type	Cable Symbol
Standard	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
Robot Cable	R01 (1m) ~ R03 (3m)
	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* See page A-39 for cables for maintenance.

Option List

Name	Option Code	See Page
Brake	B	→ A-25
Foot bracket	FT	→ A-29
Flange bracket (front)	FL	→ A-27
Flange bracket (back)	FLR	→ A-28
High-acceleration/deceleration (*1)	HA	→ A-32
Home sensor (*2)	HS	→ A-32
Knuckle joint	NJ	→ A-34
Reversed-home	NM	→ A-33
Trunnion bracket (front)	TRF	→ A-38
Trunnion bracket (back)	TRR	→ A-38

Actuator Specifications

Item	Description
Drive System	Ball screw ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (white alumite treated)
Rod Diameter	ø20mm
Non-rotating accuracy of rod	±1.0 deg
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

Dimensions

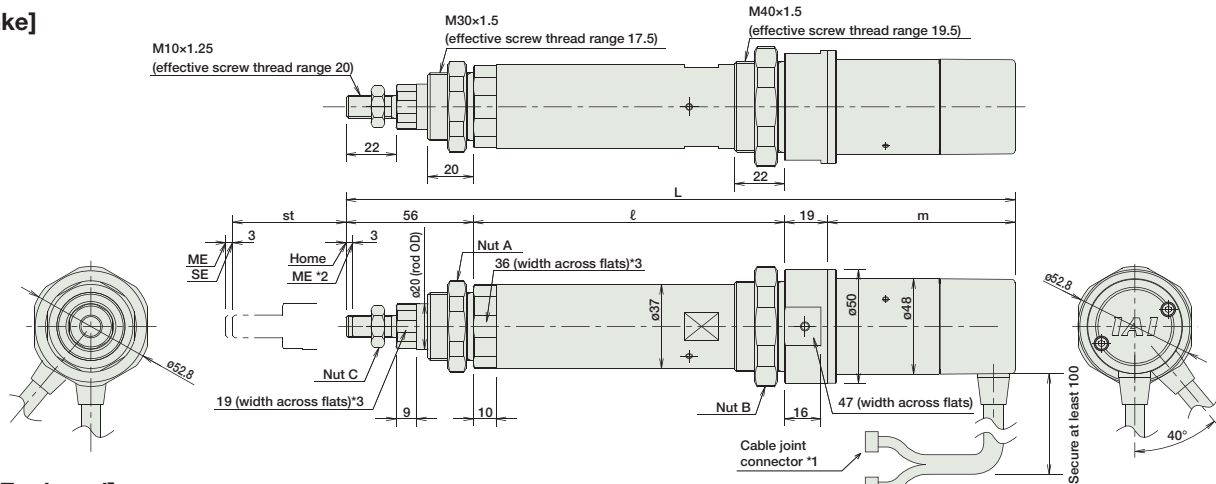
CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

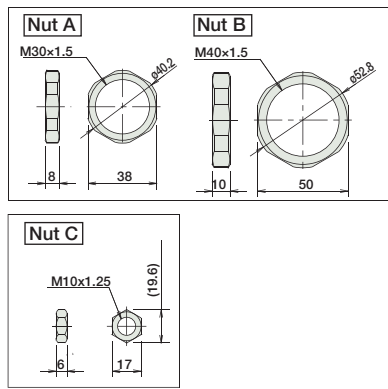
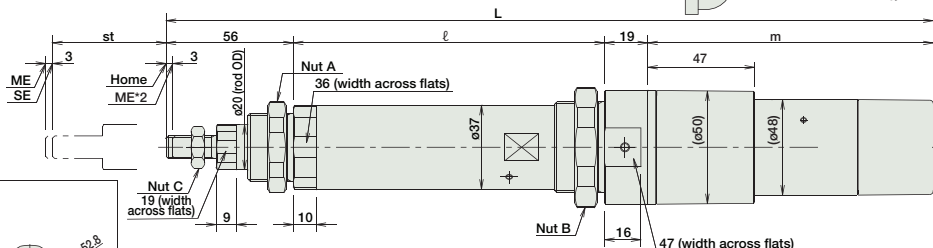


- *1. The motor-encoder cable is connected here. See page A-39 for details on cables.
- *2. When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end
- *3. The orientation of the bolt will vary depending on the product.

[No Brake]



[Brake-Equipped]



■ Dimensions/Weight by Stroke

RCS2-RA4C (without brake)

Stroke	50	100	150	200	250	300	
L	20W	292.5	342.5	392.5	442.5	492.5	542.5
	30W	307.5	357.5	407.5	457.5	507.5	557.5
ℓ	137	187	237	287	337	487	
m	20W	80.5					
	30W	95.5					
Weight (kg)	1.1	1.2	1.4	1.5	1.7	1.8	

RCS2-RA4C (with brake)

Stroke	50	100	150	200	250	300	
L	20W	335.5	385.5	435.5	485.5	535.5	585.5
	30W	350.5	400.5	450.5	500.5	550.5	600.5
ℓ	137	187	237	287	337	487	
m	20W	123.5					
	30W	138.5					
Weight (kg)	1.3	1.5	1.6	1.7	1.9	2.0	

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-20①②-NP-2-③ SCON-C-30D①②-NP-2-③	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	360VA max. * When operating a 150W single-Axes model	→ P547
Solenoid Valve Mode			Operable with same controls as solenoid valve.	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated for Pulse Train Input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-20①-N1-NP-2-③ SSEL-C-1-30D①②-NP-2-③	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-④-1-20①-N1-EEE-2-⑤ XSEL-④-1-30D①②-N1-EEE-2-⑤	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-Axes model.
 * ① is a placeholder for the encoder type (I: incremental, A: absolute).
 * ② is a placeholder for the code "HA" when the high acceleration/deceleration option is specified.
 * ③ is a placeholder for the power supply voltage (1: single-phase 115V, 2: single phase 230V).
 * ④ is a placeholder for the XSEL type name (KE, KET, P, Q).
 * ⑤ is a placeholder for the power supply voltage type (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

RCS2-RA5C

RoboCylinder Rod Type 55mm Width 230V Servo Motor Coupled

■ Configuration: **RCS2** — **RA5C** — [] — [] — [] — [] — [] — [] — []

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
I : Incremental A : Absloute			60 : 60W Servo Motor 100 : 100W Servo Motor	16 : 16mm 8 : 8mm 4 : 4mm	50 : 50mm 300 : 300mm (50mm pitch increments)	T1 : XSEL-KE/KET T2 : SCON SSEL XSEL-P/Q	N : None P : 1m S : 3m M : 5m X [] : Custom R [] : Robot cable	See Options below

* See page Pre-35 for an explanation of the naming convention.

For High Acceleration/Deceleration



(*1) Except all 60W models and 100W 4mm lead models

Technical References P. A-5

- POINT**
Notes on Selection
- When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
 - The load capacity values are based on 0.3G acceleration for the standard model (0.2G for 4mm-lead), and 1G acceleration for the high-acceleration/deceleration models (0.2G for 4mm-lead). (Even when the acceleration/deceleration is dropped, the maximum load capacity values shown in the table below are the upper limits.)
 - The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. Load Capacity	Rated Thrust (N)	Stroke (mm)	
			Horizontal (kg)	Vertical (kg)		
RCS2-RA5C-①-60-16-②-③-④-⑤	60	16	12.0	2.0	50 ~ 300 (50mm increments)	
RCS2-RA5C-①-60-8-②-③-④-⑤		8	25.0	5.0		127.5
RCS2-RA5C-①-60-4-②-③-④-⑤		4	50.0	11.5		255.1
RCS2-RA5C-①-100-16-②-③-④-⑤	100	16	15.0	3.5		105.8
RCS2-RA5C-①-100-8-②-③-④-⑤		8	30.0	9.0		212.7
RCS2-RA5C-①-100-4-②-③-④-⑤		4	60.0	18.0		424.3

Legend: ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options

Stroke and Maximum Speed

Stroke / Lead	50 ~ 250 (50mm increments)	300 (mm)
16	800	755
8	400	377
4	200	188

(Unit: mm/s)

Cable List

Type	Cable Symbol
Standard	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
Robot Cable	R01 (1m) ~ R03 (3m)
	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* See page A-39 for cables for maintenance.

Option List

Name	Option Code	See Page
Connector cable exit direction	A2	→ A-25
Brake	B	→ A-25
Flange	FL	→ A-27
Foot bracket	FT	→ A-29
High-acceleration/deceleration (*1)	HA	→ A-32

(*1) The high-acceleration/deceleration option is not available for all 60W models and 100W model with 4mm lead.

Actuator Specifications

Item	Description
Drive System	Ball screw ø12mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (white alumite treated)
Rod Diameter	ø30mm
Non-rotating accuracy of rod	±0.7 deg
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

Dimensions

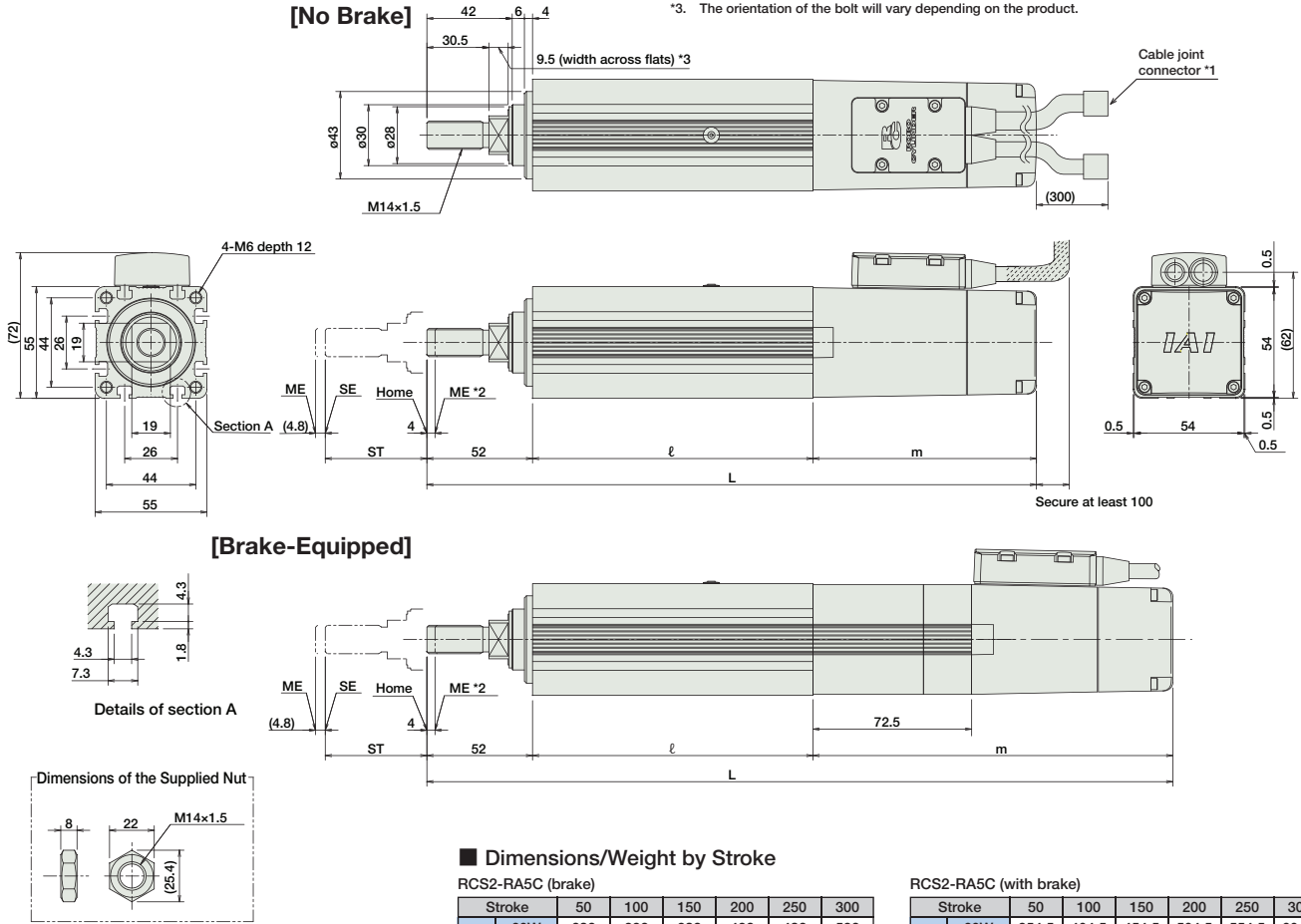
CAD drawings can be downloaded from IAI website. www.robocylinder.de



* The RA5C is not available in reversed-home configuration, due to its construction.

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- *1. The motor-encoder cable is connected here. See page A-39 for details on cables.
- *2. When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end
- *3. The orientation of the bolt will vary depending on the product.



■ Dimensions/Weight by Stroke

RCS2-RA5C (brake)

Stroke	50	100	150	200	250	300	
L	60W	282	332	382	432	482	532
	100W	300	350	400	450	500	550
l	60W	138	188	238	288	338	388
	100W	92					
m	60W	110					
	100W	110					
Weight (kg)	1.9	2.2	2.5	2.8	3.1	3.4	

RCS2-RA5C (with brake)

Stroke	50	100	150	200	250	300	
L	60W	354.5	404.5	454.5	504.5	554.5	604.5
	100W	372.5	422.5	472.5	522.5	572.5	622.5
l	60W	138	188	238	288	338	388
	100W	164.5					
m	60W	182.5					
	100W	182.5					
Weight (kg)	2.2	2.5	2.8	3.1	3.4	3.7	

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-60①-NP-2-③ SCON-C-100①②-NP-2-③	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	360VA max. * When operating a 150W single-Axes model	→ P547
Solenoid Valve Mode			Operable with same controls as solenoid valve.	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to Pulse Train Input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-60①-NP-2-③ SSEL-C-1-100①②-NP-2-③	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-④-1-60①-N1-EEE-2-⑤ XSEL-④-1-100①②-N1-EEE-2-⑤	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-Axes model.
 * ① is a placeholder for the encoder type (I: incremental, A: absolute).
 * ② is a placeholder for the code "HA" when the high acceleration/deceleration option is specified.
 * ③ is a placeholder for the power supply voltage (1: single-phase 115V, 2: single phase 230V).
 * ④ is a placeholder for the XSEL type name (KE, KET, P, Q).
 * ⑤ is a placeholder for the power supply voltage type (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

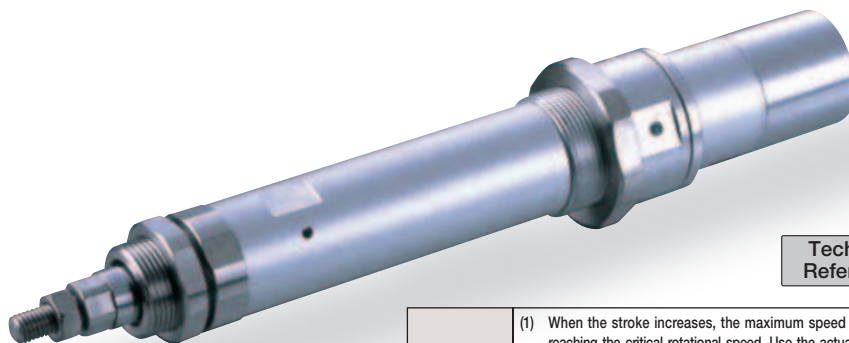
RCS2-RA4D

RoboCylinder Rod Type ø37mm Diameter 230V Servo Motor Built-In (Direct-Coupled) Motor

■ Configuration: **RCS2** -- **RA4D** -- [] -- [] -- [] -- [] -- [] -- [] -- []

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
I : Incremental A: Absloute			20 : 20W Servo Motor 30 : 30W Servo Motor	12 : 12mm 6 : 6mm 3 : 3mm	50 : 50mm 300 : 300mm (50mm pitch increments)	T1 : XSEL-KE/KET T2 : SCON SSEL XSEL-P/Q	N : None P : 1m S : 3m M : 5m X [] : Custom R [] : Robot cable	See Options below

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5

- POINT**
Notes on Selection
- When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
 - The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model). This is the upper limit of the acceleration.
 - The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. Load Capacity Horizontal (kg)	Max. Load Capacity Vertical (kg)	Rated Thrust (N)	Stroke (mm)
RCS2-RA4D-①-20-12-②-③-④-⑤	20	12	3.0	1.0	18.9	50 ~ 300 (50mm increments)
RCS2-RA4D-①-20-6-②-③-④-⑤		6	6.0	2.0	37.7	
RCS2-RA4D-①-20-3-②-③-④-⑤		3	12.0	4.0	75.4	
RCS2-RA4D-①-30-12-②-③-④-⑤	30	12	4.0	1.5	28.3	
RCS2-RA4D-①-30-6-②-③-④-⑤		6	9.0	3.0	56.6	
RCS2-RA4D-①-30-3-②-③-④-⑤		3	18.0	6.5	113.1	

Legend: ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options

Stroke and Maximum Speed

Stroke Lead	50 ~ 300 (50mm increments)
12	600
6	300
3	150

(Unit: mm/s)

Cable List

Type	Cable Symbol
Standard	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
Robot Cable	R01 (1m) ~ R03 (3m)
	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* See page A-39 for cables for maintenance.

Option List

Name	Option Code	See Page
Foot bracket	FT	→ A-29
Flange bracket (front)	FL	→ A-27
Flange bracket (back)	FLR	→ A-28
Home sensor	HS	→ A-32
Knuckle joint	NJ	→ A-34
Reversed-home	NM	→ A-33
Trunnion bracket (front)	TRF	→ A-38
Trunnion bracket (back)	TRR	→ A-38

* The home sensor (HS) cannot be used on the reversed-home models.

Actuator Specifications

Item	Description
Drive System	Ball screw ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (white alumite treated)
Rod Diameter	ø20mm
Non-rotating accuracy of rod	±1.0 deg
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

Dimensions

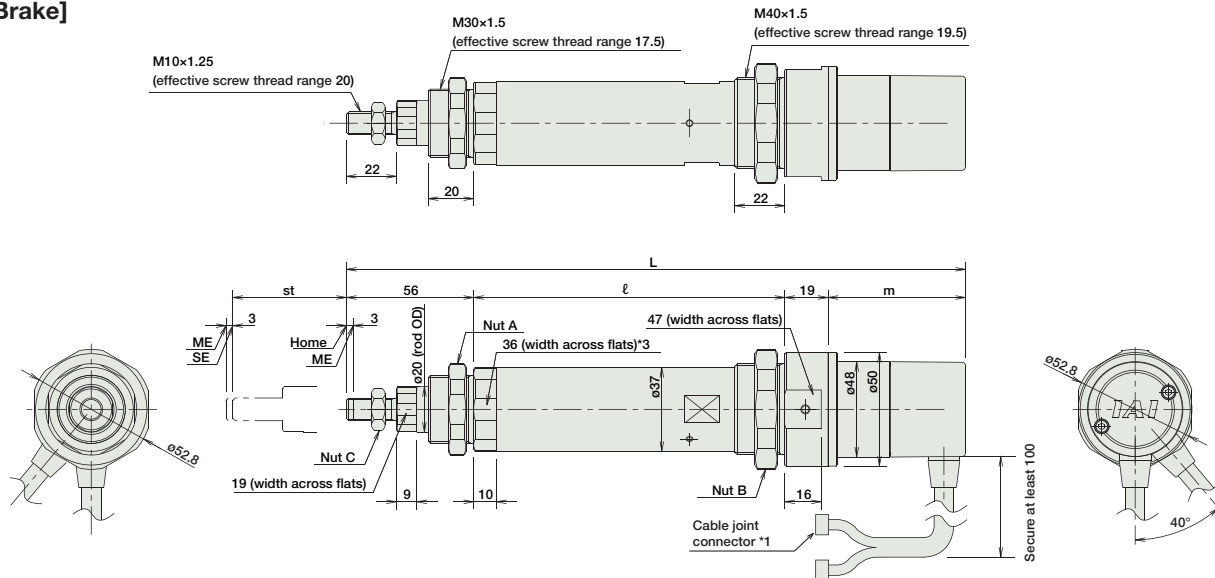
CAD drawings can be downloaded from IAI website. www.robocylinder.de



- *1. The motor-encoder cable is connected here. See page A-39 for details on cables.
- *2. When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end
- *3. The orientation of the bolt will vary depending on the product.

For Special Orders P. A-9

[No Brake]



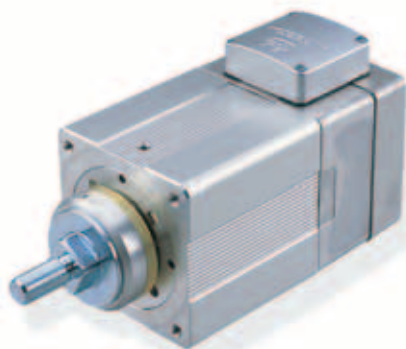
RCS2-SRA7BD

RoboCylinder Rod Type 75mm Width 230V Servo Motor
Short-Length Type

■ Configuration: **RCS2** - **SRA7BD** - [] - [] - [] - [] - [] - [] - []

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
I : Incremental			60 : 60W Servo Motor 100 : 100W Servo Motor 150 : 150W Servo Motor	16 : 16mm 8 : 8mm 4 : 4mm	50 : 50mm 300 : 300mm (50mm pitch increments)	T1 : XSEL-KE/KET T2 : SCON SSEL XSEL-P/Q	N : None P : 1m S : 3m M : 5m X [] : Custom R [] : Robot cable	See Options below

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5

- POINT**
Notes on Selection
- (1) When operated at the rated acceleration, the maximum load capacity is the load capacity at the rated acceleration.
 - (2) When operated at the maximum acceleration, the maximum load capacity is the load capacity at the maximum acceleration.
 - (3) If positioning repeatability and/or lost motion is required, the rotation of the rod must be restricted. In this case, select a model with a guide, or add a separate guide.
 - (4) The standard model may exhibit vibration of the rod at long strokes. If this is an issue, select a model with a guide, or add a separate guide.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Rated Acceleration (G)	Load Capacity at Rated Acceleration		Maximum Acceleration (G)	Load Capacity at Max. Acceleration		Rated Thrust (N)	Stroke (mm)
				Horizontal (kg)	Vertical (kg)		Horizontal (kg)	Vertical (kg)		
RCS2-SRA7BD-I-60-16-①-②-③-④	60	16	0.25	5	2	0.35	2.5	1	63	50~300 (50mm increments)
RCS2-SRA7BD-I-60-8-①-②-③-④		8	0.15	10	5	0.25	5	2.5	127	
RCS2-SRA7BD-I-60-4-①-②-③-④		4	0.05	20	10	0.15	10	5	254	
RCS2-SRA7BD-I-100-16-①-②-③-④	100	16	0.3	10	3.5	0.4	5	1.5	103	
RCS2-SRA7BD-I-100-8-①-②-③-④		8	0.2	22	9	0.3	10	4.5	207	
RCS2-SRA7BD-I-100-4-①-②-③-④		4	0.1	40	19.5	0.2	20	9	414	
RCS2-SRA7BD-I-150-16-①-②-③-④	150	16	0.3	15	6.5	0.4	7.5	3	157	
RCS2-SRA7BD-I-150-8-①-②-③-④		8	0.2	35	14.5	0.3	17.5	7	314	
RCS2-SRA7BD-I-150-4-①-②-③-④		4	0.1	55	22.5	0.2	27.5	11	628	

Stroke and Maximum Speed

Lead	Stroke	50 ~ 300 (50mm increments)
	16	800
8	400	
4	200	

(Unit: mm/s)

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

Cable List

Type	Cable Symbol	
Standard	P (1m)	
	S (3m)	
	M (5m)	
Special Lengths	X06 (6m) ~ X10 (10m)	
	X11 (11m) ~ X15 (15m)	
	X16 (16m) ~ X20 (20m)	
Robot Cable	R01 (1m) ~ R03 (3m)	
	R04 (4m) ~ R05 (5m)	
	R06 (6m) ~ R10 (10m)	
	R11 (11m) ~ R15 (15m)	
	R16 (16m) ~ R20 (20m)	

* See page A-39 for cables for maintenance.

Option List

Name	Option Code	See Page
Connector cable exit direction	A1 ~ A3	→ A-25
Brake	B	→ A-25
Flange	FL	→ A-27
Foot bracket	FT	→ A-29
Extended rod tip	RE	→ A-35

Actuator Specifications

Item	Description
Drive System	Ball screw ø12mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (white alumite treated)
Rod Diameter	ø35mm
Non-rotating accuracy of rod	-
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

Dimensions

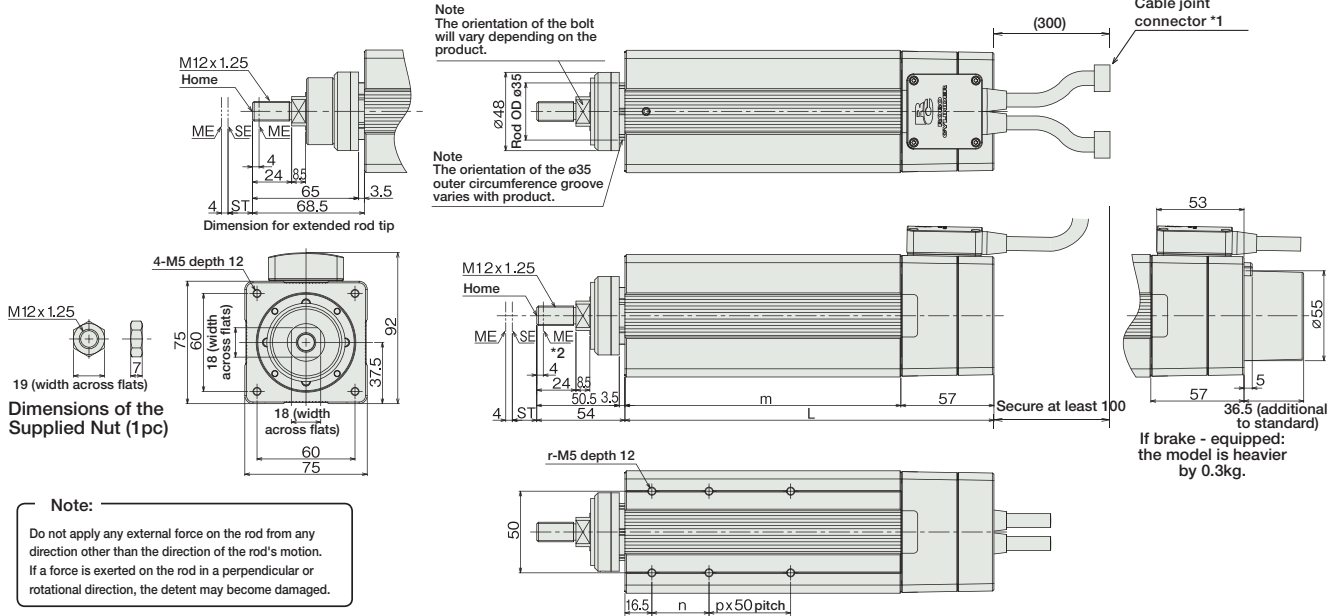
CAD drawings can be downloaded from IAI website. www.robocylinder.de



* The SRA7BD is not available in reversed-home configuration, due to its construction.

For Special Orders P. A-9

- *1. The motor-encoder cable is connected here. See page A-39 for details on cables.
- *2. When homing, the rod moves to the mechanical end position; therefore, please watch for any interference with the surrounding objects.
ST: Stroke
SE: Stroke end
ME: Mechanical end
- *3. The orientation of the bolt will vary depending on the product.



Note:
Do not apply any external force on the rod from any direction other than the direction of the rod's motion. If a force is exerted on the rod in a perpendicular or rotational direction, the detent may become damaged.

Note:
A slit is provided in the side of the actuator body to prevent pauses due to forward/backward operation. Please make a separate request for a dustproof/splash-proof model.

Dimensions/Weight by Stroke

	Stroke	Stroke					
		50	100	150	200	250	300
L	60W	126	176	226	276	326	376
	100W	133	176	226	276	326	376
	150W	145	176	226	276	326	376
m	60W	69	119	169	219	269	319
	100W	76	119	169	219	269	319
	150W	88	119	169	219	269	319
n		25	35	35	35	35	35
p		0	0	1	2	3	4
r		4	4	6	8	10	12
Weight (kg)	60W	2.4	2.9	3.5	4.1	4.6	5.2
	100W	2.6	3.1	3.7	4.2	4.8	5.4
	150W	2.9	3.3	3.9	4.4	5	5.6

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-1-I-NP-2-2	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	360VA max. * When operating a 150W single-axis model	→ P547
Solenoid Valve Mode			Operable with same controls as solenoid valve.	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to Pulse Train Input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-1-I-NP-2-2	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-3-1-1-I-N1-EEE-2-4	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

Note: The SRA7BD type actuator cannot be connected to the 5th and 6th axis of the XSEL-P/Q controller.

* For SSEL and XSEL, only applicable to the single-axis model.
 * ① is a place holder for the motor output (W) (60, 100, 150).
 * ② is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
 * ③ is a placeholder for the XSEL type name ("KE", "KET", "P", or "Q").
 * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, or 3: three-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

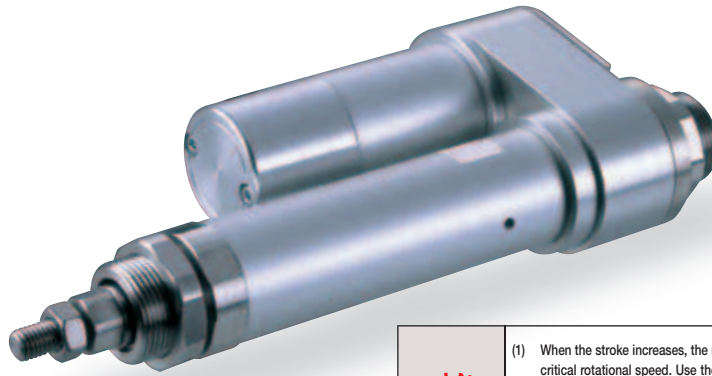
RCS2-RA4R

RoboCylinder Rod Type ø37mm Diameter 230V Servo Motor
Side-Mounted Motor

■ Configuration: **RCS2** -- **RA4R** -- [] -- [] -- [] -- [] -- [] -- [] -- []

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
I : Incremental A : Absolute			20 : 20W Servo Motor 30 : 30W Servo Motor	12 : 12mm 6 : 6mm 3 : 3mm	50 : 50mm 300 : 300mm (50mm pitch increments)	T1 : XSEL-KE/KET T2 : SCON SSEL XSEL-P/Q	N : None P : 1m S : 3m M : 5m X [] : Custom R [] : Robot cable	See Options below

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5

- POINT**
Notes on Selection
- When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
 - The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model). This is the upper limit of the acceleration.
 - The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. Load Capacity Horizontal (kg)	Max. Load Capacity Vertical (kg)	Rated Thrust (N)	Stroke (mm)
RCS2-RA4R-①-20-12-②-③-④-⑤	20	12	3.0	1.0	18.9	50 ~ 300 (50mm increments)
RCS2-RA4R-①-20-6-②-③-④-⑤		6	6.0	2.0	37.7	
RCS2-RA4R-①-20-3-②-③-④-⑤		3	12.0	4.0	75.4	
RCS2-RA4R-①-30-12-②-③-④-⑤	30	12	4.0	1.5	28.3	
RCS2-RA4R-①-30-6-②-③-④-⑤		6	9.0	3.0	56.6	
RCS2-RA4R-①-30-3-②-③-④-⑤		3	18.0	6.5	113.1	

Stroke and Maximum Speed

Stroke Lead	50 ~ 300 (50mm increments)
12	600
6	300
3	150

(Unit: mm/s)

Legend: ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options

Cable List

Type	Cable Symbol
Standard	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
	R01 (1m) ~ R03 (3m)
Robot Cable	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* See page A-39 for cables for maintenance.

Option List

Name	Option Code	See Page
Brake	B	→ A-25
Foot bracket	FT	→ A-29
Flange bracket (front)	FL	→ A-27
Flange bracket (back)	FLR	→ A-28
Home sensor	HS	→ A-32
Knuckle joint	NJ	→ A-34
Reversed-home	NM	→ A-33
Clevis Bracket	QR	→ A-34
Back-mounting plate	RP	→ A-35
Trunnion bracket (front)	TRF	→ A-38

* The home sensor (HS) cannot be used on the reversed-home models.

Actuator Specifications

Item	Description
Drive System	Ball screw ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (white alumite treated)
Rod Diameter	ø20mm
Non-rotating accuracy of rod	±1.0 deg
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

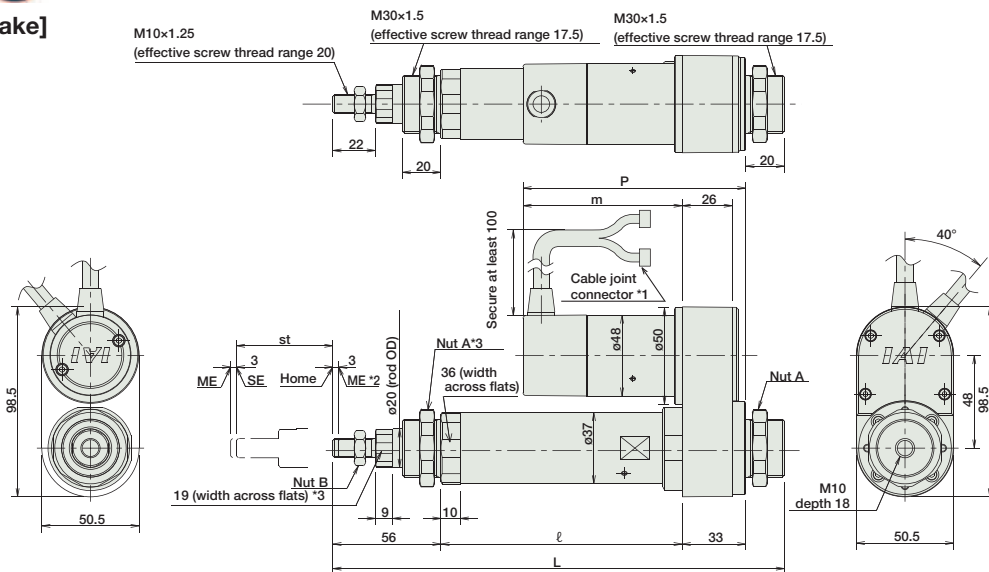


- *1. The motor-encoder cable is connected here. See page A-39 for details on cables.
- *2. When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end

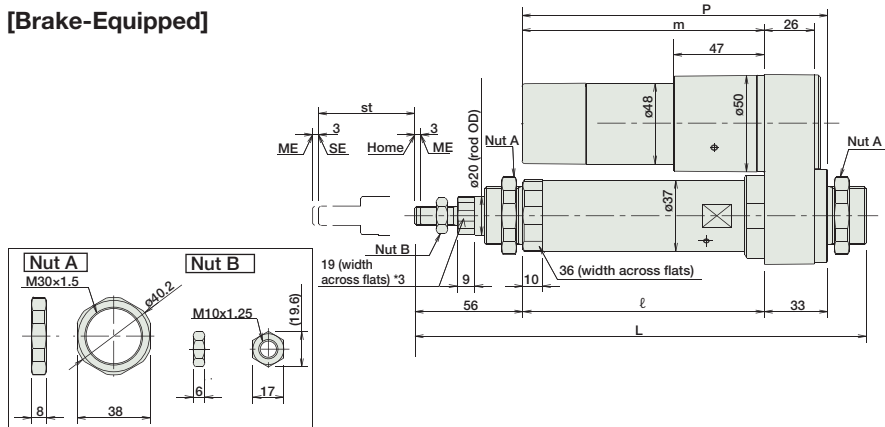
For Special Orders P. A-9

- *3. The orientation of the bolt will vary depending on the product.

[No Brake]



[Brake-Equipped]



Dimensions/Weight by Stroke

RCS2-RA4R (without brake)

Stroke	50	100	150	200	250	300	
L	20W	234	284	334	384	434	484
	30W	234	284	334	384	434	484
ℓ	125	175	225	275	325	375	
m	20W	80.5					
	30W	95.5					
P	20W	113.5					
	30W	128.5					
Weight (kg)	1.2	1.4	1.5	1.7	1.8	2.0	

RCS2-RA4R (with brake)

Stroke	50	100	150	200	250	300	
L	20W	234	284	334	384	434	484
	30W	234	284	334	384	434	484
ℓ	125	175	225	275	325	375	
m	20W	123.5					
	30W	138.5					
P	20W	156.5					
	30W	171.5					
Weight (kg)	1.4	1.6	1.7	1.9	2.0	2.2	

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-20 ①-NP-2-② SCON-C-30D ①-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	360VA max. * When operating a 150W single-axis model	→ P547
Solenoid Valve Mode			Operable with same controls as solenoid valve.	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to Pulse Train Input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-20 ①-NP-2-② SSEL-C-1-30D ①-NP-2-②	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-③-1-20 ①-N1-EEE-2-④ XSEL-③-1-30D ①-N1-EEE-2-④	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-axis model.
 * ① is a placeholder for the encoder type (I: incremental / A: absolute).
 * ② is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
 * ③ is a placeholder for the XSEL type name ("KE", "KET", "P", or "Q").
 * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, or 3: three-phase 230V).

RCS2-RA5R

RoboCylinder Rod Type 55mm Width 230V Servo Motor Side-Mounted Motor

■ Configuration: **RCS2** -- **RA5R** -- -- **60** -- -- -- -- --

Series -- Type -- Encoder -- Motor -- Lead -- Stroke -- Compatible Controllers -- Cable Length -- Option

I : Incremental
A : Absolute

60 : 60W Servo Motor

16 : 16mm
8 : 8mm
4 : 4mm

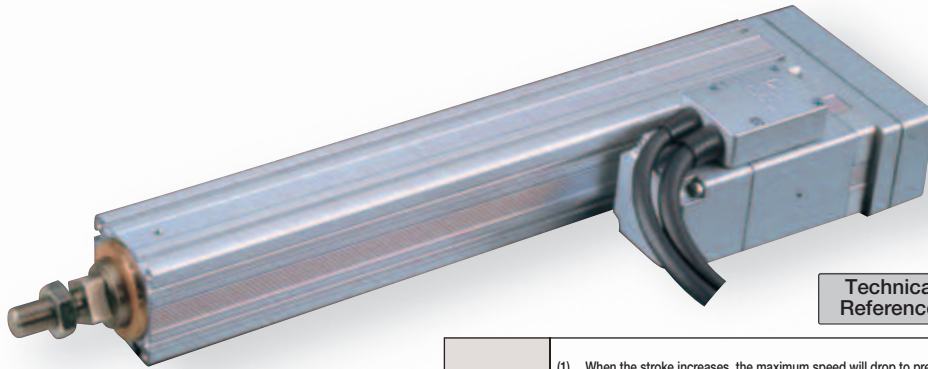
50 : 50mm
300 : 300mm (50mm pitch increments)

T1 : XSEL-KE/KET
T2 : SCON
SSEL
XSEL-P/Q

N : None
P : 1m
S : 3m
M : 5m
X : Custom
R : Robot cable

See Options below
* Be sure to specify which side the motor is to be mounted (ML/MR).

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5

- POINT**
Notes on Selection
- (1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
 - (2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 4mm-lead model). This is the upper limit of the acceleration.
 - (3) The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. Load Capacity		Rated Thrust (N)	Stroke (mm)
			Horizontal (kg)	Vertical (kg)		
RCS2-RA5R-①-60-16-②-③-④-⑤	60	16	12.0	2.0	63.8	50 ~ 300 (50mm increments)
RCS2-RA5R-①-60-8-②-③-④-⑤		8	25.0	5.0	127.5	
RCS2-RA5R-①-60-4-②-③-④-⑤		4	50.0	11.5	255.1	

Legend: ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options

Stroke and Maximum Speed

Lead	Stroke	50 ~ 250 (50mm increments)	300 (mm)
	16	800	755
8	400	377	
4	200	188	

(Unit: mm/s)

Cable List

Type	Cable Symbol
Standard	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
Robot Cable	R01 (1m) ~ R03 (3m)
	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball screw ø12mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (white alumite treated)
Rod Diameter	ø30mm
Non-rotating accuracy of rod	±0.7 deg
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

Option List

Name	Option Code	See Page
Connector cable exit direction	A2	→ A-25
Brake	B	→ A-25
Flange	FL	→ A-27
Foot bracket	FT	→ A-29
Left-Mounted Motor (Standard)	ML	→ A-33
Right-Mounted Motor	MR	→ A-33

Dimensions

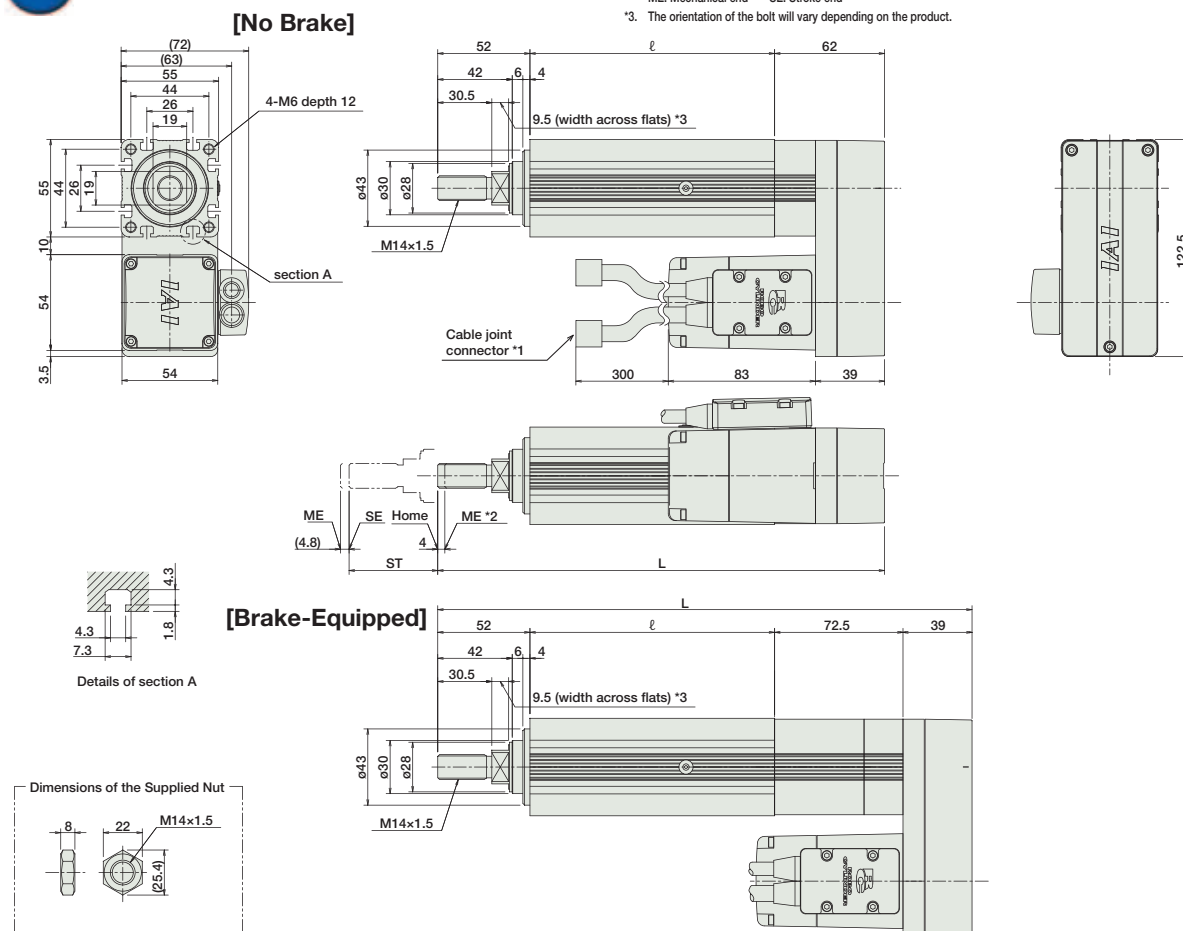
CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

2/3D CAD

* The RA5R is not available in reversed-home configuration, due to its construction.

- The motor-encoder cable is connected here. See page A-39 for details on cables.
- When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end
- The orientation of the bolt will vary depending on the product.



■ Dimensions/Weight by Stroke

RCS2-RA5R (without brake)

Stroke	50	100	150	200	250	300
L	252	302	352	402	452	502
ℓ	138	188	238	288	338	388
Weight (kg)	2.3	2.6	2.9	3.2	3.5	3.8

RCS2-RA5R (with brake)

Stroke	50	100	150	200	250	300
L	301.5	351.5	401.5	451.5	501.5	551.5
ℓ	138	188	238	288	338	388
Weight (kg)	2.6	2.9	3.2	3.5	3.8	4.1

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-60①-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	360VA max. * When operating a 150W single-axis model	→ P547
Solenoid Valve Mode			Operable with same controls as solenoid valve.	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to Pulse Train Input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-60①-NP-2-②	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-③-1-60①-N1-EEE-2-④	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-axis model.
 * ① is a placeholder for the encoder type (I: incremental / A: absolute).
 * ② is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
 * ③ is a placeholder for the XSEL type name ("KE", "KET", "P", or "Q").
 * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, or 3: three-phase 230V).

Slider Type

Mini

Standard

Controllers Integrated

Rod Type

Mini

Standard

Controllers Integrated

Table/Arm /Flat Type

Mini

Standard

Gripper/ Rotary Type

Linear Motor Type

Cleanroom Type

Splash Proof

Controllers

PMEC /AMEC

PSEP /ASEP

ROBO NET

ERC2

PCON

ACON

SCON

PSEL

ASEL

SSEL

XSEL

Pulse Motor

Servo Motor (24V)

Servo Motor (230V)

Linear Motor

RCS2-RA13R

RoboCylinder Ultra High Thrust Rod Type 130mm Width 230V Servo Motor Side-Mounted Motor

Configuration: **RCS2** -- **RA13R** -- -- **750** -- -- -- **T2** -- --

Series -- Type -- Encoder -- Motor -- Lead -- Stroke -- Compatible Controllers -- Cable Length -- Option

I : Incremental
A : Absolute

750 : 750W Servo Motor

2.5 : 2.5mm
1.25 : 1.25mm

50 : 50mm
 200 : 200mm (50mm pitch increments)

T1 : XSEL-KE/KET
T2 : SCON
SSEL
XSEL-P/Q

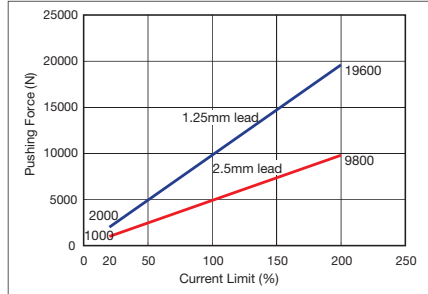
N : None
P : 1m
S : 3m
M : 5m
X : Custom
R : Robot cable

See Options below
* Please be sure to specify one of the codes for the motor mounting direction and the cable exit direction.

* See page Pre-35 for an explanation of the naming convention.



Pushing Force vs. Current Limit



- Note:
- The correlation between the pushing force and the current limit are only rough guide values, and may deviate from the actual numbers.
 - The pushing force may be inconsistent if the current limit is low. Therefore, please set it at 20% or higher.
 - The travel speed while the pushing force is acting is fixed at 10mm/s. The graph shows pushing action at 10mm/s. Please note that the pushing force will decrease if the speed changes.
 - Depending on operational conditions, the pushing force may decrease due to the rise in the temperature of the motor.

* Continuous pushing is possible if pushing order value is 70% or less. Please see A-71 for maximum pushing time limitation, if pushing order value is more than 70%.

Technical References P. A-5

- POINT**
Notes on Selection
- When performing pushing operation, duration of continuous use is preset for the set pushing force. In addition, the continuous thrust (with load and duty factored in) must be less than the rated thrust. For details, please see selection reference material (→ A-71).
 - The load capacity is based on operation at an acceleration of 0.02G for 2.5mm-lead, and 0.01 for 1.25-lead. This is the upper limit of the acceleration.
 - The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod.
 - The brake option requires, in addition to the actuator and the controller, a brake box (see accessories on P248).

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. Acceleration (G)	Max. Load Capacity		Rated Thrust (N)	Continuous Pushing Force (N)	Maximum Push Force (N)	Stroke (mm)
				Horizontal (kg)	Vertical (kg)				
RCS2-RA13R-①-750-2.5-②-T2-③-④	750	2.5	0.02	400	200	5106	3567	9800	50~200 (50mm increments)
RCS2-RA13R-①-750-1.25-②-T2-③-④		1.25	0.01	500	300	10211	7141	19600	

Legend: ① Encoder ② Stroke ③ Cable length ④ Options

Stroke and Maximum Speed

Lead (mm)	Stroke (mm)			
	50	100	150	200
2.5	85	120	125	
1.25	62			

(Unit: mm/s)

Cable List

Type	Cable Symbol
Standard	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
	X21 (21m) ~ X25 (25m)
Robot Cable	R01 (1m) ~ R03 (3m)
	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)
	R21 (21m) ~ R25 (25m)

* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball screw ø32mm C10 grade
Positioning Repeatability	±0.01mm
Lost Motion	0.2mm or less
Rod Diameter	ø50mm (ball spline)
Allowable Load Moment of the Rod	120 N-m
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)
Push Force Service Life	10 million pushes (*1)

(*1) The number of pushes are based on maximum pushing force and a distance of 1mm without load cell. With load cell this has to be replaced after 2 million pushes.

Option List

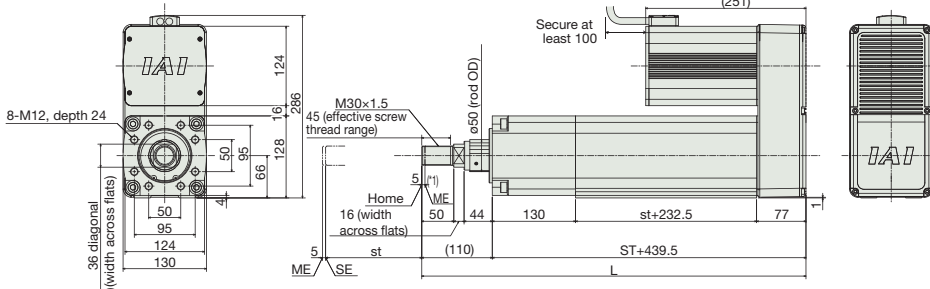
Name	Option Code	See Page
Brake (with brake box)	B	→ P248
Brake (without brake box)	BN	→ P248
Top-mounted motor	MT1/MT2/MT3	→ P248
Right-mounted motor	MR1/MR2	→ P248
Left-mounted motor	ML1/ML3	→ P248
Flange	FL	→ A-27
Foot bracket	FT	→ A-29
Load cell (with cable track)	LCT	-
Load cell (without cable track)	LCN	-

Dimensions

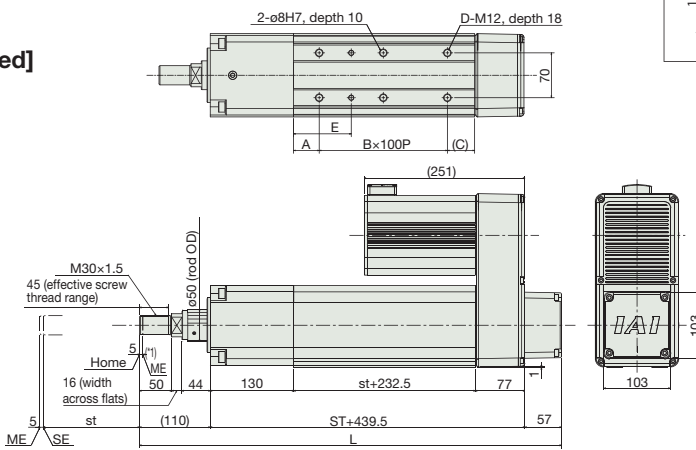
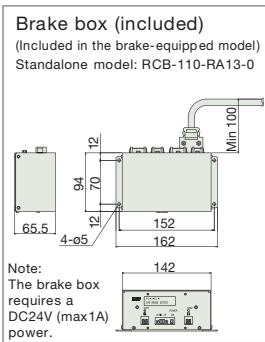
CAD drawings can be downloaded from IAI website. www.robocylinder.de



[No Brake]

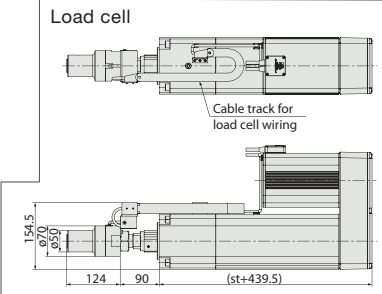


[Brake-Equipped]



For Special Orders P. A-9

- The motor-encoder cable is connected here. See page A-39 for details on cables.
 - When homing, the rod moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.
 - The orientation of the bolt will vary depending on the product.
- SE: Stroke end
ME: Mechanical end



Dimensions/Weight by Stroke

RCS2-RA13R (without brake)

Stroke	50	100	150	200
L	599.5	649.5	699.5	749.5
A	40	65	40	65
B	2	2	3	3
C	42.5	67.5	42.5	67.5
D	6	6	8	8
E	90	115	90	115
Weight (kg)	33	34	35	36

RCS2-RA13R (with brake)

Stroke	50	100	150	200
L	656.5	706.5	756.5	806.5
A	40	65	40	65
B	2	2	3	3
C	42.5	67.5	42.5	67.5
D	6	6	8	8
E	90	115	90	115
Weight (kg)	35	36	37	38

Note: The brake-equipped model (option code: "-B") always comes with a brake box. If you want to order just the brake-equipped actuator, specify the option code "-BN".

Motor-mounting direction / Cable exit direction (Options)

Note: Please be sure to specify one of the codes for the motor mounting direction and the cable exit direction.



Option Code	MT1	MT2	MT3	MR1	ML1	MR2	ML3
Motor-mounting direction	Top (standard)	Top	Top	Right	Left	Right	Left
Cable exit direction	Top (standard)	Right	Left	Top	Top	Right	Left

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode			Positioning is possible for up to 512 points	512 points			
Solenoid Valve Mode			Operable with same controls as solenoid valve.	7 points			
Serial Communication Type		SCON-C-750②①-NP-2-2	Dedicated to serial communication	64 points	Single-Phase AC 230V	1569VA max.	→ P547
Pulse Train Input Control Type			Dedicated to Pulse Train Input	(-)	Three-phase AC 230V (XSEL-P/Q only)	*When operating a 750W single-axis model	
Program Control 1-2 Axes Type		SSEL-C-1-750②①-NP-2-2	Programmed operation is possible. Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-③-1-750②①-N1-EEE-2-④	Programmed operation is possible. Operation is possible on up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-axis model. * ① is a placeholder for the encoder type (I: incremental / A: absolute). * ② is a placeholder for the code "S", if the load cell option is specified. * ③ is a placeholder for the XSEL type name ("KE", "KET", "P", or "Q"). * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

RCS2-RGS4C

RoboCylinder Rod Type with Single Guide ø37mm Diameter 230V Servo Motor
Coupled

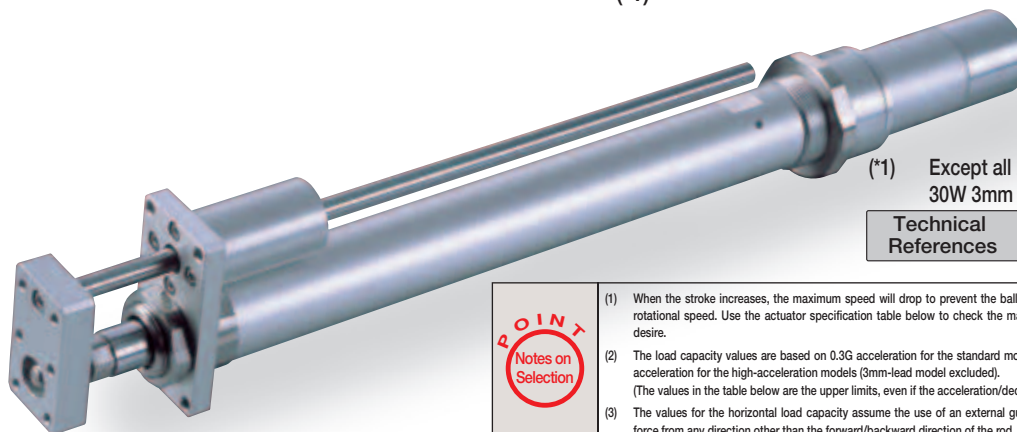
■ Configuration: **RCS2** — **RGS4C** — [] — [] — [] — [] — [] — [] — []

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
		I : Incremental A : Absolute	20 : 20W Servo Motor 30 : 30W Servo Motor	12 : 12mm 6 : 6mm 3 : 3mm	50 : 50mm 300 : 300mm (50mm pitch increments)	T1 : XSEL-KE/KET T2 : SCON SSEL XSEL-P/Q	N : None P : 1m S : 3m M : 5m X [] : Custom R [] : Robot cable	See Options below

* See page Pre-35 for an explanation of the naming convention.

For High Acceleration/Deceleration

(*1)



(*1) Except all 20W models and 30W 3mm lead models

Technical References P. A-5

- POINT**
Notes on Selection
- When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
 - The load capacity values are based on 0.3G acceleration for the standard model (0.2G for 3mm-lead), and 1G acceleration for the high-acceleration models (3mm-lead model excluded). (The values in the table below are the upper limits, even if the acceleration/deceleration is decreased.)
 - The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod. See the technical resources (page A-81) for the allowable weight using the supplied guide alone.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. Load Capacity		Rated Thrust (N)	Stroke (mm)
			Horizontal (kg)	Vertical (kg)		
RCS2-RGS4C-①-20-12-②-③-④-⑤	20	12	3.0	0.5	18.9	50 ~ 300 (50mm increments)
RCS2-RGS4C-①-20-6-②-③-④-⑤		6	6.0	1.5	37.7	
RCS2-RGS4C-①-20-3-②-③-④-⑤		3	12.0	3.5	75.4	
RCS2-RGS4C-①-30-12-②-③-④-⑤	30	12	4.0	1.0	28.3	
RCS2-RGS4C-①-30-6-②-③-④-⑤		6	9.0	2.5	56.6	
RCS2-RGS4C-①-30-3-②-③-④-⑤		3	18.0	6.0	113.1	

Legend: ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options

Stroke and Maximum Speed

Stroke Lead	50 ~ 300 (50mm increments)	
	12	600
6	300	
3	150	

(Unit: mm/s)

Cable List

Type	Cable Symbol	
Standard	P (1m)	
	S (3m)	
	M (5m)	
Special Lengths	X06 (6m) ~ X10 (10m)	
	X11 (11m) ~ X15 (15m)	
	X16 (16m) ~ X20 (20m)	
Robot Cable	R01 (1m) ~ R03 (3m)	
	R04 (4m) ~ R05 (5m)	
	R06 (6m) ~ R10 (10m)	
	R11 (11m) ~ R15 (15m)	
	R16 (16m) ~ R20 (20m)	

* See page A-39 for cables for maintenance.

Option List

Name	Option Code	See Page
Brake	B	→ A-25
Foot bracket	FT	→ A-29
High-acceleration/deceleration (*1)	HA	→ A-32
Home sensor (*2)	HS	→ A-32
Reversed-home	NM	→ A-33
Trunnion bracket (back)	TRR	→ A-38

(*1) The high-acceleration/deceleration option is not available for all 20W models and 30W model with 3mm lead.

(*2) The home sensor (HS) cannot be used on the reversed-home models.

Actuator Specifications

Item	Description
Drive System	Ball screw ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Guide	Single guide (guide rod diameter ø10mm, Ball bush type)
Rod Diameter	ø20mm
Non-rotating accuracy of rod	±0.05 deg
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

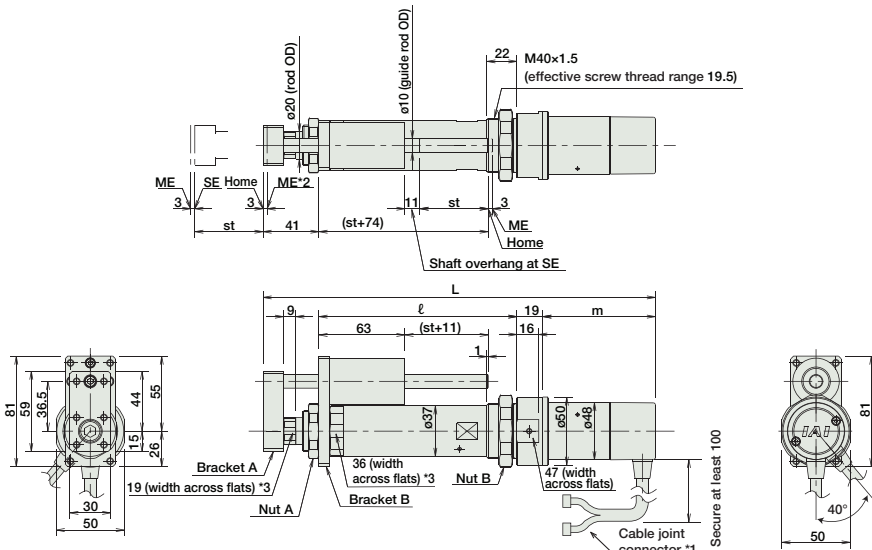


- *1. The motor-encoder cable is connected here. See page A-39 for details on cables.
- *2. When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end

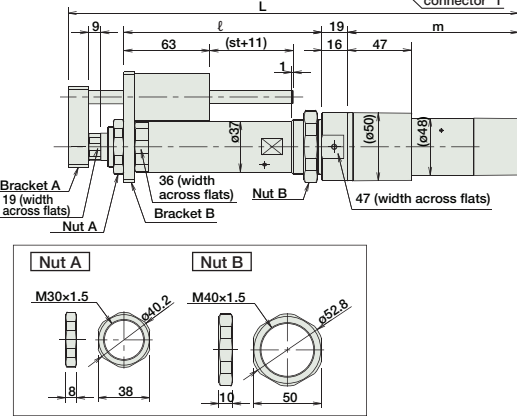
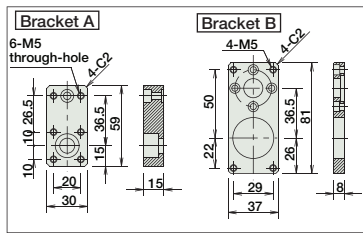
For Special Orders P. A-9

- *3. The orientation of the bolt will vary depending on the product.

[No Brake]



[Brake-Equipped]



Dimensions/Weight by Stroke

RCS2-RGS4C (without brake)							
Stroke	50	100	150	200	250	300	
L	20W	285.5	335.5	385.5	435.5	485.5	535.5
	30W	300.5	350.5	400.5	450.5	500.5	550.5
ℓ	145	195	245	295	345	395	
m	20W	80.5					
	30W	95.5					
Weight (kg)	1.5	1.6	1.8	2.0	2.2	2.4	

RCS2-RGS4C (with brake)							
Stroke	50	100	150	200	250	300	
L	20W	328.5	378.5	428.5	478.5	528.5	578.5
	30W	343.5	393.5	443.5	493.5	543.5	593.5
ℓ	145	195	245	295	345	395	
m	20W	123.5					
	30W	138.5					
Weight (kg)	1.7	1.8	2.0	2.2	2.4	2.6	

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-20①-NP-2-③ SCON-C-30D①②-NP-2-③	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V	Maximum 360VA * Single-axis model operated at 150W	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve.	7 points			
Serial Communication Type			Dedicated to serial communication	64 points	Single-Phase AC 230V		
Pulse Train Input Control Type			Dedicated to Pulse Train Input	(-)	3-Phase AC 230V (XSEL-P/Q only)		
Program Control 1-2 Axes Type		SSEL-C-1-20①-NP-2-③ SSEL-C-1-30D①②-NP-2-③	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-④-1-20①-N1-EEE-2-⑤ XSEL-④-1-30D①②-N1-EEE-2-⑤	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-axis model.
 * ① is a placeholder for the encoder type (I: incremental, A: absolute).
 * ② is a placeholder for the code "HA" when the high acceleration/deceleration option is specified.
 * ③ is a placeholder for the power supply voltage (1: single-phase 115V, 2: single phase 230V).
 * ④ is a placeholder for the XSEL type name (KE, KET, P, Q).
 * ⑤ is a placeholder for the power supply voltage type (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

RCS2-RGS5C

RoboCylinder Rod Type with Single Guide ø55mm Diameter 230V Servo Motor
Coupled

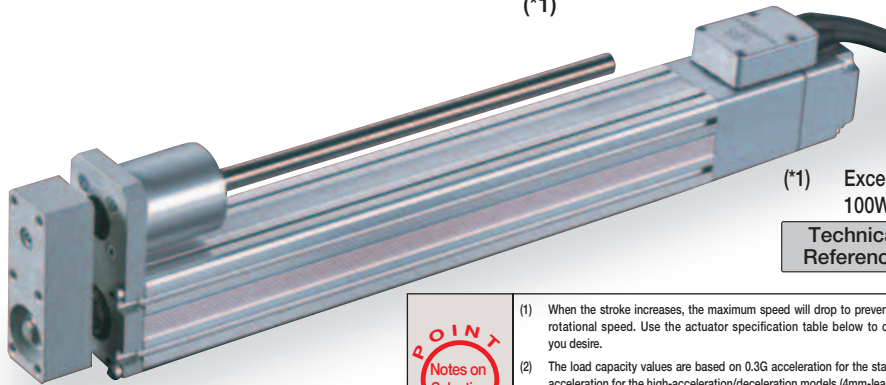
■ Configuration: **RCS2** — **RGS5C** — [] — [] — [] — [] — [] — [] — []

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
I : Incremental A : Absolute			60 : 60W Servo Motor 100 : 100W Servo Motor	16 : 16mm 8 : 8mm 4 : 4mm	50 : 50mm 300 : 300mm (50mm pitch increments)	T1 : XSEL-KE/KET T2 : SCON SSEL XSEL-P/Q	N : None P : 1m S : 3m M : 5m X [] : Custom R [] : Robot cable	See Options below

* See page Pre-35 for an explanation of the naming convention.

For High Acceleration/Deceleration

(*1)



(*1) Except all 60W models and 100W 4mm lead models

Technical References P. A-5

- POINT**
Notes on Selection
- When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
 - The load capacity values are based on 0.3G acceleration for the standard model (0.2G for 4mm-lead), and 1G acceleration for the high-acceleration/deceleration models (4mm-lead excluded). (The values in the table below are the upper limits, even if the acceleration/deceleration is decreased.)
 - The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod. See the technical resources (page A-82) for the allowable weight using the supplied guide alone.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. Load Capacity	Rated Thrust (N)	Stroke (mm)	
			Horizontal (kg)	Vertical (kg)		
RCS2-RGS5C-①-60-16-②-③-④-⑤	60	16	12.0	1.3	50 ~ 300 (50mm increments)	
RCS2-RGS5C-①-60-8-②-③-④-⑤		8	25.0	4.3		127.5
RCS2-RGS5C-①-60-4-②-③-④-⑤		4	50.0	10.8		255.1
RCS2-RGS5C-①-100-16-②-③-④-⑤	100	16	15.0	2.8		105.8
RCS2-RGS5C-①-100-8-②-③-④-⑤		8	30.0	8.3		212.7
RCS2-RGS5C-①-100-4-②-③-④-⑤		4	60.0	17.3		424.3

Legend: ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options

Stroke and Maximum Speed

Stroke / Lead	50 ~ 250 (50mm increments)	300 (mm)
16	800	755
8	400	377
4	200	188

(Unit: mm/s)

Cable List

Type	Cable Symbol
Standard	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
Robot Cable	R01 (1m) ~ R03 (3m)
	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* See page A-39 for cables for maintenance.

Option List

Name	Option Code	See Page
Connector cable exit direction	A2	→ A-25
Brake	B	→ A-25
Foot bracket	FT	→ A-29
Guide mounting direction	GS2 ~ GS4	→ P252
High-acceleration/deceleration (*1)	HA	→ A-32

(*1) The high-acceleration/deceleration option is not available for all 60W models and 100W model with 4mm lead.

Actuator Specifications

Item	Description
Drive System	Ball screw ø12mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Guide	Single guide (guide rod diameter ø12mm, Ball bush type)
Rod Diameter	ø30mm
Non-rotating accuracy of rod	±0.1 deg
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

Dimensions

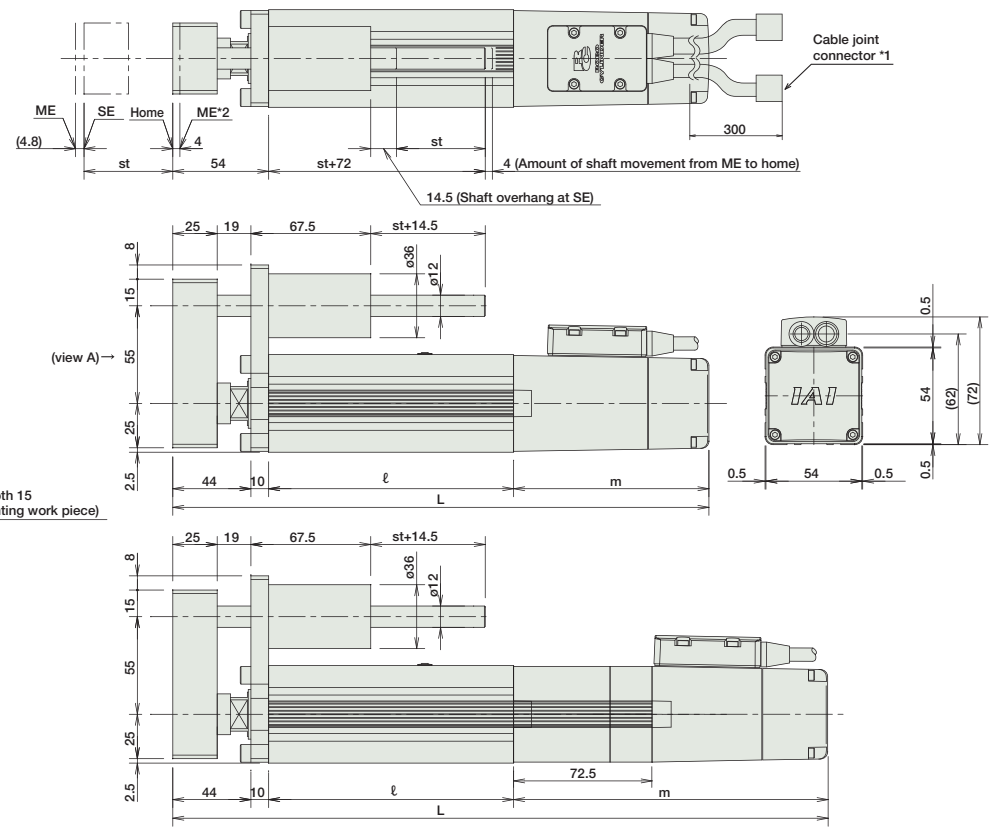
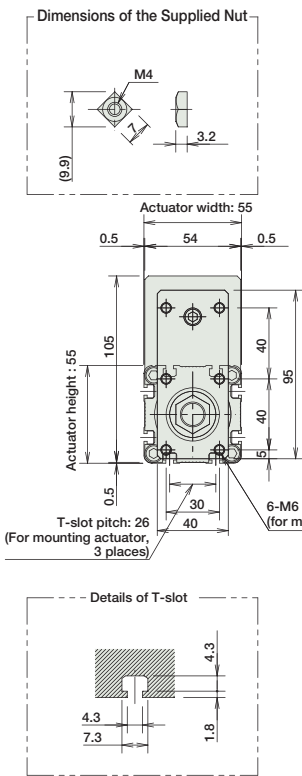
CAD drawings can be downloaded from IAI website. www.robocylinder.de



* The RGS5C is not available in reversed-home configuration, due to its construction.

- *1. The motor-encoder cable is connected here. See page A-39 for details on cables.
- *2. When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end

For Special Orders P. A-9



Dimensions/Weight by Stroke

RCS2-RGS5C (without brake)		Stroke	50	100	150	200	250	300
L	60W	284	334	384	434	484	534	
	100W	302	352	402	452	502	552	
		ℓ	138	188	238	288	338	388
m	60W	92						
	100W	110						
Weight (kg)		2.5	2.8	3.2	3.6	3.9	4.3	

RCS2-RGS5C (with brake)		Stroke	50	100	150	200	250	300
L	60W	356.5	406.5	456.5	506.5	556.5	606.5	
	100W	374.5	424.5	474.5	524.5	574.5	624.5	
		ℓ	138	188	238	288	338	388
m	60W	164.5						
	100W	182.5						
Weight (kg)		2.8	3.1	3.5	3.9	4.2	4.6	

Guide mounting direction (as viewed from view A)

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-60①-NP-2-③ SCON-C-100①-②-NP-2-③	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	Maximum 360VA * Single-axis model operated at 150W	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve.	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to Pulse Train Input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-60①-NP-2-③ SSEL-C-1-100①-②-NP-2-③	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-④-1-60①-N1-EEE-2-⑤ XSEL-④-1-100①-②-N1-EEE-2-⑤	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-axis model.
 * ① is a placeholder for the encoder type (I: incremental, A: absolute).
 * ② is a placeholder for the code "HA" when the high acceleration/deceleration option is specified.
 * ③ is a placeholder for the power supply voltage (1: single-phase 115V, 2: single phase 230V).
 * ④ is a placeholder for the XSEL type name (KE, KET, P, Q).
 * ⑤ is a placeholder for the power supply voltage type (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

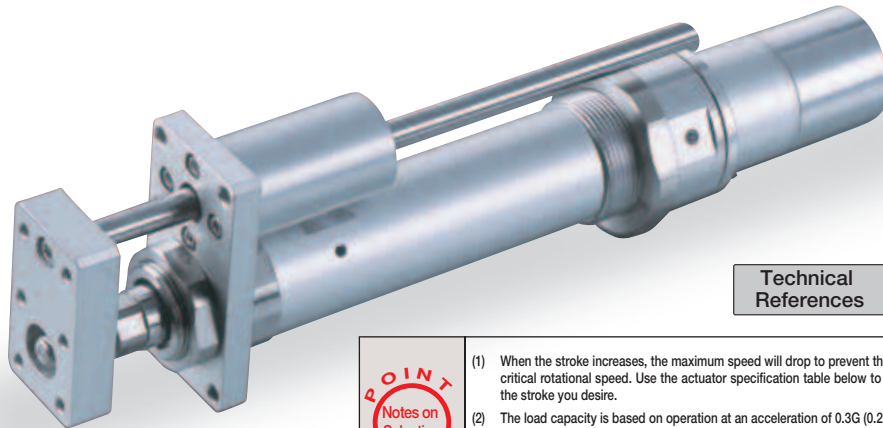
RCS2-RGS4D

RoboCylinder Rod Type with Single Guide ø37mm Diameter 230V Servo Motor
Built-In Model

■ Configuration: **RCS2** -- **RGS4D** -- [] -- [] -- [] -- [] -- [] -- [] -- []

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
I : Incremental A : Absolute		60 : 60W Servo Motor 30 : 30W Servo Motor	12 : 12mm 6 : 6mm 3 : 3mm	50 : 50mm 300 : 300mm (50mm pitch increments)	T1 : XSEL-KE/KET T2 : SCON SSEL XSEL-P/Q	N : None P : 1m S : 3m M : 5m X [] : Custom R [] : Robot cable	See Options below	

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5

- POINT**
Notes on Selection
- (1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
 - (2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model). This is the upper limit of the acceleration.
 - (3) The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod. See the technical resources (page A-82) for the allowable weight using the supplied guide alone.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. Load Capacity Horizontal (kg)	Max. Load Capacity Vertical (kg)	Rated Thrust (N)	Stroke (mm)
RCS2-RGS4D-①-20-12-②-③-④-⑤	20	12	3.0	0.5	18.9	50 ~ 300 (50mm increments)
RCS2-RGS4D-①-20-6-②-③-④-⑤		6	6.0	1.5	37.7	
RCS2-RGS4D-①-20-3-②-③-④-⑤		3	12.0	3.5	75.4	
RCS2-RGS4D-①-30-12-②-③-④-⑤	30	12	4.0	1.0	28.3	
RCS2-RGS4D-①-30-6-②-③-④-⑤		6	9.0	2.5	56.6	
RCS2-RGS4D-①-30-3-②-③-④-⑤		3	18.0	6.0	113.1	

Stroke and Maximum Speed

Stroke Lead	50 ~ 300 (50mm increments)
12	600
6	300
3	150

(Unit: mm/s)

Legend: ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options

Cable List

Type	Cable Symbol
Standard	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
Robot Cable	R01 (1m) ~ R03 (3m)
	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball screw ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Guide	Single guide (guide rod diameter ø10mm, Ball bush type)
Rod Diameter	ø20mm
Non-rotating accuracy of rod	±0.05 deg
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

Option List

Name	Option Code	See Page
Foot bracket	FT	→ A-29
Home sensor	HS	→ A-32
Reversed-home	NM	→ A-33
Trunnion bracket (back)	TRR	→ A-38

* The home sensor (HS) cannot be used on the reversed-home models.

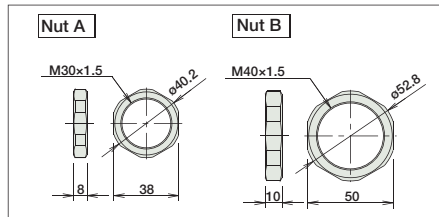
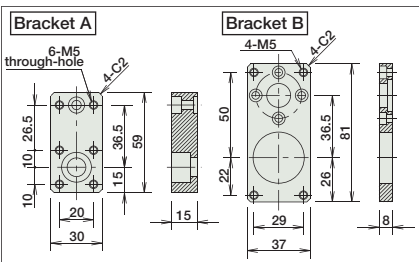
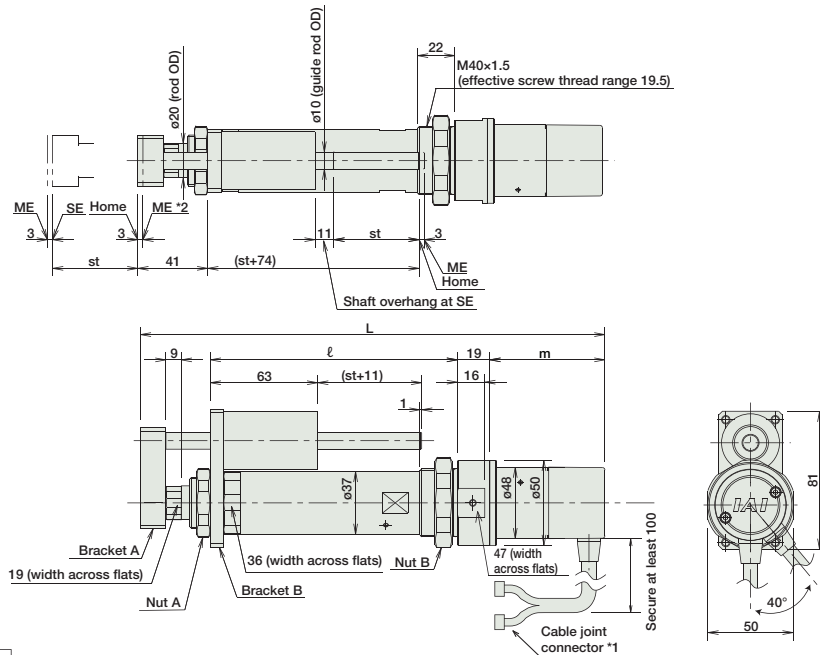
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de



- *1. The motor-encoder cable is connected here. See page A-39 for details on cables.
- *2. When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end

For Special Orders P. A-9



Dimensions/Weight by Stroke

RCS2-RGS4D (without brake)

Stroke	50	100	150	200	250	300	
L	20W	263.5	313.5	363.5	413.5	463.5	513.5
	30W	278.5	328.5	378.5	428.5	478.5	528.5
ℓ	145	195	245	295	345	395	
m	20W	58.5					
	30W	73.5					
Weight (kg)	1.3	1.5	1.7	1.9	2.1	2.3	

RCS2-RGS4D does not come in a brake-equipped configuration.

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-20①-NP-2-② SCON-C-30D①-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	Maximum 360VA * Single-axis model operated at 150W	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve.	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to Pulse Train Input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-20①-NP-2-② SSEL-C-1-30D①-NP-2-②	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-③-1-20①-N1-EEE-2-④ XSEL-③-1-30D①-N1-EEE-2-④	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-axis model.
 * ① is a placeholder for the encoder type (I: incremental / A: absolute).
 * ② is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
 * ③ is a placeholder for the XSEL type name ("KE", "KET", "P", or "Q").
 * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, or 3: three-phase 230V).

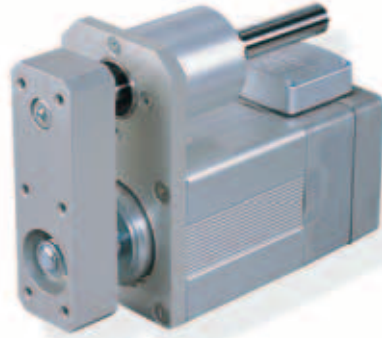
RCS2-SRGS7BD

RoboCylinder Rod Type with Single Guide ø75mm Width 230V Servo Motor Short-Length Model

■ Configuration: **RCS2** — **SRGS7BD** — **I** — [] — [] — [] — [] — [] — []

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
		I : Incremental	60 : 60W Servo Motor 100 : 100W Servo Motor 150 : 150W Servo Motor	12 : 12mm 6 : 6mm 3 : 3mm	50 : 50mm 300 : 300mm (50mm pitch increments)	T1 : XSEL-KE/KET T2 : SCON SSEL XSEL-P/Q	N : None P : 1m S : 3m M : 5m X [] : Custom R [] : Robot cable	See Options below

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5



- (1) When operated at the rated acceleration, the maximum load capacity is the load capacity at the rated acceleration.
- (2) When operated at the maximum acceleration, the maximum load capacity is the load capacity at the maximum acceleration.
- (3) The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod. See the technical resources (page A-82) for the allowable weight using the supplied guide alone.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Rated Acceleration (G)	Load Capacity at Rated Acceleration		Max. Acceleration (G)	Load Capacity at Max. Acceleration		Rated Thrust (N)	Stroke (mm)
				Horizontal (kg)	Vertical (kg)		Horizontal (kg)	Vertical (kg)		
RCS2-SRGS7BD-I-60-16-①-②-③-④	60	16	0.25	5	1.5	0.35	2.5	0.5	63	50~300 (50mm increments)
RCS2-SRGS7BD-I-60-8-①-②-③-④		8	0.15	10	4.5	0.25	5	2	127	
RCS2-SRGS7BD-I-60-4-①-②-③-④		4	0.05	20	9.5	0.15	10	4.5	254	
RCS2-SRGS7BD-I-100-16-①-②-③-④	100	16	0.3	10	3	0.4	5	1	103	
RCS2-SRGS7BD-I-100-8-①-②-③-④		8	0.2	22	8.5	0.3	10	4	207	
RCS2-SRGS7BD-I-100-4-①-②-③-④		4	0.1	40	19	0.2	20	8.5	414	
RCS2-SRGS7BD-I-150-16-①-②-③-④	150	16	0.3	15	6	0.4	7.5	2.5	157	
RCS2-SRGS7BD-I-150-8-①-②-③-④		8	0.2	35	14	0.3	17.5	6.5	314	
RCS2-SRGS7BD-I-150-4-①-②-③-④		4	0.1	55	22	0.2	27.5	10.5	628	

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

Stroke and Maximum Speed

Lead	Stroke	50 ~ 300 (50mm increments)
	16	800
8	400	
4	200	

(Unit: mm/s)

Cable List

Type	Cable Symbol	
Standard	P (1m)	
	S (3m)	
	M (5m)	
Special Lengths	X06 (6m) ~ X10 (10m)	
	X11 (11m) ~ X15 (15m)	
	X16 (16m) ~ X20 (20m)	
Robot Cable	R01 (1m) ~ R03 (3m)	
	R04 (4m) ~ R05 (5m)	
	R06 (6m) ~ R10 (10m)	
	R11 (11m) ~ R15 (15m)	
	R16 (16m) ~ R20 (20m)	

* See page A-39 for cables for maintenance.

Option List

Name	Option Code	See Page
Connector cable exit direction	A1 ~ A3	→ A-25
Brake	B	→ A-25
Foot bracket	FT	→ A-29
Guide mounting direction	GS2 ~ GS4	→ P256

Actuator Specifications

Item	Description
Drive System	Ball screw ø12mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Guide	Single guide (guide rod diameter ø16, Ball bush type)
Rod Diameter	ø35mm
Non-rotating accuracy of rod	±0.1 deg
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de



*The SRGS7BD is not available in reversed-home configuration, due to its construction.

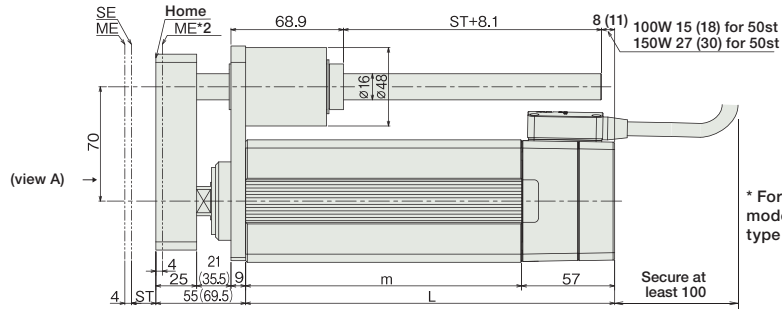
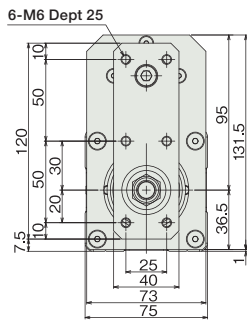
Note:

A slit is provided in the side of the actuator body to prevent pauses due to forward/backward operation. Please make a separate request for a dustproof/splash-proof model.

For Special Orders P. A-9

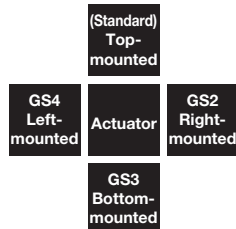
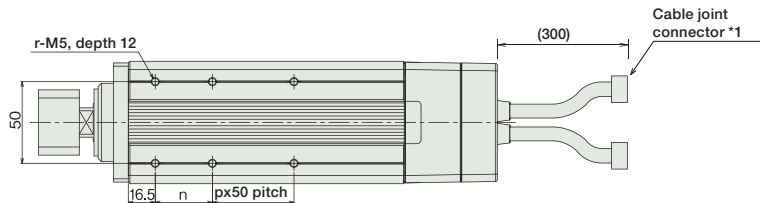
- The motor-encoder cable is connected here. See page A-39 for details on cables.
- When homing, the rod moves to the mechanical end position; therefore, please watch for any interference with the surrounding objects.

ST: Stroke
SE: Stroke end
ME: Mechanical end



* The value inside () is the dimension for the extended rod tip model.

* For brake-equipped model, see standard type (see P242)



Guide mounting direction (as viewed from view A)

Dimensions/Weight by Stroke

Stroke	50	100	150	200	250	300
L	60W	126	176	226	276	326
	100W	133	176	226	276	326
	150W	145	176	226	276	326
m	60W	69	119	169	219	269
	100W	76	119	169	219	269
	150W	88	119	169	219	269
n	25	35	35	35	35	35
p	0	0	1	2	3	4
r	4	4	6	8	10	12
Weight (kg)	60W	3.5	4.1	4.8	5.4	6.1
	100W	3.7	4.3	4.9	5.6	6.2
	150W	4	4.5	5.1	5.8	6.4

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-①-I-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	Maximum 360VA * Single-axis model operated at 150W	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve.	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated for Pulse Train Input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-①-I-NP-2-②	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-③-1-①-I-N1-EEE-2-④	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

Note: The SRGS7BD type actuator cannot be connected to the 5th and 6th axes of the XSEL-P/Q controller.

- * For SSEL and XSEL, only applicable to the single-axis model.
- * ① is a place holder for the motor output (W) (60, 100, 150).
- * ② is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
- * ③ is a placeholder for the XSEL type name ("KE", "KET", "P", or "Q").
- * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, or 3: three-phase 230V).

Slider Type

Mini

Standard

Controllers Integrated

Rod Type

Mini

Standard

Controllers Integrated

Table/Arm /Flat Type

Mini

Standard

Gripper/ Rotary Type

Linear Motor Type

Cleanroom Type

Splash Proof

Controllers

PMEC /AMEC

PSEP /ASEP

ROBO NET

ERC2

PCON

ACON

SCON

PSEL

ASEL

SSEL

XSEL

Pulse Motor

Servo Motor (24V)

Servo Motor (230V)

Linear Motor

RCS2-RGD4C

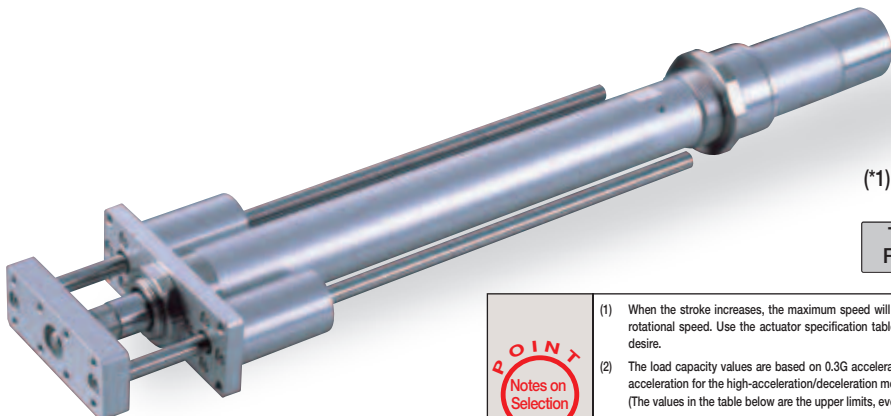
RoboCylinder Rod Type with Double Guide ø37mm Diameter 230V Servo Motor
Coupled

■ Configuration: **RCS2** — **RGD4C** — [] — [] — [] — [] — [] — [] — []

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
		I : Incremental A : Absolute	20 : 20W Servo Motor 30 : 30W Servo Motor	12 : 12mm 6 : 6mm 3 : 3mm	50 : 50mm 300 : 300mm (50mm pitch increments)	T1 : XSEL-KE/KET T2 : SCON SSEL XSEL-P/Q	N : None P : 1m S : 3m M : 5m X [] : Custom R [] : Robot cable	See Options below

* See page Pre-35 for an explanation of the naming convention.

For High Acceleration/Deceleration



(*1) Except all 20W models and 30W 3mm lead models

Technical References P. A-5

- POINT**
Notes on Selection
- When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
 - The load capacity values are based on 0.3G acceleration for the standard model (0.2G for 3mm-lead), and 1G acceleration for the high-acceleration/deceleration model (3mm-lead excluded). (The values in the table below are the upper limits, even if the acceleration/deceleration is decreased.)
 - The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod. See the technical resources (page A-83) for the allowable weight using the supplied guide alone.

Actuator Specifications

■ Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. Load Capacity		Rated Thrust (N)	Stroke (mm)
			Horizontal (kg)	Vertical (kg)		
RCS2-RGD4C-①-20-12-②-③-④-⑤	20	12	3.0	0.5	18.9	50 ~ 300 (50mm increments)
RCS2-RGD4C-①-20-6-②-③-④-⑤		6	6.0	1.5	37.7	
RCS2-RGD4C-①-20-3-②-③-④-⑤		3	12.0	3.5	75.4	
RCS2-RGD4C-①-30-12-②-③-④-⑤	30	12	4.0	1.0	28.3	
RCS2-RGD4C-①-30-6-②-③-④-⑤		6	9.0	2.5	56.6	
RCS2-RGD4C-①-30-3-②-③-④-⑤		3	18.0	6.0	113.1	

■ Stroke and Maximum Speed

Stroke	50 ~ 300 (50mm increments)
12	600
6	300
3	150

(Unit: mm/s)

Legend: ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options

Cable List

Type	Cable Symbol
Standard	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
Robot Cable	R01 (1m) ~ R03 (3m)
	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* See page A-39 for cables for maintenance.

Option List

Name	Option Code	See Page
Brake	B	→ A-25
Foot bracket	FT	→ A-29
High-acceleration/deceleration (*1)	HA	→ A-32
Home sensor (*2)	HS	→ A-32
Reversed-home	NM	→ A-33
Trunnion bracket (back)	TRR	→ A-38

(*1) The high-acceleration/deceleration option is not available for all 20W models and 30W model with 3mm lead.
(*2) The home sensor (HS) cannot be used on the reversed-home models.

Actuator Specifications

Item	Description
Drive System	Ball screw ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Guide	Double guide (guide rod diameter ø10, Ball bush type)
Rod Diameter	ø20mm
Non-rotating accuracy of rod	±0.05 deg
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

Dimensions

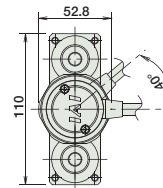
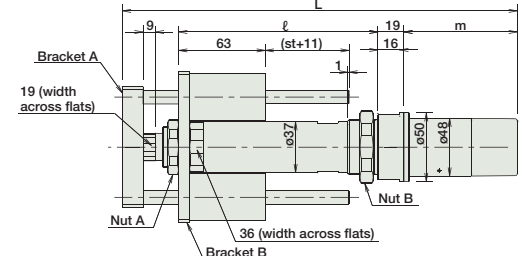
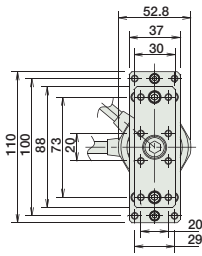
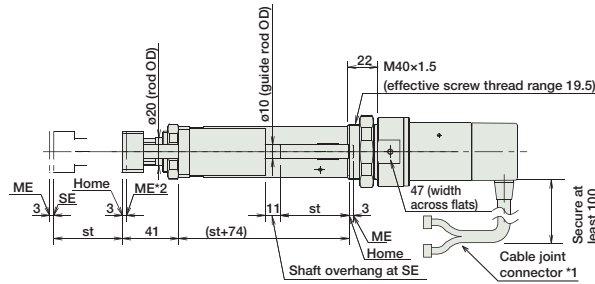
CAD drawings can be downloaded from IAI website. www.robocylinder.de



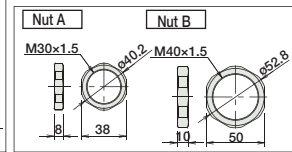
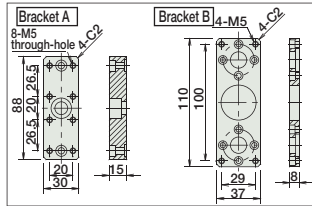
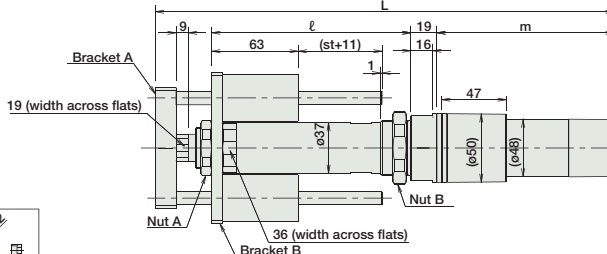
[No Brake]

- *1. The motor-encoder cable is connected here. See page A-39 for details on cables.
- *2. When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.

ME: Mechanical end SE: Stroke end



[Brake-Equipped]



Dimensions/Weight by Stroke

RCS2-RGD4C (without brake)

	Stroke	Stroke					
		50	100	150	200	250	300
L	20W	285.5	335.5	385.5	435.5	485.5	535.5
	30W	300.5	350.5	400.5	450.5	500.5	550.5
ℓ		145	195	245	295	345	395
m	20W	80.5					
	30W	95.5					
Weight (kg)		1.8	2.0	2.2	2.4	2.6	2.8

RCS2-RGD4C (with brake)

	Stroke	Stroke					
		50	100	150	200	250	300
L	20W	328.5	378.5	428.5	478.5	528.5	578.5
	30W	343.5	393.5	443.5	493.5	543.5	593.5
ℓ		145	195	245	295	345	395
m	20W	123.5					
	30W	138.5					
Weight (kg)		2.0	2.2	2.4	2.6	2.8	3.0

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-20①-NP-2-③ SCON-C-30D①②-NP-2-③	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	360VA max. * When operating a 150W single-axis model	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve.	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to Pulse Train Input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-20①-NP-2-③ SSEL-C-1-30D①②-NP-2-③	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-④-1-20①-N1-EEE-2-⑤ XSEL-④-1-30D①②-N1-EEE-2-⑤	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

- * For SSEL and XSEL, only applicable to the single-axis model.
- * ① is a placeholder for the encoder type (I: incremental, A: absolute).
- * ② is a placeholder for the code "HA" when the high acceleration/deceleration option is specified.
- * ③ is a placeholder for the power supply voltage (1: single-phase 115V, 2: single phase 230V).
- * ④ is a placeholder for the XSEL type name (KE, KET, P, Q).
- * ⑤ is a placeholder for the power supply voltage type (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

RCS2-RGD5C

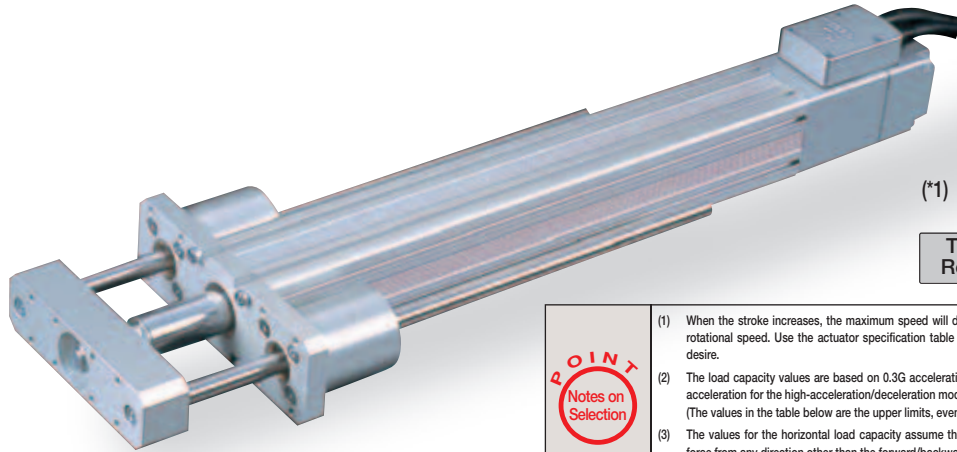
RoboCylinder Rod Type with Single Guide ø37mm Diameter 230V Servo Motor
Built-In Model

■ Configuration: **RCS2** -- **RGD5C** -- [] -- [] -- [] -- [] -- [] -- [] -- []

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
I : Incremental A : Absolute		60 : 60W Servo Motor 100 : 100W Servo Motor	16 : 16mm 8 : 8mm 4 : 4mm	50 : 50mm 300 : 300mm (50mm pitch increments)	T1 : XSEL-KE/KET T2 : SCON SSEL XSEL-P/Q	N : None P : 1m S : 3m M : 5m X [] : Custom R [] : Robot cable	See Options below	

* See page Pre-35 for an explanation of the naming convention.

For High Acceleration/Deceleration



(*1)

(*1) Except all 60W models and 100W 4mm lead models

Technical References P. A-5

- POINT**
Notes on Selection
- When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
 - The load capacity values are based on 0.3G acceleration for the standard model (0.2G for 4mm-lead), and 1G acceleration for the high-acceleration/deceleration models (4mm-lead excluded). (The values in the table below are the upper limits, even if the acceleration/deceleration is decreased.)
 - The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod. See the technical resources (page A-83) for the allowable weight using the supplied guide alone.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. Load Capacity		Rated Thrust (N)	Stroke (mm)
			Horizontal (kg)	Vertical (kg)		
RCS2-RGD5C-①-60-16-②-③-④-⑤	60	16	12.0	1.3	63.8	50 ~ 300 (50mm increments)
RCS2-RGD5C-①-60-8-②-③-④-⑤		8	25.0	4.3	127.5	
RCS2-RGD5C-①-60-4-②-③-④-⑤		4	50.0	10.8	255.1	
RCS2-RGD5C-①-100-16-②-③-④-⑤	100	16	15.0	2.8	105.8	
RCS2-RGD5C-①-100-8-②-③-④-⑤		8	30.0	8.3	212.7	
RCS2-RGD5C-①-100-4-②-③-④-⑤		4	60.0	17.3	424.3	

Legend: ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options

Stroke and Maximum Speed

Stroke / Lead	50 ~ 250 (50mm increments)	300 (mm)
16	800	755
8	400	377
4	200	188

(Unit: mm/s)

Cable List

Type	Cable Symbol
Standard	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
Robot Cable	R01 (1m) ~ R03 (3m)
	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* See page A-39 for cables for maintenance.

Option List

Name	Option Code	See Page
Connector cable exit direction	A2	→ A-25
Brake	B	→ A-25
Foot bracket	FT	→ A-29
High-acceleration/deceleration (*1)	HA	→ A-32

(*1) The high-acceleration/deceleration option is not available for all 60W models and 100W model with 4mm lead.

Actuator Specifications

Item	Description
Drive System	Ball screw ø12mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Guide	Double guide (guide rod diameter ø12, Ball bush type)
Rod Diameter	ø30mm
Non-rotating accuracy of rod	±0.08 deg
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

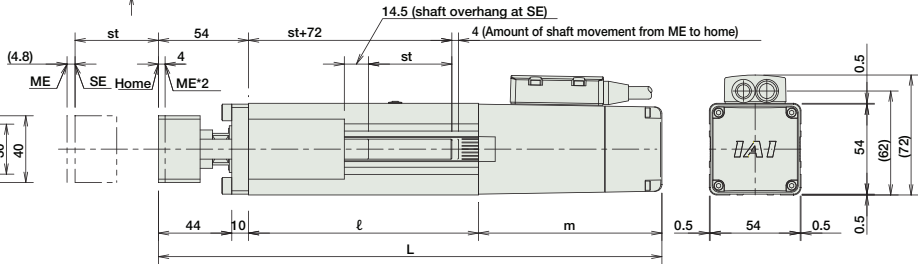
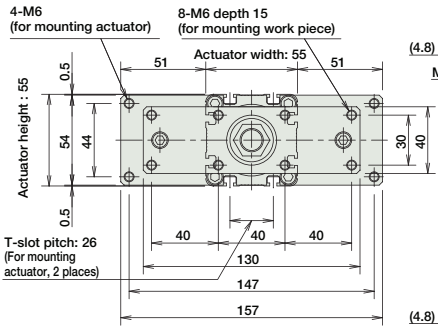
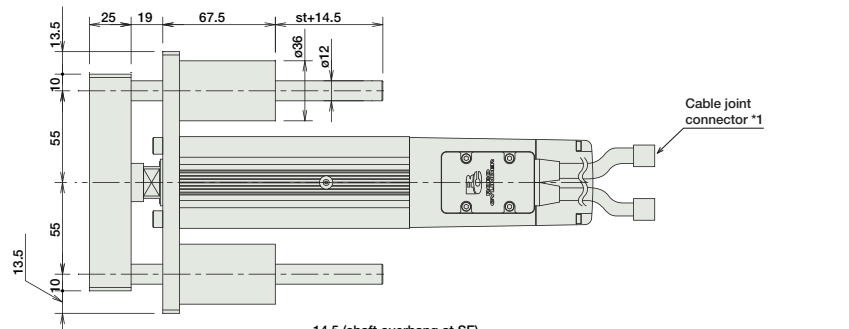
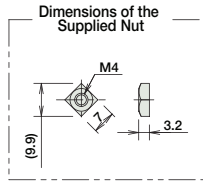
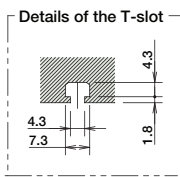


*The RGD5C is not available in reversed-home configuration, due to its construction.

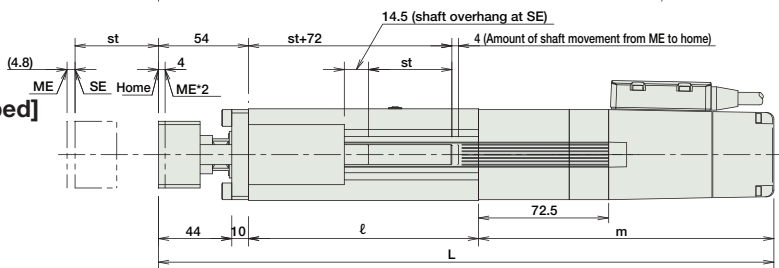
- *1 The motor-encoder cable is connected here. See page A-39 for details on cables.
- *2. When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end

For Special Orders P. A-9

[No Brake]



[Brake-Equipped]



■ Dimensions/Weight by Stroke

RCS2-RGD5C (without brake)

Stroke	50	100	150	200	250	300	
L	60W	284	334	384	434	484	524
	100W	302	352	402	452	502	552
ℓ	138	188	238	288	338	388	
m	60W	92					
	100W	110					
Weight (kg)	2.7	3.0	3.4	3.8	4.2	5.5	

RCS2-RGD5C (with brake)

Stroke	50	100	150	200	250	300	
L	60W	356.5	406.5	456.5	506.5	556.5	606.5
	100W	374.5	424.5	474.5	524.5	574.5	624.5
ℓ	138	188	238	288	338	388	
m	60W	164.5					
	100W	182.5					
Weight (kg)	3.0	3.3	3.7	4.1	4.5	5.8	

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-60①-NP-2-③ SCON-C-100①②-NP-2-③	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	360VA max. * When operating a 150W single-axis model	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve.	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to Pulse Train Input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-60①-NP-2-③ SSEL-C-1-100①②-NP-2-③	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-④-1-60①-N1-EEE-2-⑤ XSEL-④-1-100①②-N1-EEE-2-⑤	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

- * For SSEL and XSEL, only applicable to the single-axis model.
- ① is a placeholder for the encoder type (I: incremental, A: absolute).
- ② is a placeholder for the code "HA" when the high acceleration/deceleration option is specified.
- ③ is a placeholder for the power supply voltage (1: single-phase 115V, 2: single phase 230V).
- ④ is a placeholder for the XSEL type name (KE, KET, P, Q).
- ⑤ is a placeholder for the power supply voltage type (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

Slider Type

Mini

Standard

Controllers Integrated

Rod Type

Mini

Standard

Controllers Integrated

Table/Arm /Flat Type

Mini

Standard

Gripper/ Rotary Type

Linear Motor Type

Cleanroom Type

Splash Proof

Controllers

PMEC /AMEC

PSEP /ASEP

ROBO NET

ERC2

PCON

ACON

SCON

PSEL

ASEL

SSEL

XSEL

Pulse Motor

Servo Motor (24V)

Servo Motor (230V)

Linear Motor

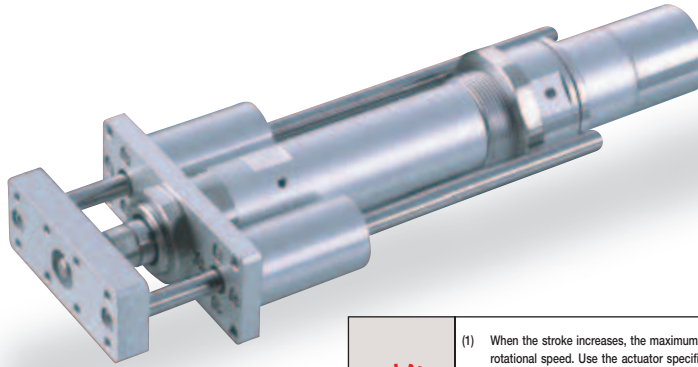
RCS2-RGD4D

RoboCylinder Rod Type with Double Guide ø37mm Diameter 230V Servo Motor
Built-In Model

■ Configuration: **RCS2** -- **RGD4D** -- [] -- [] -- [] -- [] -- [] -- [] -- []

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
I : Incremental A : Absolute			20 : 20W Servo Motor 30 : 30W Servo Motor	12 : 12mm 6 : 6mm 3 : 3mm	50 : 50mm 300 : 300mm (50mm pitch increments)	T1 : XSEL-KE/KET T2 : SCON SSEL XSEL-P/Q	N : None P : 1m S : 3m M : 5m X [] : Custom R [] : Robot cable	See Options below

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5

- POINT**
Notes on Selection
- When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
 - The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model). This is the upper limit of the acceleration.
 - The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod. See the technical resources (page A-83) for the allowable weight using the supplied guide alone.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. Load Capacity		Rated Thrust (N)	Stroke (mm)
			Horizontal (kg)	Vertical (kg)		
RCS2-RGD4D-①-20-12-②-③-④-⑤	20	12	3.0	0.5	18.9	50 ~ 300 (50mm increments)
RCS2-RGD4D-①-20-6-②-③-④-⑤		6	6.0	1.5	37.7	
RCS2-RGD4D-①-20-3-②-③-④-⑤		3	12.0	3.5	75.4	
RCS2-RGD4D-①-30-12-②-③-④-⑤	30	12	4.0	1.0	28.3	
RCS2-RGD4D-①-30-6-②-③-④-⑤		6	9.0	2.5	56.6	
RCS2-RGD4D-①-30-3-②-③-④-⑤		3	18.0	6.0	113.1	

Stroke and Maximum Speed

Stroke	50 ~ 300 (50mm increments)
12	600
6	300
3	150

(Unit: mm/s)

Legend: ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options

Cable List

Type	Cable Symbol
Standard	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
Robot Cable	R01 (1m) ~ R03 (3m)
	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* See page A-39 for cables for maintenance.

Option List

Name	Option Code	See Page
Foot bracket	FT	→ A-29
Home sensor	HS	→ A-32
Reversed-home	NM	→ A-33
Trunnion bracket (back)	TRR	→ A-38

* The home sensor (HS) cannot be used on the reversed-home models.

Actuator Specifications

Item	Description
Drive System	Ball screw ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Guide	Double guide (guide rod diameter ø10, Ball bush type)
Rod Diameter	ø20mm
Non-rotating accuracy of rod	±0.05 deg
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

Dimensions

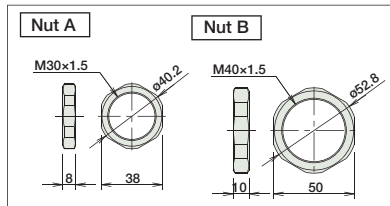
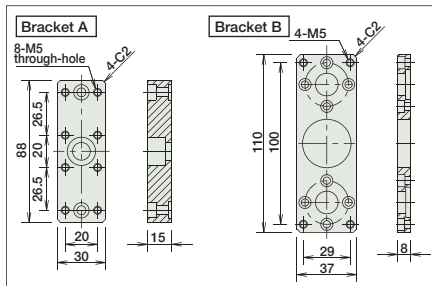
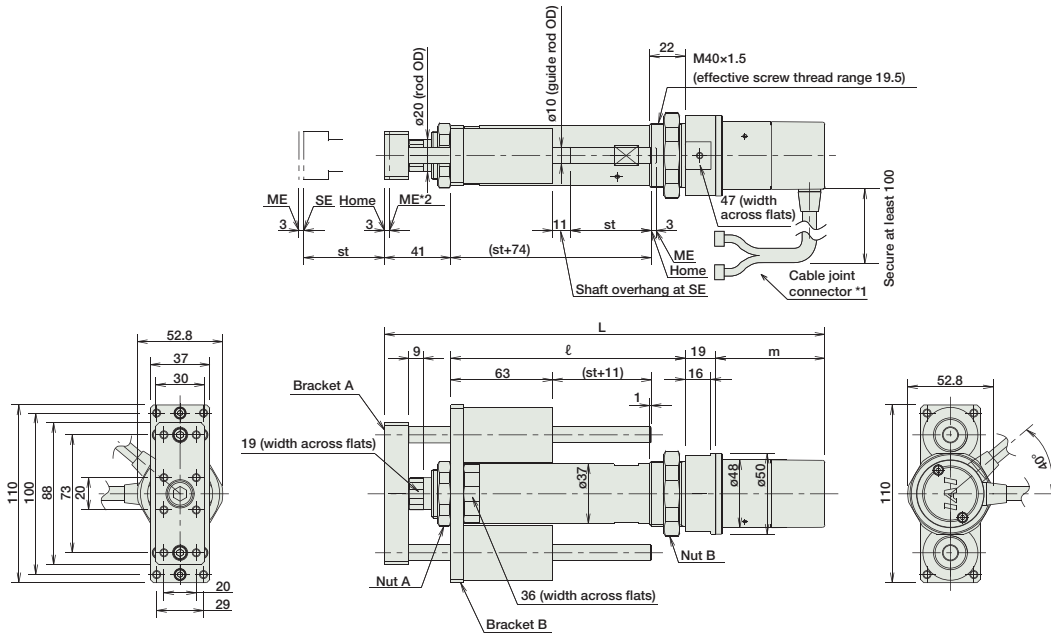
CAD drawings can be downloaded from IAI website. www.robocylinder.de



- *1. The motor-encoder cable is connected here. See page A-39 for details on cables.
- *2. When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end

For Special Orders P. A-9

[No Brake]



Dimensions/Weight by Stroke

RCS2-RGD4D (without brake)

Stroke	50	100	150	200	250	300	
L	20W	263.5	313.5	363.5	413.5	463.5	513.5
	30W	278.5	328.5	378.5	428.5	478.5	528.5
ℓ	145	195	245	295	345	395	
m	20W	58.5					
	30W	73.5					
Weight (kg)	1.6	1.8	2.1	2.3	2.5	2.7	

RCS2-RGD4D is not available in a brake-equipped configuration.

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-20①-NP-2-② SCON-C-30D①-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	360VA max. * When operating a 150W single-axis model	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve.	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to Pulse Train Input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-20①-NP-2-② SSEL-C-1-30D①-NP-2-②	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-③-1-20①-N1-EEE-2-④ XSEL-③-1-30D①-N1-EEE-2-④	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-axis model.
 * ① is a placeholder for the encoder type (I: incremental / A: absolute).
 * ② is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
 * ③ is a placeholder for the XSEL type name ("KE", "KET", "P", or "Q").
 * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, or 3: three-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

RCS2-SRGD7BD

RoboCylinder Rod Type with Double Guide 75mm Diameter 230V Servo Motor Short-Length Model

■ Configuration: **RCS2-SRGD7BD-I**

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
		I : Incremental	60 : 60W Servo Motor 100 : 100W Servo Motor 150 : 150W Servo Motor	16 : 16mm 8 : 8mm 4 : 4mm	50 : 50mm 300 : 300mm (50mm pitch increments)	T1 : XSEL-KE/KET T2 : SCON SSEL XSEL-P/Q	N : None P : 1m S : 3m M : 5m X □ : Custom R □ : Robot cable	See Options below

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5



- (1) When operated at the rated acceleration, the maximum load capacity is the load capacity at the rated acceleration.
- (2) When operated at the maximum acceleration, the maximum load capacity is the load capacity at the maximum acceleration.
- (3) The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod.
See the technical resources (page A-83) for the allowable weight using the supplied guide alone.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Rated Acceleration (G)	Load Capacity at Rated Acceleration		Max. Acceleration (G)	Load Capacity at Max. Acceleration		Rated Thrust (N)	Stroke (mm)
				Horizontal (kg)	Vertical (kg)		Horizontal (kg)	Vertical (kg)		
RCS2-SRGD7BD-I-60-16-①-②-③-④	60	16	0.25	5	1	0.35	2.5	(N/A)	63	50~300 (50mm increments)
RCS2-SRGD7BD-I-60-8-①-②-③-④		8	0.15	10	4	0.25	5	1.5	127	
RCS2-SRGD7BD-I-60-4-①-②-③-④		4	0.05	20	9	0.15	10	4	254	
RCS2-SRGD7BD-I-100-16-①-②-③-④	100	16	0.3	10	2.5	0.4	5	0.5	103	
RCS2-SRGD7BD-I-100-8-①-②-③-④		8	0.2	22	8	0.3	10	3.5	207	
RCS2-SRGD7BD-I-100-4-①-②-③-④		4	0.1	40	18.5	0.2	20	8	414	
RCS2-SRGD7BD-I-150-16-①-②-③-④	150	16	0.3	15	5.5	0.4	7.5	2	157	
RCS2-SRGD7BD-I-150-8-①-②-③-④		8	0.2	35	13.5	0.3	17.5	6	314	
RCS2-SRGD7BD-I-150-4-①-②-③-④		4	0.1	55	21.5	0.2	27.5	10	628	

Legend ① Stroke ② Compatible controller ③ Cable length ④ Options

Stroke and Maximum Speed

Lead	Stroke	50 ~ 300 (50mm increments)
	16	800
8	400	
4	200	

(Unit: mm/s)

Cable List

Type	Cable Symbol	
Standard	P (1m)	
	S (3m)	
	M (5m)	
Special Lengths	X06 (6m) ~ X10 (10m)	
	X11 (11m) ~ X15 (15m)	
	X16 (16m) ~ X20 (20m)	
Robot Cable	R01 (1m) ~ R03 (3m)	
	R04 (4m) ~ R05 (5m)	
	R06 (6m) ~ R10 (10m)	
	R11 (11m) ~ R15 (15m)	
	R16 (16m) ~ R20 (20m)	

* See page A-39 for cables for maintenance.

Option List

Name	Option Code	See Page
Connector cable exit direction	A1 ~ A3	→ A-25
Brake	B	→ A-25
Foot bracket	FT	→ A-29

Actuator Specifications

Item	Description
Drive System	Ball screw ø12mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Guide	Double guide (guide rod diameter ø16, Ball bush type)
Rod Diameter	ø35mm
Non-rotating accuracy of rod	±0.08 deg
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

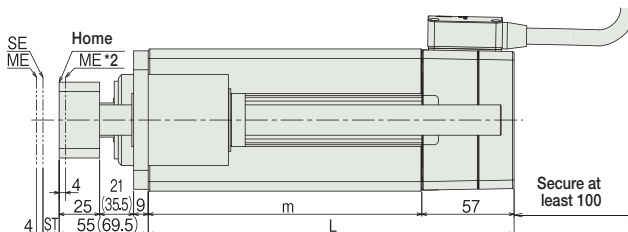
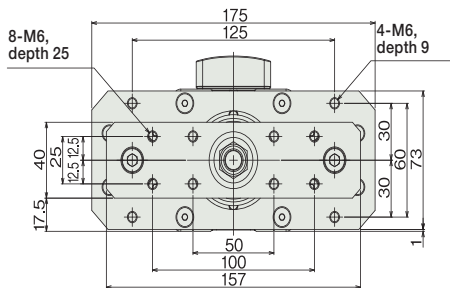
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

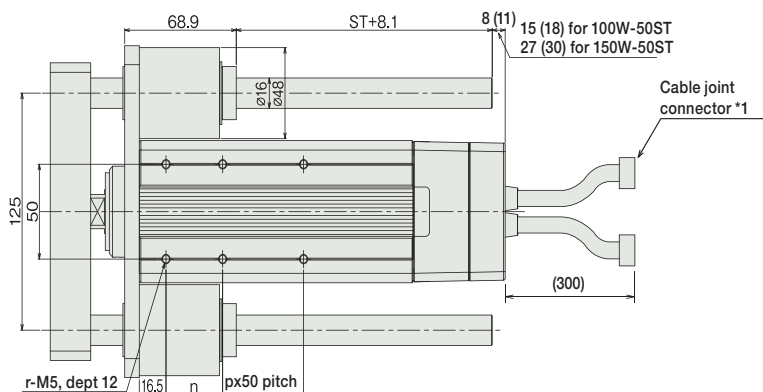
2/3D CAD

*The SRGD7BD is not available in reversed-home configuration, due to its construction.



* For brake-equipped model, see standard type (see P242)

* The value inside () is the dimension for the extended rod tip model.



Note:
A slit is provided in the side of the actuator body to prevent pauses due to forward/backward operation. Please make a separate request for a dustproof/splash-proof model.

- *1: The motor-encoder cable is connected here. See page A-39 for details on cables.
 - *2 When homing, the rod moves to the mechanical end position; therefore, please watch for any interference with the surrounding objects.
- ST: Stroke
SE: Stroke end
ME: Mechanical end

Dimensions/Weight by Stroke

Stroke		50	100	150	200	250	300
L	60W	126	176	226	276	326	376
	100W	133	176	226	276	326	376
	150W	145	176	226	276	326	376
m	60W	69	119	169	219	269	319
	100W	76	119	169	219	269	319
	150W	88	119	169	219	269	319
n		25	35	35	35	35	35
p		0	0	1	2	3	4
r		4	4	6	8	10	12
Weight (kg)	60W	4.3	5	5.7	6.4	7.2	7.9
	100W	4.5	5.1	5.9	6.6	7.3	8
	150W	4.8	5.3	6.1	6.8	7.5	8.2

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-①-I-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	360VA max. * When operating a 150W single-axis model	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve.	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to Pulse Train Input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-①-I-NP-2-②	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-③-1-①-I-N1-EEE-2-④	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

Note: The SRGD7BD type actuator cannot be connected to the 5th and 6th axis of the XSEL-P/Q controller.

- * For SSEL and XSEL, only applicable to the single-axis model.
- * ① is a placeholder for the motor output (W) (60, 100, 150).
- * ② is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
- * ③ is a placeholder for the XSEL type name ("KE", "KET", "P", or "Q").
- * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, or 3: three-phase 230V).

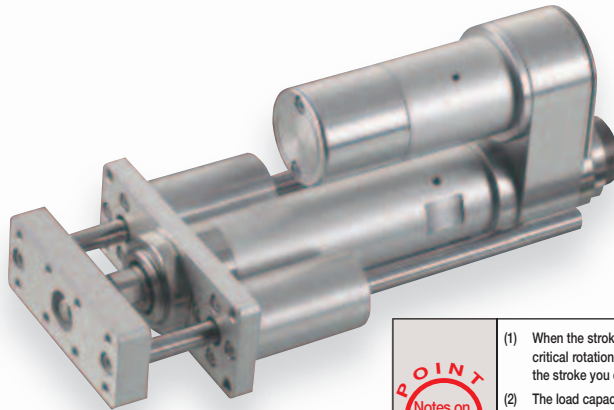
RCS2-RGD4R

RoboCylinder Rod Type with Double Guide ø37mm Diameter 230V Servo Motor
Side-Mounted Motor

■ Configuration: **RCS2** -- **RGD4R** -- **I** -- [] -- [] -- [] -- [] -- [] -- []

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
		I : Incremental A : Absolute	20 : 20W Servo Motor 30 : 30W Servo Motor	12 : 12mm 6 : 6mm 3 : 3mm	50 : 50mm 300 : 300mm (50mm pitch increments)	T1 : XSEL-KE/KET T2 : SCON SSEL XSEL-P/Q	N : None P : 1m S : 3m M : 5m X [] : Custom R [] : Robot cable	See Options below

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5

- POINT**
Notes on Selection
- (1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
 - (2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model). This is the upper limit of the acceleration.
 - (3) The values for the horizontal load capacity assume the use of an external guide, so that there is no external force from any direction other than the forward/backward direction of the rod. See the technical resources (page A-83) for the allowable weight using the supplied guide alone.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. Load Capacity		Rated Thrust (N)	Stroke (mm)
			Horizontal (kg)	Vertical (kg)		
RCS2-RGD4R-①-20-12-②-③-④-⑤	20	12	3.0	0.5	18.9	50~300 (50mm increments)
RCS2-RGD4R-①-20-6-②-③-④-⑤		6	6.0	1.5	37.7	
RCS2-RGD4R-①-20-3-②-③-④-⑤		3	12.0	3.5	75.4	
RCS2-RGD4R-①-30-12-②-③-④-⑤	30	12	4.0	1.0	28.3	
RCS2-RGD4R-①-30-6-②-③-④-⑤		6	9.0	2.5	56.6	
RCS2-RGD4R-①-30-3-②-③-④-⑤		3	18.0	6.0	113.1	

Legend: ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options

Stroke and Maximum Speed

Stroke Lead	50 ~ 300 (50mm increments)	
	12	600
6	300	
3	150	

(Unit: mm/s)

Cable List

Type	Cable Symbol
Standard	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
Robot Cable	R01 (1m) ~ R03 (3m)
	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* See page A-39 for cables for maintenance.

Option List

Name	Option Code	See Page
Brake	B	→ A-25
Foot bracket	FT	→ A-29
Flange bracket (back)	FLR	→ A-28
Home sensor	HS	→ A-32
Reversed-home	NM	→ A-33
Clevis Bracket	QR	→ A-34
Back-mounting plate	RP	→ A-35

Actuator Specifications

Item	Description
Drive System	Ball screw ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (white alumite treated)
Rod Diameter	ø20mm
Non-rotating accuracy of rod	±1.0 deg
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

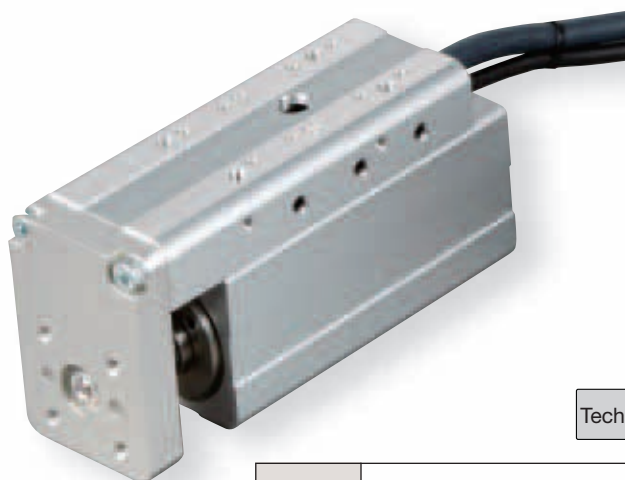
RCS2-TCA5N

RoboCylinder Mini Table Type Short-Length Compact Type
48mm Width 230 V Servo Motor Ball Screw

■ Configuration: **RCS2-TCA5N** — **I** — **60** — — — **T2** — —

Series	Type	Encoder	Motor type	Lead	Stroke	Compatible Controllers	Cable Length	Option
I	Incremental	60	60W Servo Motor	10 : 10mm 5 : 5mm 2.5 : 2.5mm	50 : 50mm 75 : 75mm	T2 : SCON SSEL XSEL-P/Q	N : None P : 1m S : 3m M : 5m X <input type="checkbox"/> <input type="checkbox"/> : Custom R <input type="checkbox"/> <input type="checkbox"/> : Robot Cable	K1 : Cable exit direction left K2 : Cable exit direction front K3 : Cable exit direction right

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5



- (1) The load capacity is based on operation at an acceleration of 0.3G (or 0.2G for the 2.5mm-lead model, or when used vertically). This is the upper limit of the acceleration.
- (2) If the actuator is used vertically, pay attention to rod contact because the rod will come down when the power is turned off.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Feed Screw	Lead (mm)	Max. Load Capacity		Rated Thrust (N)	Positioning Repeatability (mm)	Stroke (mm)
				Horizontal (kg)	Vertical (kg)			
RCS2-TCA5N-I-60-10- <input type="checkbox"/> -T2- <input type="checkbox"/> - <input type="checkbox"/>	60	Ball Screw	10	5	1.5	89	± 0.02	50 75
RCS2-TCA5N-I-60-5- <input type="checkbox"/> -T2- <input type="checkbox"/> - <input type="checkbox"/>			5	10	3	178		
RCS2-TCA5N-I-60-2.5- <input type="checkbox"/> -T2- <input type="checkbox"/> - <input type="checkbox"/>			2.5	20	6	356		

Legend Compatible controller Cable length Options

Stroke and Maximum Speed

Lead	Stroke	50 (mm)	75 (mm)
		10	280 <230>
5	250 <230>	250	
2.5	125		

* The value enclosed in < > apply for vertical usage. (Unit: mm/s)

Cable List

Type	Cable Symbol	
Standard	P (1m)	
	S (3m)	
	M (5m)	
Special Lengths	X06 (6m) ~ X10 (10m)	
	X11 (11m) ~ X15 (15m)	
	X16 (16m) ~ X20 (20m)	
	R01 (1m) ~ R03 (3m)	
Robot Cable	R04 (4m) ~ R05 (5m)	
	R06 (6m) ~ R10 (10m)	
	R11 (11m) ~ R15 (15m)	
	R16 (16m) ~ R20 (20m)	

* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball Screw Ø8mm C10 grade
Lost Motion	0.1mm or less (initial value)
Frame	Material: Aluminum (white alumite treated)
Allowable Dynamic Moment (Note)	Ma: 15 N·m Mb: 15 N·m Mc: 7.1 N·m
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non condensing)
Service Life	5000km or 50million cycles

(Note) Based on a 5000 km service life set for the guide.

Option List

Name	Option Code	See Page
Cable exit from left	K1	A-32
Cable exit from front	K2	A-32
Cable exit from right	K3	A-32

RCS2-TWA5N

RoboCylinder Mini Table Type Short-Length Wide Type
80mm Width 230 V Servo Motor Ball Screw

■ Configuration: **RCS2-TWA5N-I-60-□-□-T2-□-□**

Series	Type	Encoder	Motor type	Lead	Stroke	Compatible Controllers	Cable Length	Option
I	Incremental	60	60W Servo Motor	10 : 10mm 5 : 5mm 2.5 : 2.5mm	50 : 50mm 75 : 75mm	T2 : SCON SSEL XSEL-P/Q	N : None P : 1m S : 3m M : 5m X□□ : Custom R□□ : Robot Cable	K1 : Cable exit direction left K2 : Cable exit direction front K3 : Cable exit direction right

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5



- (1) The load capacity is based on operation at an acceleration of 0.3G (or 0.2G for the 2.5mm-lead model, or when used vertically). This is the upper limit of the acceleration.
- (2) If the actuator is used vertically, pay attention to rod contact because the rod will come down when the power is turned off.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Feed Screw	Lead (mm)	Max. Load Capacity		Rated Thrust (N)	Positioning Repeatability (mm)	Stroke (mm)
				Horizontal (kg)	Vertical (kg)			
RCS2-TWA5N-I-60-10-①-T2-②-③	60	Ball Screw	10	5	1.5	89	± 0.02	50 75
RCS2-TWA5N-I-60-5-①-T2-②-③			5	10	3	178		
RCS2-TWA5N-I-60-2.5-①-T2-②-③			2.5	20	6	356		

Legend ① Compatible controller ② Cable length ③ Options

Stroke and Maximum Speed

Lead	Stroke	50 (mm)	75 (mm)
		10	280 <230>
5		250 <230>	250
2.5		125	

*The value enclosed in <> apply for vertical usage. (Unit: mm/s)

Cable List

Type	Cable Symbol	
Standard	P (1m)	
	S (3m)	
	M (5m)	
Special Lengths	X06 (6m) ~ X10 (10m)	
	X11 (11m) ~ X15 (15m)	
	X16 (16m) ~ X20 (20m)	
Robot Cable	R01 (1m) ~ R03 (3m)	
	R04 (4m) ~ R05 (5m)	
	R06 (6m) ~ R10 (10m)	
	R11 (11m) ~ R15 (15m)	
	R16 (16m) ~ R20 (20m)	

* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball Screw Ø8mm C10 grade
Lost Motion	0.1mm or less (initial value)
Frame	Material: Aluminum (white alumite treated)
Allowable Dynamic Moment (Note)	Ma: 15 N·m Mb: 15 N·m Mc: 25.5 N·m
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non condensing)
Service Life	5000km or 50million cycles

(Note) Based on a 5000 km service life set for the guide.

Option List

Name	Option Code	See Page
Cable exit from left	K1	A-32
Cable exit from front	K2	A-32
Cable exit from right	K3	A-32

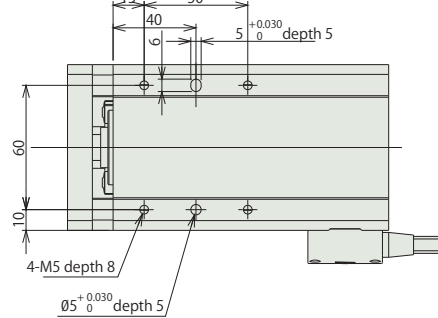
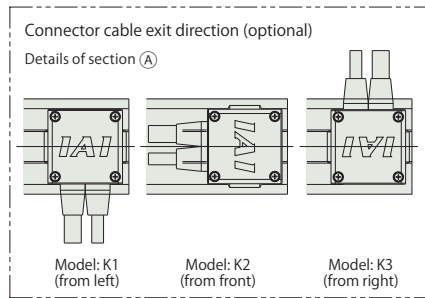
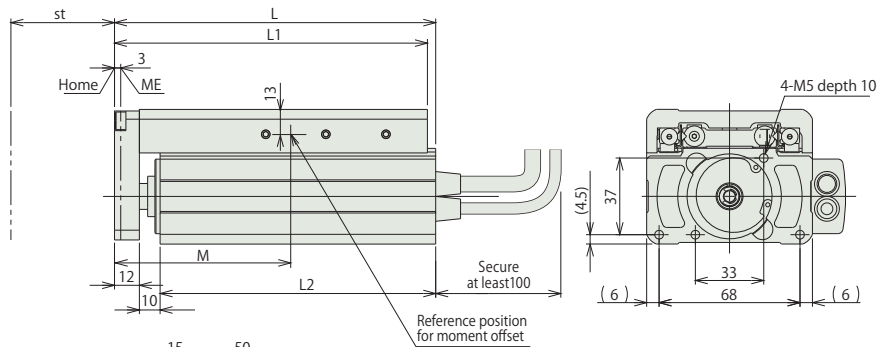
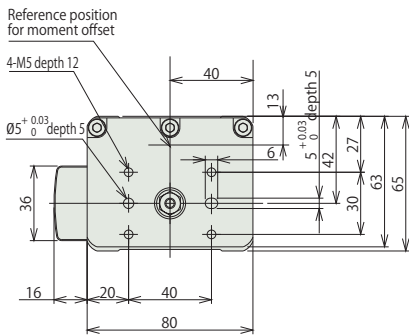
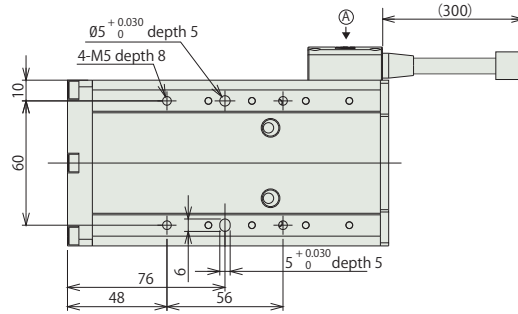
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9



- *1 A motor-encoder cable is connected here. See page A-39 for details on cables.
- *2 When homing, the rod moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end



Dimensions/Weight by Stroke

Stroke	50	75
L	130	155
L1	126	151
L2	108	133
M	89	105.5
Weight (kg)	1.7	2.0

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External view	Model	Description	Max. Positioning points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-60 I -NP-2-①	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	218VA max. * The power supply capacity vary depending on the controller (refer to the manual).	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve	7 points			
Serial Communication Type			Dedicated to serial communication	(-)			
Pulse Train Input Control Type			Dedicated to pulse train input	768 points			
Program Control 1-2 Axes Type		SSEL-C-1-60 I -NP-2-①	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-②-1-60 I -N1-EEE-2-③	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P578

* For SSEL and XSEL, only applicable to the single-axis model.
 ① is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
 ② is a placeholder for the XSEL type name ("P" or "Q").
 ③ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, or 3: three-phase 230V).

Slider Type

Mini

Standard

Controllers Integrated

Rod Type

Mini

Standard

Controllers Integrated

Table/Arm /Flat-Type

Mini

Standard

Gripper/ Rotary Type

Linear Motor Type

Cleanroom-Type

Splash Proof

Controllers

PMEC /AMEC

PSEP /ASEP

ROBO NET

ERC2

PCON

ACON

SCON

PSEL

ASEL

SSEL

XSEL

Pulse motor

Servo Motor (24 V)

Servo Motor (230 V)

Linear Motor

RCS2-TFA5N

RoboCylinder Mini Table Type Short-Length Flat Type
95mm Width 230 V Servo Motor Ball Screw

■ Configuration: **RCS2** – **TFA5N** – **I** – **60** – – – **T2** – –

Series	Type	Encoder	Motor type	Lead	Stroke	Compatible Controllers	Cable Length	Option
I	Incremental	60	60W Servo Motor	10 : 10mm 5 : 5mm 2.5 : 2.5mm	50 : 50mm 75 : 75mm	T2 : SCON SSEL XSEL-P/Q	N : None P : 1m S : 3m M : 5m X <input type="checkbox"/> <input type="checkbox"/> : Custom R <input type="checkbox"/> <input type="checkbox"/> : Robot Cable	K1 : Cable exit direction left K2 : Cable exit direction front K3 : Cable exit direction right

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5



- (1) The load capacity is based on operation at an acceleration of 0.3G (or 0.2G for the 2.5mm-lead model, or when used vertically). This is the upper limit of the acceleration.
- (2) If the actuator is used vertically, pay attention to rod contact because the rod will come down when the power is turned off.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Feed Screw	Lead (mm)	Max. Load Capacity		Rated Thrust (N)	Positioning Repeatability (mm)	Stroke (mm)
				Horizontal (kg)	Vertical (kg)			
RCS2-TFA5N-I-60-10- <input type="checkbox"/> -T2- <input type="checkbox"/> - <input type="checkbox"/>	60	Ball Screw	10	5	1.5	89	± 0.02	50 75
RCS2-TFA5N-I-60-5- <input type="checkbox"/> -T2- <input type="checkbox"/> - <input type="checkbox"/>			5	10	3	178		
RCS2-TFA5N-I-60-2.5- <input type="checkbox"/> -T2- <input type="checkbox"/> - <input type="checkbox"/>			2.5	20	6	356		

Legend Compatible controller Cable length Options

Stroke and Maximum Speed

Lead	Stroke	50 (mm)	75 (mm)
		10	280 <230>
5	250 <230>	250	
2.5	125		

*The value enclosed in <> apply for vertical usage. (Unit: mm/s)

Cable List

Type	Cable Symbol	
Standard	P (1m)	
	S (3m)	
	M (5m)	
Special Lengths	X06 (6m) ~ X10 (10m)	
	X11 (11m) ~ X15 (15m)	
	X16 (16m) ~ X20 (20m)	
	R01 (1m) ~ R03 (3m)	
Robot Cable	R04 (4m) ~ R05 (5m)	
	R06 (6m) ~ R10 (10m)	
	R11 (11m) ~ R15 (15m)	
	R16 (16m) ~ R20 (20m)	

* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball Screw Ø8mm C10 grade
Lost Motion	0.1mm or less (initial value)
Frame	Material: Aluminum (white alumite treated)
Allowable Dynamic Moment (Note)	Ma: 15 N·m Mb: 15 N·m Mc: 7.1 N·m
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non condensing)
Service Life	5000km or 50million cycles

(Note) Based on a 5000 km service life set for the guide.

Option List

Name	Option Code	See Page
Cable exit from left	K1	A-32
Cable exit from front	K2	A-32
Cable exit from right	K3	A-32

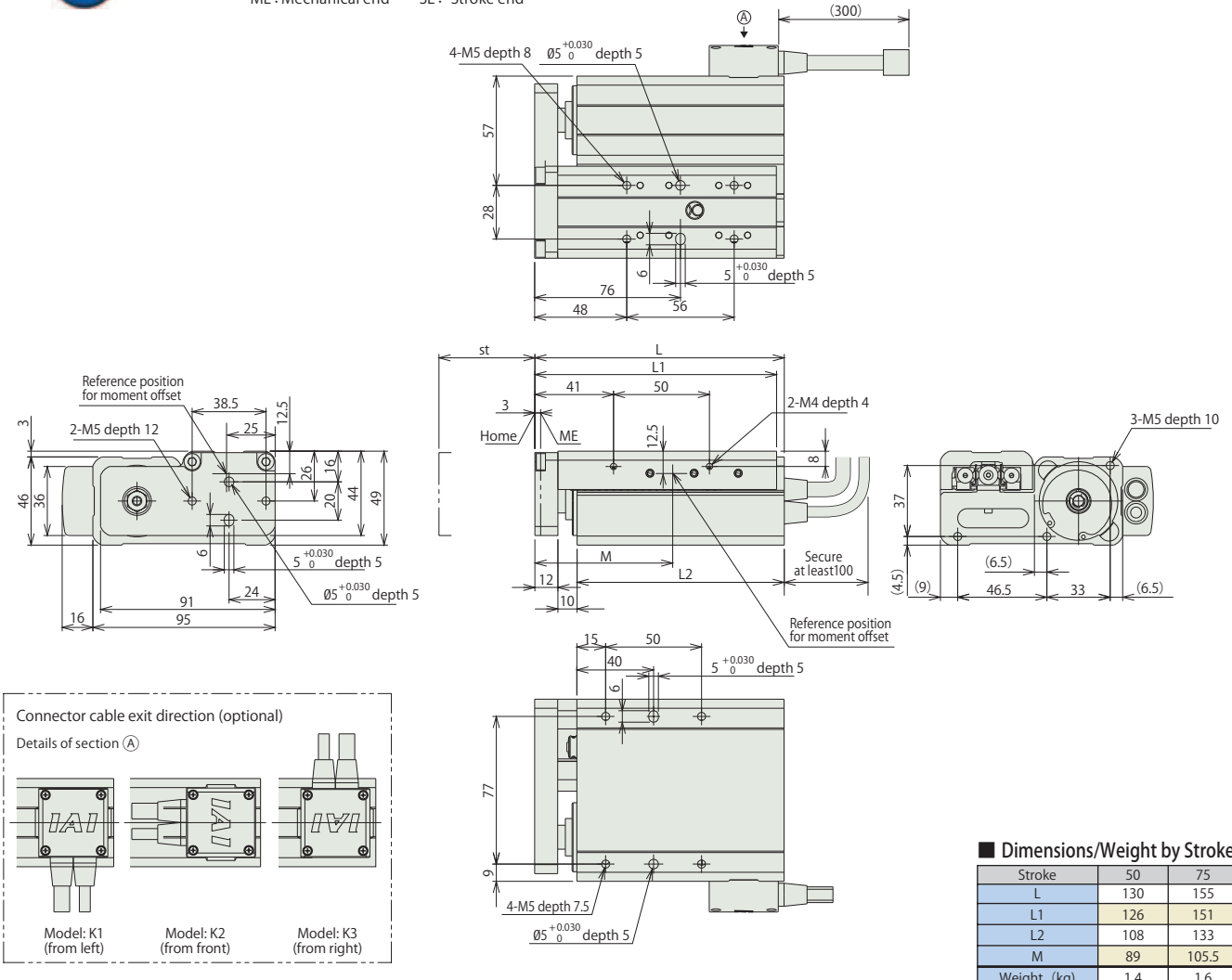
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9



- *1 A motor-encoder cable is connected here. See page A-39 for details on cables.
 - *2 When homing, the rod moves to the mechanical end; therefore, please watch for any interference with the surrounding objects.
- ME: Mechanical end SE: Stroke end



■ Dimensions/Weight by Stroke

Stroke	50	75
L	130	155
L1	126	151
L2	108	133
M	89	105.5
Weight (kg)	1.4	1.6

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External view	Model	Description	Max. Positioning points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-60 I -NP-2-①	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	218VA max. * The power supply capacity vary depending on the controller (refer to the manual).	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve	7 points			
Serial Communication Type			Dedicated to serial communication	(-)			
Pulse Train Input Control Type			Dedicated to pulse train input	768 points			
Program Control 1-2 Axes Type		SSEL-C-1-60 I -NP-2-①	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-②-1-60 I -N1-EEE-2-③	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P578

* For SSEL and XSEL, only applicable to the single-axis model.
 ① is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
 ② is a placeholder for the XSEL type name ("P" or "Q").
 ③ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, or 3: three-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat-Type
- Mini
- Standard
- Controllers Integrated
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom-Type
- Splash Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse motor
- Servo Motor (24 V)
- Servo Motor (230 V)
- Linear Motor

Dimensions

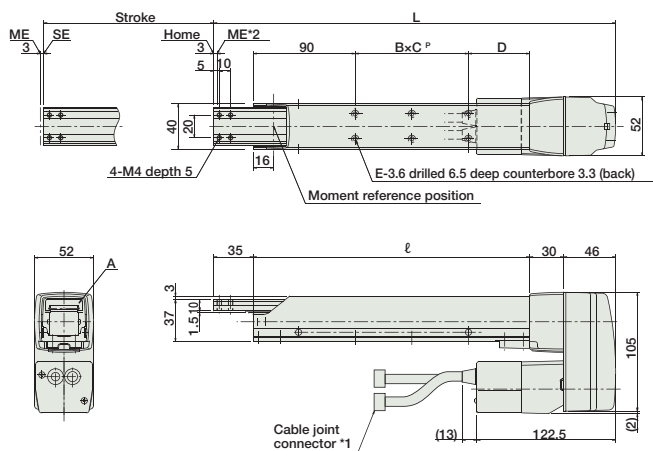
CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9

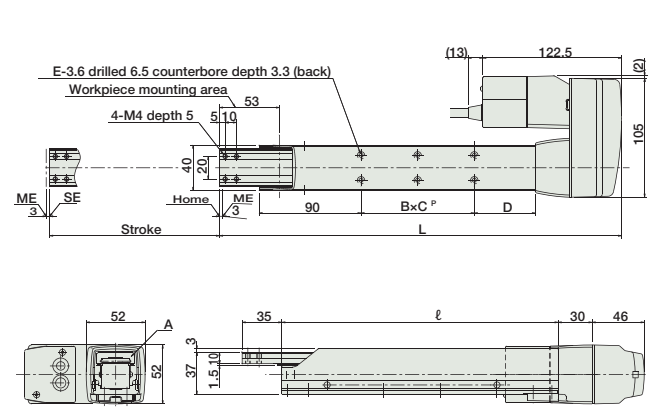


- *1 The motor-encoder cable is connected here. See page A-39 for details on cables.
- *2 When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end

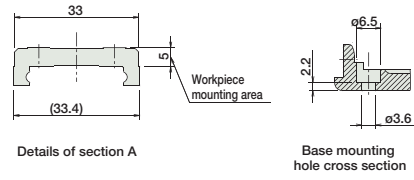
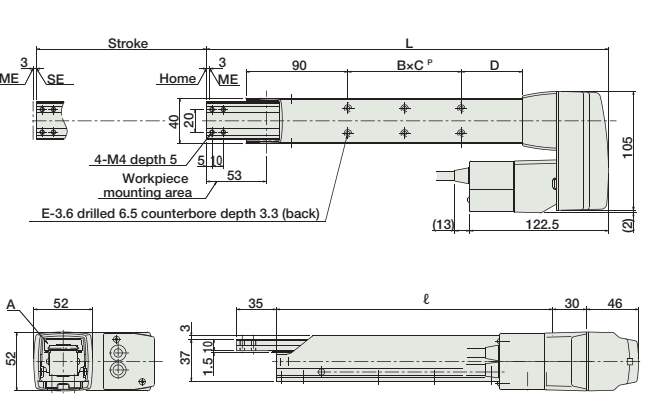
Bottom-mounted motor (option code: MB)



Right-mounted motor (option code: MR)



Left-mounted motor (option code: ML)



■ Dimensions and Weight by Stroke

Stroke	50	100	150	200
L	255	305	355	405
ℓ	144	194	244	294
B×C ^P	1×19	1×50	2×50	2×50
D	35	54	54	104
E	4	4	6	6
Weight (kg)	1.7	1.8	2.0	2.1

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-20①-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	360VA max. * When operating a 150W single-axis model	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to pulse train input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-20①-NP-2-②	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-C-1-20①-N1-EEE-2-④	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-axis model.
 * ① is a placeholder for the encoder type (I: incremental / A: absolute).
 * ② is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
 * ③ is a placeholder for the XSEL type name ("KE", "KET", "P", or "Q").
 * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, or 3: three-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

RCS2-A5R

RoboCylinder Arm Type Side-Mounted Motor 52mm Width 230V Servo Motor Ball Srew

■ Configuration: **RCS2** — **A5R** — — **20** — — — — —

Series — Type — Encoder — Motor — Lead — Stroke — Compatible Controllers — Cable Length — Option

I : Incremental
A: Absolute

20 : 20W Servo motor

12 : 12mm
6 : 6mm

50: 50mm
200: 200mm (50mm pitch increments)

T1: XSEL-KE/KET
T2: SCON
SSEL
XSEL-P/Q

N : None
P : 1m
S : 3m
M : 5m
X : Custom
R : Robot cable

See Options below
* Be sure to specify which side the motor is to be mounted (ML/MR).

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5

- POINT**
Notes on Selection
- (1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
 - (2) The load capacity is based on operation at an acceleration of 0.2G. This is the upper limit of the acceleration.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. Load Capacity		Rated Thrust (N)	Stroke (mm)
			Horizontal (kg)	Vertical (kg)		
RCS2-A5R-①-20-12-②-③-④-B-⑤	20	12	-	2	33.3	50~200 (50mm increments)
RCS2-A5R-①-20-6-②-③-④-B-⑤		6	-	4	65.7	

Legend: ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options

Stroke and Maximum Speed

Lead	Stroke	50 ~ 200 (50mm increments)
	12	400
6	200	

(Unit: mm/s)

Cable List

Type	Cable Symbol
Standard Type	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
Robot Cable	R01 (1m) ~ R03 (3m)
	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* See page A-39 for cables for maintenance.

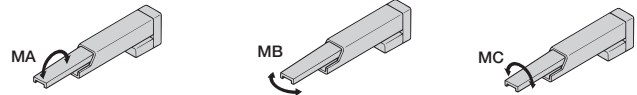
Option List

Name	Option Code	See Page
Brake (standard)	B	→ A-25
Bottom-mounted motor	MB	→ A-33
Right-mounted motor	MR	→ A-33
Left-mounted motor	ML	→ A-33
Reversed-home	NM	→ A-33

Actuator Specifications

Item	Description
Drive System	Ball screw ø8mm C10 grade (ball screw speed reduced by 1/2 by timing belt)
Positioning Repeatability	±0.02mm
Lost Motion	0.1 mm or less
Base	Material: Aluminum (white alumite treated)
Allowable Load Moment	Ma: 4.5 N-m Mb: 5.4 N-m Mc: 4.1 N-m
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

Directions of Allowable Load Moments



5,000 km service life

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

Dimensions

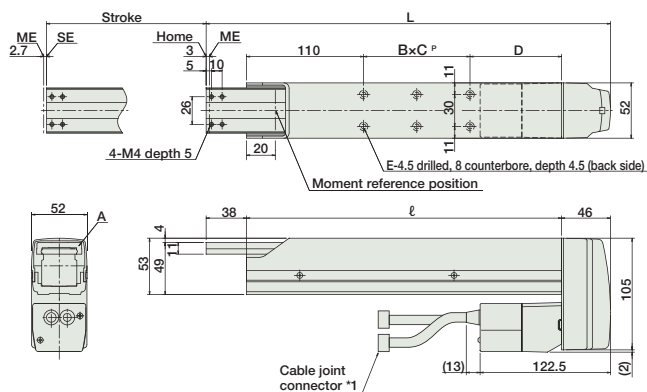
CAD drawings can be downloaded from IAI website. www.robocylinder.de

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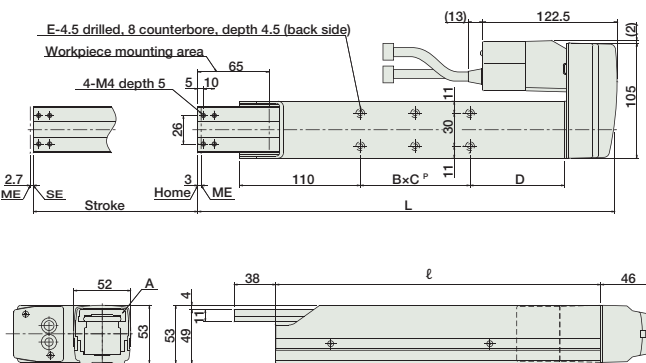


- *1 The motor-encoder cable is connected here. See page A-39 for details on cables.
- *2 When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end

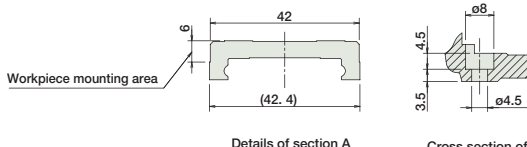
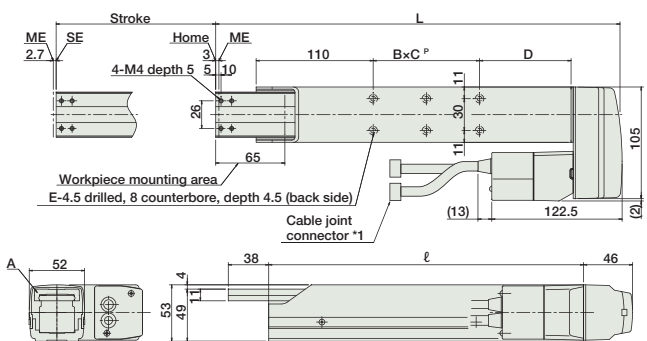
Bottom-mounted motor (option code: MB)



Right-mounted motor (option code: MR)



Left-mounted motor (option code: ML)



■ Dimensions and Weight by Stroke

Stroke	50	100	150	200
L	280	330	380	430
ℓ	196	246	296	346
BxC ^P	1×30	1×50	2×50	2×50
D	56	86	86	136
E	4	4	6	6
Weight (kg)	2.2	2.4	2.6	2.8

Note: The 50mm stroke model is only available with a right- or left-mounted motor. Please note that there is no 50mm stroke configuration for the standard model.

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-20①-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	360VA max. * When operating a 150W single-axis model	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to pulse train input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-20①-NP-2-②	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-③-1-20①-N1-EEE-2-④	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-axis model.
 ① is a placeholder for the encoder type (I: incremental / A: absolute).
 ② is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
 ③ is a placeholder for the XSEL type name ("KE", "KET", "P", or "Q").
 ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, or 3: three-phase 230V).

RCS2-A6R

RoboCylinder Arm Type Side-Mounted Motor 58mm Width 230V Servo Motor Ball Screw

■ Configuration: **RCS2** — **A6R** — — **30** — — — — —

Series — Type — Encoder — Motor — Lead — Stroke — Compatible Controllers — Cable Length — Option

I : Incremental
A : Absolute

30 : 30W Servo motor

12 : 12mm
6 : 6mm

50: 50mm
200: 200mm (50mm pitch increments)

T1: XSEL-KE/KET
T2: SCON
SSEL
XSEL-P/Q

N : None
P : 1m
S : 3m
M : 5m
X : Custom
R : Robot cable

See Options below
* Be sure to specify which side the motor is to be mounted (ML/MR).

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5

- POINT**
Notes on Selection
- (1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
 - (2) The load capacity is based on operation at an acceleration of 0.2G. This is the upper limit of the acceleration.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. Load Capacity		Rated Thrust (N)	Stroke (mm)
			Horizontal (kg)	Vertical (kg)		
RCS2-A6R-①-30-12-②-③-④-B-⑤	30	12	-	3	48.4	50~200 (50mm increments)
RCS2-A6R-①-30-6-②-③-④-B-⑤		6	-	6		

Legend: ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options

Stroke and Maximum Speed

Lead	Stroke	50 ~ 200 (50mm increments)
	12	400
6	200	200

(Unit: mm/s)

Cable List

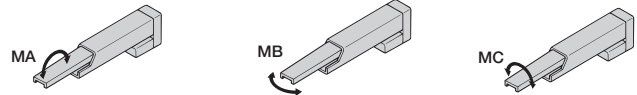
Type	Cable Symbol
Standard Type	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
Robot Cable	R01 (1m) ~ R03 (3m)
	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball screw ø10mm C10 grade (ball screw speed reduced by 1/2 by timing belt)
Positioning Repeatability	±0.02mm
Lost Motion	0.1 mm or less
Base	Material: Aluminum (white alumite treated)
Allowable Load Moment	Ma: 8.1 N·m Mb: 10.0 N·m Mc: 6.5 N·m
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

Directions of Allowable Load Moments



5,000 km service life

Option List

Name	Option Code	See Page
Brake (standard)	B	→ A-25
Bottom-mounted motor	MB	→ A-33
Right-mounted motor	MR	→ A-33
Left-mounted motor	ML	→ A-33
Reversed-home	NM	→ A-33

Dimensions

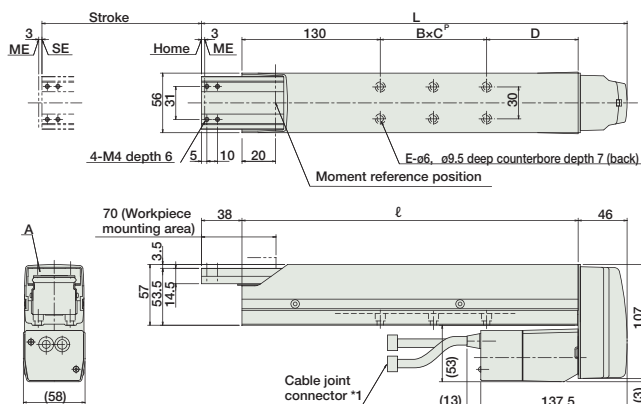
CAD drawings can be downloaded from IAI website. www.robocylinder.de

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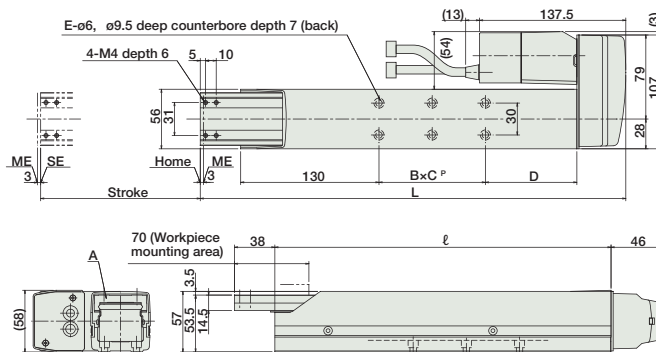


- *1 The motor-encoder cable is connected here. See page A-39 for details on cables.
- *2 When homing, the rod moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end

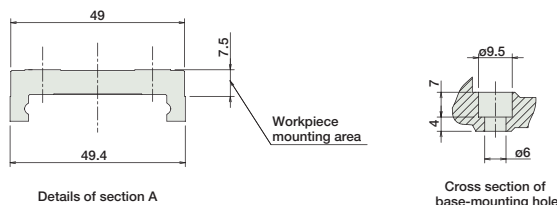
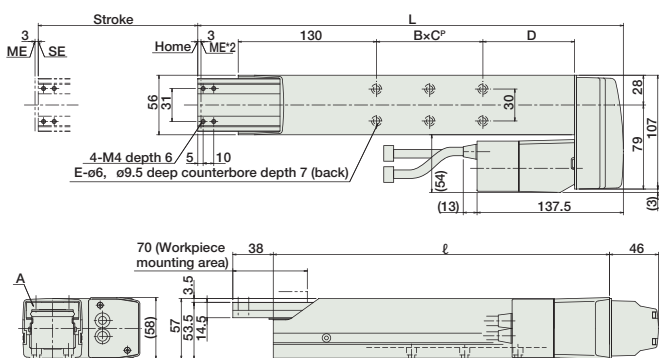
Bottom-mounted motor (option code: MB)



Right-mounted motor (option code: MR)



Left-mounted motor (option code: ML)



Dimensions and Weight by Stroke

Stroke	50	100	150	200
L	300	350	400	450
ℓ	216	266	316	366
BxC [°]	1x30	1x50	2x50	2x50
D	56	86	86	136
E	4	4	6	6
Weight (kg)	3.0	3.3	3.6	3.9

Note: The 50mm stroke model is only available with a right- or left-mounted motor. Please note that there is no 50mm stroke configuration for the standard model.

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-30D①-NP-2②	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	360VA max. * When operating a 150W single-axis model	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to pulse train input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-30D①-NP-2②	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-③-1-30D①-N1-EEE-2④	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-axis model.
 * ① is a placeholder for the encoder type (I: incremental / A: absolute).
 * ② is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
 * ③ is a placeholder for the XSEL type name ("KE", "KET", "P", or "Q").
 * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, or 3: three-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

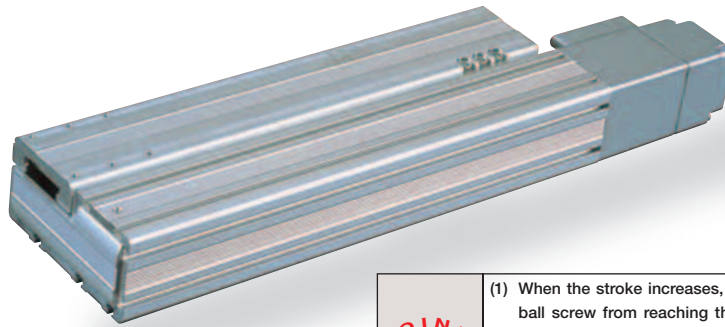
RCS2-F5D

RoboCylinder Flat Type Built-In (Direct-Coupled) Motor 55mm Width 230V Servo Motor Ball Screw

■ Configuration: **RCS2** — **F5D** — [] — [] — [] — [] — [] — [] — []

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
		I : Incremental A : Absolute	60 : 60W servo motor 100 : 100W servo motor	16 : 16mm 8 : 8mm 4 : 4mm	50: 50mm 300: 300mm (50mm pitch increments)	T1: XSEL-KE/KET T2: SCON SSEL XSEL-P/Q	N : None P : 1m S : 3m M : 5m X [] : Custom R [] : Robot cable	B : Brake NM: Reversed-home

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5

- POINT**
Notes on Selection
- (1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
 - (2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 4mm-lead model). This is the upper limit of the acceleration.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. Load Capacity		Rated Thrust (N)	Stroke (mm)
			Horizontal (kg)	Vertical (kg)		
RCS2-F5D-①-60-16-②-③-④-⑤	60	16	See page A-88	2.0	63.8	50 ~ 300 (50mm increments)
RCS2-F5D-①-60-8-②-③-④-⑤		8		5.0	127.5	
RCS2-F5D-①-60-4-②-③-④-⑤		4		11.5	255.1	
RCS2-F5D-①-100-16-②-③-④-⑤	100	16		3.5	105.8	
RCS2-F5D-①-100-8-②-③-④-⑤		8		9.0	212.7	
RCS2-F5D-①-100-4-②-③-④-⑤		4		18.0	424.3	

Stroke and Maximum Speed

Stroke / Lead	50 ~ 300 (50mm increments)	
	Stroke	50 ~ 300 (50mm increments)
16		800
8		400
4		200

(Unit: mm/s)

Legend: ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options

Cable List

Type	Cable Symbol
Standard Type	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
Robot Cable	R01 (1m) ~ R03 (3m)
	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* See page A-39 for cables for maintenance.

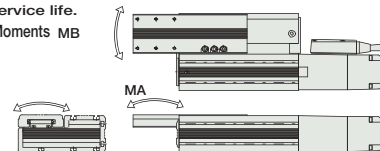
Option List

Name	Option Code	See Page
Brake	B	→ A-25
Reversed-home	NM	→ A-33

Actuator Specifications

Item	Description
Drive System	Ball screw ø12mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.05mm or less
Base	Material: Aluminum (white alumite treated)
Allowable Dynamic Moment (*)	Ma: 4.5 N·m Mb: 5.4 N·m Mc: 4.1 N·m
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

(*) Based on a 5,000km service life.
Directions of Allowable Load Moments MB



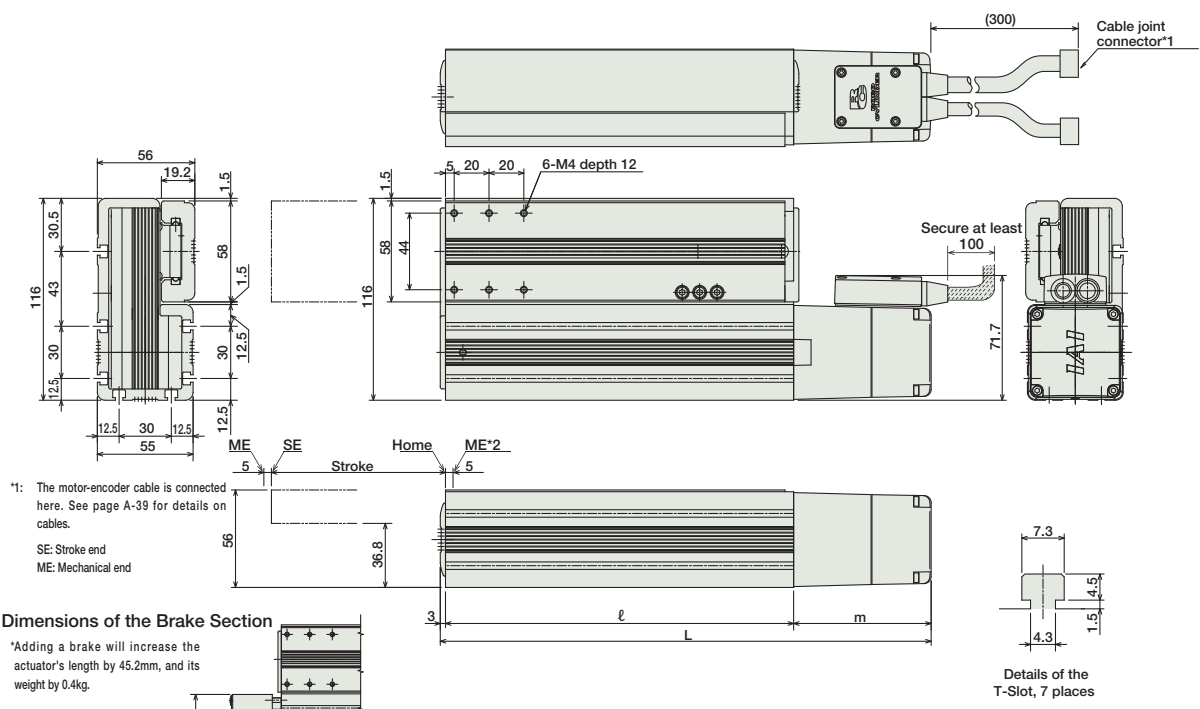
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Order P. A-9



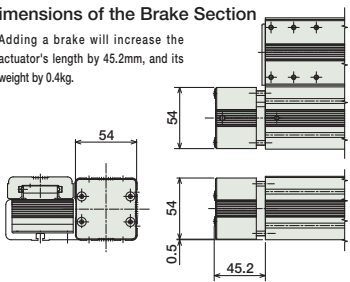
* To change the direction of the home position, arrangements must be made to send in the product. Please make a note of it.



*1: The motor-encoder cable is connected here. See page A-39 for details on cables.
SE: Stroke end
ME: Mechanical end

Dimensions of the Brake Section

*Adding a brake will increase the actuator's length by 45.2mm, and its weight by 0.4kg.



Dimensions and Weight by Stroke

Stroke	50	100	150	200	250	300	
L	60W	232	282	332	382	432	482
	100W	250	300	350	400	450	500
ℓ	150	200	250	300	350	400	
m	60W	79					
	100W	97					
Weight (kg)	60W	2.1	2.5	3	3.4	3.9	4.3
	100W	2.3	2.7	3.2	3.6	4.1	4.5

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-60①-NP-2-② SCON-C-100①-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	360VA max. * Single-axis model operated at 150W	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to pulse train input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-60 ①-NP-2-② SSEL-C-1-100 ①-NP-2-②	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-③-1-60 ①-N1-EEE-2-④ XSEL-③-1-100 ①-N1-EEE-2-④	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-axis model.
 * ① is a placeholder for the encoder type (I: incremental / A: absolute).
 * ② is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
 * ③ is a placeholder for the XSEL type name ("KE", "KET", "P", or "Q").
 * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, or 3: three-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

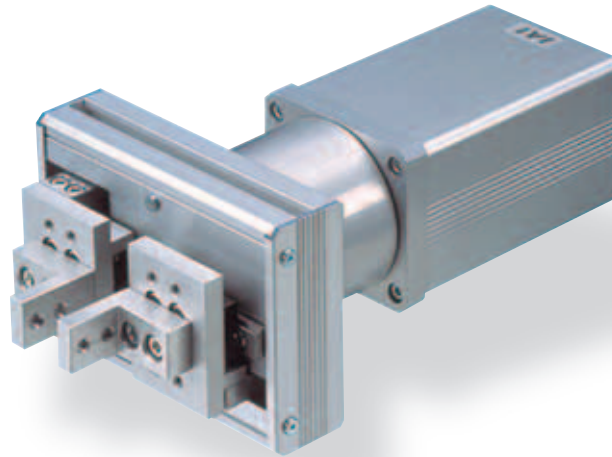
- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

RCS2-GR8 RoboCylinder 2-Finger Gripper Long Stroke Slider Type 104~284mm Width 230V Servo Motor

■ Configuration: **RCS2** — **GR8** — **I** — **60** — **5** — — —

Series	Type	Encoder	Motor	Deceleration Ratio	Stroke	Compatible Controllers	Cable Length
	I : Incremental	60: 60W Servo motor	5 : 1/5	20: 20mm 40: 40mm (60): 60mm (80): 80mm 100: 100mm (120): 120mm (200): 200mm	T1 : XSEL-KE/KET T2 : SCON SSEL XSEL-P/Q	N : None P : 1m S : 3m M : 5m X <input type="checkbox"/> Custom Length R <input type="checkbox"/> Robot Cable	

* See page Pre-35 for explanation of each code that makes up the configuration name.



* Please note that, when gripping (pressing), the speed is fixed at 10mm/s.

Technical References P. A-5

POINT
Notes on Selection

(1) Stroke values enclosed in "()" are (60, 80, 120, 200) are semi-standard models.

(2) The maximum gripping force is the sum of both fingers.

Actuator Specifications

■ Lead and Load Capacity

Model	Motor Output (W)	Deceleration Ratio	Max. Static Gripp. Force (N) (*1)	Max. Dynamic Gripp. Force (N) (*2)	Stroke (mm)
RCS2-GR8-I-60-5- ① - ② - ③	60	1/5	22.5	31.3	20, 40, (60), (80), 100, (120), (200)

Legend: ① Stroke ② Compatible controller ③ Cable length

(*1) Allowable load limit when stopped.
(*2) Allowable load limit when moving.

Cable List

Type	② Cable Symbol	
Standard Type	P (1m)	
	S (3m)	
	M (5m)	
Special Lengths	X06 (6m) ~ X10 (10m)	
	X11 (11m) ~ X15 (15m)	
	X16 (16m) ~ X20 (20m)	
Robot Cable	R01 (1m) ~ R03 (3m)	
	R04 (4m) ~ R05 (5m)	
	R06 (6m) ~ R10 (10m)	
	R11 (11m) ~ R15 (15m)	
	R16 (16m) ~ R20 (20m)	

* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Rack and pinion
Positioning Repeatability	±0.04mm
Lost Motion	0.7mm or less
Base	Material: Aluminum (white alumite treated)
Allowable Static Load Moment	Ma: 5.1 N·m Mb: 5.1 N·m Mc: 10.4 N·m
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

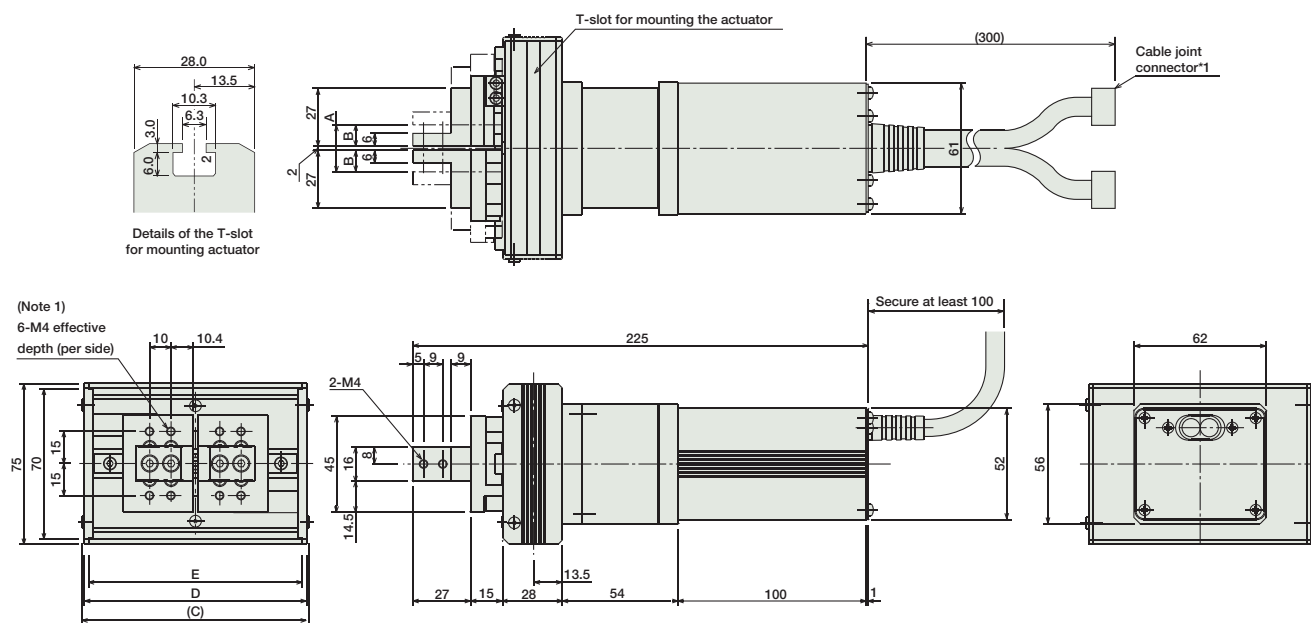
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9



* The opening side of the slider is the home position.



*1 The motor cable and encoder cable are connected here. See page A-39 for details on cables. (Note 1) The number of tapped holes on the finger mounting plate is for one side. In addition, by default, each finger is secured using 2 tapped holes.

■ Dimensions and Weight by Stroke

Stroke	20	40	(60)	(80)	100	(120)	(200)
A	22	42	62	82	102	122	202
B	10	20	30	40	50	60	100
C	106.4	126.4	146.4	166.4	186.4	206.4	286.4
D	104	124	144	164	184	204	284
E	100	120	140	160	180	200	280
Weight (kg)	1.8	1.9	1.9	2.0	2.0	2.1	2.3

*1 The strokes enclosed in "()" are semi-standard configurations, and will require longer delivery time.

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-60-NP-2-①	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	218 VA max. * It depends on the controller type. Please refer each controller manual in detail.	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to pulse train input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-60-NP-2-①	Programmed operation is possible Operation is possible on up to 2 axes	1500 points			→ P577
Program Control 1-6 Axis Type		XSEL-②-1-60-N1-EEE-2-③	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-axis model.
 * ① is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
 * ② is a placeholder for the XSEL type name ("KE", "KET", "P", or "Q").
 * ③ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, or 3: three-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

RCS2-RT6

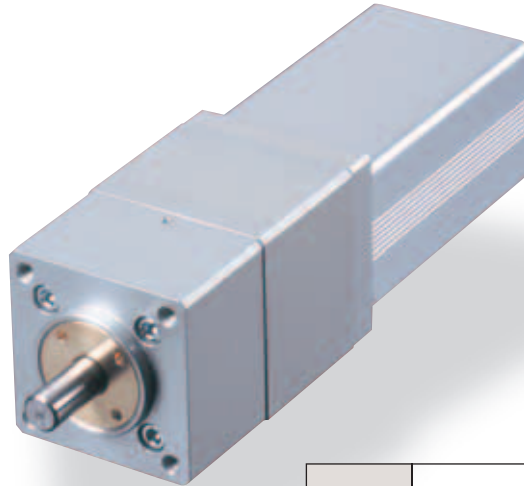
RoboCylinder Rotary Straight Motor Model 64mm Width 230V Servo Motor

■ Configuration: **RCS2** - **RT6** - **I** - **60** - **18** - **300** - - - **L**

Series - Type - Encoder - Motor - Deceleration Ratio - Oscillation Angle - Compatible Controllers - Cable Length - Option

I: Incremental 60: 60W Servo Motor 18: 1/18 300: 300degrees T1:XSEL-KE/KET N: None L: Limit switch (equipped as standard)
 T2:SCON P: 1m S: 3m M: 5m X : Custom R : Robot cable
 SSEL XSEL-P/Q

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5

POINT
Notes on Selection

- (1) The thrust load is the mechanical strength of the output axis at rest. When selecting, take into account the load moment and the load inertia.
- (2) The rated acceleration while moving is 0.3G.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Deceleration Ratio	Rated torque (N·m)	Allowable Moment of Inertia (kg·m ²)	Oscillation Angle (deg)
RCS2-RT6-I-60-18-300-①-②-L	60	1/18	2.4	2.5×10 ⁻² or less	300

Legend: ① Compatible controller ② Cable length

Stroke and Maximum Speed

Deceleration Ratio	Oscillation Angle	300 (deg)
	1/18	500

(Unit: degrees/s)

Cable List

Type	Cable Symbol
Standard Type	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
Robot Cable	R01 (1m) ~ R03 (3m)
	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball speed reducer
Positioning Repeatability	±0.02 degrees
Lost Motion	0.1 degrees or less
Base	Material: Aluminum (white alumite treated)
Allowable Load Moment	6.8N·m or less
Thrust load	100N or less
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

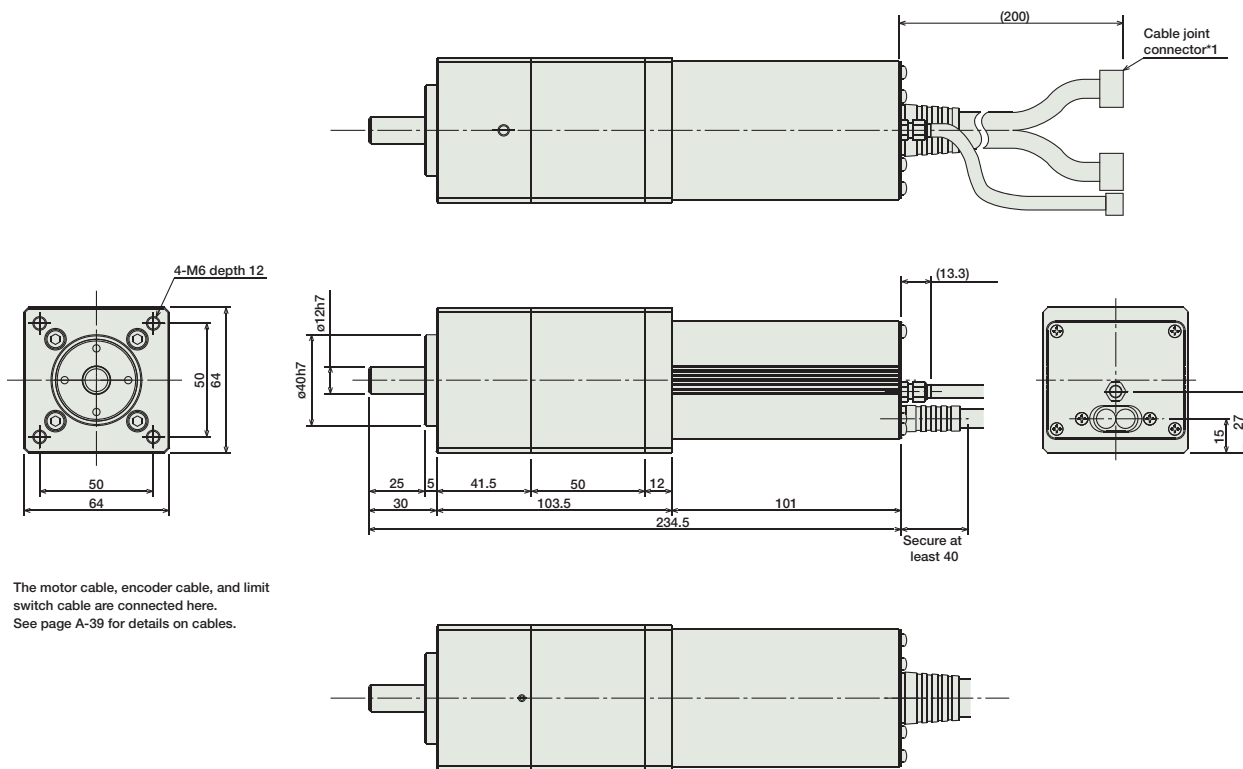
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9



* For more information on homing, see page A-79.



*1 The motor cable, encoder cable, and limit switch cable are connected here. See page A-39 for details on cables.

Weight (kg) 1.9

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-60-NP-2-①	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	218 VA max. * It depends on the controller type. Please refer each controller manual in detail.	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to pulse train input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-60-NP-2-①	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-②-1-60-N1-EEE-2-③	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-axis model.
 * ① is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
 * ② is a placeholder for the XSEL type name ("KE", "KET", "P", or "Q").
 * ③ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, or 3: three-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

RCS2-RT6R

RoboCylinder Rotary Side-Mounted Motor 64mm Width 230V Servo Motor

■ Configuration: **RCS2** - **RT6R** - **I** - **60** - **18** - **300** - - - **L**

Series — Type — Encoder — Motor — Deceleration Ratio — Oscillation Angle — Compatible Controllers — Cable Length — Option

I: Incremental 60: 60W Servo Motor 18: 1/18 300: 300degrees T1:XSEL-KE/KET
T2:SCON
SSEL
XSEL-P/Q N: None L: Limit switch
P: 1m S: 3m (equipped as standard)
M: 5m X : Custom
R : Robot cable

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5

POINT
Notes on Selection

(1) The thrust load is the mechanical strength of the output axis at rest. When selecting, take into account the load moment and the load inertia.
(2) The rated acceleration while moving is 0.3G.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Deceleration Ratio	Rated torque (N·m)	Allowable Moment of Inertia (kg·m ²)	Oscillation Angle (deg)
RCS2-RT6R-I-60-18-300- <input type="checkbox"/> - <input type="checkbox"/> -L	60	1/18	2.4	2.5×10 ⁻² or less	300

Legend: Compatible controller Cable length

Stroke and Maximum Speed

Deceleration Ratio	Oscillation Angle
	300 (deg)
1/18	500

(Unit: degrees/s)

Cable List

Type	Cable Symbol
Standard Type	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
Robot Cable	R01 (1m) ~ R03 (3m)
	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball speed reducer + timing belt
Positioning Repeatability	±0.02 degrees
Lost Motion	0.1 degrees or less
Base	Material: Aluminum (white alumite treated)
Allowable Load Moment	6.8N·m or less
Thrust load	100N or less
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

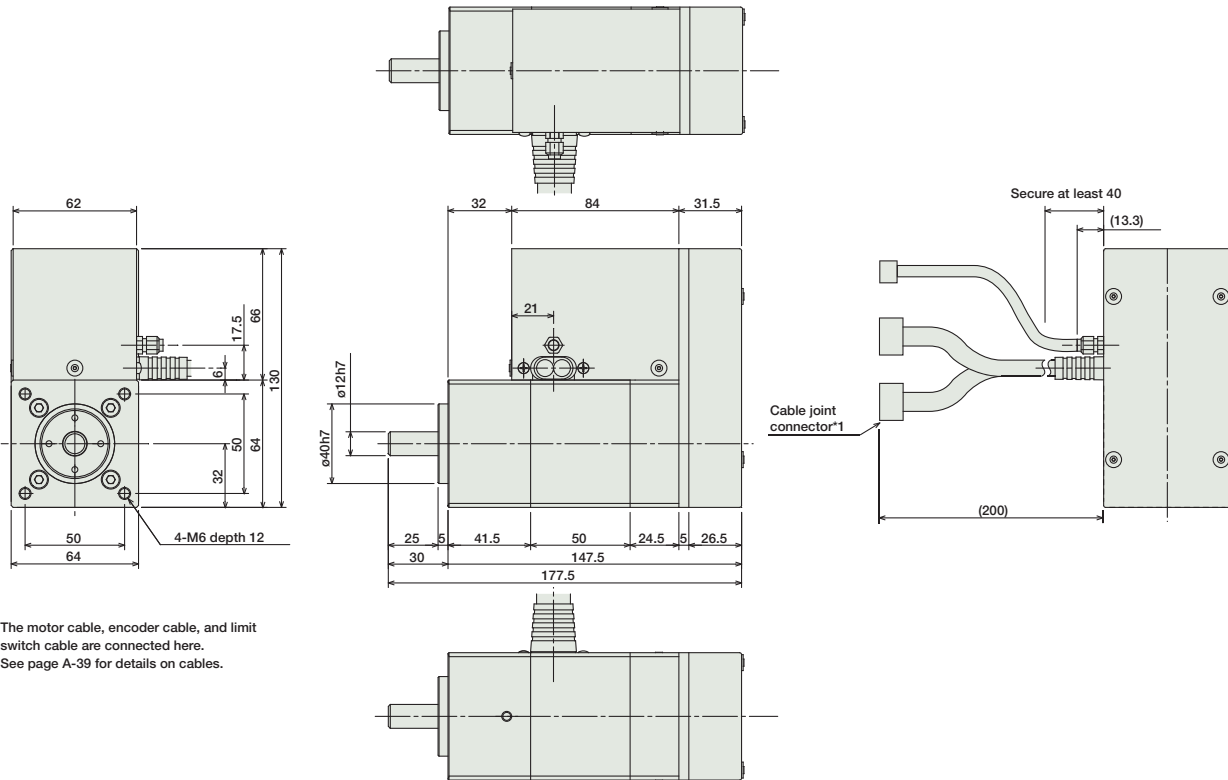
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9



* For more information on homing, see page A-79.



*1 The motor cable, encoder cable, and limit switch cable are connected here. See page A-39 for details on cables.

Weight (kg) 2.8

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-60-NP-2-①	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	218 VA max. * It depends on the controller type. Please refer each controller manual in detail.	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to pulse train input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-60-NP-2-①	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-②-1-60-N1-EEE-2-③	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-axis model.
 * ① is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
 * ② is a placeholder for the XSEL type name ("KE", "KET", "P", or "Q").
 * ③ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, or 3: three-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

RCS2-RT7R

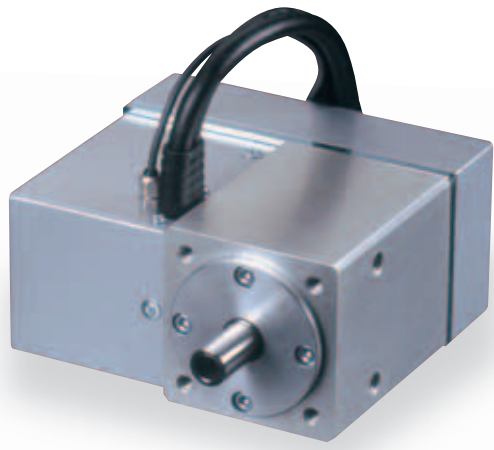
RoboCylinder Rotary Side-Mounted Motor (Hollow Output Shaft) 68mm Width
230V Servo Motor

■ Configuration: **RCS2** - **RT7R** - **I** - **60** - **4** - **300** - - - **L**

Series — Type — Encoder — Motor — Deceleration Ratio — Oscillation Angle — Compatible Controllers — Cable Length — Option

I: Incremental 60: 60W Servo Motor 4: 1/4 300: 300degrees T1: XSEL-KE/KET N: None L: Limit switch (equipped as standard)
 T2: SCON P: 1m S: 3m M: 5m X: Custom R: Robot cable
 SSEL XSEL-P/Q

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5

POINT
Notes on Selection

(1) The thrust load is the mechanical strength of the output axis at rest. When selecting, take into account the load moment and the load inertia.

(2) The rated acceleration while moving is 0.3G.

Actuator Specifications						Stroke and Maximum Speed	
■ Lead and Load Capacity							
Model	Motor Output (W)	Deceleration Ratio	Rated torque (N·m)	Allowable Moment of Inertia (kg·m ²)	Oscillation Angle (deg)	Oscillation Angle / Deceleration Ratio	300 (deg)
RCS2-RT7R-I-60-4-300-①-②-L	60	1/4	0.764	1.25×10 ⁻³ or less	300	1/4	500
Legend: ① Compatible controller ② Cable length						(Unit: degrees/s)	

Cable List	
Type	Cable Symbol
Standard Type	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
Robot Cable	R01 (1m) ~ R03 (3m)
	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

Actuator Specifications	
Item	Description
Drive System	Timing Belt
Positioning Repeatability	±0.02 degrees
Lost Motion	0.1 degrees or less
Base	Material: Aluminum (white alumite treated)
Allowable Load Moment	8.9N·m or less
Thrust load	100N or less
Ambient Operating Temp./Humidity	0 ~ 40°C, 85% RH or less (non-condensing)

* See page A-39 for cables for maintenance.

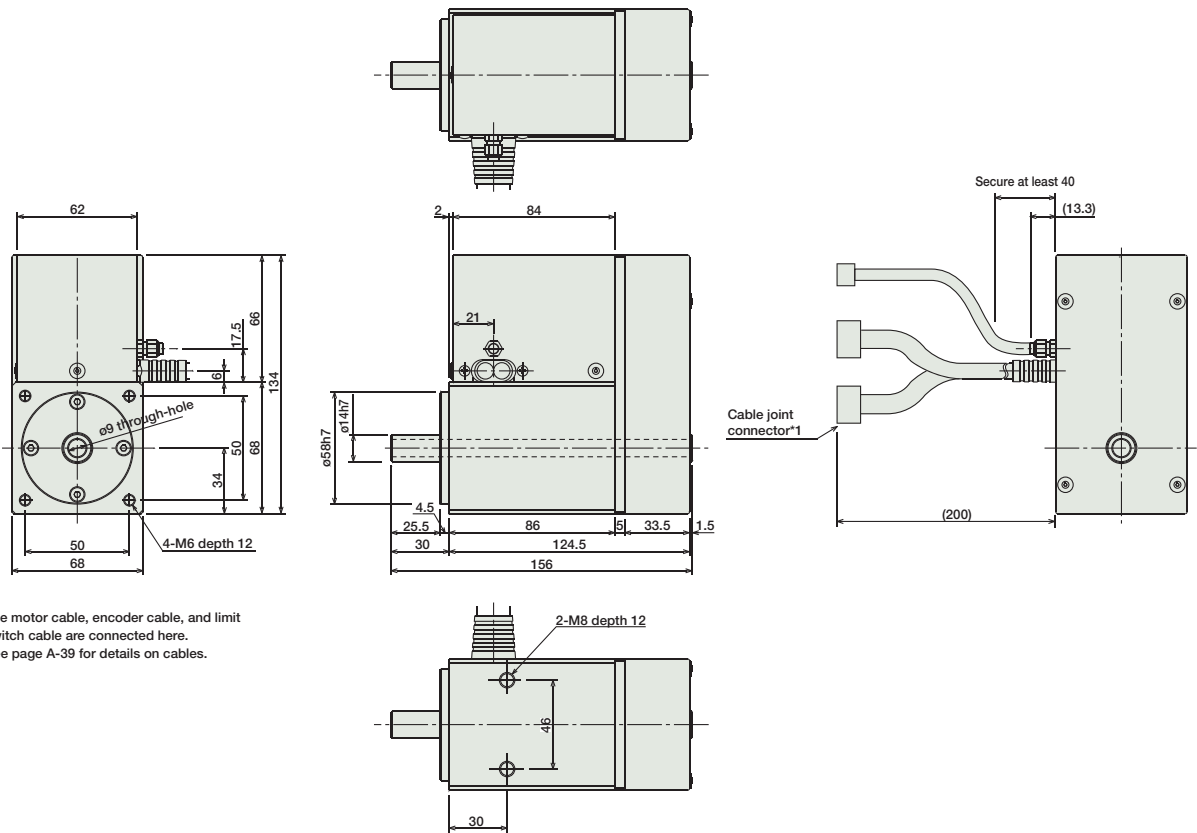
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

For Special Orders P. A-9



* For more information on homing, see page A-79.



*1 The motor cable, encoder cable, and limit switch cable are connected here. See page A-39 for details on cables.

Weight (kg) 2.6

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-60-NP-2-①	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	218 VA max. * It depends on the controller type. Please refer each controller manual in detail.	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to pulse train input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-60-NP-2-①	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-②-1-60-N1-EEE-2-③	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-axis model.
 * ① is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
 * ② is a placeholder for the XSEL type name ("KE", "KET", "P", or "Q").
 * ③ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, or 3: three-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

RCS2-RTC8L/RTC8HL

RoboCylinder Rotary Small Flat Type (Hollow Output Shaft)
85mm Width 230V Servo Motor

■ Configuration: **RCS2** — — — — — **360** — **T2** — —

Series	Type	Encoder	Motor	Deceleration Ratio	Oscillation Angle	Compatible Controllers	Cable Length	Option
	RTC8L (Standard) RTC8HL (High output)	I: Incremental A: Absolute	12: 12W Servo Motor 20: 20W Servo Motor	15: 1/15 (only RTC8HL) 24: 1/24	360: 360degrees (Multi-rotational)	T2: SCON SSEL XSEL-P/Q	N: None P: 1m S: 3m M: 5m X <input type="checkbox"/> : Custom R <input type="checkbox"/> : Robot cable	L: Limit switch (equipped as standard) B: Brake NM: Reversed-rotation

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5

POINT
Notes on Selection

(1) The thrust load is the mechanical strength of the output axis at rest. When selecting, take into account the load moment and the load inertia.

(2) The rated acceleration while moving is 0.1G up to 0.3G.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Deceleration Ratio	Rated torque (N·m)	Allowable Moment of Inertia (kg·m ²)	Oscillation Angle (deg)
RCS2-RTC8L-①-12-24-360-T2-②-③	12	1/24	0.55	1.1x10 ⁻² or less	360*
RCS2-RTC8HL-①-20-15-360-T2-②-③	20	1/15	0.53	1.0x10 ⁻² or less	
RCS2-RTC8HL-①-20-24-360-T2-②-③		1/24	0.85	1.7x10 ⁻² or less	

Legend: ① Encoder ② Cable length ③ Options

*Max. operating range: ±9999 degrees

Stroke and Maximum Speed

Deceleration Ratio	Stroke	±9999 (deg)
	Angle (deg)	
1/15		1200
1/24		750

(Unit: degrees/s)

Cable List

Type	Cable Symbol	
Standard Type	P (1m)	
	S (3m)	
	M (5m)	
Special Lengths	X06 (6m) ~ X10 (10m)	
	X11 (11m) ~ X15 (15m)	
	X16 (16m) ~ X20 (20m)	
Robot Cable	R01 (1m) ~ R03 (3m)	
	R04 (4m) ~ R05 (5m)	
	R06 (6m) ~ R10 (10m)	
	R11 (11m) ~ R15 (15m)	
	R16 (16m) ~ R20 (20m)	

* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Timing Belt + Hypoid Gear
Positioning Repeatability	±0.005 degrees
Lost Motion	±0.05 degrees or less
Inside Diameter	ø30
Base	Material: Aluminum (white alumite treated)
Allowable Load Moment	5.0N·m
Thrust load	400N
Ambient Operating Temp./Humidity	0~40°C, 85 % RH or less (non-condensing)

Option List

Name	Option Code	See Page
Limit switch (standard)	L	→ A-32
Brake	B	→ A-25
Reversed-rotation	NM	→ A-33

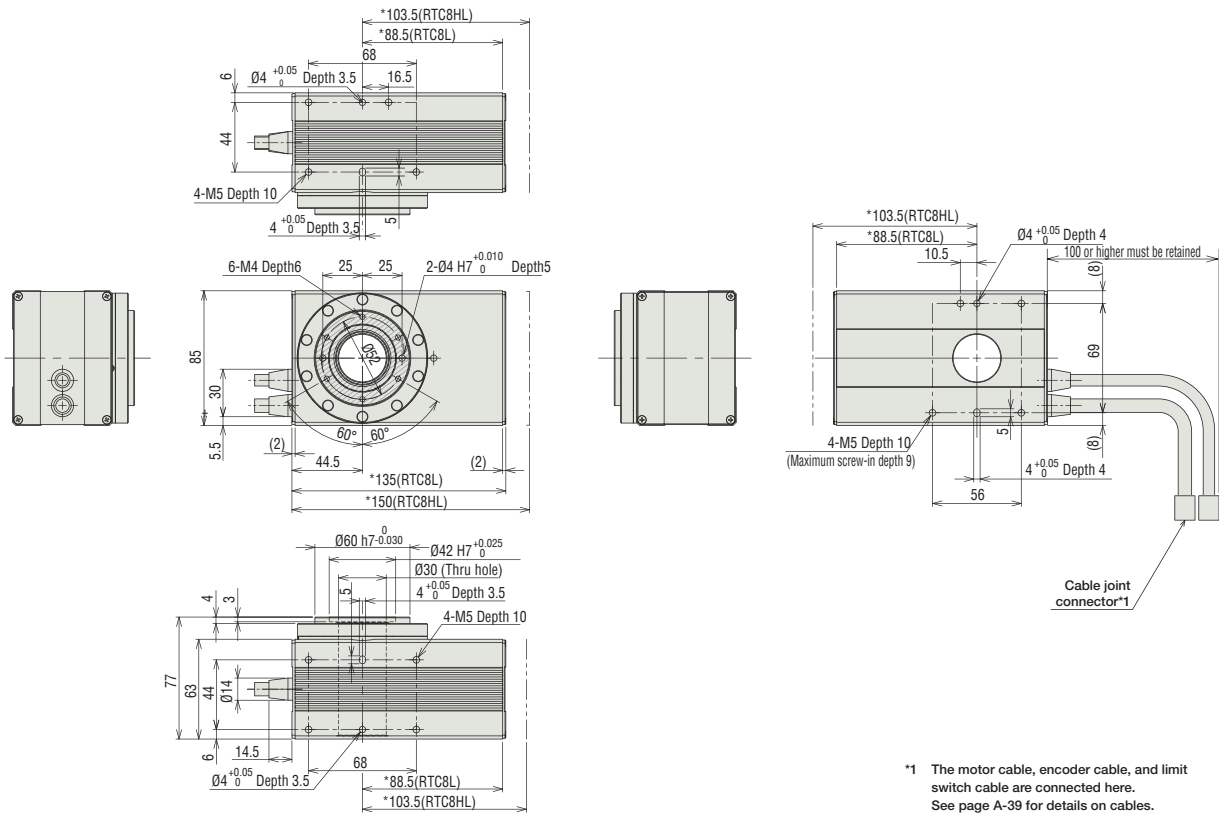
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

2/3D CAD

* The shaded area in the top view shows the rotation area.

For Special Orders P. A-9



*1 The motor cable, encoder cable, and limit switch cable are connected here. See page A-39 for details on cables.

Weight (kg) 2.4

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-12①-NP-2-② SCON-C-20①-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-phase AC115V Single-phase AC230V Three-phase AC230V (XSEL-P/Q only)	360VA max. * Single-axis model operated at 150W	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to pulse train input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-12①-NP-2-② SSEL-C-1-20①-NP-2-②	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-③-1-12①-N1-EEE-2-④ XSEL-③-1-20①-N1-EEE-2-④	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-axis model.

* ① is a placeholder for the encoder type (I: incremental, A: absolute).

* ② is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).

* ③ is a placeholder for the XSEL type name ("P" or "Q" only).

* ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, or 3: three-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

RCS2-RTC10L

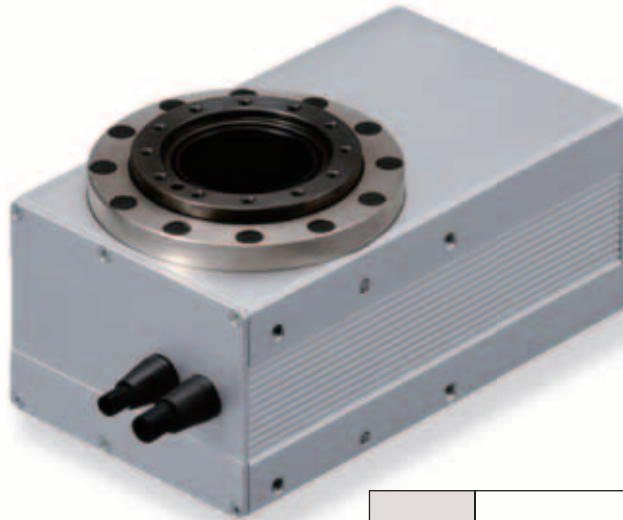
RoboCylinder Rotary Medium Flat Type (Hollow Output Shaft)
99mm Width 230V Servo Motor

■ Configuration: **RCS2** — **RTC10L** — — **60** — — **360** — **T2** — —

Series — Type — Encoder — Motor — Deceleration Ratio — Oscillation Angle — Compatible Controllers — Cable Length — Option

I: Incremental A: Absolute 60: 60W Servo Motor 15: 1/15 24: 1/24 360: 360degrees (Multi-rotational) T2: SCON SSEL XSEL-P/Q N: None P: 1m S: 3m M: 5m X : Custom R : Robot cable L: Limit switch (equipped as standard) B: Brake NM: Reversed-rotation

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5

POINT
Notes on Selection

(1) The thrust load is the mechanical strength of the output axis at rest. When selecting, take into account the load moment and the load inertia.
(2) The rated acceleration while moving is 0.1G up to 0.3G.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Deceleration Ratio	Rated torque (N·m)	Allowable Moment of Inertia (kg·m ²)	Oscillation Angle (deg)
RCS2-RTC10L-①-60-15-360-T2-②-③	60	1/15	1.7	3.3x10 ⁻² or less	360*
RCS2-RTC10L-①-60-24-360-T2-②-③		1/24	2.8	5.4x10 ⁻² or less	

Legend: ① Encoder ② Cable length ③ Options

*Max. operating range: ±9999 degrees

Stroke and Maximum Speed

Stroke / Deceleration Ratio	±9999 (deg)
1/15	1200
1/24	750

(Unit: degrees/s)

Cable List

Type	Cable Symbol	
Standard Type	P (1m)	
	S (3m)	
	M (5m)	
Special Lengths	X06 (6m) ~ X10 (10m)	
	X11 (11m) ~ X15 (15m)	
	X16 (16m) ~ X20 (20m)	
Robot Cable	R01 (1m) ~ R03 (3m)	
	R04 (4m) ~ R05 (5m)	
	R06 (6m) ~ R10 (10m)	
	R11 (11m) ~ R15 (15m)	
	R16 (16m) ~ R20 (20m)	

* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Timing Belt + Hypoid Gear
Positioning Repeatability	±0.005 degrees
Lost Motion	±0.05 degrees or less
Inside Diameter	ø40
Base	Material: Aluminum (white alumite treated)
Allowable Load Moment	10.0N·m
Thrust load	600N
Ambient Operating Temp./Humidity	0~40°C, 85 % RH or less (non-condensing)

Option List

Name	Option Code	See Page
Limit switch (standard)	L	→ A-32
Brake	B	→ A-25
Reversed-rotation	NM	→ A-33

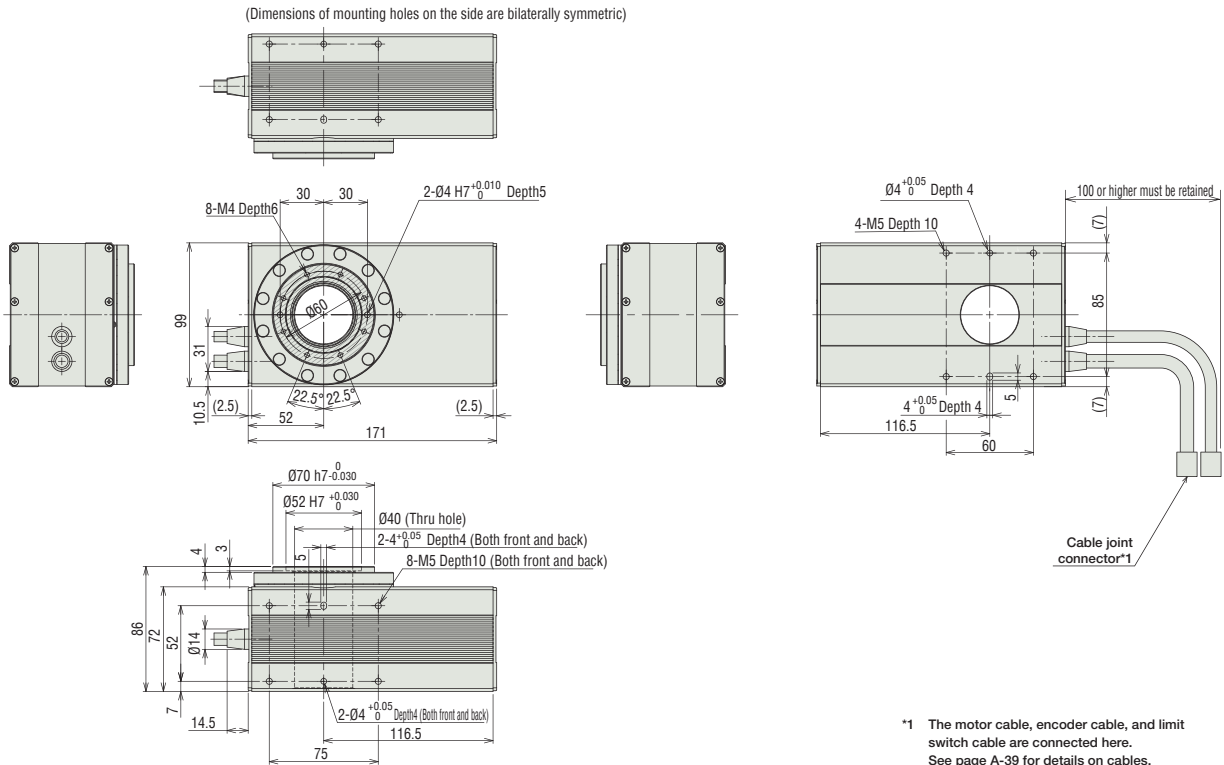
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

2/3D CAD

* The shaded area in the top view shows the rotation area.

For Special Orders P. A-9



*1 The motor cable, encoder cable, and limit switch cable are connected here. See page A-39 for details on cables.

Weight (kg) 3.5

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-60 ①-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-phase AC115V Single-phase AC230V Three-phase AC230V (XSEL-P/Q only)	360VA max. * Single-axis model operated at 150W	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to pulse train input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-60 ①-NP-2-②	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-③-1-60 ①-N1-EEE-2-④	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-axis model.
 * ① is a placeholder for the encoder type (I: incremental, A: absolute).
 * ② is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).
 * ③ is a placeholder for the XSEL type name ("P" or "Q" only).
 * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, or 3: three-phase 230V).

RCS2-RTC12L

RoboCylinder Rotary Medium Flat Type (Hollow Output Shaft)
123mm Width 230V Servo Motor

■ Configuration: **RCS2** — **RTC12L** — — **150** — — **360** — **T2** — —

Series — Type — Encoder — Motor — Deceleration Ratio — Oscillation Angle — Compatible Controllers — Cable Length — Option

I: Incremental 150: 150W Servo Motor 18: 1/18 30: 1/30 360: 360degrees (Multi-rotational) T2: SCON SSEL XSEL-P/Q N: None L: Limit switch (equipped as standard) P: 1m S: 3m M: 5m B: Brake NM: Reversed-rotation X : Custom R : Robot cable

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5

POINT
Notes on Selection

(1) The thrust load is the mechanical strength of the output axis at rest. When selecting, take into account the load moment and the load inertia.
(2) The rated acceleration while moving is 0.1G up to 0.3G.

Actuator Specifications

■ Lead and Load Capacity						■ Stroke and Maximum Speed	
Model	Motor Output (W)	Deceleration Ratio	Rated torque (N·m)	Allowable Moment of Inertia (kg·m ²)	Oscillation Angle (deg)	Stroke / Deceleration Ratio	±9999 (deg)
RCS2-RTC12L-①-150-18-360-T2-②-③	150	1/18	5.2	10.0x10 ⁻² or less	360*	1/18	800
RCS2-RTC12L-①-150-30-360-T2-②-③		1/30	8.6	17.0x10 ⁻² or less		1/30	600

Legend: ① Encoder ② Cable length ③ Options *Max. operating range: ±9999 degrees (Unit: degrees/s)

Cable List

Type	Cable Symbol	
Standard Type	P (1m)	
	S (3m)	
	M (5m)	
Special Lengths	X06 (6m) ~ X10 (10m)	
	X11 (11m) ~ X15 (15m)	
	X16 (16m) ~ X20 (20m)	
Robot Cable	R01 (1m) ~ R03 (3m)	
	R04 (4m) ~ R05 (5m)	
	R06 (6m) ~ R10 (10m)	
	R11 (11m) ~ R15 (15m)	
	R16 (16m) ~ R20 (20m)	

* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Timing Belt + Hypoid Gear
Positioning Repeatability	±0.005 degrees
Lost Motion	±0.05 degrees or less
Inside Diameter	ø54
Base	Material: Aluminum (white alumite treated)
Allowable Load Moment	25.0N·m
Thrust load	800N
Ambient Operating Temp./Humidity	0~40°C, 85 % RH or less (non-condensing)

Option List


Name	Option Code	See Page
Limit switch (standard)	L	→ A-32
Brake	B	→ A-25
Reversed-rotation	NM	→ A-33

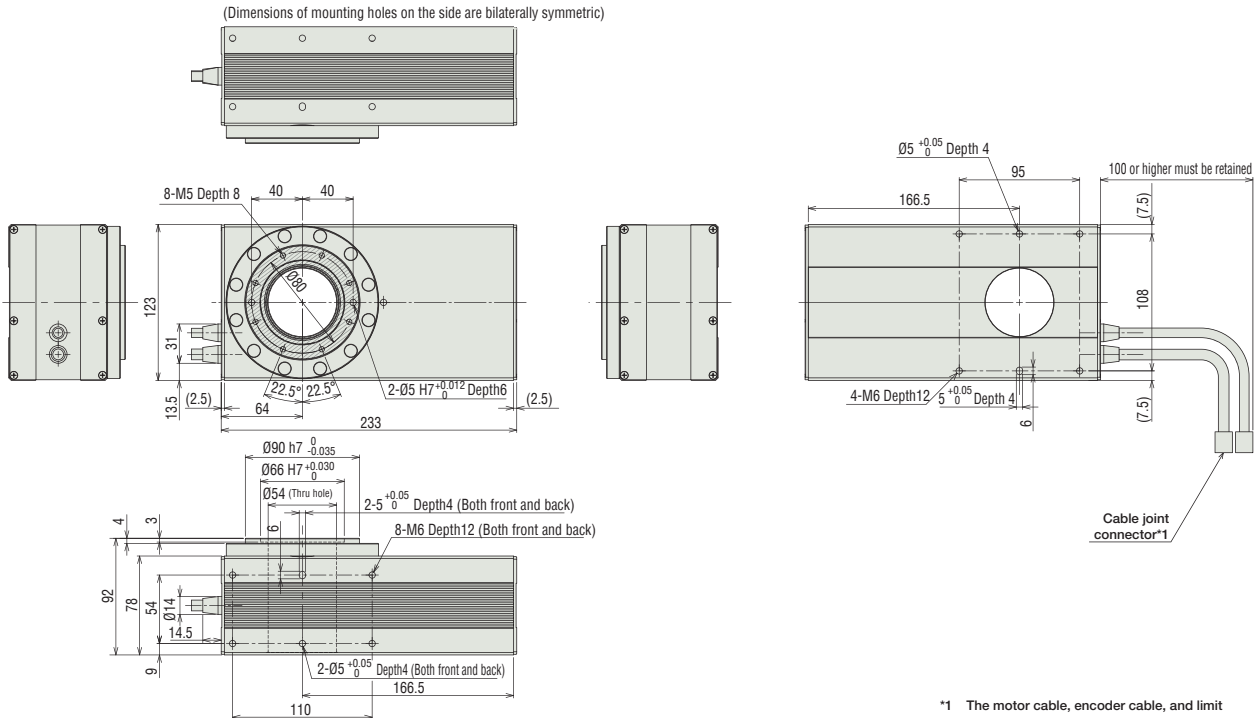
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

2/3D CAD

* The shaded area in the top view shows the rotation area.

For Special Orders  P. A-9






*1 The motor cable, encoder cable, and limit switch cable are connected here. See page A-39 for details on cables.

Weight (kg) 6.5

Compatible Controllers

The RCS2 series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-150①-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-phase AC115V Single-phase AC230V Three-phase AC230V (XSEL-P/Q only)	360VA max. * Single-axis model operated at 150W	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to pulse train input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-150①-NP-2-②	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-③-1-150①-N1-EEE-2-④	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-axis model.

* ① is a placeholder for the encoder type (I: incremental, A: absolute).

* ② is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V).

* ③ is a placeholder for the XSEL type name ("P" or "Q" only).

* ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, or 3: three-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

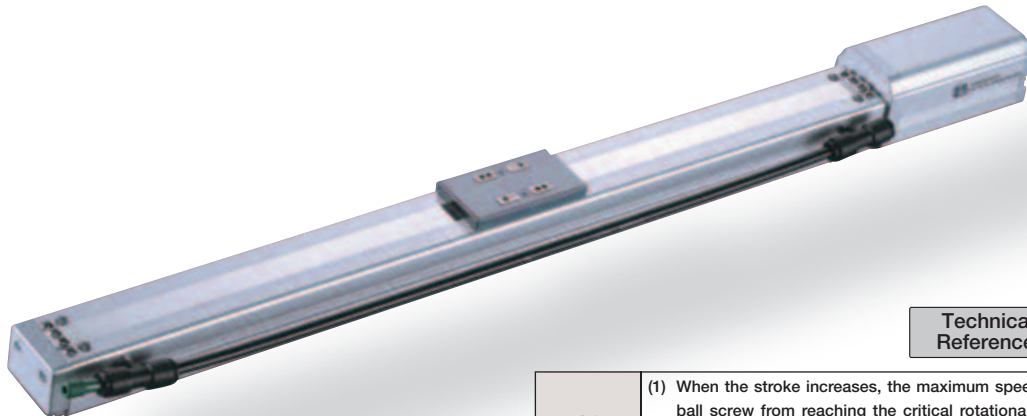
RCS2CR-SA4C Cleanroom RoboCylinder Slider Coupling Type 40mm Width 230V Servo Motor Aluminum Base

■ Configuration: **RCS2CR-SA4C** - [] - **20** - [] - [] - [] - []

Series — Type — Encoder — Motor — Lead — Stroke — Compatible Controllers — Cable Length — Option

I : Incremental 20 : 20W servo motor 10: 10mm 5: 5mm 2.5: 2.5mm 50: 50mm 400: 400mm (50mm pitch increments) T1: XSEL-KE/KET T2: SCON SSEL XSEL-P/Q N: None P: 1m S: 3m M: 5m X [] : Custom R [] : Robot cable See Options below

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5

POINT Notes on Selection

- (1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
- (2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 2.5mm-lead model). This is the upper limit of the acceleration.

Actuator Specifications						Stroke, Max. Speed/Suction Volume			
■ Lead and Load Capacity						Stroke (mm)	Suction Volume (NI/min)	50 ~ 400 (50mm increments)	
Model	Motor Output (W)	Lead (mm)	Max. Load Capacity (kg)	Rated Thrust (N)	Stroke			50 ~ 400 (50mm increments)	Suction Volume (NI/min)
RCS2CR-SA4C-①-20-10-②-③-④-⑤	20	10	4	1	19.6	50~400 (50mm increments)	10	665	50
RCS2CR-SA4C-①-20-5-②-③-④-⑤		5	6	2.5	39.2		5	330	30
RCS2CR-SA4C-①-20-2.5-②-③-④-⑤		2.5	8	4.5	78.4		2.5	165	15

Legend: ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options (Unit: mm/s)

Type	Cable Symbol
Standard Type	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
Robot Cable	R01 (1m) ~ R03 (3m)
	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* See page A-39 for cables for maintenance.

Name	Option Code	See Page
Brake	B	→ A-25
Foot bracket	FT	→ A-29
Home sensor	HS	→ A-32
Reversed-home	NM	→ A-33
Slider spacer	SS	→ A-36
Intake port mounted on opposite side	VR	→ A-38

Item	Description
Drive System	Ball screw ø8mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (white alumite treated)
Allowable Static Moment	Ma: 6.9N·m Mb: 9.9N·m Mc: 17.0N·m
Allowable Dynamic Moment (*)	Ma: 2.7N·m Mb: 3.9N·m Mc: 6.8N·m
Overhang Length	Ma direction: 120mm or less; Mb-Mc direction: 120mm or less
Grease Type	Low dust generation grease (both ball screw and guide)
Cleanliness	ISO class 4 (US FED STD class 10)
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

(*) Based on a 5,000km service life.

Directions of Allowable Load Moments

Overhang Load Length

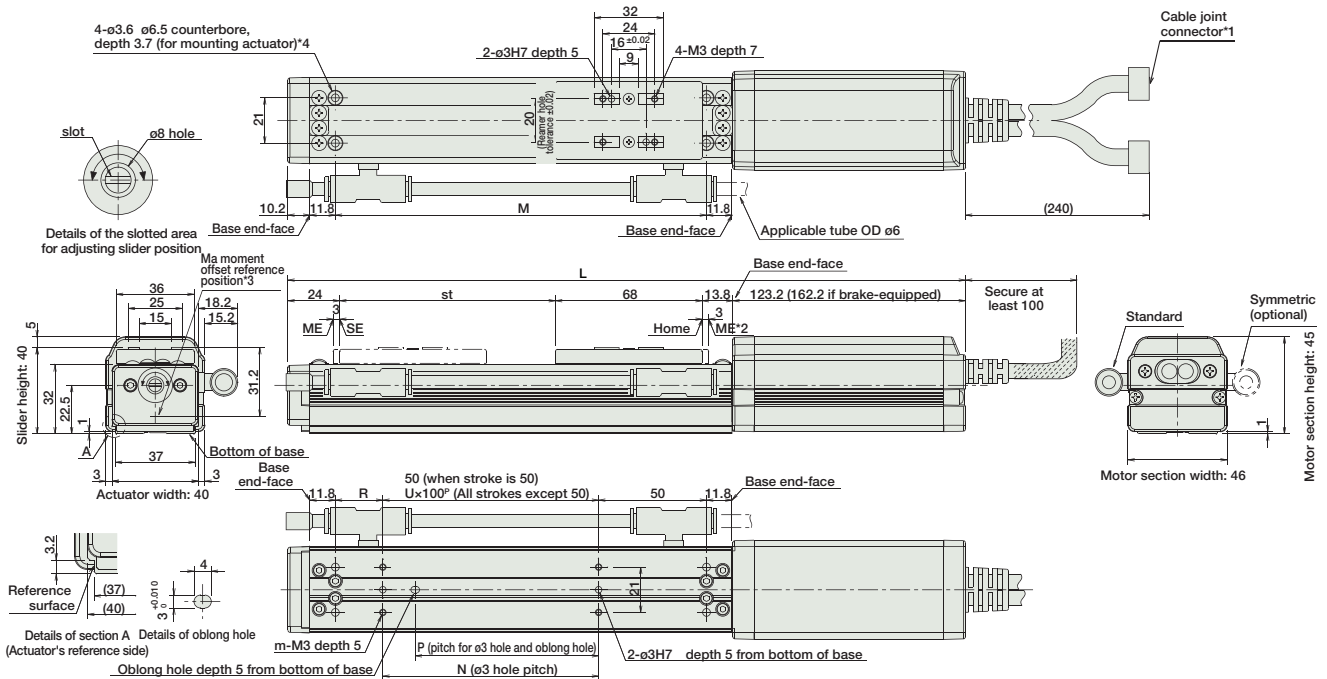
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

2/3D CAD

- *1 The motor-encoder cable is connected here. See page A-39 for details on cables.
- *2 When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end
- *3 Reference position for calculating the moment Ma.
- *4 If the actuator is secured using only the mounting holes provided on the top surface of the base, the base may twist to cause abnormal sliding of the slider, or may produce abnormal noise. Therefore, when using the mounting holes on the top surface of the base, keep the stroke at 200mm or less.

For Special Orders P. A-9



■ Dimensions and Weight by Stroke * Adding a brake will increase the actuator's weight by 0.3kg.

Stroke	50	100	150	200	250	300	350	400	
L	No Brake	279	329	379	429	479	529	579	629
	With Brake	318	368	418	468	518	568	618	668
M	122	172	222	272	322	372	422	472	
N	50	100	100	200	200	300	300	400	
P	35	85	85	185	185	285	285	385	
R	22	22	72	22	72	22	72	22	
U	-	1	1	2	2	3	3	4	
m	4	4	4	6	6	8	8	10	
Weight (kg)	0.7	0.8	0.9	1	1.1	1.2	1.3	1.4	

Compatible Controllers

The RCS2CR series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-20①-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	106 VA max. * It depends on the controller type. Please refer each controller manual in detail.	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to pulse train input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-20①-NP-2-②	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-③-1-20②-N1-EEE-2-④	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

- * For SSEL and XSEL, only applicable to the single-axis model.
- * ① is a placeholder for the encoder type (I: incremental / A: absolute).
- * ② is a placeholder for the power supply voltage (1: 115V, or 2: single-phase 230V).
- * ③ is a placeholder for the XSEL type name ("KE", "KET", "P", or "Q").
- * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

RCS2CR-SA5C

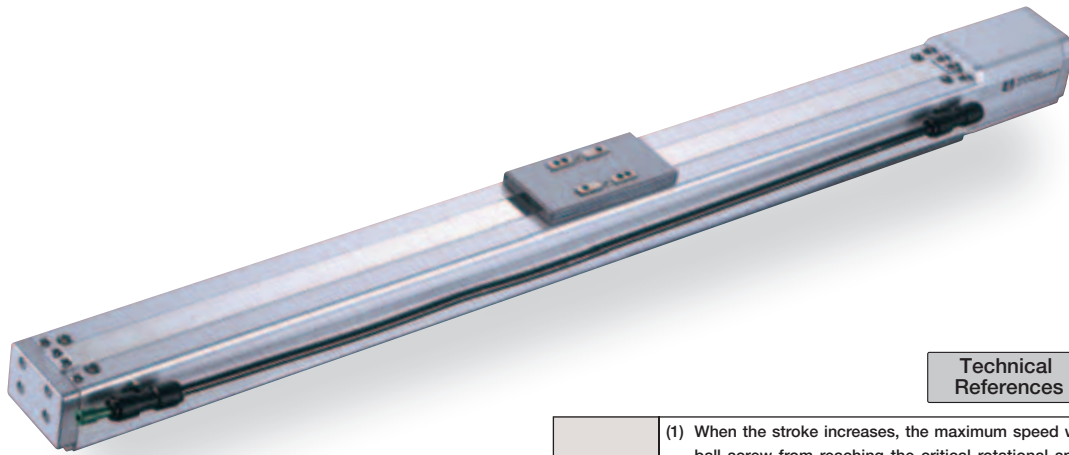
Cleanroom RoboCylinder Slider Coupling Type 52mm Width 230V Servo Motor Aluminum Base

Configuration: **RCS2CR-SA5C** - [] - **20** - [] - [] - [] - []

Series — Type — Encoder — Motor — Lead — Stroke — Compatible Controllers — Cable Length — Option

I : Incremental 20 : 20W servo motor 20 : 20mm 50: 50mm T1:XSEL-KE/KET N : None See Options below
 A : Absolute 12 : 12mm 6 : 6mm 500: 500mm (50mm pitch increments) T2:SCON P : 1m S : 3m M : 5m X [] : Custom R [] : Robot cable
 SSEL XSEL-P/Q

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5



- (1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
- (2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model). This is the upper limit of the acceleration.

Actuator Specifications						Stroke, Max. Speed/Suction Volume				
Lead and Load Capacity						Stroke (mm)	Suction Volume (N l / min)	Stroke		500 (mm)
Model	Motor Output (W)	Lead (mm)	Max. Load Capacity		Rated Thrust (N)			50 ~ 450 (50mm increments)	500 (mm)	
RCS2CR-SA5C-①-20-20-②-③-④-⑤	20	20	Horizontal (kg)	Vertical (kg)	9.9	50 ~ 500 (50mm increments)	1300	1300	80	
RCS2CR-SA5C-①-20-12-②-③-④-⑤		12	4	1			16.7	800	760	50
RCS2CR-SA5C-①-20-6-②-③-④-⑤		6	8	2			33.3	400	380	30
RCS2CR-SA5C-①-20-3-②-③-④-⑤		3	12	4			65.7	200	190	15

Legend: ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options (Unit: mm/s)

Type	Cable Symbol
Standard Type	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
Robot Cable	R01 (1m) ~ R03 (3m)
	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* See page A-39 for cables for maintenance.

Name	Option Code	See Page
Brake	B	→ A-25
Foot bracket	FT	→ A-29
Home sensor	HS	→ A-32
Reversed-home	NM	→ A-33
Intake port mounted on opposite side	VR	→ A-38

Item	Description
Drive System	Ball screw ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (white alumite treated)
Allowable Static Moment	Ma: 18.6N·m Mb: 26.6N·m Mc: 47.5N·m
Allowable Dynamic Moment (*)	Ma: 4.9N·m Mb: 6.8N·m Mc: 11.7N·m
Overhang Length	Ma direction: 150mm or less; Mb, Mc direction: 150mm or less
Grease Type	Low dust generation grease (both ball screw and guide)
Cleanliness	ISO class 4 (US FED STD class 10)
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

(*) Based on a 5,000km service life.

Directions of Allowable Load Moments

Overhang Load Length

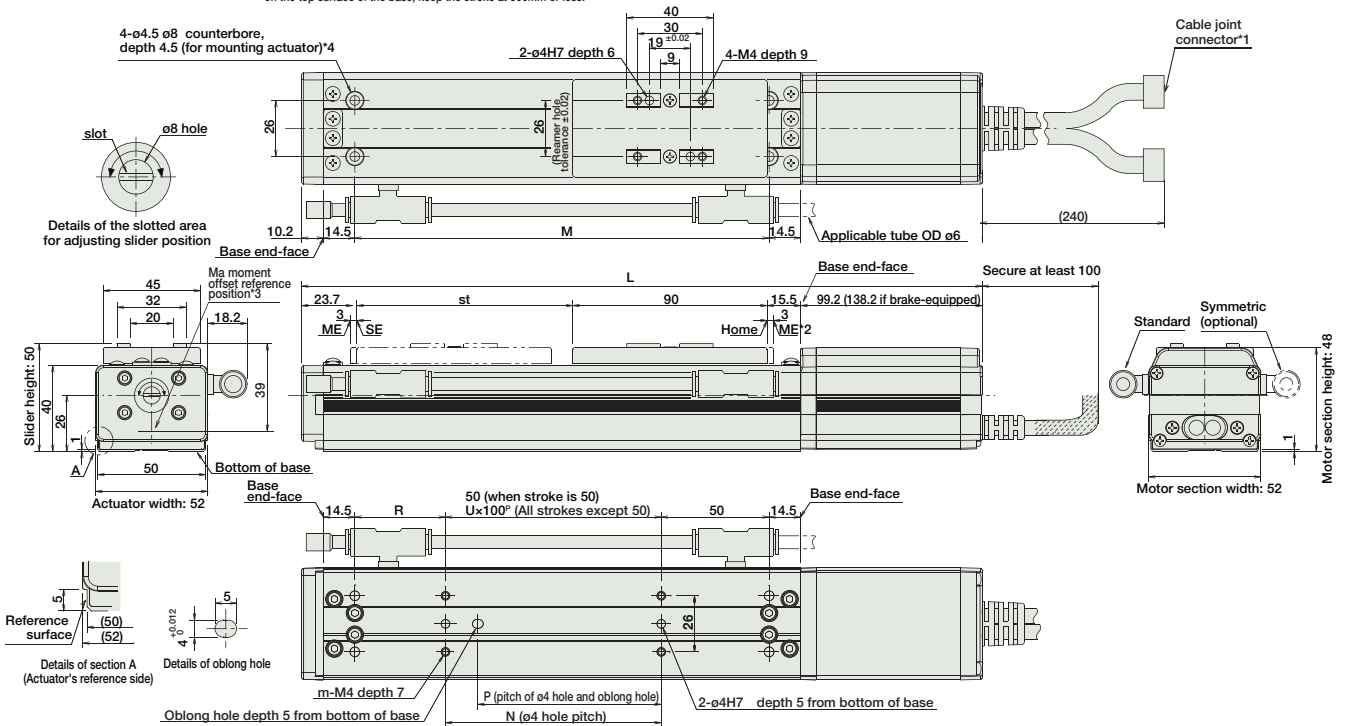
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de



- *1 The motor-encoder cable is connected here. See page A-39 for details on cables.
- *2 After homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end
- *3 Reference position for calculating the moment Ma.
- *4 If the actuator is secured using only the mounting holes provided on the top surface of the base, the base may twist to cause abnormal sliding of the slider, or may produce abnormal noise. Therefore, when using the mounting holes on the top surface of the base, keep the stroke at 300mm or less.

For Special Orders P. A-9



■ Dimensions and Weight by Stroke * Adding a brake will increase the actuator's weight by 0.3kg.

Stroke	50	100	150	200	250	300	350	400	450	500
L	No Brake	280.4	330.4	380.4	430.4	480.4	530.4	580.4	630.4	730.4
	With Brake	319.4	369.4	419.4	469.4	519.4	569.4	619.4	669.4	769.4
M	142	192	242	292	342	392	442	492	542	592
N	50	100	100	200	200	300	300	400	400	500
P	35	85	85	185	185	285	285	385	385	485
R	42	42	92	42	92	42	92	42	92	42
U	-	1	1	2	2	3	3	4	4	5
m	4	4	4	6	6	8	8	10	10	12
Weight (kg)	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2	2.1	2.2

Compatible Controllers

The RCS2CR series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-20①-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	106 VA max. * It depends on the controller type. Please refer each controller manual in detail.	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to pulse train input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-20①-NP-2-②	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-③-1-20①-N1-EEE-2-④	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-axis model.
 * ① is a placeholder for the encoder type (I: incremental / A: absolute).
 * ② is a placeholder for the power supply voltage (1: 115V, or 2: single-phase 230V).
 * ③ is a placeholder for the XSEL type name ("KE", "KET", "P", or "Q").
 * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm/Flat Type
- Mini
- Standard
- Gripper/Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC/AMEC
- PSEP/ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

RCS2CR-SA6C

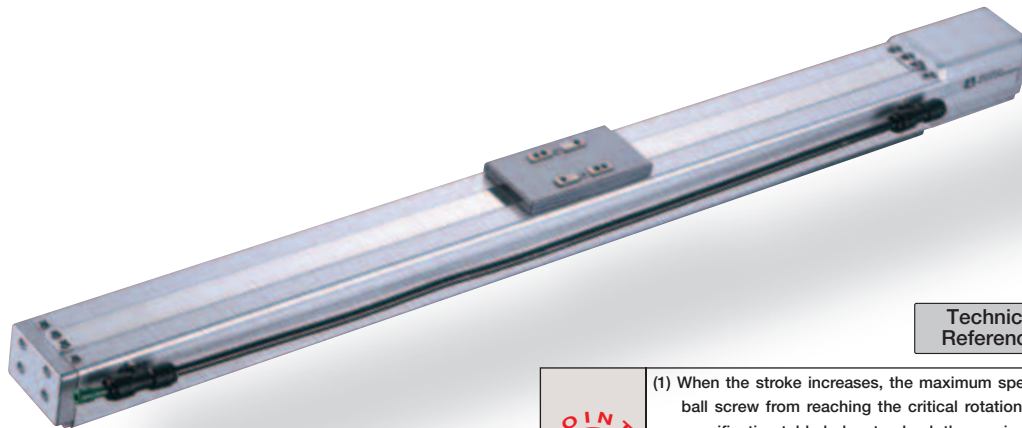
Cleanroom RoboCylinder Slider Coupling Type 58mm Width 230V Servo Motor Aluminum Base

Configuration: RCS2CR— SA6C — **30** — — — —

Series — Type — Encoder — Motor — Lead — Stroke — Compatible Controllers — Cable Length — Option

I : Incremental 30 : 30W servo 20 : 20mm 50: 50mm T1:XSEL-KE/KET N : None See Options below
 A : Absolute motor 12 : 12mm \ T2:SCON P : 1m S : 3m M : 5m
 6 : 6mm 600: 600mm SSEL X : Custom
 3 : 3mm (50mm pitch increments) XSEL-P/Q R : Robot cable

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5



- (1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
- (2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model). This is the upper limit of the acceleration.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. Load Capacity		Rated Thrust (N)	Stroke (mm)
			Horizontal (kg)	Vertical (kg)		
RCS2CR-SA6C-①-30-20-②-③-④-⑤	30	20	3	0.5	14.5	50 ~ 600 (50mm increments)
RCS2CR-SA6C-①-30-12-②-③-④-⑤		12	6	1.5	24.2	
RCS2CR-SA6C-①-30-6-②-③-④-⑤		6	12	3	48.4	
RCS2CR-SA6C-①-30-3-②-③-④-⑤		3	18	6	96.8	

Stroke, Max. Speed/Suction Volume

Stroke / Lead	50 ~ 450 (50mm increments)	500 (mm)	550 (mm)	600 (mm)	Suction Volume (NL/min)
20	1300	1300	1160	990	80
12	800	760	640	540	50
6	400	380	320	270	30
3	200	190	160	135	15

Legend: ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options (Unit: mm/s)

Cable List

Type	Cable Symbol	
Standard Type	P (1m)	
	S (3m)	
	M (5m)	
Special Lengths	X06 (6m) ~ X10 (10m)	
	X11 (11m) ~ X15 (15m)	
	X16 (16m) ~ X20 (20m)	
Robot Cable	R01 (1m) ~ R03 (3m)	
	R04 (4m) ~ R05 (5m)	
	R06 (6m) ~ R10 (10m)	
	R11 (11m) ~ R15 (15m)	
	R16 (16m) ~ R20 (20m)	

* See page A-39 for cables for maintenance.

Option List

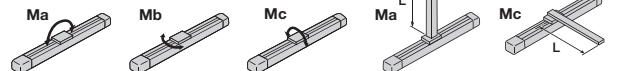
Name	Option Code	See Page
Brake	B	→ A-25
Foot bracket	FT	→ A-29
Home sensor	HS	→ A-32
Reversed-home	NM	→ A-33
Intake port mounted on opposite side	VR	→ A-38

Actuator Specifications

Item	Description
Drive System	Ball screw ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (white alumite treated)
Allowable Static Moment	Ma: 38.3N·m Mb: 54.7N·m Mc: 81.0N·m
Allowable Dynamic Moment (*)	Ma: 8.9N·m Mb: 12.7N·m Mc: 18.6N·m
Overhang Length	Ma direction: 220mm or less; Mb, Mc directions: 220mm or less
Grease Type	Low dust generation grease (both ball screw and guide)
Cleanliness	ISO class 4 (US FED STD class 10)
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

(*) Based on a 5,000km service life.

Directions of Allowable Load Moments



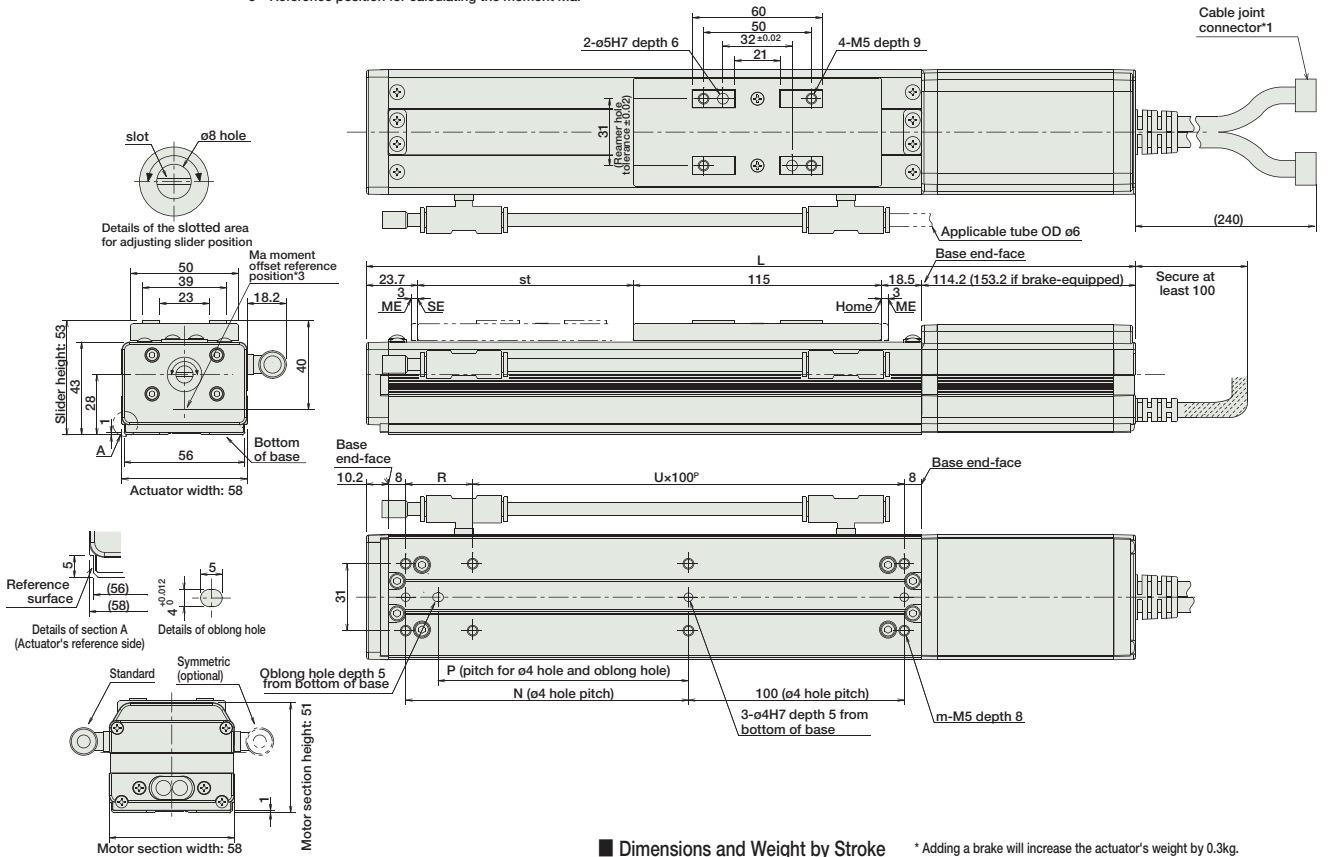
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de



- *1 The motor-encoder cable is connected here. See page A-39 for details on cables.
- *2 After homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end SE: Stroke end
- *3 Reference position for calculating the moment Ma.

For Special Orders P. A-9



■ Dimensions and Weight by Stroke * Adding a brake will increase the actuator's weight by 0.3kg.

Stroke	50	100	150	200	250	300	350	400	450	500	550	600
L	No Brake	321.4	371.4	421.4	471.4	521.4	571.4	621.4	671.4	721.4	771.4	821.4
	With Brake	360.4	410.4	460.4	510.4	560.4	610.4	660.4	710.4	760.4	810.4	860.4
N	81	131	181	231	281	331	381	431	481	531	581	631
P	66	116	166	216	266	316	366	416	466	516	566	616
R	81	31	81	31	81	31	81	31	81	31	81	31
U	1	2	2	3	3	4	4	5	5	6	6	7
m	6	8	8	10	10	12	12	14	14	16	16	18
Weight (kg)	1.4	1.6	1.8	2	2.2	2.4	2.6	2.8	3	3.2	3.4	3.6

Compatible Controllers

The RCS2CR series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-30D①-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	126 VA max. * It depends on the controller type. Please refer each controller manual in detail.	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to pulse train input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-30D①-NP-2-②	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-③-1-30D①-N1-EEE-2-④	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-axis model.
 * ① is a placeholder for the encoder type (I: incremental / A: absolute).
 * ② is a placeholder for the power supply voltage (1: 115V, or 2: single-phase 230V).
 * ③ is a placeholder for the XSEL type name ("KE", "KET", "P", or "Q").
 * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

RCS2CR-SA7C Cleanroom RoboCylinder Slider Coupling Type 73mm Width 230V Servo Motor Aluminum Base

■ Configuration: **RCS2CR** — **SA7C** — [] — **60** — [] — [] — [] — [] — []

Series — Type — Encoder — Motor — Lead — Stroke — Compatible Controllers — Cable Length — Option

I : Incremental
A : Absolute

60 : 60W servo motor

16 : 16mm
8 : 8mm
4 : 4mm

50 : 50mm
↙
800 : 800mm (50mm pitch increments)

T1 : XSEL-KE/KET
T2 : SCON
SSEL
XSEL-P/Q

N : None
P : 1m
S : 3m
M : 5m
X [] : Custom
R [] : Robot cable

See Options below

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5



- (1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
- (2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 4mm-lead model). This is the upper limit of the acceleration.
- (3) The ISO cleanliness class 4 is for horizontal usage. Please note that the actuator may not support C10 when used on its side or in vertical orientation.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. Load Capacity		Rated Thrust (N)	Stroke (mm)
			Horizontal (kg)	Vertical (kg)		
RCS2CR-SA7C-①-60-16-②-③-④-⑤	60	16	12	3	63.8	50~800 (50mm increments)
RCS2CR-SA7C-①-60-8-②-③-④-⑤		8	25	6	127.5	
RCS2CR-SA7C-①-60-4-②-③-④-⑤		4	40	12	255.0	

Legend: ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options

Stroke, Max. Speed/Suction Volume

Stroke Lead	50 ~ 600 (50mm increments)	~ 700 (mm)	~ 800 (mm)	Suction Volume (NL/min)
16	800	640	480	50
8	400	320	240	30
4	200	160	120	10

(Unit: mm/s)

Cable List

Type	Cable Symbol	
Standard Type	P (1m)	
	S (3m)	
	M (5m)	
Special Lengths	X06 (6m) ~ X10 (10m)	
	X11 (11m) ~ X15 (15m)	
	X16 (16m) ~ X20 (20m)	
Robot Cable	R01 (1m) ~ R03 (3m)	
	R04 (4m) ~ R05 (5m)	
	R06 (6m) ~ R10 (10m)	
	R11 (11m) ~ R15 (15m)	
	R16 (16m) ~ R20 (20m)	

* See page A-39 for cables for maintenance.

Option List

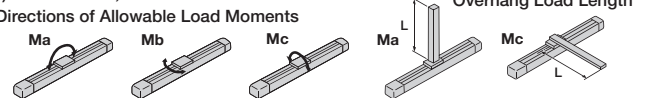
Name	Option Code	See Page
Brake (Cable exiting from end)	BE	→ A-25
Brake (Cable exiting from left)	BL	→ A-25
Brake (Cable exiting from right)	BR	→ A-25
Reversed-home	NM	→ A-33
Intake port mounted on opposite side	VR	→ A-38

Actuator Specifications

Item	Description
Drive System	Ball screw ϕ 12mm C10 grade
Positioning Repeatability	\pm 0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (white alumite treated)
Allowable Static Moment	Ma: 50.4N·m Mb: 71.9N·m Mc: 138.0N·m
Allowable Dynamic Moment (*)	Ma: 13.9N·m Mb: 19.9N·m Mc: 38.3N·m
Overhang Length	Ma direction: 230mm or less; Mb, Mc directions: 230mm or less
Grease Type	Low dust generation grease (both ball screw and guide)
Cleanliness	ISO class 4 (US FED STD class 10)
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

(*) Based on a 5,000km service life.

Directions of Allowable Load Moments



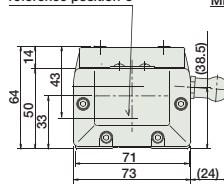
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

2/3D CAD

*For the reversed-home model, the dimensions (distance to home) on the motor-side and that on the opposite side are flipped.

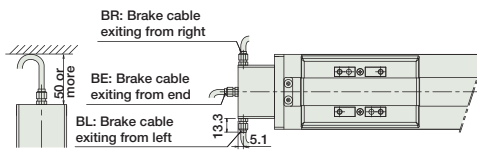
Ma: moment offset reference position*3



Details of oblong hole

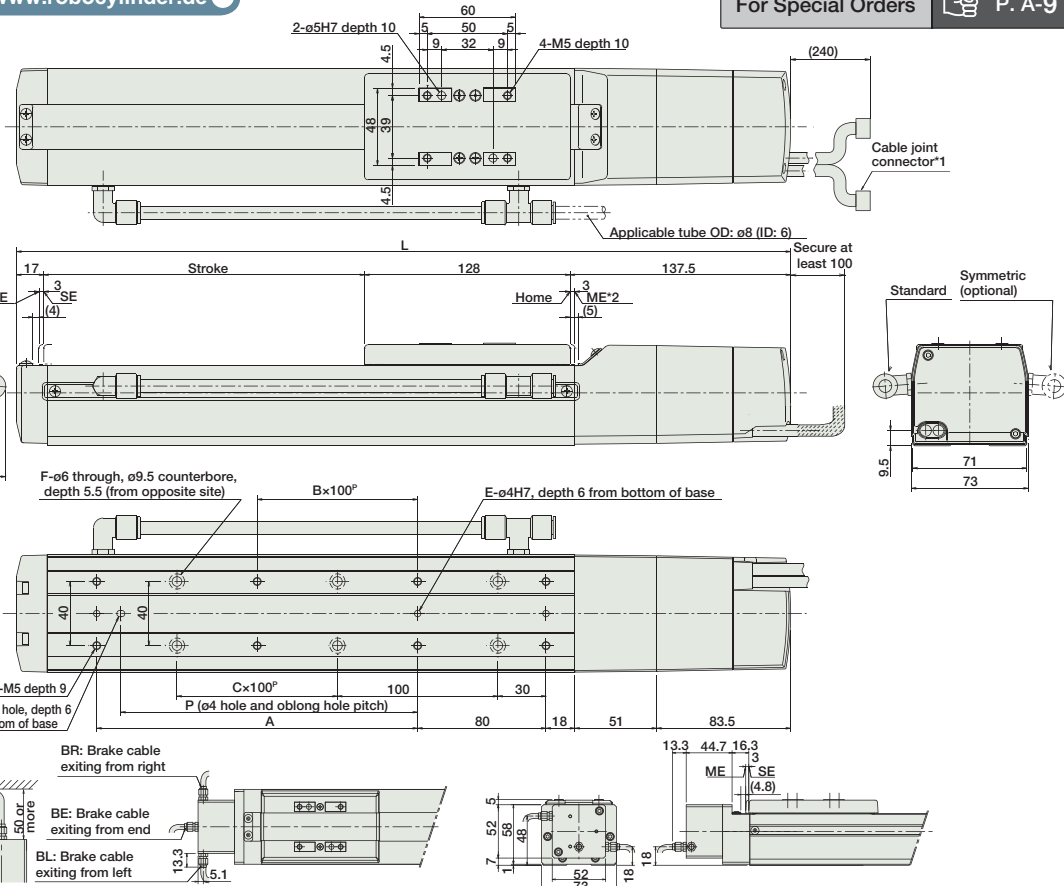
Dimensions of the Brake Section

* Adding a brake will increase the actuator's overall length by 43mm (56.3mm with the cable coming out the end), and its weight by 0.6kg.



- The motor-encoder cable is connected here. See page A-39 for details on cables.
- When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end
SE: Stroke end
The values enclosed in "()" are reference dimensions.
- Reference position for calculating the moment Ma.

For Special Orders P. A-9



Dimensions and Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	332.5	382.5	432.5	482.5	532.5	582.5	632.5	682.5	732.5	782.5	832.5	882.5	932.5	982.5	1032.5	1082.5
A	0	100	100	200	200	300	300	400	400	500	500	600	600	700	700	800
B	0	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7
C	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7
D	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20
E	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
F	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18
H	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
P	0	85	85	185	185	285	285	385	385	485	485	585	585	685	685	785
Weight (kg)	2.6	2.8	3.0	3.2	3.5	3.7	3.9	4.1	4.4	4.6	4.8	5.0	5.3	5.5	5.7	5.9

Compatible Controllers

The RCS2CR series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-60①-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	218 VA max. * It depends on the controller type. Please refer each controller manual in detail.	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to pulse train input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-60①-NP-2-②	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-③-1-60①-N1-EEE-2-④	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

- * For SSEL and XSEL, only applicable to the single-axis model.
- * ① is a placeholder for the encoder type (I: incremental / A: absolute).
- * ② is a placeholder for the power supply voltage (1: 115V, or 2: single-phase 230V).
- * ③ is a placeholder for the XSEL type name ("KE", "KET", "P", or "Q").
- * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

Slider Type

Mini

Standard

Controllers Integrated

Rod Type

Mini

Standard

Controllers Integrated

Table/Arm /Flat Type

Mini

Standard

Gripper/ Rotary Type

Linear Motor Type

Cleanroom Type

Splash-Proof

Controllers

PMEC /AMEC

PSEP /ASEP

ROBO NET

ERC2

PCON

ACON

SCON

PSEL

ASEL

SSEL

XSEL

Pulse Motor

Servo Motor (24V)

Servo Motor (230V)

Linear Motor

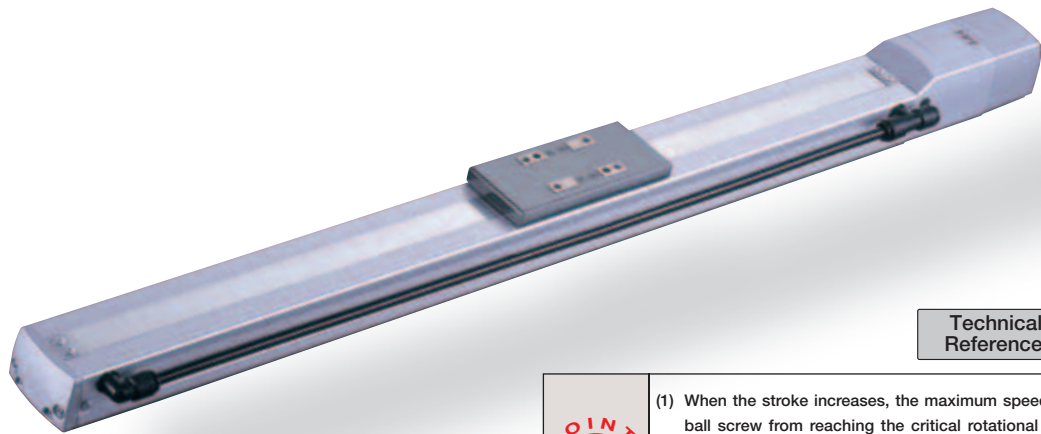
RCS2CR-SS7C

Cleanroom RoboCylinder Slider Coupling Type 60mm Width 230V Servo Motor
Steel Base

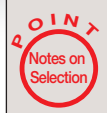
Configuration: RCS2CR-SS7C

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
I : Incremental A : Absolute			60 : 60W servo motor	12: 12mm 6: 6mm	50: 50mm 600: 600mm (50mm pitch increments)	T1: XSEL-KE/KET T2: SCON SSEL XSEL-P/Q	N : None P : 1m S : 3m M : 5m X <input type="checkbox"/> : Custom R <input type="checkbox"/> : Robot cable	See Options below

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5



- (1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
- (2) The load capacity is based on operation at an acceleration of 0.3G. This is the upper limit of the acceleration.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. Load Capacity		Rated Thrust (N)	Stroke (mm)
			Horizontal (kg)	Vertical (kg)		
RCS2CR-SS7C-①-60-12-②-③-④-⑤	60	12	15	4	85	50~600 (50mm increments)
RCS2CR-SS7C-①-60-6-②-③-④-⑤		6	30	8		170

Stroke, Max. Speed/Suction Volume

Lead	Stroke		Suction Volume (Nl/min)
	50~500 (50mm increments)	~ 600 (mm)	
12	600	470	50
6	300	230	30

Legend: ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options (Unit: mm/s)

Cable List

Type	Cable Symbol
Standard Type	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
	X21 (21m) ~ X25 (25m)
Robot Cable	R01 (1m) ~ R03 (3m)
	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)
	R21 (21m) ~ R25 (25m)

* See page A-39 for cables for maintenance.

Option List

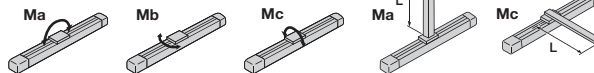
Name	Option Code	See Page
Brake	B	→ A-25
Reversed-home	NM	→ A-33
Intake port mounted on opposite side	VR	→ A-38

Actuator Specifications

Item	Description
Drive System	Ball screw ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Special alloy steel
Allowable Static Moment	Ma: 79.4N-m Mb: 79.4N-m Mc: 172.9N-m
Allowable Dynamic Moment (*)	Ma: 14.7N-m Mb: 14.7N-m Mc: 33.3N-m
Overhang Length	Ma direction: 300mm or less; Mb, Mc directions: 300mm or less
Grease Type	Low dust generation grease (both ball screw and guide)
Cleanliness	ISO class 4 (US FED STD class 10)
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

(*) Based on a 10,000km service life.

Directions of Allowable Load Moments



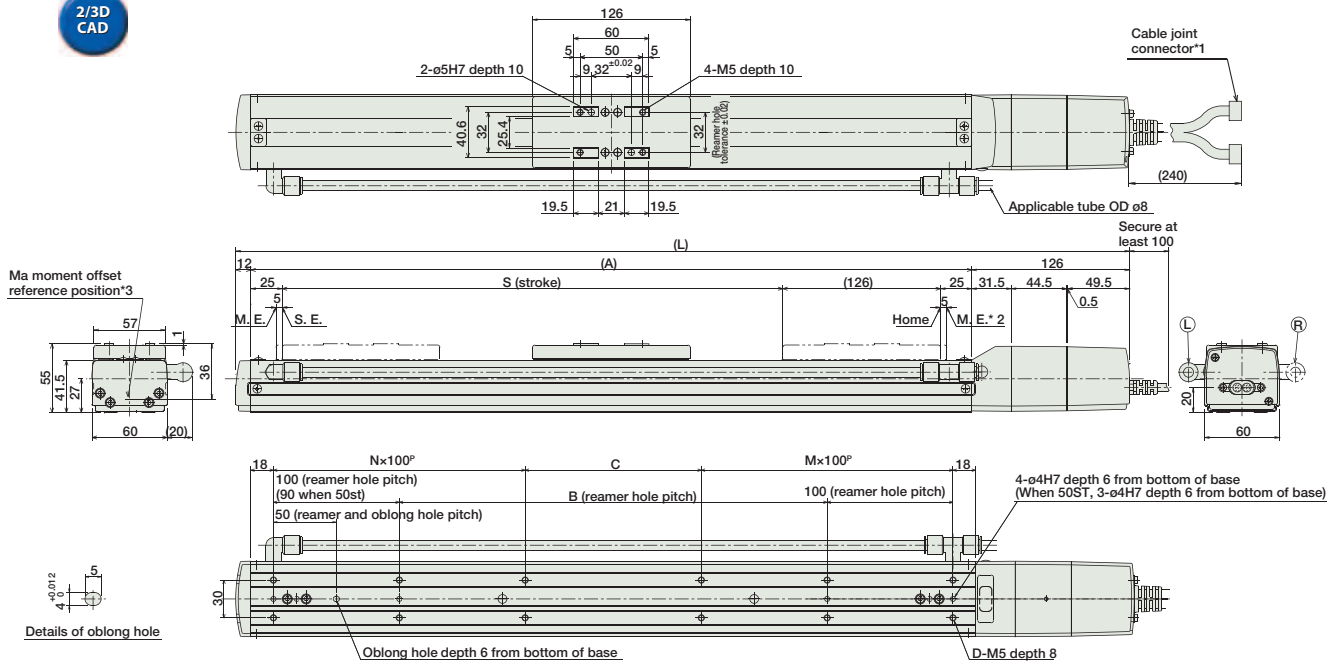
Overhang Load Length

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

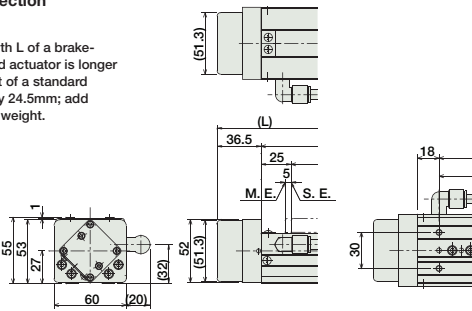
For Special Orders P. A-9

2/3D CAD



Dimensions of the Brake Section

*The length L of a brake-equipped actuator is longer than that of a standard model by 24.5mm; add 0.3kg to weight.



- *1. The motor-encoder cable is connected here. See page A-39 for details on cables.
- *2. When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end
SE: Stroke end
The values enclosed in "()" are reference dimensions.
- *3. Reference position for calculating the moment Ma.

Dimensions and Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600
L	364	414	464	514	564	614	664	714	764	814	864	914
A	226	276	326	376	426	476	526	576	626	676	726	776
B	0	40	90	140	190	240	290	340	390	440	490	540
C	90	40	90	140	190	40	90	140	190	40	90	140
D	6	8	8	8	8	12	12	12	12	16	16	16
M	1	1	1	1	1	2	2	2	2	3	3	3
N	0	1	1	1	1	2	2	2	2	3	3	3
Weight (kg)	3.1	3.4	3.7	4.0	4.4	4.7	5.0	5.3	5.7	6.0	6.3	6.6

Compatible Controllers

The RCS2CR series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-60①-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	218 VA max. * It depends on the controller type. Please refer each controller manual in detail.	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to pulse train input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-60①-NP-2-④	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-③-1-60①-N1-EEE-2-④	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

- * For SSEL and XSEL, only applicable to the single-axis model.
- * ① is a placeholder for the encoder type (I: incremental / A: absolute).
- * ② is a placeholder for the power supply voltage (1: 115V, or 2: single-phase 230V).
- * ③ is a placeholder for the XSEL type name ("KE", "KET", "P", or "Q").
- * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

RCS2CR-SS8C

Cleanroom RoboCylinder Slider Coupling Type 80mm Width 230V Servo Motor Steel Base

■ Configuration: **RCS2CR-SS8C** — [] — [] — [] — [] — [] — [] — []

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
		I : Incremental A : Absolute	100 : 100W servo motor 150 : 150W servo motor	20 : 20mm 10 : 10mm	50 : 50mm 1000 : 1000mm (50mm pitch increments)	T1 : XSEL-KE/KET T2 : SCON SSEL XSEL-P/Q	N : None P : 1m S : 3m M : 5m X [] : Custom R [] : Robot cable	See Options below

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5



- (1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
- (2) The load capacity is based on operation at an acceleration of 0.3G. This is the upper limit of the acceleration.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. Load Capacity		Rated Thrust (N)	Stroke (mm)
			Horizontal (kg)	Vertical (kg)		
RCS2CR-SS8C-①-100-20-②-③-④-⑤	100	20	20	4	84.9	50~1000 (50mm increments)
RCS2CR-SS8C-①-100-10-②-③-④-⑤		10	40	8	169	
RCS2CR-SS8C-①-150-20-②-③-④-⑤	150	20	30	6	128	
RCS2CR-SS8C-①-150-10-②-③-④-⑤		10	60	12	256	

Legend: ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options

Stroke, Max. Speed/Suction Volume

Lead	Stroke					Suction Volume (Nl/min)
	50~600 (50mm increments)	~700 (mm)	~800 (mm)	~900 (mm)	~1000 (mm)	
20	1000	960	765	625	515	80
10	500	480	380	310	255	40

(Unit: mm/s)

Cable List

Type	Cable Symbol	
Standard Type	P (1m)	
	S (3m)	
	M (5m)	
Special Lengths	X06 (6m) ~ X10 (10m)	
	X11 (11m) ~ X15 (15m)	
	X16 (16m) ~ X20 (20m)	
Robot Cable	R01 (1m) ~ R03 (3m)	
	R04 (4m) ~ R05 (5m)	
	R06 (6m) ~ R10 (10m)	
	R11 (11m) ~ R15 (15m)	
	R16 (16m) ~ R20 (20m)	

* See page A-39 for cables for maintenance.

Option List

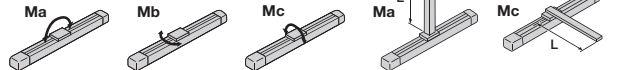
Name	Option Code	See Page
Brake	B	→ A-25
Reversed-home	NM	→ A-33
Intake port mounted on opposite side	VR	→ A-38

Actuator Specifications

Item	Description
Drive System	Ball screw ϕ 16mm C10 grade
Positioning Repeatability	\pm 0.02mm
Lost Motion	0.1 mm or less
Base	Material: Special alloy steel
Allowable Static Moment	Ma: 198.9N·m Mb: 198.9N·m Mc: 416.7N·m
Allowable Dynamic Moment (*)	Ma: 36.3N·m Mb: 36.3N·m Mc: 77.4N·m
Overhang Load Length	Ma direction: 450mm or less Mb-Mc direction: 450mm or less
Grease Type	Low dust generation grease (both ball screw and guide)
Cleanliness	ISO class 4 (US FED STD class 10)
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

(*) Based on a 10,000km service life.

Directions of Allowable Load Moments

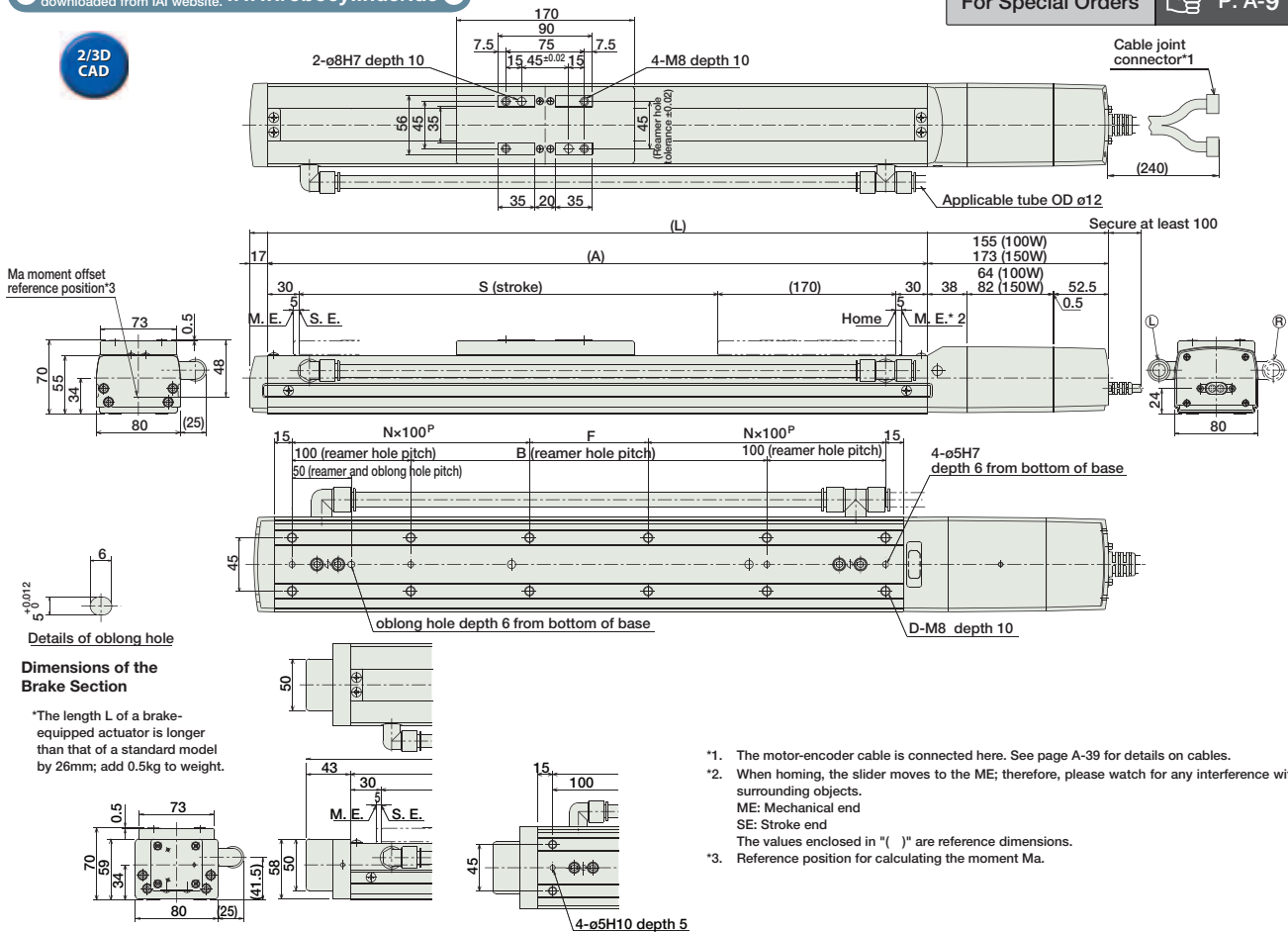


Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

2/3D CAD

For Special Orders P. A-9



- *1. The motor-encoder cable is connected here. See page A-39 for details on cables.
- *2. When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end
SE: Stroke end
The values enclosed in "()" are reference dimensions.
- *3. Reference position for calculating the moment Ma.

■ Dimensions and Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
L (100W)	452	502	552	602	652	702	752	802	852	902	952	1002	1052	1102	1152	1202	1252	1302	1352	1402
L (150W)	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120	1170	1220	1270	1320	1370	1420
A	280	330	380	430	480	530	580	630	680	730	780	830	880	930	980	1030	1080	1130	1180	1230
B	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
D	8	8	8	10	12	12	12	14	16	16	16	18	20	20	20	22	24	24	24	26
F	50	100	150	0	50	100	150	0	50	100	150	0	50	100	150	0	50	100	150	0
N	1	1	1	2	2	2	3	3	3	3	3	4	4	4	4	5	5	5	5	6
Weight (kg)	6.5	7.0	7.6	8.1	8.7	9.2	9.8	10.3	10.9	11.4	12.0	12.5	13.1	13.6	14.2	14.7	15.3	15.8	16.4	16.9

Compatible Controllers

The RCS2CR series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-100①-NP-2-② SCON-C-150①-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	408 VA max. * It depends on the controller type. Please refer each controller manual in detail.	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to pulse train input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-100①-NP-2-② SSEL-C-1-150①-NP-2-②	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-③-1-100①-N1-EEE-2-④ XSEL-③-1-150①-N1-EEE-2-④	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

- * For SSEL and XSEL, only applicable to the single-axis model.
- * ① is a placeholder for the encoder type (I: incremental / A: absolute).
- * ② is a placeholder for the power supply voltage (1: 115V, or 2: single-phase 230V).
- * ③ is a placeholder for the XSEL type name ("KE", "KET", "P", or "Q").
- * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

Slider Type

Mini

Standard

Controllers Integrated

Rod Type

Mini

Standard

Controllers Integrated

Table/Arm /Flat Type

Mini

Standard

Gripper/ Rotary Type

Linear Motor Type

Cleanroom Type

Splash-Proof

Controllers

PMEC /AMEC

PSEP /ASEP

ROBO NET

ERC2

PCON

ACON

SCON

PSEL

ASEL

SSEL

XSEL

Pulse Motor

Servo Motor (24V)

Servo Motor (230V)

Linear Motor

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

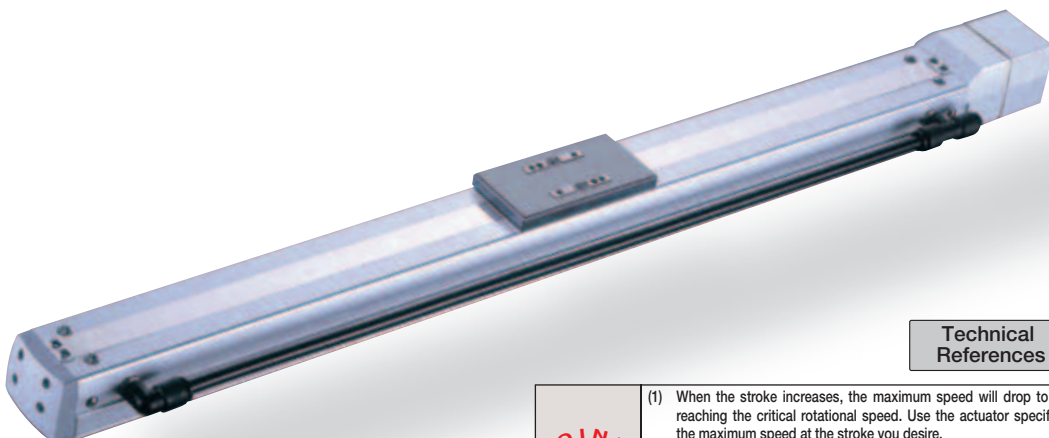
RCS2CR-SA5D

Cleanroom RoboCylinder Slider Built-In Type 52mm Width 230V Servo Motor Aluminum Base

Configuration: RCS2CR-SA5D- [] - 20 - [] - [] - [] - []

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
I : Incremental A : Absolute	20 : 20W servo motor	12: 12mm 6 : 6mm 3 : 3mm	50: 50mm 500: 500mm (50mm pitch increments)	T1:XSEL-KE/KET T2:SCON SSEL XSEL-P/Q	N : None P : 1m S : 3m M : 5m X <input type="checkbox"/> : Custom R <input type="checkbox"/> : Robot cable	See Options below		

* See page Pre-35 for an explanation of the naming convention.



Technical References P. A-5

- POINT**
Notes on Selection
- (1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
 - (2) The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model). This is the upper limit of the acceleration.
 - (3) The ISO cleanliness class 4 is for horizontal usage. Please note that the actuator may not support C10 when used on its side or in vertical orientation.

Actuator Specifications						Stroke, Max. Speed/Suction Volume				
Lead and Load Capacity						Stroke (mm)	Suction Volume (Nl/min)	Stroke		500 (mm)
Model	Motor Output (W)	Lead (mm)	Max. Load Capacity (kg)	Rated Thrust (N)	Lead			50~450 (50mm increments)		
RCS2CR-SA5D-①-20-12-②-③-④-⑤	20	12	4	1	16.7	12	800	760	50	
RCS2CR-SA5D-①-20-6-②-③-④-⑤		6	8	2	33.3	6	400	380	30	
RCS2CR-SA5D-①-20-3-②-③-④-⑤		3	12	4	65.7	3	200	190	15	

Legend: ① Encoder ② Stroke ③ Compatible controller ④ Cable length ⑤ Options (Unit: mm/s)

Cable List

Type	Cable Symbol
Standard Type	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
	X21 (21m) ~ X25 (25m)
Robot Cable	R01 (1m) ~ R03 (3m)
	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)
	R21 (21m) ~ R25 (25m)

* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball screw ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1mm or less
Base	Material: Aluminum (white alumite treated)
Allowable Static Moment	Ma: 18.6N·m Mb: 26.6N·m Mc: 47.5N·m
Allowable Dynamic Moment (*)	Ma: 4.9N·m Mb: 6.8N·m Mc: 11.7N·m
Overhang Length	Ma direction: 150mm or less; Mb, Mc direction: 150mm or less
Grease Type	Low dust generation grease (both ball screw and guide)
Cleanliness	ISO class 4 (US FED STD class 10)
Ambient Operating Temp./Humidity	0~40°C, 85% RH or less (non-condensing)

(*) Based on a 5,000km service life.

Directions of Allowable Load Moments

Overhang Load Length

Option List

Name	Option Code	See Page
Brake (Cable exiting from end)	BE	→ A-25
Brake (Cable exiting from left)	BL	→ A-25
Brake (Cable exiting from right)	BR	→ A-25
Reversed-home	NM	→ A-33
Intake port mounted on opposite side	VR	→ A-38

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

2/3D CAD

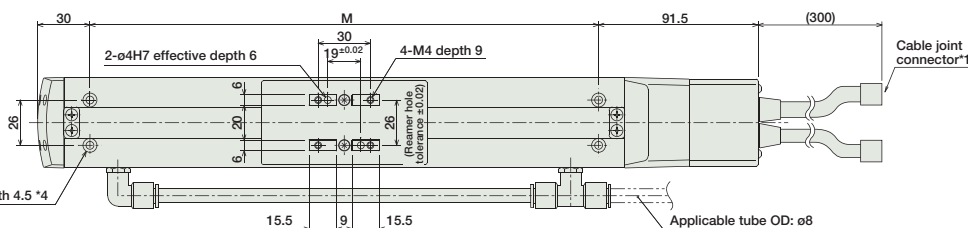
- Note that in order to change the home orientation, arrangements must be made to send in the product to IAI.
- In the reversed-home model (NM), the new home position is set 3mm inward from the ME opposite of the motor-side.

- The motor-encoder cable is connected here. See page A-39 for details on cables.
- When homing, the slider moves to the ME; therefore, please watch for any interference with the surrounding objects.
ME: Mechanical end
SE: Stroke end
The values enclosed in "()" are reference dimensions.
- Reference position for calculating the moment Ma.

- If the actuator is secured using only the mounting holes provided on the top surface of the base, the base may twist to cause abnormal sliding of the slider, or may produce abnormal noise. Therefore, when using the mounting holes on the top surface of the base, keep the stroke at 300mm or less.

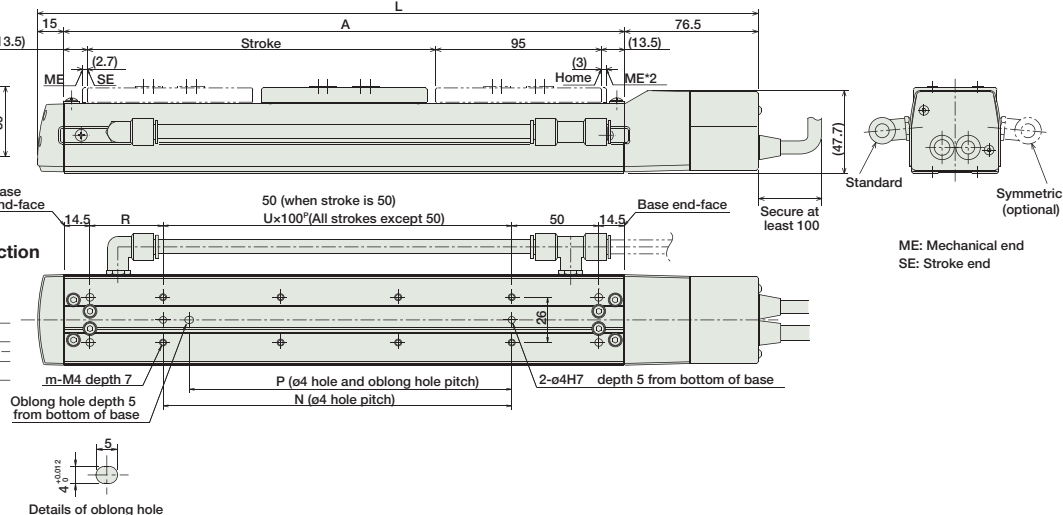
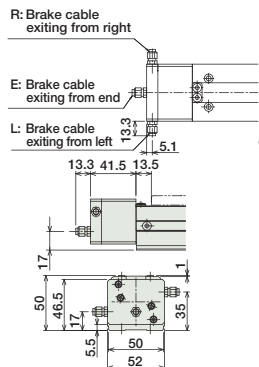
For Special Orders P. A-9

4- ϕ 4.5 through, ϕ 8 counterbore depth 4.5 *4



Ma moment offset reference position*3

Dimensions of the Brake Section



Dimensions and Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500
L	263.5	313.5	363.5	413.5	463.5	513.5	563.5	613.5	663.5	713.5
A	172	222	272	322	372	422	472	522	572	622
M	142	192	242	292	342	392	442	492	542	592
N	50	100	100	200	200	300	300	400	400	500
P	35	85	85	185	185	285	285	385	385	485
R	42	42	92	42	92	42	92	42	92	42
U	-	1	1	2	2	3	3	4	4	5
m	4	4	4	6	6	8	8	10	10	12
Weight (kg)	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.5

- Adding a brake will increase the actuator's overall length by 26.5mm (39.8mm with the cable coming out the end), and its weight by 0.3kg.

Compatible Controllers

The RCS2CR series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-20①-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	106 VA max. * It depends on the controller type. Please refer each controller manual in detail.	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to pulse train input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-20①-NP-2-②	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-③-1-20①-N1-EEE-2-④	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

- * For SSEL and XSEL, only applicable to the single-axis model.
- * ① is a placeholder for the encoder type (I: incremental / A: absolute).
- * ② is a placeholder for the power supply voltage (1: 115V, or 2: single-phase 230V).
- * ③ is a placeholder for the XSEL type name ("KE", "KET", "P", or "Q").
- * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

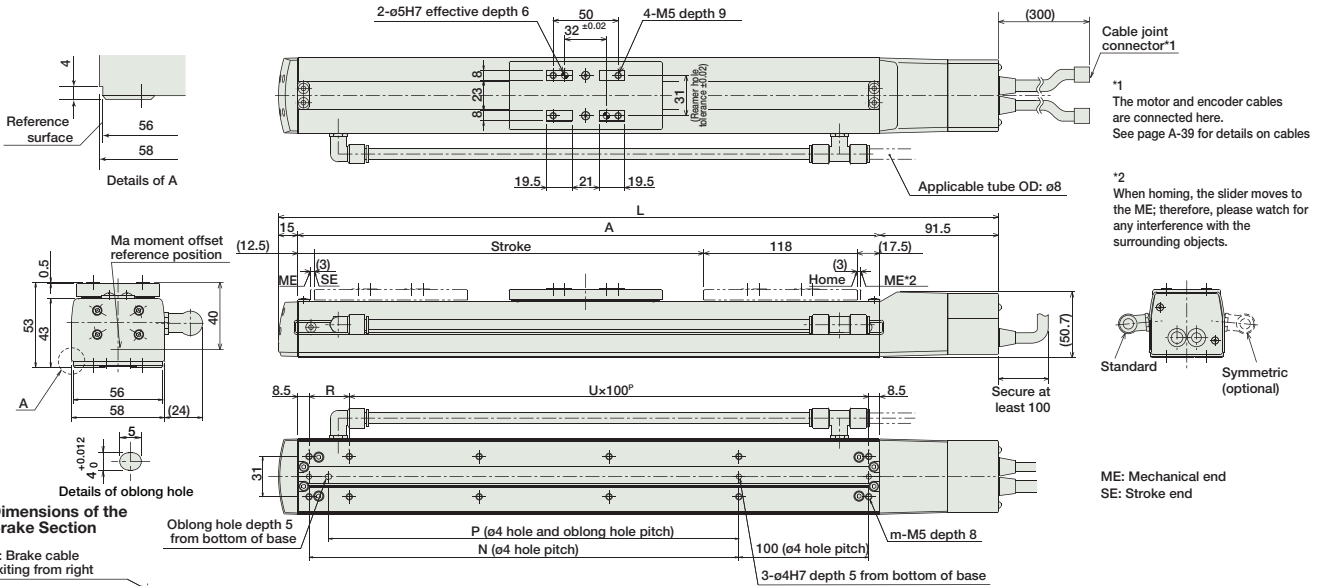
Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de

2/3D CAD

* Note that in order to change the home orientation, arrangements must be made to send in the product to IAI.
 * In the reversed-home model (NM), the new home position is set 3mm inward from the ME opposite of the motor-side.

For Special Orders P. A-9



* Adding a brake increases the actuator's overall length (L) by 238mm. Please refer to the cable coming out of the end, and its weight by 0.3kg.

Dimensions and Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600
L	304.5	354.5	404.5	454.5	504.5	554.5	604.5	654.5	704.5	754.5	804.5	854.5
A	198	248	298	348	398	448	498	548	598	648	698	748
N	81	131	181	231	281	331	381	431	481	531	581	631
P	66	116	166	216	266	316	366	416	466	516	566	616
R	81	31	81	31	81	31	81	31	81	31	81	31
U	1	2	2	3	3	4	4	5	5	6	6	7
m	6	8	8	10	10	12	12	14	14	16	16	18
Weight (kg)	2.0	2.1	2.3	2.4	2.6	2.7	2.9	3.0	3.2	3.3	3.5	3.6

Compatible Controllers

The RCS2CR series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-30D ①-NP-2-②	Positioning is possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	126 VA max. * It depends on the controller type. Please refer each controller manual in detail.	→ P547
Solenoid Valve Mode			Operable with the same controls as the solenoid valve	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Dedicated to pulse train input	(-)			
Program Control 1-2 Axes Type		SSEL-C-1-30D ①-NP-2-②	Programmed operation is possible Operation is possible on up to 2 axes	20000 points			→ P577
Program Control 1-6 Axes Type		XSEL-③-1-30D ①-N1-EEE-2-④	Programmed operation is possible Operation is possible on up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-axis model.
 * ① is a placeholder for the encoder type (I: incremental / A: absolute).
 * ② is a placeholder for the power supply voltage (1: 115V, or 2: single-phase 230V).
 * ③ is a placeholder for the XSEL type name ("KE", "KET", "P", or "Q").
 * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

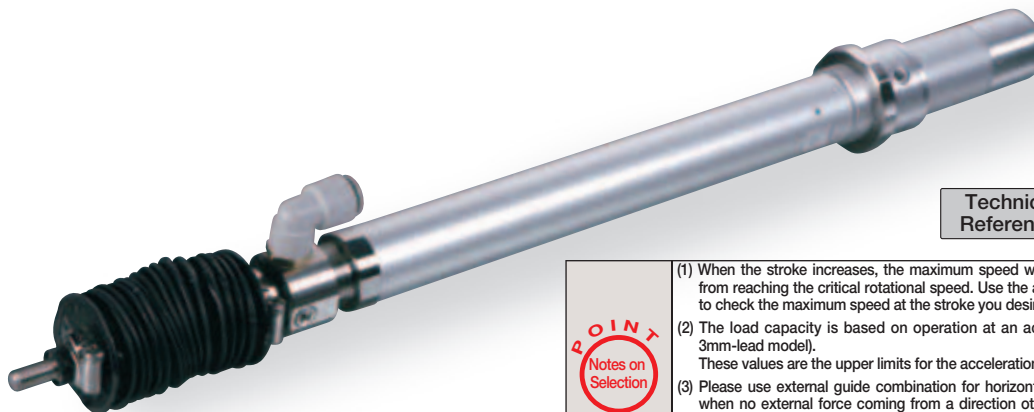
RCS2W-RA4C/RA4D/RA4R

RoboCylinder Splash-proof Rod Type
 ø37mm Diameter 230V Servo Motor
 Coupled/Built-in/Side-Mounted Motor Specification

■ Configuration: RCS2W— [] — [] — [] — [] — [] — [] — [] — [] — []

Series	Type	Encoder	Motor	Lead	Stroke	Compatible Controllers	Cable Length	Option
RA4C: Coupled type	I : Incremental Type A : Absolute Type	20 : 20W servo motor 30 : 30W servo motor	12 : 12mm 6 : 6mm 3 : 3mm	50:50mm 300:300mm (50mm pitch increments)	T1 : XSEL-KE/KET T2 : SCON SSEL XEL-P/Q	N : None P : 1m S : 3m M : 5m X [] : Custom Length R [] : Robot Cable	See Options below	

* See page Pre-35 for explanation of each code that makes up the configuration name.



Technical References P. A-5

- POINT**
Notes on Selection
- When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching the critical rotational speed. Use the actuator specification table below to check the maximum speed at the stroke you desire.
 - The load capacity is based on operation at an acceleration of 0.3G (0.2G for the 3mm-lead model). These values are the upper limits for the acceleration.
 - Please use external guide combination for horizontal load capacity; the value is for when no external force coming from a direction other than that of rod's advance is applied.
 - The cable joint connector is not splash-proof; secure it in a place that is not prone to water spills.

Actuator Specifications

Lead and Load Capacity

Model	Motor Output (W)	Lead (mm)	Max. load capacity		Rated thrust (N)	Stroke (mm)
			Horizontal(kg)	Vertical(kg)		
RCS2W-①-②-20-12-③-④-⑤-⑥	20	12	3.0	1.0	18.9	50-300 (50mm increments)
RCS2W-①-②-20-6-③-④-⑤-⑥		6	6.0	2.0	37.7	
RCS2W-①-②-20-3-③-④-⑤-⑥		3	12.0	4.0	75.4	
RCS2W-①-②-30-12-③-④-⑤-⑥	30	12	4.0	1.5	28.3	
RCS2W-①-②-30-6-③-④-⑤-⑥		6	9.0	3.0	56.6	
RCS2W-①-②-30-3-③-④-⑤-⑥		3	18.0	6.5	113.1	

Stroke and Maximum Speed

Stroke Lead	50-300 (50mm increments)	
	Stroke (mm)	Maximum Speed (mm/s)
12	600	
6	300	
3	150	

(Unit: mm/s)

Legend ① Type ② Encoder ③ Stroke ④ Compatible controller ⑤ Cable length ⑥ Options

Cable List

Type	Cable Symbol
Standard	P (1m)
	S (3m)
	M (5m)
Special Lengths	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
	R01 (1m) ~ R03 (3m)
Robot Cable	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* See page A-39 for cables for maintenance.

Actuator Specifications

Item	Description
Drive System	Ball screw ø10mm C10 grade
Positioning Repeatability	±0.02mm
Lost Motion	0.1 mm or less
Base	Material: Aluminum (white alumite treated)
Rod diameter	ø20mm
Rod non-rotational accuracy	±1.0 degrees
Protection Structure	IP54
Ambient Operating Temp./Humidity	0~40°C, 85%RH or less (Non-condensing)

Option List

Name	Option Code	See Page
Brake (*1)	B	→ A-25
Flange bracket	FL	→ A-27
Foot bracket	FT	→ A-29
Home confirmation sensor (*2)	HS	→ A-32
Knuckle Joint	NJ	→ A-34
Reversed-home (*2)	NM	→ A-33
Clevis Bracket (*3)	QR	→ A-34
Rear mounting plate (*3)	RP	→ A-33
Trunnion Bracket (Front) (*4)	TRF	→ A-38
Trunnion Bracket (Back) (*4)	TRR	→ A-38

(*1) No brake setting for RA4D.
 (*2) Home sensor (HS) can't be used under reversed-home (NM).
 (*3) Clevis bracket and rear mounting plate only available for RA4R.
 (*4) Trunnion bracket only available for RA4C/RA4D.

Dimensions

CAD drawings can be downloaded from IAI website. www.robocylinder.de



Note: No 3D CAD data for RA4D type.

For Special Orders

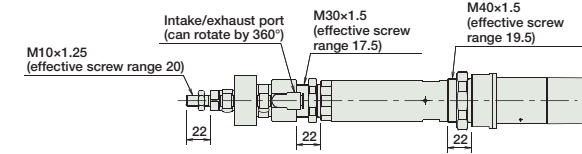


Dimensions/Weight by Stroke

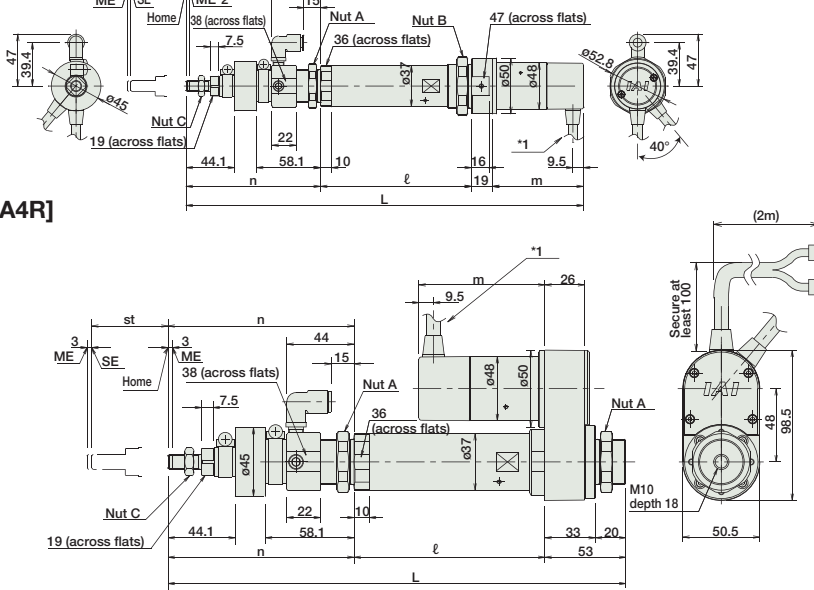
RCS2W-RA4C/RA4D/RA4R (without brake)

Stroke		50	100	150	200	250	300	
L	RA4C	20W	358.4	418.4	478.4	538.4	599.4	660.4
		30W	373.4	433.4	493.4	553.4	614.4	675.4
	RA4D	20W	336.4	396.4	456.4	516.4	577.4	638.4
		30W	351.4	411.4	471.4	531.4	592.4	653.4
		20W	299.9	359.9	419.9	479.9	540.9	601.9
		30W	299.9	359.9	419.9	479.9	540.9	601.9
r	RA4C	20W	137	187	237	287	337	387
		30W	137	187	237	287	337	387
	RA4D	20W	137	187	237	287	337	387
		30W	137	187	237	287	337	387
		20W	125	175	225	275	325	375
		30W	125	175	225	275	325	375
m	RA4C	20W	80.5					
		30W	95.5					
	RA4D	20W	58.5					
		30W	73.5					
		20W	80.5					
		30W	95.5					
n	RA4C	20W	121.9	131.9	141.9	151.9	162.9	173.9
		30W	121.9	131.9	141.9	151.9	162.9	173.9
	RA4D	20W	121.9	131.9	141.9	151.9	162.9	173.9
		30W	121.9	131.9	141.9	151.9	162.9	173.9
		20W	121.9	131.9	141.9	151.9	162.9	173.9
		30W	121.9	131.9	141.9	151.9	162.9	173.9
Weight (kg)	RA4C 20W/30W	1.4	1.5	1.7	1.8	2.0	2.1	
	RA4D 20W/30W	1.3	1.5	1.6	1.8	1.9	2.1	
	RA4R 20W/30W	1.5	1.7	1.8	2.0	2.1	2.3	

[RA4C/RA4D]

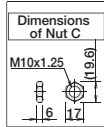
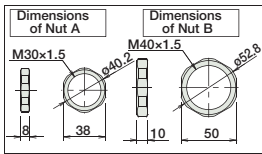


[RA4R]



RCS2W-RA4C/RA4D/RA4R (with brake)

Stroke		50	100	150	200	250	300	
L	RA4C	20W	401.4	461.4	521.4	581.4	642.4	703.4
		30W	416.4	476.4	536.4	596.4	657.4	718.4
	RA4D	20W	No brake-equipped model.					
		30W	No brake-equipped model.					
		20W	299.9	359.9	419.9	479.9	540.9	601.9
		30W	299.9	359.9	419.9	479.9	540.9	601.9
l	RA4C	20W	137	187	237	287	337	387
		30W	137	187	237	287	337	387
	RA4D	20W	No brake-equipped model.					
		30W	No brake-equipped model.					
		20W	125	175	225	275	325	375
		30W	125	175	225	275	325	375
m	RA4C	20W	123.5					
		30W	138.5					
	RA4D	20W	No brake-equipped model.					
		30W	No brake-equipped model.					
		20W	123.5					
		30W	138.5					
n	RA4C	20W	121.9	131.9	141.9	151.9	162.9	173.9
		30W	121.9	131.9	141.9	151.9	162.9	173.9
	RA4D	20W	No brake-equipped model.					
		30W	No brake-equipped model.					
		20W	121.9	131.9	141.9	151.9	162.9	173.9
		30W	121.9	131.9	141.9	151.9	162.9	173.9
Weight (kg)	RA4C 20W/30W	1.6	1.7	1.9	2.0	2.2	2.3	
	RA4D 20W/30W	-						
	RA4R 20W/30W	1.7	1.9	2.0	2.2	2.3	2.5	



Note: Do not apply any external force on the rod from any direction other than the direction of the rod's motion. If a force is exerted on the rod in a perpendicular or rotational direction, the detent may become damaged.

Compatible Controllers

The RCS2W series actuators can operate with the controllers below. Select the controller according to your usage.

Name	External View	Model	Description	Max. Positioning Points	Input Voltage	Power Supply Capacity	See Page
Positioner Mode		SCON-C-20 ①-NP-2-② SCON-C-30D ①-NP-2-②	Positioning possible for up to 512 points	512 points	Single-Phase AC 115V Single-Phase AC 230V 3-Phase AC 230V (XSEL-P/Q only)	126 VA max. * It depends on the controller type. Please refer each controller manual in detail.	→ P547
Solenoid Valve Mode			Operation possible with the same controls as solenoid valve.	7 points			
Serial Communication Type			Dedicated to serial communication	64 points			
Pulse Train Input Control Type			Open Collector Pulse Train Input Type	(-)			
Program control 1-2 Axes type		SSEL-C-1-20 ①-NP-2-② SSEL-C-1-30D ①-NP-2-②	Programmed operation is possible Can operate up to 2 axes	20000 points			→ P577
Program control 1-6 Axes type		XSEL-③-1-20 ①-N1-EEE-2-④ XSEL-③-1-30D ①-N1-EEE-2-④	Programmed operation is possible Can operate up to 6 axes	20000 points			→ P587

* For SSEL and XSEL, only applicable to the single-axis model.
 * ① is a placeholder for the encoder type (I: incremental / A: absolute).
 * ② is a placeholder for the power supply voltage (1: 115V, or 2: single-phase 230V).
 * ③ is a placeholder for the XSEL type name ("KE", "KET", "P", or "Q").
 * ④ is a placeholder for the power supply voltage (1: 115V, 2: single-phase 230V, 3: 3-phase 230V).

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

SCON

Models C / CA

Position Controllers
For RCS2 series



C

CA

List of models

There are 2 I/O types of SCON controllers: standard specifications in which operation is performed via PIO or pulse train input, and network specifications for operation via connection to a field network. Incremental specifications and absolute specifications are available for both types. However, only incremental specified operations are available when operating via the pulse train input.

Type	C / CA					CA						
I/O type	Standard specifications					Network connection specifications (optional)						
External View												
Description	Positioning mode, Teaching mode Solenoid valve mode, Force mode (*1)		Pulse train mode (*2)	DeviceNet (*4)	CC-Link (*4)	ProfiBus (*4)	ProfiNet	MechatroLink	CompoNet	EtherCAT	Ethernet/IP	Sercos III (*3)
Position points	Max. 512 points		(-)	Max. 512 points								
I/O type symbol	NP/PN		DV	CC	PR	PN	ML	CN	EC	EP	SC	
Compatible encoder	Incremental / Absolute		Incremental	Incremental / Absolute								

*Always use a noise filter for power supplies. (See P548)

(Caution) Note that with the network specifications, neither control via pulse train nor PIO is available.

(*1) Force mode is only supported by SCON-CA. (*2) If the controller is operated in pulse-train mode, only an incremental encoder can be used. (*3) Planned industrial ethernet interface.

(*4) SCON-C will communicate at the I/O level when connected to the field network. It is necessary to use the gateway unit when communicating positional data. Only SCON-CA can be operated in direct mode for positional data without gateway unit.

Model

SCON - [] - [] - [] - [] - [] - [] - [] - []

Series Type Motor Encoder Option I/O Type I/O Cable Length Power/Voltage

C Standard Type				HA High Accel./Decel.			1 Single-phase AC115V
CA High-function Type							2 Single-phase AC230V

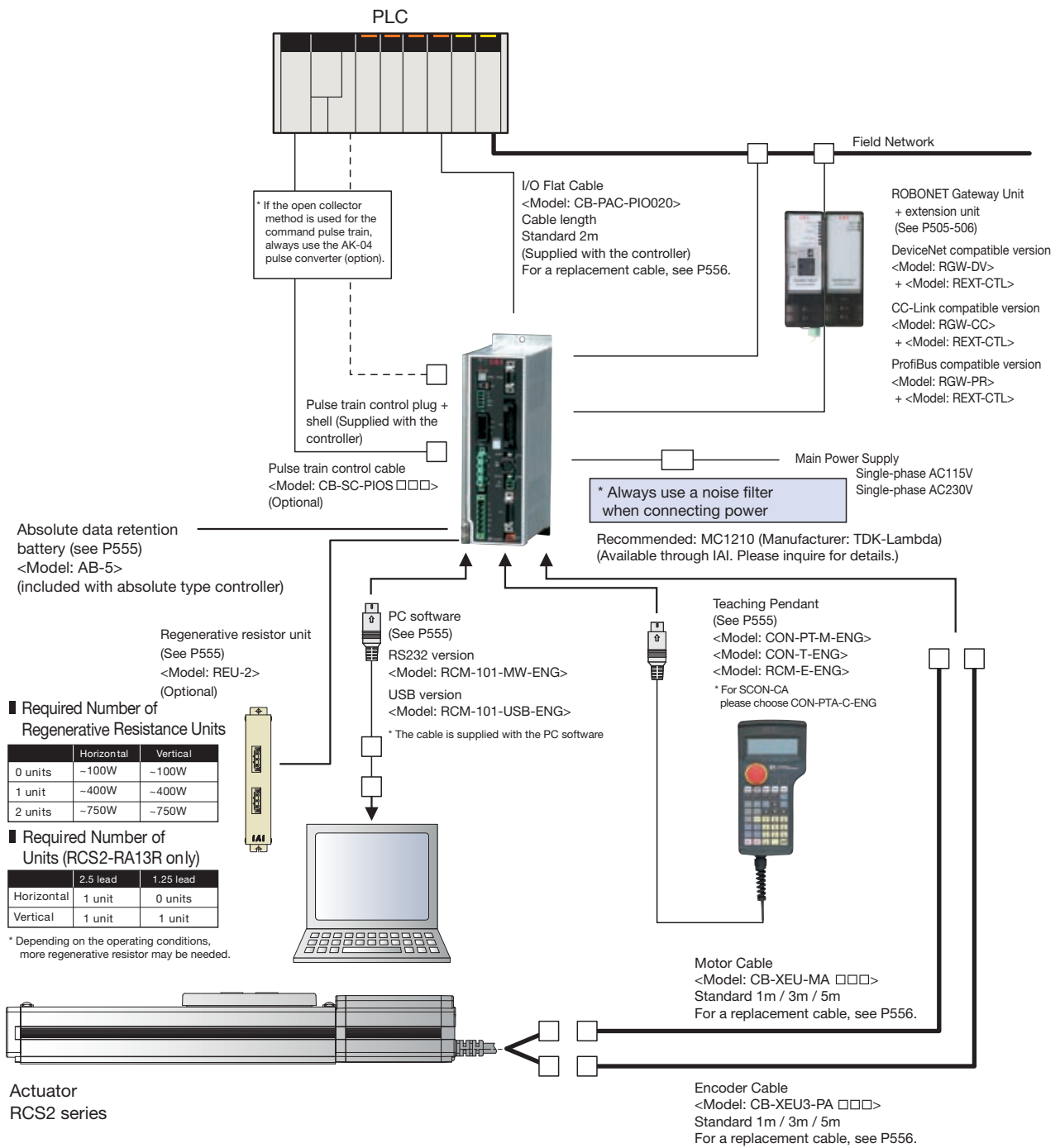
12 12W motor	I Incremental	NP PIO NPN	0 No cable (*)
20 20W motor			
30D 30W motor (for RCS2)	A Absolute	PN PIO PNP (standard)	2 2m (standard)
30R 30W motor (for RS)		DV DeviceNet	
60 60W motor		CC CC-Link	3 3m
100 100W motor		PR ProfiBus	
150 150W motor		PN ProfiNet	5 5m
200 200W motor		ML MechatroLink	
300 300W motor		CN CompoNet	
400 400W motor		EC EtherCAT	
600 600W motor		EP Ethernet/IP	
750 750W motor		SC Sercos III (*)	
750S 750W motor (for RCS2-RA13R-LC)			

* Planned industrial ethernet interface

The network models PN, ML, CN, EC, SC, and EP support CA type only.

* If DV, CC, PR, PN, ML, CN, EC, SC or EP is selected for the I/O type, specify "0" (no cable) for the I/O cable.

System configuration



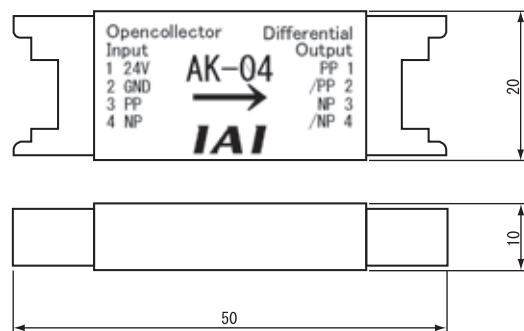
Pulse converter AK-04 (option)

Description: Pulse converter (model: AK-04) + I/O e-CON connector
Use this converter if output pulses from the host controller are of open collector specification. This converter is used to convert the open-collector command output pulses from the host controller to differential pulses. Converting open collector pulses to differential pulses improves noise resistance. Two phases of differential pulses equivalent to those from the line driver 26C31 are output. The e-CON connector is used as an input/output connector to simplify the field wiring.

Basic Specifications

- Input power : DC24V±10% (Max. 50mA)
- Input pulse : Open collector (collector current Max. 12mA)
- Input frequency : 200 kHz or less
- Output pulse : 26C31 equivalent differential output (Max. 10mA)
- External dimensions : See the figure at right (cable connector not included)
- Weight : 10g or less (cable connector not included)
- Accessories : I/O e-CON connector
3M 37104-3122-000FL

(Applicable wire: AWG No. 24 to 26, 0.14 to less than 0.3mm²)
Outer diameter of finished wire 1.0 to 1.2mm



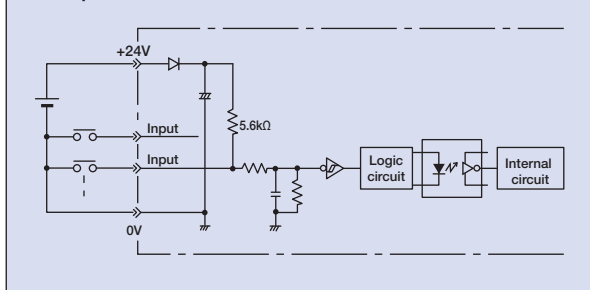
- Slider Type
- Mini
- Standard
- Controllers Integrated
- Pod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /FlatType
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

I/O Specifications

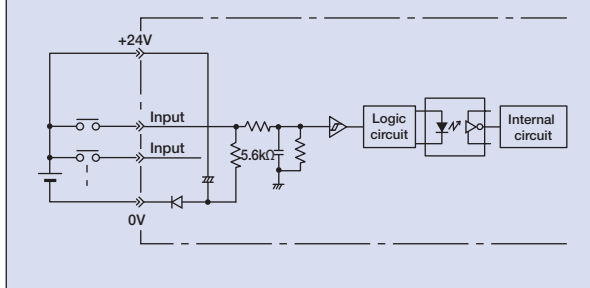
Input section External input specifications

Item	Specifications
Input voltage	DC24V ±10%
Input current	4mA / 1 point
ON/OFF power supply	ON voltage...Min DC18.0V (3.5mA) ON voltage...Max DC6.0V (1mA)
Isolation method	Photocoupler

NPN Specifications



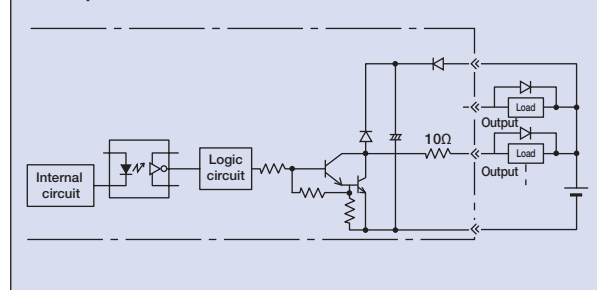
PNP Specifications



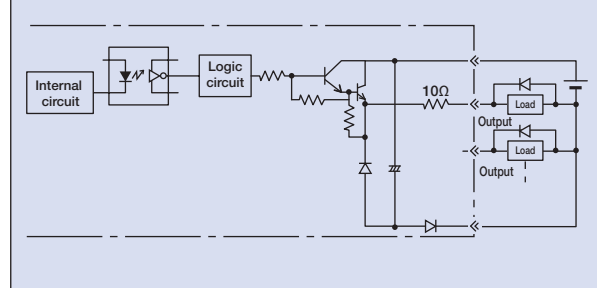
Output section External output specifications

Item	Specifications
Load Voltage	DC24V
Max. load current	100mA / 1 point 400mA / 8 points
Leak current	Max 0.1mA / 1 point
Isolation method	Photocoupler

NPN Specifications



PNP Specifications



Explanation of I/O Signal Functions

SCON-C is compatible with all of the following control methods except the force mode (only applicable for SCON-CA). Positioning is possible with up to 512 points in positioner mode and up to 7 points in solenoid valve mode.

Control Function by Operation Mode

Mode	Number of positioning points	Features
Positioner mode	Positioning mode	64 points Standard factory-set mode. Specify externally a number corresponding to the position you want to move to, to operate the actuator.
	Teaching mode	64 points In this mode, you can move the slider (rod) via an external signal and register the stopped position in the position data table.
	256-point mode	256 points In this mode, the number of positioning points available in the positioning mode has been increased to 256 points.
	512-point mode	512 points In this mode, the number of positioning points available in the positioning mode has been increased to 512 points.
	Solenoid value mode 1	7 points In this mode, the actuator can be moved only by turning signals ON/OFF, just like you do with an air cylinder of solenoid valve type.
	Solenoid value mode 2	3 points In this mode, the output signal is set to the same as the air cylinder auto switch in the solenoid valve mode.
	Force mode 1 (only SCON-CA)	32 points In this mode, you can move to positions under force control in the positioning mode. (Up to 32 positioning points are available.)
	Force mode 2 (only SCON-CA)	5 points In this mode, you can move to positions under force control in the solenoid valve mode. (Up to five positioning points are available.)
Pulse-train control mode	—	There is no need to enter position data in the controller, and the customer can operate the actuator freely based on custom control.

CAUTION

Note that for network compatible types with direct connection to a field network, these modes (PIO and pulse train communication) are not available.

Explanation of I/O Signal Functions

The table below explains the functions allocated to the controller's I/O signal.

Since the signals that can be used vary depending on the controller type and settings, check the signal table for each controller to confirm the available functions.

■ Signal Function Description

Classification	Signal abbreviations	Signal	Function description
Input	CSTR	Start signal	Input this signal to cause the actuator to start moving to the position set by the command position number signal.
	PC1 to PC256	Command position number signal	This signal is used to input a target position number (binary input).
	BKRL	Brake forced release signal	This signal forcibly releases the brake.
	RMOD	Running mode switching signal	Operations mode can be switched when the controller's MODE switch is set to AUTO. (AUTO if this signal is OFF, MANU if the signal is ON)
	* STP	Pause signal	Turning this signal OFF causes the moving actuator to decelerate to a stop. The actuator will resume the remaining movement if the signal is turned ON during the pause.
	RES	Reset signal	Turning this signal ON resets the alarms that are present. If this signal is turned ON while the actuator is paused (*STP is OFF), the remaining movement can be cancelled.
	SON	Servo ON signal	The servo remains on while this signal is ON, or off while the signal is OFF.
	HOME	Home return signal	Turning this signal ON preforms home-return operation.
	MODE	Teaching mode signal	Turning this signal ON switches the controller to the teaching mode (provided that CSTR, JOG+ and JOG- are all OFF and the actuator is not moving)
	JISL	JOG/INCHING switching signal	When the main signal is off, the JOG operation will be conducted for JOG+ and JOG-. When the signal is on, the unit will do the inching operation for JOG+ and JOG-.
	JOG+, JOG-	JOG signal	When the JISL signal is OFF and the JOG +/- signal turns ON, the unit will jog in the + (positive) direction when the JOG + turns on and the - (negative) direction when the JOG - turns on. During the JOG operation, the unit slows to a stop when the JOG +/- signal turns off.
	PWRT	Teaching signal	In the teaching mode, specify a desired position number and then turn this signal ON for at least 20ms to write the current position to the specified position number.
	ST0 to ST6	Start position command signal	Turning this signal ON in the solenoid valve mode causes the actuator to move to the specified position. (Start signal is not required)
	TL	Torque limit selection signal	While this signal is ON, torque is limited by the value set by a parameter. The TLM signal turns on if torque has reached the specified value.
	Output	CSTP	Forced Stop Signal
DCLR		Deviation counter clear signal	When this signal is ON, the position deviation counter is cleared continuously.
PEND/INP		In position signal	This signal turns ON when the actuator has entered the positioning band after movement. If the actuator has exceeded the positioning band, PEND does not turn OFF, but INP does. PEND and INP can be swapped using a parameter.
PM1 to PM256		Positioning complete signal	This signal is used to output the position number achieved at completion of positioning (binary output)
HEND		Home return completion signal	This signal turns ON upon completion of home return.
ZONE1		Zone signal	Turns ON if the actuator's current position is within the range set by the parameter.
PZONE		Position zone signal	This signal turns ON when the current actuator position has entered the range specified by position data during position movement. PZONE can be used together with ZONE1, but PZONE is valid only during movement to a specified position.
RMDS		Running mode status signal	This outputs the operation mode status.
* ALM		Controller alarm status signal	Turns ON when the controller is in normal condition, and turns OFF when an alarm occurs.
MOVE		Moving signal	Turns ON while the actuator is moving (home return), including when there is push force.
SV		Servo ON status signal	This signal turns ON when servo is ON.
* EMGS		Emergency stop status signal	This signal remains ON while the controller is not in the emergency stop mode, and turns OFF once an emergency stop has been actuated.
* BALM		Absolute battery voltage drop warning signal	With the absolute specifications for the controller, turns OFF when the absolute battery voltage drops.
MODES		Mode status signal	The mode signal input turns it ON when it goes into teaching mode. It turns OFF when it goes into normal mode.
WEND		Writing complete signal	This signal remains OFF after the controller has switched to the teaching mode. It turns ON upon completion of data write using the PWRT signal. If the PWRT signal is turned Off, this signal also turns OFF.
PE0 to PE6		Current position number signal	This signal turns ON after the controller has completed moving to the target position in the solenoid valve mode.
PWR		System Ready Signal	Turns ON when it starts up normally after turning ON the controller. (Dedicated pulse train type)
TLR		Torque limiting signal	This signal turns ON once the motor torque has reached the specified value in a condition where torque is being limited by the TL signal. (Dedicated pulse train mode)
ALM1 to ALM8	Alarm Code Output Signal	During a controller alarm, the alarm details are output in code. (Dedicated pulse train mode)	
LSO to LS2	Limit switch output signal	Each signal turns ON when the current actuator position has entered the positioning band before or after the target position. If the actuator has already completed home return, these signals are output even before a movement command is issued or while the servo is OFF.	

(Note) Signals with asterisks (*) are normally ON and OFF during operation.
 (*1) A „pause“ function is not available during S-curve motion.

Slider Type

Mini

Standard

Controllers Integrated

Rod Type

Mini

Standard

Controllers Integrated

Table/Arm /FlatType

Mini

Standard

Gripper/ Rotary Type

Linear Motor Type

Cleanroom Type

Splash-Proof

Controllers

PMEC /AMEC

PSEP /ASEP

ROBO NET

ERC2

PCON

ACON

SCON

PSEL

ASEL

SSEL

XSEL

Pulse Motor

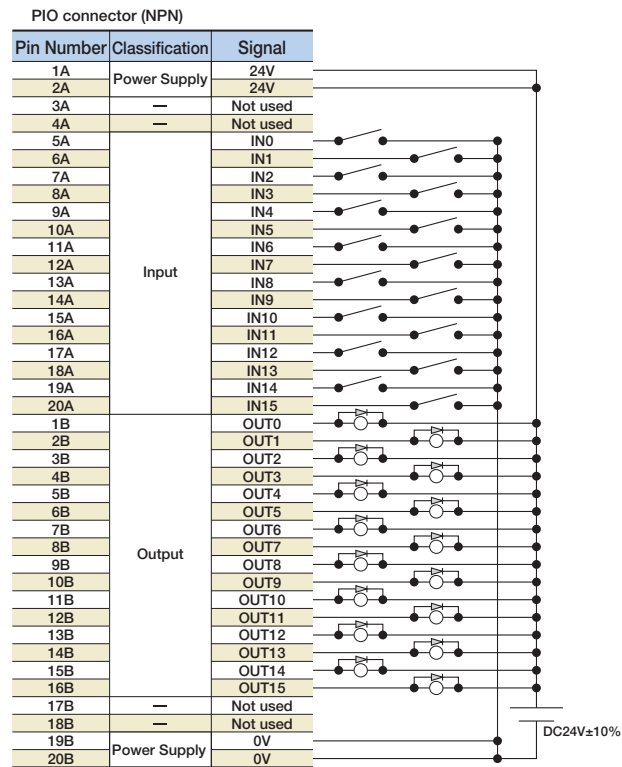
Servo Motor (24V)

Servo Motor (230V)

Linear Motor

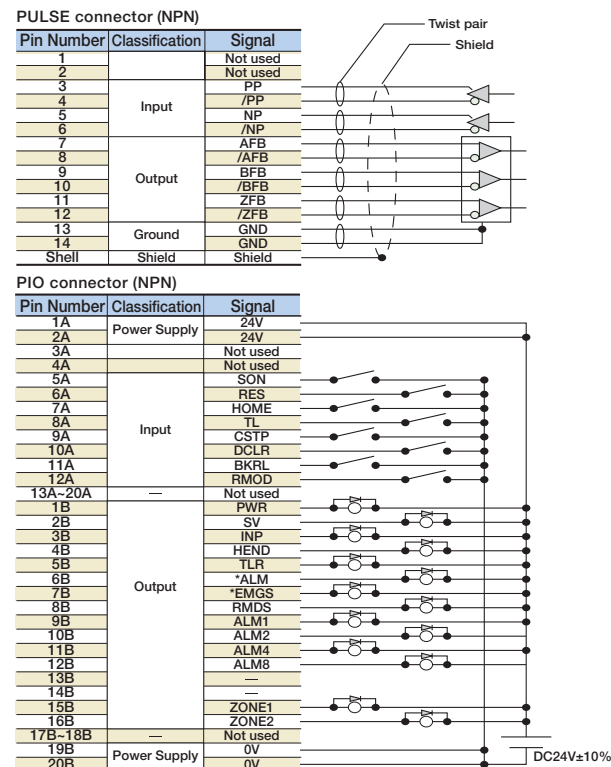
I/O wiring drawing

■ Positioning mode / teaching mode / solenoid valve mode



* Connect 24V between pins 1A and 2A, and 0V between pins 19B and 20B.

■ Pulse train mode (differential output)



* The shield on the twisted pair cable connected to the pulse connector must be connected to the shell. Also, the cable length must not be longer than 10m.
* Connect 24V between pins 1A and 2A, and 0V between pins 19B and 20B.

I/O Signal Table *Choose from 7 types (SCON-CA: from 9 types) of signal allocation.

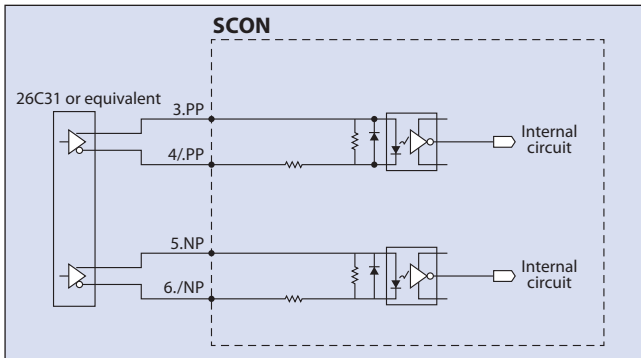
Pin No.	Category	Parameter (PIO pattern) selection	Parameter (PIO pattern) selection								Pulse-train mode								
			0		1		2		3			4		5		6		7	
			Positioning mode	Teaching mode	256-point mode	512-point mode	Solenoid value mode 1	Solenoid value mode 2	Force mode 1 **	Force mode 2 **		Standard mode							
1A	24V		64 points	64 points	256 points	512 points	7 points	3 points	32 points	5 points		P24							
2A	24V											P24							
3A	—											NC							
4A	—											NC							
5A	Input	IN0	PC1	PC1	PC1	PC1	ST0	ST0	PC1	ST0	SON								
6A		IN1	PC2	PC2	PC2	PC2	ST1	ST1(JOG+)	PC2	ST1	RES								
7A		IN2	PC4	PC4	PC4	PC4	ST2	ST2(-)	PC4	ST2	HOME								
8A		IN3	PC8	PC8	PC8	PC8	ST3	—	PC8	ST3	TL								
9A		IN4	PC16	PC16	PC16	PC16	ST4	—	PC16	ST4	CSTP								
10A		IN5	PC32	PC32	PC32	PC32	ST5	—	—	—	DCLR								
11A		IN6	—	MODE	PC64	PC64	ST6	—	—	—	BKRL								
12A		IN7	—	JISL	PC128	PC128	—	—	—	—	RMOD								
13A		IN8	—	JOG+	—	PC256	—	—	—	CLBR	CLBR								
14A		IN9	BKRL	JOG-	BKRL	BKRL	BKRL	BKRL	BKRL	BKRL	—								
15A		IN10	RMOD	RMOD	RMOD	RMOD	RMOD	RMOD	RMOD	RMOD	—								
16A		IN11	HOME	HOME	HOME	HOME	HOME	HOME	HOME	HOME	—								
17A		IN12	*STP	*STP	*STP	*STP	*STP	—	*STP	*STP	—								
18A		IN13	CSTR	CSTR/PWRT	CSTR	CSTR	—	—	CSTR	—	—								
19A		IN14	RES	RES	RES	RES	RES	RES	RES	RES	—								
20A	IN15	SON	SON	SON	SON	SON	SON	SON	SON	—									
1B	Output	OUT0	PM1	PM1	PM1	PM1	PE0	LS0	PM1	PE0	PWR								
2B		OUT1	PM2	PM2	PM2	PM2	PE1	LS1(TRQS)	PM2	PE1	SV								
3B		OUT2	PM4	PM4	PM4	PM4	PE2	LS2(-)	PM4	PE2	INP								
4B		OUT3	PM8	PM8	PM8	PM8	PE3	—	PM8	PE3	HEND								
5B		OUT4	PM16	PM16	PM16	PM16	PE4	—	PM16	PE4	TLR								
6B		OUT5	PM32	PM32	PM32	PM32	PE5	—	TRQS	TRQS	*ALM								
7B		OUT6	MOVE	MOVE	PM64	PM64	PE6	—	LOAD	LOAD	*EMGS								
8B		OUT7	ZONE1	MODES	PM128	PM128	ZONE1	ZONE1	CEND	CEND	RMDS								
9B		OUT8	PZONE/ZONE2	PZONE/ZONE1	PZONE/ZONE1	PM256	PZONE/ZONE2	PZONE/ZONE2	PZONE/ZONE1	PZONE/ZONE1	ALM1								
10B		OUT9	RMDS	RMDS	RMDS	RMDS	RMDS	RMDS	RMDS	RMDS	ALM2								
11B		OUT10	HEND	HEND	HEND	HEND	HEND	HEND	HEND	HEND	ALM4								
12B		OUT11	PEND	PEND/WEND	PEND	PEND	PEND	—	PEND	PEND	ALM8								
13B		OUT12	SV	SV	SV	SV	SV	SV	SV	SV	*OVLW/*ALML								
14B		OUT13	*EMGS	*EMGS	*EMGS	*EMGS	*EMGS	*EMGS	*EMGS	*EMGS	—								
15B		OUT14	*ALM	*ALM	*ALM	*ALM	*ALM	*ALM	*ALM	*ALM	ZONE1								
16B	OUT15	*BALM	*BALM	*BALM	*BALM	*BALM	*BALM	*BALM	*BALM	ZONE2									
17B	—									—									
18B	—									—									
19B	0V									N									
20B	0V									N									

* In the above table, signals in () represent functions available before the home return. Signals preceded by * are turned OFF while the actuator is operating.
** The force modes are only available for SCON-CA.

Pulse Train Type I/O Specifications (differential line driver specifications)

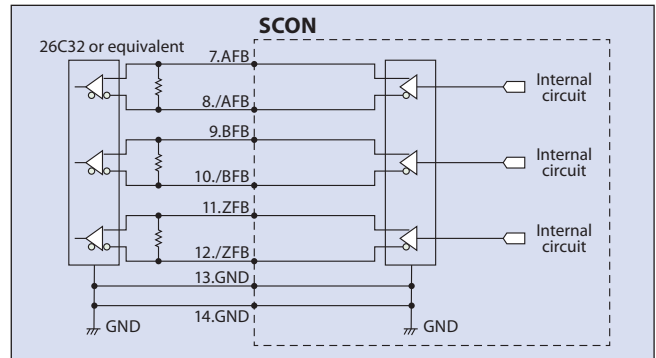
Input Section

Max. No. of input pulses: Line driver interface 0.5Mpps (SCON-CA: 2.5Mpps)
Isolation method : Photocoupler isolation



Output Section

Max. No. of output pulses: Line driver interface 0.5Mpps (SCON-CA: 2.5Mpps)
Isolation/non-isolation: Non-isolation



Pulse Train Type I/O Specifications (open collector specifications)

The AK-04 (options) is needed to input pulses. The JM-08 (options) is needed to output pulses.

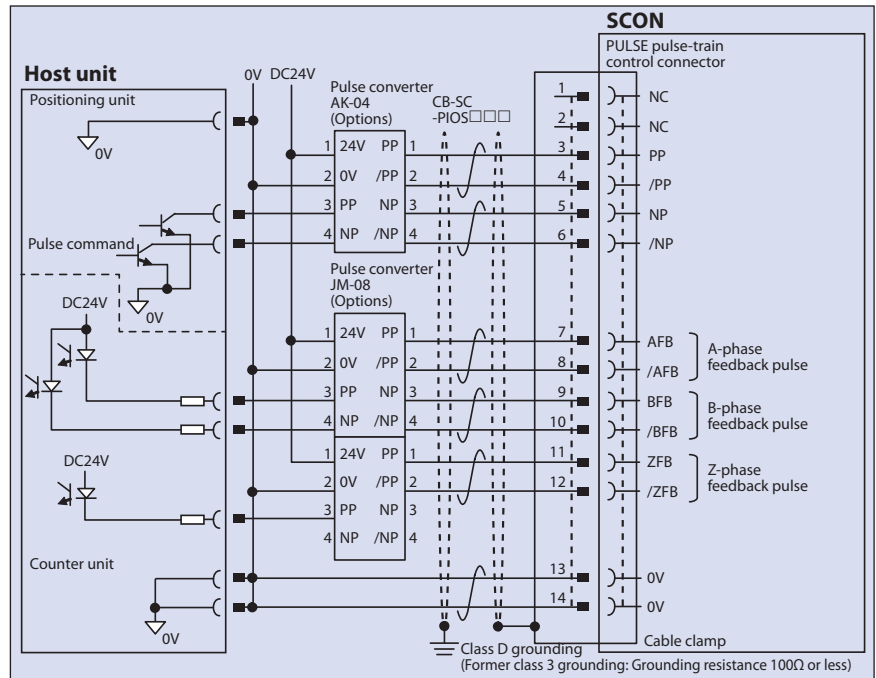
Maximum number of input pulses:
200kpps (The AK-04 is needed.)
Maximum number of output pulses:
500kpps (The JM-08 is needed.)

* The 24-VDC power supply connected to the AK-4 must be shared with the PIO interface.

* Keep the length of the cable connecting the pulse output unit (PLC) and AK-04/JM-08 as short as possible.
Also keep the cable between the AK-04/JM-08 and PULSE connector to 2m or less.

Note

Use the same power supply for open collector input/output to/from the host and for the AK-04, JM-08.



Command Pulse Input State

Command Pulse Train Shapes		Input terminals	Forward	Reverse	
Negative Logic	Forward pulse train	PP /PP			
	Reverse pulse train	NP /NP			
	The forward pulse train controls the amount of forward motor rotation; the reverse pulse train controls the same in reverse direction.				
	Pulse train	PP /PP			
	Sign	NP /NP	Low	High	
The command pulse controls the amount of motor rotation, and the command sign controls the direction of rotation.					
Positive Logic	A/B phase pulse train	PP /PP			
		NP /NP			
	A (frequency-quadrupled) A/B phase pulse with a 90° phase difference is used to control the amount and direction of rotation.				
	Forward pulse train	PP /PP			
	Reverse pulse train	NP /NP			
Positive Logic	Pulse train	PP /PP			
	Sign	NP /NP	High	Low	
	A/B phase pulse train	PP /PP			
		NP /NP			

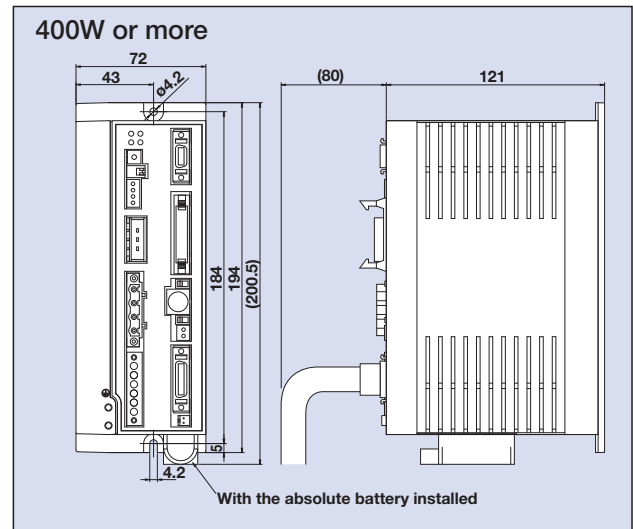
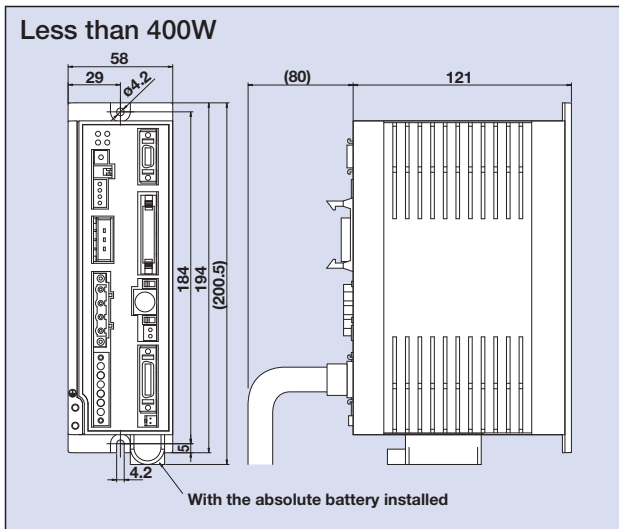
Table of specifications

Item	Specifications	
Motor Capacity	Less than 400W	400W or more
Connected actuator	RCS2 series actuator / single axis robot / linear motor	
Number of control axes	1-axis	
Operating method	Positioner type / pulse train type	
Positioning Points	512 points (PIO specification) / 768 (fieldbus specification)	
Backup memory	SCON-C: EEPROM / SCON-CA: FRAM (nonvolatile memory)	
I/O connector	40-pin connector	
Number of I/O	16 input points / 16 output points	
I/O power	External supply DC24V±10%	
Serial Communication	RS485 1ch	
Field Network	DeviceNet, CC-Link, ProfiBus (SCON-CA: additionally CompuNet, Mechatrolink, ProfiNet, EtherCAT, Ethernet/IP, Sercos III *2)	
Peripheral device communication cable	CB-PAC-PIO □□□	
Command pulse train input method	Differential line driver method / open collector method (converted to differential with the pulse converter *1)	
Max. input pulse frequency	Differential line driver method: 500kpps (SCON-CA: 2500kpps) / Open collector method (using pulse converter): 200kpps	
Position detection method	Incremental encoder / Absolute encoder	
Emergency stop function	Available (integrated relay)	
Electromagnetic brake forced release	Brake release switch ON/OFF	
Input Voltage	Single-phase AC90V to AC126.5V Single-phase AC180V to AC253V	Single-phase AC180V to AC253V
Power Supply Capacity	20W / 74VA 30W / 94VA 60W / 186VA 100W / 282VA 150W / 376VA 200W / 469VA	400W / 844VA 600W / 1212VA 750W / 1569VA
Dielectric strength voltage	DC500V 100MΩ or more	
Vibration resistance	XYZ directions	10 to 57Hz, One side amplitude: 0.035mm (continuous), 0.075mm (intermittent) 58 to 150 Hz 4.9 m/s ² (continuous), 9.8 m/s ² (intermittent)
Ambient operating temperature	0~40°C	
Ambient operating humidity	10 - 95% (non-condensing)	
Ambient operating atmosphere	Without corrosive gases	
Protection class	IP20	
Weight	Approximately 800g (plus 25g for the absolute specifications)	Approximately 1.1kg (plus 25g for absolute specifications)
External dimension	58mm(W)×194mm(H)×121mm(D)	72mm(W)×194mm(H)×121mm(D)

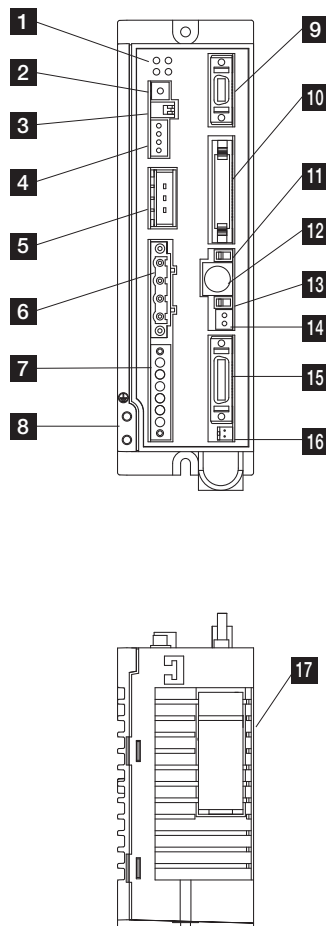
(Note 1) For the command-pulse input method, use the differential line driver method offering higher noise resistance.
If the open collector method must be used, convert the pulse to differential using the optional pulse converter (AK-04/JM-08).
(Note 2) Fieldbus network specification Sercos III is planned.

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /FlatType
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

External dimensions



Name of Each Part



1 LED display

These LED colors indicate the condition of the controller.

Name	Color	Explanation
PWR	Green	Lit when the system is ready (after power is ON, CPU normal functions)
SV	Green	Lit when servo is ON
ALM	Orange	Lit during an alarm
EMG	Red	Lit during an emergency stop

2 Rotary switch

This is the address setting switch for identifying each controller when they are linked.

3 Piano switch

Controller system switch.

Name	Explanation
1	Operating mode switch OFF: positioner mode ON: pulse train control mode *Enabled at power ON.
2	Remote update switch (normally set to OFF) OFF: normal operating mode ON: update mode *Enabled when power is ON or during soft reset.

4 System I/O connector

Connector for the emergency stop switch etc.

5 Regeneration unit connector

Connector for resistance unit that absorbs regeneration current produced when the actuator decelerates to a stop.

6 Motor connector (X-SEL, ECON, RCS compatible)

Actuator motor cable connector.

7 Power supply connector

AC power connector. Divided into the control power input and motor power input.

8 Grounding screw

Protective grounding screw. Always ground this screw.

9 Pulse train control connector

This connector is used during pulse train control mode operations. It is disconnected during operations in positioner mode.

10 PIO connector

Connector for the cable for parallel communications with the PLC and other peripheral devices.

11 Operating mode switch

Name	Explanation
MANU	Do not receive PIO commands
AUTO	Accept PIO commands

*The emergency stop switch on the teaching pendant becomes effective when the line is connected, regardless of whether this switch is set to AUTO or MANU. Take note that an emergency stop will be actuated momentarily when the teaching-pendant or SIO communication cable is disconnected. This is a normal phenomenon and does not indicate an error.

12 SIO connector

Connector for the teaching pendant or PC communications cable.

13 Brake release switch

This is the electromagnetic brake forced release switch, integrated with the actuator.

*It is necessary to connect the DC 24V power for the brake drive.

14 Brake power connector

Brake power DC 24V supply connector (only required when the brake equipped actuator is connected)

15 Encoder sensor connector (X-SEL-P/Q compatible)

Encoder sensor cable connector

16 Absolute battery connector

Connector for the absolute data backup battery. (Required only for absolute encoder specifications)

17 Absolute battery holder

Battery holder for installing the absolute data backup battery

Slider Type

Mini

Standard

Controllers Integrated

Rod Type

Mini

Standard

Controllers Integrated

Table/Arm /FlatType

Mini

Standard

Gripper/ Rotary Type

Linear Motor Type

Cleanroom Type

Splash-Proof

Controllers

PMEC /AMEC

PSEP /ASEP

ROBO NET

ERC2

PCON

ACON

SCON

PSEL

ASEL

SSEL

XSEL

Pulse Motor

Servo Motor (24V)

Servo Motor (230V)

Linear Motor

Option

Teaching Pendant

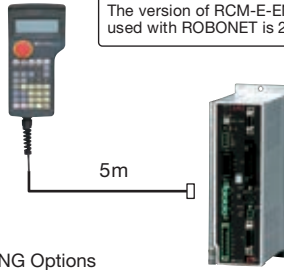
Features

This is a teaching device that provides information on functions such as position input, test runs, and monitoring.

Model

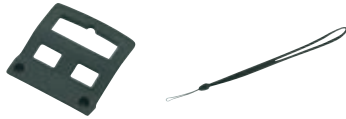
- CON-PT-M-ENG** (Touch panel teaching pendant)
- CON-T-ENG** (Standard type)
- RCM-E-ENG** (Simple teaching pendant)

Configuration

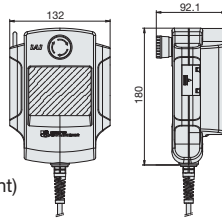


CON-T-ENG Options

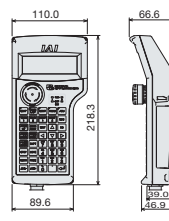
- Wall-mounting hook Model HK-1
- Strap Model STR-1



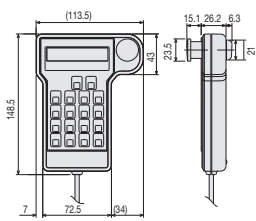
CON-PT-M-ENG



CON-T-ENG



RCM-E-ENG



Specifications

Item	CON-PT-M-ENG	CON-T-ENG	RCM-E-ENG
Data input	○	○	○
Actuator motion	○	○	○
Ambient operating temp/humidity	Temp: 0~40°C; Humidity: 85% RH or below		
Ambient operating atmosphere	No corrosive gases. Especially no dust.		
Protection class	IP40	IP54	-
Weight	Approx. 750g	Approx. 400g	Approx. 400g
Cable length	5m		
Display	3-color LED touch panel with backlight	20 char × 4 lines LCD display	16 char. × 2 lines LCD display

For SCON-CA please choose more functional and lighter teaching pendant CON-PTA-C-ENG with 16-bit color LED touch panel (IP40).

PC Software (Windows Only)

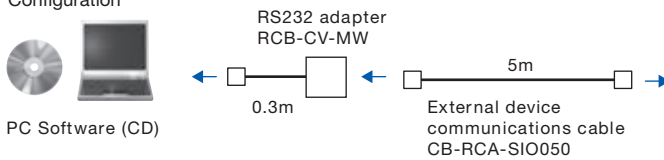
Features

A startup support software for inputting positions, performing test runs, and monitoring. With enhancements for adjustment functions, the startup time is shortened.

Model

RCM-101-MW-ENG (External device communications cable + RS232 conversion unit)

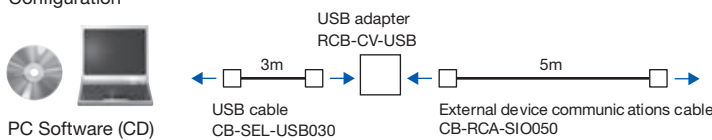
Configuration



Model

RCM-101-USB-ENG (External device communications cable + USB adapter + USB cable)

Configuration



Regenerative Resistance Unit

Features

A unit that returns the regenerative current, generated during the acceleration/deceleration of the motor, into heat. In the tables below, check the total power output of the actuator to see if a regenerative resistor is needed.

Model

REU-2 (for SCON/SSEL)

Specifications

Actuator weight	0.9kg
Internal regenerative resistance	220Ω 80W
Actuator-Controller Connection Cable (included)	CB-SC-REU010 (for SSEL)

Required Number of Units

	Horizontal	Vertical
0 units	~100W	~100W
1 unit	~400W	~400W
2 units	~750W	~750W

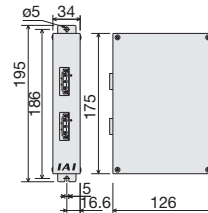
Required Number of Units (RCS2-RA13R only)

	2.5 lead	1.25 lead
Horizontal	1 unit	0 units
Vertical	1 unit	1 unit

* Depending on the operating conditions, more regenerative resistor may be needed.

* If two regenerative units are needed, acquire one REU-2 and one REU-1 (See P596).

Exterior Dimensions



Battery for retaining absolute data

Features

Battery for saving absolute data, when operating an actuator with an absolute encoder.

Model

AB-5



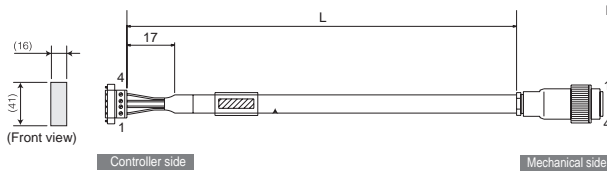
Spare parts

When you need spare parts after purchasing the product, such as when replacing a cable, refer to the list of models below.

Motor cable / EU motor robot cable

Model **CB-RCC-MA** / **CB-XEU-MA**

* Enter the cable length (L) into . Compatible to a maximum of 30 meters.
Ex.: 080 = 8 m



Min. bend radius $r = 50$ mm or larger (when movable robot cable is used)
* Only the robot cable is to be used in a cable track

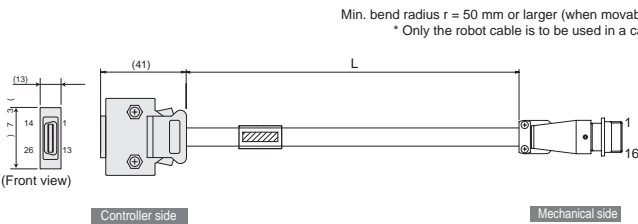
Wire	Color	Signal	No.	No.	Signal	Color	Wire
0.75sq	Green	PE	1	1	U	Red	0.75sq (crimped)
	Red	U	2	2	V	White	
	White	V	3	3	W	Black	
	Black	W	4	4	PE	Green	

(Fig.: Motor robot cable CB-XEU-MA , high-flexible, EU version with metal connector)

Encoder cable / EU encoder robot cable

Model **CB-RCS2-PA** / **CB-XEU3-PA**

* Enter the cable length (L) into . Compatible to a maximum of 30 meters.
Ex.: 080 = 8 m



Min. bend radius $r = 50$ mm or larger (when movable robot cable is used)
* Only the robot cable is to be used in a cable track

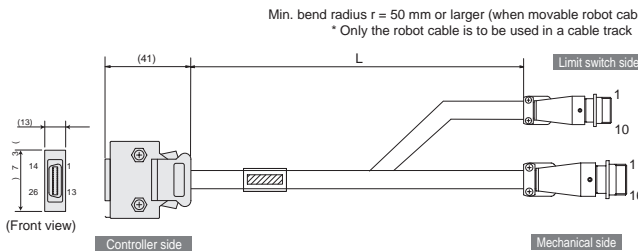
Wire	Color	Signal	No.	No.	Signal	Color	Wire
-	-	-	10	-	-	-	-
-	-	-	11	-	-	-	-
-	-	E24V	12	-	-	-	-
Gray/White	0V	-	13	-	-	-	-
Brown/White	OT	22	22	-	-	-	-
-	OT	23	23	-	-	-	-
-	RSV	23	23	-	-	-	-
-	-	-	9	-	-	-	-
-	-	-	18	-	-	-	-
-	-	-	19	-	-	-	-
Blue	BAT+	14	14	-	-	-	-
Purple	A+	2	2	-	-	-	-
White	B+	3	3	-	-	-	-
Brown/Red	B-	4	4	-	-	-	-
Orange/White	Z+	5	5	-	-	-	-
Orange/White	Z-	6	6	-	-	-	-
Blue	SRD+	8	8	-	-	-	-
Orange	SRD-	8	8	-	-	-	-
Black	BAT+	14	14	-	-	-	-
Yellow	BAT-	15	15	-	-	-	-
Green	VCC	16	16	-	-	-	-
Brown	GND	17	17	-	-	-	-
Gray	BKR-	20	20	-	-	-	-
Red	BKR+	21	21	-	-	-	-
-	-	-	22	-	-	-	-

(Fig.: Encoder robot cable CB-XEU3-PA , high-flexible, EU version with metal connector)

Encoder cable / EU LS encoder robot cable RCS2-RT6/RT6R/RT7R/RTC8/RTC10/RTC12/RA13R

Model **CB-RCS2-PLA** / **CB-XEU2-PLA**

* Enter the cable length (L) into . Compatible to a maximum of 30 meters.
Ex.: 080 = 8 m



Min. bend radius $r = 50$ mm or larger (when movable robot cable is used)
* Only the robot cable is to be used in a cable track

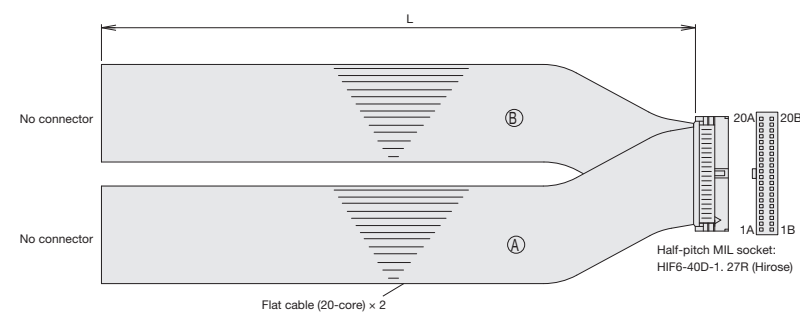
Wire	Color	Signal	No.	No.	Signal	Color	Wire
-	-	-	10	-	-	-	-
-	-	E24 V	11	-	-	-	-
White/Green	0 V	-	13	-	-	-	-
Brown/Blue	OT	26	26	-	-	-	-
Brown/Yellow	CREEP	5	5	-	-	-	-
Brown/Red	OT	24	24	-	-	-	-
Brown/Black	RSV	23	23	-	-	-	-
-	-	-	9	-	-	-	-
-	-	-	18	-	-	-	-
-	-	-	19	-	-	-	-
White/Blue	A+	1	1	-	-	-	-
White/Yellow	A-	2	2	-	-	-	-
White/Red	B+	3	3	-	-	-	-
White/Black	B-	4	4	-	-	-	-
White/Purple	Z+	5	5	-	-	-	-
White/Gray	Z-	6	6	-	-	-	-
Orange	SRD+	7	7	-	-	-	-
Green	SRD-	8	8	-	-	-	-
Purple	BAT+	14	14	-	-	-	-
Gray	BAT-	15	15	-	-	-	-
Red	VCC	16	16	-	-	-	-
Black	GND	17	17	-	-	-	-
Blue	BKR-	20	20	-	-	-	-
Yellow	BKR+	21	21	-	-	-	-
-	-	-	22	-	-	-	-

(Fig.: Limit switch encoder robot cable CB-XEU2-PLA , high-flexible, EU version with metal connector)

I/O Flat Cable

Model **CB-PAC-PIO**

* Enter the cable length (L) into . Compatible to a maximum of 10 meters.
Ex.: 080 = 8 m

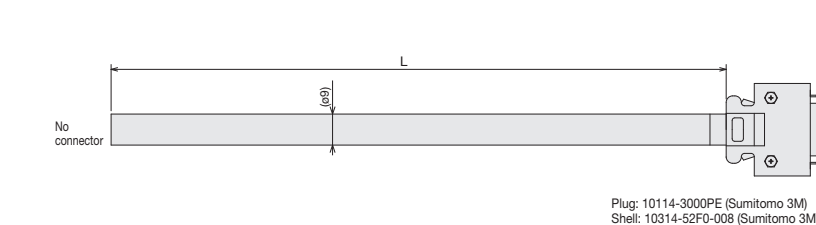


Pin No.	Signal	Color	Wire	Pin No.	Signal	Color	Wire
1A	24V	Brown-1	-	1B	OUT0	Brown-3	-
2A	24V	Red-1	-	2B	OUT1	Red-3	-
3A	-	Orange-1	-	3B	OUT2	Orange-3	-
4A	-	Yellow-1	-	4B	OUT3	Yellow-3	-
5A	IN0	Green-1	-	5B	OUT4	Green-3	-
6A	IN1	Blue-1	-	6B	OUT5	Blue-3	-
7A	IN2	Purple-1	-	7B	OUT6	Purple-3	-
8A	IN3	Gray-1	-	8B	OUT7	Gray-3	-
9A	IN4	White-1	-	9B	OUT8	White-3	-
10A	IN5	Black-1	-	10B	OUT9	Black-3	-
11A	IN6	Brown-2	-	11B	OUT10	Brown-4	-
12A	IN7	Red-2	-	12B	OUT11	Red-4	-
13A	IN8	Orange-2	-	13B	OUT12	Orange-4	-
14A	IN9	Yellow-2	-	14B	OUT13	Yellow-4	-
15A	IN10	Green-2	-	15B	OUT14	Green-4	-
16A	IN11	Blue-2	-	16B	OUT15	Blue-4	-
17A	IN12	Purple-2	-	17B	-	Purple-4	-
18A	IN13	Gray-2	-	18B	-	Gray-4	-
19A	IN14	White-2	-	19B	0V	White-4	-
20A	IN15	Black-2	-	20B	0V	Black-4	-

SCON Pulse Train Control Cable

Model **CB-SC-PIOS**

* Enter the cable length (L) into . Compatible to a maximum of 10 meters.
Ex.: 080 = 8 m



Wire	Color	Signal	Pin No.
Black	Black	Not used	1
White/Black	White/Black	Not used	2
Red	Red	PP	3
White/Red	White/Red	PP	4
Green	Green	NP	5
White/Green	White/Green	NP	6
Yellow	Yellow	AFB	7
White/Yellow	White/Yellow	/AFB	8
Brown	Brown	BFB	9
White/Brown	White/Brown	/BFB	10
Blue	Blue	ZFB	11
White/Blue	White/Blue	/ZFB	12
Gray	Gray	GND	13
White/Gray	White/Gray	GND	14
Shield	Shield	-	-

SSEL



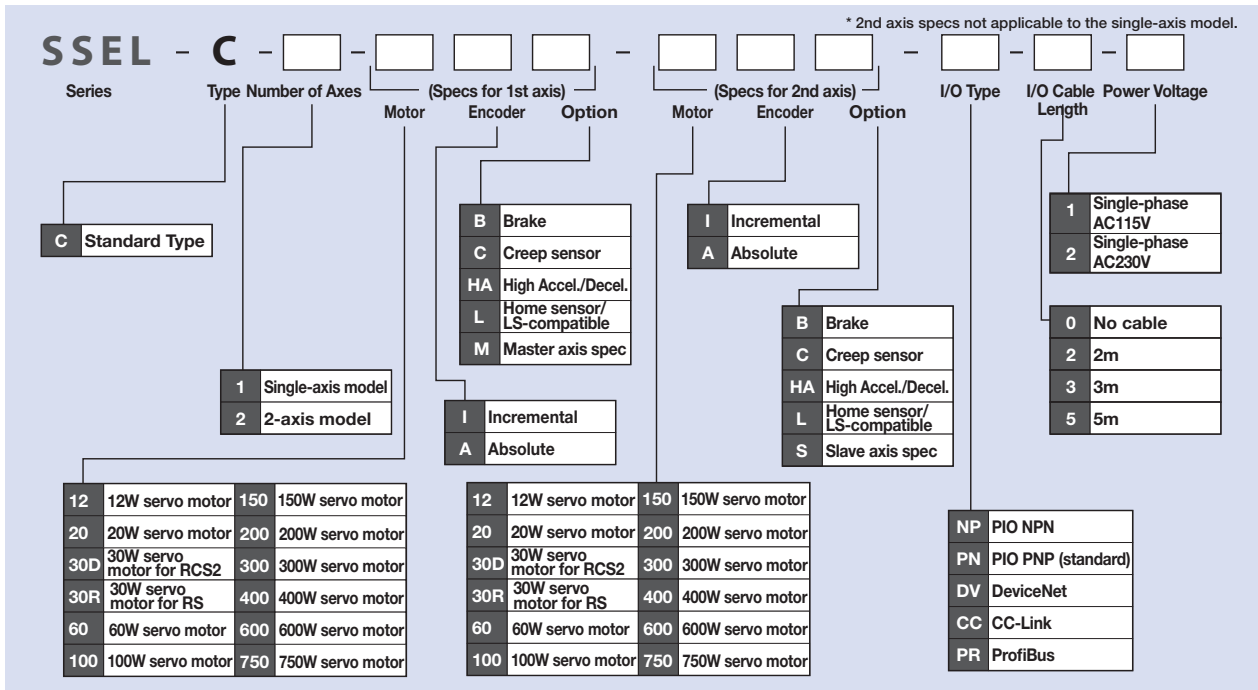
Program controller
For RCS2 series

List of models

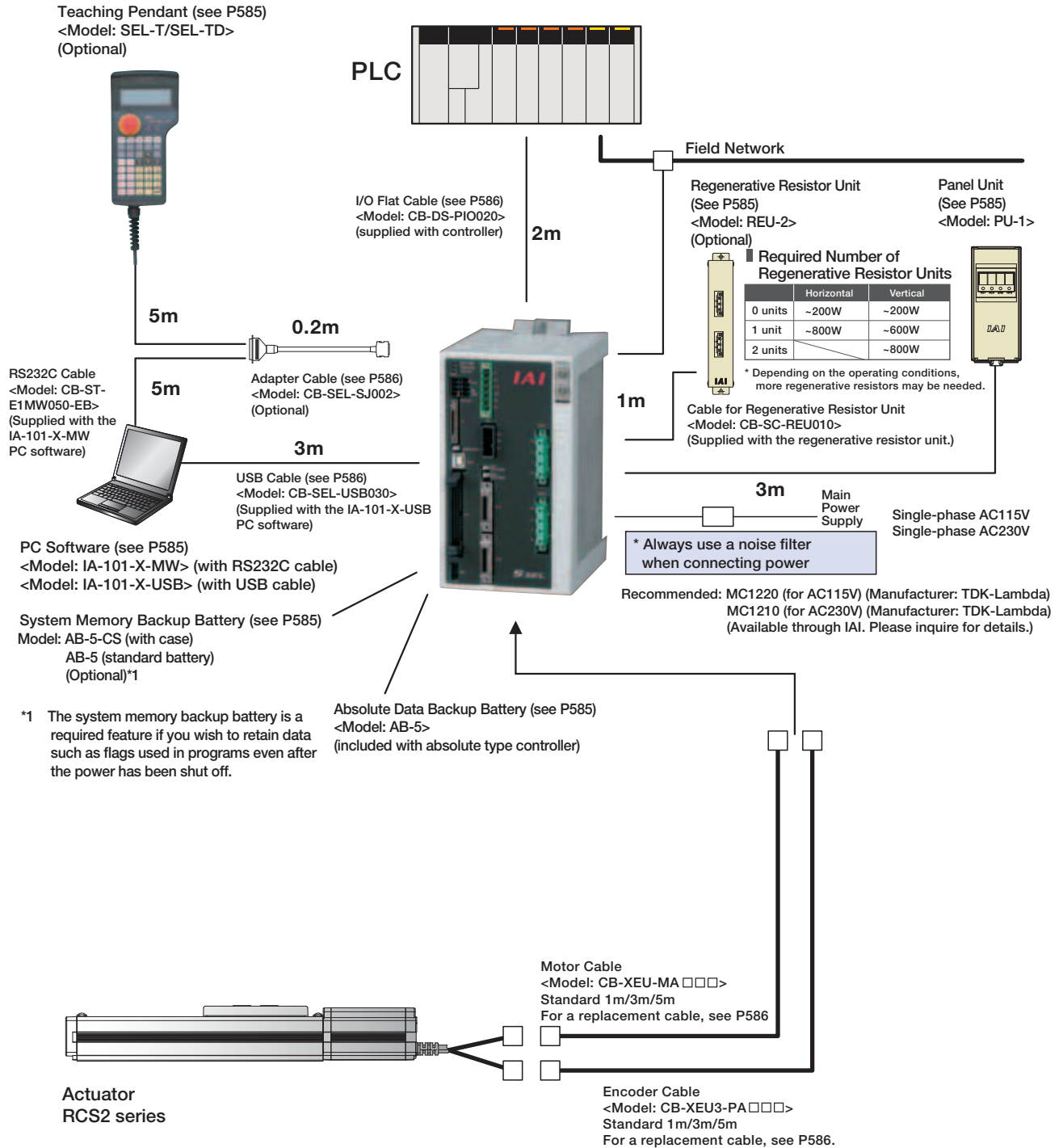
Program controller for operating RCS2 series actuators. One unit can handle various controls.

Type	C	
Name	Program mode	Positioner Mode
External View		
Description	Both the actuator operation and communication with external equipment can be handled by a single controller. When two axes are connected, arc interpolation, path operations, and synchronization can be performed.	Up to 20000 positioning points are supported. Push-motion operation and teaching operation are also possible.
Position points	20000 points	
Number of control axes:	2 axes max.	

Model



System configuration



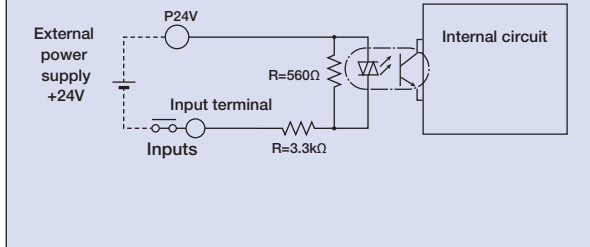
- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

I/O Specifications

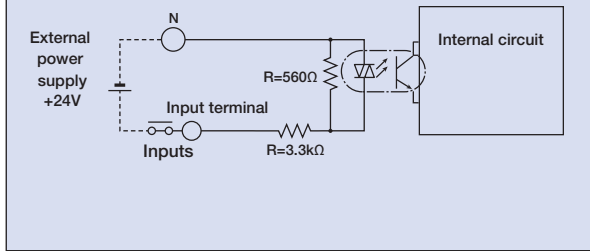
Input section External input specifications

Item	Specifications
Input voltage	DC24V ±10%
Input current	7mA / circuit
ON/OFF voltage	ON voltage (min.) NPN : DC16V / PNP : DC8V OFF voltage (max.) NPN : DC5V / PNP : DC19V
Isolation method	Photocoupler

NPN Specifications



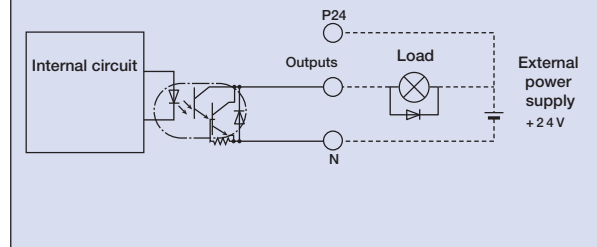
PNP Specifications



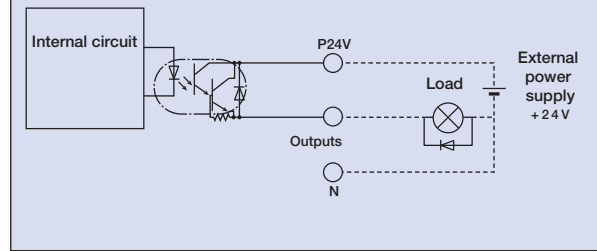
Output section External output specifications

Item	Specifications
Load Voltage	DC24V
Max. load current	100mA / 1point 400mA / 8 points in total
Residual voltage (Max.)	Max 0.1mA / 1 point
Isolation method	Photocoupler

NPN Specifications



PNP Specifications



Explanation of I/O Signal Functions

Two modes can be selected for the SSEL controller: "Program Mode," in which the actuator is operated by entering a program, and "Positioner Mode," in which PLC signals are received and the actuator is moved to designated positions. The Positioner Mode has the five input patterns listed below to enable various applications.

Control Function by Type

Operation mode		Features
Program mode		Various operations including linear/arc interpolation operation, path operation ideal for coating processes, etc., arch-motion operation and palletizing operation can be performed using the Super SEL language that lets you program complex control actions using simple commands.
Positioner mode	Standard mode	This is the basic mode from which operations can be conducted by designating position numbers and inputting the start signal. Push-motion operation and teaching operation are also possible.
	Product change mode	Multiple parts of the same shape with slightly different hole positions can be handled using movement commands to the same position numbers by simply changing the product type number.
	2-axis independent mode	With a 2-axis controller, each axis can be commanded and operated separately.
	Teaching mode	In this mode, the slider (rod) moves based on an external signal, when the actuator is stopped, the current position can be registered as position data.
	DS-S-C1 Compatible mode	If you were using a DS-S-C1 controller, you can replace it with a SSEL controller without having to change the host programs. *This mode does not ensure actuator compatibility.

Explanation of I/O Signal Functions

Program mode

Pin Number	Category	Port No.	Program Mode	Functions	NPN* Wiring Diagram	
1A	P24		24V input	Connect 24V.		
1B		016	Select Program No. 1	Selects the program number to start. (Input as BCD values to ports 016 to 022)		
2A		017	Select Program No. 2			
2B		018	Select Program No. 4			
3A		019	Select Program No. 8			
3B		020	Select Program No. 10			
4A		021	Select Program No. 20			
4B		022	Select Program No. 40			
5A		023	CPU reset			Resets the system to the same state as when the power is turned on.
5B		000	Start			Starts the programs selected by ports 016 to 022.
6A	Input	001	General-purpose input			Waits for external input via program instructions.
6B		002	General-purpose input			
7A		003	General-purpose input			
7B		004	General-purpose input			
8A		005	General-purpose input			
8B		006	General-purpose input			
9A		007	General-purpose input			
9B		008	General-purpose input			
10A		009	General-purpose input			
10B		010	General-purpose input			
11A		011	General-purpose input			
11B		012	General-purpose input			
12A		013	General-purpose input			
12B		014	General-purpose input			
13A	Output	015	General-purpose input	These outputs can be turned ON/OFF as desired via program instructions.		
13B		300	Alarm			Turns off when an alarm occurs. (Contact B)
14A		301	Ready			Turns on when the controller starts up normally and is in an operable state.
14B		302	General-purpose output			
15A		303	General-purpose output			
15B		304	General-purpose output			
16A		305	General-purpose output			
16B		306	General-purpose output			
17A		307	General-purpose output			
17B	N		0V input	Connect 0V.		

*Note: With regard to PNP wiring diagram, please refer to SSEL manual.

Positioner mode

Pin Number	Category	Port No.	Positioner Standard Mode	Functions	NPN* Wiring Diagram	
1A	P24		24V input	Connect 24V.		
1B		016	Position input 10	Specifies the position numbers to move to, using port number 007 to 019 The number can be specified either as BCD or binary.		
2A		017	Position input 11			
2B		018	Position input 12			
3A		019	Position input 13			
3B		020	Position input 14			
4A		021	Position input 15			
4B		022	Position input 16			
5A		023	Error reset			Resets minor errors. (Severe errors require a restart.)
5B		000	Start			Starts moving to selected position.
6A	Input	001	Home Return	Performs home return.		
6B		002	Servo ON	Switches between Servo ON and OFF.		
7A		003	Push	Performs a push motion.		
7B		004	Pause	Pauses the motion when turned OFF, and resumes motion when turned ON.		
8A		005	Cancel	Stops the motion when turned OFF. The remaining motion is canceled.		
8B		006	Interpolation setting	When this signal is turned ON for a 2-axis model, the actuator moves by linear interpolation.		
9A		007	Position input 1	Specifies the position numbers to move to, using ports 007 to 019. The number can be specified either as BCD or binary.		
9B		008	Position input 2			
10A		009	Position input 3			
10B		010	Position input 4			
11A		011	Position input 5			
11B		012	Position input 6			
12A		013	Position input 7			
12B		014	Position input 8			
13A	015	Position input 9				
13B	Output	300	Alarm	Turns off when an alarm occurs. (Contact B)		
14A		301	Ready	Turns on when the controller starts up normally and is in an operable state.		
14B		302	Positioning complete	Turns on when the movement to the destination is complete.		
15A		303	Home Return complete	Turns on when the home return operation is complete.		
15B		304	Servo ON output	Turns on when servo is ON.		
16A		305	Pushing complete	Turns on when a push motion is complete.		
16B		306	System battery error	Turns on when the system battery runs low (warning level).		
17A		307	Absolute encoder battery error	Turns on when the battery for the absolute encoder runs low (warning level).		
17B	N		0V input	Connect 0V.		

*Note: With regard to PNP wiring diagram, please refer to SSEL manual.

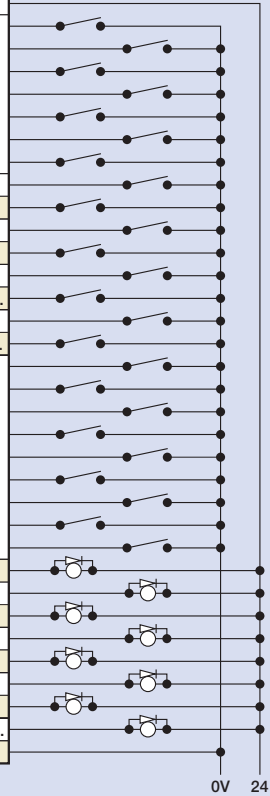
- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

Explanation of I/O Signal Functions

Positioner, Product-Type Change Mode

Pin Number	Category	Port No.	Positioner Product Type Change Mode	Functions
1A	P24		24V input	Connect 24V.
1B	Input	016	Position/Product Type Input 10	Specifies the position numbers to move to, and the product type numbers, using ports 007 to 022. The position and product type numbers are assigned by parameter settings. The number can be specified either as BCD or binary.
2A		017	Position/Product Type Input 11	
2B		018	Position/Product Type Input 12	
3A		019	Position/Product Type Input 13	
3B		020	Position/Product Type Input 14	
4A		021	Position/Product Type Input 15	
4B		022	Position/Product Type Input 16	
5A		023	Error reset	Resets minor errors. (Severe errors require a restart.)
5B		000	Start	Starts moving to selected position.
6A		001	Home Return	Performs home return.
6B		002	Servo ON	Switches between Servo ON and OFF.
7A		003	Push	Performs a push motion.
7B		004	Pause	Pauses the motion when turned OFF, and resumes motion when turned ON.
8A		005	Cancel	Stops the motion when turned OFF. The remaining motion is canceled.
8B		006	Interpolation setting	When this signal is turned ON for a 2-axis model, the actuator moves by linear interpolation.
9A		007	Position/Product Type Input 1	Specifies the position numbers to move to, and the product type numbers, using ports 007 to 022. The position and product type numbers are assigned by parameter settings. The number can be specified either as BCD or binary.
9B	008	Position/Product Type Input 2		
10A	009	Position/Product Type Input 3		
10B	010	Position/Product Type Input 4		
11A	011	Position/Product Type Input 5		
11B	012	Position/Product Type Input 6		
12A	013	Position/Product Type Input 7	Turns off when an alarm occurs. (Contact B)	
12B	014	Position/Product Type Input 8		
13A	015	Position/Product Type Input 9		
13B	300	Alarm		
14A	301	Ready		Turns on when the controller starts up normally and is in an operable state.
14B	302	Positioning complete		Turns on when the movement to the destination is complete.
15A	303	Home Return complete	Turns on when the home return operation is complete.	
15B	304	Servo ON output	Turns on when servo is ON.	
16A	305	Pushing complete	Turns on when a push motion is complete.	
16B	306	System battery error	Turns on when the system battery runs low (warning level).	
17A	307	Absolute encoder battery error	Turns on when the battery for the absolute encoder runs low (warning level).	
17B	N		0V input	Connect 0V.

NPN* Wiring Diagram



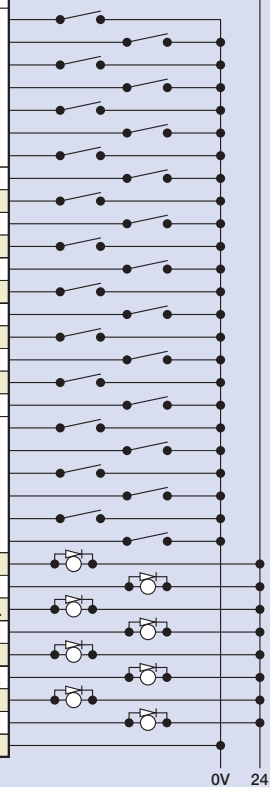
*Note: With regard to PNP wiring diagram, please refer to SSEL manual.

0V 24

Positioner, 2-axis Independent Mode

Pin Number	Category	Port No.	Positioner Independent Mode	Functions
1A	P24		24V input	Connect 24V.
1B	Input	016	Position input 7	Specifies the position numbers to move to, using ports 010 to 022. The position numbers on the 1st and 2nd axes are assigned by parameter settings. The number can be specified either as BCD or binary.
2A		017	Position input 8	
2B		018	Position input 9	
3A		019	Position input 10	
3B		020	Position input 11	
4A		021	Position input 12	
4B		022	Position input 13	
5A		023	Error reset	Resets minor errors. (Severe errors require a restart.)
5B		000	Start 1	Starts the movement to the selected position number on the 1st axis.
6A		001	Home Return 1	Performs Home Return on the 1st axis.
6B		002	Servo ON 1	Switches between servo ON and OFF for the 1st axis.
7A		003	Pause 1	Pauses the motion on 1st axis when turned OFF, and resumes when turned ON.
7B		004	Cancel 1	Cancels the movement on the 1st axis.
8A	005	Start 2	Starts the movement to the selected position number on the 2nd axis.	
8B	006	Home Return 2	Performs Home Return on the 2nd axis.	
9A	007	Servo ON 2	Switches between servo ON and OFF for the 2nd axis.	
9B	008	Pause 2	Pauses the motion on 2nd axis when turned OFF, and resumes when turned ON.	
10A	009	Cancel 2	Cancels the movement on the 2nd axis.	
10B	010	Position input 1	Specifies the position numbers to move to, using ports 010 to 022. The position numbers on the 1st and 2nd axes are assigned by parameter settings. The number can be specified either as BCD or binary.	
11A	011	Position input 2		
11B	012	Position input 3		
12A	013	Position input 4		
12B	014	Position input 5		
13A	015	Position input 6		
13B	300	Alarm	Turns off when an alarm occurs. (Contact B)	
14A	301	Ready	Turns on when the controller starts up normally and is in an operable state.	
14B	302	Positioning complete 1	Turns on when the movement to the specified position on the 1st axis is complete.	
15A	303	Home Return complete 1	Turns on when home return on the 1st axis is complete.	
15B	304	Servo ON output 1	Turns on when the 1st axis is in a servo ON state.	
16A	305	Positioning complete 2	Turns on when the movement to the specified position on the 2nd axis is complete.	
16B	306	Home Return complete 2	Turns on when home return on the 2nd axis is complete.	
17A	307	Servo ON output 2	Turns on when the 2nd axis is in a servo ON state.	
17B	N		0V input	Connect 0V.

NPN* Wiring Diagram



*Note: With regard to PNP wiring diagram, please refer to SSEL manual.

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Explanation of I/O Signal Functions

Positioner, Teaching Mode

Pin Number	Category	Port No.	Positioner Teaching Mode	Functions	NPN* Wiring Diagram	
1A	Input	P24	24V input	Connect 24V.		
1B			016	JOG- on 1st axis		While the signal is input, the 1st axis is moved in the - (negative) direction.
2A			017	JOG+ on 2nd axis		While the signal is input, the 2nd axis is moved in the + (positive) direction.
2B			018	JOG- on 2nd axis		While the signal is input, the 2nd axis is moved in the - (negative) direction.
3A			019	Specify inching (0.01mm)		Specifies how much to move during inching. (Total of the values specified for ports 019 to 022)
3B			020	Specify inching (0.1mm)		
4A			021	Specify inching (0.5mm)		
4B			022	Specify inching (1mm)		
5A			023	Error reset		Resets minor errors. (Severe errors require a restart.)
5B			000	Start		Starts moving to selected position.
6A			001	Servo ON		Switches between Servo ON and OFF.
6B			002	Pause		Pauses the motion when turned OFF, and resumes motion when turned ON.
7A			003	Position input 1		Ports 003 to 013 are used to specify the position number to move, and the position number for inputting the current position. When the teaching mode setting on port 014 is in the ON state, the current value is written to the specified position number.
7B			004	Position input 2		
8A			005	Position input 3		
8B			006	Position input 4		
9A			007	Position input 5		
9B	008	Position input 6				
10A	009	Position input 7				
10B	010	Position input 8				
11A	011	Position input 9				
11B	012	Position input 10				
12A	013	Position input 11				
12B	014	Teaching mode setting				
13A	015	JOG+ on 1st axis	While the signal is input, the 1st axis is moved in the plus direction.			
13B	300	Alarm	Turns off when an alarm occurs. (Contact B)			
14A	301	Ready	Turns on when the controller starts up normally and is in an operable state.			
14B	302	Positioning complete	Turns on when the movement to the destination is complete.			
15A	303	Home Return complete	Turns on when the home return operation is complete.			
15B	304	Servo ON output	Turns on when servo is ON.			
16A	305	-	-			
16B	306	System battery error	Turns on when the system battery runs low (warning level).			
17A	307	Absolute encoder battery error	Turns on when the battery for the absolute encoder runs low (warning level).			
17B	N	0V input	Connect 0V.			

*Note: With regard to PNP wiring diagram, please refer to SSEL manual.

Positioner, DS-S-C1 Compatible Mode

Pin Number	Category	Port No.	Positioner DS-S-C1 Compatible Mode	Functions	NPN* Wiring Diagram	
1A	Input	P24	24V input	Connect 24V.		
1B			016	Position No. 1000		(Same as ports 004 through 015)
2A			017	Position No. 2000		-
2B			018	Position No. 4000		-
3A			019	Position No. 8000		-
3B			020	Position No. 10000		-
4A			021	Position No. 20000		-
4B			022	NC (*1)		-
5A			023	CPU reset		Resets the system to the same state as when the power is turned on.
5B			000	Start		Starts moving to selected position.
6A			001	Hold (Pause)		Pauses the motion when turned ON, and resumes motion when turned OFF.
6B			002	Cancel		Stops the motion when turned ON. The remaining motion is canceled.
7A			003	Interpolation setting		When this signal is turned ON for a 2-axis model, the actuator moves by linear interpolation.
7B			004	Position No. 1		Ports 004 through 016 are used to specify the position number to move. The numbers are specified as BCD.
8A			005	Position No. 2		
8B			006	Position No. 4		
9A			007	Position No. 8		
9B	008	Position No. 10				
10A	009	Position No. 20				
10B	010	Position No. 40				
11A	011	Position No. 80				
11B	012	Position No. 100				
12A	013	Position No. 200				
12B	014	Position No. 400				
13A	015	Position No. 800				
13B	300	Alarm	Turns off when an alarm occurs. (Contact A)			
14A	301	Ready	Turns on when the controller starts up normally and is in an operable state.			
14B	302	Positioning complete	Turns on when the movement to the destination is complete.			
15A	303	-	-			
15B	304	-	-			
16A	305	-	-			
16B	306	System battery error	Turns on when the system battery runs low (warning level).			
17A	307	Absolute encoder battery error	Turns on when the battery for the absolute encoder runs low (warning level).			
17B	N	0V input	Connect 0V.			

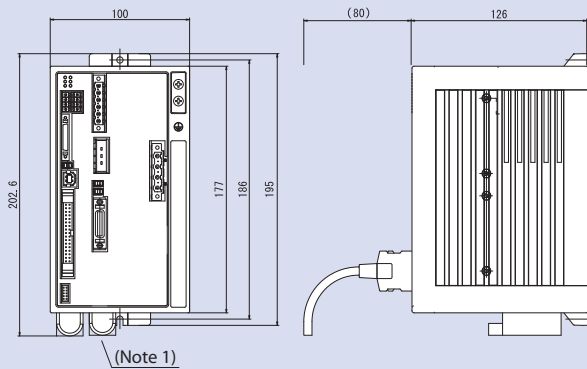
(*1) The input needs to be set to OFF. Be sure to leave this disconnected.
*Note: With regard to PNP wiring diagram, please refer to SSEL manual.

Table of specifications

	Item	Specifications
Basic Specifications	Connected actuator	RCS2 series actuator / single axis robot / linear motor
	Input Voltage	Single-phase AC90V to AC126.5V Single-phase AC180V to AC253V
	Power Supply Capacity	Max. 1660VA (for 400W, 2-axis operation)
	Dielectric strength voltage	DC500V 10MΩ or higher
	Withstand voltage	AC500V 1 min.
	Rush current	Control Power 15A / Motor Power 37.5A Control Power 30A / Motor Power 75A
Control specification	Vibration resistance	XYZ directions 10 to 57Hz, One side amplitude: 0.035mm (continuous), 0.075mm (intermittent) 58 to 150 Hz 4.9 m/s ² (continuous), 9.8 m/s ² (intermittent)
	Number of control axes	1 axis / 2 axis
	Maximum total output of connected axis	400W 800W
	Position detection method	Incremental encoder / Absolute encoder
	Speed setting	1mm/sec and up, the maximum depends on actuator specifications
	Acceleration setting	0.01G and up, the maximum depends on the actuator
Program	Operating method	Program operation / Positioner operation (switchable)
	Programming language	Super SEL language
	Number of programs	128 programs
	Number of program steps	9999 steps
	Number of multi-tasking programs	8 programs
	Positioning Points	20000 points
Communication	Data memory device	FLASHROM (A system-memory backup battery can be added as an option)
	Data input method	Teaching pendant or PC software
	Number of I/O	24 input points / 8 output points (NPN or PNP selectable)
	I/O power	Externally supplied 24VDC ± 10%
	PIO cable	CB-DS-PIO □□□ (supplied with the controller)
	Serial communications function	RS232C (D-Sub Half-pitch connector) / USB connector
General specifications	Field Network	DeviceNet, CC-Link, ProfiBus
	Motor Cable	CB-XEU-MA □□□ (Max. 20m)
	Encoder cable	CB-XEU3-PA □□□ (Max. 20m)
	Protection function	Motor overcurrent, Motor driver temperature check, Overload check, Encoder open-circuit check Soft limit over, system error, battery error, etc.
	Ambient operating humidity and temperature	0 to 40°C 10 to 95% (non-condensing)
	Ambient atmosphere	Free from corrosive gases. In particular, there shall be no significant dust.
	Protection class	IP20
	Weight	1.4kg
	External dimensions	100mm (W) x 202.6mm (H) x 126mm (D)

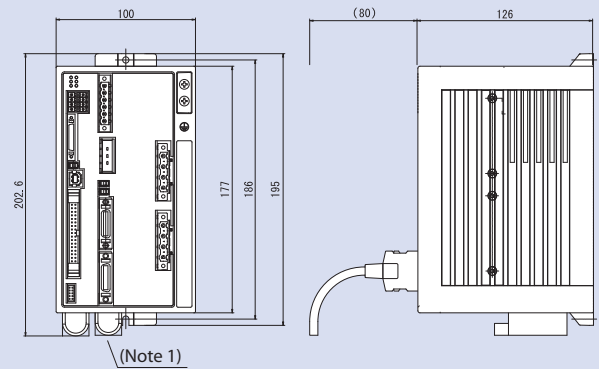
External Dimensions

SSEL 1-axis controller



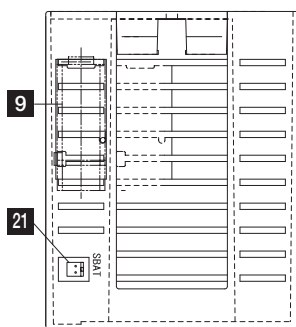
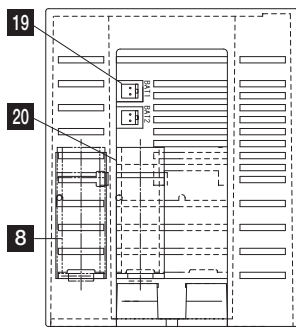
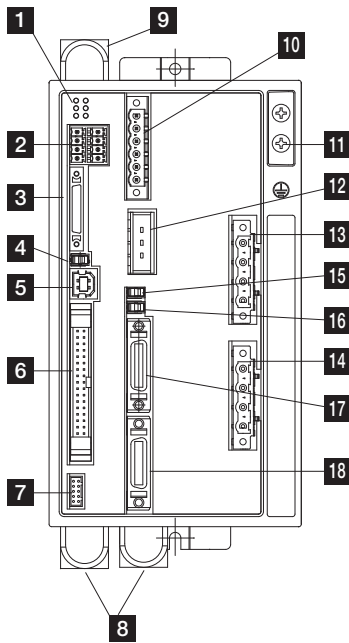
(Note 1) Absolute data back-up battery. Not installed with incremental specification.

SSEL 2-axis controller



(Note 1) Absolute data back-up battery. Not installed with incremental specification.

Name of Each Part



1 Status indicator LEDs

These LEDs are used to indicate the operating condition of the controller.

The LED status indicators are as follows:

- PWR : Power is input to controller.
- RDY : The controller is ready to perform program operation.
- ALM : The controller is abnormal.
- EMG : An emergency stop is actuated and the drive source is cut off.
- SV1 : The axis 1 actuator servo is on.
- SV2 : The axis 2 actuator servo is on.

2 System I/O connector

Connector for emergency stop / enable input / brake power input, etc.

3 Teaching pendant connector

A half-pitch I/O 26-pin connector that connects a teaching pendant when the running mode is MANU. A special conversion cable is needed to connect a conventional Dsub, 25-pin connector.

4 Mode switch

This switch is used to specify the running mode of the controller. The left position indicates the MANU (manual operation) mode, while the right position indicates the AUTO (automatic operation) mode. Teaching can only be performed as manual operation, and automatic operation using external I/Os is not possible in the MANU mode.

5 USB connector

A connector for PC connection via USB. If the USB connector is connected, the TP connector is disabled and all communication inputs to the TP connector are cut off.

6 I/O Connector

A connector for interface I/Os.
34-pin flat cable connector for DIO (24IN/8OUT) interface.
I/O power is also supplied to the controller via this connector (Pin No. 1 and No. 34).

7 Panel unit connector

A connector for the panel unit (optional) that displays the controller status and error numbers.

8 Absolute data backup battery

When an absolute-type axis is operated, this battery retains position data even after the power is cut off.

9 System memory backup battery (Option)

This battery is needed if you wish to retain various data recorded in the SRAM of the controller even after the power is cut off.
This battery is optional. Specify it if necessary.

10 Power supply connector

AC power connector. Divided into the control power input and motor power input.

11 Grounding screw

Protective grounding screw. Always ground this screw.

12 External regenerative resistor connector

A connector for the regenerative resistor that must be connected when the built-in regenerative resistor alone does not offer sufficient capacity in high-acceleration/high-load operation, etc.

Whether or not an external regenerative resistor is necessary depends on the conditions of your specific application such as the axis configuration.

13 Motor connector for axis 1

Connects the motor cable of the axis 1 actuator.

14 Motor connector for axis 2

Connects the motor cable of the axis 2 actuator.

15 Brake switch for axis 1

This switch is used to release the axis brake. Setting it to the left position (RLS side) forcibly releases the brake, while setting it to the right position (NOM side) causes the controller to automatically control the brake.

16 Brake switch for axis 2

This switch is used to release the axis brake. Setting it to the left position (RLS side) forcibly releases the brake, while setting it to the right position (NOM side) causes the controller to automatically control the brake.

17 Encoder connector for axis 1

Connect the encoder cable of the axis 1 actuator.

18 Encoder connector for axis 2

Connect the encoder cable of the axis 2 actuator.

19 Absolute-data backup battery connector for axis 1

A connector for the battery that backs up absolute data for axis 1 when the actuator uses an absolute encoder.

20 Absolute-data backup battery connector for axis 2

A connector for the battery that backs up absolute data for axis 2 when the actuator uses an absolute encoder.

21 System-memory backup battery connector

A connector for the system-memory backup battery.

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /Flat Type
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

Option

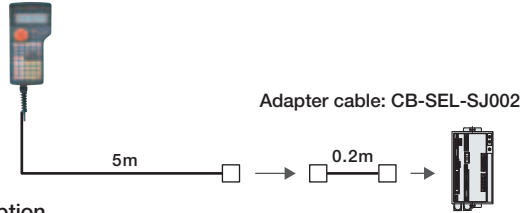
Teaching Pendant

Features A teaching device for entering programs and positions, test runs, and monitoring.

Model/Price

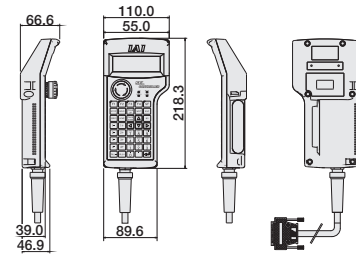
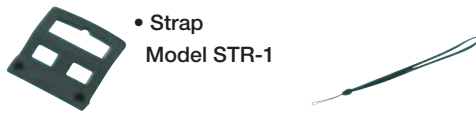
Model	Description
SEL-T-J	Standard type with adapter cable
SEL-TD-J	Deadman's switch type and adapter cable

Configuration



SEL-T option

- Wall-mounting hook Model HK-1
- Strap Model STR-1



Specifications

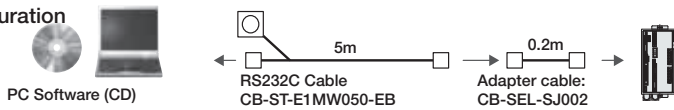
Item	SEL-T-J	SEL-TD-J
3-position Enable Switch	No	Yes
ANSI/UL standards	Non-compliant	Compliant
CE mark	Compliant	
Display	20 char. x 4 lines	
Ambient Operating Temp./Humidity	0~40°C 10~90% RH (non-condensing)	
Protective structure	IP54	
Weight	Approx. 0.4kg (not incl. cable)	

PC Software (Windows Only)

Features A startup support software for entering programs/positions, performing test runs, and monitoring. More functions have been added for debugging, and improvements have been made to shorten the start-up time.

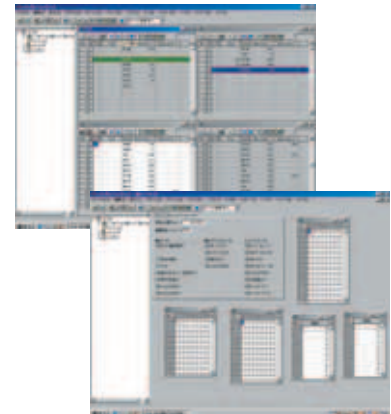
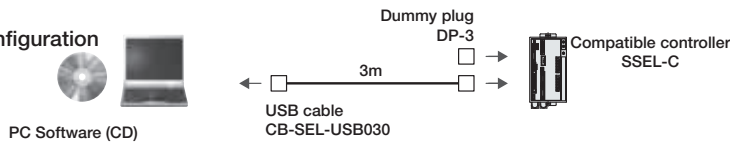
Model IA-101-X-MW-J (with RS232C cable + adapter cable)
IA-101-X-MW (with RS232C cable)

Configuration



Model IA-101-X-USB (with USB cable)

Configuration



Note: Only versions 6.0.0.0 and later can be used with the SSEL controller.

Regenerative Resistor Unit

Features A unit that converts the regenerative current, generated during the acceleration/deceleration of the motor, into heat. In the table on the right, check the total power output of the actuator to see if a regenerative resistor is needed.

Model REU-2 (for SCON/SSEL)

Specifications

Weight of main unit	0.9kg
Internal regenerative resistance	220Ω 80W
Main unit-Controller Connection Cable (included)	CB-SC-REU010 (for SSEL)

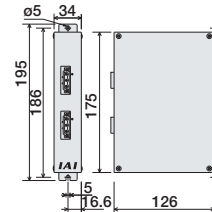
Required Number of Units

	Horizontal	Vertical
0 units	~200W	~200W
1 unit	~800W	~600W
2 units	~800W	~800W

* Depending on the operating conditions, more regenerative resistors may be needed.

* If 2 regenerative units are needed, acquire one REU-2 and one REU-1 (See P596).

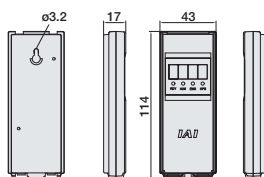
Exterior Dimensions



Panel Unit

Features Display device that shows the error code from the controller or the currently running program number.

Model PU-1 (Cable length: 3m)



Absolute Data Backup Battery

Features Battery for saving absolute data, when operating an actuator with an absolute encoder. Same as the battery used for system memory backup.

Model AB-5



System Memory Backup Battery

Features This battery is required, for example, when you are using global flags in the program and you want to retain your data even after the power has been turned OFF.

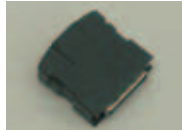
Model AB-5-CS (with case)
AB-5 (Standalone battery)



Option

Dummy Plug

- Features** When connecting the SSEL controller to a computer with a USB cable, this plug is inserted in the teaching port to shut off the enable circuit. (Supplied with the PC software IA-101-X-USB)
- Model** **DP-3**



USB Cable

- Features** A cable for connecting the controller to the USB port of a computer. A controller with no USB port (e.g. XSEL) can be connected to the USB port of a computer by connecting an RS232C cable to the USB cable via a USB adapter. (See PC software IA-101-X-USBMW)
- Model** **CB-SEL-USB030** (Cable length: 3m)



Adapter Cable

- Features** An adapter cable to connect the D-sub 25-pin connector from the teaching pendant or a PC to the teaching connector (half-pitch) of the SSEL controller.
- Model** **CB-SEL-SJ002** (Cable length: 0.2m)



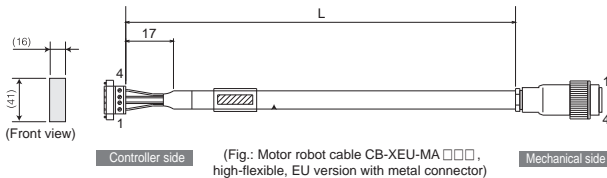
Spare parts

When you need spare parts after purchasing the product, such as when replacing a cable, refer to the list of models below.

Motor cable / EU motor robot cable

Model **CB-RCC-MA** [] [] [] / **CB-XEU-MA** [] [] []

* Enter the cable length (L) into [] [] []. Compatible to a maximum of 30 meters. Ex.: 080 = 8 m



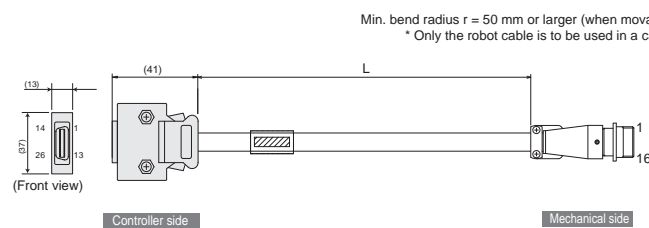
Min. bend radius $r = 50$ mm or larger (when movable type is used)
* Only the robot cable is to be used in a cable track

Wire	Color	Signal	No.	No.	Signal	Color	Wire
0.75sq	Green	PE	1	1	U	Red	0.75sq (crimped)
	Red	U	2	2	V	White	
	White	V	3	3	W	Black	
	Black	W	4	4	PE	Green	

Encoder cable / EU encoder robot cable

Model **CB-RCS2-PA** [] [] [] / **CB-XEU3-PA** [] [] []

* Enter the cable length (L) into [] [] []. Compatible to a maximum of 30 meters. Ex.: 080 = 8 m



Min. bend radius $r = 50$ mm or larger (when movable type is used)
* Only the robot cable is to be used in a cable track

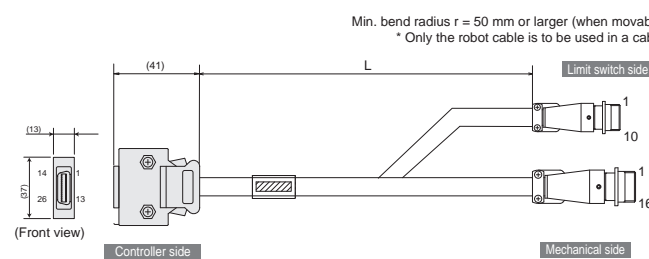
Wire	Color	Signal	No.	No.	Signal	Color	Wire
-	-	E24V	11	1	A	Pink	-
-	-	E24V	12	2	B	White	-
Gray/White	0V	0V	13	3	0V	White	-
Brown/White	LS	26	26	4	B	Blue/Red	-
-	-	CLEEP	6	5	Z	Green/White	-
-	-	OT	24	6	Z	Green/White	-
-	-	RSV	23	7	LS+	Brown/White	-
-	-	-	9	8	SD	Blue	-
-	-	-	18	9	SD	Blue	-
-	-	-	19	10	BAT+	Black	-
Pink	A+	A+	1	11	BAT-	Yellow	-
Purple	A-	A-	2	12	VCC	Green	-
White	B+	B+	3	13	GND	Brown	-
Blue/Red	B-	B-	4	14	LS-	Gray/White	-
Brown/White	Z+	Z+	5	15	BK-	Gray	-
Green/White	Z-	Z-	6	16	BK+	Red	-
Blue	SRD+	SRD+	7	-	-	-	-
Orange	SRD-	SRD-	8	-	-	-	-
Black	BAT+	BAT+	14	-	-	-	-
Yellow	BAT-	BAT-	15	-	-	-	-
Green	VCC	VCC	16	-	-	-	-
Brown	GND	GND	17	-	-	-	-
Gray	BKR-	BKR-	20	-	-	-	-
Red	BKR+	BKR+	21	-	-	-	-
-	-	-	22	-	-	-	-

The shield is connected to the hood by a clamp. Ground wire and shield braiding. The shield is connected to the hood by a clamp.

LS encoder cable / EU LS encoder robot cable for RCS2-RT6/RT6R/RT7R/RTC8/RTC10/RTC12/RA13R

Model **CB-RCS2-PLA** [] [] [] / **CB-XEU2-PLA** [] [] []

* Enter the cable length (L) into [] [] []. Compatible to a maximum of 30 meters. Ex.: 080 = 8 m



Min. bend radius $r = 50$ mm or larger (when movable type is used)
* Only the robot cable is to be used in a cable track

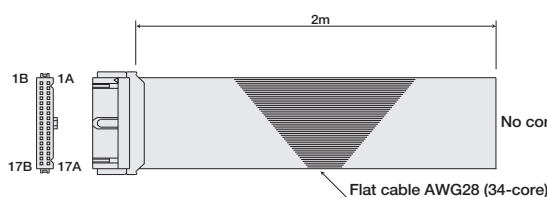
Wire	Color	Signal	No.	No.	Signal	Color	Wire
-	-	E24V	12	1	A	White/Blue	-
White/Green	0V	0V	13	2	0V	White/Yellow	-
Brown/Blue	LS	26	26	4	LS	White/Red	-
Brown/Yellow	CLEEP+	6	6	5	CLEEP+	White/Black	-
Brown/Red	OT	24	24	6	OT	White/Purple	-
Brown/Black	RSV	23	23	7	RSV	White/Gray	-
-	-	-	9	8	-	-	-
-	-	-	18	9	-	-	-
-	-	-	19	10	-	-	-
White/Blue	A+	A+	1	11	A	White/Blue	-
White/Yellow	A-	A-	2	12	A	White/Yellow	-
White/Red	B+	B+	3	13	B	White/Red	-
White/Black	B-	B-	4	14	B	White/Black	-
White/Purple	Z+	Z+	5	15	Z	White/Purple	-
White/Gray	Z-	Z-	6	16	Z	White/Gray	-
Orange	SRD+	SRD+	7	17	LS+	Orange	-
Green	SRD-	SRD-	8	18	SD	Green	-
Purple	BAT+	BAT+	14	19	SD	Orange	-
Gray	BAT-	BAT-	15	20	BAT+	Purple	-
Red	VCC	VCC	16	21	BAT-	Gray	-
Black	GND	GND	17	22	GND	Black	-
Blue	BKR-	BKR-	20	-	-	-	-
Yellow	BKR+	BKR+	21	-	-	-	-
-	-	-	22	-	-	-	-

The shield is connected to the hood by a clamp. Ground wire and shield braiding. The shield is connected to the hood by a clamp.

I/O Flat Cable

Model **CB-DS-PIO** [] [] []

* Enter the cable length (L) into [] [] []. Compatible to a maximum of 10 meters. Ex.: 080 = 8 m



Pin No.	Color	Wire	Pin No.	Color	Wire		
1A	Brown 1	1B	9B	Gray 2	10A	White 2	
1B	Red 1	2A	Orange 1	10A	White 2	10B	Black 2
2A	Orange 1	2B	Yellow 1	11A	Brown-3	11B	Brown-3
2B	Yellow 1	3A	Green 1	11B	Red 3	12A	Orange 3
3A	Green 1	3B	Blue 1	12A	Orange 3	12B	Yellow 3
3B	Blue 1	4A	Purple 1	12B	Yellow 3	13A	Purple 3
4A	Purple 1	4B	Gray 1	13A	Purple 3	13B	Blue 3
4B	Gray 1	5A	White 1	13B	Blue 3	14A	Purple 3
5A	White 1	5B	Black 1	14A	Purple 3	14B	Gray 3
5B	Black 1	6A	Brown-2	14B	Gray 3	15A	White 3
6A	Brown-2	6B	Red 2	15A	White 3	15B	Black 3
6B	Red 2	7A	Orange 2	15B	Black 3	16A	Brown-4
7A	Orange 2	7B	Yellow 2	16A	Brown-4	16B	Red 4
7B	Yellow 2	8A	Green 2	16B	Red 4	17A	Orange 4
8A	Green 2	8B	Blue 2	17A	Orange 4	17B	Yellow 4
8B	Blue 2	9A	Purple 2	17B	Yellow 4	-	-


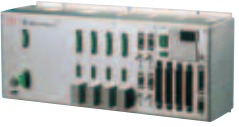


X-SEL



Program controller
For RCS2 series

List of models

Multiaxial program controller for operating RCS2 series actuators. Up to 6 axes can be simultaneously controlled.

Type	KE	KET	P	Q
Name	General Purpose Standard Type	General Purpose Global Type	Large-Capacity Standard Type	Large-Capacity Global Type
External View				
Description	Standard type offering excellent expandability	Global type conforming to safety category 4	Large-capacity standard type capable of controlling up to six axes or 2400W	Large-capacity global type conforming to safety category 4
Maximum number of control axes	4-axis		6-axis	
Number of positions	3000 positions		20000 positions	
Total Number of Connectable W	800/1600W	800/1600W	1600/2400W	
Power Supply	Single-phase AC115V/Single-phase AC230V		Single-phase AC230V/3-phase A230V	
Safety Category	B	Category 4 compatible	B	Category 4 compatible
Safety Rating	CE	CE, ANSI	CE	CE, ANSI

(*1) The maximum output for 1 shaft during vertical operation is limited to 600W.

(*2) Axis 5 and axis 6 cannot control the RCS2-RA7/SRA7 series.

Model

[XSEL-KE/KET type]

*To specify multiple options, enter them in alphabetical order. (Example: Brake + Home sensor -> BL)

* Notation for 2 - 4 axes depends on the number of axes to be used.

XSEL - [] - [] - [] - [] - [] - ([] [] [] []) - [] - [] - [] - [] - []

Series	Type	Number of Axes	(Specs for 1st axis)	(Specs for axis 2 - 4)	(Slot 1)	(Slot 2)	(Slot 3)	(Slot 4)	I/O Cable Length	Power/ Voltage	
KE	General purpose type	1	Motor	Encoder	Option	Motor	Encoder	Option	Standard I/O	Expansion I/O	1 Single-phase AC115V 2 Single-phase AC230V
	KET		Safety-compliant, general purpose type	2	3	4	200 200W servo motor	300 300W servo motor	400 400W servo motor	600 600W servo motor	

Series
 KE General purpose type
 KET Safety-compliant, general purpose type

Type
 1 Single-axis model
 2 2-axis model
 3 3-axis model
 4 4-axis model

(Specs for 1st axis)
 Motor: 20 20W servo motor, 30D 30W servo motor for RCS2, 30R 30W servo motor for RS, 60 60W servo motor, 100 100W servo motor, 150 150W servo motor
 Encoder: B Brake, C Creep sensor, HA High Accel./Decel., L Home sensor/LS-compatible, M Master axis spec, S Slave axis spec
 Option: I Incremental, A Absolute

(Specs for axis 2 - 4)
 Motor: 200 200W servo motor, 300 300W servo motor, 400 400W servo motor, 600 600W servo motor, 750 750W servo motor
 Encoder: I Incremental, A Absolute
 Option: B Brake, C Creep sensor, HA High Accel./Decel., L Home sensor/LS-compatible, M Master axis spec, S Slave axis spec

(Slot 1)
 N1 Input 32/ Output 16 (NPN)
 P1 Input 32/ Output 16 (PNP)

(Slot 2)
 DV DeviceNet board

(Slot 3)
 CC CC-Link board

(Slot 4)
 PR ProfiBus board
 ET Ethernet board

I/O Cable Length
 0 No cable
 2 2m (standard)
 3 3m
 5 5m

Power/ Voltage
 1 Single-phase AC115V
 2 Single-phase AC230V

Expansion I/O
 * E (Not used) is for expansion I/O only.
 E Not used
 N1 Input 32/ Output 16 (NPN)
 N2 Input 16/ Output 32 (NPN)
 P1 Input 32/ Output 16 (PNP)
 P2 Input 16/ Output 32 (PNP)
 SA Expansion SIO type A
 SB Expansion SIO type B
 SC Expansion SIO type C

* If you selected DV, CC, PR, or ET for standard and expansion I/O select 0 (no cable) for the I/O cable length.

[XSEL-P/Q type]

* Notation for 2 - 6 axes depends on the number of axes to be used.

XSEL - [] - [] - [] - [] - [] - ([] [] [] [] [] []) - [] - [] - [] - [] - []

Series	Type	Number of Axes	(Specs for 1st axis)	(Specs for axis 2 - 6)	Dedicated network slot	(Slot 1)	(Slot 2)	(Slot 3)	(Slot 4)	I/O Cable Length	Power/ Voltage							
P	Large-capacity type	1	Motor	Encoder	Option	Motor	Encoder	Option	Standard I/O	Expansion I/O	2 Single-phase AC230V 3 Three-phase AC230V 2L Dedicated linear single-phase AC230V 3L Dedicated linear 3-phase AC230V							
			Q	Safety-compliant, large-capacity type	4	5	6	12 12W servo motor	20 20W servo motor	30D 30W servo motor for RCS2		30R 30W servo motor for RS	60 60W servo motor	100 100W servo motor	150 150W servo motor	200 200W servo motor	200S For LSA-S10/N15	20S For LSA-N19

Series
 P Large-capacity type
 Q Safety-compliant, large-capacity type

Type
 1 Single-axis model
 2 2-axis model
 3 3-axis model
 4 4-axis model
 5 5-axis model
 6 6-axis model

(Specs for 1st axis)
 Motor: 12 12W servo motor, 20 20W servo motor, 30D 30W servo motor for RCS2, 30R 30W servo motor for RS, 60 60W servo motor, 100 100W servo motor, 150 150W servo motor
 Encoder: B Brake, C Creep sensor, HA High Accel./Decel., L Home sensor/LS-compatible, M Master axis spec, S Slave axis spec
 Option: I Incremental, A Absolute

(Specs for axis 2 - 6)
 Motor: 200 200W servo motor, 300 300W servo motor, 400 400W servo motor, 600 600W servo motor, 750 750W servo motor, 1000 For LSA-W21H (high-thrust type)
 Encoder: I Incremental, A Absolute
 Option: B Brake, C Creep sensor, HA High Accel./Decel., L Home sensor/LS-compatible, M Master axis spec, S Slave axis spec

Dedicated network slot
 Blank Not used
 DV DeviceNet board
 CC CC-Link board
 PR ProfiBus board
 ET Ethernet board

(Slot 1)
 E Not used
 N1 Input 32/ Output 16 (NPN)
 N2 Input 16/ Output 32 (NPN)
 P1 Input 32/ Output 16 (PNP)
 P2 Input 16/ Output 32 (PNP)
 S With expansion I/O base

(Slot 2)
 DV DeviceNet board

(Slot 3)
 CC CC-Link board

(Slot 4)
 PR ProfiBus board
 ET Ethernet board

I/O Cable Length
 0 No cable
 2 2m (standard)
 3 3m
 5 5m

Power/ Voltage
 2 Single-phase AC230V
 3 Three-phase AC230V
 2L Dedicated linear single-phase AC230V
 3L Dedicated linear 3-phase AC230V

* Enter 2L or 3L when operating a linear motor actuator. Otherwise, enter 2 or 3.

* If expansion I/O will not be used, enter E (not used) for slots 2 to 4. If you are using expansion I/O, enter the expansion I/O code in the desired slot. If an expansion I/O is specified, the controller chassis will come with the expansion I/O base. (See P592-593) If you will not be using the expansion I/O initially but will be adding it later, specify the chassis with I/O expansion board, but specify S for slots 2 to 4.

e.g. Expansion I/O on slot 2, remaining slots unused
 Expansion I/O base attached, but not the expansion I/O

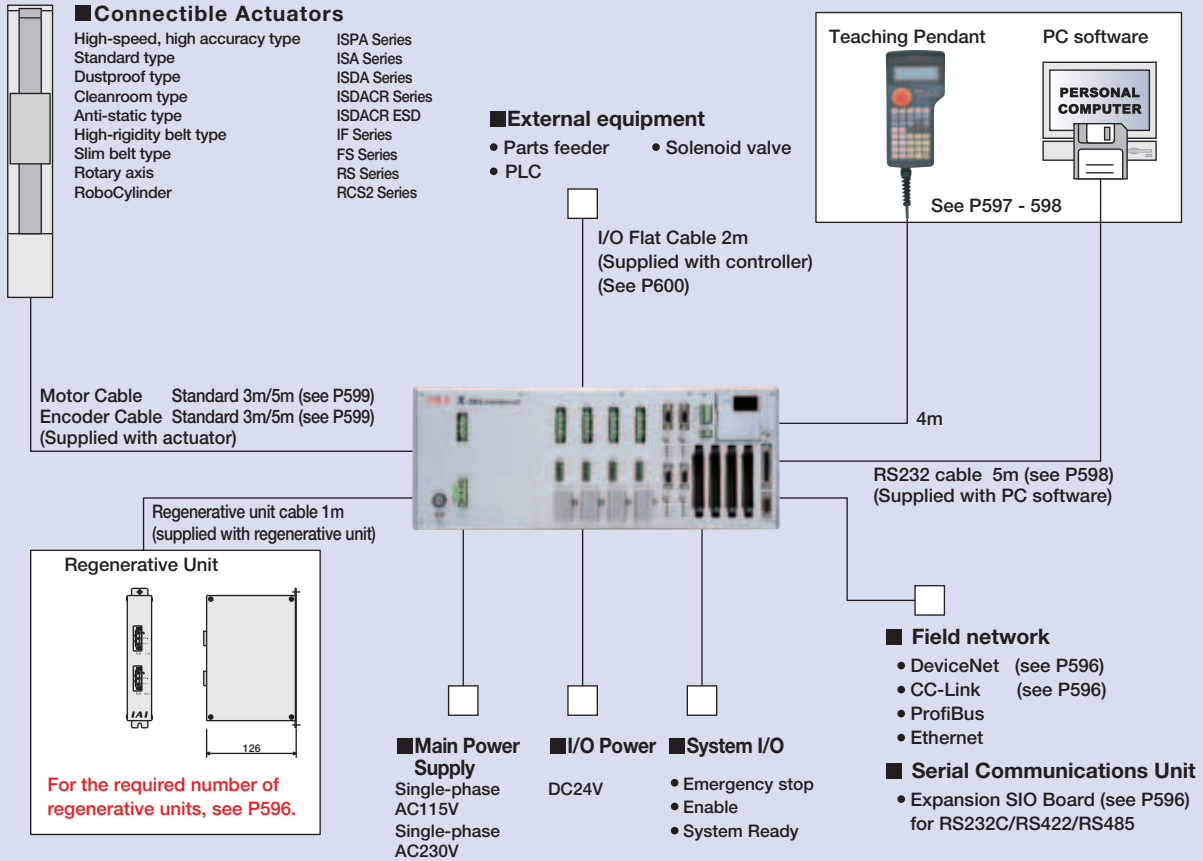
XSEL-P-2-100A-100A-N1-N1EE-2-3
 XSEL-P-2-100A-100A-N1-SSS-2-3

Note:
 For axis 5 and 6 of XSEL-P/Q type, LSA series, and the RCS2-RA7 / SRA7 series actuators are unavailable.

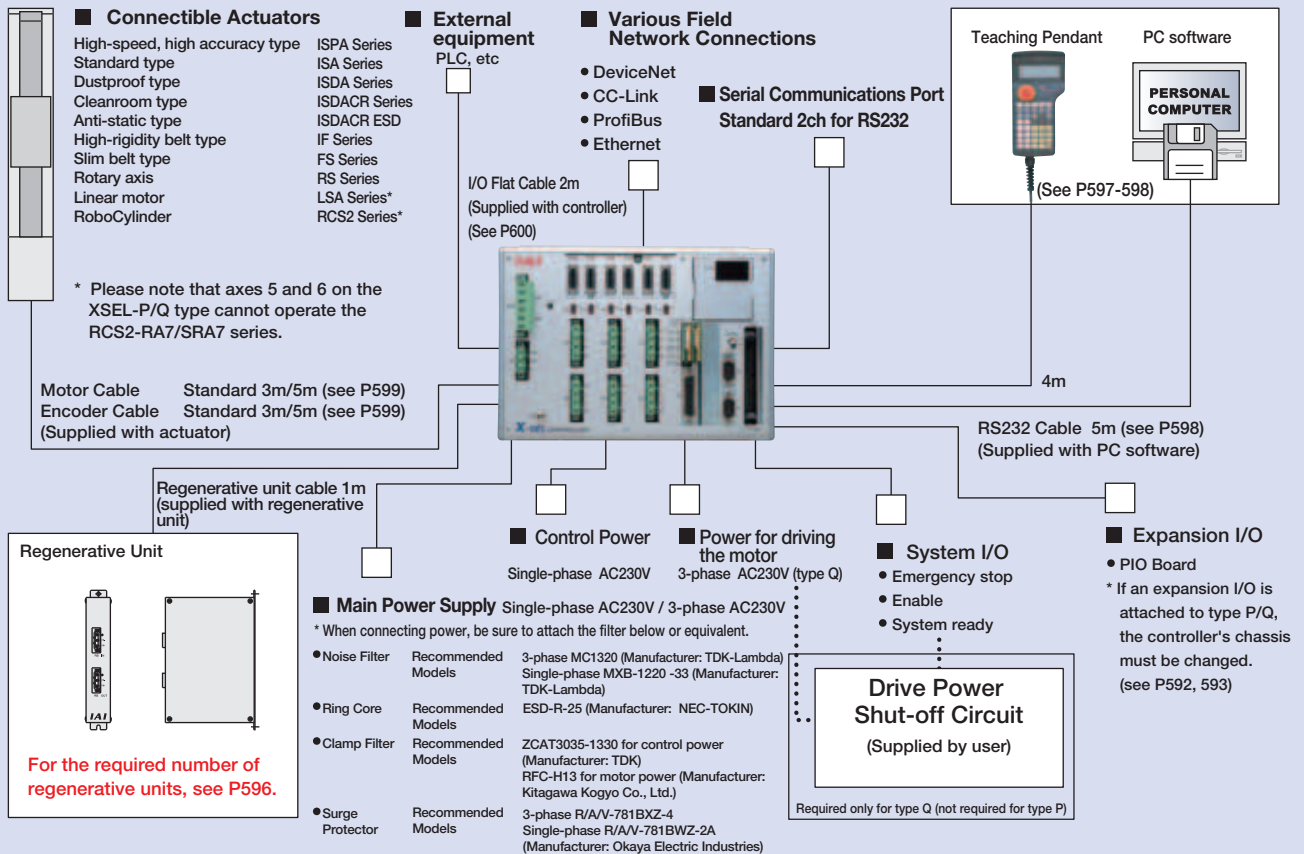
- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /FlatType
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

System configuration

KE (standard type) / KET (global type)



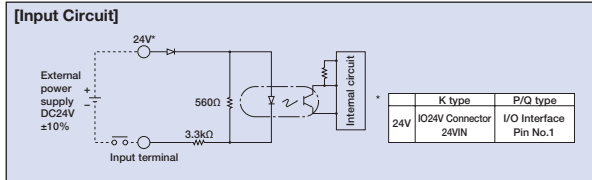
P (large-capacity standard type) / Q (large-capacity global type)



I/O wiring drawing

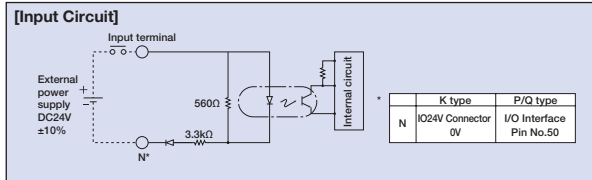
Input section External input specification (NPN specification)

Item	Specifications
Input voltage	DC24V ±10%
Input current	7mA / circuit
ON/OFF voltage	ON Voltage... Min DC16.0V / OFF Voltage... Max DC5.0V
Isolation method	Photocoupler
Externally Connected Equipment	(1) Non-Voltage Contact (Minimum load around DC5V, 1mA) (2) Photoelectric Proximity Sensor (NPN Type) (3) PLC Transistor Output (Open Collector Type) (4) PLC Contact Output (Minimum Load approx. DC5V, 1mA)



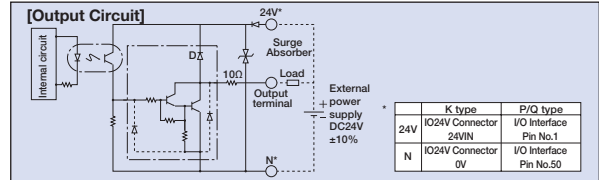
Input section External input specification (PNP specification)

Item	Specifications
Input voltage	DC24V ±10%
Input current	7mA / circuit
ON/OFF voltage	ON Voltage... Min DC8V / OFF Voltage... Max DC19V
Isolation method	Photocoupler
Externally Connected Equipment	(1) Non-Voltage Contact (Minimum load around DC5V, 1mA) (2) Photoelectric Proximity Sensor (PNP Type) (3) PLC Transistor Output (Open Collector Type) (4) PLC Contact Output (Minimum Load approx. DC5V, 1mA)



Output section External input specification (NPN specification)

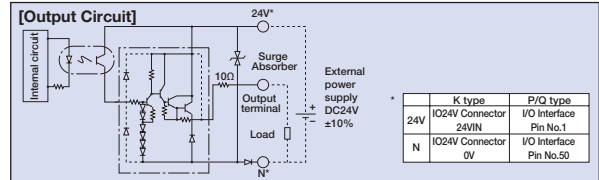
Item	Specifications
Load Voltage	DC24V
Max. load current	100mA / point 400 mA
Leak current	Peak (Total Current) TD62084 (or equivalent)
Isolation method	Max 0.1mA / point
Externally Connected Equipment	Photocoupler
Equipment	(1) Miniature Relay, (2) PLC Input Unit



Output section External input specification (PNP specification)

Item	Specifications
Load Voltage	DC24V
Max. load current	100mA / 1 point 400mA / 8 port (Note)
Leak current	Max 0.1mA / point
Isolation method	Photocoupler
Externally Connected Equipment	(1) Miniature Relay, (2) PLC Input Unit

(Note) 400mA is the maximum total load current for each set of the eight ports from output port No. 300. (The maximum total current output for output port No. 300+n to No. 300+n+7 must be 400mA, where n = 0 or a multiple of eight.)



I/O Signal table

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

Pin No.	Classification	Port No.	Standard Settings
1		—	(P/Q type: 24V 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		—	(P/Q type: 0V connection/K type: NC)

Extension I/O Signal Table (when N1 or P1 is selected)

Pin No.	Classification	Standard Settings
1		(P/Q type: 24V connection / K type: NC)
2		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	Input	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	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		—

Extension I/O Signal Table (when N2 or P2 is selected)

Pin No.	Classification	Standard Settings
1		(P/Q type: 24V 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		—

Table of specifications

■ KE (General Purpose Standard Type) / KET (General Purpose Global Type)

Item	Description							
	KE (Standard) Type				KET (Global) Type			
Controller Series, Type	RCS2 / ISA / ISPA / ISP / ISDA / ISDACR / ISPDACR / IF / FS / RS							
Connecting actuator	RCS2 / ISA / ISPA / ISP / ISDA / ISDACR / ISPDACR / IF / FS / RS							
Compatible Motor Output (W)	20 / 30 / 60 / 100 / 150 / 200 / 300 / 400 / 600 / 750							
Number of control axes	1-axis	2-axis	3-axis	4-axis	1-axis	2-axis	3-axis	4-axis
Maximum Connected Axes Output (W)	Max 800	Max. 1600 (When power supply voltage is 230V) Max. 800 (When power supply voltage is 115V)			Max 800	Max. 1600 (When power supply voltage is 230V) Max. 800 (When power supply voltage is 115V)		
Input Voltage	115V Specification: Single-phase AC100 to 115V 230V Specification: Single-phase AC200 to 230V							
Motor Power Input	±10%							
Power Supply Frequency	50Hz/60Hz							
Power Supply Capacity	Max 1670VA	Max 3120VA	Max 3220VA	Max 3310VA	Max 1670VA	Max 3120VA	Max 3220VA	Max 3310VA
Position detection method	Incremental Encoder (Serial encoder) Absolute encoder with a rotational data backup (Serial encoder)							
Speed setting	1mm/sec and up, the maximum depends on actuator specifications							
Acceleration setting	0.01G and up, the maximum depends on the actuator							
Programming language	Super SEL language							
Number of programs	64 Programs							
Number of program steps	6000 Steps (total)							
Number of multi-tasking programs	16 Programs							
Number of Positions	3000 positions							
Data memory device	FLASH ROM+SRAM Battery Backup							
Data input method	Teaching pendant or PC software							
Standard Input/Output	32 points (total of dedicated inputs + general-purpose inputs) / 16 points (total of dedicated outputs + general-purpose outputs)							
Expansion Input/Output	48 points per unit (3 more units can be installed)							
Serial communications function	Teaching Pendant+ Expansion SIO Board Installable (optional)							
Other Input/Output	System I/O (Emergency Stop Input, Enable Input, System Ready Output)							
Protection function	Motor overcurrent, Motor driver temperature check, Overload check, Encoder open-circuit check soft limit over, system error, battery error, etc.							
Ambient Operating Temp./Humidity	Temperature 0 to 40°C, Humidity 30 to 85%							
Ambient atmosphere	Free from corrosive gases. In particular, there shall be no significant dust.							
Weight	6.0kg		7.0kg		6.0kg		7.0kg	
Accessory	I/O Flat Cable							

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

Item	Description											
	P (Standard) Type						Q (Global) Type					
Controller Series, Type	RCS2 / ISA / ISPA / ISP / ISDA / ISDACR / ISPDACR / IF / FS / RS / LSA											
Connecting actuator	RCS2 / ISA / ISPA / ISP / ISDA / ISDACR / ISPDACR / IF / FS / RS / LSA											
Compatible Motor Output	20 / 30 / 60 / 100 / 150 / 200 / 300 / 400 / 600 / 750											
Number of Controlled Axes	1-axis	2-axis	3-axis	4-axis	5-axis	6-axis	1-axis	2-axis	3-axis	4-axis	5-axis	6-axis
Maximum Connected Axes Output (W)	Max 2400W (The single-phase AC230V specification is 1600W)											
Control Power Input	Single-phase AC170V to AC253V						Single-phase AC170V to AC253V					
Motor Power Input	Single-phase/3-phase AC180V to AC253V						Single-phase/3-phase AC180V to AC253V					
Power Supply Frequency	50 / 60Hz											
Insulation Resistance	10MΩ or more (between the power-supply terminal and I/O terminals, and between all external terminals and case, at 500VDC)											
Withstand Voltage	AC1500V (1 minute)						AC1500V (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 (Serial encoder) Absolute encoder with a rotational data backup (Serial encoder)											
Safety Circuit Configuration	Redundancy not supported						Double Redundant Enabled					
Drive Source Breaker System	Internal cutoff relay						External Safety Circuit					
Enable Input	B Contact Input (Internal Power Supply Model)						B Contact Input (External Power Supply Model, Double Redundant)					
Speed setting	1mm/sec and up, the maximum depends on actuator specifications											
Acceleration/Deceleration Setting	0.01G and up, the maximum depends on the actuator											
Programming language	Super SEL language											
Number of programs	128 Programs											
Number of program steps	9999 Steps (total)											
Number of multi-tasking programs	16 Programs											
Number of Positions	20000 Positions (Total)											
Data memory device	FLASH ROM+SRAM Battery Backup											
Data input method	Teaching pendant or PC software											
Standard Input/Output	48-point I/O PIO Board (NPN/PNP), 96-point I/O PIO Board (NPN/PNP), 1 board can be installed											
Expansion Input/Output	48-point I/O PIO Board (NPN/PNP), 96-point I/O PIO Board (NPN/PNP), Up to 3 boards can be installed											
Serial communications function	Teaching Pendant (25-pin D-sub) Port + 2ch RS232C Port (9-pin D-sub x 2)											
Protection function	Motor overcurrent, overload, motor driver temperature check, overload check encoder open-circuit check, soft limit over, system error, battery error, etc.											
Ambient Operating Temp. Humidity, Atmosphere	0 to 40°C, 10 to 95% (non-condensing). Free from corrosive gases. In particular, there shall be no significant dust.											
Weight (*2)	5.2kg			5.7kg			4.5kg			5kg		
Accessory	I/O Flat Cable											

*1 When the connected axes represent the maximum wattage.

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

External Dimensions

■ KE (General Purpose Standard Type) / KET (General Purpose Global Type)

	1/2-axis specification	3/4-axis specification	Side View
KE type (standard)			
KET type (global)			

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

The XSEL-P/Q types have different shapes and dimensions in accordance with the controller specifications (encoder type, with/without brake, and with/without I/O expansion). The 4 layouts below are available. Confirm dimensions to match the desired type and number of axes.

Caution
The specifications of the single phase 230V in Q type is the exterior dimension of P type.

[P Type]

		Basic Layout (Incremental Specification)	With brake/absolute unit	Basic Layout + I/O expansion base	With brake/absolute unit + I/O expansion base	Side View
Controllers Specifications	Encoder	Incremental	Absolute	Incremental	Absolute	
	Brake	None	Yes	None	Yes	
	I/O	Standard only	Standard only	Standard + Expansion	Standard + Expansion	
Single phase Specifications	1 to 4 axis Specifications					
	5 to 6 axis Specifications					
3 phases Specifications	1 to 4 axis Specifications					
	5 to 6 axis Specifications					

- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /FlatType
- Mini
- Standard
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

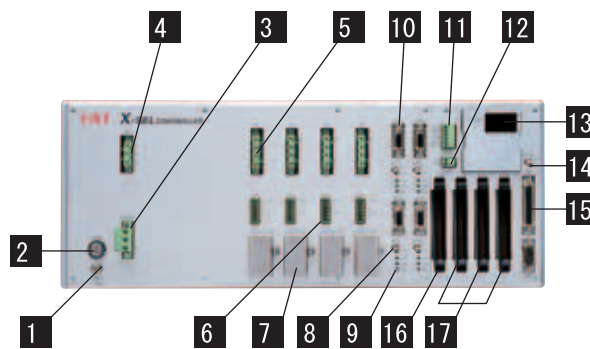
External dimensional drawing

[Q Type]

		Basic Layout (Incremental Specification)	With brake/absolute unit	Basic Layout + I/O expansion base	With brake/absolute unit + I/O expansion base	Side View
Controllers Specifications	Encoder	Incremental	Absolute	Incremental	Absolute	
	Brake	None	Yes	None	Yes	
	I/O	Standard only	Standard only	Standard + Expansion	Standard + Expansion	
Single phase Specifications	1 to 4 axis Specifications					
	5 to 6 axis Specifications					
3 phase Specifications	1 to 4 axis Specifications					
	5 to 6 axis Specifications					

Part Names

K type (General)



1 FG Connection Terminal

A terminal for connecting to the FG terminal on the enclosure. The PE of the AC input are connected to the enclosure inside the controller.

2 Fuse Holder

This is the single-pole fuse holder for overcurrent protection in the AC input.

3 Main Power Input Connector

This connector is for the AC230V single-phase input.

4 Regeneration Resistance Unit Connector

This connector is for the regenerative resistance unit (optional/REU-1) that is connected when there is insufficient capacity with the built-in regenerative resistor for high-acceleration/high-loads, etc.

5 Motor Cable Connector

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

6 Actuator Sensor Input Connector

A connector for axis sensors such as LS, CREEP and OT.

7 Absolute-data backup battery

This is the encoder backup battery unit when an absolute encoder is used. This battery is not connected for a non-absolute axis.

8 Brake Release Switch (Brake-equipped specification only)

Locking toggle switch for releasing the axis brake. Pull the switch forward and then tilt it up or down. Set the switch to the top position (RLS) to forcibly release the brake, or to the bottom position (NOM) to have the brake automatically controlled by the controller.

9 Axis Driver Status LED

This LED is for monitoring the operating status of the driver CPU that controls the motor drive. Features the following three LEDs.

Name	Color	Function description
ALM	Orange	Indicates when an error has been detected by the driver.
SVON	Green	Indicates that the servo is ON and the motor is driven.
BATT ALM	Orange	Indicates low absolute battery charge.

10 Encoder sensor cable connector

15-pin D-sub connector for the actuator encoder cable.

11 System I/O Connector

A connector for three input/output points including two inputs used to for the controller operation, and one system status output.

Name		
EMG	Emergency stop input	ON=operation enabled, OFF=emergency stop
ENB	Safety Gate Input	ON=operation enabled, OFF=servo OFF
RDY	System Ready Relay Output	This signal outputs the status of this controller. Cascade connection is supported. Short=ready, Open=not ready

12 I/O 24V Power Connector

16, 17 This connector is for supplying external I/O power to the insulator when DI and DOs are installed in the I/O boards.

13 Panel Window

This window has a 4-digit, 7-segment LED and five LED lamps showing the system status.

14 Mode switch

This is a locking toggle switch for designating the controller operating mode. Pull the switch forward and then tilt it up or down. The top position indicates the MANU (manual operation) mode, while the bottom position indicates the AUTO (automatic operation) mode. Teaching can only be performed in manual operation, and automatic operation using external I/Os is not possible in the MANU mode.

15 Teaching Connector

This is a 25-pin D-sub connector for connecting a teaching pendant or PC cable to enter programmed positions.

16 Standard I/O Slot (Slot 1)

A 32-point input / 16-point output PIO board is installed as standard equipment.

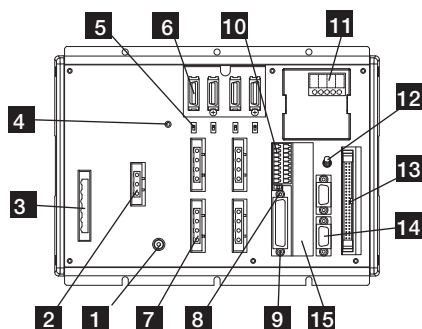
17 Expansion I/O Slots (Slot 2, Slot 3, Slot 4)

Install an expansion I/O board. (Option)

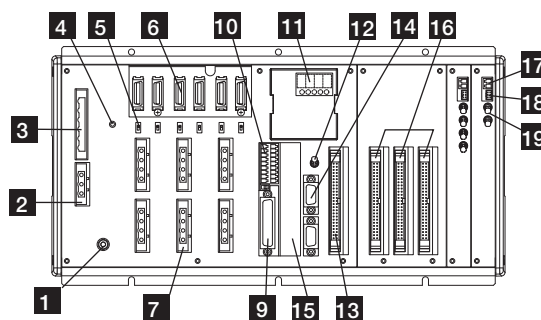
- Slider Type
- Mini
- Standard
- Controllers Integrated
- Rod Type
- Mini
- Standard
- Controllers Integrated
- Table/Arm /FlatType
- Mini
- Standard
- Controllers Integrated
- Gripper/ Rotary Type
- Linear Motor Type
- Cleanroom Type
- Splash-Proof
- Controllers
- PMEC /AMEC
- PSEP /ASEP
- ROBO NET
- ERC2
- PCON
- ACON
- SCON
- PSEL
- ASEL
- SSEL
- XSEL
- Pulse Motor
- Servo Motor (24V)
- Servo Motor (230V)
- Linear Motor

Part Names

P type (4-axis)



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



1 FG Connection Terminal

A terminal for connecting to the FG terminal on the enclosure. The PE of the AC input are connected to the enclosure inside the controller.

2 External regeneration unit connector

A connector for the regenerative resistor that must be connected when the built-in regenerative resistor alone does not offer sufficient capacity in high-acceleration/ high-load operation, etc. Whether or not an external regenerative resistor is necessary depends on the conditions of your specific application such as the axis configuration.

3 AC Power Input Connector

AC230V 3-phase input connector. It consists of six terminals including motor power-supply, control power-supply and PE terminals. Standard equipment only includes a terminal block.

Due to risk of electrical shock, do not touch this connector while power is supplied.

4 Control Power Monitor LED

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

5 Enable/Disable Switch for Absolute Battery

This switch is for enabling/disabling the encoder backup using the absolute data backup battery. The encoder backup has been disabled prior to shipment. After connecting the encoder/axis-sensor cables, turn on the power, and then set this switch to the top position.

6 Encoder/Axis Sensor Connector

A connector for axis sensors such as LS, CREEP and OT.
* LS, CREEP, and OT are options.

7 Motor connector

A connector for driving the motor in the actuator.

8 Teaching Pendant Type Selection Switch

This switch is for selecting the type of teaching pendant to connect to the teaching connector. Switch between an IAI standard teaching pendant and the ANSI-compatible teaching pendant. Operate the switch on the front face of the board in accordance with the teaching pendant used.

9 Teaching Connector

The teaching interface is used for connecting the IAI teaching pendant or the software on a PC to operate and configure the system, etc.

10 System I/O connector

A connector for managing the safety operation functions of the controllers. Controllers of the global specification let you configure a safety circuit conforming to safety categories of up to 4 using this connector and an external safety circuit.

11 Panel Window

This window consists of a 4-digit, 7-segment LED and five LED lamps showing the system status.

Description of five LEDs

Name	Status when LED is lit
RDY	CPU Ready (programs can be run)
ALM	CPU Power (System Down Level Error) CPU Hardware Problem
EMG	Emergency stop status, CPU hardware problem, or power system hardware problem
PSE	Power supply hardware problem
CLK	System clock problem

12 Mode switch

This is a locking toggle switch for designating the controller operating mode. Pull the switch forward and then tilt it up or down. The top position indicates the MANU (manual operation) mode, while the bottom position indicates the AUTO (automatic operation) mode. Teaching can only be performed in manual operation, and automatic operation using external I/Os is not possible in the MANU mode.

13 Standard I/O connector

50-pin flat connector structure, comprised of 32 input / 16 output DIOs.

Overview of Standard I/O Interface Specifications

Item	Details
Connector Name	I/O
Applicable connector	50-Pins, Flat Connector
Power Supply	Power is supplied through connector pins No. 1 and No. 50.
Input	32 points (including general-purpose and dedicated inputs)
Output	16 points (including general-purpose and dedicated inputs)
Connected to	External PLC, sensors, etc.

14 General-purpose RS232C Port Connector

This port is for connecting general-purpose RS232C equipment. (2-channels are available)

15 Field network board slot

A slot that accepts a fieldbus interface module.

16 Expansion I/O Board (optional)

Slots that accept optional expansion I/O boards.

17 Brake Power Input Connector

A power input connector for driving the actuator brake. DC 24V must be supplied externally. If this power supply is not provided, the actuator brake cannot be released. Be certain that power is supplied to the brake-equipped axis. Use a shielded cable for the brake power cable, and connect the shielding on the 24V power supply side.

18 Brake Release Switch Connector

A connector for the switch that releases the actuator brake externally to the controller. Shorting the COM terminal and BKMR1* terminal of this connector will release the brake. Use this method if you wish to manually operate the actuator after the controller has experienced a power failure or malfunction.

19 Brake Switch

Locking toggle switch for releasing the axis brake. Pull the switch forward and then tilt it up or down. Setting it to the top position (RLS side) forcibly releases the brake, while setting it to the bottom position (NOM side) causes the controller to automatically control the brake.

Option

Regenerative Resistance Unit

Model **REU-1**

Details

This unit converts to heat the regenerative current produced when the motor decelerates. Although the controller has a built-in regenerative resistor, its capacity may not be enough if the axis is positioned vertically and the load is large. In this case, one or more regenerative units will be required. (Refer to the table at right)

Specifications

Item	Specifications
Main Unit dimensions	W34mm × H195mm × D126mm
Main Unit Weight	900g
Built-in regenerative resistor	220Ω 80W
Accessory	Controller Connection Cable (Model No. CB-ST-REU010) 1m

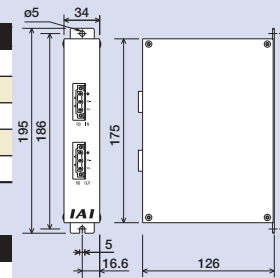
Installation Standards Determined by the total motor capacity of vertical axes connected.

Horizontal Application

Number of connecting units	P/Q Type	K Type
0 pc	to 100W	to 800W
1 pc	to 600W	to 1200W
2 pc	to 1200W	to 1600W
3 pc	to 1800W	-
4 pc	to 2400W	-

Vertical Application

Number of connecting units	P/Q Type	K Type
0 pc	to 100W	to 400W
1 pc	to 600W	to 800W
2 pc	to 1000W	to 1200W
3 pc	to 1400W	When exceeding 1200W, please contact IAL.
4 pc	to 2000W	
5 pc	to 2400W	



Absolute Data Retention Battery (for XSEL-KE/KET)

Model **IA-XAB-BT**

Features

A battery that retains the data stored in an absolute type controller. Replace when the controller battery alarm illuminates.

Packaging

1 Unit (One battery is required for each axis. Specify a quantity for the number of axes used.)



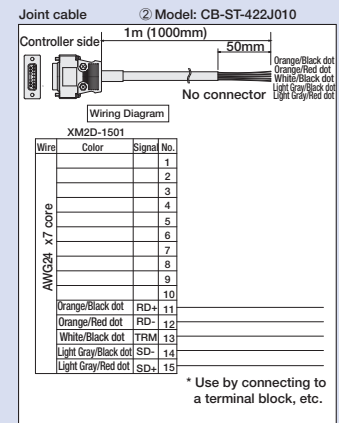
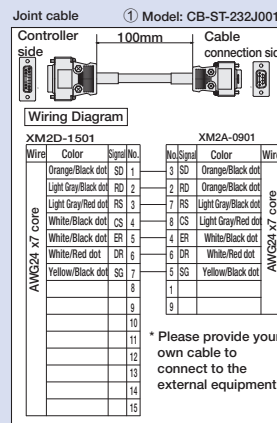
Expansion SIO Board (for XSEL-KE/KET)

Model/Specifications

IA-105-X-MW-A (for RS232C connection) (Board + joint cables (1), 2 included)
 IA-105-X-MW-B (for RS422 connection) (Board + joint cables (2), 1 included)
 IA-105-X-MW-C (for RS485 connection) (Board + joint cables (2), 1 included)

Details

Board for serial communications with external equipment. This board has two port channels and implements three communication modes using the supplied joint cable(s).



Absolute Data Retention Battery (for XSEL-P/Q)

Model **AB-5**

Features

Absolute data retention battery for operating actuators under absolute specification.



Expansion PIO Board

Details

An optional board for adding I/O (input/output) points. With the general-purpose and large-capacity types, up to three expansion PIO boards can be installed in the expansion slots. (With the compact types, only one expansion PIO board can be installed in the expansion slot, provided that the controller is of 3 or 4-axis specification.)

DeviceNet Connection Board

A board for connecting the XSEL controller to DeviceNet.

Item	Specifications			
Number of I/O Points	1 board, 256 input points / 256 output points *Only 1 can be installed			
Communication Standard	Interface module certified under DeviceNet 2.0 (certification to be obtained)			
	Group 2 Only Server			
Communication specifications	Insulated node operating on network power supply			
	Master-Slave connection		Bit strobe	
			Polling	
Communication Rate	500k/250k/125kbps (Selectable by DIP switch)			
	Communication Rate	Maximum network length	Maximum branch length	Total branch length
Communication cable length	500 kbps	100m	6m	39m
	250 kbps	250m		78m
	125 kbps	500m	156m	
(Note) When a large DeviceNet cable is used				
Communication Power Supply	24VDC (supplied from DeviceNet)			
Low Current Communication Power Supply	60mA or higher			
Number of Reserved Nodes	1 node			
Connector	MSTBA2.5/5-G.08AUM by Phoenix Contact (*1)			

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

CC-Link Connection Board

A board for connecting the XSEL controller to CC-Link.

Item	Specifications				
Number of I/O Points	1 board, 256 input points / 256 output points *Only 1 can be installed				
Communication Standard	CC-Link Ver1.10 (certified)				
Communication Rate	10M/5M/2.5M/625k/156kbps (switched using a rotary switch)				
Communication method	Broadcast polling method				
Asynchronous	Frame synchronization method				
Encoding Format	NRZI				
Transmission path type	Bus Format (EIA RS485 Compliant)				
Transmission Format	HDLC Compliant				
Error control method	CRC (X ¹⁶ +X ² +X ¹ +1)				
Number of Reserved Stations	1 to 3 Stations (Remote Device Stations)				
Communication cable length	Communication Rate (bps)	10M	5M	2.5M	625k 156k
	Communication cable length	100	160	400	900 1200
Connector (Controller-side)	MSTBA2.5/5-G.08AUM by Phoenix Contact (*1)				

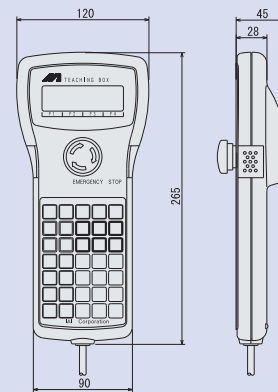
(*1) The connector on the cable (SMSTB2.5/5-ST-5.08AU by Phoenix Contact) is a standard accessory.

Part Names

Teaching Pendant

Model IA-T-X (standard)
IA-T-XD (with deadman switch)

Dimensions



- Features**
- A teaching device that has program/position input, test operation, monitoring function, etc.
 - Interactive, easy to operate.
 - For higher safety, a deadman switch version is also available.

Specifications

Item	Specifications
Ambient Operating Temp./Humidity	Temperature 0 to 40°C, Humidity: 85 %RH or lower
Ambient Operating atmosphere	Free from corrosive gases. In particular, there shall be no significant powder dust.
Weight	Approx. 650g
Cable Length	4m
Indication	20 characters x 4 lines LCD display

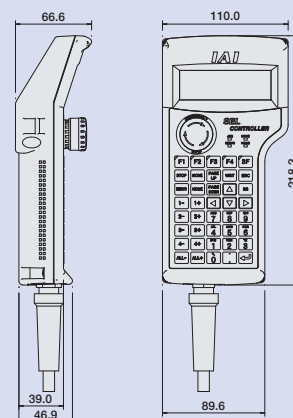
Note:

* Versions older than 1.13 cannot be used with XSEL-P/Q.
* Versions older than 1.08 cannot be used with SCARA.

ANSI standard / CE mark compatible teaching pendant (dedicated universal type)

Model SEL-T
SEL-TD (Corresponding to ANSI)
SEL-TG (Corresponding to ANSI and safety category)

Dimensions



- Features** Splash-proof type that corresponds to protection level IP54. Improved operationability with separate keys for different functions. In addition, SEL-TD / SEL-TG has a 3-position enable switch and corresponds to ANSI standard.

Specifications

Item	Specifications
Ambient Operating Temp./Humidity	Temperature: 0 to 40°C Humidity: 30 to 85%RH or lower (non-condensing)
Protection mechanism	IP54 (Cable connector excluded)
Weight	400g or lower (Cable connector excluded)
Cable Length	5m
Indication	32 characters x 8 lines LCD display
Safety Rating	CE mark, ANSI standard (*)

(*) only SEL-TD / SEL-TG corresponds to ANSI standard.

Teaching pendant controller correspondence table

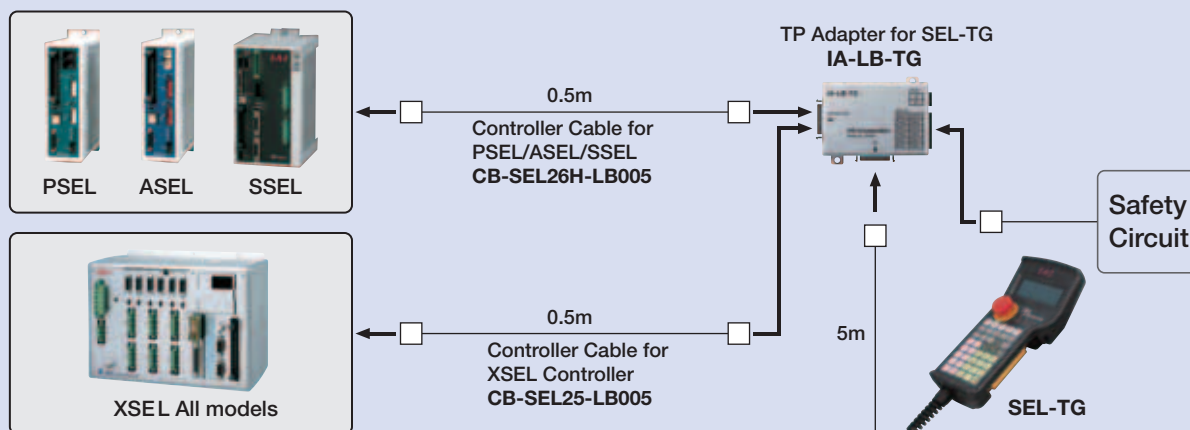
		IA-T-X	IA-T-XD	SEL-T	SEL-TD	SEL-TG
		Standard	With a deadman switch	Standard	Safety Category Compliant	Safety Category Compliant
Program Controllers	PSEL/ASEL/SSEL	○ (Note 1)	○ (Note 1)	○ (Note 1)	○ (Note 1)	◎
	XSEL-P	○	○	○	○	◎
	XSEL-Q	-	-	○	◎	◎
	XSEL-KET	○	○	○	◎	◎
	XSEL-KE	○	○	○	○	○
	XSEL-KETX	○	○	○	○	○
	XSEL-PX	○	○	○	○	◎
	XSEL-QX	-	-	○	◎	◎

* ◎ corresponds to safety category B to 4.

○ does not correspond to safety category, but connection is available.

(Note 1) To connect to PSEL/ASEL/SSEL, a conversion cable is necessary.

SEL-TG wiring drawing



PC software (Windows dedicated)

Model IA-101-X-MW(EB)*

*Set with emergency stop box: IA-101-X-MW-EB

Note:

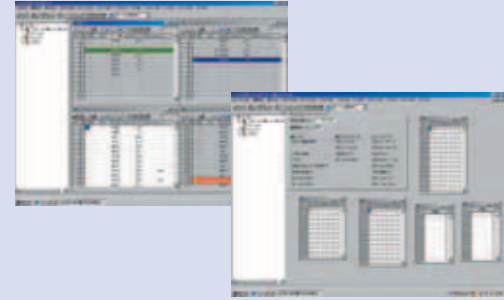
- * Versions older than 3.0.0 cannot be used with XSEL-P/Q.
- * Versions older than 2.0.0 cannot be used with SCARA.
- * Please use IA-101-XA-MW for safety category 4-compliant controller.

Features

A startup support software program offering program/position input function, test operation function, monitoring function, and more.
The functions needed for debugging have been enhanced to help reduce the startup time.

Details

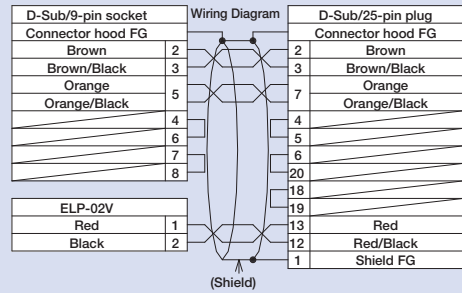
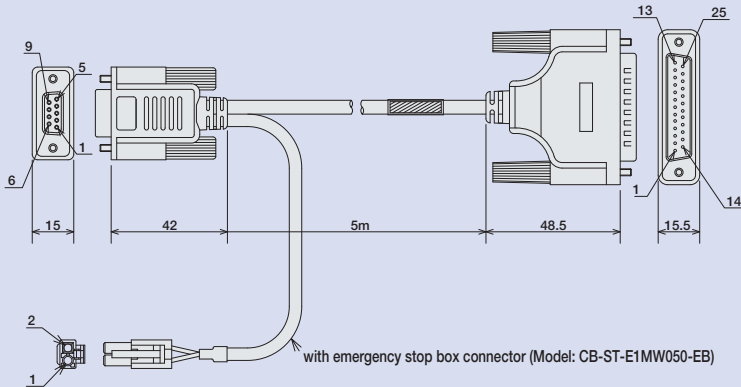
Software (CD-ROM)
(Corresponding to Windows98, NT, 2000, ME, and XP)
PC connecting cable 5m, model: CB-ST-9-25 (with emergency stop box: CB-ST-E1MW050-EB)



PC connecting cable single unit (Model: CB-ST-9-25)

Note:

When ordering a PC connecting cable separately for maintenance purposes, specify model CB-ST-9-25 for only the cable. When ordering a PC connecting cable and an emergency stop box as a set, specify model CB-ST-E1MW050-EB.



Safety Category 4-compatible PC Software

Model IA-101-XA-MW-EB*

Features

A startup support software program offering program/position input function, test operation function, monitoring function, and more.
The functions needed for debugging have been enhanced to help reduce the startup time.
PC connecting cable is compatible to safety category 4 by duplicating the emergency stop circuits.

Details

Software (CD-ROM)
(Accessory) (Corresponding to Windows98, NT, 2000, ME, and XP)
PC connecting cable 5m, model: CB-ST-9-25-Q (with emergency stop box: CB-ST-A1MW050-EB)

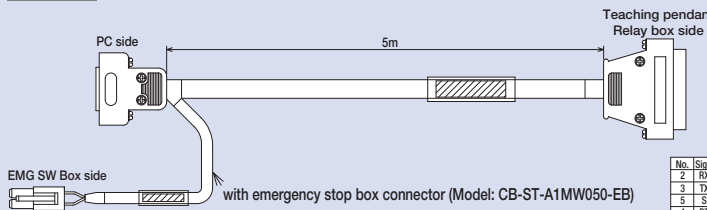
Dimensions

PC connecting cable single unit (Model: CB-ST-9-25-Q)

* Set with emergency stop box cannot be used with XSEL-KE/P/PX.

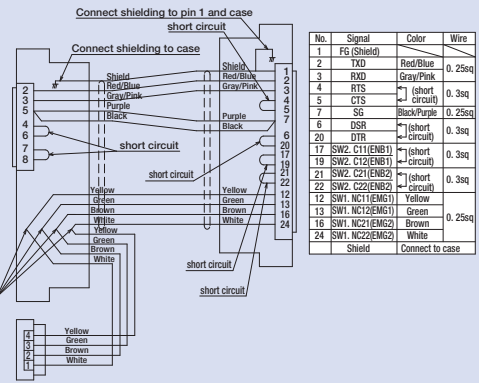
Note:

When ordering a PC connecting cable separately for maintenance purposes, specify model CB-ST-9-25-Q for only the cable. When ordering a PC connecting cable and an emergency stop box as a set, specify model CB-ST-A1MW050-EB.



No.	Signal	Color	Wire
2	R/D	Red/Blue	
3	T/D	Gray/Pink	0.25sq
5	SG	Purple/Black	
4	DTR	(short circuit)	0.3sq
6	DSR	(short circuit)	
7	RTS	(short circuit)	0.3sq
8	CTS	(short circuit)	
	Shield	Connect to case	

No.	Signal	Color	Wire
1	SW1. NC1(EMG1)	White	
2	SW1. NC2(EMG1)	Brown	0.25sq
3	SW1. NC2(EMG2)	Green	
4	SW1. NC2(EMG2)	Yellow	



USB-compatible PC software

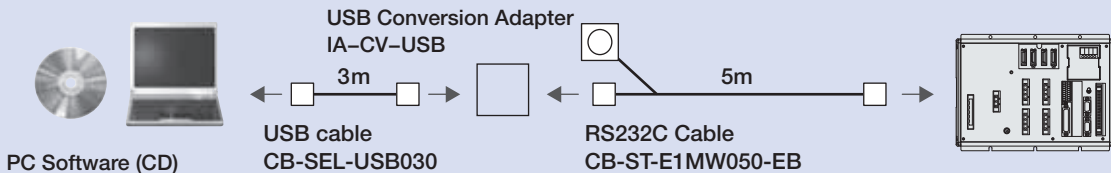
Model IA-101-X-USBW

Features

Software available by PC USB port by connecting a USB conversion adaptor to a RS232C cable.

Details

Software (CD-ROM)
* Corresponding to Windows98, NT, 2000, ME, and XP
PC connecting cable 5m + Emergency stop box + USB conversion adaptor + USB cable 3m



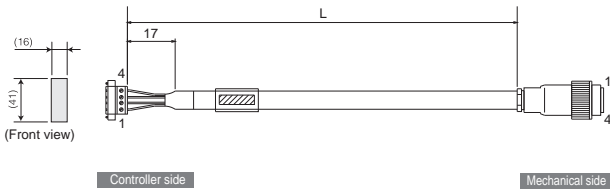
Spare Parts

When you need spare parts after purchasing the product, such as when replacing a cable, refer to the list of models below.

Motor cable / EU motor robot cable

Model **CB-RCC-MA** / **CB-XEU-MA**

* Enter the cable length (L) into . Compatible to a maximum of 20 meters.
Ex.: 080 = 8 m



(Fig.: Motor robot cable CB-XEU-MA , high-flexible, EU version with metal connector)

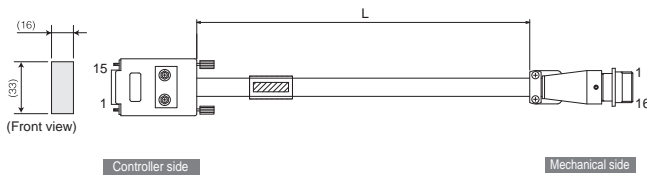
Min. bend radius $r = 50$ mm or larger (when movable type is used)
* Only the robot cable is to be used in a cable track

Wire	Color	Signal	No.	No.	Signal	Color	Wire
0.75sq	Green	PE	1	1	U	Red	0.75sq (crimped)
	Red	U	2	2	V	White	
	White	V	3	3	W	Black	
	Black	W	4	4	PE	Green	

Encoder cable / EU encoder robot cable (for XSEL-KE/KET)

Model **CB-RCBC-PA** / **CB-XEU-PA**

* Enter the cable length (L) into . Compatible to a maximum of 15 meters.
Ex.: 080 = 8 m



(Fig.: Encoder robot cable CB-XEU-PA , high-flexible, EU version with metal connector)

Min. bend radius $r = 50$ mm or larger (when movable type is used)
* Only the robot cable is to be used in a cable track

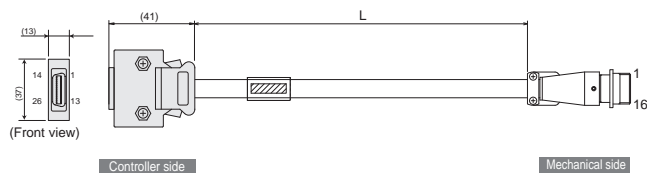
Wire	Color	Signal	No.	No.	Signal	Color	Wire
0.15sq (crimped)	-	-	1	1	SD	Blue	0.15sq (soldered)
	-	-	2	2	SD	Orange	
	-	-	3	3	-	-	
	-	-	4	4	-	-	
	-	-	5	5	-	-	
	-	-	6	6	-	-	
	-	-	7	7	-	-	
	Blue	SD	7	8	-	-	
	Orange	SD	8	9	-	-	
	Black	BAT+	9	10	VCC	Green	
	Yellow	BAT-	10	11	GND	Brown	
	Green	VCC	11	12	BAT+	Black	
	Brown	GND	12	13	BAT-	Yellow	
	Gray	BK-	13	14	-	-	
	Red	BK+	14	15	BK-	Gray	
-	-	15	16	BK+	Red		

The shield is connected to the hood by a clamp. Ground wire and shield braiding. A shield is connected to shield soldered part.

Encoder cable / EU encoder robot cable (for XSEL-P/Q)

Model **CB-RCS2-PA** / **CB-XEU3-PA**

* Enter the cable length (L) into . Compatible to a maximum of 20 meters.
Ex.: 080 = 8 m



(Fig.: Encoder robot cable CB-XEU3-PA , high-flexible, EU version with metal connector)

Min. bend radius $r = 50$ mm or larger (when movable type is used)
* Only the robot cable is to be used in a cable track

Wire	Color	Signal	No.	No.	Signal	Color	Wire
AWG26 (soldered)	-	-	10	1	A	Pink	AWG26 (crimped)
	-	-	11	2	A	Green	
	-	E24V	12	3	B	White	
	Gray/White	0V	13	4	B	Blue/Red	
	Brown/White	LS	26	5	Z	Orange/White	
	-	GLEEP	25	6	Z	Green/White	
	-	OT	24	7	LS+	Brown/White	
	-	RSV	23	8	SD	Blue	
	-	-	9	9	SD	Orange	
	-	-	18	10	BAT+	Black	
	-	-	19	11	BAT-	Yellow	
	Pink	A+	1	12	VCC	Green	
	Purple	A-	2	13	GND	Brown	
	White	B+	3	14	LS-	Gray/White	
	Blue/Red	B-	4	15	BK-	Gray	
	Orange/White	Z+	5	16	BK+	Red	
	Green/White	Z-	6	17	-	-	
	Blue	SRD+	7	18	-	-	
	Orange	SRD-	8	19	-	-	
	Black	BAT+	14	20	-	-	
	Yellow	BAT-	15	21	-	-	
	Green	VCC	16	22	-	-	
Brown	GND	17	-	-	-		
Gray	BKR+	20	-	-	-		
Red	BKR+	21	-	-	-		
-	-	22	-	-	-		

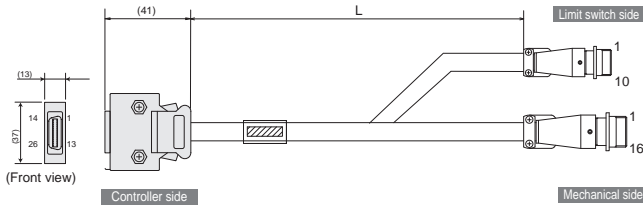
The shield is connected to the hood by a clamp. Ground wire and shield braiding. The shield is connected to the hood by a clamp.

Spare Parts

Rotary dedicated LS encoder cable / EU LS encoder robot cable for RCS2-RT6/RT6R/RT7R/RTC8/RTC10/RTC12/RA13R

Model **CB-RCS2-PLA** / **CB-XEU2-PLA**

* Enter the cable length (L) into . Compatible to a maximum of 30 meters. Ex.: 080 = 8 m



(Fig.: Limit switch encoder robot cable CB-XEU2-PLA , high-flexible, EU version with metal connector)

Min. bend radius $r = 50$ mm or larger (when movable type is used)
* Only the robot cable is to be used in a cable track

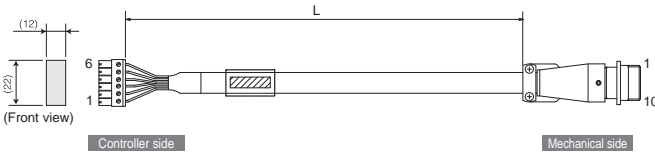
Wire	Color	Signal	No.	No.	Signal	Color	Wire
-	-	-	10	1	E24 V	White/Blue	-
-	-	-	11	2	0 V	White/Yellow	-
White/Orange	E24 V	12	12	4	LS	White/Red	-
White/Green	0 V	13	13	5	CLEEP	White/Black	AWG26 (crimped)
Brown/Blue	LS	26	26	6	OT	White/Purple	-
Brown/Yellow	CLEEP	25	25	7	RSV	White/Gray	-
Brown/Red	OT	24	24	(3/8/9/10)	-	-	-
Brown/Black	RSV	23	23	-	-	-	-
-	-	-	9	-	-	-	-
-	-	-	18	-	-	-	-
-	-	-	19	-	-	-	-
White/Blue	A+	1	1	1	A	White/Red	-
White/Yellow	A-	2	2	2	B	White/Red	-
White/Red	B+	3	3	3	Z	White/Black	-
White/Black	B-	4	4	4	Z	White/Purple	AWG26 (crimped)
White/Purple	Z+	5	5	5	Z	White/Gray	-
White/Gray	Z-	6	6	6	-	-	-
Orange	SRD+	7	7	7	-	-	-
Green	SRD-	8	8	8	-	-	-
Purple	BAT+	14	14	9	SD	Orange	-
Gray	BAT-	15	15	10	SD	Green	-
Red	VCC	16	16	11	BAT+	Purple	-
Black	GND	17	17	12	BAT-	Gray	-
Blue	BKR-	20	20	13	VCC	Red	-
Yellow	BKR+	21	21	14	GND	Black	-
-	-	-	22	15	BK-	Blue	-
-	-	-	-	16	BK+	Yellow	-

The shield is connected to the hood by a clamp. Ground wire and shield braiding. The shield is connected to the hood by a clamp.

LS encoder cable / EU LS robot cable for XSEL-KE/KET when using a homing sensor

Model **CB-RCBC-PLA** / **CB-XEU-LC**

* Enter the cable length (L) into . Compatible to a maximum of 20 meters. Ex.: 080 = 8 m



(Fig.: Limit switch robot cable CB-XEU-LC , high-flexible, EU version with metal connector)

Min. bend radius $r = 50$ mm or larger (when movable type is used)
* Only the robot cable is to be used in a cable track

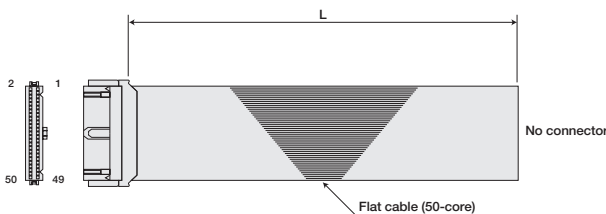
Wire	Color	Signal	No.	No.	Signal	Color	Wire
-	-	-	6	1	24V OUT	Sky blue	-
Sky blue	24VOUT	6	6	2	n	Purple	-
Purple	N	5	5	3	-	-	-
Lime green	LS	4	4	4	LS	Lime green	-
Orange	CREEP	3	3	5	CREEP	Orange	-
Gray	OT	2	2	6	O.T	Gray	-
1B/Sky blue	RSV	1	1	7	RSV	1B/Sky blue	-

Note: "1B" means 1 black dot mark

I/O flat cable (for XSEL-KE/KET/P/Q)

Model **CB-X-PIO**

* Enter the cable length (L) into . Compatible to a maximum of 10 meters. Ex.: 080 = 8 m



Number	Color	Wire	Number	Color	Wire	Number	Color	Wire
1	Brown 1	-	18	Gray 2	-	35	Green 4	-
2	Red 1	-	19	White 2	-	36	Blue 4	-
3	Orange 1	-	20	Black 2	-	37	Purple 4	-
4	Yellow 1	-	21	Brown-3	-	38	Gray 4	-
5	Green 1	-	22	Red 3	-	39	White 4	-
6	Blue 1	-	23	Orange 3	-	40	Black 4	-
7	Purple 1	-	24	Yellow 3	-	41	Brown-5	-
8	Gray 1	Flat cable crimped	25	Green 3	Flat cable crimped	42	Red 5	Flat cable crimped
9	White 1	-	26	Blue 3	-	43	Orange 5	-
10	Black 1	-	27	Purple 3	-	44	Yellow 5	-
11	Brown-2	-	28	Gray 3	-	45	Green 5	-
12	Red 2	-	29	White 3	-	46	Blue 5	-
13	Orange 2	-	30	Black 3	-	47	Purple 5	-
14	Yellow 2	-	31	Brown-4	-	48	Gray 5	-
15	Green 2	-	32	Red 4	-	49	White 5	-
16	Blue 2	-	33	Orange 4	-	50	Black 5	-
17	Purple 2	-	34	Yellow 4	-	-	-	-

RCS2 Series
Extract Cat. No. 0513-E

The information contained in this catalog is subject to change without notice for the purpose of product improvement



Providing quality products
since 1986



IAI Industrieroboter GmbH
Ober der Röth 4
D-65824 Schwalbach / Frankfurt
Germany
Tel.:+49-6196-8895-0
Fax:+49-6196-8895-24
E-Mail: info@IAI-GmbH.de
Internet: <http://www.eu.IAI-GmbH.de>

IAI America Inc.

2690 W. 237th Street, Torrance, CA 90505, U.S.A
Phone: +1-310-891-6015 Fax: +1-310-891-0815

IAI CORPORATION

645-1 Shimizu Hirose, Shizuoka 424-0102, Japan
Phone: +81-543-64-5105 Fax: +81-543-64-5182