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ROBO CYLINDER

230 VAC Servo Motor

RCS2

with dedicated controllers SCON, SSEL and XSEL

RCS2-SA4C

ROBO Cylinder, Slider Type, Actuator Width 40mm, 200-V Servo Motor, Coupling Specification

■Model Specification Items **RCS2** – **SA4C** – □ – **20** – □ – □ – □ – □ – □ – □

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
—	—	I: Incremental specification A: Absolute specification	20: Servo motor 20W	10: 10mm 5: 5mm 2.5:2.5mm	50:50mm ~ 400:400mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	B: Brake FT: Foot bracket HS: Home check sensor NM: Reversed-home specification SR: Slider roller specification SS: Slider spacer

* Refer to p. 31 of the front matter for details on the model specification items.

POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 2.5). This is the maximum acceleration.

Actuator Specifications

■ Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity (Note 1) Horizontal (kg)	Maximum load capacity (Note 1) Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-SA4C-①-20-10-②-③-④-⑤	20	10	4	1	19.6	50 ~ 400 (Set in 50-mm steps)
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	

Explanation of numbers ① Encoder type ② Stroke ③ Applicable controller ④ Cable length ⑤ Options

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 400 (Set in 50-mm steps)
10	665
5	330
2.5	165

(Unit: mm/s)

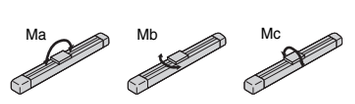
Options

Name	Model	Page
Brake	B	P381
Foot bracket	FT	P383
Home sensor	HS	P385
Reversed-home specification	NM	P385
Slide roller specification	SR	P388
Slide spacer	SS	P388

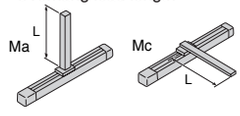
Actuator Specifications

Item	Description
Drive method	Ball screw Ø8mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.1mm or less
Base	Material: Aluminum with special alumite treatment
Allowable load moment	Ma : 2.7N • m Mb : 3.9N • m Mc : 6.8N • m
Overhang load length	Ma direction: 120mm or less, Mb/Mc directions: 120mm or less
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Direction of allowable load moment



Overhang load length

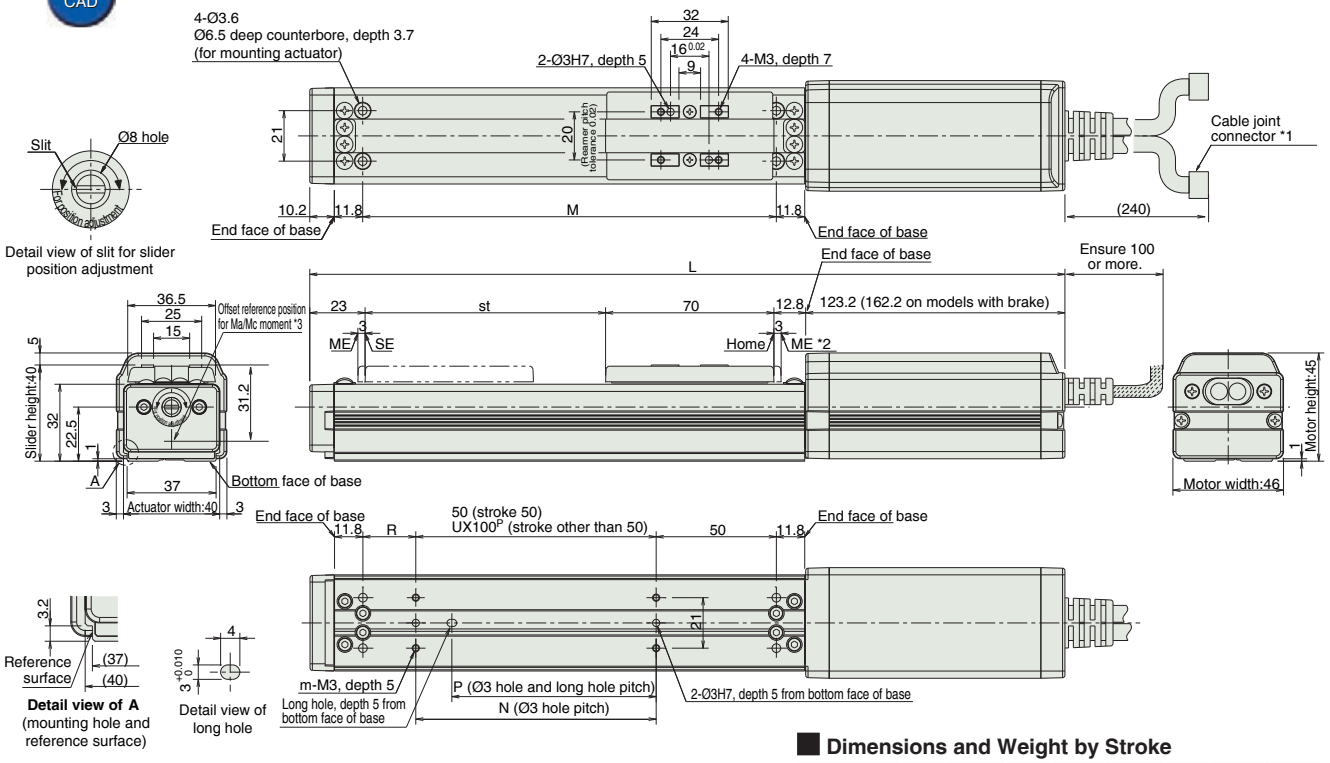


Dimensions

You can download CAD drawings from our website. www.robocylinder.de

2D CAD

*1 Connect the motor/encoder cables. Refer to p. 324 for details on the cables.
*2 The slider moves to the ME during home return. Pay attention to prevent contact between the slider and surrounding parts.
ME: Mechanical end SE: Stroke end
*3 Reference position for calculating Ma moment



Dimensions and Weight by Stroke

Stroke		50	100	150	200	250	300	350	400
L	Without 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

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-20①-NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC (XSEL-P/Q only)	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-20①-NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-20①-N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

RCS2-SA5C

ROBO Cylinder, Slider Type, Actuator Width 52mm, 200-V Servo Motor, Coupling Specification

■Model Specification Items **RCS2** — **SA5C** — □ — **20** — □ — □ — □ — □ — □ — □

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
RCS2	SA5C	I: Incremental specification A: Absolute specification	20: Servo motor 20W	12: 12mm 6: 6mm 3: 3mm	50:50mm ~ 500:500mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	B: Brake FT: Foot bracket HS: Home check sensor NM: Reversed-home specification SR: Slider roller specification

* Refer to p. 31 of the front matter for details on the model specification items.

POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 3). This is the maximum acceleration.

Actuator Specifications

■ Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity (Note 1) Horizontal (kg)	Maximum load capacity (Note 1) Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-SA5C-①-20-12-②-③-④-⑤	20	12	4	1	16.7	50 ~ 500 (Set in 50-mm steps)
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	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 450 (Set in 50-mm steps)	500 (mm)
12	800	760
6	400	360
3	200	190

(Unit: mm/s)

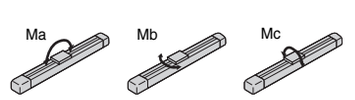
Options

Name	Model	Page
Brake	B	P381
Foot bracket	FT	P383
Home sensor	HS	P385
Reversed-home specification	NM	P385
Slide roller specification	SR	P388

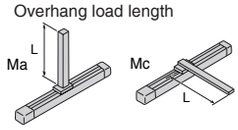
Actuator Specifications

Item	Description
Drive method	Ball screw Ø10mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.1mm or less
Base	Material: Aluminum with special alumite treatment
Allowable load moment	Ma : 4.9N • m Mb : 6.8N • m Mc : 11.7N • m
Overhang load length	Ma direction: 150mm or less, Mb/Mc directions: 150mm or less
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Direction of allowable load moment



Overhang load length



Dimensions

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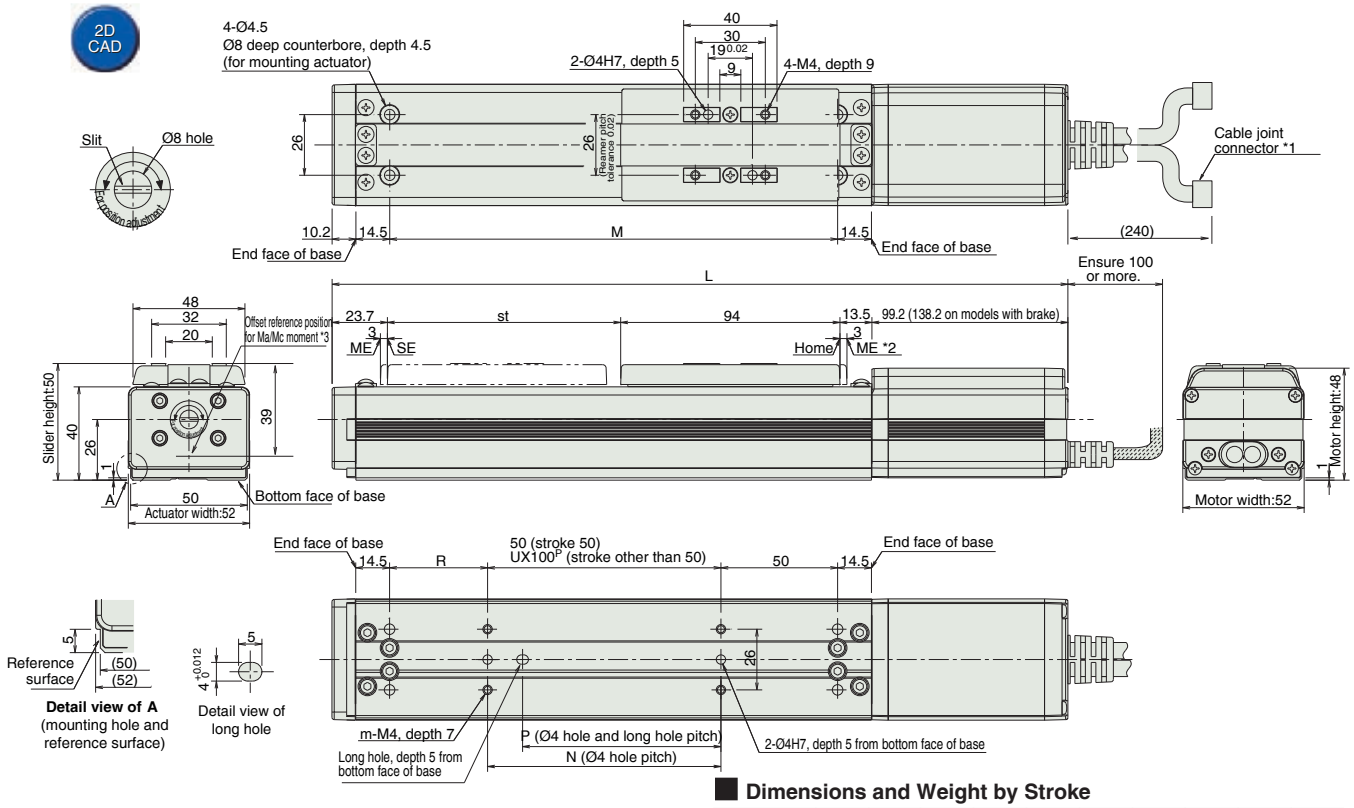


Dimensions and Weight by Stroke

Stroke		50	100	150	200	250	300	350	400	450	500
L	Without brake	280.4	330.4	380.4	430.4	480.4	530.4	580.4	630.4	680.4	730.4
	With brake	319.4	369.4	419.4	469.4	519.4	569.4	619.4	669.4	719.4	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

*1 Connect the motor/encoder cables. Refer to p. 324 for details on the cables.
*2 The slider moves to the ME during home return. Pay attention to prevent contact between the slider and surrounding parts.
ME: Mechanical end SE: Stroke end
*3 Reference position for calculating Ma moment
*4 If the actuator is affixed using only the mounting holes provided in the top face of the base, the base may twist to cause abnormal sliding of the slider or generate noise. When the mounting holes in the top face of the base are used, keep the stroke to 200 mm or less.

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-20 ① -NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-20 ① -NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-20 ① -N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

RCS2-SA6C

ROBO Cylinder, Slider Type, Actuator Width 58mm, 200-V Servo Motor, Coupling Specification

■Model Specification Items **RCS2** — **SA6C** — □ — **30** — □ — □ — □ — □ — □ — □

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
RCS2	SA6C	I: Incremental specification A: Absolute specification	30: Servo motor 30W	12: 12mm 6: 6mm 3: 3mm	50:50mm 〜 600:600mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	B: Brake FT: Foot bracket HS: Home check sensor NM: Reversed-home specification SR: Slider roller specification

* Refer to p. 31 of the front matter for details on the model specification items.

POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 3). This is the maximum acceleration.

Actuator Specifications

■ Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity (Note 1) Horizontal (kg)	Maximum load capacity (Note 1) Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-SA6C-①-30-12-②-③-④-⑤	30	12	6	1.5	24.2	50 ~ 600 (Set in 50-mm steps)
RCS2-SA6C-①-30-6-②-③-④-⑤		6	12	3	48.4	
RCS2-SA6C-①-30-3-②-③-④-⑤		3	18	6	96.8	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 450 (Set in 50-mm steps)	500 (mm)	550 (mm)	600 (mm)
12	800	760	640	540
6	400	380	320	270
3	200	190	160	135

(Unit: mm/s)

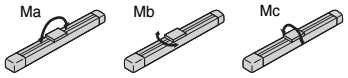
Options

Name	Model	Page
Brake	B	P381
Foot bracket	FT	P383
Home sensor	HS	P385
Reversed-home specification	NM	P385
Slide roller specification	SR	P388

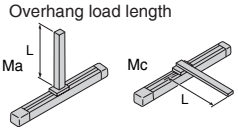
Actuator Specifications

Item	Description
Drive method	Ball screw Ø10mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.1mm or less
Base	Material: Aluminum with special alumite treatment
Allowable load moment	Ma : 8.9N • m Mb : 12.7N • m Mc : 18.6N • m
Overhang load length	Ma direction: 220mm or less, Mb/Mc directions: 220mm or less
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Direction of allowable load moment



Overhang load length



Dimensions

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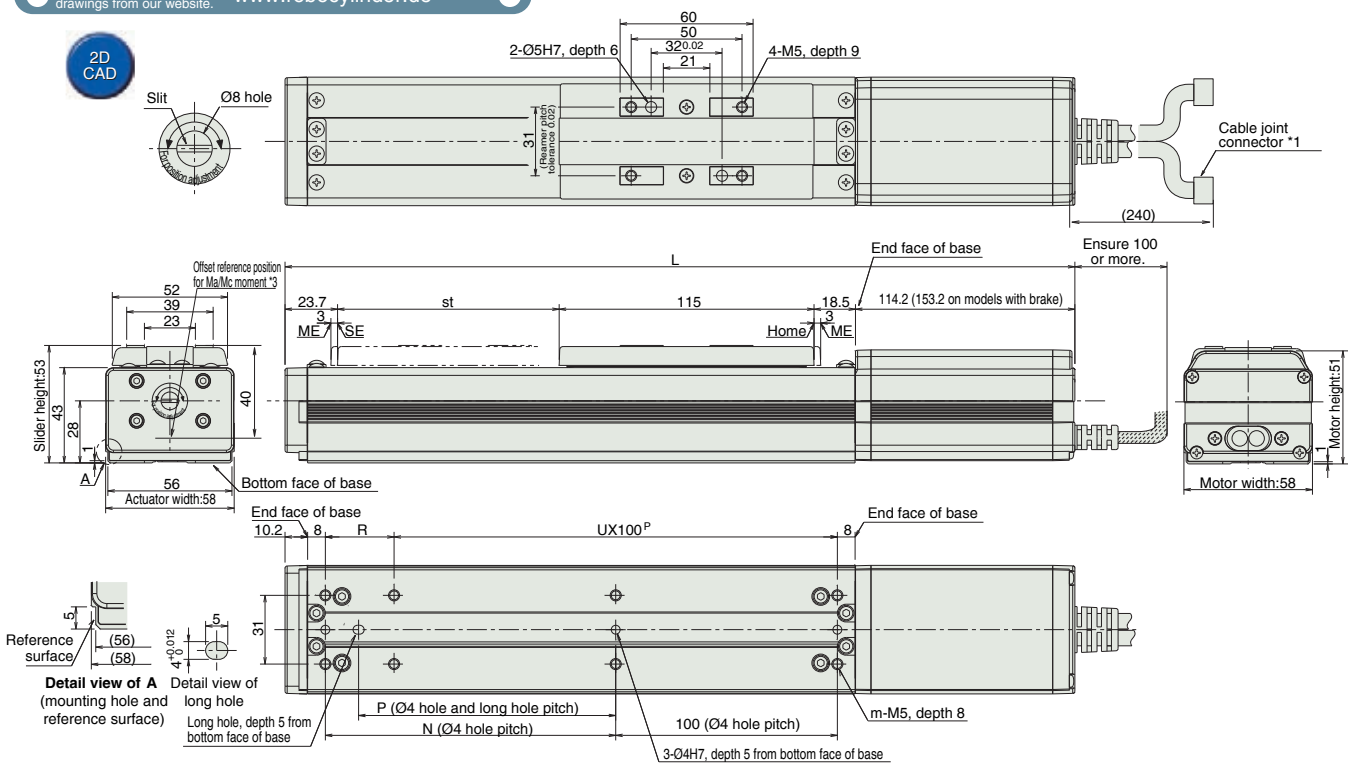


*1 Connect the motor/encoder cables. Refer to p. 324 for details on the cables.
*2 The slider moves to the ME during home return. Pay attention to prevent contact between the slider and surrounding parts.
ME: Mechanical end SE: Stroke end
*3 Reference position for calculating Ma moment

Dimensions and Weight by Stroke

Stroke		50	100	150	200	250	300	350	400	450	500	550	600
L	Without 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

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-30 ① -NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-30 ① -NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-30 ① -N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

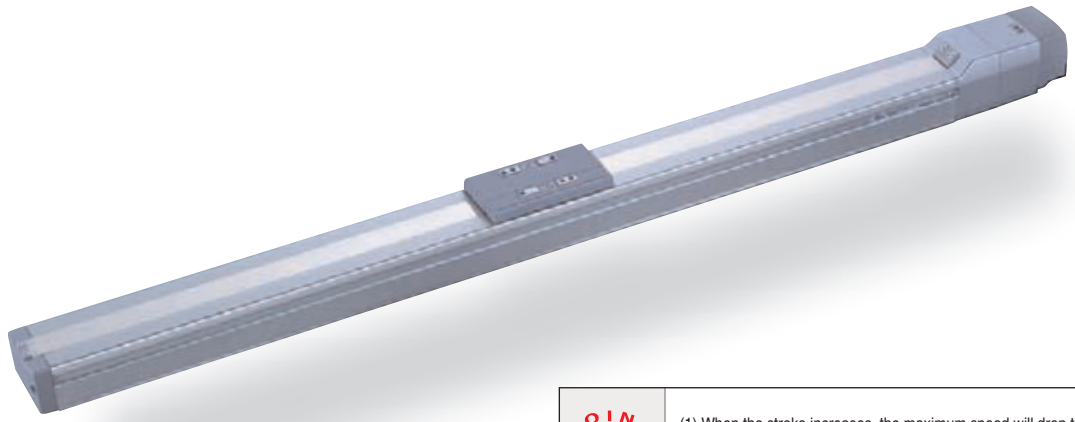
RCS2-SA7C

ROBO Cylinder, Slider Type, Actuator Width 73mm, 200-V Servo Motor, Coupling Specification

■Model Specification Items **RCS2 — SA7C — □ — 60 — □ — □ — □ — □ — □ — □**

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
RCS2	SA7C	I: Incremental specification A: Absolute specification	60: Servo motor 60W	16: 16mm 8: 8mm 4: 4mm	100:100mm ~ 800:800mm (Set in 100-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	BE : Brake (wire taken out from end) BL : Brake (wire taken out from left) BR : Brake (wire taken out from right) NM : Reversed-home specification SR : Slider roller specification

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 4). This is the maximum acceleration.

Actuator Specifications

■ Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity (Note 1) Horizontal (kg)	Maximum load capacity (Note 1) Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-SA7C-①-60-16-②-③-④-⑤	60	16	12	3	63.8	100 ~ 800 (Set in 100-mm steps)
RCS2-SA7C-①-60-8-②-③-④-⑤		8	25	6	127.5	
RCS2-SA7C-①-60-4-②-③-④-⑤		4	40	12	255.0	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■ Stroke and Maximum Speed

Lead \ Stroke	100 ~ 600 (Set in 100-mm steps)	700 (mm)	800 (mm)
16	800	640	480
8	400	320	240
4	200	160	120

(Unit: mm/s)

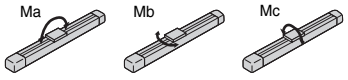
Options

Name	Model	Page
Brake (Cable exiting the end)	BE	P381
Brake (Cable exiting the left)	BL	P381
Brake (Cable exiting the right)	BR	P381
Reversed-home specification	NM	P385
Slide roller specification	SR	P388

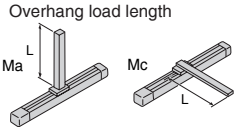
Actuator Specifications

Item	Description
Drive method	Ball screw Ø12mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.1mm or less
Base	Material: Aluminum with special alumite treatment
Allowable load moment	Ma : 13.9N • m Mb : 19.9N • m Mc : 38.3N • m
Overhang load length	Ma direction: 230mm or less, Mb/Mc directions: 230mm or less
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Direction of allowable load moment



Overhang load length



Dimensions

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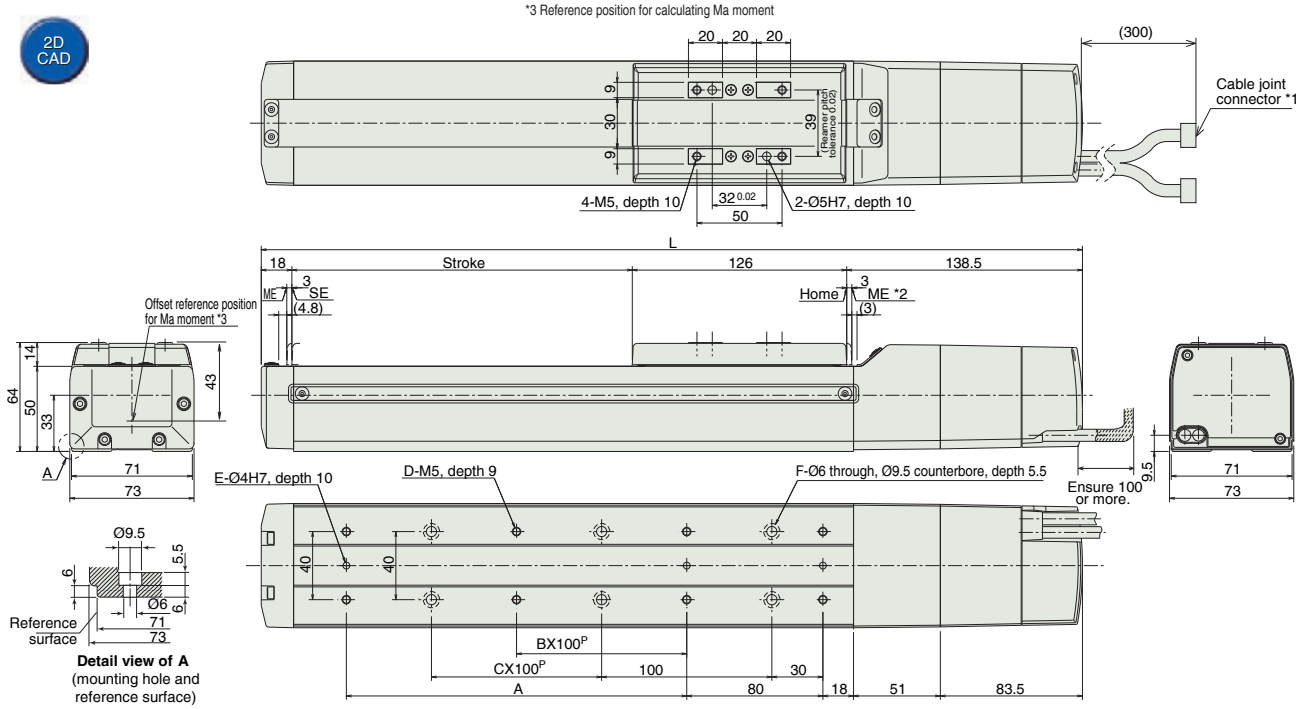
2D CAD

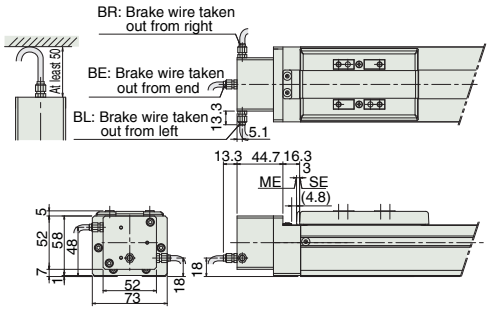
*1 Connect the motor/encoder cables. Refer to p. 324 for details on the cables.
*2 The slider moves to the ME during home return. Pay attention to prevent contact between the slider and surrounding parts.
ME: Mechanical end SE: Stroke end
*3 Reference position for calculating Ma moment



Detail view of A
(mounting hole and reference surface)

Brake dimensions

* Models with brake have their overall length extended by 43 mm (or 56.3 mm if the wire is taken out from the end) and weight increased by 0.6 kg.



Dimensions and Weight by Stroke

Stroke	100	200	300	400	500	600	700	800
L	382.5	482.5	582.5	682.5	782.5	882.5	982.5	1082.5
A	100	200	300	400	500	600	700	800
B	0	1	2	3	4	5	6	7
C	0	1	2	3	4	5	6	7
D	6	8	10	12	14	16	18	20
E	3	3	3	3	3	3	3	3
F	4	6	8	10	12	14	16	18
Weight (kg)	2.6	3.0	3.5	3.9	4.4	4.8	5.3	5.7

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-60 ① -NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-60 ① -NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-60 ① -N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

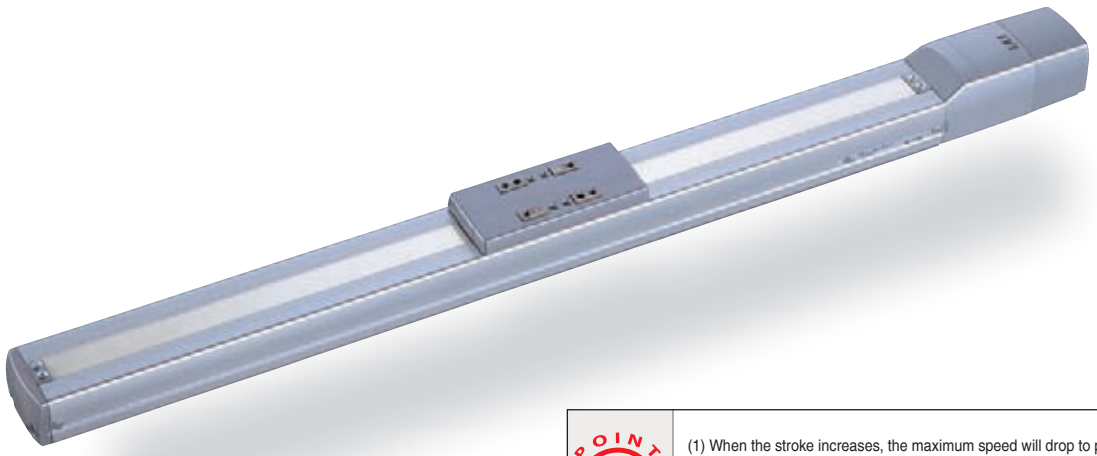
RCS2-SS7C

ROBO Cylinder, Slider Type, Actuator Width 60mm, 200-V Servo Motor, Coupling Specification
Iron Base Type

■Model Specification Items **RCS2** — **SS7C** — □ — **60** — □ — □ — □ — □ — □ — □

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
RCS2	SS7C	I: Incremental specification A: Absolute specification	60: Servo motor 60W	12: 12mm 6: 6mm	100:100mm ~ 600:600mm (Set in 100-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	B : Brake NM : Reversed-home specification SR : Slider roller specification

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G . This is the maximum acceleration.

Actuator Specifications

■Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity (Note 1) Horizontal (kg)	Maximum load capacity (Note 1) Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-SS7C-①-60-12-②-③-④-⑤	60	12	15	4	85	100 ~ 600 (Set in 100-mm steps)
RCS2-SS7C-①-60-6-②-③-④-⑤		6	30	8	170	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■Stroke and Maximum Speed

Lead \ Stroke	100 ~ 500 (Set in 100-mm steps)	600 (mm)
12	600	470
6	300	230

(Unit: mm/s)

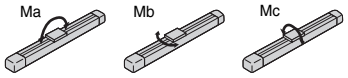
Options

Name	Model	Page
Brake	B	P381
Reversed-home specification	NM	P385
Slide roller specification	SR	P388

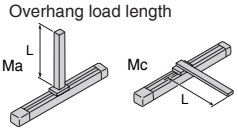
Actuator Specifications

Item	Description
Drive method	Ball screw Ø10mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.05mm or less
Base	Material: Special alloy steel
Allowable load moment	Ma : 14.7N • m Mb : 14.7N • m Mc : 33.3N • m
Overhang load length	Ma direction: 300mm or less, Mb/Mc directions: 300mm or less
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Direction of allowable load moment



Overhang load length

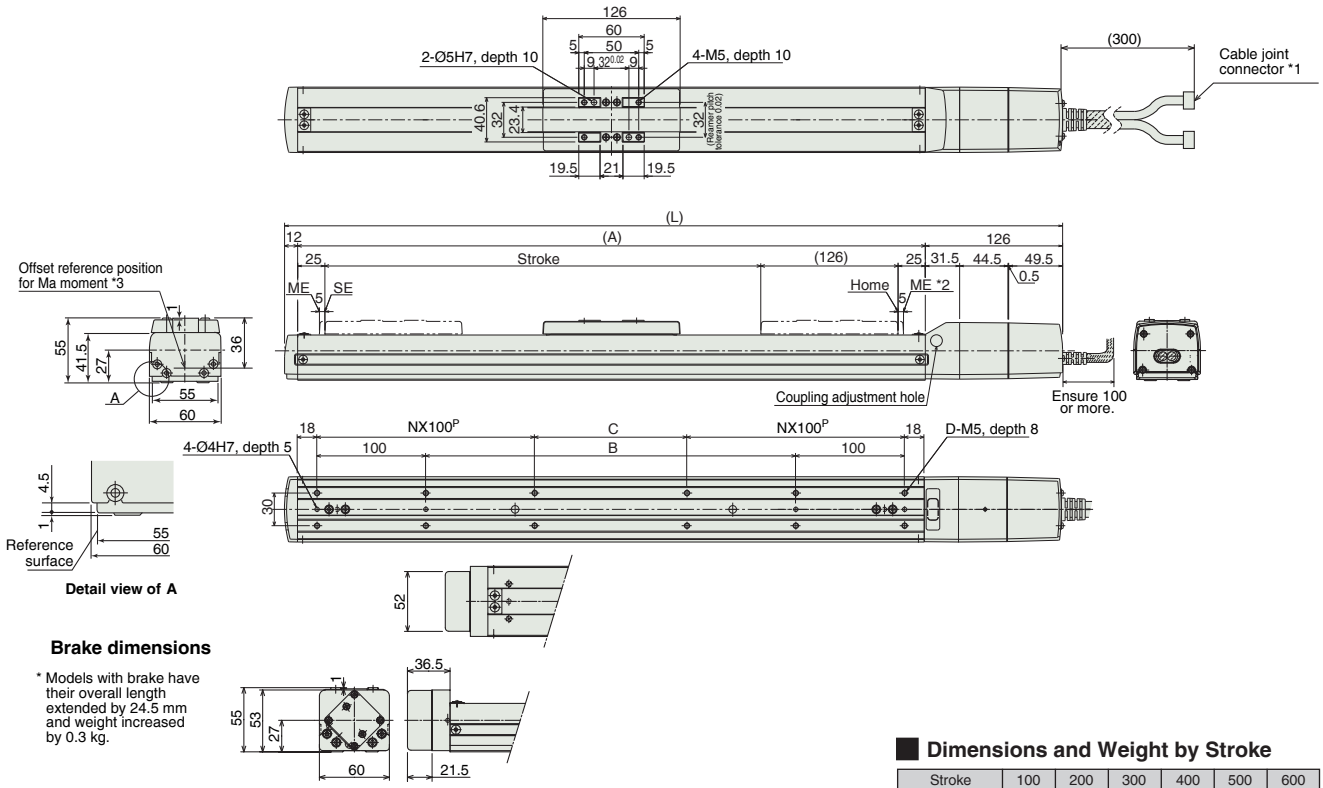


Dimensions

You can download CAD drawings from our website. www.robocylinder.de

2D CAD

*1 Connect the motor/encoder cables. Refer to p. 324 for details on the cables.
*2 The slider moves to the ME during home return. Pay attention to prevent contact between the slider and surrounding parts.
ME: Mechanical end SE: Stroke end
*3 Reference position for calculating Ma moment



Brake dimensions

* Models with brake have their overall length extended by 24.5 mm and weight increased by 0.3 kg.

Dimensions and Weight by Stroke

Stroke	100	200	300	400	500	600
L	414	514	614	714	814	914
A	276	376	476	576	676	776
B	40	140	240	340	440	540
C	40	140	40	140	40	140
D	8	8	12	12	16	16
E	1	1	2	2	3	3
Weight (kg)	3.2	3.8	4.5	5.1	5.8	6.4

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-60 ① -NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-60 ① -NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-60 ① -N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

RCS2-SS8C

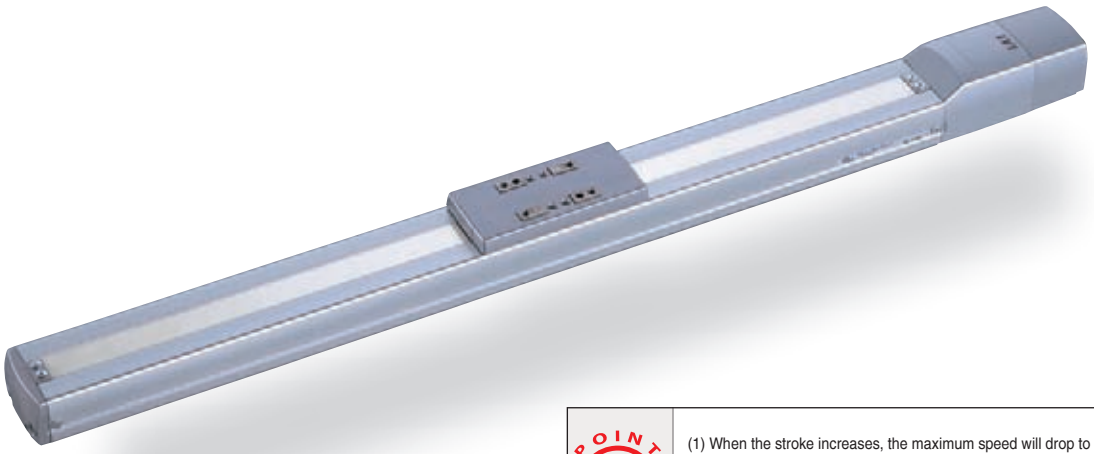
ROBO Cylinder, Slider Type, Actuator Width 80mm, 200-V Servo Motor, Coupling Specification
Iron Base Type

■Model Specification Items **RCS2 — SS8C — □ — □ — □ — □ — □ — □ — □ — □ — □**

Series — Type — Encoder type — Motor type — Lead — Stroke — Applicable controller — Cable length — Options

- Encoder type: I: Incremental specification; A: Absolute specification
- Motor type: 100: Servo motor 100W; 150: Servo motor 150W
- Lead: 20: 20mm; 10: 10mm
- Stroke: 100:100mm ~ 1000:1000mm (Set in 100-mm steps)
- Applicable controller: T1 : XSEL-J/K; T2 : SCON, SSEL, XSEL-P/Q
- Cable length: N : No cable; P : 1m; S : 3m; M : 5m; X□□ : Specified length; R□□ : Robot cable
- Options: B : Brake; NM : Reversed-home specification; SR : Slider roller specification

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G . This is the maximum acceleration.

Actuator Specifications

■ Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity (Note 1) Horizontal (kg)	Maximum load capacity (Note 1) Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-SS8C-①-100-20-②-③-④-⑤	100	20	20	4	84.9	100 ~ 1000 (Set in 100-mm steps)
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	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■ Stroke and Maximum Speed

Lead \ Stroke	100 ~ 600 (Set in 100-mm steps)	700 (mm)	800 (mm)	900 (mm)	1000 (mm)
20	1000	960	765	625	515
10	500	480	380	310	255

(Unit: mm/s)

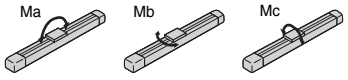
Options

Name	Model	Page
Brake	B	P381
Reversed-home specification	NM	P385
Slide roller specification	SR	P388

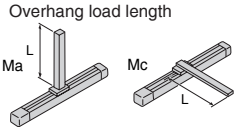
Actuator Specifications

Item	Description
Drive method	Ball screw Ø16mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.05mm or less
Base	Material: Special alloy steel
Allowable load moment	Ma : 36.3N • m Mb : 36.3N • m Mc : 77.4N • m
Overhang load length	Ma direction: 450mm or less, Mb/Mc directions: 450mm or less
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Direction of allowable load moment



Overhang load length

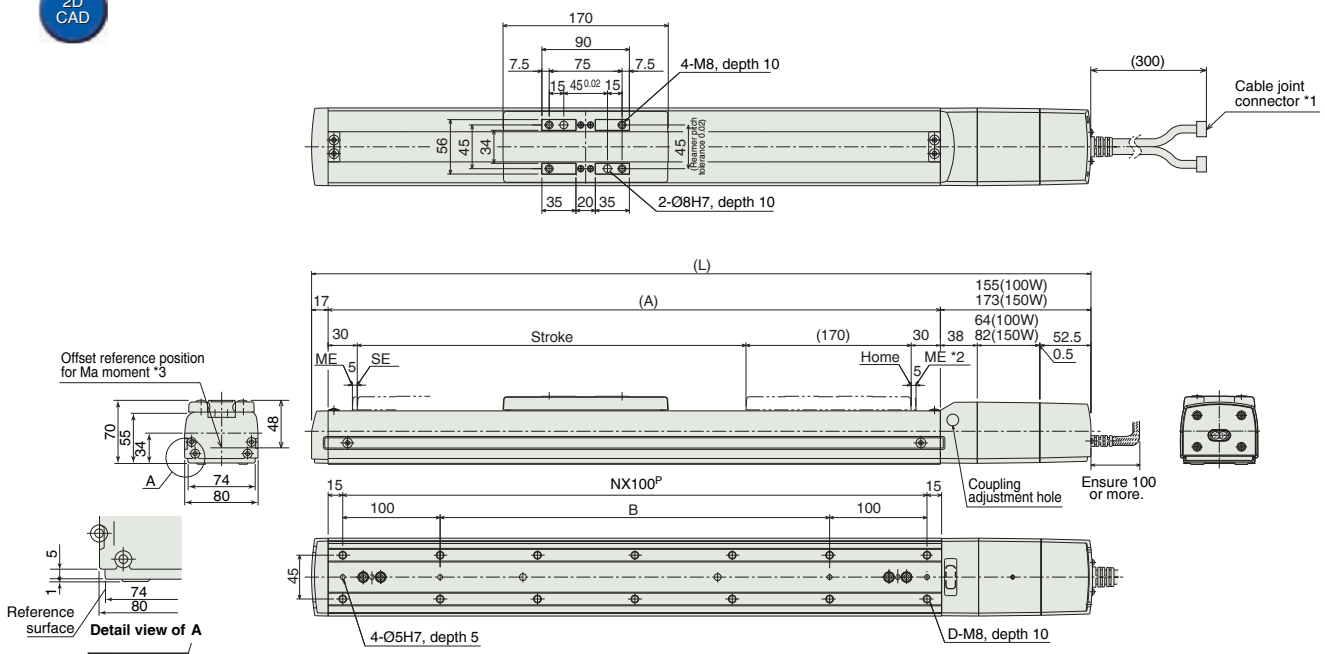


Dimensions

You can download CAD drawings from our website. www.robocylinder.de

2D CAD

*1 Connect the motor/encoder cables. Refer to p. 324 for details on the cables.
*2 The slider moves to the ME during home return. Pay attention to prevent contact between the slider and surrounding parts.
ME: Mechanical end SE: Stroke end
*3 Reference position for calculating Ma moment



Brake dimensions

* Models with brake have their overall length extended by 26 mm and weight increased by 0.5 kg.

Dimensions and Weight by Stroke

Stroke	100	200	300	400	500	600	700	800	900	1000
L (100W)	502	602	702	802	902	1002	1102	1202	1302	1402
L (150W)	520	620	720	820	920	1020	1120	1220	1320	1420
A	330	430	530	630	730	830	930	1030	1130	1230
B	100	200	300	400	500	600	700	800	900	1000
D	8	10	12	14	16	18	20	22	24	26
N	3	4	5	6	7	8	9	10	11	12
Weight (kg)	6.5	7.6	8.7	9.8	10.9	12.0	13.1	14.2	15.3	16.4

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-100①-NP-2- ② SCON- C-150①-NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-100①-NP-2- ② SSEL- C-1-150①-NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-100①-N1-EEE-2- ② XSEL- ③ -1-150①-N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

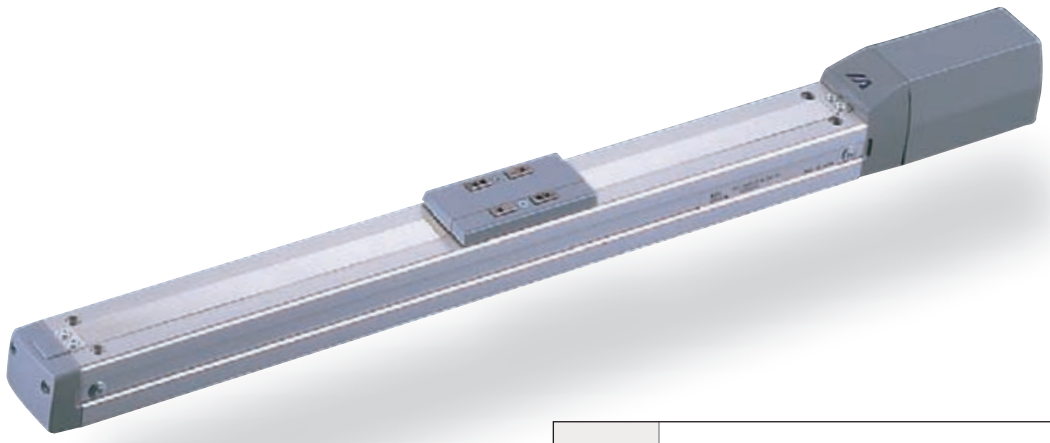
RCS2-SA4D

ROBO Cylinder, Slider Type, Actuator Width 40mm, 200-V Servo Motor, Built-In (Direct-Coupled) Motor Specification

■Model Specification Items **RCS2** — **SA4D** — □ — **20** — □ — □ — □ — □ — □

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
RCS2	SA4D	I: Incremental specification A: Absolute specification	20: Servo motor 20W	10: 10mm 5: 5mm 2.5:2.5mm	50:50mm 〜 300:300mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	BE : Brake (wire taken out from end) BL : Brake (wire taken out from left) BR : Brake (wire taken out from right) NM : Reversed-home specification

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 2.5). This is the maximum acceleration.

Actuator Specifications

■Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity (Note 1) Horizontal (kg)	Maximum load capacity (Note 1) Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-SA4D-①-20-10-②-③-④-⑤	20	10	4	1	19.6	50 ~ 300 (Set in 50-mm steps)
RCS2-SA4D-①-20-5-②-③-④-⑤		5	6	2.5	39.2	
RCS2-SA4D-①-20-2.5-②-③-④-⑤		2.5	8	4.5	78.4	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■Stroke and Maximum Speed

Lead \ Stroke	50 ~ 300 (Set in 50-mm steps)
12	665
6	330
3	165

(Unit: mm/s)

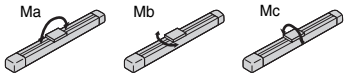
Options

Name	Model	Page
Brake (Cable exiting the end)	BE	P381
Brake (Cable exiting the left)	BL	P381
Brake (Cable exiting the right)	BR	P381
Reversed-home specification	NM	P385

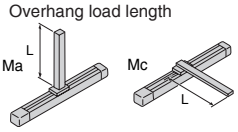
Actuator Specifications

Item	Description
Drive method	Ball screw Ø8mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.1mm or less
Base	Material: Aluminum with special alumite treatment
Allowable load moment	Ma : 2.7N • m Mb : 3.9N • m Mc : 6.8N • m
Overhang load length	Ma direction: 120mm or less, Mb/Mc directions: 120mm or less
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Direction of allowable load moment



Overhang load length

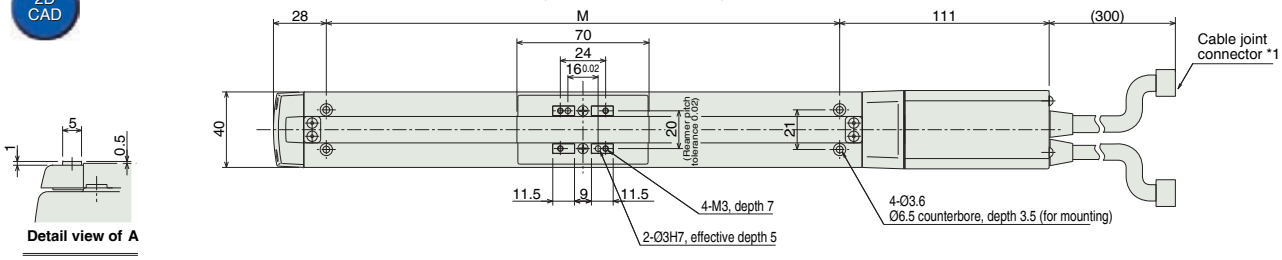


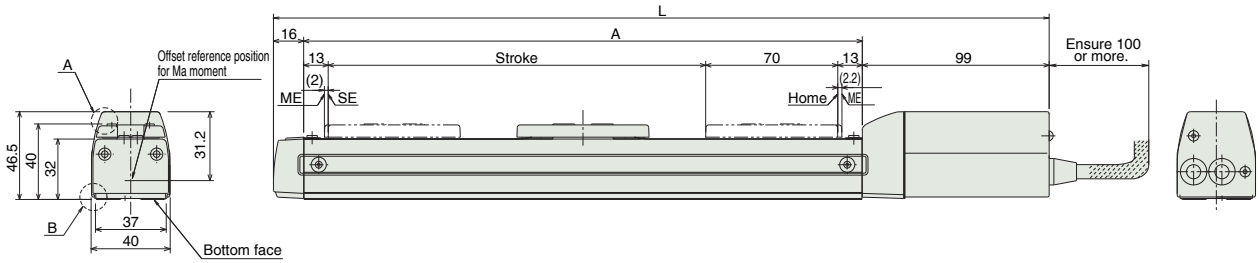
Dimensions

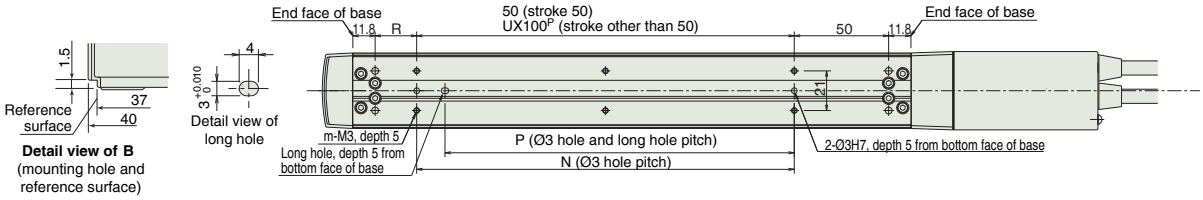
You can download CAD drawings from our website. www.robocylinder.de

2D CAD

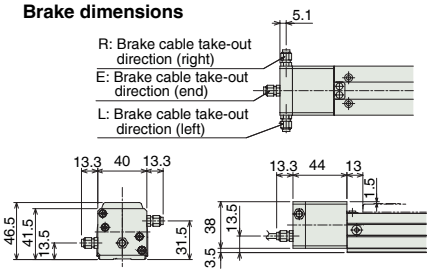
*1 Connect the motor/encoder cables. Refer to p. 324 for details on the cables.
*2 The slider moves to the ME during home return. Pay attention to prevent contact between the slider and surrounding parts.
ME: Mechanical end SE: Stroke end
*3 Reference position for calculating Ma moment
*4 If the actuator is affixed using only the mounting holes provided in the top face of the base, the base may twist to cause abnormal sliding of the slider or generate noise. When the mounting holes in the top face of the base are used, keep the stroke to 200 mm or less.







Brake dimensions



* Models with brake have their overall length (L) extended by 28 mm (or 41.3 mm if the wire is taken out from the end) and weight increased by 0.2 kg.

Dimensions and 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

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-20 ① -NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-20 ① -NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-20 ① -N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

RCS2-SA5D

ROBO Cylinder, Slider Type, Actuator Width 52mm, 200-V Servo Motor, Built-In (Direct-Coupled) Motor Specification

■Model Specification Items **RCS2 — SA5D — □ — 20 — □ — □ — □ — □ — □ — □**

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
RCS2	SA5D	I: Incremental specification A: Absolute specification	20: Servo motor 20W	12: 12mm 6: 6mm 3: 3mm	50:50mm ~ 500:500mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	BE : Brake (wire taken out from end) BL : Brake (wire taken out from left) BR : Brake (wire taken out from right) NM : Reversed-home specification SR : Slider roller specification

* Refer to p. 31 of the front matter for details on the model specification items.

POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 3). This is the maximum acceleration.

Actuator Specifications

■Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity (Note 1) Horizontal (kg)	Maximum load capacity (Note 1) Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-SA5D-①-20-12-②-③-④-⑤	20	12	4	1	16.7	50 ~ 500 (Set in 50-mm steps)
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	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■Stroke and Maximum Speed

Lead \ Stroke	50 ~ 450 (Set in 50-mm steps)	500 (mm)
12	800	760
6	400	380
3	200	190

(Unit: mm/s)

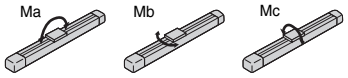
Options

Name	Model	Page
Brake (Cable exiting the end)	BE	P381
Brake (Cable exiting the left)	BL	P381
Brake (Cable exiting the right)	BR	P381
Reversed-home specification	NM	P385
Slide roller specification	SR	P388

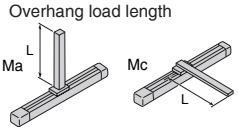
Actuator Specifications

Item	Description
Drive method	Ball screw Ø10mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.1mm or less
Base	Material: Aluminum with special alumite treatment
Allowable load moment	Ma : 4.9N • m Mb : 6.8N • m Mc : 11.7N • m
Overhang load length	Ma direction: 150mm or less, Mb/Mc directions: 150mm or less
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Direction of allowable load moment



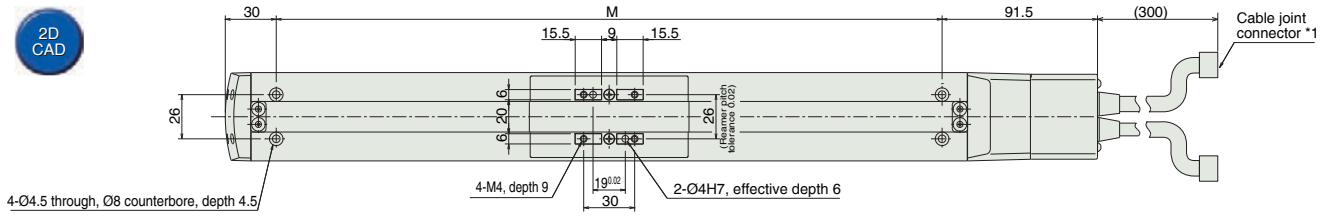
Overhang load length

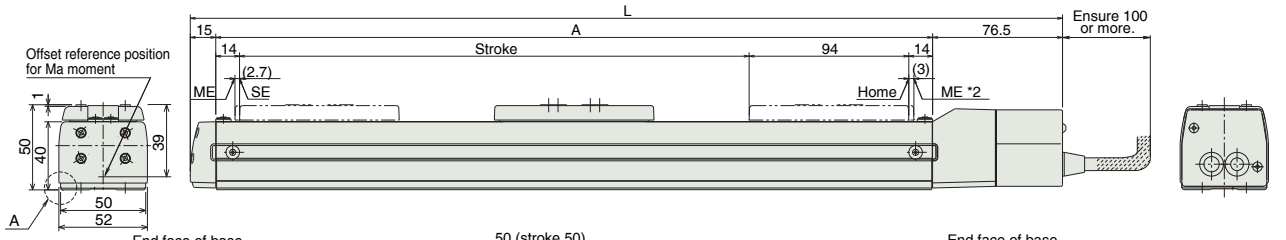


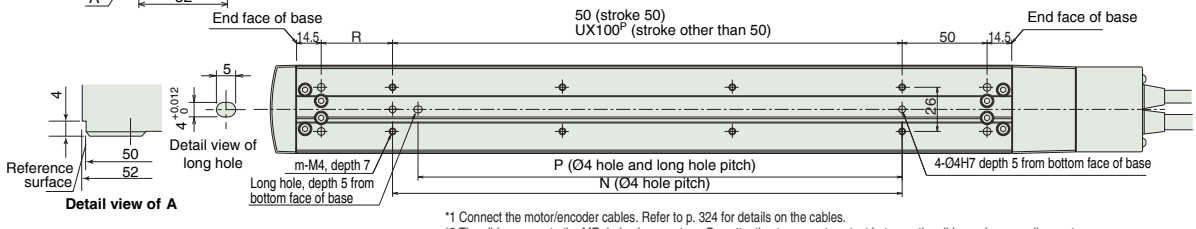
Dimensions

You can download CAD drawings from our website. www.robocylinder.de

2D CAD

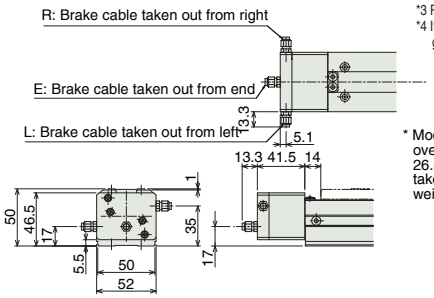






*1 Connect the motor/encoder cables. Refer to p. 324 for details on the cables.
*2 The slider moves to the ME during home return. Pay attention to prevent contact between the slider and surrounding parts.
ME: Mechanical end SE: Stroke end
*3 Reference position for calculating Ma moment
*4 If the actuator is affixed using only the mounting holes provided in the top face of the base, the base may twist to cause abnormal sliding of the slider or generate noise. When the mounting holes in the top face of the base are used, keep the stroke to 200 mm or less.

Brake dimensions



* Models with brake have their overall length (L) extended by 26.5 mm (or 39.8 mm if the wire is taken out from the end) and weight increased by 0.3 kg.

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)	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-20 ① -NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-20 ① -NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-20 ① -N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

RCS2-SA6D

ROBO Cylinder, Slider Type, Actuator Width 58mm, 200-V Servo Motor, Built-In (Direct-Coupled) Motor Specification

■Model Specification Items **RCS2** — **SA6D** — □ — **30** — □ — □ — □ — □ — □ — □

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
RCS2	SA6D	I: Incremental specification A: Absolute specification	30: Servo motor 30W	12: 12mm 6: 6mm 3: 3mm	50:50mm ~ 600:600mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	BE : Brake (wire taken out from end) BL : Brake (wire taken out from left) BR : Brake (wire taken out from right) NM : Reversed-home specification SR : Slider roller specification

* Refer to p. 31 of the front matter for details on the model specification items.

POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 3). This is the maximum acceleration.

Actuator Specifications

■ Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity (Note 1) Horizontal (kg)	Maximum load capacity (Note 1) Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-SA6D-①-30-12-②-③-④-⑤	30	12	6	1.5	24.2	50 ~ 600 (Set in 50-mm steps)
RCS2-SA6D-①-30-6-②-③-④-⑤		6	12	3	48.4	
RCS2-SA6D-①-30-3-②-③-④-⑤		3	18	6	96.8	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 450 (Set in 50-mm steps)	500 (mm)	550 (mm)	600 (mm)
12	800	760	640	540
6	400	380	320	270
3	200	190	160	135

(Unit: mm/s)

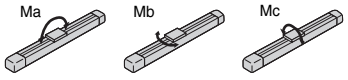
Options

Name	Model	Page
Brake (Cable exiting the end)	BE	P381
Brake (Cable exiting the left)	BL	P381
Brake (Cable exiting the right)	BR	P381
Reversed-home specification	NM	P385
Slide roller specification	SR	P388

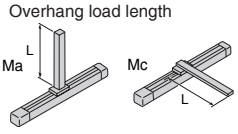
Actuator Specifications

Item	Description
Drive method	Ball screw Ø10mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.1mm or less
Base	Material: Aluminum with special alumite treatment
Allowable load moment	Ma : 8.9N • m Mb : 12.7N • m Mc : 18.6N • m
Overhang load length	Ma direction: 220mm or less, Mb/Mc directions: 220mm or less
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Direction of allowable load moment



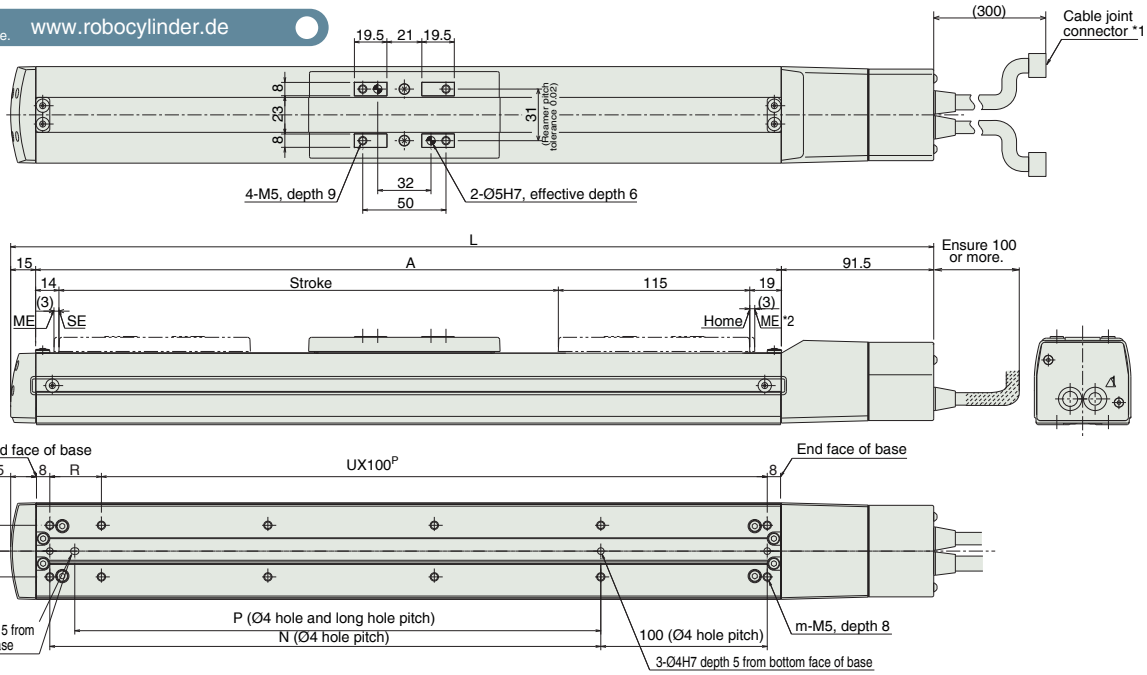
Overhang load length



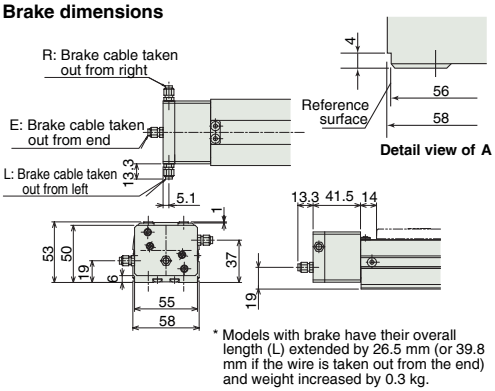
Dimensions

You can download CAD drawings from our website. www.robocylinder.de

2D CAD



Brake dimensions



* Models with brake have their overall length (L) extended by 26.5 mm (or 39.8 mm if the wire is taken out from the end) and weight increased by 0.3 kg.

*1 Connect the motor/encoder cables. Refer to p. 324 for details on the cables.
*2 The slider moves to the ME during home return. Pay attention to prevent contact between the slider and surrounding parts.
ME: Mechanical end SE: Stroke end
*3 Reference position for calculating Ma moment

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)	1.3	1.5	1.7	1.9	2.1	2.3	2.5	2.7	2.9	3.1	3.3	3.5

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-30 ① -NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-30 ① -NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-30 ① -N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

RCS2-SA4R

ROBO Cylinder, Slider Type, Actuator Width 40mm, 200-V Servo Motor, Motor Reversing

■Model Specification Items **RCS2** — **SA4R** — □ — **20** — □ — □ — □ — **A1** — □ — □

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
RCS2	SA4R	I: Incremental specification A: Absolute specification	20: Servo motor 20W	10: 10mm 5: 5mm 2.5:2.5mm	50:50mm ~ 400:400mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	B : Brake HS : Home check sensor NM : Reversed-home specification R : Opposite motor reversing direction SR : Slider roller specification SS : Slider spacer

* Refer to p. 31 of the front matter for details on the model specification items.

POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 2.5). This is the maximum acceleration.

Actuator Specifications

■ Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity (Note 1) Horizontal (kg)	Maximum load capacity (Note 1) Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-SA4R-①-20-10-②-③-④-⑤	20	10	4	1	19.6	50 ~ 400 (Set in 50-mm steps)
RCS2-SA4R-①-20-5-②-③-④-⑤		5	6	2.5	39.2	
RCS2-SA4R-①-20-2.5-②-③-④-⑤		2.5	8	4.5	78.4	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 400 (Set in 50-mm steps)
10	665
5	330
2.5	165

(Unit: mm/s)

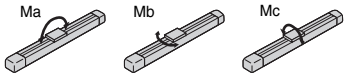
Options

Name	Model	Page
Brake	B	P381
Home sensor	HS	P385
Reversed-home specification	NM	P385
Inverse motor-reversing direction	R	P387
Slide roller specification	SR	P388
Slide spacer	SS	P388

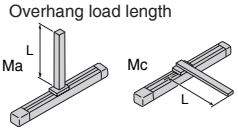
Actuator Specifications

Item	Description
Drive method	Ball screw Ø8mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.1mm or less
Base	Material: Aluminum with special alumite treatment
Allowable load moment	Ma : 2.7N • m Mb : 3.9N • m Mc : 6.8N • m
Overhang load length	Ma direction: 120mm or less, Mb/Mc directions: 120mm or less
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Direction of allowable load moment



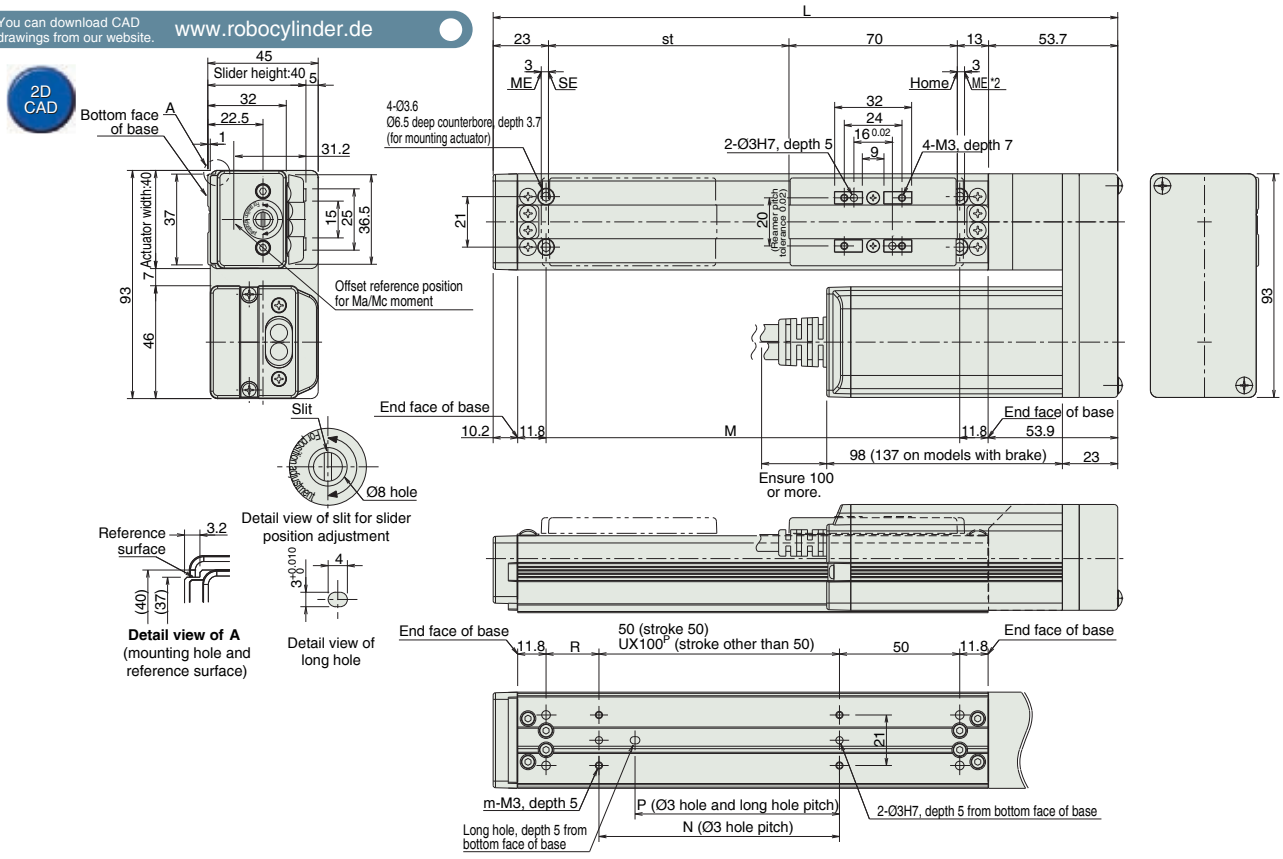
Overhang load length



Dimensions

You can download CAD drawings from our website. www.robocylinder.de

2D CAD



Dimensions and Weight by Stroke

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 Connect the motor/encoder cables. Refer to p. 324 for details on the cables.
*2 The slider moves to the ME during home return. Pay attention to prevent contact between the slider and surrounding parts.
*3 Reference position for calculating Ma moment.
*4 If the actuator is affixed using only the mounting holes provided in the top face of the base, the base may twist to cause abnormal sliding of the slider or generate noise. When the mounting holes in the top face of the base are used, keep the stroke to 200 mm or less.

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-20 ① -NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-20 ① -NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-20 ① -N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

RCS2-SA5R

ROBO Cylinder, Slider Type, Actuator Width 52mm, 200-V Servo Motor, Motor Reversing

■Model Specification Items **RCS2** — **SA5R** — □ — **20** — □ — □ — □ — **A1** — □ — □

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
—	—	I: Incremental specification A: Absolute specification	20: Servo motor 20W	12: 12mm 6: 6mm 3: 3mm	50:50mm 〜 500:500mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	B : Brake HS : Home check sensor NM : Reversed-home specification R : Opposite motor reversing direction SR : Slider roller specification

* Refer to p. 31 of the front matter for details on the model specification items.

POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 3). This is the maximum acceleration.

Actuator Specifications

■ Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity (Note 1) Horizontal (kg)	Maximum load capacity (Note 1) Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-SA5R-①-20-12-②-③-④-⑤	20	12	4	1	16.7	50 ~ 400 (Set in 50-mm steps)
RCS2-SA5R-①-20-6-②-③-④-⑤		6	8	2	33.3	
RCS2-SA5R-①-20-3-②-③-④-⑤		3	12	4	65.7	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 450 (Set in 50-mm steps)	500 (mm)
12	800	760
6	400	360
3	200	190

(Unit: mm/s)

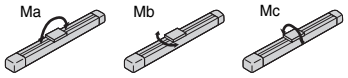
Options

Name	Model	Page
Brake	B	P381
Home sensor	HS	P385
Reversed-home specification	NM	P385
Inverse motor-reversing direction	R	P387
Slide roller specification	SR	P388

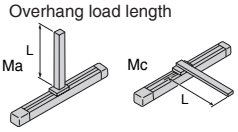
Actuator Specifications

Item	Description
Drive method	Ball screw Ø10mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.1mm or less
Base	Material: Aluminum with special alumite treatment
Allowable load moment	Ma : 4.9N • m Mb : 6.8N • m Mc : 11.7N • m
Overhang load length	Ma direction: 150mm or less, Mb/Mc directions: 150mm or less
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Direction of allowable load moment



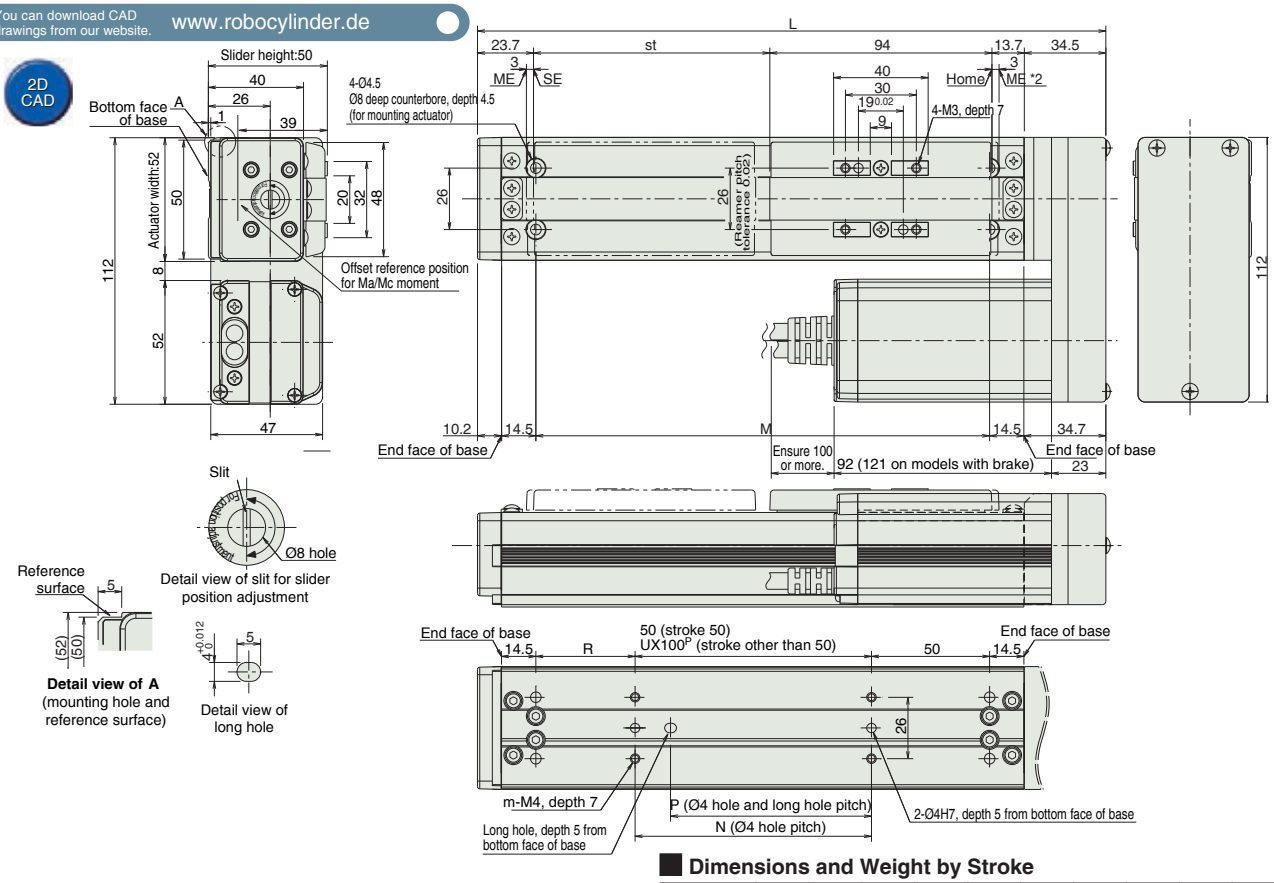
Overhang load length



Dimensions

You can download CAD drawings from our website. www.robocylinder.de

2D CAD



Dimensions and Weight by Stroke

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	92	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

*1 Connect the motor/encoder cables. Refer to p. 324 for details on the cables.
*2 The slider moves to the ME during home return. Pay attention to prevent contact between the slider and surrounding parts.
*3 Reference position for calculating Ma moment.
*4 If the actuator is affixed using only the mounting holes provided in the top face of the base, the base may twist to cause abnormal sliding of the slider or generate noise. When the mounting holes in the top face of the base are used, keep the stroke to 200 mm or less.

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-20 ① -NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-20 ① -NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-20 ① -N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

RCS2-SA6R

ROBO Cylinder, Slider Type, Actuator Width 58mm, 200-V Servo Motor, Motor Reversing

■Model Specification Items **RCS2** — **SA6R** — □ — **30** — □ — □ — □ — **A1** — □ — □

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
—	—	I: Incremental specification A: Absolute specification	30: Servo motor 30W	12: 12mm 6: 6mm 3: 3mm	50:50mm ~ 600:600mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	B : Brake HS : Home check sensor NM : Reversed-home specification R : Opposite motor reversing direction SR : Slider roller specification

* Refer to p. 31 of the front matter for details on the model specification items.

POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 3). This is the maximum acceleration.

Actuator Specifications

■ Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity (Note 1) Horizontal (kg)	Maximum load capacity (Note 1) Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-SA6R-①-30-12-②-③-④-⑤	30	12	6	1.5	24.2	50 ~ 600 (Set in 50-mm steps)
RCS2-SA6R-①-30-6-②-③-④-⑤		6	12	3	48.4	
RCS2-SA6R-①-30-3-②-③-④-⑤		3	18	6	96.8	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 450 (Set in 50-mm steps)	500 (mm)	550 (mm)	600 (mm)
12	800	760	640	540
6	400	380	320	270
3	200	190	160	135

(Unit: mm/s)

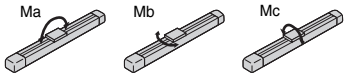
Options

Name	Model	Page
Brake	B	P381
Home sensor	HS	P385
Reversed-home specification	NM	P385
Inverse motor-reversing direction	R	P387
Slide roller specification	SR	P388

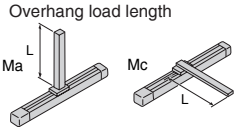
Actuator Specifications

Item	Description
Drive method	Ball screw Ø10mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.1mm or less
Base	Material: Aluminum with special alumite treatment
Allowable load moment	Ma : 8.9N • m Mb : 12.7N • m Mc : 18.6N • m
Overhang load length	Ma direction: 220mm or less, Mb/Mc directions: 220mm or less
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Direction of allowable load moment



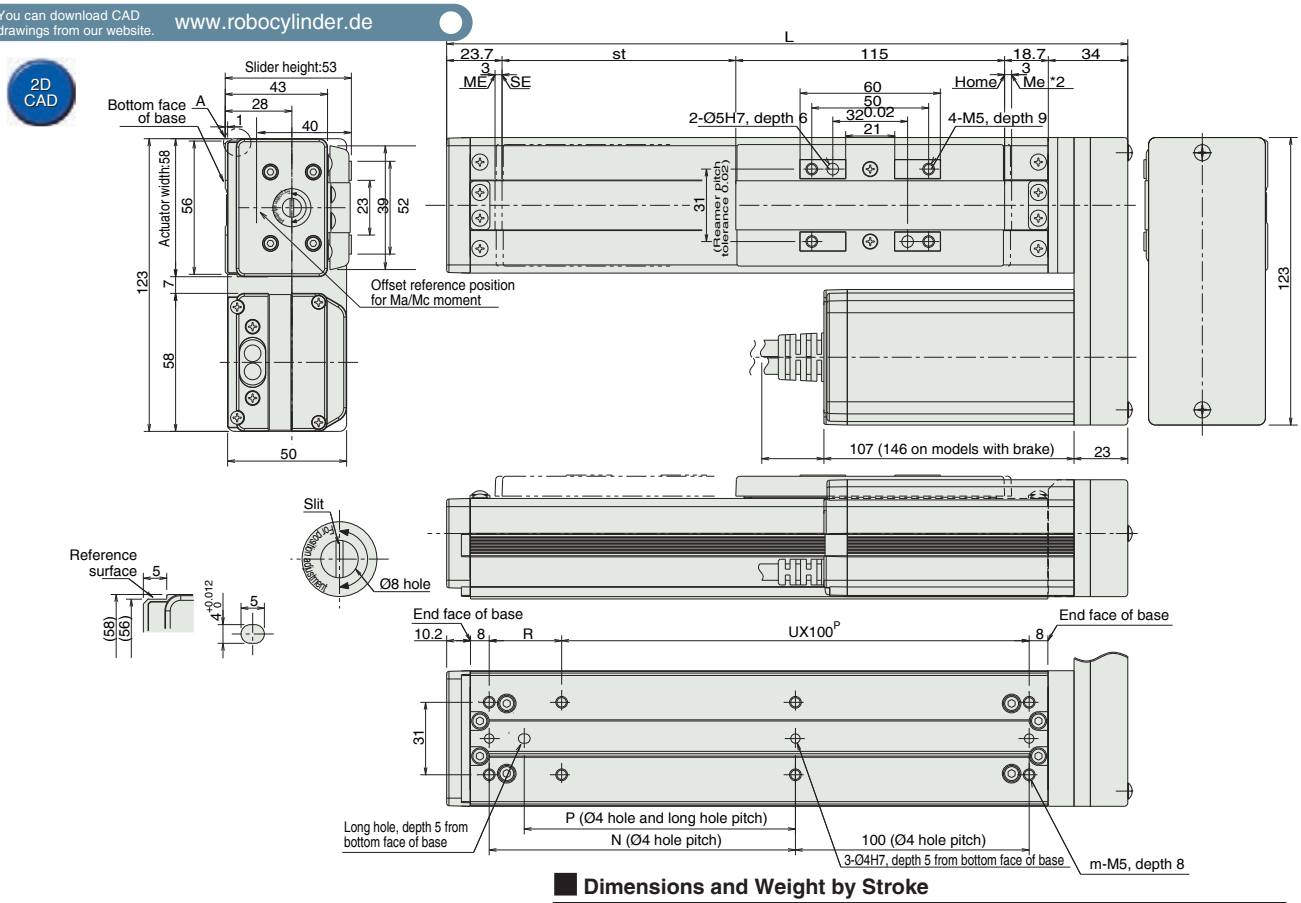
Overhang load length



Dimensions

You can download CAD drawings from our website. www.robocylinder.de

2D CAD



Dimensions and Weight by Stroke

Stroke	50	100	150	200	250	300	350	400	450	500	550	600
L	241.4	291.4	341.4	391.4	441.4	491.4	541.4	591.4	641.4	691.4	741.4	791.4
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)	1.7	1.9	2.1	2.3	2.5	2.7	2.9	3.1	3.3	3.5	3.7	3.9

*1 Connect the motor/encoder cables. Refer to p. 324 for details on the cables.
*2 The slider moves to the ME during home return. Pay attention to prevent contact between the slider and surrounding parts.
*3 Reference position for calculating Ma moment.

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-30 ① -NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-30 ① -NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-30 ① -N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

RCS2-SA7R

ROBO Cylinder, Slider Type, Actuator Width 73mm, 200-V Servo Motor, Motor Reversing

■Model Specification Items **RCS2** — **SA7R** — □ — **60** — □ — □ — □ — □ — □ — □

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
RCS2	SA7R	I: Incremental specification A: Absolute specification	60: Servo motor 60W	16: 16mm 8: 8mm 4: 4mm	100:100mm 〜 800:800mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	BE : Brake (wire taken out from end) BL : Brake (wire taken out from left) BR : Brake (wire taken out from right) NM : Reversed-home specification R : Opposite motor reversing direction SR : Slider roller specification

* Refer to p. 31 of the front matter for details on the model specification items.

POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 4). This is the maximum acceleration.

Actuator Specifications

■ Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity (Note 1) Horizontal (kg)	Maximum load capacity (Note 1) Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-SA7R-①-60-16-②-③-④-⑤	60	16	12	3	63.8	100 ~ 800 (Set in 100-mm steps)
RCS2-SA7R-①-60-8-②-③-④-⑤		8	25	6	127.5	
RCS2-SA7R-①-60-4-②-③-④-⑤		4	40	12	255.0	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■ Stroke and Maximum Speed

Lead \ Stroke	100 ~ 600 (Set in 100-mm steps)	700 (mm)	800 (mm)
16	800	640	480
8	400	320	240
4	200	160	120

(Unit: mm/s)

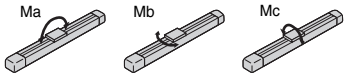
Options

Name	Model	Page
Brake (Cable exiting the end)	BE	P381
Brake (Cable exiting the left)	BL	P381
Brake (Cable exiting the right)	BR	P381
Reversed-home specification	NM	P385
Inverse motor-reversing direction	R	P387
Slide roller specification	SR	P388

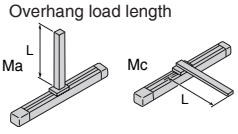
Actuator Specifications

Item	Description
Drive method	Ball screw Ø12mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.1mm or less
Base	Material: Aluminum with special alumite treatment
Allowable load moment	Ma : 13.9N • m Mb : 19.7N• m Mc : 38.3N• m
Overhang load length	Ma direction: 230mm or less, Mb/Mc directions: 230mm or less
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Direction of allowable load moment



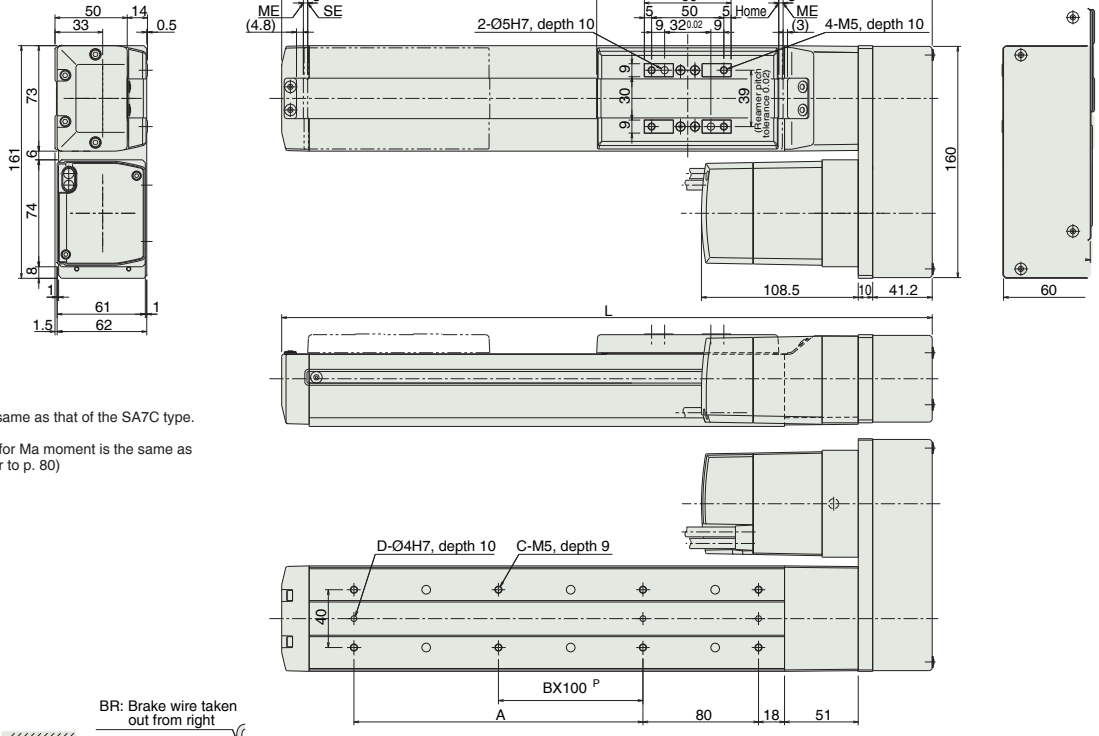
Overhang load length



Dimensions

You can download CAD drawings from our website. www.robocylinder.de

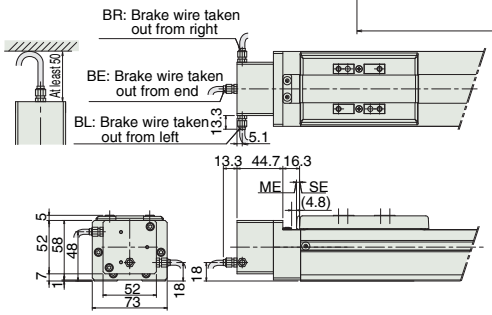
2D CAD



* The reference surface is the same as that of the SA7C type. (Refer to p. 80)
* The offset reference position for Ma moment is the same as that of the SA7C type. (Refer to p. 80)

Brake dimensions

* Models with brake have their overall length extended by 43 mm (or 56.3 mm if the wire is taken out from the end) and weight increased by 0.6 kg.



Note
ME: Mechanical end, SE: Stroke end

Dimensions and Weight by Stroke

Stroke	100	200	300	400	500	600	700	800
L	350.2	450.2	550.2	650.2	750.2	850.2	950.2	1050.2
A	100	200	300	400	500	600	700	800
B	0	1	2	3	4	5	6	7
C	6	8	10	12	14	16	18	20
D	3	3	3	3	3	3	3	3
Weight (kg)	4.2	4.6	5.1	5.5	6.0	6.4	6.9	7.3

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-60 ① -NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-60 ① -NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-60 ① -N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

RCS2-SS7R

ROBO Cylinder, Slider Type, Actuator Width 60mm, 200-V Servo Motor, Motor Reversing Iron Base Type

■Model Specification Items **RCS2** – **SS7R** – □ – **60** – □ – □ – □ – □ – □ – □

Series — Type — Encoder type — Motor type — Lead — Stroke — Applicable controller — Cable length — Options

- Encoder type: I: Incremental specification; A: Absolute specification
- Motor type: 60: Servo motor 60W
- Lead: 12: 12mm; 6: 6mm
- Stroke: 100:100mm ~ 600:600mm (Set in 100-mm steps)
- Applicable controller: T1 : XSEL-J/K; T2 : SCON, SSEL, XSEL-P/Q
- Cable length: N : No cable; P : 1m; S : 3m; M : 5m; X□□ : Specified length; R□□ : Robot cable
- Options: B :Brake (wire taken out from end); NM :Reversed-home specification; R :Opposite motor reversing direction; SR :Slider roller specification

* Refer to p. 31 of the front matter for details on the model specification items.

POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G . This is the maximum acceleration.

Actuator Specifications

■Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity (Note 1) Horizontal (kg)	Maximum load capacity (Note 1) Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-SS7R-①-60-12-②-③-④-⑤	60	12	15	4	85	100 ~ 600 (Set in 100-mm steps)
RCS2-SS7R-①-60-6-②-③-④-⑤		6	30	8	170	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■Stroke and Maximum Speed

Lead \ Stroke	100 ~ 500 (Set in 100-mm steps)	600 (mm)
12	600	470
6	300	230

(Unit: mm/s)

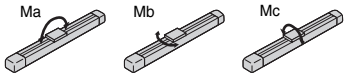
Options

Name	Model	Page
Brake	B	P381
Reversed-home specification	NM	P385
Inverse motor-reversing direction	R	P387
Slide roller specification	SR	P388

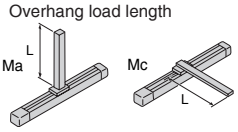
Actuator Specifications

Item	Description
Drive method	Ball screw Ø10mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.05mm or less
Base	Material: Special alloy steel
Allowable load moment	Ma : 14.7N • m Mb : 14.7N • m Mc : 33.3N • m
Overhang load length	Ma direction: 300mm or less, Mb/Mc directions: 300mm or less
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Direction of allowable load moment



Overhang load length

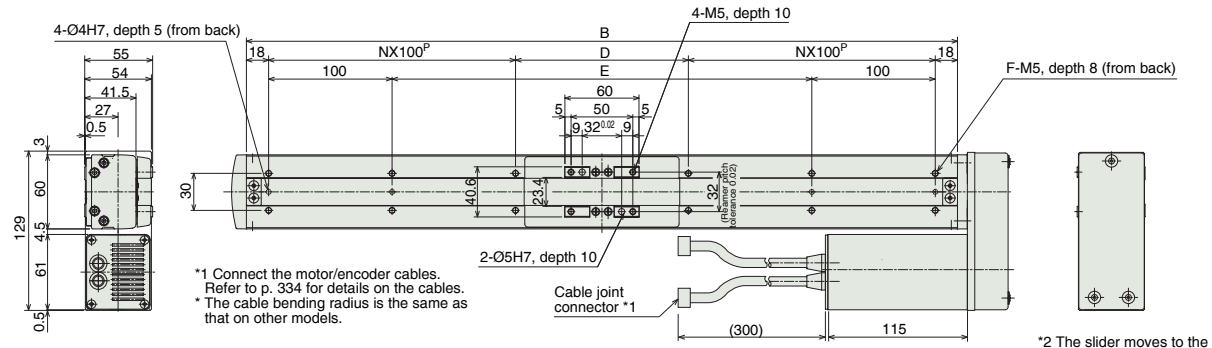


Dimensions

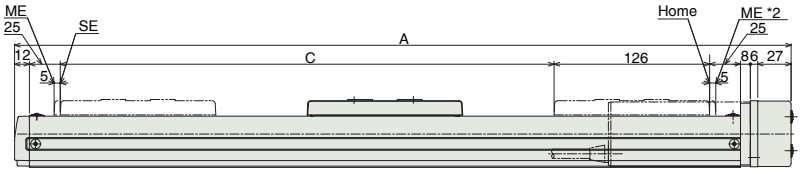
You can download CAD drawings from our website. www.robocylinder.de

2D CAD

* The reference surface is the same as that of the SS7C type. (Refer to p. 82)
* The offset reference position for Ma moment is the same as that of the SS7C type. (Refer to p. 82)



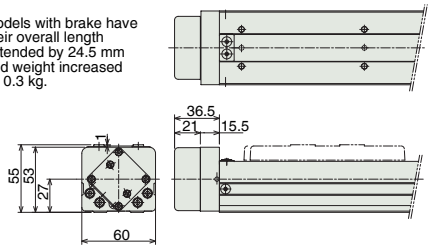
* To change the home direction, the actuator must be returned to IAI for adjustment.
* With the reversed-home specification, the dimension on the motor side (distance from the ME to the home) and that on the counter-motor side are reversed.



*2 The slider moves to the ME during home return. Pay attention to prevent contact between the slider and surrounding parts.
SE: Stroke end
ME: Mechanical end

Brake dimensions

* Models with brake have their overall length extended by 24.5 mm and weight increased by 0.3 kg.



Dimensions and Weight by Stroke

Stroke	100	200	300	400	500	600
A	329	429	529	629	729	829
B	276	376	476	576	676	776
C	100	200	300	400	500	600
D	40	140	40	140	40	140
E	40	140	240	340	440	540
F	8	8	12	12	16	16
N	1	1	2	2	3	3
Weight (kg)	4.0	4.6	5.2	5.8	6.4	7.0

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-60 ① -NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-60 ① -NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-60 ① -N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

RCS2-SS8R

ROBO Cylinder, Slider Type, Actuator Width 80mm, 200-V Servo Motor, Motor Reversing Iron Base Type

■Model Specification Items **RCS2 — SS8R — □ — □ — □ — □ — □ — □ — □ — □**

Series — Type — Encoder type — Motor type — Lead — Stroke — Applicable controller — Cable length — Options

- Encoder type: I: Incremental specification; A: Absolute specification
- Motor type: 100: Servo motor 100W; 150: Servo motor 150W
- Lead: 20: 20mm; 10: 10mm
- Stroke: 100: 100mm ~ 1000: 1000mm (Set in 100-mm steps)
- Applicable controller: T1: XSEL-J/K; T2: SCON, SSEL, XSEL-P/Q
- Cable length: N: No cable; P: 1m; S: 3m; M: 5m; X□□: Specified length; R□□: Robot cable
- Options: B: Brake; NM: Reversed-home specification; R: Opposite motor reversing direction; SR: Slider roller specification

* Refer to p. 31 of the front matter for details on the model specification items.

POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G. This is the maximum acceleration.

Actuator Specifications

■Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity (Note 1) Horizontal (kg)	Maximum load capacity (Note 1) Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-SS8R-①-100-20-②-③-④-⑤	100	20	20	4	84.9	100 ~ 1000 (Set in 100-mm steps)
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	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■Stroke and Maximum Speed

Lead \ Stroke	100 ~ 600 (Set in 100-mm steps)	700 (mm)	800 (mm)	900 (mm)	1000 (mm)
20	1000	960	765	625	515
10	500	480	380	310	255

(Unit: mm/s)

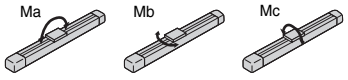
Options

Name	Model	Page
Brake	B	P381
Reversed-home specification	NM	P385
Inverse motor-reversing direction	R	P387
Slide roller specification	SR	P388

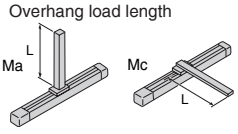
Actuator Specifications

Item	Description
Drive method	Ball screw Ø16mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.05mm or less
Base	Material: Special alloy steel
Allowable load moment	Ma : 36.3N • m Mb : 36.3N • m Mc : 77.4N • m
Overhang load length	Ma direction: 450mm or less, Mb/Mc directions: 450mm or less
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Direction of allowable load moment



Overhang load length

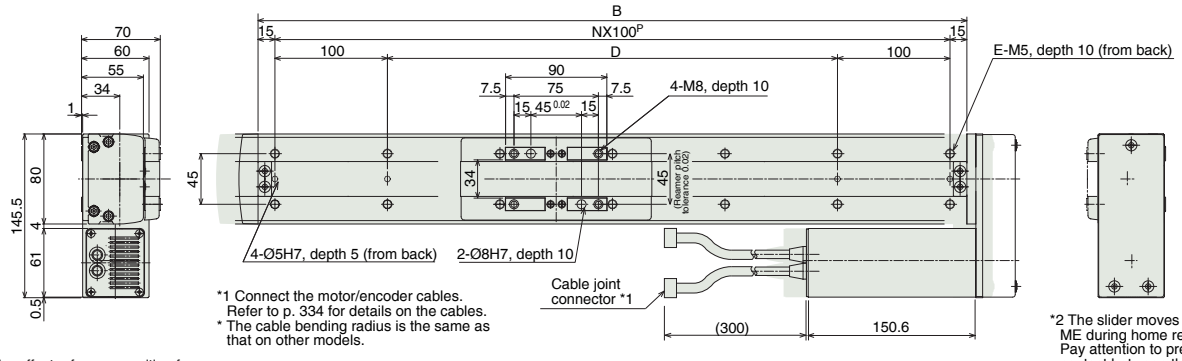


Dimensions

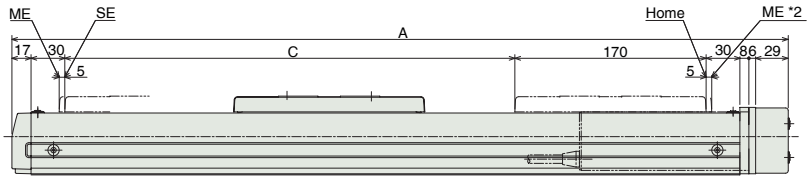
You can download CAD drawings from our website. www.robocylinder.de

2D CAD

* The reference surface is the same as that of the SS8C type. (Refer to p. 84)

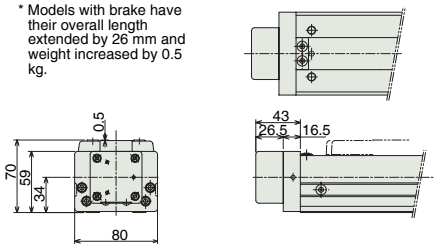


* The offset reference position for Ma moment is the same as that of the SS8C type. (Refer to p. 84)
* With the reversed-home specification, the dimension on the motor side (distance from the ME to the home) and that on the counter-motor side are reversed.



Brake dimensions

* Models with brake have their overall length extended by 26 mm and weight increased by 0.5 kg.



Dimensions and Weight by Stroke

Stroke	100	200	300	400	500	600	700	800	900	1000
A	390	490	590	690	790	890	990	1090	1190	1290
B	330	430	530	630	730	830	930	1030	1130	1230
C	100	200	300	400	500	600	700	800	900	1000
D	100	200	300	400	500	600	700	800	900	1000
E	8	10	12	14	16	18	20	22	24	26
N	3	4	5	6	7	8	9	10	11	12
Weight (kg)	7.2	8.2	9.2	10.2	11.2	12.2	13.2	14.2	15.2	16.2

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-100①-NP-2- ② SCON- C-150①-NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-100①-NP-2- ② SSEL- C-1-150①-NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-100①-N1-EEE-2- ② XSEL- ③ -1-150①-N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

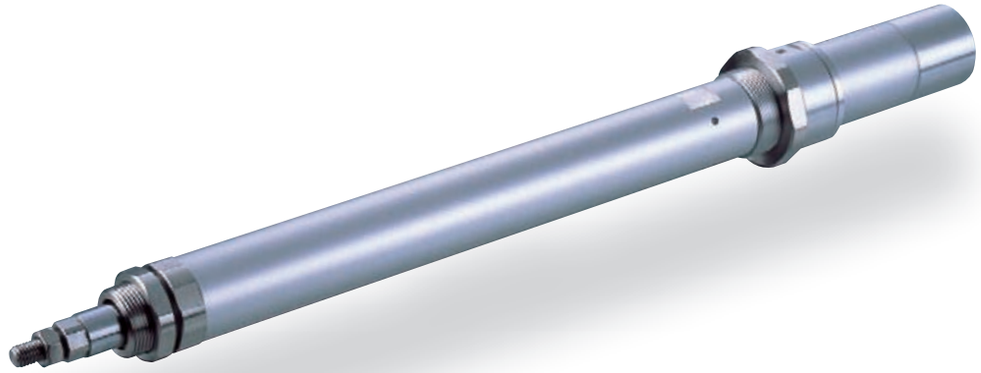
RCS2-RA4C

ROBO Cylinder, Rod Type, Actuator Diameter Ø37mm, 200-V Servo Motor Coupling Specification

■Model Specification Items **RCS2** – **RA4C** – **I** – □ – □ – □ – □ – □ – □ – □

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
—	—	I: Incremental specification A: Absolute specification	20: Servo motor 20W 30: Servo motor 30W	12: 12mm 6: 6mm 3: 3mm	50:50mm 〜 300:300mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	Refer to the options table below.

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 3). The maximum acceleration is 0.3 G (or 0.2 G if the lead is 2.5).
(3) The horizontal load capacity assumes use of an external guide and absence of external force applied from any direction other than the moving direction of the rod.

Actuator Specifications

■Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-RA4C-①-20-12-②-③-④-⑤	20	12	3.0	1.0	18.9	50 ~ 300 (Set in 50-mm steps)
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	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■Stroke and Maximum Speed

Lead \ Stroke	50 ~ 300 (Set in 50-mm steps)
12	600
6	300
3	150

(Unit: mm/s)

Options

Name	Model	Page
Brake	B	P381
Foot bracket	FT	P384
Flange	FL	P382
Home sensor	HS	P385
Knuckle joint	NJ	P385
Reversed-home specification	NM	P385
Front trunnion	TRF	P388
Rear trunnion	TRR	P389

Actuator Specifications

Item	Description
Drive method	Ball screw Ø10mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.05mm or less
Base	Material: Aluminum with white alumite treatment
Rod diameter	Ø20mm
Rod non-rotation accuracy	±1.0°
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

25 mm
32 mm
35 mm
37 mm
45 mm
55 mm
64 mm
75 mm
100 mm

Pulse Motor
20w
30w
60w
100w
150w

Dimensions

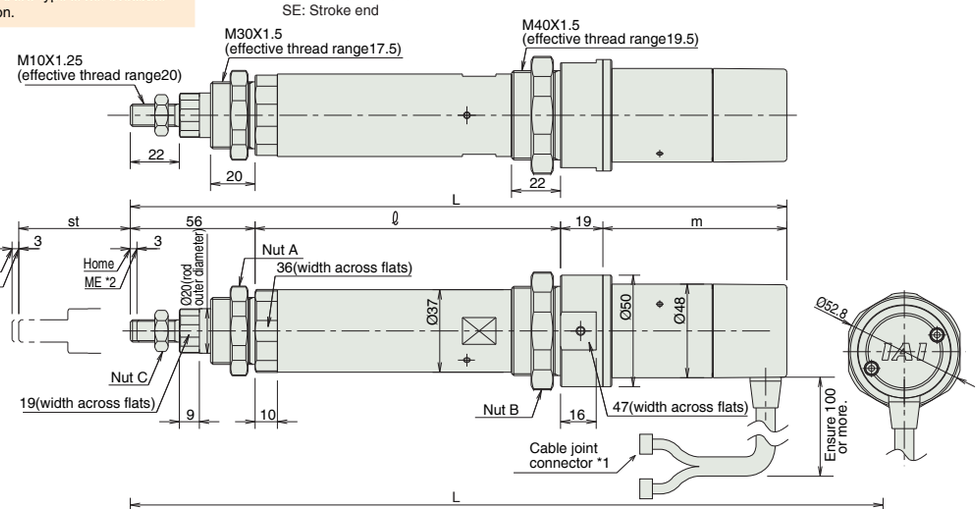
You can download CAD drawings from our website. www.robocylinder.de

2D CAD

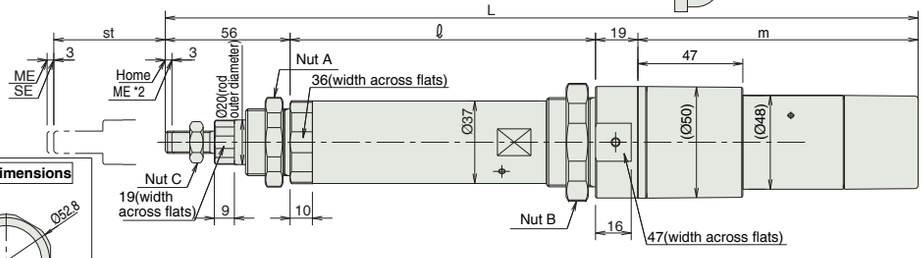
* Due to structural limitations, the RA5C type is not available in the reversed-home specification.

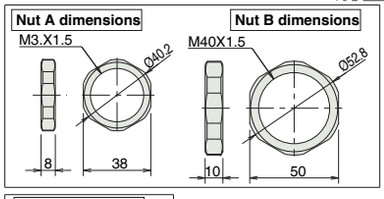
*1 Connect the motor/encoder cables. Refer to p. 334 for details on the cables.
*2 The rod moves to the ME during home return. Pay attention to prevent contact between the rod and surrounding parts.
ME: Mechanical end
SE: Stroke end

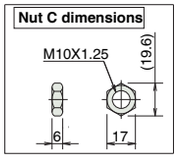
[Without brake]



[With brake]







Dimensions and 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	1.6	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

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-20①-NP-2- ② SCON- C-30①-NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoi valve mode			Same control actions as those applicable to solenoid valves	3 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-20①-NP-2- ② SSEL- C-1-30①-NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-20①-N1-EEE-2- ② XSEL- ③ -1-30①-N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ②indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three- phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

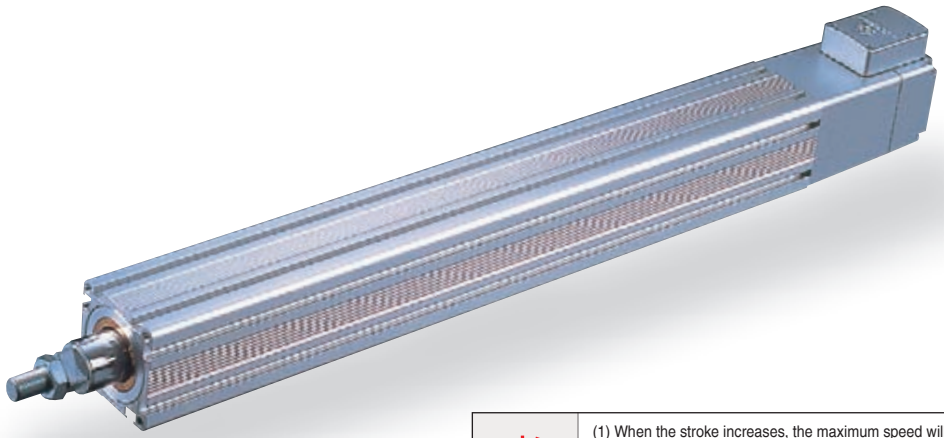
RCS2-RA5C

ROBO Cylinder, Rod Type, Actuator Width 55mm, 200-V Servo Motor Coupling Specification

■Model Specification Items **RCS2** — **RA5C** — **I** — □ — □ — □ — □ — □ — □ — □

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
RCS2	RA5C	I: Incremental specification A: Absolute specification	60: Servo motor 60W 100: Servo motor 100W	16: 16mm 8: 8mm 4: 4mm	50:50mm 〜 300:300mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	Refer to the options table below.

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 3). The maximum acceleration is 0.3 G (or 0.2 G if the lead is 2.5).
(3) The horizontal load capacity assumes use of an external guide and absence of external force applied from any direction other than the moving direction of the rod.

Actuator Specifications

■Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-RA5C-①-20-12-②-③-④-⑤	60	16	12.0	2.0	63.8	50 ~ 300 (Set in 50-mm steps)
RCS2-RA5C-①-20-6-②-③-④-⑤		8	25.0	5.0	127.5	
RCS2-RA5C-①-20-3-②-③-④-⑤		4	50.0	11.5	255.1	
RCS2-RA5C-①-30-12-②-③-④-⑤	100	16	15.0	3.5	105.8	
RCS2-RA5C-①-30-6-②-③-④-⑤		8	30.0	9.0	212.7	
RCS2-RA5C-①-30-3-②-③-④-⑤		4	60.0	18.0	424.3	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■Stroke and Maximum Speed

Lead \ Stroke	50 ~ 250 (Set in 50-mm steps)	300 (mm)
16	800	755
8	400	377
4	200	188

(Unit: mm/s)

Options

Name	Model	Page
Cable outlet direction	A2	P381
Brake	B	P381
Flange	FL	P382
Foot bracket	FT	P384

Actuator Specifications

Item	Description
Drive method	Ball screw Ø12mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.05mm or less
Base	Material: Aluminum with white alumite treatment
Rod diameter	Ø30mm
Rod non-rotation accuracy	±0.7°
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

25 mm
32 mm
35 mm
37 mm
45 mm
55 mm
64 mm
75 mm
100 mm
Pulse Motor
20w
30w
60w
100w
150w

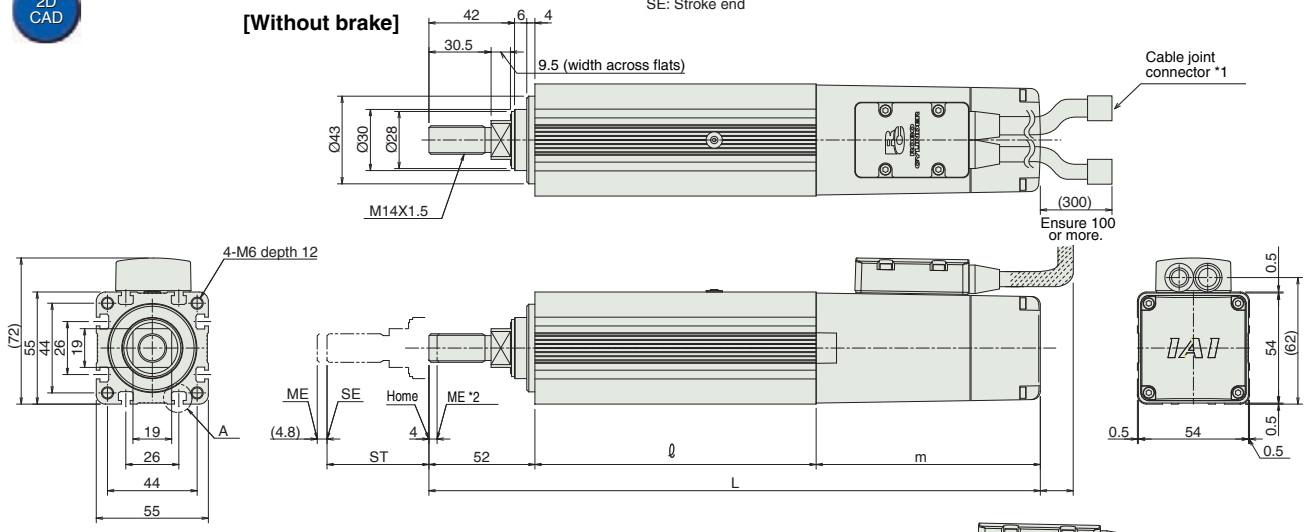
Dimensions

You can download CAD drawings from our website. www.robocylinder.de

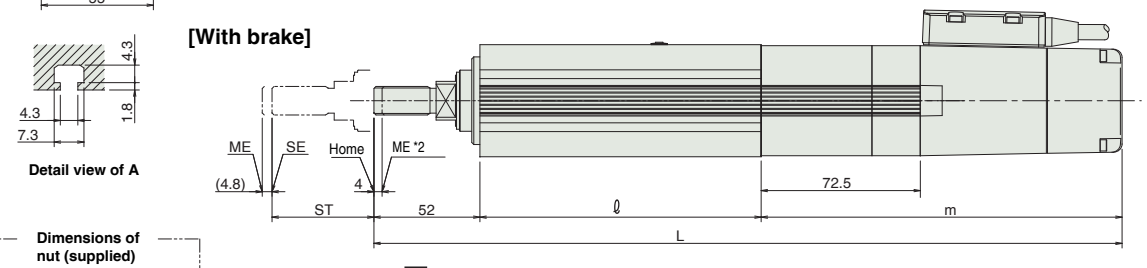
2D CAD

*1 Connect the motor/encoder cables. Refer to p. 334 for details on the cables.
*2 The rod moves to the ME during home return. Pay attention to prevent contact between the rod and surrounding parts.
ME: Mechanical end
SE: Stroke end

[Without brake]

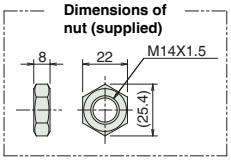


[With brake]



Detail view of A

Dimensions of nut (supplied)



Dimensions and Weight by Stroke

RCS2-RA5C (without brake)

Stroke		50	100	150	200	250	300
L	60W	282	332	382	432	482	532
	100W	300	350	400	450	500	550
ℓ		138	188	238	288	338	388
m	60W	92					
	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		138	188	238	288	338	388
m	60W	164.5					
	100W	182.5					
Weight (kg)		2.2	2.5	2.8	3.1	3.4	3.7

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-60 ① -NP-2- ② SCON- C-100 ① -NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoi valve mode			Same control actions as those applicable to solenoid valves	3 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-60 ① -NP-2- ② SSEL- C-1-100 ① -NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-60 ① -N1-EEE-2- ② XSEL- ③ -1-100 ① -N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three- phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

RCS2-RA4D

ROBO Cylinder, Rod Type, Actuator Diameter Ø37mm, 200-V Servo Motor Built-In (Direct-Coupled) Motor Specification

■Model Specification Items **RCS2** – **RA4D** – **I** – □ – □ – □ – □ – □ – □ – □

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
RCS2	RA4D	I: Incremental specification A: Absolute specification	20: Servo motor 20W 30: Servo motor 30W	12: 12mm 6: 6mm 3: 3mm	50:50mm ~ 300:300mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	Refer to the options table below.

* Refer to p. 31 of the front matter for details on the model specification items.

POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 3). The maximum acceleration is 0.3 G (or 0.2 G if the lead is 2.5).
(3) The horizontal load capacity assumes use of an external guide and absence of external force applied from any direction other than the moving direction of the rod.

Actuator Specifications

■Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum 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 (Set in 50-mm steps)
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	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■Stroke and Maximum Speed

Lead \ Stroke	50 ~ 300 (Set in 50-mm steps)
12	600
6	300
3	150

(Unit: mm/s)

Options

Name	Model	Page
Foot bracket	FT	P384
Flange	FL	P382
Home sensor	HS	P385
Knuckle joint	NJ	P385
Reversed-home specification	NM	P385
Front trunnion	TRF	P388
Rear trunnion	TRR	P389

Actuator Specifications

Item	Description
Drive method	Ball screw Ø10mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.05mm or less
Base	Material: Aluminum with white alumite treatment
Rod diameter	Ø20mm
Rod non-rotation accuracy	±1.0°
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

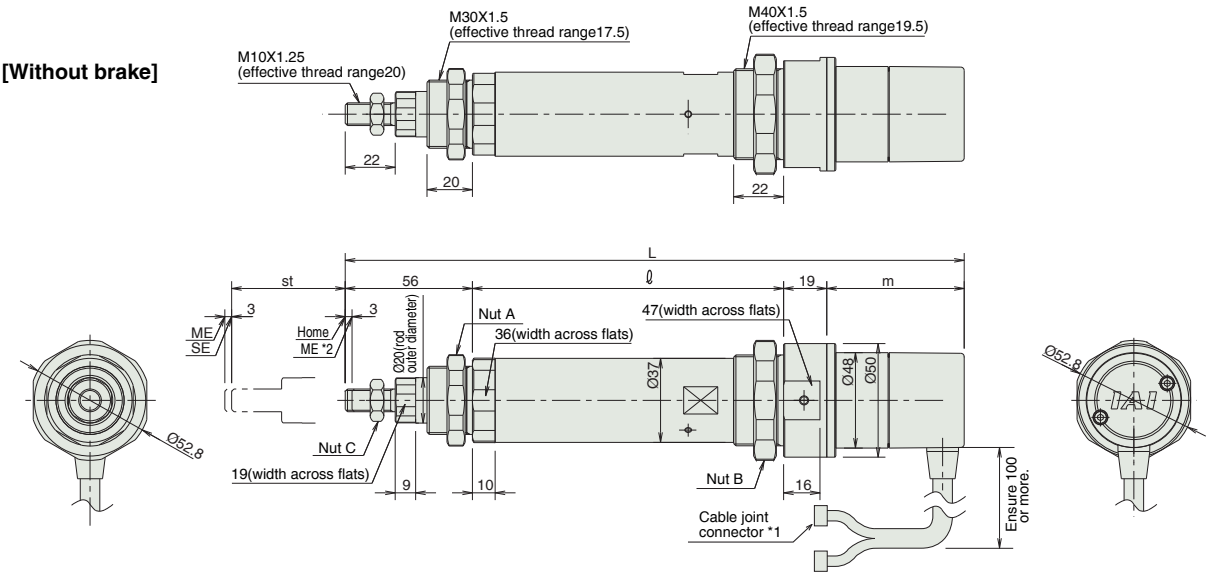
Dimensions

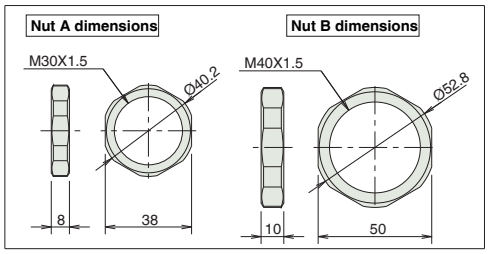
You can download CAD drawings from our website. www.robocylinder.de

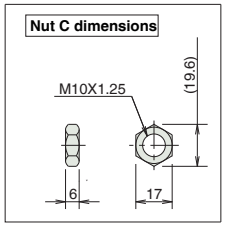
*1 Connect the motor/encoder cables. Refer to p. 334 for details on the cables.
*2 The rod moves to the ME during home return. Pay attention to prevent contact between the rod and surrounding parts.
ME: Mechanical end
SE: Stroke end

2D CAD

[Without brake]







Dimensions and Weight by Stroke

RCS2-RA4D (without brake)

Stroke		50	100	150	200	250	300
L	20W	270.5	320.5	370.5	420.5	470.5	520.5
	30W	285.5	335.5	385.5	435.5	485.5	535.5
ℓ		137	187	237	287	337	487
m	20W	58.5					
	30W	73.5					
Weight (kg)		1.0	1.2	1.3	1.5	1.6	1.8

The RCA-RA3D type is not available with a brake.

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-20 ① -NP-2- ② SCON- C-30 ① -NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoi valve mode			Same control actions as those applicable to solenoid valves	3 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-20 ① -NP-2- ② SSEL- C-1-30 ① -NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-20 ① -N1-EEE-2- ② XSEL- ③ -1-30 ① -N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three- phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

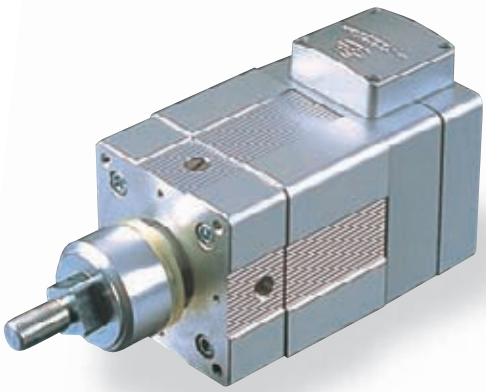
RCS2-RA7AD

ROBO Cylinder, Rod Type, Actuator Width 75mm, 200-V Servo Motor Built-In (Direct-Coupled) Motor Specification

■Model Specification Items **RCS2 — RA7AD — I — □ — □ — □ — □ — □ — □ — □**

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
—	—	I: Incremental specification	60: Servo motor 60W 100: Servo motor 100W	12: 12mm 6: 6mm 3: 3mm	50:50mm 〜 300:300mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	Refer to the options table below.

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.15 G (lead 12), 0.1 G (lead 6) or 0.05 G (lead 3) with a motor output of 60 W, or acceleration of 0.2 G (lead 12) or 0.1 G (lead 6) with a motor output of 100 W. These are the maximum accelerations for the respective lead/motor output specifications.
(3) The horizontal load capacity assumes use of an external guide and absence of external force applied from any direction other than the moving direction of the rod.

Actuator Specifications

■Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-RA7AD-I-60-12-①-②-③-④	60	12	10.0	2.5	85.3	50 ~ 300 (Set in 50-mm steps)
RCS2-RA7AD-I-60-6-①-②-③-④		6	20.0	7.0	169.5	
RCS2-RA7AD-I-60-3-①-②-③-④		3	40.0	15.0	340.1	
RCS2-RA7AD-I-100-12-①-②-③-④	100	12	15.0	5.5	141.1	
RCS2-RA7AD-I-100-6-①-②-③-④		6	30.0	12.5	283.2	

Explanation of numbers ① Stroke ② Applicable controller ③ Cable length ④ Options

■Stroke and Maximum Speed

Lead \ Stroke	50 ~ 250 (Set in 50-mm steps)	300 (mm)
12	600	505
6	300	250
3	150	125

(Unit: mm/s)

Options

Name	Model	Page
Cable outlet direction	A1~A3	P381
Brake	B	P381
Flange	FL	P382
Foot bracket	FT	P384

Actuator Specifications

Item	Description
Drive method	Ball screw Ø10mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.05mm or less
Base	Material: Aluminum with white alumite treatment
Rod diameter	Ø30mm
Rod non-rotation accuracy	±0.7°
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Dimensions

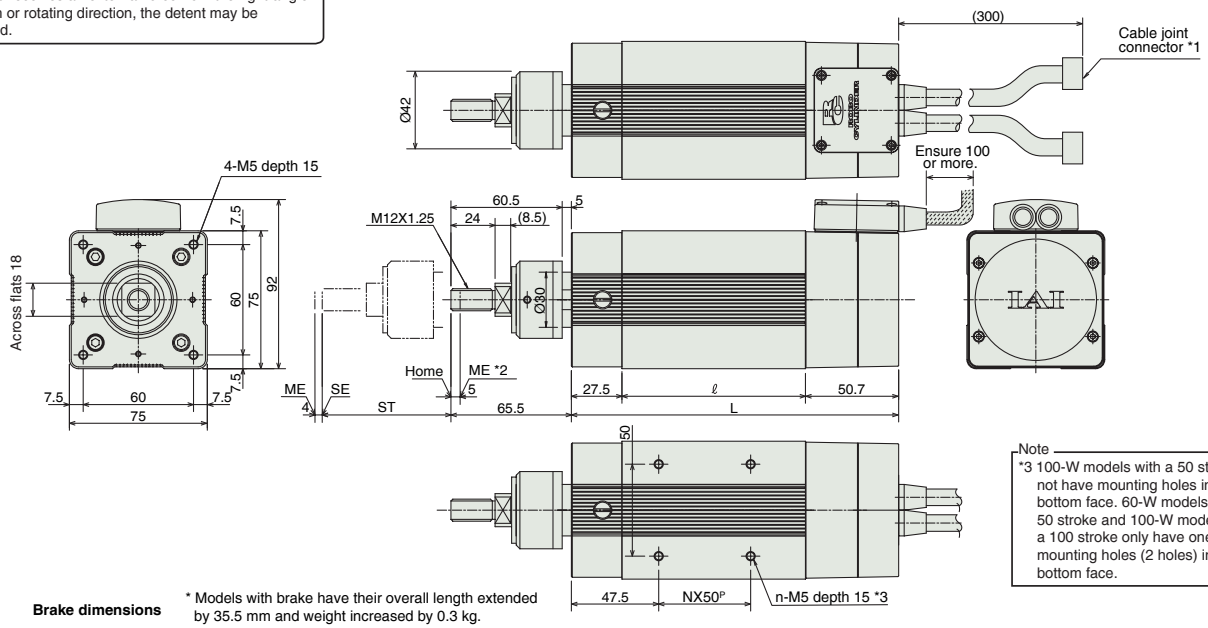
You can download CAD drawings from our website. www.robocylinder.de

2D CAD

* Due to structural limitations, the RA7AD type is not available in the reversed-home specification.

*1 Connect the motor/encoder cables. Refer to p. 334 for details on the cables.
*2 The rod moves to the ME during home return. Pay attention to prevent contact between the rod and surrounding parts.
ST: Stroke
SE: Stroke end
ME: Mechanical end

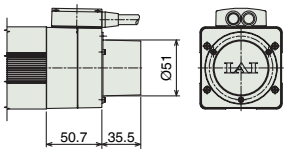
Note
Do not apply an external force on the rod in any direction other than the moving direction of the rod.
If the rod receives an external force from the right-angle direction or rotating direction, the detent may be damaged.

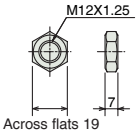


Note
*3 100-W models with a 50 stroke do not have mounting holes in their bottom face. 60-W models with a 50 stroke and 100-W models with a 100 stroke only have one row of mounting holes (2 holes) in their bottom face.

Brake dimensions

* Models with brake have their overall length extended by 35.5 mm and weight increased by 0.3 kg.





Dimensions of nut (supplied)

Dimensions and Weight by Stroke

Stroke	50	100	150	200	250	300
ℓ	49.8	99.8	149.8	199.8	249.8	299.8
L	128	178	228	278	328	378
N	-	1	2	3	4	5
n	2	4	6	8	10	12
Weight (kg)	2.1	2.6	3.0	3.5	3.9	4.4

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-60I-NP-2-① SCON- C-100I-NP-2-①	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoi valve mode			Same control actions as those applicable to solenoid valves	3 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-60I-NP-2-① SSEL- C-1-100I-NP-2-①	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL-②-1-60I-N1-EEE-2-① XSEL-②-1-100I-N1-EEE-2-①	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three- phase 200V).
* ② indicates the XSEL type (J / K / P / Q).

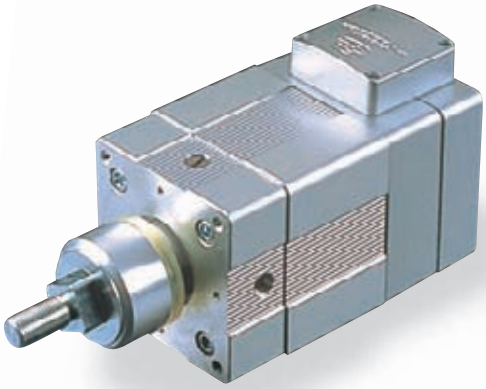
RCS2-RA7BD

ROBO Cylinder, Rod Type, Actuator Width 75mm, 200-V Servo Motor Built-In (Direct-Coupled) Motor Specification

■Model Specification Items **RCS2 — RA7BD — I — □ — □ — □ — □ — □ — □ — □**

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
—	—	I: Incremental specification	100: Servo motor 100W 150: Servo motor 150W	16: 16mm 8: 8mm 4: 4mm	50:50mm 〜 300:300mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	Refer to the options table below.

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.25 G (lead 16), 0.17 G (lead 8) or 0.1 G (lead 4) with a motor output of 100 W, or acceleration of 0.3 G (lead 16) or 0.2 G (lead 8) with a motor output of 150 W. These are the maximum accelerations for the respective lead/motor output specifications.
(3) The horizontal load capacity assumes use of an external guide and absence of external force applied from any direction other than the moving direction of the rod.

Actuator Specifications

■Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-RA7BD-I-60-16-①-②-③-④	100	16	10.0	3.5	105.8	50 ~ 300 (Set in 50-mm steps)
RCS2-RA7BD-I-60-8-①-②-③-④		8	22.0	9.0	212.7	
RCS2-RA7BD-I-60-4-①-②-③-④		4	40.0	19.5	424.3	
RCS2-RA7BD-I-100-16-①-②-③-④	150	16	15.0	6.5	158.8	100 ~ 300 (Set in 50-mm steps)
RCS2-RA7BD-I-100-8-①-②-③-④		8	35.0	14.5	318.5	

Explanation of numbers ① Stroke ② Applicable controller ③ Cable length ④ Options

■Stroke and Maximum Speed

Lead \ Stroke	50 ~ 300 (Set in 50-mm steps)
16	800
8	400
4	200

(Unit: mm/s)

25 mm
32 mm
35 mm
37 mm
45 mm
55 mm
64 mm
75 mm
100 mm

Pulse Motor
20w
30w
60w
100w
150w

Options

Name	Model	Page
Cable outlet direction	A1~A3	P381
Brake	B	P381
Flange	FL	P382
Foot bracket	FT	P384

Actuator Specifications

Item	Description
Drive method	Ball screw Ø12mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.05mm or less
Base	Material: Aluminum with white alumite treatment
Rod diameter	Ø35mm
Rod non-rotation accuracy	±0.7°
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Dimensions

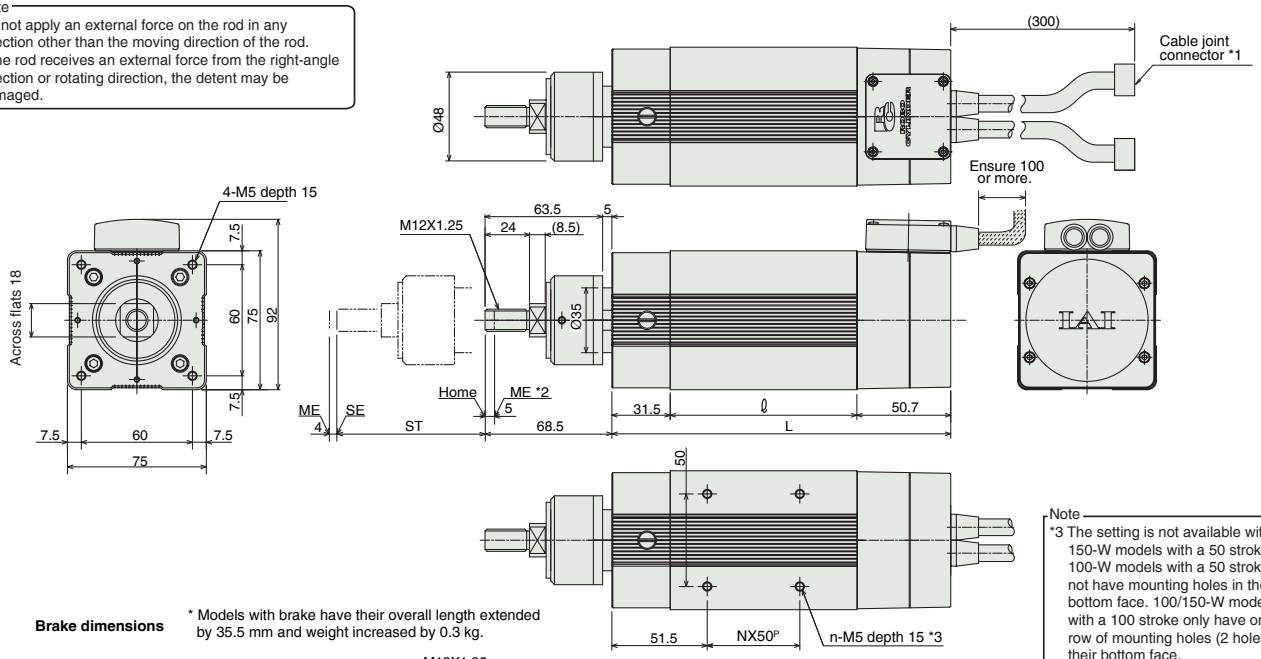
You can download CAD drawings from our website. www.robocylinder.de

2D CAD

* Due to structural limitations, the RA7BD type is not available in the reversed-home specification.

*1 Connect the motor/encoder cables. Refer to p. 334 for details on the cables.
*2 The rod moves to the ME during home return. Pay attention to prevent contact between the rod and surrounding parts.
ST: Stroke
SE: Stroke end
ME: Mechanical end

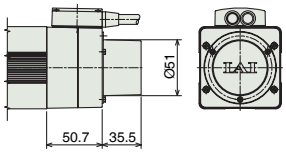
Note
Do not apply an external force on the rod in any direction other than the moving direction of the rod.
If the rod receives an external force from the right-angle direction or rotating direction, the detent may be damaged.

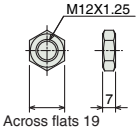


Note
*3 The setting is not available with 150-W models with a 50 stroke. 100-W models with a 50 stroke do not have mounting holes in their bottom face. 100/150-W models with a 100 stroke only have one row of mounting holes (2 holes) in their bottom face.

Brake dimensions

* Models with brake have their overall length extended by 35.5 mm and weight increased by 0.3 kg.





Dimensions of nut (supplied)

Dimensions and Weight by Stroke

Stroke	50	100	150	200	250	300
ℓ	50.8	100.8	150.8	200.8	250.8	300.8
L	133	183	233	283	333	383
N	-	-	1	2	3	4
n	-	2	4	6	8	10
Weight (kg)	2.7	3.2	3.6	4.1	4.5	5.0

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-100I-NP-2-① SCON- C-150I-NP-2-①	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoi valve mode			Same control actions as those applicable to solenoid valves	3 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-100I-NP-2-① SSEL- C-1-150I-NP-2-①	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL-②-1-100I-N1-EEE-2-① XSEL-②-1-150I-N1-EEE-2-①	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three- phase 200V).
* ② indicates the XSEL type (J / K / P / Q).

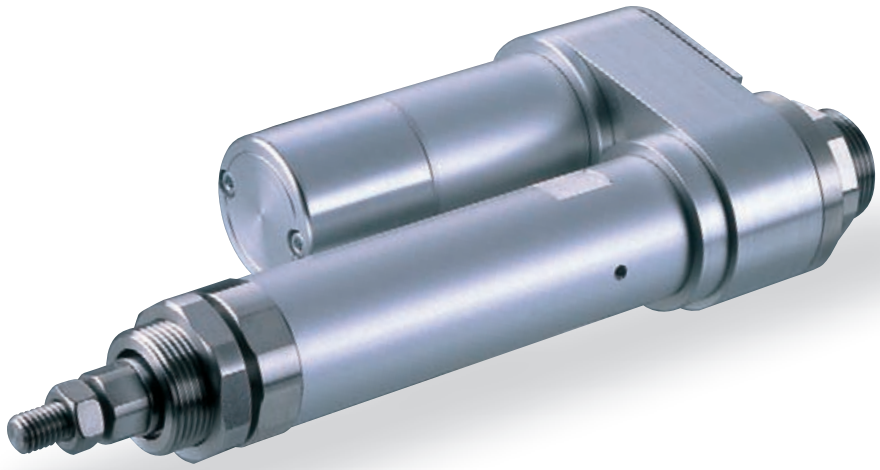
RCS2-RA4R

ROBO Cylinder, Rod Type, Actuator Diameter Ø37mm, 200-V Servo Motor
Motor Reversing Specification

■Model Specification Items **RCS2** — **RA4R** — □ — □ — □ — □ — □ — □ — □ — □

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
RCS2	RA4R	I: Incremental specification A: Absolute specification	20: Servo motor 20W 30: Servo motor 30W	12: 12mm 6: 6mm 3: 3mm	50:50mm ~ 300:300mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	Refer to the options table below.

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 3). This is the maximum acceleration.
(3) The horizontal load capacity assumes use of an external guide and absence of external force applied from any direction other than the moving direction of the rod.

Actuator Specifications

■Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum 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 (Set in 50-mm steps)
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	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■Stroke and Maximum Speed

Lead \ Stroke	50 ~ 300 (Set in 50-mm steps)
12	600
6	300
3	150

(Unit: mm/s)

Options

Name	Model	Page
Brake	B	P381
Rear mounting plate	RP	P387
Foot bracket	FT	P384
Flange	FL	P382
Home sensor	HS	P385
Knuckle joint	NJ	P385
Reversed-home specification	NM	P385
Clevis	QR	P386
Front trunnion	TRR	P389

Actuator Specifications

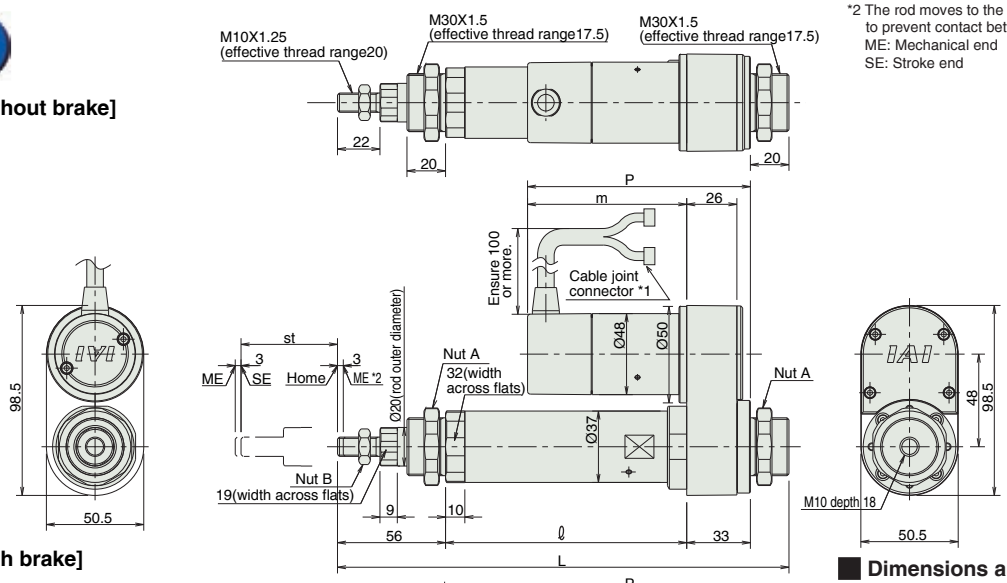
Item	Description
Drive method	Ball screw Ø10mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.05mm or less
Base	Material: Aluminum with white alumite treatment
Rod diameter	Ø20mm
Rod non-rotation accuracy	±1.0°
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Dimensions

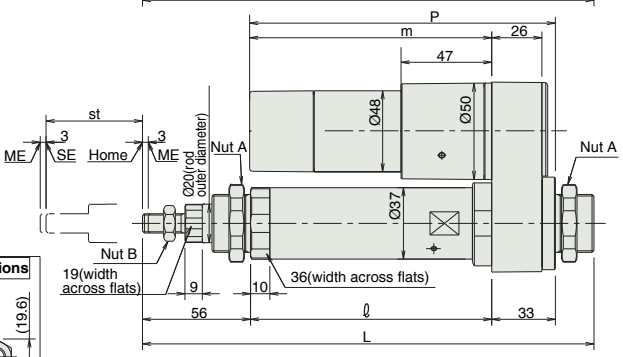
You can download CAD drawings from our website. www.robocylinder.de

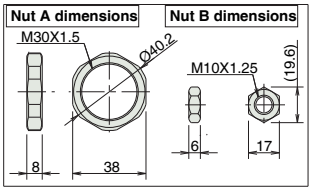
2D CAD

[Without brake]



[With brake]





*1 Connect the motor/encoder cables. Refer to p. 334 for details on the cables.
*2 The rod moves to the ME during home return. Pay attention to prevent contact between the rod and surrounding parts.
ME: Mechanical end
SE: Stroke end

Dimensions and 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

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-20 ① -NP-2- ② SCON- C-30 ① -NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoi valve mode			Same control actions as those applicable to solenoid valves	3 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-20 ① -NP-2- ② SSEL- C-1-30 ① -NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-20 ① -N1-EEE-2- ② XSEL- ③ -1-30 ① -N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three- phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

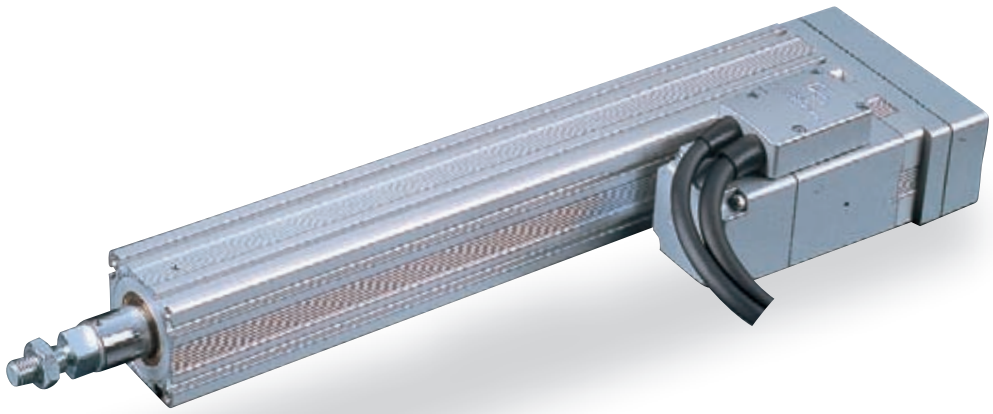
RCS2-RA5R

ROBO Cylinder, Rod Type, Actuator Width 55mm, 200-V Servo Motor Motor Reversing Specification

■Model Specification Items **RCS2** — **RA5R** — □ — **60** — □ — □ — □ — □ — □

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
RCS2	RA5R	I: Incremental specification A: Absolute specification	60: Servo motor 60W	16: 16mm 8: 8mm 4: 4mm	50:50mm 〜 300:300mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	Refer to the options table below.

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 4). This is the maximum acceleration.
(3) The horizontal load capacity assumes use of an external guide and absence of external force applied from any direction other than the moving direction of the rod.

Actuator Specifications

■Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-RA5R-①-60-16-②-③-④-⑤	60	16	12.0	2.0	63.8	50 ~ 300 (Set in 50-mm steps)
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	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■Stroke and Maximum Speed

Lead \ Stroke	50 ~ 250 (Set in 50-mm steps)	300 (mm)
16	800	755
8	400	377
4	200	188

(Unit: mm/s)

Options

Name	Model	Page
Cable outlet direction	A2	P381
Brake	B	P381
Flange	FL	P382
Foot bracket	FT	P384

Actuator Specifications

Item	Description
Drive method	Ball screw Ø12mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.05mm or less
Base	Material: Aluminum with white alumite treatment
Rod diameter	Ø30mm
Rod non-rotation accuracy	±0.7°
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

25 mm
32 mm
35 mm
37 mm
45 mm
55 mm
64 mm
75 mm
100 mm
Pulse Motor
20w
30w
60w
100w
150w

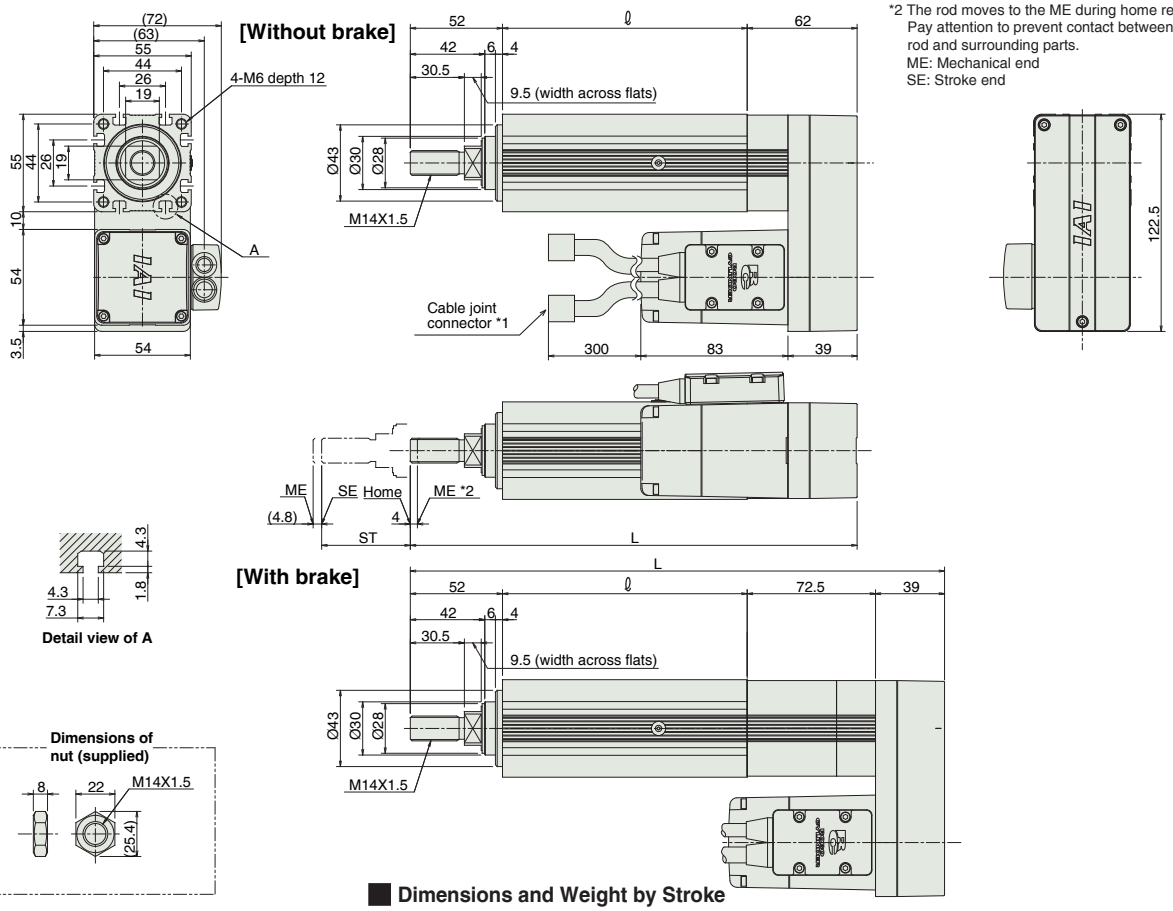
Dimensions

You can download CAD drawings from our website. www.robocylinder.de

* Due to structural limitations, the RA5R type is not available in the reversed-home specification.

*1 Connect the motor/encoder cables. Refer to p. 334 for details on the cables.
*2 The rod moves to the ME during home return. Pay attention to prevent contact between the rod and surrounding parts.
ME: Mechanical end
SE: Stroke end

2D CAD



Dimensions and 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

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-60 ① -NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoi valve mode			Same control actions as those applicable to solenoid valves	3 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-60 ① -NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-60 ① -N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three- phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

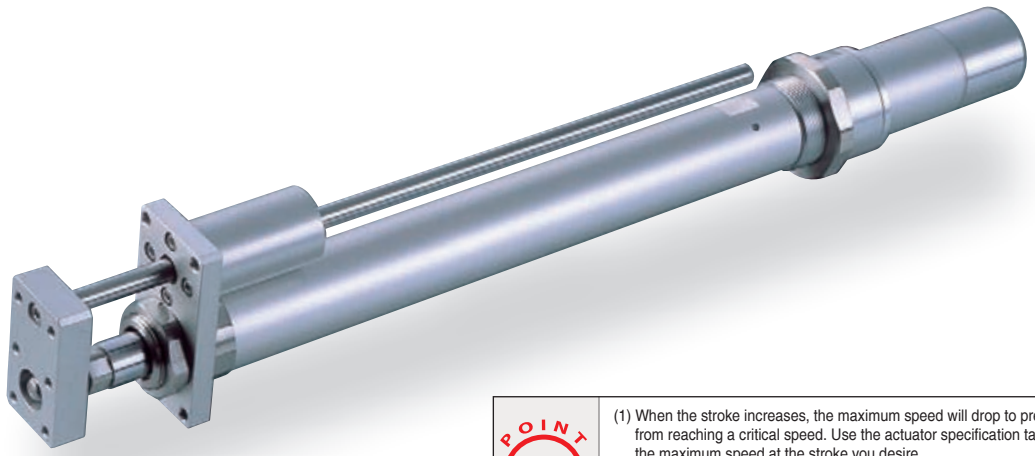
RCS2-RGS4C

ROBO Cylinder, Rod Type with Single Guide, Actuator Diameter Ø37mm
200-V Servo Motor, Coupling Specification

■Model Specification Items **RCS2 — RGS4C — □ — □ — □ — □ — □ — □ — □ — □**

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
—	—	I: Incremental specification A: Absolute specification	20: Servo motor 20W 30: Servo motor 30W	12: 12mm 6: 6mm 3: 3mm	50:50mm 〜 300:300mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	Refer to the options table below.

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 3). This is the maximum acceleration.
(3) The horizontal load capacity assumes use of an external guide and absence of external force applied from any direction other than the moving direction of the rod.

Actuator Specifications

■Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-RGS4C-①-20-12-②-③-④-⑤	20	12	3.0	0.5	18.9	50 ~ 300 (Set in 50-mm steps)
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	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■Stroke and Maximum Speed

Lead \ Stroke	50 ~ 300 (Set in 50-mm steps)
12	600
6	300
3	150

(Unit: mm/s)

Options

Name	Model	Page
Brake	B	P381
Foot bracket	FT	P383
Home sensor	HS	P385
Reversed-home specification	NM	P385
Rear trunnion	TRR	P389

Actuator Specifications

Item	Description
Drive method	Ball screw Ø10mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.05mm or less
Guide	Single guide, guide rod diameter Ø10mm, ball bush type
Rod diameter	Ø20mm
Rod non-rotation accuracy	±0.05°
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

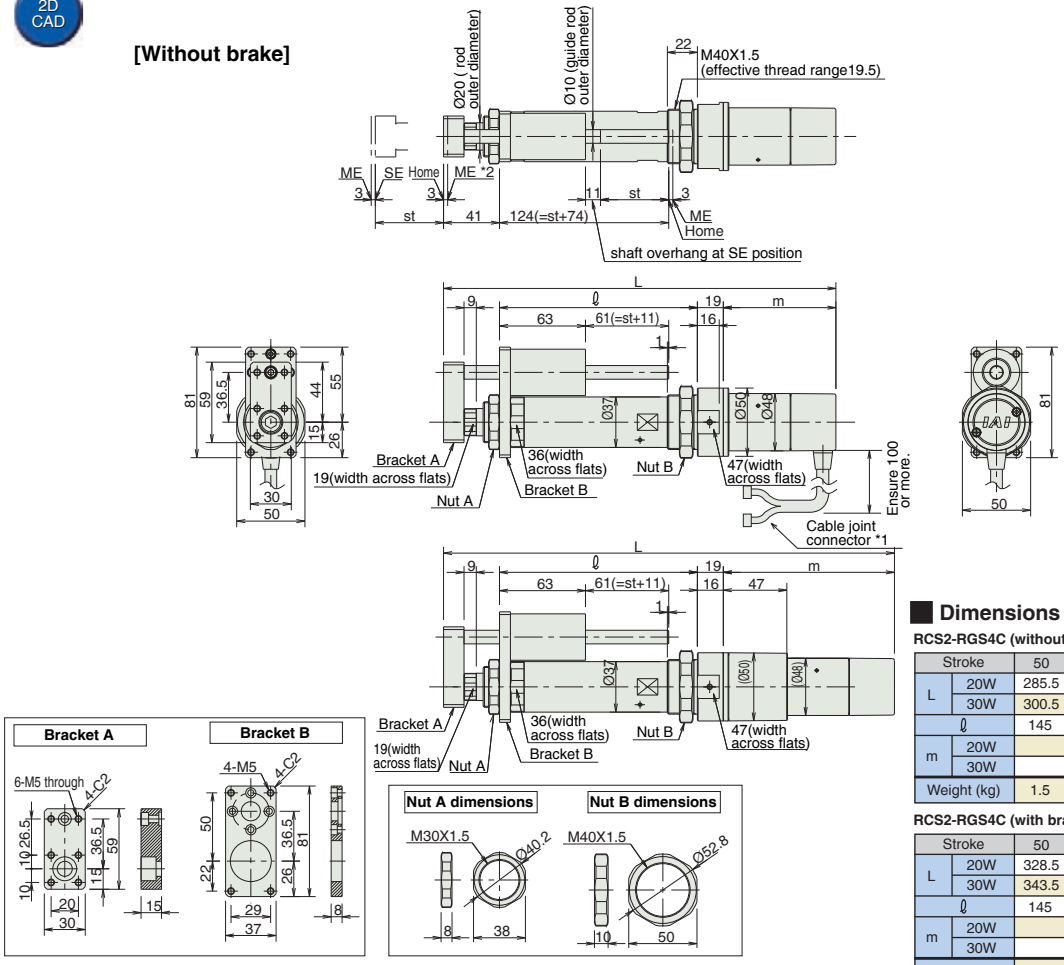
Dimensions

You can download CAD drawings from our website. www.robocylinder.de

*1 Connect the motor/encoder cables. Refer to p. 334 for details on the cables.
*2 The rod moves to the ME during home return. Pay attention to prevent contact between the rod and surrounding parts.
ME: Mechanical end
SE: Stroke end

2D CAD

[Without brake]



Dimensions and 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

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-20 ① -NP-2- ② SCON- C-30D ① -NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoi valve mode			Same control actions as those applicable to solenoid valves	3 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-20 ① -NP-2- ② SSEL- C-1-30D ① -NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-20 ① -N1-EEE-2- ② XSEL- ③ -1-30D ① -N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three- phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

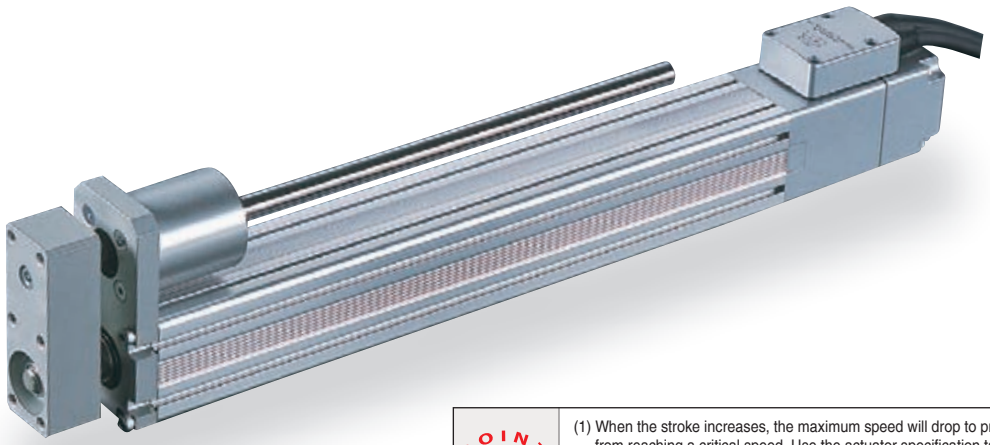
RCS2-RGS5C

ROBO Cylinder, Rod Type with Single Guide, Actuator Width 55mm, 200-V Servo Motor Coupling Specification

■Model Specification Items **RCS2 — RGS5C — □ — □ — □ — □ — □ — □ — □ — □**

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
—	—	I: Incremental specification A: Absolute specification	60: Servo motor 60W 100: Servo motor 100W	16: 16mm 8: 8mm 4: 4mm	50: 50mm ~ 300: 300mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	Refer to the options table below.

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 3). This is the maximum acceleration.
(3) The horizontal load capacity assumes use of an external guide and absence of external force applied from any direction other than the moving direction of the rod.

Actuator Specifications

■Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-RGS5C-①-60-16-②-③-④-⑤	60	16	12.0	1.3	63.8	50 ~ 300 (Set in 50-mm steps)
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	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■Stroke and Maximum Speed

Lead \ Stroke	50 ~ 250 (Set in 50-mm steps)	300 (mm)
16	800	755
8	400	377
4	200	188

(Unit: mm/s)

Options

Name	Model	Page
Cable outlet direction	A2	P381
Brake	B	P381
Foot bracket	FT	P384
Guide installation direction change	GS2~GS4	P170

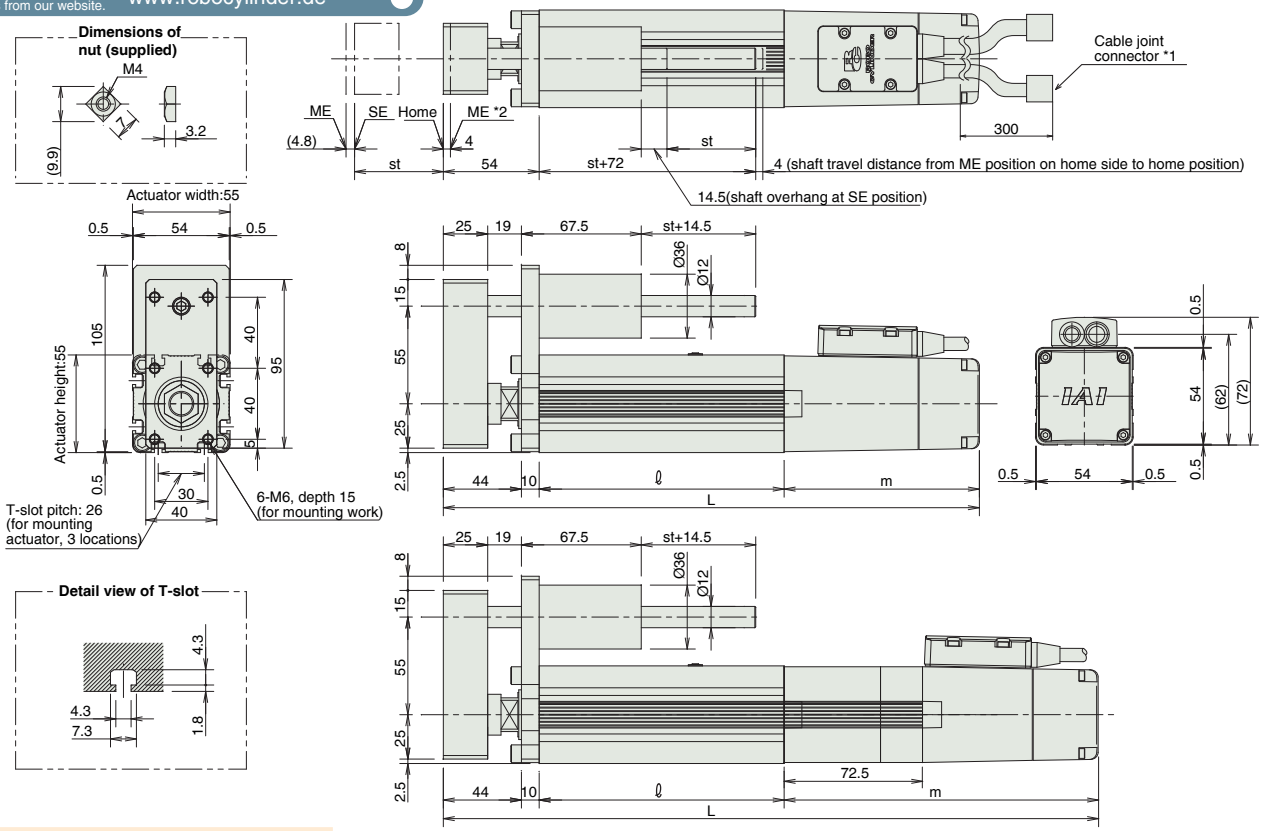
Actuator Specifications

Item	Description
Drive method	Ball screw Ø12mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.05mm or less
Guide	Single guide, guide rod diameter Ø12mm, ball bush type
Rod diameter	Ø20mm
Rod non-rotation accuracy	±0.1°
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Dimensions

You can download CAD drawings from our website. www.robocylinder.de

2D CAD



* Due to structural limitations, the RGS5C type is not available in the reversed-home specification.

*1 Connect the motor/encoder cables. Refer to p. 334 for details on the cables.
*2 The rod moves to the ME during home return. Pay attention to prevent contact between the rod and surrounding parts.
ME: Mechanical end
SE: Stroke end

Dimensions and 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

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-60①-NP-2- ② SCON- C-100①-NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoi valve mode			Same control actions as those applicable to solenoid valves	3 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-60①-NP-2- ② SSEL- C-1-100①-NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-60①-N1-EEE-2- ② XSEL- ③ -1-100①-N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three- phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

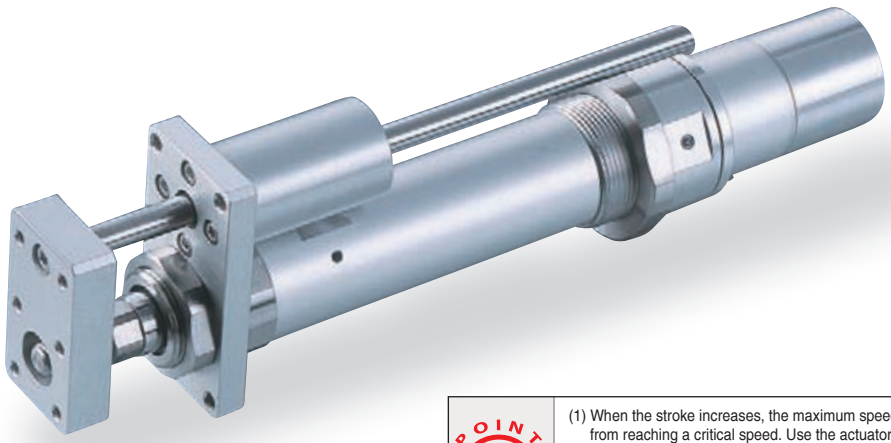
RCS2-RGS4D

ROBO Cylinder, Rod Type with Single Guide, Actuator Diameter Ø37mm
200-V Servo Motor, Built-In Specification

■Model Specification Items **RCS2 — RGS4D — □ — □ — □ — □ — □ — □ — □ — □**

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
—	—	I: Incremental specification A: Absolute specification	20: Servo motor 20W 30: Servo motor 30W	12: 12mm 6: 6mm 3: 3mm	50:50mm 〜 300:300mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	Refer to the options table below.

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 3). This is the maximum acceleration.
(3) The horizontal load capacity assumes use of an external guide and absence of external force applied from any direction other than the moving direction of the rod.

Actuator Specifications

■Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum 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 (Set in 50-mm steps)
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	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■Stroke and Maximum Speed

Lead \ Stroke	50 ~ 300 (Set in 50-mm steps)
12	600
6	300
3	150

(Unit: mm/s)

Options

Name	Model	Page
Foot bracket	FT	P384
Home sensor	HS	P385
Reversed-home specification	NM	P385
Rear trunnion	TRR	P389

Actuator Specifications

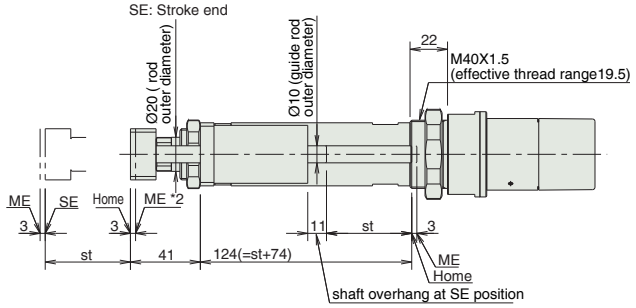
Item	Description
Drive method	Ball screw Ø10mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.05mm or less
Guide	Single guide, guide rod diameter Ø10mm, ball bush type
Rod diameter	Ø20mm
Rod non-rotation accuracy	±0.05°
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

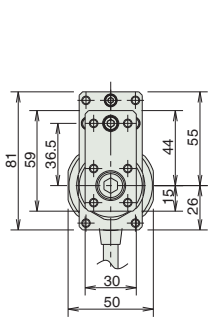
Dimensions

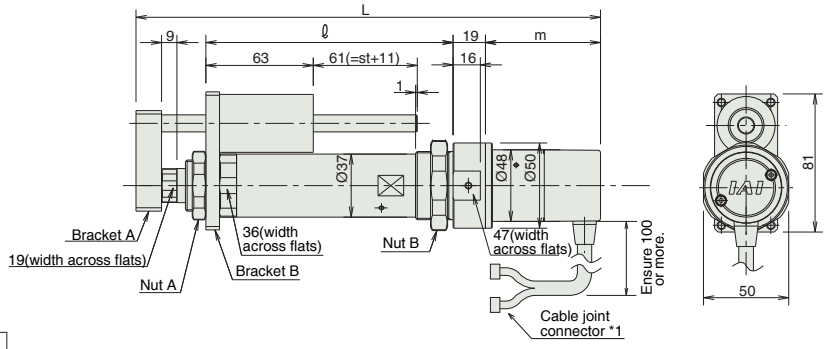
You can download CAD drawings from our website. www.robocylinder.de

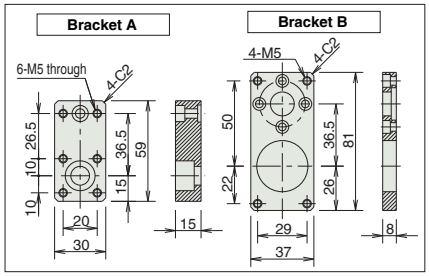
2D CAD

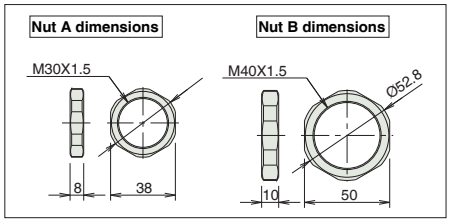
*1 Connect the motor/encoder cables. Refer to p. 334 for details on the cables.
*2 The rod moves to the ME during home return. Pay attention to prevent contact between the rod and surrounding parts.
ME: Mechanical end
SE: Stroke end











Dimensions and 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

The RCS2-RGS4D type does not come with brake.

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-20 ① -NP-2- ② SCON- C-30D ① -NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoi valve mode			Same control actions as those applicable to solenoid valves	3 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-20 ① -NP-2- ② SSEL- C-1-30D ① -NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-20 ① -N1-EEE-2- ② XSEL- ③ -1-30D ① -N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three- phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

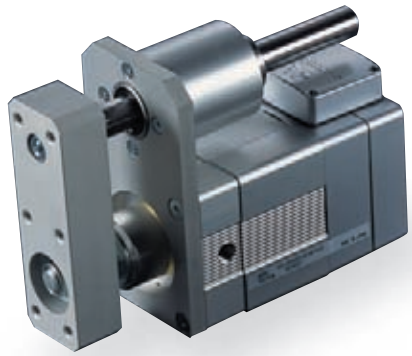
RCS2-RGS7AD

ROBO Cylinder, Rod Type with Single Guide, Actuator Width 75mm
200-V Servo Motor, Built-In (Direct-Coupled) Motor Specification

■Model Specification Items **RCS2 — RGS7AD — I — □ — □ — □ — □ — □ — □ — □**

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
—	—	I: Incremental specification	60: Servo motor 60W 100: Servo motor 100W	12: 12mm 6: 6mm 3: 3mm	50:50mm 〜 300:300mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	Refer to the options table below.

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.15 G (lead 12), 0.1 G (lead 6) or 0.05 G (lead 3) with a motor output of 60 W, or acceleration of 0.2 G (lead 12) or 0.1 G (lead 6) with a motor output of 100 W. These are the maximum accelerations for the respective lead/motor output specifications.
(3) The horizontal load capacity assumes use of an external guide and absence of external force applied from any direction other than the moving direction of the rod.

Actuator Specifications

■Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-RGS7AD-I-60-12-①-②-③-④	60	12	10.0	1.5	85.3	50 ~ 300 (Set in 50-mm steps)
RCS2-RGS7AD-I-60-6-①-②-③-④		6	20.0	6.0	169.5	
RCS2-RGS7AD-I-60-3-①-②-③-④		3	40.0	14.5	340.1	
RCS2-RGS7AD-I-100-12-①-②-③-④	100	12	15.0	4.5	141.1	
RCS2-RGS7AD-I-100-6-①-②-③-④		6	30.0	11.5	283.2	

Explanation of numbers ① Stroke ② Applicable controller ③ Cable length ④ Options

■Stroke and Maximum Speed

Lead \ Stroke	50 ~ 250 (Set in 50-mm steps)	300 (mm)
12	600	505
6	300	250
3	150	125

(Unit: mm/s)

Options

Name	Model	Page
Cable outlet direction	A1~A3	P381
Brake	B	P381
Foot bracket	FT	P384
Guide installation direction change	GS2~GS4	P174

Actuator Specifications

Item	Description
Drive method	Ball screw Ø10mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.05mm or less
Guide	Single guide, guide rod diameter Ø16mm, ball bush type
Rod diameter	Ø30mm
Rod non-rotation accuracy	±0.1°
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Dimensions

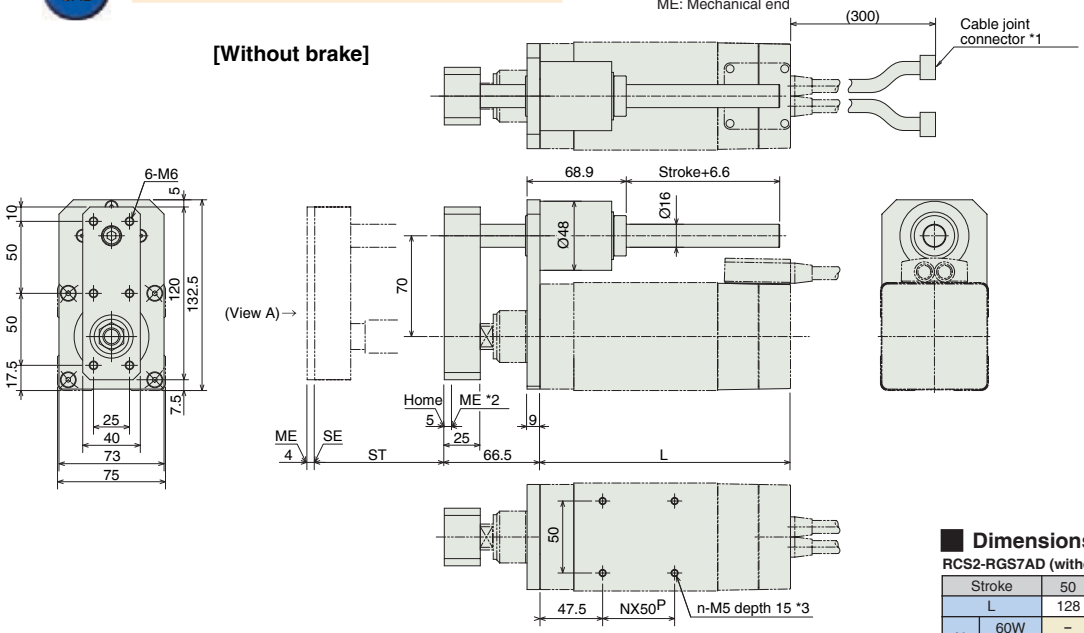
You can download CAD drawings from our website. www.robocylinder.de

2D CAD

* Due to structural limitations, the RGS7AD type is not available in the reversed-home specification.

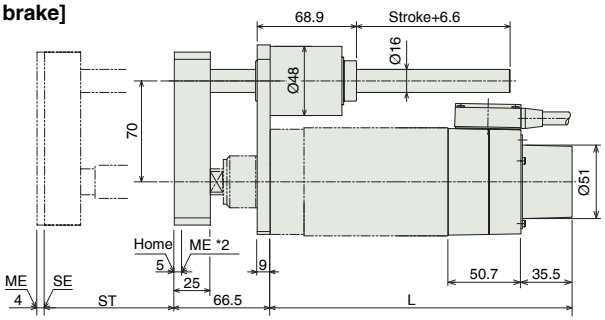
*1 Connect the motor/encoder cables. Refer to p. 334 for details on the cables.
*2 The rod moves to the ME during home return. Pay attention to prevent contact between the rod and surrounding parts.
ST: Stroke
SE: Stroke end
ME: Mechanical end

[Without brake]



Note
*3 100-W models with a 50 stroke do not have mounting holes in their bottom face. 60-W models with a 50 stroke and 100-W models with a 100 stroke only have one row of mounting holes (2 holes) in their bottom face.

[With brake]



Dimensions and Weight by Stroke

RCS2-RGS7AD (without brake)

Stroke		50	100	150	200	250	300
L		128	178	228	278	328	378
N	60W	–	1	2	3	4	5
	100W	–	–	1	2	3	4
n	60W	2	4	6	8	10	12
	100W	–	2	4	6	8	10
Weight (kg)	60W	3.2	3.8	4.3	4.8	5.3	5.9
	100W	3.3	3.9	4.4	4.9	5.4	6.0

RCS2-RGS7AD (with brake)

Stroke		50	100	150	200	250	300
L		163.5	213.5	263.5	313.5	363.5	413.5
N	60W	–	1	2	3	4	5
	100W	–	–	1	2	3	4
n	60W	2	4	6	8	10	12
	100W	–	2	4	6	8	10
Weight (kg)	60W	3.5	4.1	4.6	5.1	5.6	6.2
	100W	3.6	4.2	4.7	5.2	5.7	6.3

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-60I-NP-2-① SCON- C-100I-NP-2-①	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoi valve mode			Same control actions as those applicable to solenoid valves	3 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-60I-NP-2-① SSEL- C-1-100I-NP-2-①	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL-②-1-60I-N1-EEE-2-① XSEL-②-1-100I-N1-EEE-2-①	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three- phase 200V).
* ② indicates the XSEL type (J / K / P / Q).

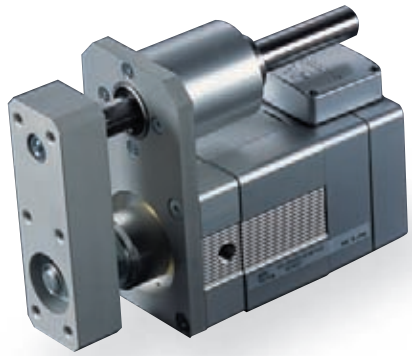
RCS2-RGS7BD

ROBO Cylinder, Rod Type with Single Guide, Actuator Width 75mm
200-V Servo Motor, Built-In (Direct-Coupled) Motor Specification

■Model Specification Items **RCS2 — RGS7BD — I — □ — □ — □ — □ — □ — □ — □**

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
—	—	I: Incremental specification	100: Servo motor 100W 150: Servo motor 150W	16: 16mm 8: 8mm 4: 4mm	50:50mm ~ 300:300mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	Refer to the options table below.

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.25 G (lead 16), 0.17 G (lead 8) or 0.1 G (lead 4) with a motor output of 100 W, or acceleration of 0.3 G (lead 16) or 0.2 G (lead 8) with a motor output of 150 W. These are the maximum accelerations for the respective lead/motor output specifications.
(3) The horizontal load capacity assumes use of an external guide and absence of external force applied from any direction other than the moving direction of the rod.

Actuator Specifications

■Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-RGS7BD-I-100-12-①-②-③-④	100	16	10.0	2.5	105.8	50 ~ 300 (Set in 50-mm steps)
RCS2-RGS7BD-I-100-6-①-②-③-④		8	22.0	8.0	212.7	
RCS2-RGS7BD-I-100-3-①-②-③-④		4	40.0	18.5	424.3	
RCS2-RGS7BD-I-150-12-①-②-③-④	150	16	15.0	5.5	158.8	
RCS2-RGS7BD-I-150-6-①-②-③-④		8	35.0	13.5	318.5	

Explanation of numbers ① Stroke ② Applicable controller ③ Cable length ④ Options

■Stroke and Maximum Speed

Lead \ Stroke	50 ~ 300 (Set in 50-mm steps)
16	800
8	400
4	200

(Unit: mm/s)

Options

Name	Model	Page
Cable outlet direction	A1~A3	P381
Brake	B	P381
Foot bracket	FT	P384
Guide installation direction change	GS2~GS4	P176

Actuator Specifications

Item	Description
Drive method	Ball screw Ø12mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.05mm or less
Guide	Single guide, guide rod diameter Ø16mm, ball bush type
Rod diameter	Ø35mm
Rod non-rotation accuracy	±0.1°
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Dimensions

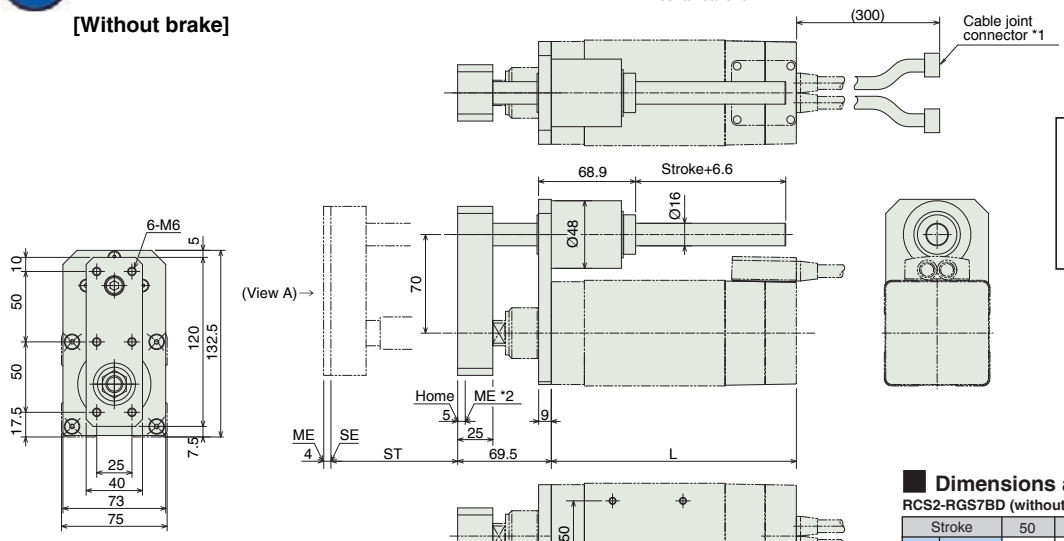
You can download CAD drawings from our website. www.robocylinder.de

2D CAD

* Due to structural limitations, the RGS7BD type is not available in the reversed-home specification.

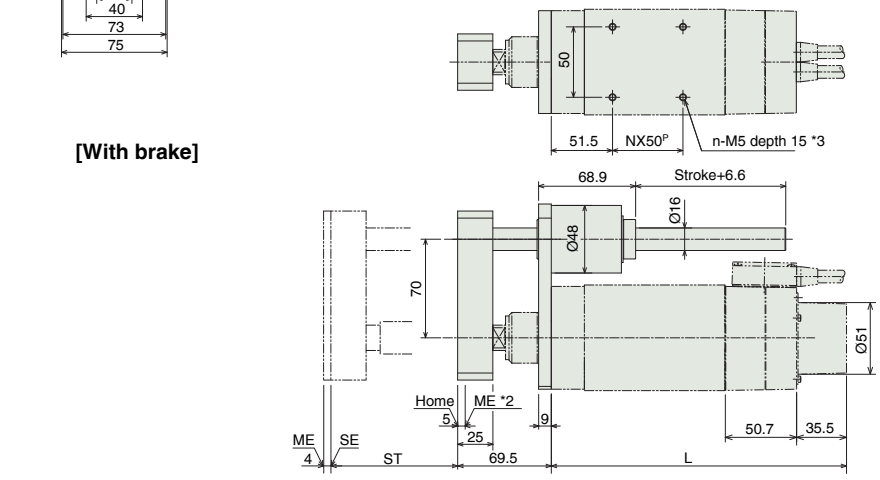
*1 Connect the motor/encoder cables. Refer to p. 334 for details on the cables.
*2 The rod moves to the ME during home return. Pay attention to prevent contact between the rod and surrounding parts.
ST: Stroke
SE: Stroke end
ME: Mechanical end

[Without brake]



Note
*3 The setting is not available with 150-W models with a 50 stroke. 100-W models with a 50 stroke do not have mounting holes in their bottom face. 100/150-W models with a 100 stroke only have one row of mounting holes (2 holes) in their bottom face.

[With brake]



Dimensions and Weight by Stroke

RCS2-RGS7BD (without brake)

Stroke		50	100	150	200	250	300
L	100W	133	183	233	283	333	383
	150W	–	183	233	283	333	383
N	100W	–	–	1	2	3	4
	150W	–	–	1	2	3	4
n	100W	–	2	4	6	8	10
	150W	–	2	4	6	8	10
Weight (kg)	100W	3.8	4.4	4.9	5.4	5.9	6.5
	150W	–	4.5	5.0	5.5	6.0	6.6

RCS2-RGS7BD (with brake)

Stroke		50	100	150	200	250	300
L	100W	168.5	218.5	268.5	318.5	368.5	418.5
	150W	–	218.5	268.5	318.5	368.5	418.5
N	100W	–	1	2	3	4	5
	150W	–	–	1	2	3	4
n	100W	–	2	4	6	8	10
	150W	–	2	4	6	8	10
Weight (kg)	100W	4.1	4.7	5.2	5.7	6.2	6.8
	150W	–	4.8	5.3	5.8	6.3	6.9

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-100I-NP-2-① SCON- C-150I-NP-2-①	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoi valve mode			Same control actions as those applicable to solenoid valves	3 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-100I-NP-2-① SSEL- C-1-150I-NP-2-①	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL-②-1-100I-N1-EEE-2-① XSEL-②-1-150I-N1-EEE-2-①	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three- phase 200V).
* ② indicates the XSEL type (J / K / P / Q).

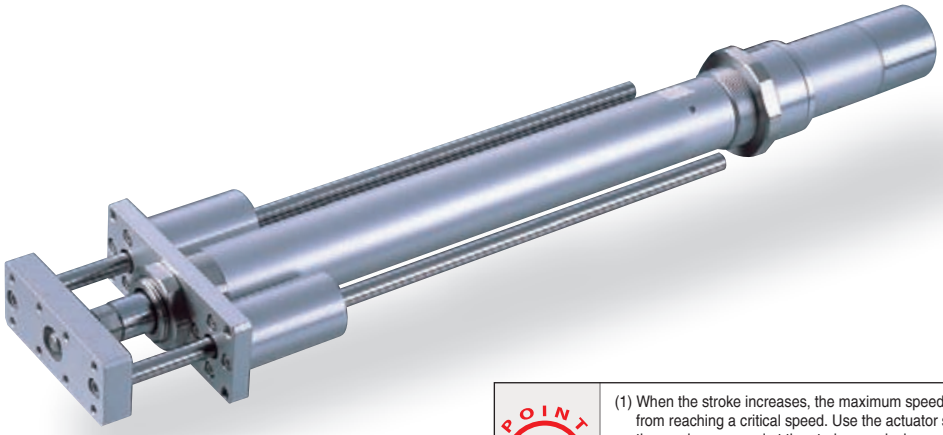
RCS2-RGD4C

ROBO Cylinder, Rod Type with Double Guide, Actuator Diameter Ø37mm
200-V Servo Motor, Coupling Specification

■Model Specification Items **RCS2—RGD4C—□—□—□—□—□—□—□—□—□**

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
RCS2	RGD4C	I: Incremental specification A: Absolute specification	20: Servo motor 20W 30: Servo motor 30W	12: 12mm 6: 6mm 3: 3mm	50:50mm ~ 300:300mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	Refer to the options table below.

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 3). This is the maximum acceleration.
(3) The horizontal load capacity assumes use of an external guide and absence of external force applied from any direction other than the moving direction of the rod.

Actuator Specifications

■Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-RGD4C-①-20-12-②-③-④-⑤	20	12	3.0	0.5	18.9	50 ~ 300 (Set in 50-mm steps)
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	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■Stroke and Maximum Speed

Lead \ Stroke	50 ~ 300 (Set in 50-mm steps)
12	600
6	300
3	150

(Unit: mm/s)

Options

Name	Model	Page
Brake	B	P381
Foot bracket	FT	P383
Home sensor	HS	P385
Reversed-home specification	NM	P385
Rear trunnion	TRR	P389

Actuator Specifications

Item	Description
Drive method	Ball screw Ø10mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.05mm or less
Guide	Double guide, guide rod diameter Ø10mm, ball bush type
Rod diameter	Ø20mm
Rod non-rotation accuracy	±0.05°
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

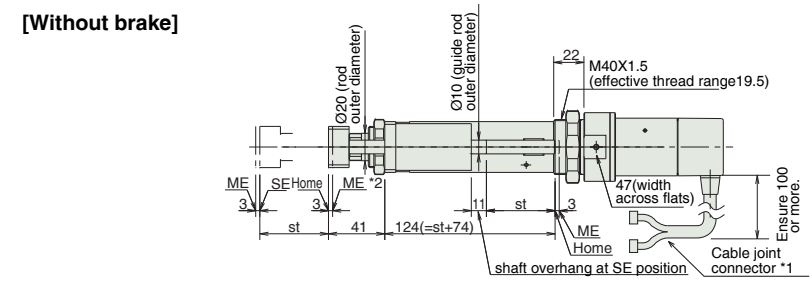
Dimensions

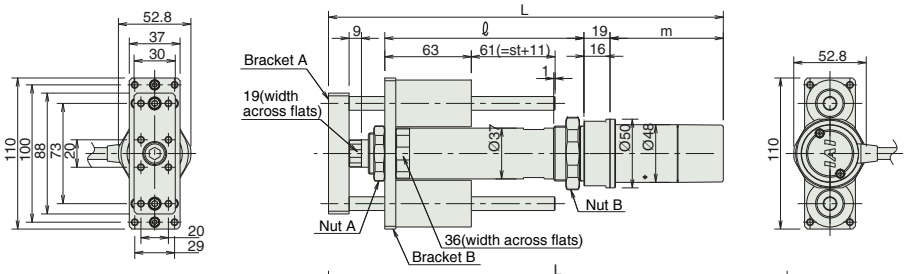
You can download CAD drawings from our website. www.robocylinder.de

*1 Connect the motor/encoder cables. Refer to p. 334 for details on the cables.
*2 The rod moves to the ME during home return. Pay attention to prevent contact between the rod and surrounding parts.
ME: Mechanical end
SE: Stroke end

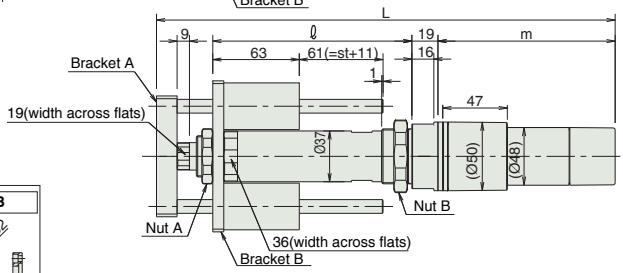
2D CAD

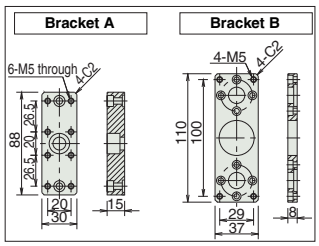
[Without brake]

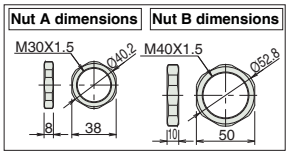




[With brake]







Dimensions and Weight by Stroke

RCS2-RGD4C (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)		1.8	2.0	2.2	2.4	2.6	2.8

RCS2-RGD4C (with brake)

Stroke		50	100	150	200	250	300
L	60W	328.5	378.5	428.5	478.5	528.5	578.5
	100W	343.5	393.5	443.5	493.5	543.5	593.5
ℓ		145	195	245	295	345	395
m	60W	123.5					
	100W	138.5					
Weight (kg)		2.0	2.2	2.4	2.6	2.8	3.0

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-20 ① -NP-2- ② SCON- C-30D ① -NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoi valve mode			Same control actions as those applicable to solenoid valves	3 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-20 ① -NP-2- ② SSEL- C-1-30D ① -NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-20 ① -N1-EEE-2- ② XSEL- ③ -1-30D ① -N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three- phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

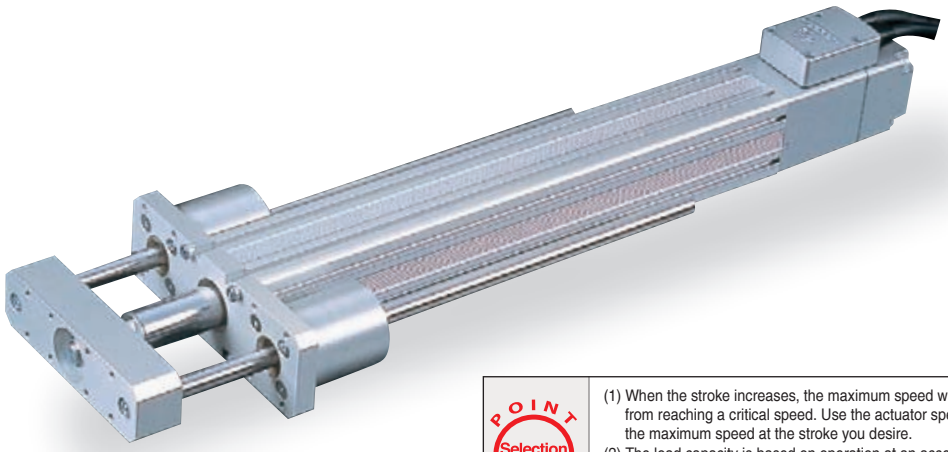
RCS2-RGD5C

ROBO Cylinder, Rod Type with Double Guide, Actuator Width 55mm
200-V Servo Motor, Coupling Specification

■Model Specification Items **RCS2—RGD5C—□—□—□—□—□—□—□—□—□**

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
—	—	I: Incremental specification A: Absolute specification	60: Servo motor 60W 100: Servo motor 100W	16: 16mm 8: 8mm 4: 4mm	50: 50mm 〜 300: 300mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	Refer to the options table below.

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 4). This is the maximum acceleration.
(3) The horizontal load capacity assumes use of an external guide and absence of external force applied from any direction other than the moving direction of the rod.

Actuator Specifications

■Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-RGD5C-①-60-16-②-③-④-⑤	60	16	12.0	1.3	63.8	50 ~ 300 (Set in 50-mm steps)
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	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■Stroke and Maximum Speed

Lead \ Stroke	50 ~ 250 (Set in 50-mm steps)	300 (mm)
16	800	755
8	400	377
4	200	188

(Unit: mm/s)

Options

Name	Model	Page
Cable outlet direction	A2	P381
Brake	B	P381
Foot bracket	FT	P384

Actuator Specifications

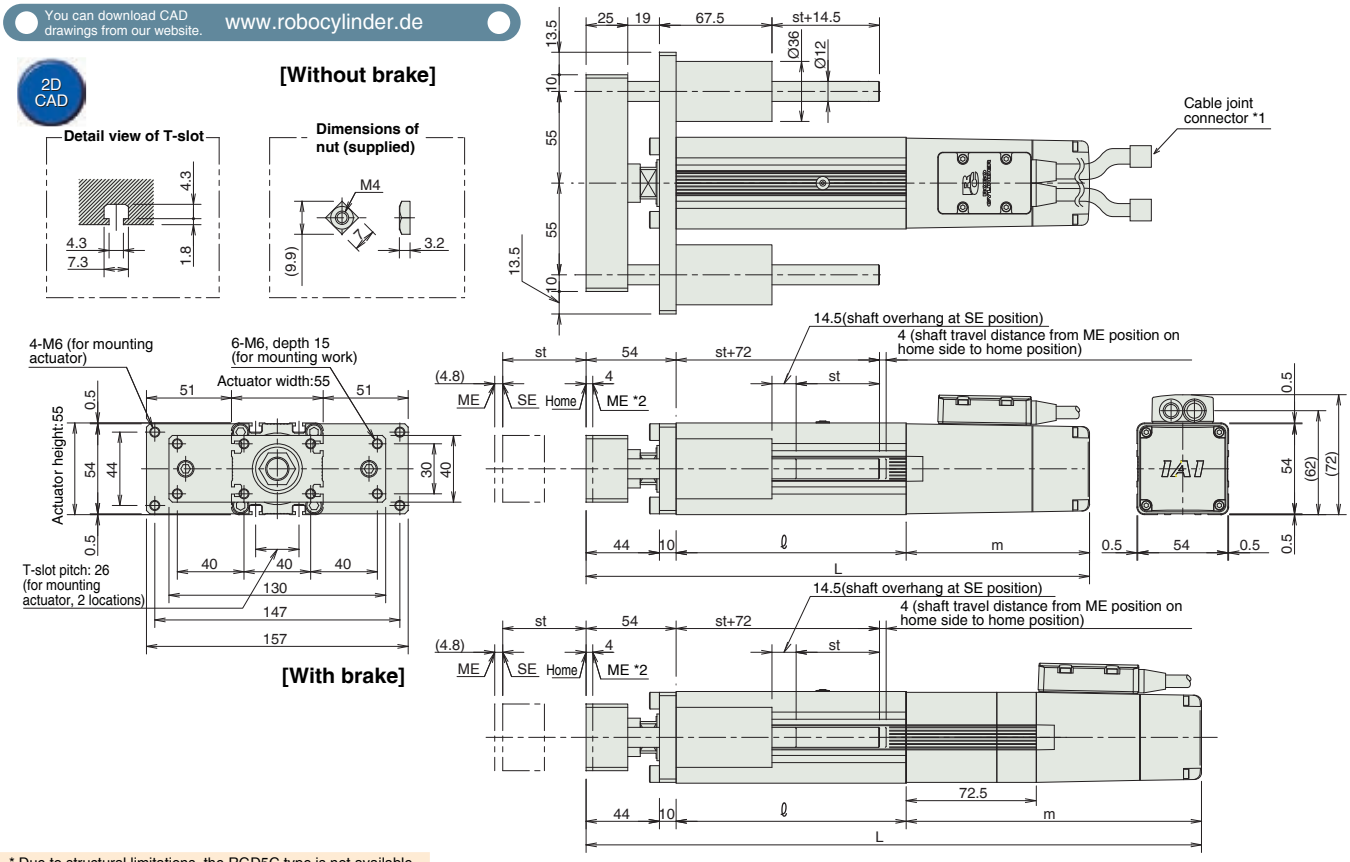
Item	Description
Drive method	Ball screw Ø12mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.05mm or less
Guide	Double guide, guide rod diameter Ø10mm, ball bush type
Rod diameter	Ø30mm
Rod non-rotation accuracy	±0.08°
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Dimensions

You can download CAD drawings from our website. www.robocylinder.de

2D CAD

[Without brake]



* Due to structural limitations, the RGD5C type is not available in the reversed-home specification.

*1 Connect the motor/encoder cables. Refer to p. 334 for details on the cables.
*2 The rod moves to the ME during home return. Pay attention to prevent contact between the rod and surrounding parts.
ME: Mechanical end
SE: Stroke end

Dimensions and 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

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-60 ① -NP-2- ② SCON- C-100 ① -NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoi valve mode			Same control actions as those applicable to solenoid valves	3 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-60 ① -NP-2- ② SSEL- C-1-100 ① -NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-60 ① -N1-EEE-2- ② XSEL- ③ -1-100 ① -N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three- phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

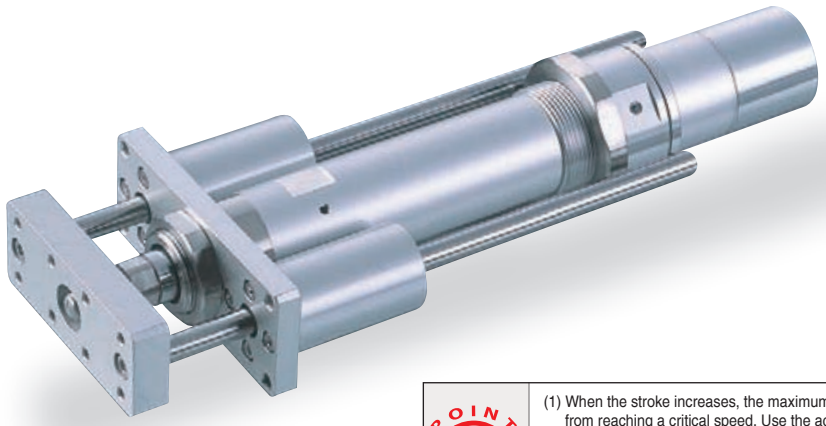
RCS2-RGD4D

ROBO Cylinder, Rod Type with Double Guide, Actuator Diameter Ø37mm
200-V Servo Motor, Built-In Specification

■Model Specification Items **RCS2 — RGD4D — □ — □ — □ — □ — □ — □ — □ — □**

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
—	—	I: Incremental specification A: Absolute specification	20: Servo motor 20W 30: Servo motor 30W	12: 12mm 6: 6mm 3: 3mm	50:50mm 〜 300:300mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	Refer to the options table below.

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 3). This is the maximum acceleration.
(3) The horizontal load capacity assumes use of an external guide and absence of external force applied from any direction other than the moving direction of the rod.

Actuator Specifications

■Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-RGD4D-①-20-12-②-③-④-⑤	20	12	3.0	0.5	18.9	50 ~ 300 (Set in 50-mm steps)
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	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■Stroke and Maximum Speed

Lead \ Stroke	50 ~ 300 (Set in 50-mm steps)
12	600
6	300
3	150

(Unit: mm/s)

Options

Name	Model	Page
Foot bracket	FT	P384
Home sensor	HS	P385
Reversed-home specification	NM	P385
Rear trunnion	TRR	P389

Actuator Specifications

Item	Description
Drive method	Ball screw Ø10mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.05mm or less
Guide	Double guide, guide rod diameter Ø10mm, ball bush type
Rod diameter	Ø20mm
Rod non-rotation accuracy	±0.05°
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

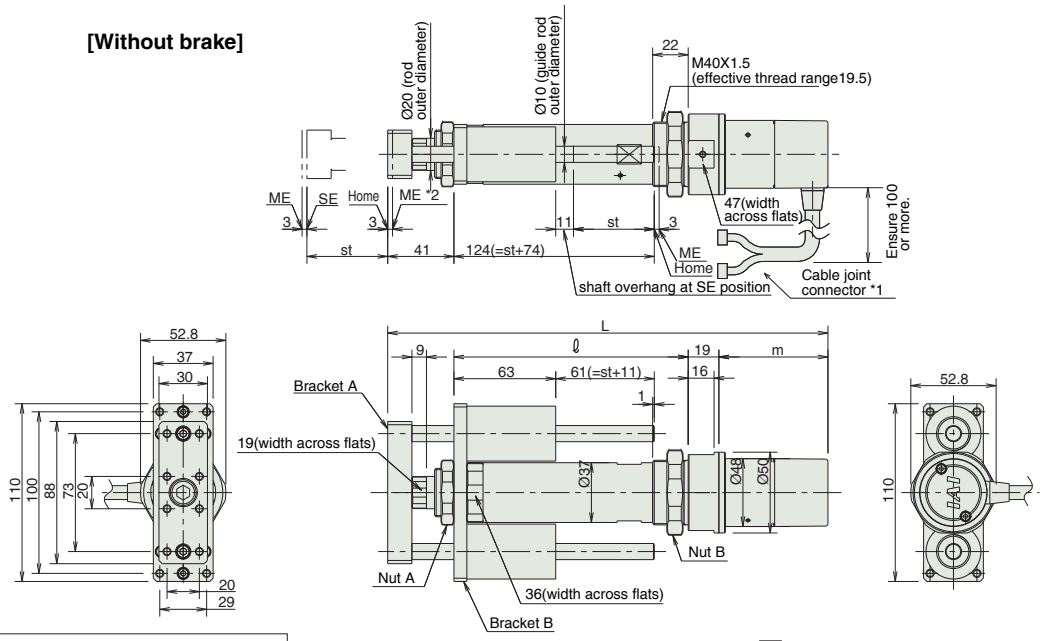
Dimensions

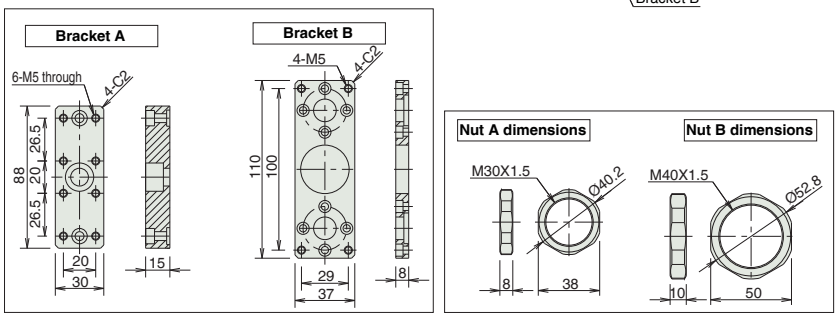
You can download CAD drawings from our website. www.robocylinder.de

2D CAD

*1 Connect the motor/encoder cables. Refer to p. 334 for details on the cables.
*2 The rod moves to the ME during home return. Pay attention to prevent contact between the rod and surrounding parts.
ME: Mechanical end
SE: Stroke end

[Without brake]





Dimensions and 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

The RCS2-RGD4D type does not come with brake.

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-20 ① -NP-2- ② SCON- C-30D ① -NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoi valve mode			Same control actions as those applicable to solenoid valves	3 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-20 ① -NP-2- ② SSEL- C-1-30D ① -NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-20 ① -N1-EEE-2- ② XSEL- ③ -1-30D ① -N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three- phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

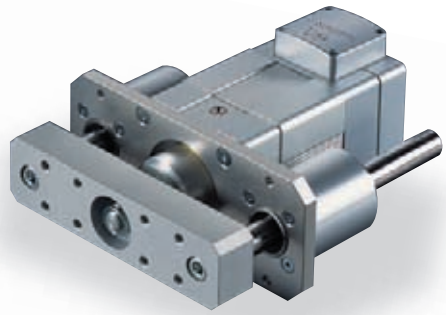
RCS2-RGD7AD

ROBO Cylinder, Rod Type with Double Guide, Actuator Width 75mm
200-V Servo Motor, Built-In (Direct-Coupled) Motor Specification

■Model Specification Items **RCS2 — RGD7AD — I — □ — □ — □ — □ — □ — □ — □**

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
—	—	I: Incremental specification	60: Servo motor 60W 100: Servo motor 100W	12: 12mm 6: 6mm 3: 3mm	50:50mm 〜 300:300mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	Refer to the options table below.

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.15 G (lead 12), 0.1 G (lead 6) or 0.05 G (lead 3) with a motor output of 60 W, or acceleration of 0.2 G (lead 12) or 0.1 G (lead 6) with a motor output of 100 W. These are the maximum accelerations for the respective lead/motor output specifications.
(3) The horizontal load capacity assumes use of an external guide and absence of external force applied from any direction other than the moving direction of the rod.

Actuator Specifications

■Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-RGD7AD-I-60-12-①-②-③-④	60	12	10.0	0.9	85.3	50 ~ 300 (Set in 50-mm steps)
RCS2-RGD7AD-I-60-6-①-②-③-④		6	20.0	5.4	169.5	
RCS2-RGD7AD-I-60-3-①-②-③-④		3	40.0	13.9	340.1	
RCS2-RGD7AD-I-100-12-①-②-③-④	100	12	15.0	3.9	141.1	
RCS2-RGD7AD-I-100-6-①-②-③-④		6	30.0	10.9	283.2	

Explanation of numbers ① Stroke ② Applicable controller ③ Cable length ④ Options

■Stroke and Maximum Speed

Lead \ Stroke	50 ~ 250 (Set in 50-mm steps)	300 (mm)
12	600	505
6	300	250
3	150	125

(Unit: mm/s)

Options

Name	Model	Page
Cable outlet direction	A2	P381
Brake	B	P381
Foot bracket	FT	P384

Actuator Specifications

Item	Description
Drive method	Ball screw Ø10mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.05mm or less
Guide	Double guide, guide rod diameter Ø16mm, ball bush type
Rod diameter	Ø30mm
Rod non-rotation accuracy	±0.08°
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

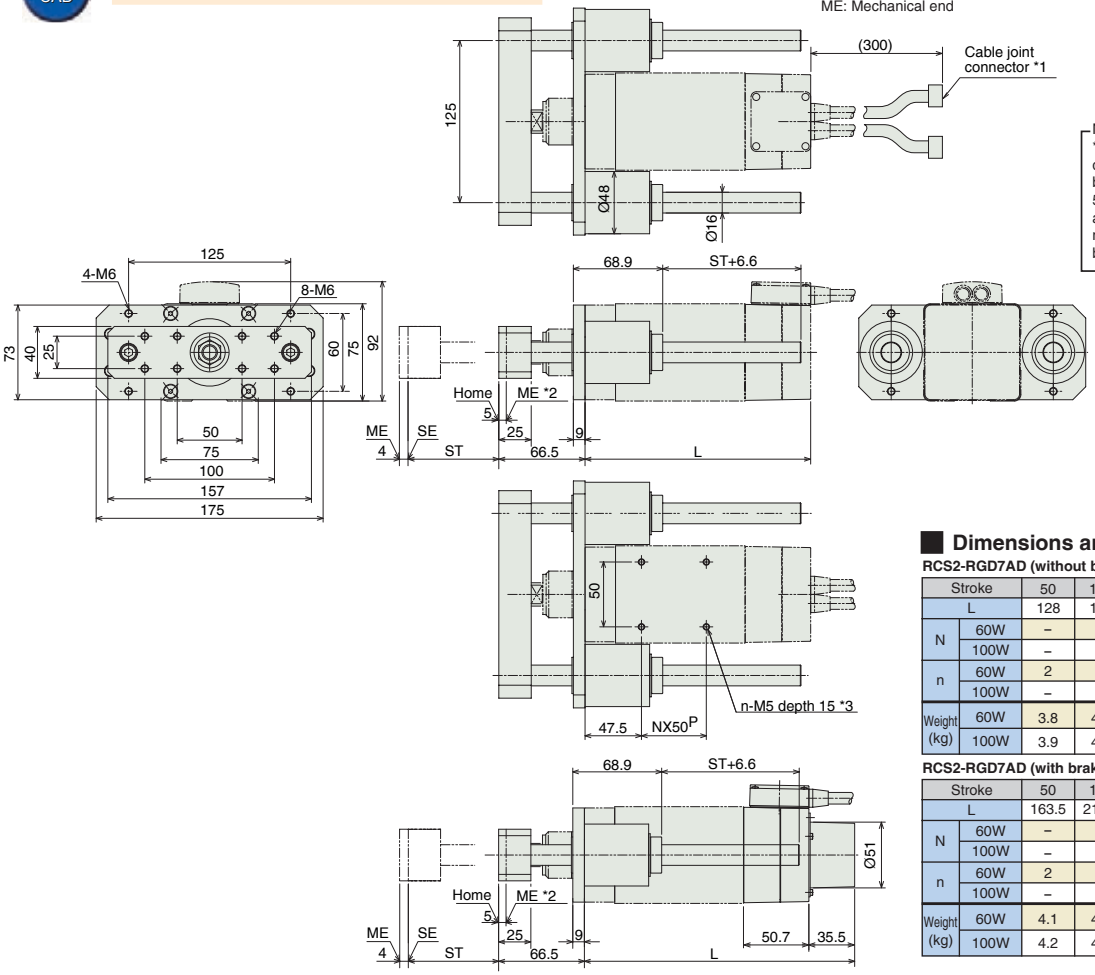
Dimensions

You can download CAD drawings from our website. www.robocylinder.de

2D CAD

* Due to structural limitations, the RGD7AD type is not available in the reversed-home specification.

*1 Connect the motor/encoder cables. Refer to p. 334 for details on the cables.
*2 The rod moves to the ME during home return. Pay attention to prevent contact between the rod and surrounding parts.
ST: Stroke
SE: Stroke end
ME: Mechanical end



Note
*3 100-W models with a 50 stroke do not have mounting holes in their bottom face. 60-W models with a 50 stroke and 100-W models with a 100 stroke only have one row of mounting holes (2 holes) in their bottom face.

Dimensions and Weight by Stroke

RCS2-RGD7AD (without brake)

Stroke		50	100	150	200	250	300
L		128	178	228	278	328	378
N	60W	–	1	2	3	4	5
	100W	–	–	1	2	3	4
n	60W	2	4	6	8	10	12
	100W	–	2	4	6	8	10
Weight (kg)	60W	3.8	4.5	5.1	5.7	6.3	6.9
	100W	3.9	4.6	5.2	5.8	6.4	7.0

RCS2-RGD7AD (with brake)

Stroke		50	100	150	200	250	300
L		163.5	213.5	263.5	313.5	363.5	413.5
N	60W	–	1	2	3	4	5
	100W	–	–	1	2	3	4
n	60W	2	4	6	8	10	12
	100W	–	2	4	6	8	10
Weight (kg)	60W	4.1	4.8	5.4	6	6.6	7.2
	100W	4.2	4.9	5.5	6.1	6.7	7.3

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-60I-NP-2-① SCON- C-100I-NP-2-①	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoi valve mode			Same control actions as those applicable to solenoid valves	3 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-60I-NP-2-① SSEL- C-1-100I-NP-2-①	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL-②-1-60I-N1-EEE-2-① XSEL-②-1-100I-N1-EEE-2-①	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three- phase 200V).
* ② indicates the XSEL type (J / K / P / Q).

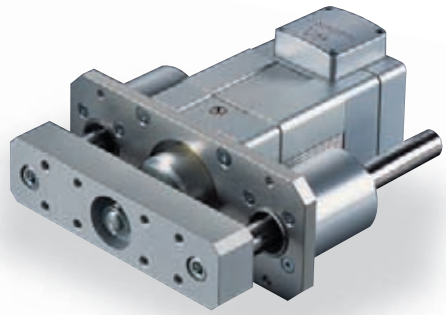
RCS2-RGD7BD

ROBO Cylinder, Rod Type with Single Guide, Actuator Width 75mm
200-V Servo Motor, Built-In (Direct-Coupled) Motor Specification

■Model Specification Items **RCS2—RGD7BD— I — □ — □ — □ — □ — □ — □ — □**

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
—	—	I: Incremental specification	100: Servo motor 100W 150: Servo motor 150W	16: 16mm 8: 8mm 4: 4mm	50:50mm 〜 300:300mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	Refer to the options table below.

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.25 G (lead 16), 0.17 G (lead 8) or 0.1 G (lead 4) with a motor output of 100 W, or acceleration of 0.3 G (lead 16) or 0.2 G (lead 8) with a motor output of 150 W. These are the maximum accelerations for the respective lead/motor output specifications.
(3) The horizontal load capacity assumes use of an external guide and absence of external force applied from any direction other than the moving direction of the rod.

Actuator Specifications

■Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-RGD7BD-I-100-12-①-②-③-④	100	16	10.0	1.9	105.8	50 ~ 300 (Set in 50-mm steps)
RCS2-RGD7BD-I-100-6-①-②-③-④		8	22.0	7.4	212.7	
RCS2-RGD7BD-I-100-3-①-②-③-④		4	40.0	17.9	424.3	
RCS2-RGD7BD-I-150-12-①-②-③-④	150	16	15.0	4.9	158.8	
RCS2-RGD7BD-I-150-6-①-②-③-④		8	35.0	12.9	318.5	

Explanation of numbers ① Stroke ② Applicable controller ③ Cable length ④ Options

■Stroke and Maximum Speed

Lead \ Stroke	50 ~ 300 (Set in 50-mm steps)
16	800
8	400
4	200

(Unit: mm/s)

Options

Name	Model	Page
Cable outlet direction	A2	P381
Brake	B	P381
Foot bracket	FT	P384

Actuator Specifications

Item	Description
Drive method	Ball screw Ø12mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.05mm or less
Guide	Single guide, guide rod diameter Ø16mm, ball bush type
Rod diameter	Ø35mm
Rod non-rotation accuracy	±0.08°
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

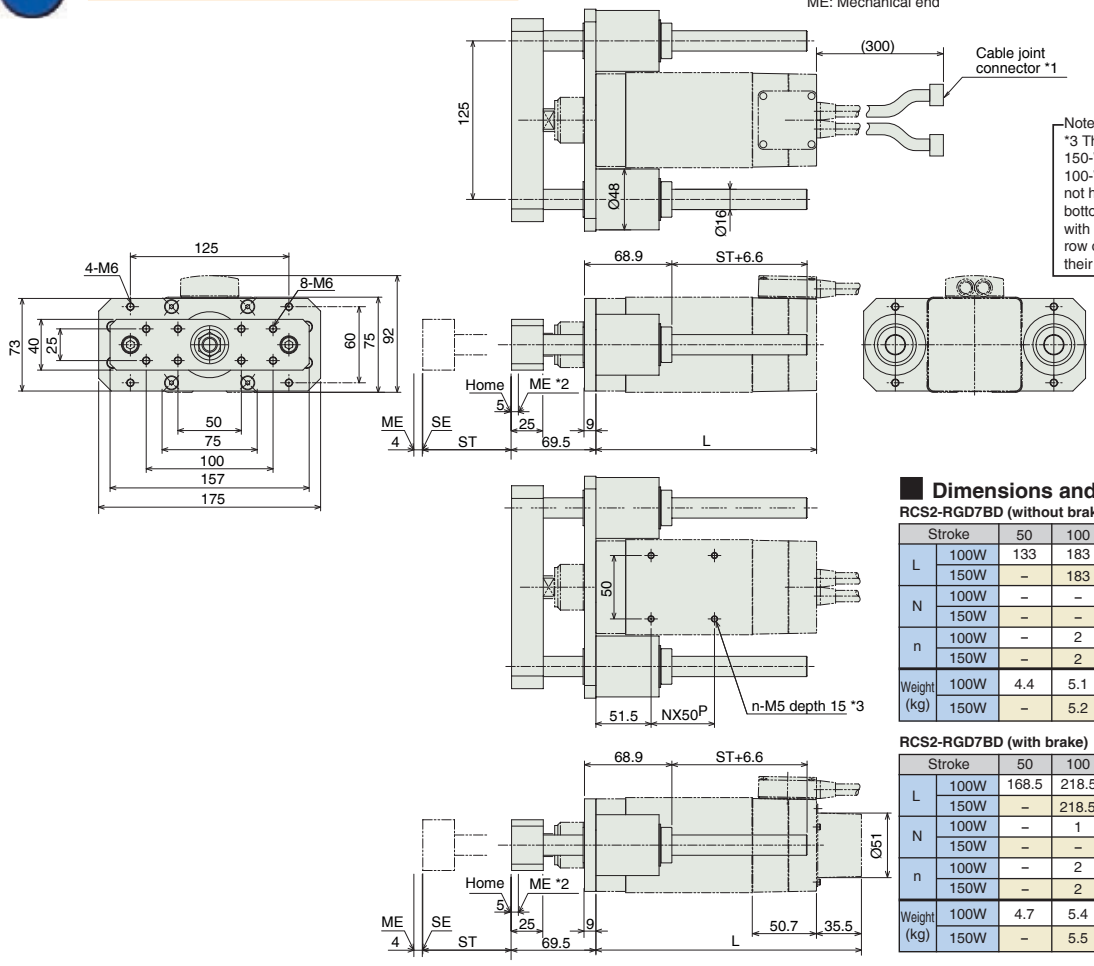
Dimensions

You can download CAD drawings from our website. www.robocylinder.de

2D CAD

* Due to structural limitations, the RGD7BD type is not available in the reversed-home specification.

*1 Connect the motor/encoder cables. Refer to p. 334 for details on the cables.
*2 The rod moves to the ME during home return. Pay attention to prevent contact between the rod and surrounding parts.
ST: Stroke
SE: Stroke end
ME: Mechanical end



Note
*3 The setting is not available with 150-W models with a 50 stroke. 100-W models with a 50 stroke do not have mounting holes in their bottom face. 100/150-W models with a 100 stroke only have one row of mounting holes (2 holes) in their bottom face.

Dimensions and Weight by Stroke

RCS2-RGD7BD (without brake)

Stroke		50	100	150	200	250	300
L	100W	133	183	233	283	333	383
	150W	–	183	233	283	333	383
N	100W	–	–	1	2	3	4
	150W	–	–	1	2	3	4
n	100W	–	2	4	6	8	10
	150W	–	2	4	6	8	10
Weight (kg)	100W	4.4	5.1	5.7	6.3	6.9	7.5
	150W	–	5.2	5.8	6.4	7.0	7.6

RCS2-RGD7BD (with brake)

Stroke		50	100	150	200	250	300
L	100W	168.5	218.5	268.5	318.5	368.5	418.5
	150W	–	218.5	268.5	318.5	368.5	418.5
N	100W	–	1	2	3	4	5
	150W	–	–	1	2	3	4
n	100W	–	2	4	6	8	10
	150W	–	2	4	6	8	10
Weight (kg)	100W	4.7	5.4	6	6.6	7.2	7.8
	150W	–	5.5	6.1	6.7	7.3	7.9

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-100I-NP-2-① SCON- C-150I-NP-2-①	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoi valve mode			Same control actions as those applicable to solenoid valves	3 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-100I-NP-2-① SSEL- C-1-150I-NP-2-①	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL-②-1-100I-N1-EEE-2-① XSEL-②-1-150I-N1-EEE-2-①	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three- phase 200V).
* ② indicates the XSEL type (J / K / P / Q).

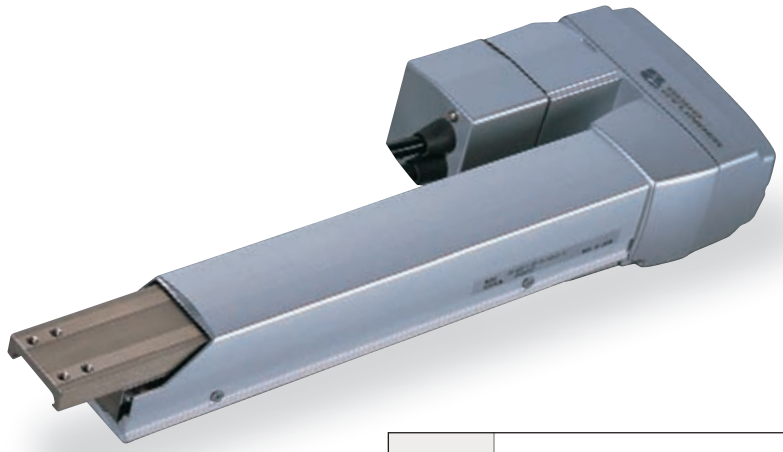
RCS2-A4R

ROBO Cylinder, Arm Type, Actuator Width 40mm, 200-V Servo Motor
Motor Reversing Specification

■Model Specification Items **RCS2** — **A4R** — □ — **20** — □ — □ — □ — □ — □

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
RCS2	A4R	I: Incremental specification A: Absolute specification	20: Servo motor 20W	10: 10mm 5: 5mm	50:50mm ~ 200:200mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	B: Brake (standard) NM: Reversed-home specification MR: Motor reversing on right ML: Motor reversing on left

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.2 G. This is the maximum acceleration.

Actuator Specifications

■Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-A4R-①-20-10-②-③-④-B-⑤	20	10	–	2.5	39.2	50 ~ 200 (Set in 50-mm steps)
RCS2-A4R-①-20-5-②-③-④-B-⑤		5	–	4.5	78.4	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■Stroke and Maximum Speed

Lead \ Stroke	50 ~ 200 (Set in 50-mm steps)
10	330
5	165

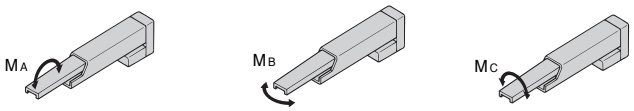
(Unit: mm/s)

Options

Name	Model	Page
Brake	B	P381
Reversed-home specification	NM	P385
Motor reversing on right	MR	P196
Motor reversing on left	ML	P196

Actuator Specifications

Item	Description
Drive method	Ball screw Ø8mm, rolled C10 (Ball screw speed reduced to half by means of timing belt)
Positioning repeatability	±0.02mm
Backlash	0.1mm or less
Base	Material: Aluminum with white alumite treatment
Allowable load moment	Ma : 2.7N • m Mb : 3.1N • m Mc : 2.9N • m
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)



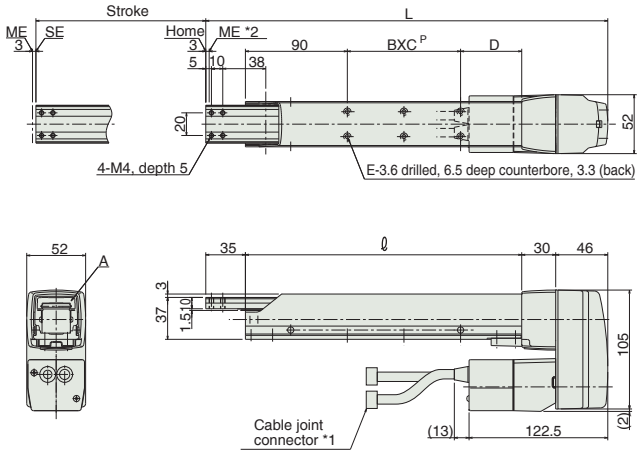
Dimensions

You can download CAD drawings from our website. www.robocylinder.de

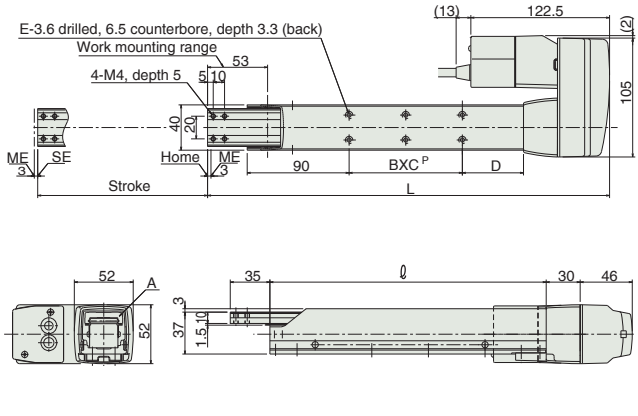
2D CAD

*1 Connect the motor/encoder cables. Refer to p. 334 for details on the cables.
*2 The rod moves to the ME during home return. Pay attention to prevent contact between the rod and surrounding parts.
ME: Mechanical end SE: Stroke end

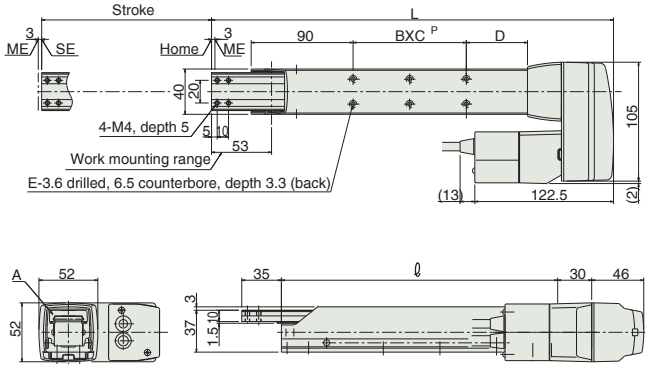
Standard motor reversing specification (Option code: Blank)

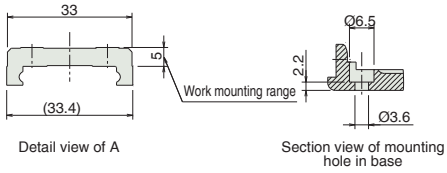


Motor reversing on right (Option code: MR)



Motor reversing on left (Option code: ML)





Dimensions and Weight by Stroke

Stroke	50	100	150	200
L	255	305	355	405
ℓ	144	194	244	294
BxC P	1x19	1x50	2x50	2x50
D	35	54	54	104
E	4	4	6	6
Weight (kg)	1.7	1.8	2.0	2.1

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-20 ① -NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-20 ① -NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-20 ① -N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

RCS2-A5R

ROBO Cylinder, Arm Type, Actuator Width 52mm, 200-V Servo Motor
Motor Reversing Specification

■Model Specification Items **RCS2** — **A5R** — □ — **20** — □ — □ — □ — □ — □

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
RCS2	A5R	I: Incremental specification A: Absolute specification	20: Servo motor 20W	12: 12mm 6: 6mm	50:50mm ～ 200:200mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	B: Brake (standard) NM: Reversed-home specification MR: Motor reversing on right ML: Motor reversing on left

* Refer to p. 31 of the front matter for details on the model specification items.

POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.2 G. This is the maximum acceleration.

Actuator Specifications

■Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-A5R-①-20-12-②-③-④-B-⑤	20	12	–	2	33.3	50 ~ 200 (Set in 50-mm steps)
RCS2-A5R-①-20-6-②-③-④-B-⑤		6	–	4	65.7	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■Stroke and Maximum Speed

Lead \ Stroke	50 ~ 200 (Set in 50-mm steps)
12	400
6	200

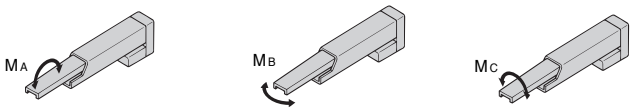
(Unit: mm/s)

Options

Name	Model	Page
Brake	B	P381
Reversed-home specification	NM	P385
Motor reversing on right	MR	P198
Motor reversing on left	ML	P198

Actuator Specifications

Item	Description
Drive method	Ball screw Ø8mm, rolled C10 (Ball screw speed reduced to half by means of timing belt)
Positioning repeatability	±0.02mm
Backlash	0.1mm or less
Base	Material: Aluminum with white alumite treatment
Allowable load moment	Ma : 4.5N • m Mb : 5.4N • m Mc : 4.1N • m
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)



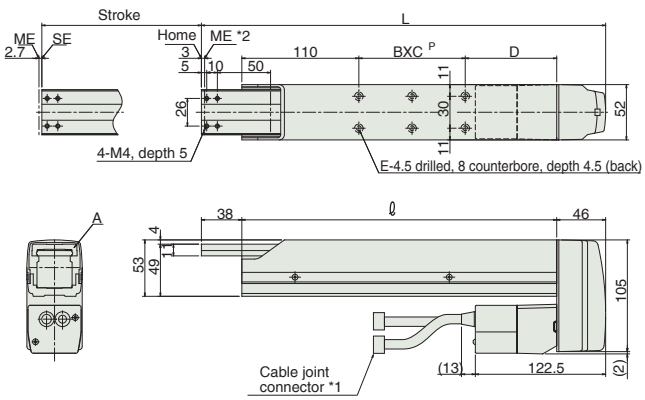
Dimensions

You can download CAD drawings from our website. www.robocylinder.de

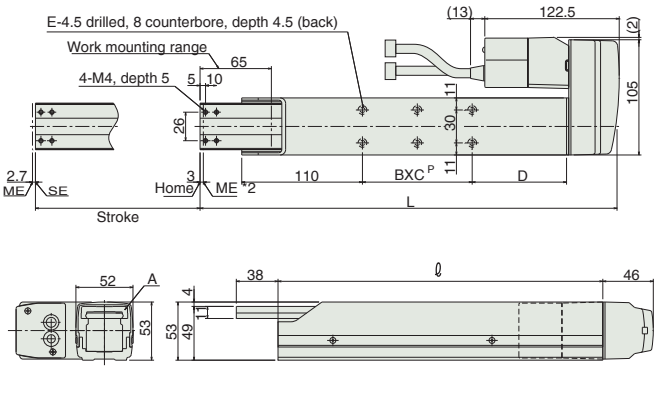
2D CAD

*1 Connect the motor/encoder cables. Refer to p. 334 for details on the cables.
*2 The rod moves to the ME during home return. Pay attention to prevent contact between the rod and surrounding parts.
ME: Mechanical end SE: Stroke end

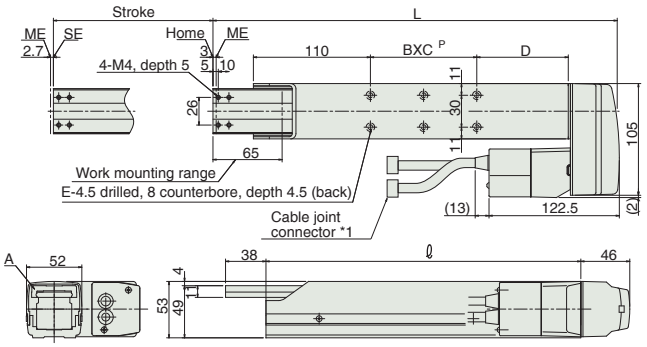
Standard motor reversing specification (Option code: Blank)

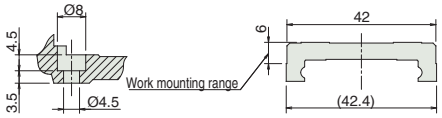


Motor reversing on right (Option code: MR)



Motor reversing on left (Option code: ML)





Detail view of A

Section view of mounting hole in base

Dimensions and Weight by Stroke

Stroke	50	100	150	200
L	280	330	380	430
ℓ	196	246	296	346
BxC^P	1x30	1x50	2x50	2x50
D	56	86	86	136
E	4	4	6	6
Weight (kg)	2.2	2.4	2.6	2.8

Note
The motor must be reversed at right or left if the stroke is 50. The standard reversing specification is not available with a 50 stroke.

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-20 ① -NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-20 ① -NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-20 ① -N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

RCS2-A6R

ROBO Cylinder, Arm Type, Actuator Width 58mm, 200-V Servo Motor
Motor Reversing Specification

■Model Specification Items **RCS2** — **A6R** — □ — **30** — □ — □ — □ — □ — □ — □

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
RCS2	A6R	I: Incremental specification A: Absolute specification	30: Servo motor 30W	12: 12mm 6: 6mm	50:50mm 〜 200:200mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	B: Brake (standard) NM: Reversed-home specification MR: Motor reversing on right ML: Motor reversing on left

* Refer to p. 31 of the front matter for details on the model specification items.

POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.2 G. This is the maximum acceleration.

Actuator Specifications

■Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-A6R-①-30-12-②-③-④-B-⑤	30	12	–	3	48.4	50 ~ 200 (Set in 50-mm steps)
RCS2-A6R-①-30-6-②-③-④-B-⑤		6	–	6	96.8	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■Stroke and Maximum Speed

Lead \ Stroke	50 ~ 200 (Set in 50-mm steps)
12	400
6	200

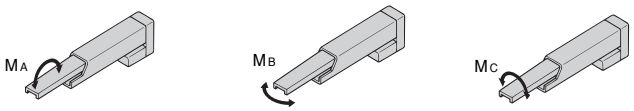
(Unit: mm/s)

Options

Name	Model	Page
Brake	B	P381
Reversed-home specification	NM	P385
Motor reversing on right	MR	P200
Motor reversing on left	ML	P200

Actuator Specifications

Item	Description
Drive method	Ball screw Ø10mm, rolled C10 (Ball screw speed reduced to half by means of timing belt)
Positioning repeatability	±0.02mm
Backlash	0.1mm or less
Base	Material: Aluminum with white alumite treatment
Allowable load moment	Ma : 8.1N • m Mb : 10.0N • m Mc : 6.5N • m
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)



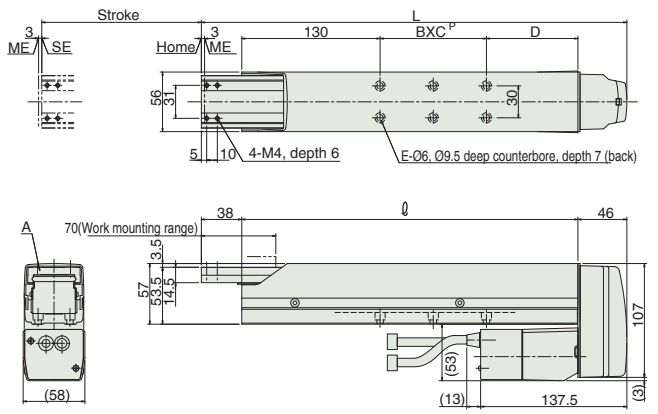
Dimensions

You can download CAD drawings from our website. www.robocylinder.de

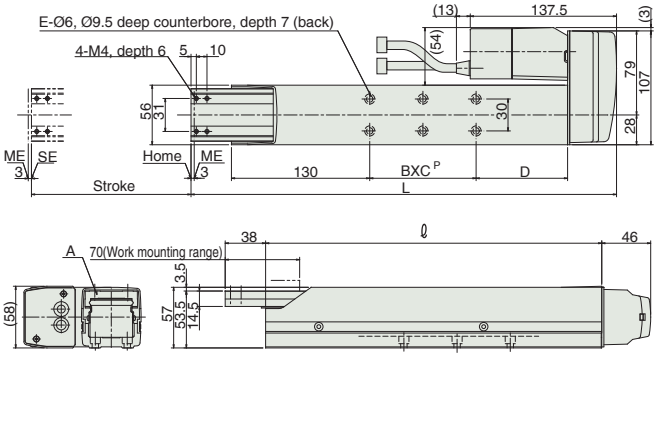
2D CAD

*1 Connect the motor/encoder cables. Refer to p. 334 for details on the cables.
*2 The rod moves to the ME during home return. Pay attention to prevent contact between the rod and surrounding parts.
ME: Mechanical end SE: Stroke end

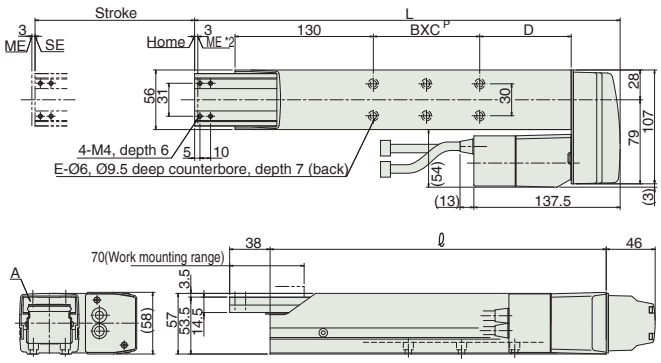
Standard motor reversing specification (Option code: Blank)

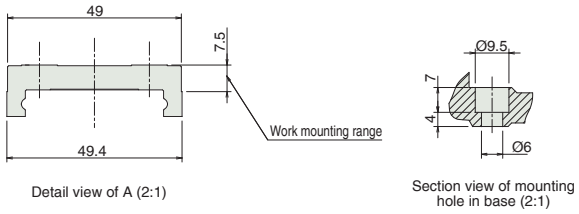


Motor reversing on right (Option code: MR)



Motor reversing on left (Option code: ML)





Dimensions and Weight by Stroke

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

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-30D ① -NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-30D ① -NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-30D ① -N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

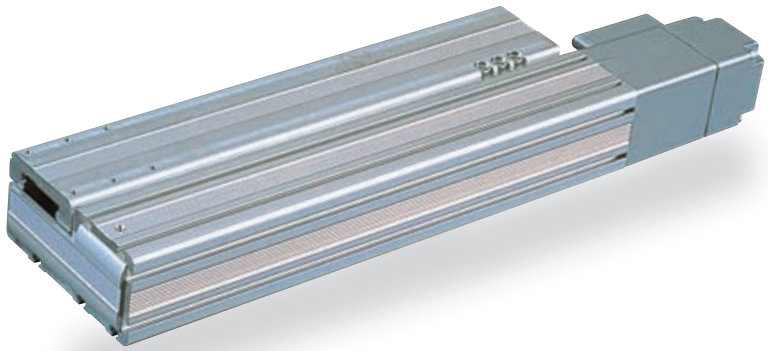
RCS2-F5D

ROBO Cylinder, Flat Type, Actuator Width 55mm, 200-V Servo Motor Built-In (Direct-Coupled) Motor Specification

■Model Specification Items **RCS2** — **F5D** — □ — □ — □ — □ — □ — □ — □ — □

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
RCS2	F5D	I: Incremental specification A: Absolute specification	60: Servo motor 60W 100: Servo motor 100W	16: 16mm 8: 8mm 4: 4mm	50: 50mm ~ 300: 300mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	B: Brake (standard) NM: Reversed-home specification

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.2 G. This is the maximum acceleration.

Actuator Specifications

■ Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2-F5D-①-60-16-②-③-④-⑤	60	16	Refer to p. 419.	2.0	63.8	50 ~ 300 (Set in 50-mm steps)
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	

Explanation of numbers ①Encoder type ②Stroke ③Applicable controller ④Cable length ⑤Options

■ Stroke and Maximum Speed

Lead \ Stroke	50 ~ 250 (Set in 50-mm steps)	300 (mm)
16	800	755
8	400	377
4	200	188

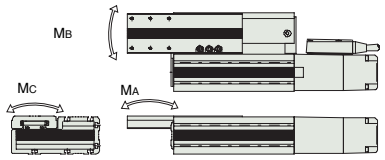
(Unit: mm/s)

Options

Name	Model	Page
Brake	B	P381
Reversed-home specification	NM	P385

Actuator Specifications

Item	Description
Drive method	Ball screw Ø12mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.05mm or less
Base	Material: Aluminum with white alumite treatment
Allowable load moment	Ma : 4.5N • m Mb : 5.4N • m Mc : 4.1N • m
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)



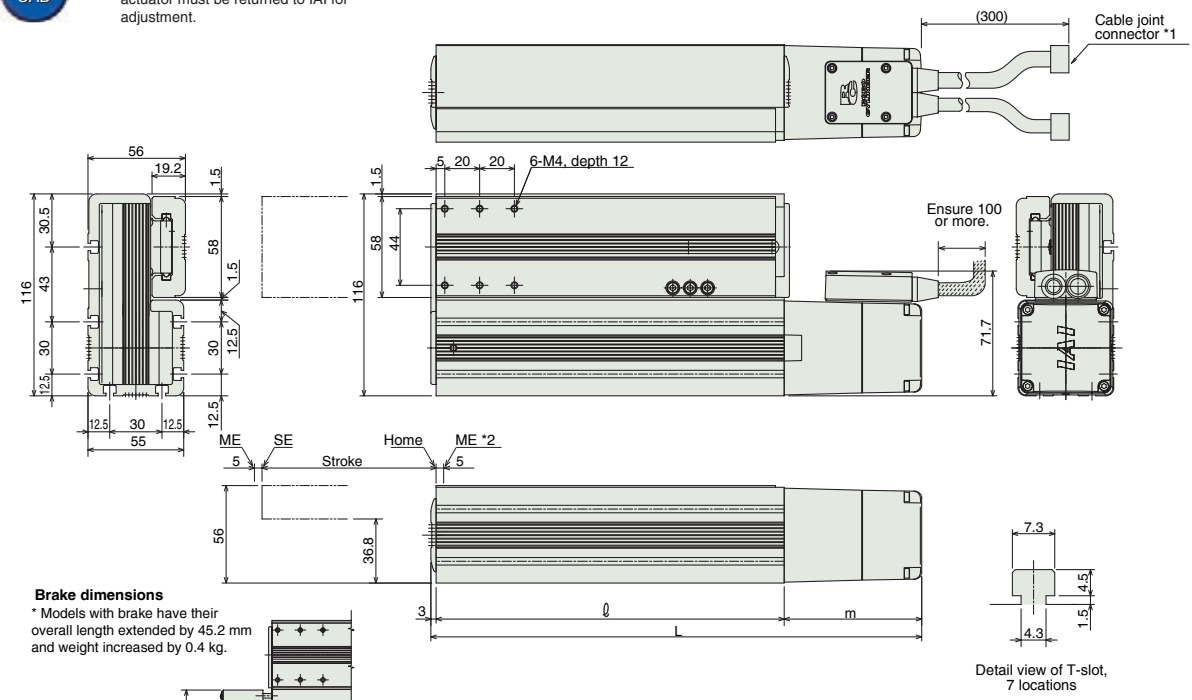
Dimensions

You can download CAD drawings from our website. www.robocylinder.de

2D CAD

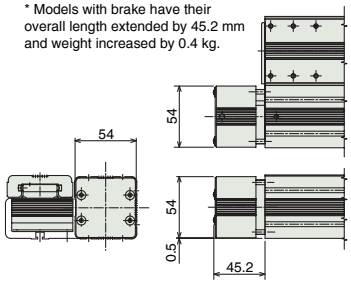
* To change the home direction, the actuator must be returned to IAI for adjustment.

*1 Connect the motor/encoder cables. Refer to p. 334 for details on the cables.
SE: Stroke end
ME: Mechanical end



Detail view of T-slot, 7 locations

Brake dimensions
* Models with brake have their overall length extended by 45.2 mm and weight increased by 0.4 kg.



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

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-60 ① -NP-2- ② SCON- C-100 ① -NP-2- ②	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(-)			
Program control, 1 or 2-axis type		SSEL- C-1-60 ① -NP-2- ② SSEL- C-1-100 ① -NP-2- ②	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③ -1-60 ① -N1-EEE-2- ② XSEL- ③ -1-100 ① -N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
* ① indicates the encoder type (I: Incremental / A: Absolute).
* ② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
* ③ indicates the XSEL type (J / K / P / Q).

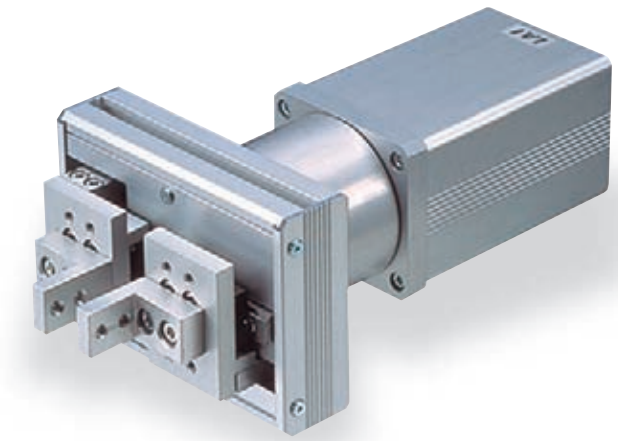
RCS2-GR8

ROBO Cylinder, Gripper Type, Actuator Width 104~284mm, 200-V Servo Motor

■Model Specification Items **RCS2** – **GR8** – **I** – **60** – **5** – □ – □ – □

Series	Type	Encoder type	Motor type	Gear ratio	Stroke	Applicable controller	Cable length
—	—	I: Incremental specification A: Absolute specification	60: Servo motor 60W	5: 1/5	20:20mm 40:40mm (60):60mm (80):80mm 100:100mm (120):120mm (200):200mm	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) The strokes in ( ) (60, 80, 120 and 200) represent semi-standard models.
(2) The maximum gripping force is the sum of gripping forces of both fingers.

Actuator Specifications

■ Lead and Load Capacity

Model	Motor output (W)	Gear ratio	Maximum gripping force (N)	Stroke (mm)
RCS2-GR8- I -60-5- ① - ② - ③	60	1/5	45.1	20, 40, (60), (80), 100, (120), (200)

Explanation of numbers ① Stroke ② Cable length ③ Options

Actuator Specifications

Item	Description
Drive method	Rack & pinion
Positioning repeatability	±0.04mm
Backlash	0.7mm or less
Base	Material: Aluminum with white alumite treatment
Allowable load moment	Ma : 5.1N • m Mb : 5.1N • m Mc : 10.4N • m
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

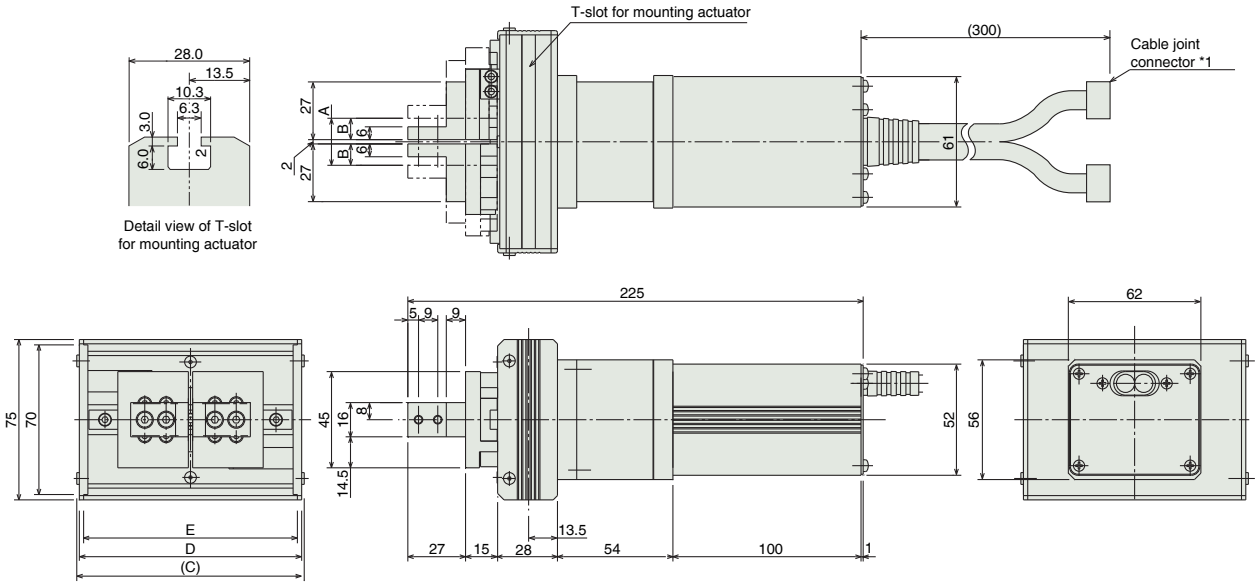
50 mm
62 mm
64 mm
68 mm
69 mm
74 mm
80 mm
88 mm
104-284 mm
Pulse Motor
20w
30w
60w
100w
150w

Dimensions

You can download CAD drawings from our website. www.robocylinder.de

2D CAD

* The slider home is located on the open side.



Dimensions, Weight and Maximum Speed 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 in ( ) are semi-standard settings and require a longer delivery lead time.

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-60I-NP-2- ①	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	3 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(Unlimited)			
Program control, 1 or 2-axis type		SSEL- C-1-60I-NP-2- ①	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ②-1-60I-N1-EEE-2- ①	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
*① indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
*② indicates the XSEL type (J / K / P / Q).

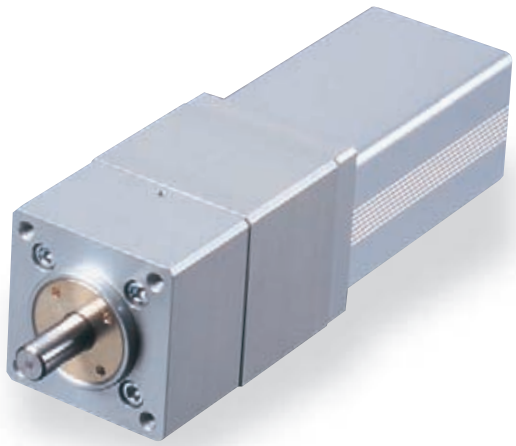
RCS2-RT6

ROBO Cylinder, Rotary Type, Actuator Width 64mm, 200-V Servo Motor, Straight Type

■Model Specification Items **RCS2** — **RT6** — **I** — **60** — **18** — **300** — □ — □ — **L**

RCS2	RT6	I	60	18	300	□	□	L
Series	Type	Encoder type	Motor type	Gear ratio	Oscillation angle	Applicable controller	Cable length	Options
		I: Incremental specification	60P: Pulse motor 60□ size	18: 1/18	300: 300°	T1: XSEL-J/K T2: SCON SSEL XSEL-P/Q	N: No cable P: 1m S: 3m M: 5m X□□: Specified length R□□: Robot cable	L: Limit switch (standard accessory)

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) The thrust load indicates the mechanical strength of the output shaft when the actuator is stationary. When selecting a model, consider the load moment and load inertia.

Actuator Specifications

■ Lead and Load Capacity

Model	Motor output (W)	Gear ratio	Maximum torque(N•m)	Allowable inertial moment (kg•m^2)	Oscillation angle (°)
RCS2-RT6-I-60-18-300-①-②-L	60	1/18	2.4	2.5X10^{-2} or less	300

Explanation of numbers ① Applicable controller ② Cable length

■ Stroke and Maximum Speed

Gear ratio \ Oscillation angle	300 (°)
1/18	500

(Unit: °/s)

Actuator Specifications

Item	Description
Drive method	Ball speed reducer
Positioning repeatability	±0.02°
Backlash	±0.1° or less
Base	Material: Aluminum with white alumite treatment
Allowable load moment	6.8N • m or less
Thrust load	100N or less
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

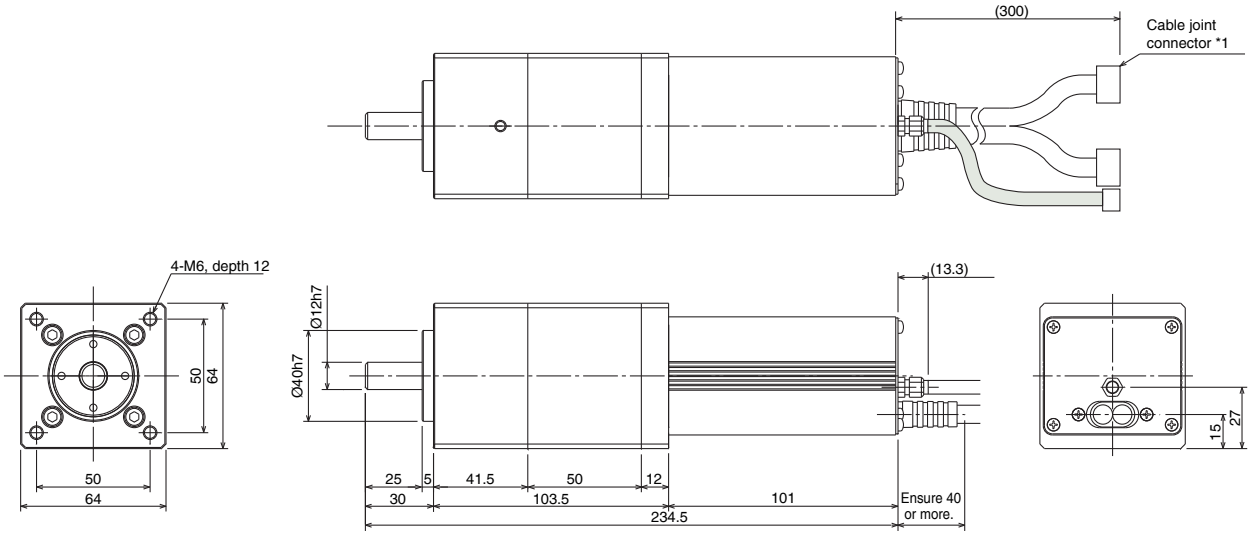
50 mm
62 mm
64 mm
68 mm
69 mm
74 mm
80 mm
88 mm
104-284 mm
Pulse Motor
20w
30w
60w
100w
150w

Dimensions

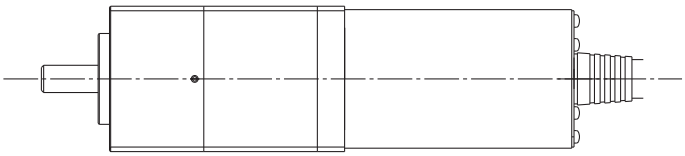
You can download CAD drawings from our website. www.robocylinder.de

2D CAD

* Refer to p. 420 for home return.



* Connect the motor/encoder and limit-switch cables. Refer to p. 334 for details on the cables.



Weight (kg)	1.9

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-60I-NP-2- ①	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	3 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(Unlimited)			
Program control, 1 or 2-axis type		SSEL- C-1-60I-NP-2- ①	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③-1-60I-N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
*① indicates the encoder type (I: Incremental / A: Absolute).
*② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
*③ indicates the XSEL type (J / K / P / Q).

RCS2-RT6R

ROBO Cylinder, Rotary Type, Actuator Width 64mm, 200-V Servo Motor
Motor reversing type

■Model Specification Items **RCS2** — **RT6R** — **I** — **60** — **18** — **300** — ☐ — ☐ — **L**

Series	Type	Encoder type	Motor type	Gear ratio	Oscillation angle	Applicable controller	Cable length	Options
RCS2	RT6R	I: Incremental specification	60P: Pulse motor 60☐size	18: 1/18	300: 300°	T1: XSEL-J/K T2: SCON SSEL XSEL-P/Q	N: No cable P: 1m S: 3m M: 5m X☐☐: Specified length R☐☐: Robot cable	L: Limit switch (standard accessory)

* Refer to p. 31 of the front matter for details on the model specification items.

POINT Selection Points

(1) The thrust load indicates the mechanical strength of the output shaft when the actuator is stationary. When selecting a model, consider the load moment and load inertia.

Actuator Specifications

■ Lead and Load Capacity

Model	Motor output (W)	Gear ratio	Maximum torque(N•m)	Allowable inertial moment (kg•m^2)	Oscillation angle (°)
RCS2-RT6R-I-60-18-300-①-②-L	60	1/18	2.4	2.5X10^{-2} or less	300

Explanation of numbers ① Applicable controller ② Cable length

■ Stroke and Maximum Speed

Gear ratio \ Oscillation angle	300 (°)
1/18	500

(Unit: °/s)

Actuator Specifications

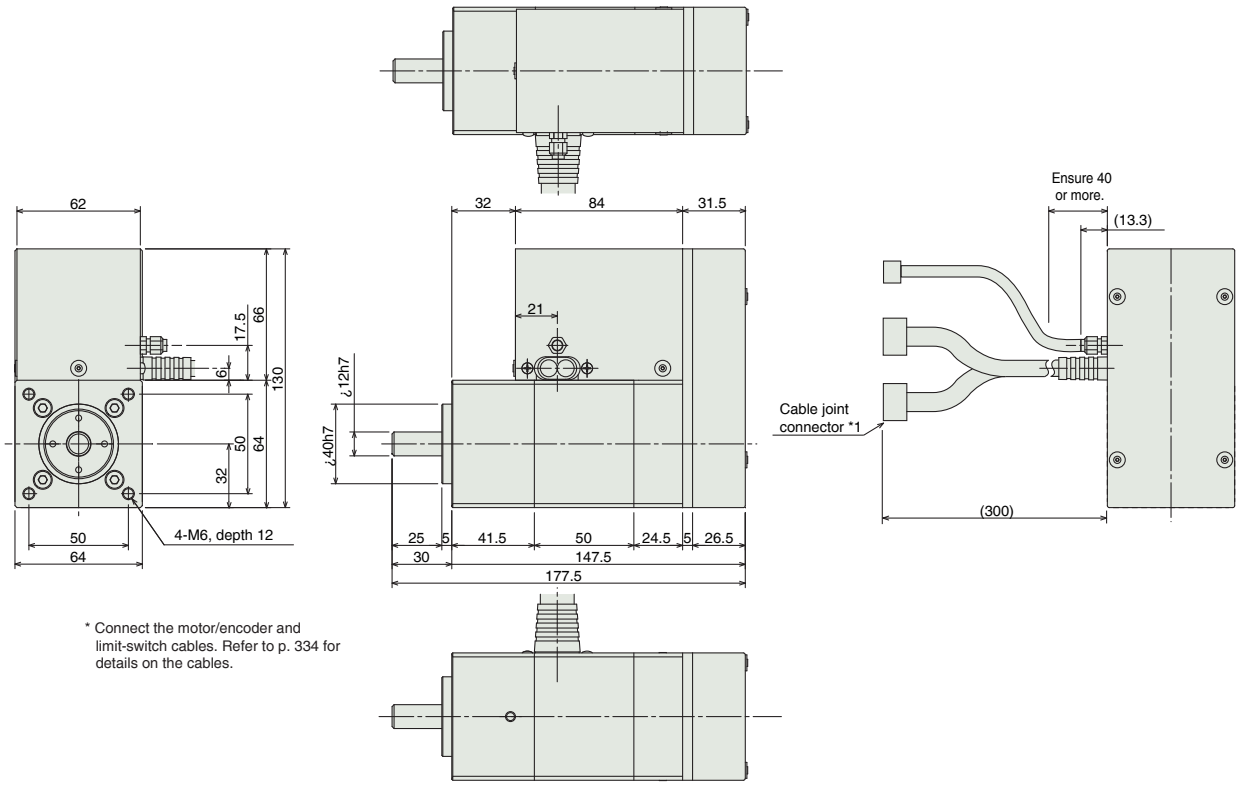
Item	Description
Drive method	Ball speed reducer + Timing belt
Positioning repeatability	±0.02°
Backlash	±0.1° or less
Base	Material: Aluminum with white alumite treatment
Allowable load moment	6.8N • m or less
Thrust load	100N or less
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Dimensions

You can download CAD drawings from our website. www.robocylinder.de

2D CAD

* Refer to p. 420 for home return.



* Connect the motor/encoder and limit-switch cables. Refer to p. 334 for details on the cables.

Weight (kg)	2.8

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-60I-NP-2- ①	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	3 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(Unlimited)			
Program control, 1 or 2-axis type		SSEL- C-1-60I-NP-2- ①	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③-1-60I-N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
*① indicates the encoder type (I: Incremental / A: Absolute).
*② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
*③ indicates the XSEL type (J / K / P / Q).

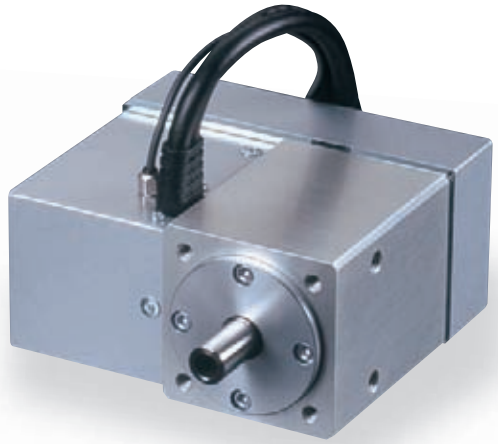
RCS2-RT7R

ROBO Cylinder, Rotary Type, Actuator Width 64mm, 200-V Servo Motor
Motor Reversing Type with Hollow Shaft

■Model Specification Items **RCS2** — **RT7R** — **I** — **60** — **4** — **300** — □ — □ — **L**

Series	Type	Encoder type	Motor type	Gear ratio	Oscillation angle	Applicable controller	Cable length	Options
		I: Incremental specification	60P: Pulse motor 60□ size	4: 1/4	300: 300°	T1: XSEL-J/K T2: SCON SSEL XSEL-P/Q	N: No cable P: 1m S: 3m M: 5m X□□: Specified length R□□: Robot cable	L: Limit switch (standard accessory)

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) The thrust load indicates the mechanical strength of the output shaft when the actuator is stationary. When selecting a model, consider the load moment and load inertia.

Actuator Specifications

■ Lead and Load Capacity

Model	Motor output (W)	Gear ratio	Maximum torque(N•m)	Allowable inertial moment (kg•m^2)	Oscillation angle (°)
RCS2-RT7R-I-60-4-300-①-②-L	60	1/4	0.764	1.25X10^{-3} or less	300

Explanation of numbers ① Applicable controller ② Cable length

■ Stroke and Maximum Speed

Gear ratio \ Oscillation angle	300 (°)
1/4	500

(Unit: °/s)

Actuator Specifications

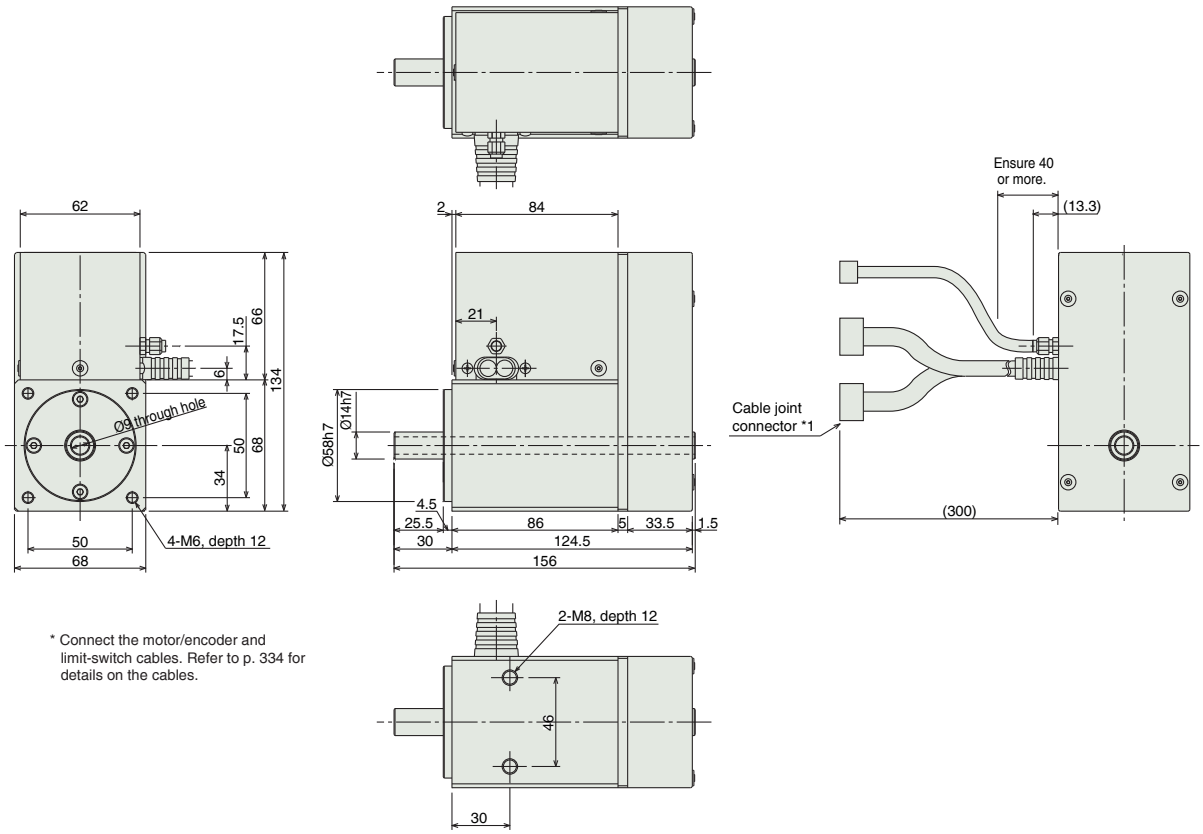
Item	Description
Drive method	Timing belt
Positioning repeatability	±0.1°
Backlash	±0.5° or less
Base	Material: Aluminum with white alumite treatment
Allowable load moment	8.9N • m or less
Thrust load	100N or less
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Dimensions

You can download CAD drawings from our website. www.robocylinder.de

2D CAD

* Refer to p. 420 for home return.



* Connect the motor/encoder and limit-switch cables. Refer to p. 334 for details on the cables.

Weight (kg)	2.6

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-60I-NP-2- ①	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	3 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(Unlimited)			
Program control, 1 or 2-axis type		SSEL- C-1-60I-NP-2- ①	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③-1-60I-N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
*① indicates the encoder type (I: Incremental / A: Absolute).
*② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
*③ indicates the XSEL type (J / K / P / Q).

RCS2CR-SA4C

Cleanroom Type ROBO Cylinder, Slider Type, Actuator Width 40mm, 200-V Servo Motor Coupling Specification

■Model Specification Items **RCS2CR – SA4C – □ – 20 – □ – □ – □ – □ – □ – □**

Series — Type — Encoder type — Motor type — Lead — Stroke — Applicable controller — Cable length — Options

- Encoder type: I: Incremental specification; A: Absolute specification
- Motor type: 20: Servo motor 20W
- Lead: 10: 10mm; 5: 5mm; 2.5: 2.5mm
- Stroke: 50:50mm ~ 400:400mm (Set in 50-mm steps)
- Applicable controller: T1: XSEL-J/K; T2: SCON, SSEL, XSEL-P/Q
- Cable length: N: No cable; P: 1m; S: 3m; M: 5m; X□□: Specified length; R□□: Robot cable
- Options: B: Brake; FT: Foot bracket; HS: Home check sensor; NM: Reversed-home specification; SS: Slider spacer; VR: Suction joint on opposite side

* Refer to p. 31 of the front matter for details on the model specification items.

POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 2.5). This is the maximum acceleration.

Actuator Specifications

■ Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2CR-SA4C-①-20-10-②-③-④-⑤	20	10	4	1	19.6	50 ~ 400 (Set in 50-mm steps)
RCS2CR-SA4C-①-20-5-②-③-④-⑤		5	6	2.5	39.2	
RCS2CR-SA4C-①-20-2.5-②-③-④-⑤		2.5	8	4.5	78.4	

Explanation of numbers ① Encoder type ② Stroke ③ Applicable controller ④ Cable length ⑤ Options

■ Stroke, Maximum Speed and Suction Volume

Lead \ Stroke	50 ~ 400 (Set in 50-mm steps)	Suction volume (N ℓ/mm)
10	665	50
5	330	30
2.5	165	15

(Unit: mm/s)

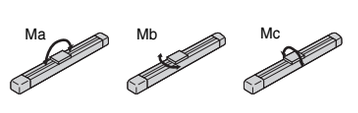
Options

Name	Model	Page
Brake	B	P381
Foot bracket	FT	P383
Home sensor	HS	P385
Reversed-home specification	NM	P385
Slide spacer	SS	P388
Vacuum joint on opposite side	VR	P389

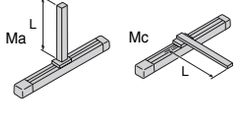
Actuator Specifications

Item	Description
Drive method	Ball screw Ø8mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.05mm or less
Base	Material: Aluminum with white alumite treatment
Allowable load moment	Ma : 2.7N • m Mb : 3.9N • m Mc : 6.8N • m
Overhang load length	Ma direction: 120mm or less, Mb • Mc directions: 120mm or less
Grease	Low-dust-raising grease (both ball screw and guide)
Cleanliness class	Class 10 (0.1μm)
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Direction of allowable load moment



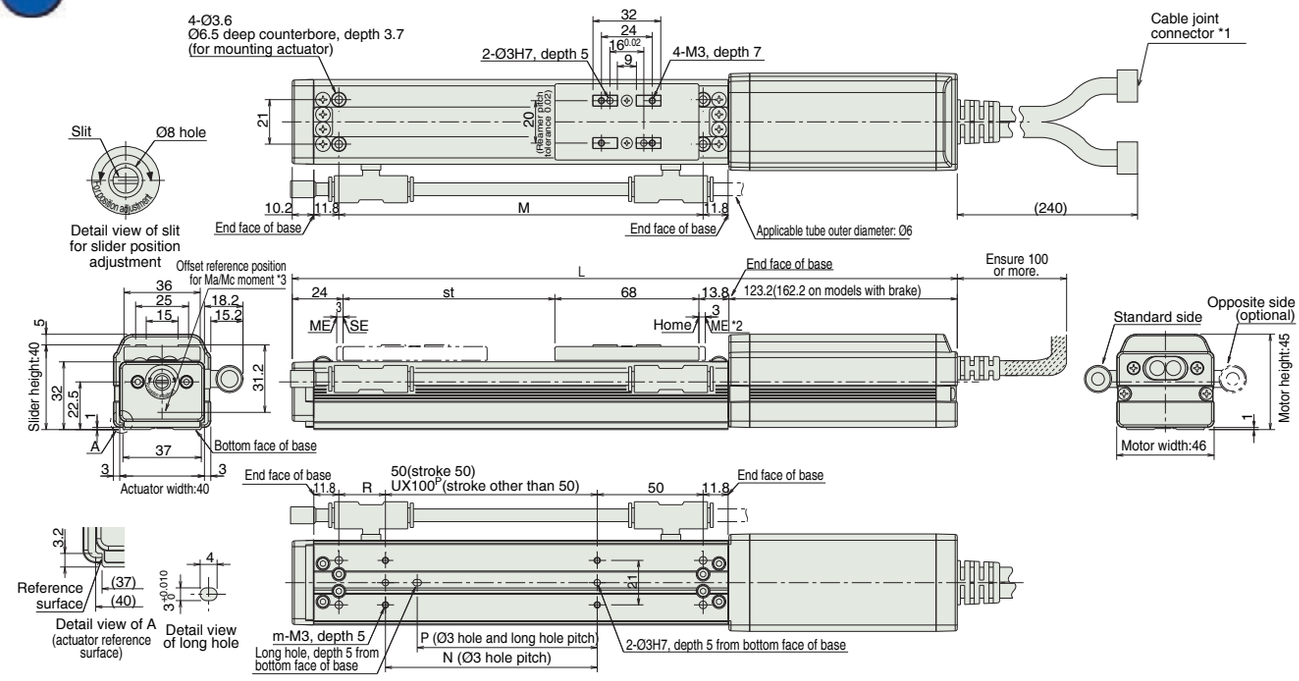
Overhang load length



Dimensions

You can download CAD drawings from our website. www.robocylinder.de

2D CAD



*1 Connect the motor/encoder cables. Refer to p. 334 for details on the cables.
*2 The slider moves to the ME during home return. Pay attention to prevent contact between the slider and surrounding parts.
ME: Mechanical end SE: Stroke end
*3 Reference position for calculating Ma moment
*4 If the actuator is affixed using only the mounting holes provided in the top face of the base, the base may twist to cause abnormal sliding of the slider or generate noise. When the mounting holes in the top face of the base are used, keep the stroke to 200 mm or less.

Dimensions and Weight by Stroke

Stroke		50	100	150	200	250	300	350	400
L	Without 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

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-20I-NP-2- ①	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(Unlimited)			
Program control, 1 or 2-axis type		SSEL- C-1-20I-NP-2- ①	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③-1-20I-N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
*① indicates the encoder type (I: Incremental / A: Absolute).
*② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
*③ indicates the XSEL type (J / K / P / Q).

RCS2CR-SA5C

Cleanroom Type ROBO Cylinder, Slider Type, Actuator Width 52mm, 200-V Servo Motor Coupling Specification

■Model Specification Items **RCS2CR – SA5C – □ – 20 – □ – □ – □ – □ – □ – □**

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
—	—	I: Incremental specification A: Absolute specification	20: Servo motor 20W	12: 12mm 6: 6mm 3: 3mm	50:50mm ~ 500:500mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	B : Brake FT : Foot bracket HS : Home check sensor NM : Reversed-home specification VR : Suction joint on opposite side

* Refer to p. 31 of the front matter for details on the model specification items.

POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 3). This is the maximum acceleration.

Actuator Specifications

■ Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2CR-SA5C-①-20-12-②-③-④-⑤	20	12	4	1	16.7	50 ~ 500 (Set in 50-mm steps)
RCS2CR-SA5C-①-20-6-②-③-④-⑤		6	8	2	33.3	
RCS2CR-SA5C-①-20-3-②-③-④-⑤		3	12	4	65.7	

Explanation of numbers ① Encoder type ② Stroke ③ Applicable controller ④ Cable length ⑤ Options

■ Stroke, Maximum Speed and Suction Volume

Lead \ Stroke	50 ~ 450 (Set in 50-mm steps)	500 (mm)	Suction volume (N ℓ/mm)
12	800	760	50
6	400	380	30
3	200	190	15

(Unit: mm/s)

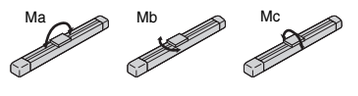
Options

Name	Model	Page
Brake	B	P381
Foot bracket	FT	P383
Home sensor	HS	P385
Reversed-home specification	NM	P385
Vacuum joint on opposite side	VR	P389

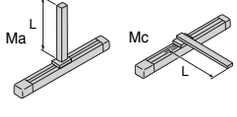
Actuator Specifications

Item	Description
Drive method	Ball screw Ø10mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.1mm or less
Base	Material: Aluminum with white alumite treatment
Allowable load moment	Ma : 4.9N • m Mb : 6.8N • m Mc : 11.7N • m
Overhang load length	Ma direction: 150mm or less, Mb • Mc directions: 150mm or less
Grease	Low-dust-raising grease (both ball screw and guide)
Cleanliness class	Class 10 (0.1μm)
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Direction of allowable load moment



Overhang load length

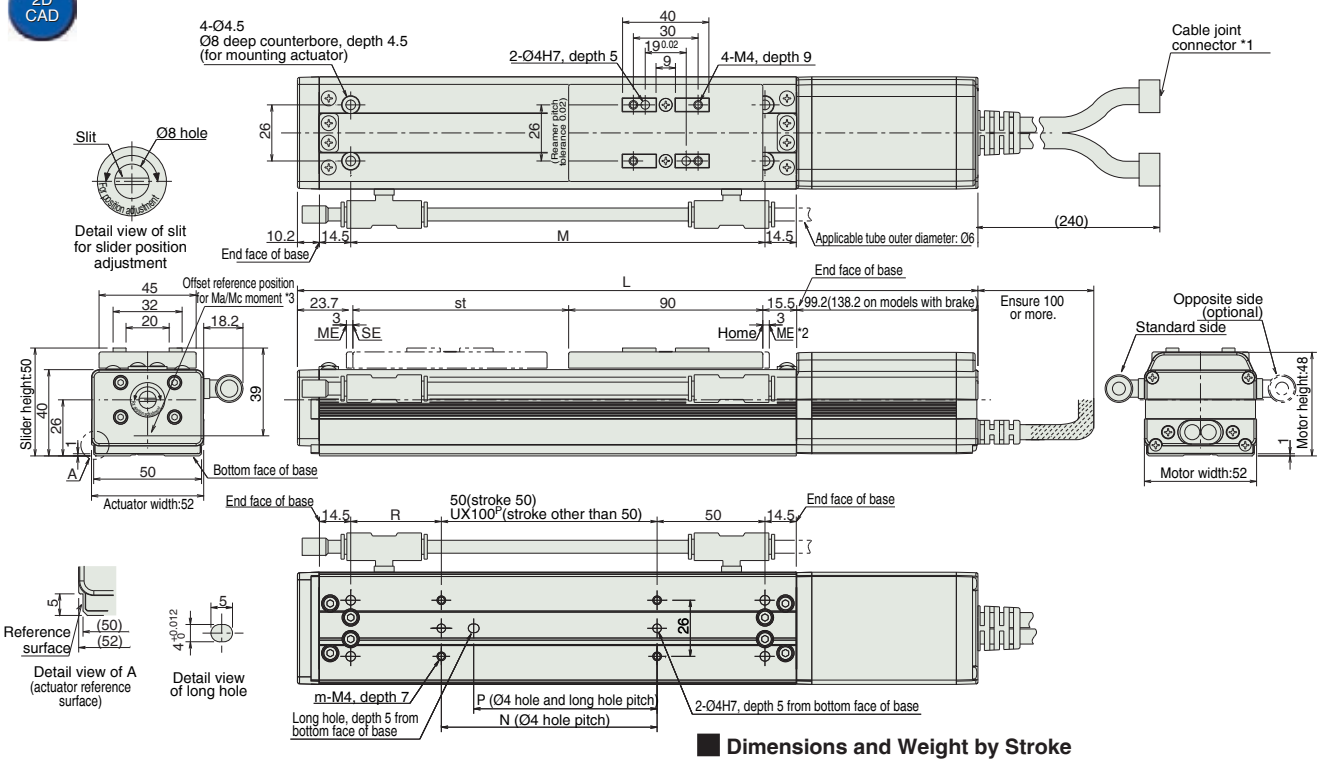


40 mm
52 mm
58 mm
60 mm
73 mm
80 mm
Pulse Motor
20w
30w
60w
100w
150w

Dimensions

You can download CAD drawings from our website. www.robocylinder.de

2D CAD



*1 Connect the motor/encoder cables. Refer to p. 334 for details on the cables.
*2 The slider moves to the ME during home return. Pay attention to prevent contact between the slider and surrounding parts.
ME: Mechanical end SE: Stroke end
*3 Reference position for calculating Ma moment
*4 If the actuator is affixed using only the mounting holes provided in the top face of the base, the base may twist to cause abnormal sliding of the slider or generate noise. When the mounting holes in the top face of the base are used, keep the stroke to 200 mm or less.

Dimensions and Weight by Stroke

Stroke		50	100	150	200	250	300	350	400	450	500
L	Without brake	280.4	330.4	380.4	430.4	480.4	530.4	580.4	630.4	680.4	730.4
	With brake	319.4	369.4	419.4	469.4	519.4	569.4	619.4	669.4	719.4	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

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-20I-NP-2- ①	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(Unlimited)			
Program control, 1 or 2-axis type		SSEL- C-1-20I-NP-2- ①	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③-1-20I-N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
*① indicates the encoder type (I: Incremental / A: Absolute).
*② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
*③ indicates the XSEL type (J / K / P / Q).

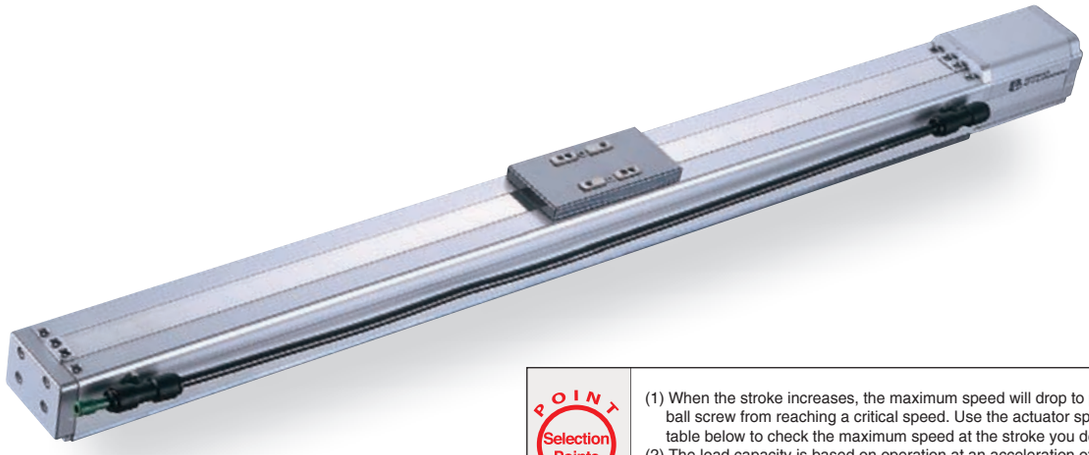
RCS2CR-SA6C

Cleanroom Type ROBO Cylinder, Slider Type, Actuator Width 58mm, 200-V Servo Motor Coupling Specification

■Model Specification Items **RCS2CR – SA6C – □ – 30 – □ – □ – □ – □ – □ – □**

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
—	—	I: Incremental specification A: Absolute specification	30: Servo motor 30W	12: 12mm 6: 6mm 3: 3mm	50:50mm ~ 600:600mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	B : Brake FT : Foot bracket HS : Home check sensor NM : Reversed-home specification VR : Suction joint on opposite side

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 3). This is the maximum acceleration.

Actuator Specifications

■ Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2CR-SA6C-①-30-12-②-③-④-⑤	30	12	6	1.5	24.2	50 ~ 600 (Set in 50-mm steps)
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	

Explanation of numbers ① Encoder type ② Stroke ③ Applicable controller ④ Cable length ⑤ Options

■ Stroke, Maximum Speed and Suction Volume

Lead \ Stroke	50 ~ 450 (Set in 50-mm steps)	500 (mm)	550 (mm)	600 (mm)	Suction volume (N ℓ/mm)
12	800	760	640	540	50
6	400	380	320	270	30
3	200	190	160	135	15

(Unit: mm/s)

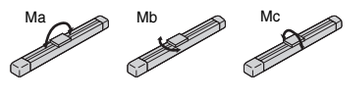
Options

Name	Model	Page
Brake	B	P381
Foot bracket	FT	P383
Home sensor	HS	P385
Reversed-home specification	NM	P385
Vacuum joint on opposite side	VR	P389

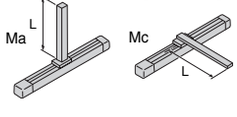
Actuator Specifications

Item	Description
Drive method	Ball screw Ø10mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.1mm or less
Base	Material: Aluminum with white alumite treatment
Allowable load moment	Ma : 8.9N • m Mb : 12.7N • m Mc : 18.6N • m
Overhang load length	Ma direction: 220mm or less, Mb • Mc directions: 220mm or less
Grease	Low-dust-raising grease (both ball screw and guide)
Cleanliness class	Class 10 (0.1μm)
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Direction of allowable load moment



Overhang load length



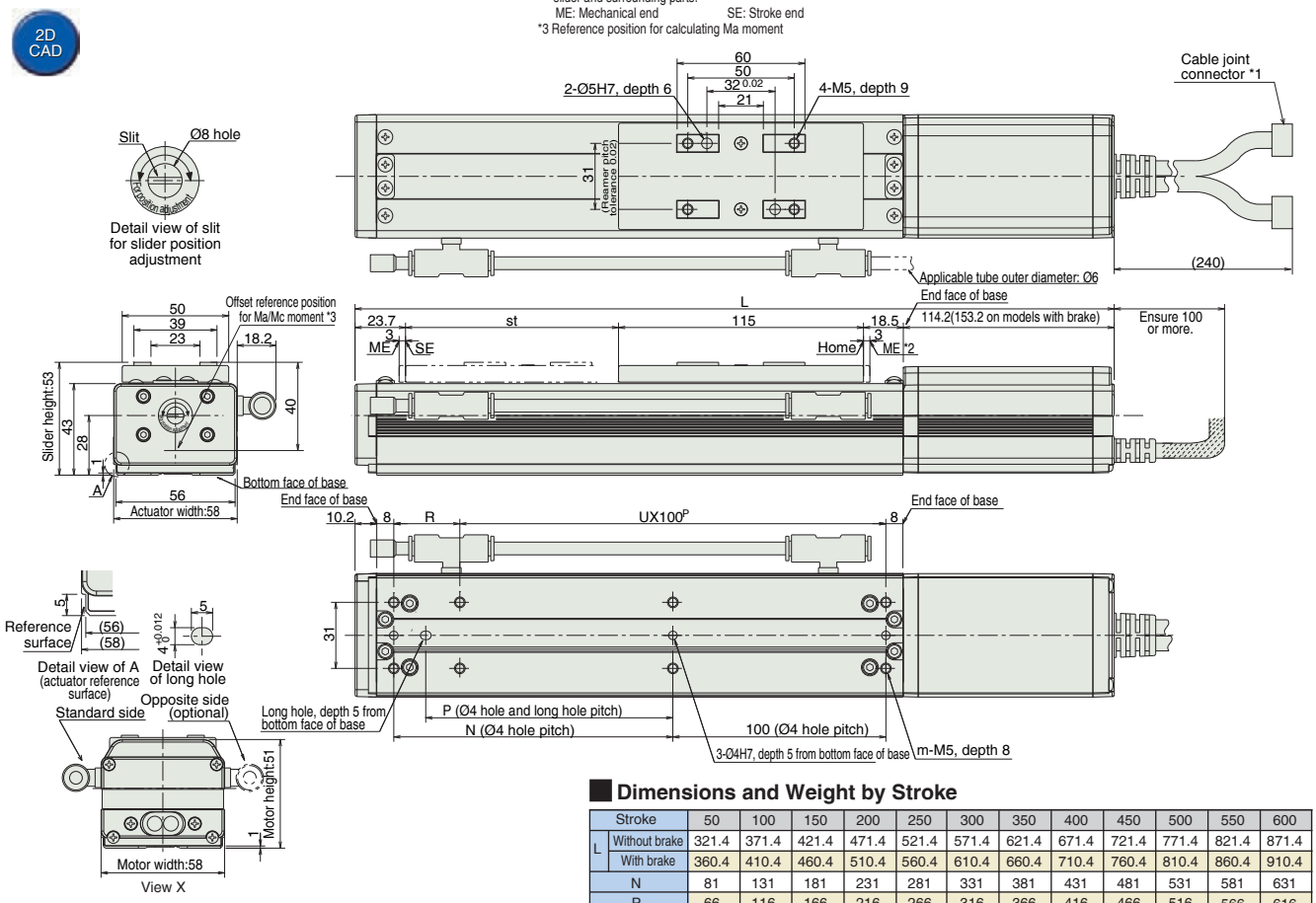
40 mm
52 mm
58 mm
60 mm
73 mm
80 mm
Pulse Motor
20w
30w
60w
100w
150w

Dimensions

You can download CAD drawings from our website. www.robocylinder.de

2D CAD

*1 Connect the motor/encoder cables. Refer to p. 334 for details on the cables.
*2 The slider moves to the ME during home return. Pay attention to prevent contact between the slider and surrounding parts.
ME: Mechanical end SE: Stroke end
*3 Reference position for calculating Ma moment



Dimensions and Weight by Stroke

Stroke		50	100	150	200	250	300	350	400	450	500	550	600
L	Without 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

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-30I-NP-2- ①	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(Unlimited)			
Program control, 1 or 2-axis type		SSEL- C-1-30I-NP-2- ①	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③-1-30I-N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
*① indicates the encoder type (I: Incremental / A: Absolute).
*② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
*③ indicates the XSEL type (J / K / P / Q).

RCS2CR-SA7C

Cleanroom Type ROBO Cylinder, Slider Type, Actuator Width 73mm, 200-V Servo Motor Coupling Specification

■Model Specification Items **RCS2CR – SA7C – □ – 60 – □ – □ – □ – □ – □ – □**

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
—	—	I: Incremental specification A: Absolute specification	60: Servo motor 60W	16: 16mm 8: 8mm 4: 4mm	100:100mm ~ 800:800mm (Set in 100-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	B : Brake FT : Foot bracket HS : Home check sensor NM : Reversed-home specification VR : Suction joint on opposite side

* Refer to p. 31 of the front matter for details on the model specification items.

POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 4). This is the maximum acceleration.
(3) Class 10 cleanliness is based on the horizontal specification.

Actuator Specifications

■ Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2CR-SA7C-①-60-16-②-③-④-⑤	60	16	12	3	63.8	100 ~ 800 (Set in 100-mm steps)
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	

Explanation of numbers ① Encoder type ② Stroke ③ Applicable controller ④ Cable length ⑤ Options

■ Stroke, Maximum Speed and Suction Volume

Lead \ Stroke	100 ~ 600 (Set in 100-mm steps)	700 (mm)	800 (mm)	Suction volume (N ℓ/mm)
16	800	640	480	50
8	400	320	240	30
4	200	160	120	10

(Unit: mm/s)

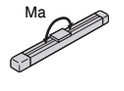
Options

Name	Model	Page
Brake (Cable exiting the end)	BE	P381
Brake (Cable exiting the left)	BL	P381
Brake (Cable exiting the right)	BR	P381
Reversed-home specification	NM	P385
Vacuum joint on opposite side	VR	P389

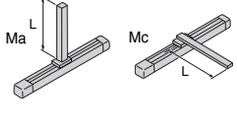
Actuator Specifications

Item	Description
Drive method	Ball screw Ø12mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.1mm or less
Base	Material: Aluminum with white alumite treatment
Allowable load moment	Ma : 13.9N • m Mb : 19.9N • m Mc : 38.3N • m
Overhang load length	Ma direction: 230mm or less, Mb • Mc directions: 230mm or less
Grease	Low-dust-raising grease (both ball screw and guide)
Cleanliness class	Class 10 (0.1μm)
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Direction of allowable load moment



Overhang load length

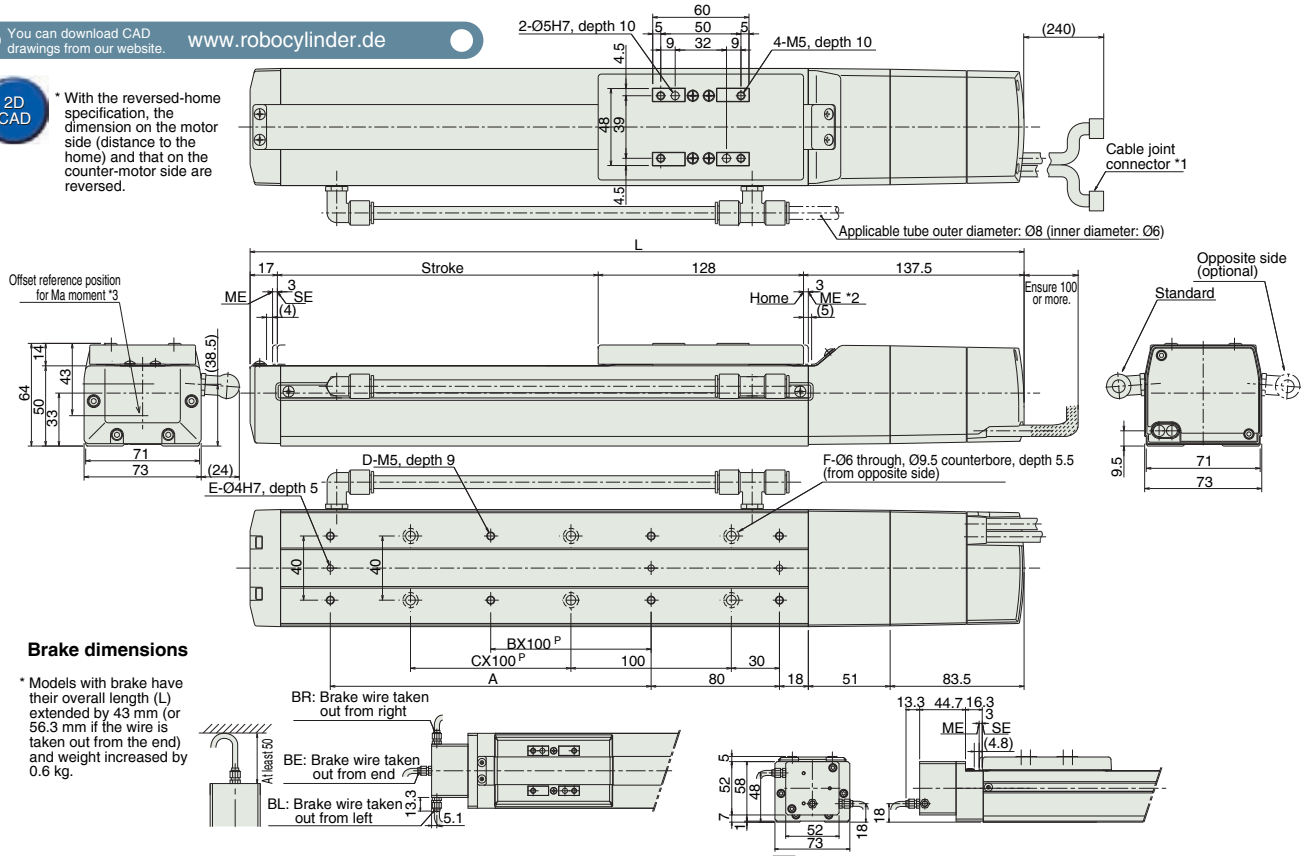


Dimensions

You can download CAD drawings from our website. www.robocylinder.de

2D CAD

* With the reversed-home specification, the dimension on the motor side (distance to the home) and that on the counter-motor side are reversed.



Brake dimensions

* Models with brake have their overall length (L) extended by 43 mm (or 56.3 mm if the wire is taken out from the end) and weight increased by 0.6 kg.

*1 Connect the motor/encoder cables. Refer to p. 314 for details on the cables.
*2 The slider moves to the ME during home return. Pay attention to prevent contact between the slider and surrounding parts.
ME: Mechanical end
SE: Stroke end
The dimensions in ( ) are reference values.
*3 Reference position for calculating Ma moment

Dimensions and Weight by Stroke

Stroke	100	200	300	400	500	600	700	800
L	382.5	482.5	582.5	682.5	782.5	882.5	982.5	1082.5
A	100	200	300	400	500	600	700	800
B	0	1	2	3	4	5	6	7
C	0	1	2	3	4	5	6	7
D	6	8	10	12	14	16	18	20
E	3	3	3	3	3	3	3	3
F	4	6	8	10	12	14	16	18
Weight (kg)	2.8	3.2	3.7	4.1	4.6	5.0	5.5	5.9

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-60I-NP-2- ①	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(Unlimited)			
Program control, 1 or 2-axis type		SSEL- C-1-60I-NP-2- ①	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③-1-60I-N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
*① indicates the encoder type (I: Incremental / A: Absolute).
*② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
*③ indicates the XSEL type (J / K / P / Q).

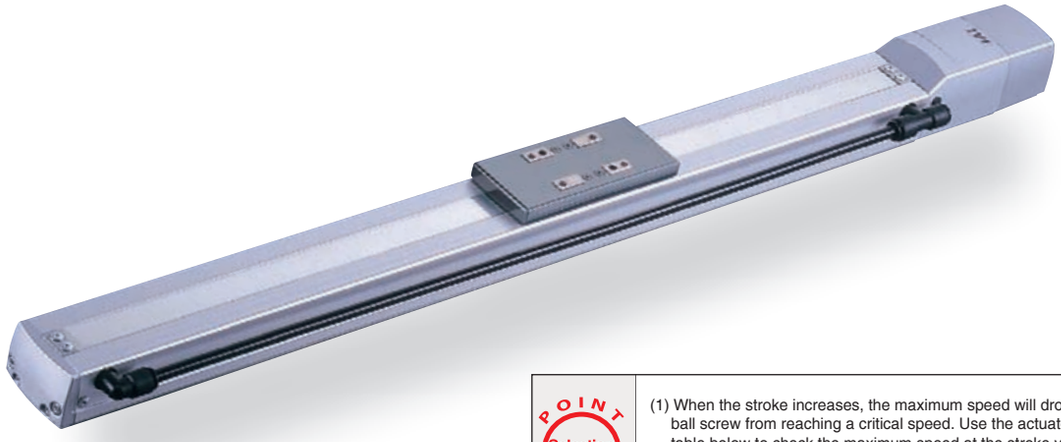
RCS2CR-SS7C

Cleanroom Type ROBO Cylinder, Slider Type, Actuator Width 60mm, 200-V Servo Motor Coupling Specification

■Model Specification Items **RCS2CR – SS7C – □ – 60 – □ – □ – □ – □ – □ – □**

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
—	—	I: Incremental specification A: Absolute specification	60: Servo motor 60W	12: 12mm 6: 6mm	100:100mm ~ 600:600mm (Set in 100-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	B : Brake NM : Reversed-home specification VR : Suction joint on opposite side

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G. This is the maximum acceleration.

Actuator Specifications

■ Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2CR-SS7C-①-60-12-②-③-④-⑤	60	12	15	4	85	100 ~ 600 (Set in 100-mm steps)
RCS2CR-SS7C-①-60-6-②-③-④-⑤		6	30	8	170	

Explanation of numbers ① Encoder type ② Stroke ③ Applicable controller ④ Cable length ⑤ Options

■ Stroke, Maximum Speed and Suction Volume

Lead \ Stroke	100 ~ 500 (Set in 100-mm steps)	600 (mm)	Suction volume (N ℓ/mm)
12	600	470	50
6	300	230	30

(Unit: mm/s)

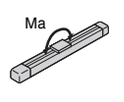
Options

Name	Model	Page
Brake	B	P381
Reversed-home specification	NM	P385
Vacuum joint on opposite side	VR	P389

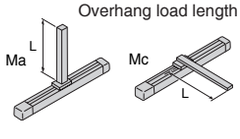
Actuator Specifications

Item	Description
Drive method	Ball screw Ø10mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.05mm or less
Base	Material: Aluminum with white alumite treatment
Allowable load moment	Ma : 14.7N • m Mb : 14.7N • m Mc : 33.3N • m
Overhang load length	Ma direction: 300mm or less, Mb • Mc directions: 300mm or less
Grease	Low-dust-raising grease (both ball screw and guide)
Cleanliness class	Class 10 (0.1μm)
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Direction of allowable load moment



Overhang load length



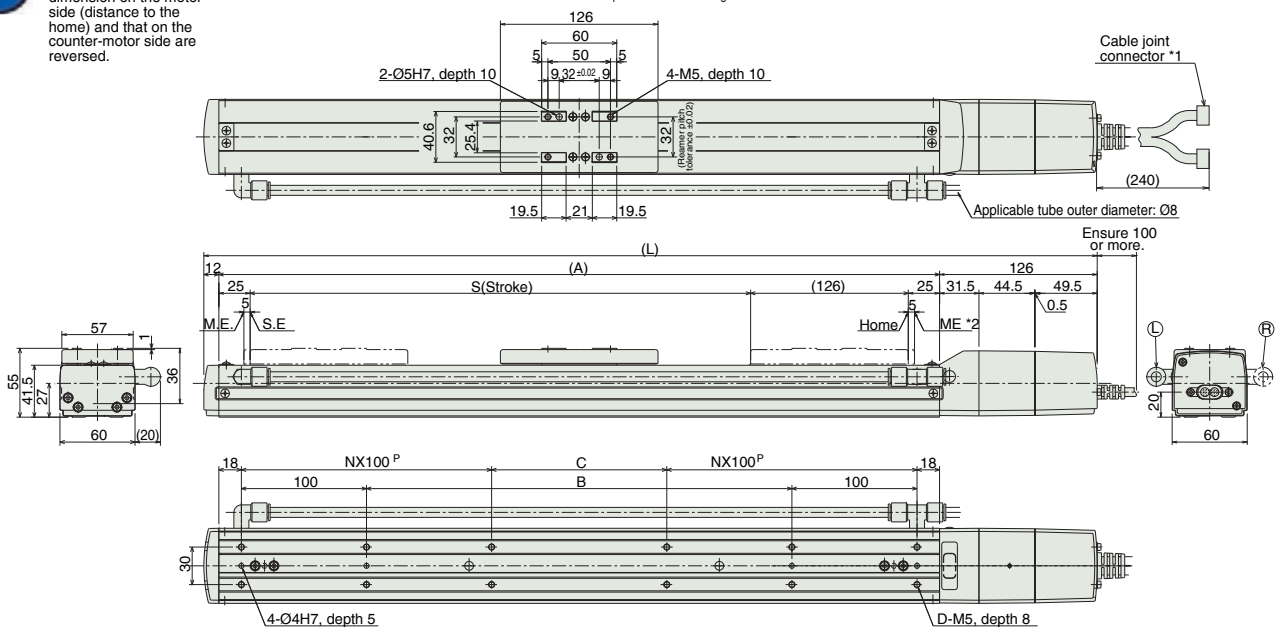
Dimensions

You can download CAD drawings from our website. www.robocylinder.de

2D CAD

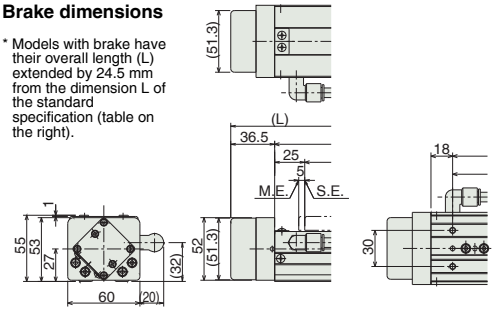
* With the reversed-home specification, the dimension on the motor side (distance to the home) and that on the counter-motor side are reversed.

*1 Connect the motor/encoder cables. Refer to p. 314 for details on the cables.
*2 The slider moves to the ME during home return. Pay attention to prevent contact between the slider and surrounding parts.
ME: Mechanical end
SE: Stroke end
The dimensions in ( ) are reference values.
*3 Reference position for calculating Ma moment.



Brake dimensions

* Models with brake have their overall length (L) extended by 24.5 mm from the dimension L of the standard specification (table on the right).



Dimensions and Weight by Stroke

Stroke	100	200	300	400	500	600
L	414	514	614	714	814	914
A	276	376	476	576	676	776
B	40	140	240	340	440	540
C	40	140	40	140	40	140
D	8	8	12	12	16	16
N	1	1	2	2	3	3
Weight (kg)	3.4	4.0	4.7	5.3	6.0	6.6

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-60I-NP-2- ①	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(Unlimited)			
Program control, 1 or 2-axis type		SSEL- C-1-60I-NP-2- ①	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③-1-60I-N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
*① indicates the encoder type (I: Incremental / A: Absolute).
*② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
*③ indicates the XSEL type (J / K / P / Q).

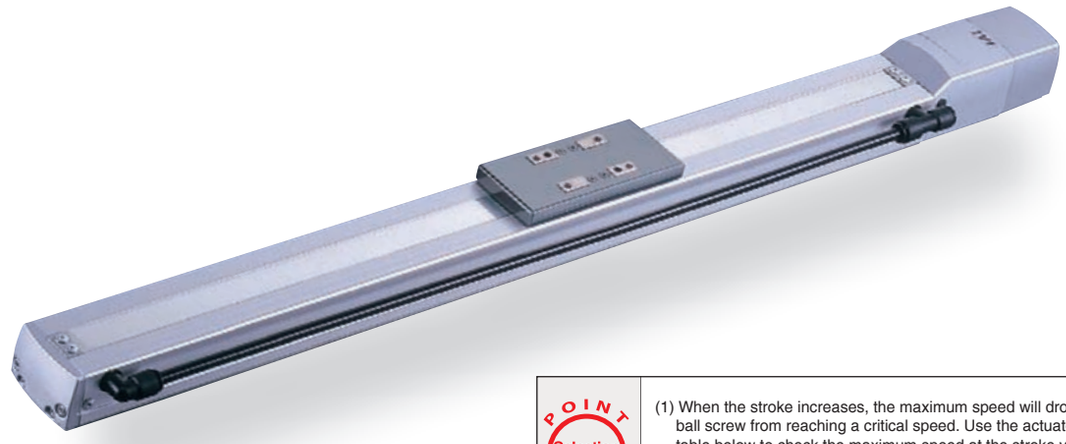
RCS2CR-SS8C

Cleanroom Type ROBO Cylinder, Slider Type, Actuator Width 80mm, 200-V Servo Motor Coupling Specification

■Model Specification Items **RCS2CR – SS8C – □ – □ – □ – □ – □ – □ – □ – □**

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
—	—	I: Incremental specification A: Absolute specification	100:Servo motor 100W 150:Servo motor 150W	20: 20mm 10: 10mm	100:100mm ~ 1000:1000mm (Set in 100-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	B : Brake NM: Reversed-home specification VR : Suction joint on opposite side

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G. This is the maximum acceleration.

Actuator Specifications

■ Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2CR-SS8C-①-100-20-②-③-④-⑤	100	20	20	4	84.9	100 ~ 1000 (Set in 100-mm steps)
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	

Explanation of numbers ① Encoder type ② Stroke ③ Applicable controller ④ Cable length ⑤ Options

■ Stroke, Maximum Speed and Suction Volume

Lead \ Stroke	100 ~ 600 (Set in 100-mm steps)	600 (mm)	600 (mm)	600 (mm)	600 (mm)	Suction volume (N ℓ/mm)
20	1000	960	765	625	515	80
10	500	480	380	310	255	40

(Unit: mm/s)

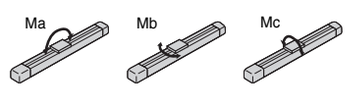
Options

Name	Model	Page
Brake	B	P381
Reversed-home specification	NM	P385
Vacuum joint on opposite side	VR	P389

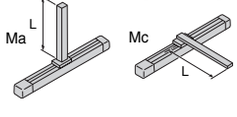
Actuator Specifications

Item	Description
Drive method	Ball screw Ø16mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.05mm or less
Base	Material: Aluminum with white alumite treatment
Allowable load moment	Ma : 36.3N • m Mb : 36.3N • m Mc : 77.4N • m
Overhang load length	Ma direction: 300mm or less, Mb • Mc directions: 300mm or less
Grease	Low-dust-raising grease (both ball screw and guide)
Cleanliness class	Class 10 (0.1μm)
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Direction of allowable load moment



Overhang load length

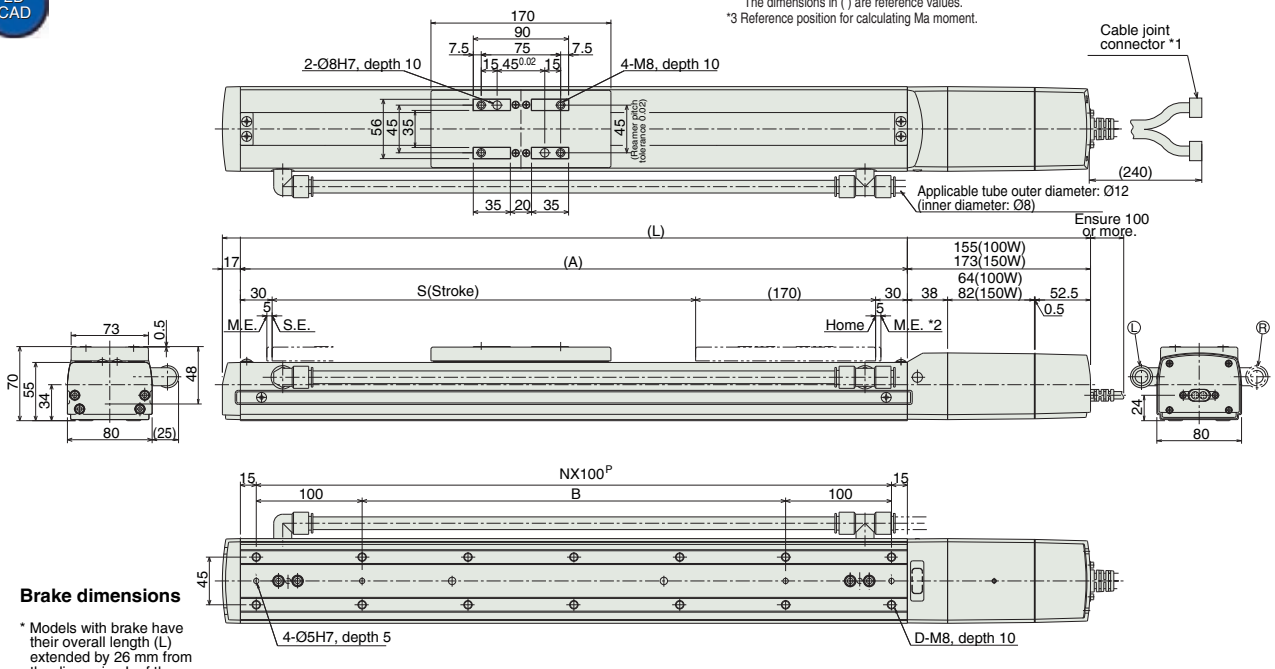


Dimensions

You can download CAD drawings from our website. www.robocylinder.de

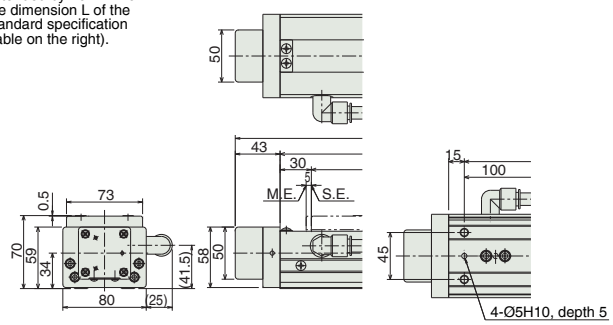
2D CAD

*1 Connect the motor/encoder cables. Refer to p. 314 for details on the cables.
*2 The slider moves to the ME during home return. Pay attention to prevent contact between the slider and surrounding parts.
ME: Mechanical end
SE: Stroke end
The dimensions in ( ) are reference values.
*3 Reference position for calculating Ma moment.



Brake dimensions

* Models with brake have their overall length (L) extended by 26 mm from the dimension L of the standard specification (table on the right).



Dimensions and Weight by Stroke

Stroke		100	200	300	400	500	600	700	800	900	100
L	100W	502	602	702	802	902	1002	1102	1202	1302	1402
	150W	520	620	720	820	920	1020	1120	1220	1320	1420
A		330	420	530	630	730	830	930	1030	1130	1230
B		100	200	300	400	500	600	700	800	900	1000
D		8	10	12	14	16	18	20	22	24	26
N		3	4	5	6	7	8	9	10	11	12
Weight (kg)		7.0	8.1	9.2	10.3	11.4	12.5	13.6	14.7	15.8	16.9

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-100I-NP-2-① SCON- C-150I-NP-2-①	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(Unlimited)			
Program control, 1 or 2-axis type		SSEL- C-1-100I-NP-2-① SSEL- C-1-150I-NP-2-①	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL-③-1-100I-N1-EEE-2-② XSEL-③-1-150I-N1-EEE-2-②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
*① indicates the encoder type (I: Incremental / A: Absolute).
*② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
*③ indicates the XSEL type (J / K / P / Q).

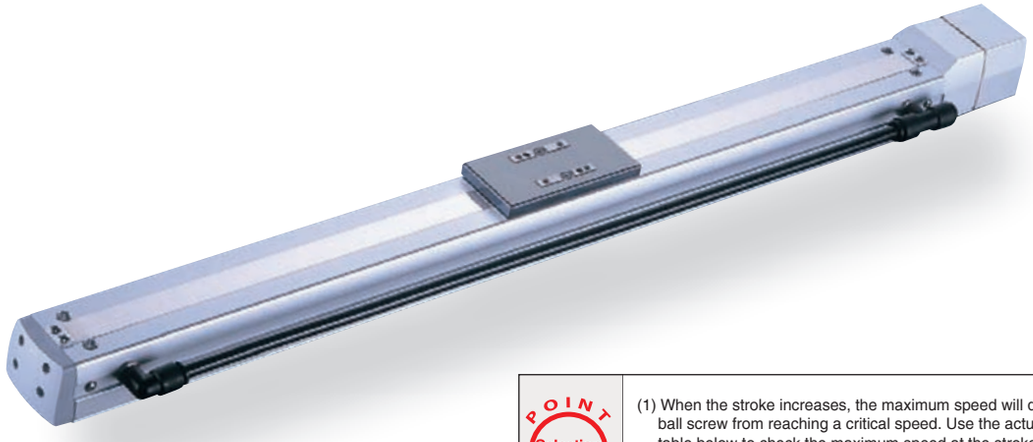
RCS2CR-SA5D

Cleanroom Type ROBO Cylinder, Slider Type, Actuator Width 52mm, 200-V Servo Motor Built-In (Direct-Coupled) Motor Specification

■Model Specification Items **RCS2CR – SA5D – □ – 20 – □ – □ – □ – □ – □ – □**

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
—	—	I: Incremental specification A: Absolute specification	20: Servo motor 20W	12: 12mm 6: 6mm 3: 3mm	50:50mm ~ 500:500mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	BE : Brake (wire taken out from end) BL : Brake (wire taken out from left) BR : Brake (wire taken out from right) NM : Reversed-home specification VR : Suction joint on opposite side

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 3). This is the maximum acceleration.
(3) Class 10 cleanliness is based on the horizontal specification.

40 mm
52 mm
58 mm
60 mm
73 mm
80 mm

Actuator Specifications

■ Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2CR-SA5D-①-20-12-②-③-④-⑤	20	12	4	1	16.7	50 ~ 500 (Set in 50-mm steps)
RCS2CR-SA5D-①-20-6-②-③-④-⑤		6	8	2	33.3	
RCS2CR-SA5D-①-20-3-②-③-④-⑤		3	12	4	65.7	

Explanation of numbers ① Encoder type ② Stroke ③ Applicable controller ④ Cable length ⑤ Options

■ Stroke, Maximum Speed and Suction Volume

Lead \ Stroke	50 ~ 450 (Set in 50-mm steps)	500 (mm)	Suction volume (N ℓ/mm)
12	800	760	50
6	400	380	30
3	200	190	10

(Unit: mm/s)

Pulse Motor
20w
30w
60w
100w
150w

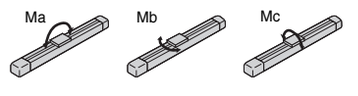
Options

Name	Model	Page
Brake (Cable exiting the end)	BE	P381
Brake (Cable exiting the left)	BL	P381
Brake (Cable exiting the right)	BR	P381
Reversed-home specification	NM	P385
Vacuum joint on opposite side	VR	P389

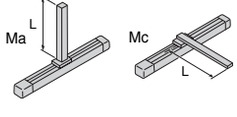
Actuator Specifications

Item	Description
Drive method	Ball screw Ø10mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.1mm or less
Base	Material: Aluminum with white alumite treatment
Allowable load moment	Ma : 4.9N • m Mb : 6.8N • m Mc : 11.7N • m
Overhang load length	Ma direction: 150mm or less, Mb • Mc directions: 150mm or less
Grease	Low-dust-raising grease (both ball screw and guide)
Cleanliness class	Class 10 (0.1μm)
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Direction of allowable load moment



Overhang load length



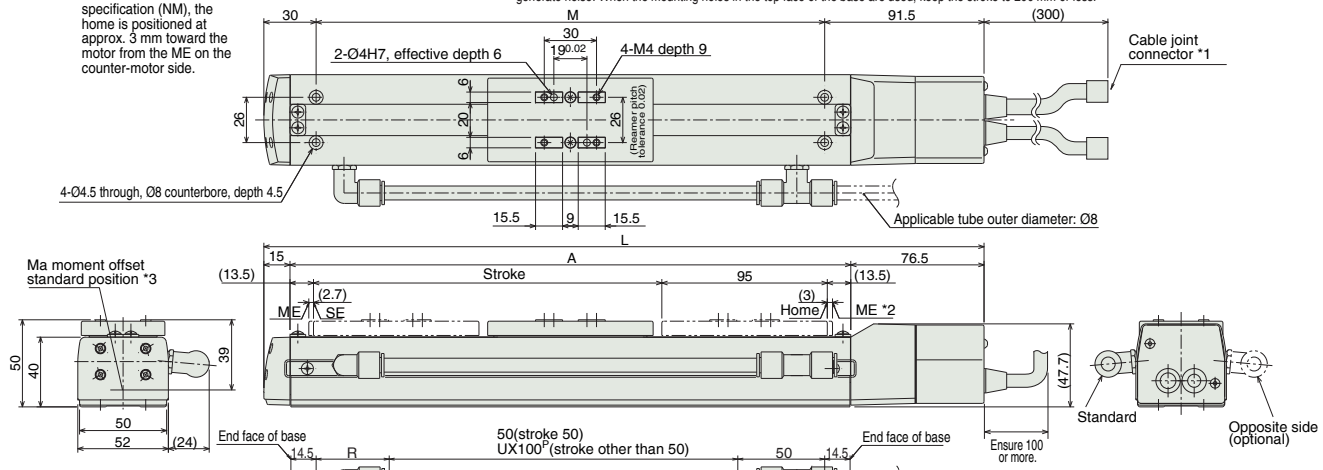
Dimensions

You can download CAD drawings from our website. www.robocylinder.de

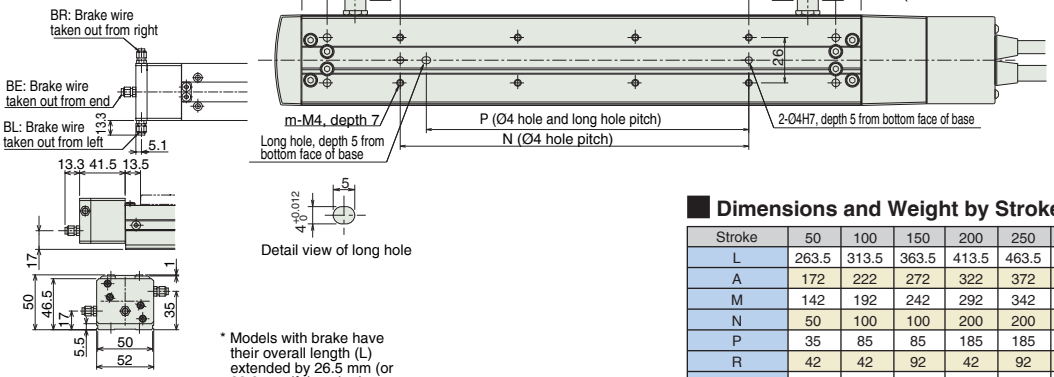
2D CAD

* To change the home direction, the actuator must be returned to IAI for adjustment.
* With the reversed-home specification (NM), the home is positioned at approx. 3 mm toward the motor from the ME on the counter-motor side.

*1 Connect the motor/encoder cables. Refer to p. 334 for details on the cables.
*2 The slider moves to the ME during home return. Pay attention to prevent contact between the slider and surrounding parts.
ME: Mechanical end
SE: Stroke end
The dimensions in ( ) are reference values.
*3 Reference position for calculating Ma moment.
*4 If the actuator is affixed using only the mounting holes provided in the top face of the base, the base may twist to cause abnormal sliding of the slider or generate noise. When the mounting holes in the top face of the base are used, keep the stroke to 200 mm or less.



Brake dimensions



* Models with brake have their overall length (L) extended by 26.5 mm (or 39.8 mm if the wire is taken out from the end) and weight increased by 0.3 kg.

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	2.1	2.1	2.2	2.3	2.5

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-20I-NP-2- ①	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	3 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(Unlimited)			
Program control, 1 or 2-axis type		SSEL- C-1-20I-NP-2- ①	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③-1-20I-N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
*① indicates the encoder type (I: Incremental / A: Absolute).
*② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
*③ indicates the XSEL type (J / K / P / Q).

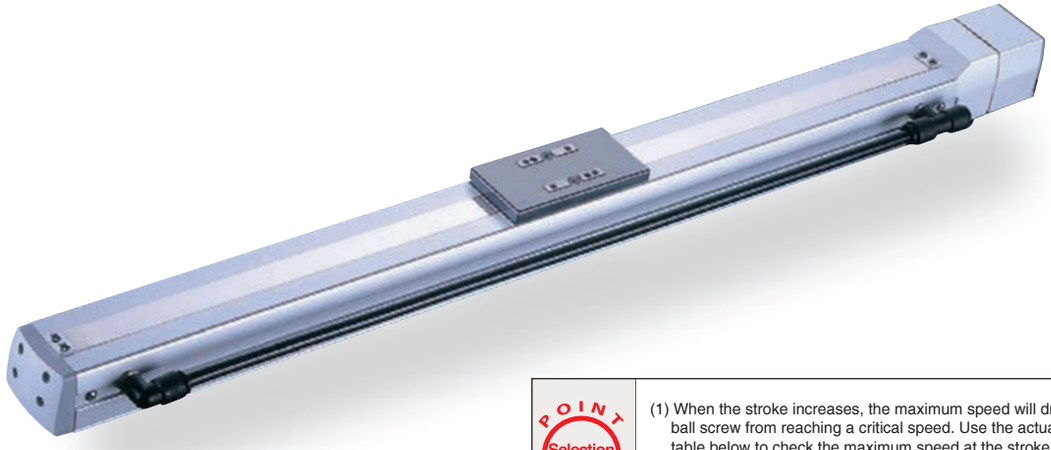
RCS2CR-SA6D

Cleanroom Type ROBO Cylinder, Slider Type, Actuator Width 58mm, 200-V Servo Motor Built-In (Direct-Coupled) Motor Specification

■Model Specification Items **RCS2CR – SA6D – □ – 30 – □ – □ – □ – □ – □ – □**

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
RCS2CR	SA6D	I: Incremental specification A: Absolute specification	30: Servo motor 30W	12: 12mm 6: 6mm 3: 3mm	50:50mm ~ 600:600mm (Set in 50-mm steps)	T1 : XSEL-J/K T2 : SCON SSEL XSEL-P/Q	N : No cable P : 1m S : 3m M : 5m X□□ : Specified length R□□ : Robot cable	BE : Brake (wire taken out from end) BL : Brake (wire taken out from left) BR : Brake (wire taken out from right) NM : Reversed-home specification VR : Suction joint on opposite side

* Refer to p. 31 of the front matter for details on the model specification items.



POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 3). This is the maximum acceleration.

Actuator Specifications

■ Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2CR-SA6D-①-30-12-②-③-④-⑤	30	12	6	1.5	24.2	50 ~ 600 (Set in 50-mm steps)
RCS2CR-SA6D-①-30-6-②-③-④-⑤		6	12	3	48.4	
RCS2CR-SA6D-①-30-3-②-③-④-⑤		3	18	6	96.8	

Explanation of numbers ① Encoder type ② Stroke ③ Applicable controller ④ Cable length ⑤ Options

■ Stroke, Maximum Speed and Suction Volume

Lead \ Stroke	50 ~ 450 (Set in 50-mm steps)	500 (mm)	550 (mm)	600 (mm)	Suction volume (N ℓ/mm)
12	800	760	640	540	50
6	400	380	320	270	30
3	200	190	160	135	15

(Unit: mm/s)

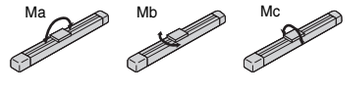
Options

Name	Model	Page
Brake (Cable exiting the end)	BE	P381
Brake (Cable exiting the left)	BL	P381
Brake (Cable exiting the right)	BR	P381
Reversed-home specification	NM	P385
Vacuum joint on opposite side	VR	P389

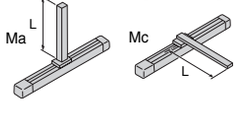
Actuator Specifications

Item	Description
Drive method	Ball screw Ø10mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.1mm or less
Base	Material: Aluminum with white alumite treatment
Allowable load moment	Ma : 8.9N • m Mb : 12.7N • m Mc : 18.6N • m
Overhang load length	Ma direction: 220mm or less, Mb • Mc directions: 220mm or less
Grease	Low-dust-raising grease (both ball screw and guide)
Cleanliness class	Class 10 (0.1μm)
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)

Direction of allowable load moment



Overhang load length



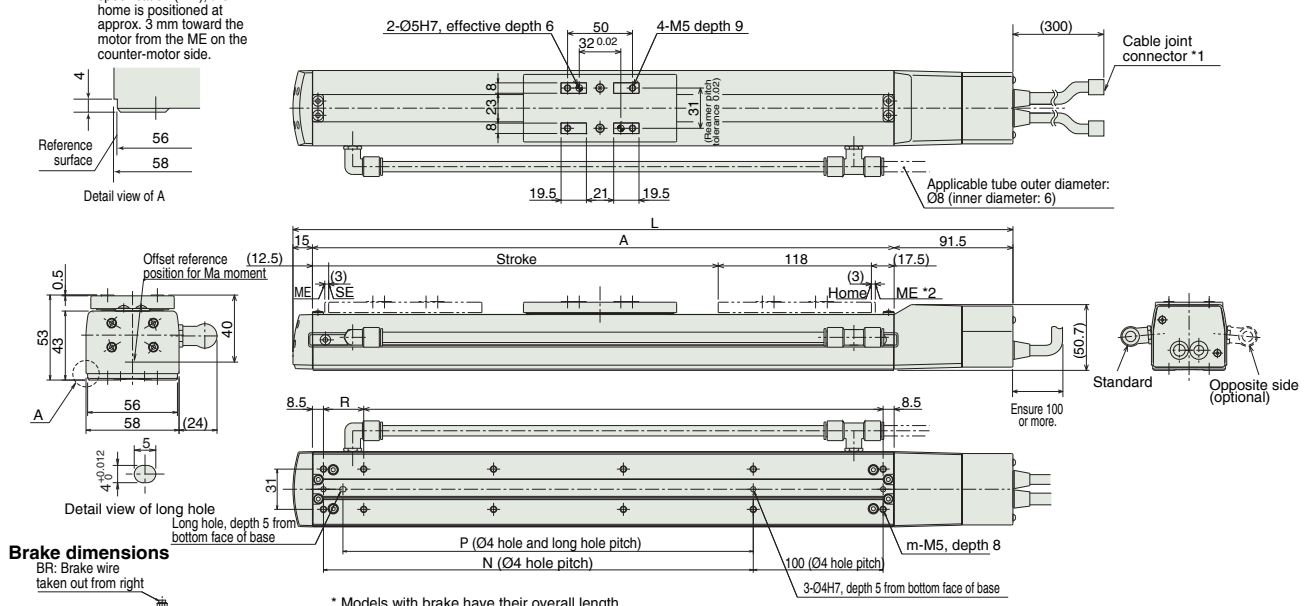
Dimensions

You can download CAD drawings from our website. www.robocylinder.de

2D CAD

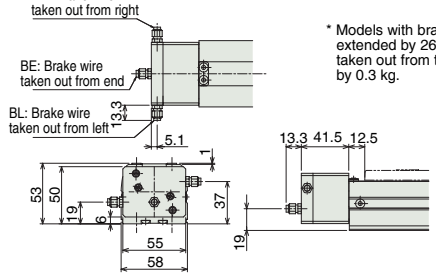
* To change the home direction, the actuator must be returned to IAI for adjustment.
* With the reversed-home specification (NM), the home is positioned at approx. 3 mm toward the motor from the ME on the counter-motor side.

*1 Connect the motor/encoder cables. Refer to p. 314 for details on the cables.
*2 The slider moves to the ME during home return. Pay attention to prevent contact between the slider and surrounding parts.
ME: Mechanical end
SE: Stroke end



* Models with brake have their overall length extended by 26.5 mm (or 39.8 mm if the wire is taken out from the end) and weight increased by 0.3 kg.

Brake dimensions



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

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-30I-NP-2- ①	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(Unlimited)			
Program control, 1 or 2-axis type		SSEL- C-1-30I-NP-2- ①	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL- ③-1-30I-N1-EEE-2- ②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
*① indicates the encoder type (I: Incremental / A: Absolute).
*② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
*③ indicates the XSEL type (J / K / P / Q).

RCS2W-RA4C/RA4D/RA4R

ROBO Cylinder, Splash-Proof Rod Type, Actuator Diameter Ø37mm, 200-V Servo Motor Coupling Specification//Built-In Specification/Motor Reversing Specification

■Model Specification Items **RCS2W** — ☐ — ☐ — ☐ — ☐ — ☐ — ☐ — ☐ — ☐ — ☐

Series	Type	Encoder type	Motor type	Lead	Stroke	Applicable controller	Cable length	Options
	RA4C: Coupling Specification RA4D: Built-In Specification RA4R: Motor Reversing Specification	I: Incremental specification A: Absolute specification	20: Servo motor 20W 30: Servo motor 30W	12: 12mm 6: 6mm 3: 3mm	50:50mm ~ 300:300mm (Set in 50-mm steps)	T1: XSEL-J/K T2: SCON SSEL XSEL-P/Q	N: No cable P: 1m S: 3m M: 5m X□□: Specified length R□□: Robot cable	Refer to the options table below.

* Refer to p. 31 of the front matter for details on the model specification items.

POINT Selection Points

(1) When the stroke increases, the maximum speed will drop to prevent the ball screw from reaching a critical 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 0.3 G (or 0.2 G if the lead is 3). This is the maximum acceleration.
(3) The horizontal load capacity assumes use of an external guide and absence of external force applied from any direction other than the moving direction of the rod.

Actuator Specifications

■Lead and Load Capacity

Model	Motor output (W)	Lead (mm)	Maximum load capacity Horizontal (kg)	Maximum load capacity Vertical (kg)	Rated thrust (N)	Stroke (mm)
RCS2W-①-②-20-12-③-④-⑤-⑥	20	12	3.0	1.0	18.9	50 ~ 300 (Set in 100-mm steps)
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	

Explanation of numbers ① Type ② Encoder type ③ Stroke ④ Applicable controller ⑤ Cable length ⑥ Options

■Stroke and Maximum Speed

Lead \ Stroke	50 ~ 300 (Set in 50-mm steps)
12	600
6	300
3	150

(Unit: mm/s)

Options

Name	Model	Page
Brake (*1)	B	P381
Flange	FL	P382
Foot bracket	FT	P384
Home sensor	HS	P385
Knuckle joint	NJ	P385
Reversed-home specification	NM	P385
Clevis bracket (*2)	QR	P386
Front trunnion bracket (*3)	TRF	P389
Rear trunnion bracket (*3)	TRR	P389

(*1) There is no setting of the brake for the RA3D.
(*2) The clevis metal fittings can be used only on the RA3R.
(*3) The trunnion metal fittings can be used only on the RA3C/RA3D.

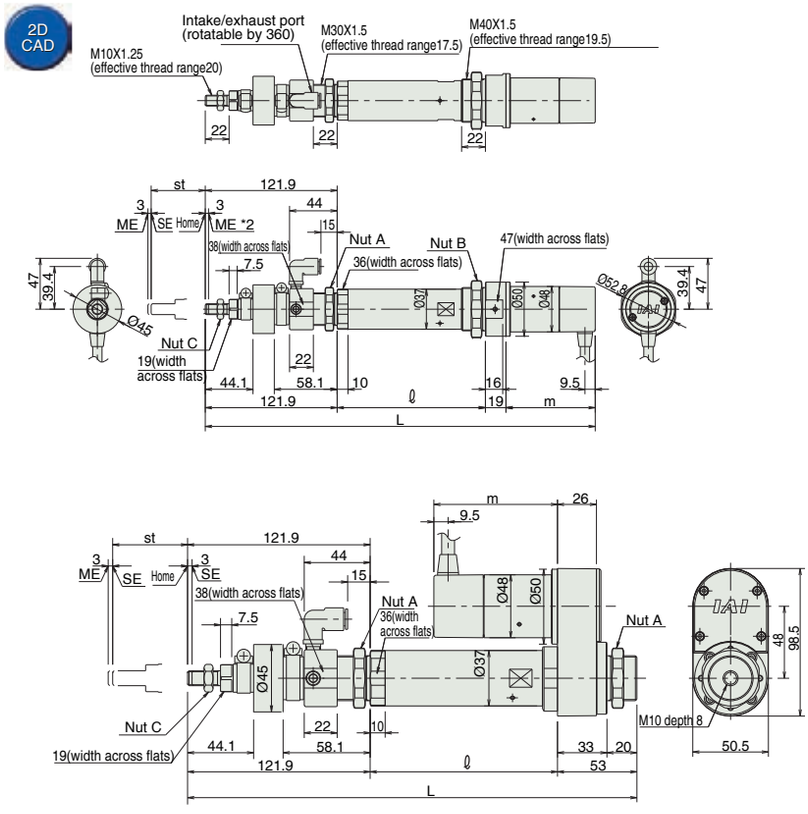
Actuator Specifications

Item	Description
Drive method	Ball screw Ø10mm, rolled C10
Positioning repeatability	±0.02mm
Backlash	0.05mm or less
Base	Material: Aluminum with white alumite treatment
Rod diameter	Ø20mm
Rod non-rotation accuracy	±1.0°
Ambient operating temperature, humidity	0~40°C, 85% RH or below (non-condensing)
Protective structure	IP54

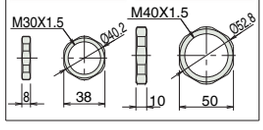
Dimensions

You can download CAD drawings from our website. www.robocylinder.de

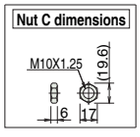
2D CAD



Nut A dimensions / **Nut B dimensions**



Nut C dimensions



*1 Connect the motor/encoder cables. Refer to p. 314 for details on the cables.
*2 The slider moves to the ME during home return. Pay attention to prevent contact between the slider and surrounding parts.
ME: Mechanical end
SE: Stroke end

Dimensions and Weight by Stroke

RCS2W-RA4C-RA4D/RA4R (without brake)

Stroke			50	100	150	200	250	300
L	RA4C	20W	358.4	408.4	458.4	508.4	558.4	608.4
		30W	373.4	423.4	473.4	523.4	573.4	623.4
	RA4D	20W	336.4	386.4	436.4	486.4	536.4	586.4
		30W	351.4	401.4	451.4	501.4	551.4	601.4
	RA4R	20W	299.9	349.9	399.9	449.9	499.9	549.9
		30W	299.9	349.9	399.9	449.9	499.9	549.9
ℓ	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
	RA4R	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					
	RA4R	20W	80.5					
		30W	95.5					
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

RCS2W-RA4C-RA4D/RA4R (with brake)

Stroke			50	100	150	200	250	300
L	RA4C	20W	401.4	451.4	501.4	551.4	601.4	651.4
		30W	416.4	466.4	516.4	566.4	616.4	666.4
	RA4D	20W	Not available with brake.					
		30W						
	RA4R	20W	299.9	349.9	399.9	449.9	499.9	549.9
		30W	299.9	349.9	399.9	449.9	499.9	549.9
ℓ	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
	RA4R	20W	125	175	225	275	325	375
		30W	125	175	225	275	325	375
m	RA4C	20W	123.5					
		30W	138.5					
	RA4D	20W	Not available with brake.					
		30W						
	RA4R	20W	123.5					
		30W	138.5					
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

Controller

Applicable Controllers

RCS2 series actuators can be operated using the following controllers. Choose the type that best suits your specific purpose.

Name	External view	Model	Features	Maximum number of positioning points	Input power supply	Power-supply capacity	Reference page
Positioner mode		SCON- C-30I-NP-2-①	Supporting up to 512 positioning points	512 points	Single-phase 100VAC Single-phase 200VAC Three-phase 200VAC	360VA max. * 1-axis specification, operated at 150W	→P325
Solenoid valve mode			Same control actions as those applicable to solenoid valves	7 points			
Serial communication type			Dedicated serial communication type	64 points			
Pulse-train input control type			Dedicated pulse-train input type	(Unlimited)			
Program control, 1 or 2-axis type		SSEL- C-1-30I-NP-2-①	Programmable type capable of operating up to 2 axes	1500 points			→P355
Program control, 1 to 6-axis type		XSEL-③-1-30I-N1-EEE-2-②	Programmable type capable of operating up to 6 axes	4000 points			→P365

* The SSEL and XSEL model names are based on a 1-axis specification.
*① indicates the encoder type (I: Incremental / A: Absolute).
*② indicates the power-supply voltage type (1: 100V / 2: Single-phase 200V / 3: Three-phase 200V).
*③ indicates the XSEL type (J / K / P / Q).

SCON

Position controller
for RCS2 series

Type List

Position controller capable of operating RCS2 series actuator. Various control functions are combined into a single unit.

Type	C				
Name	Positioner mode	Solenoid valve mode	Pulse-train control mode	Network specification (DeviceNet)	Network specification (Profibus)
External view					
Description	Positioner supporting up to 512 positioning points	Same control actions as those used on air cylinders	Controller for pulse-train control	DeviceNet connection specification (optional)	Profibus connection specification (optional)
Number of position points	512 points	7 points	(–)	512 points	512 points
Type of I/O	NP/PN			DV	PR

Model

SCON — C — [ ] — [ ] — [ ] — [ ] — [ ]

Series: SCON
Type: C
Motor type: [ ]
Encoder type: [ ]
I/O type: [ ]
I/O cable length: [ ]
Power-supply voltage: [ ]

C	Standard type

Motor type:

20	20-W motor
30D	30-W motor (RCS2)
30R	30-W motor (RS)
60	60-W motor
100	100-W motor
150	150-W motor
200	200-W motor
300	300-W motor
400	400-W motor
600	600-W motor
750	750-W motor

Encoder type:

I	Incremental
A	Absolute

I/O type:

NP	PIO NPN specification (standard)
PN	PIO PNP specification
DV	DeviceNet connection specification
CC	Profibus connection specification

I/O cable length:

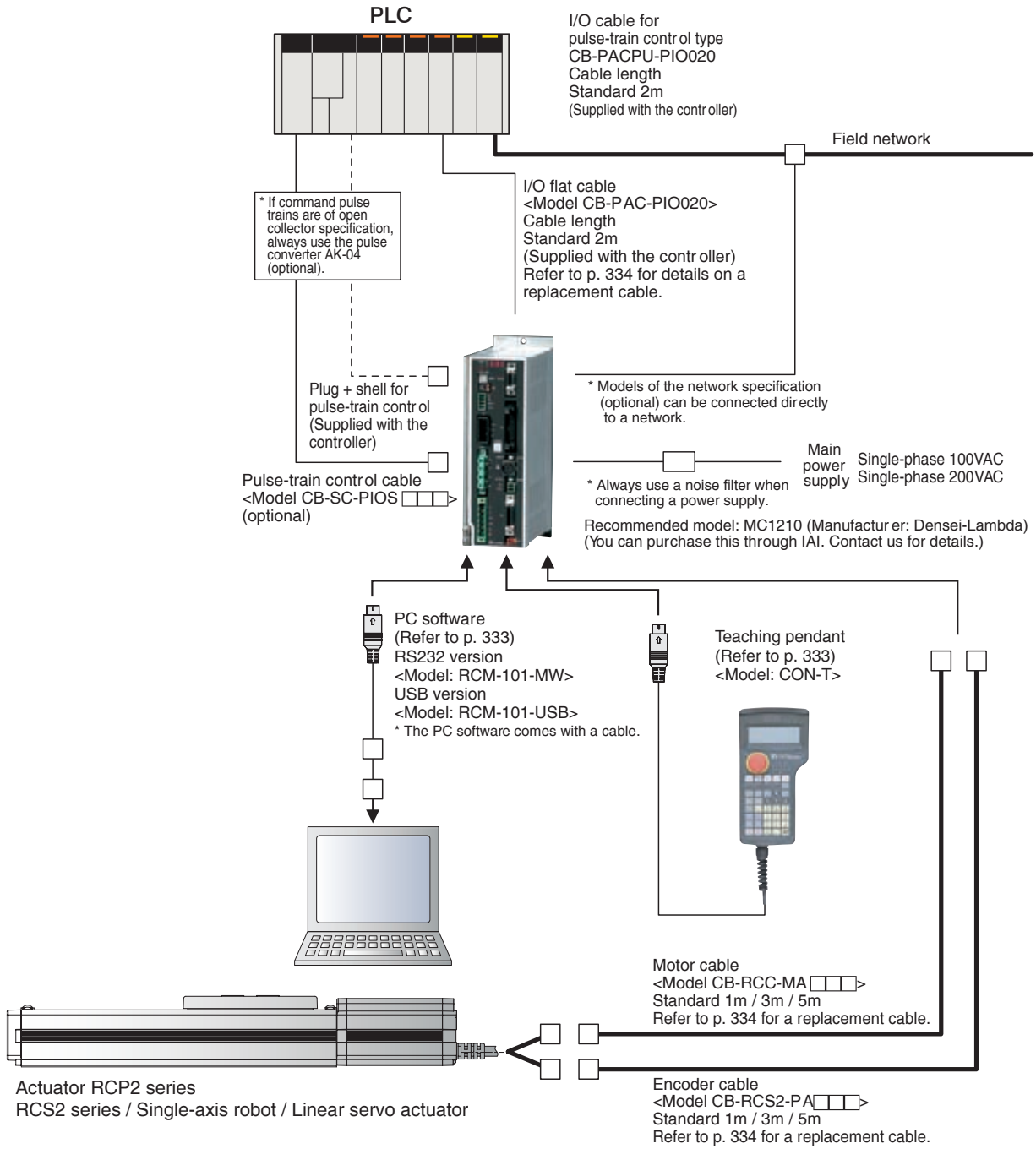
0	No cable
2	2m
3	3m
5	5m

* When selecting DV or PR as the I/O type, please select 0 for the cable length.

Power-supply voltage:

1	Single-phase 100VAC
2	Single-phase 230VAC

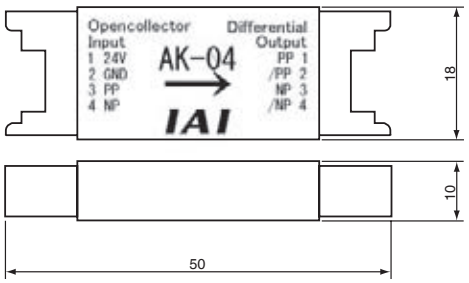
System Configuration



Pulse Converter AK-04 (Optional)

Content: Pulse converter (AK-04) + e-CON input/output connector

Use this converter if pulses output from the host controller are of open collector specification.
This converter is used to convert the open-collector command pulses output 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/out put connector to simplify the field wiring.



Basic specifications

- Input power supply: DC24V±10% (Max 50mA)
- Input pulses: Open collector (collector current 12mA max.)
- Input frequency: 200kHz max.
- Output pulses: 26C31-equivalent differential output (Max 10mA)

(Applicable wire: AWG 24~26, 0.14~0.3 mm² (max.)
Outer diameter of finished wire ø1.0~1.2mm)

I/O Specifications

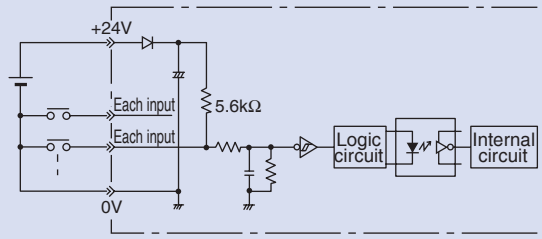
■ Input Part External input specifications

Item	Specification
Input voltage	24VDC ± 10%
Input current	4mA/point
ON/OFF voltage	ON voltage ··· Min DC18.0V (3.5mA) OFF voltage ··· Max DC6.0V (1mA)
Insulation method	Photocoupler

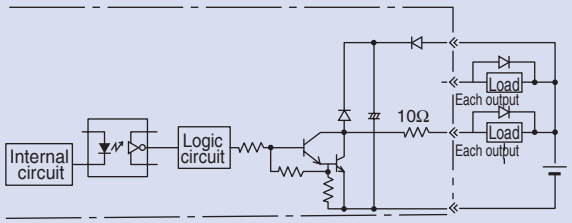
■ Output Part External output specifications

Item	Specification
Load voltage	DC24V
Maximum load current	100mA/point 400mA/8 points
Residual voltage	Max 0.1mA/point
Insulation method	Photocoupler

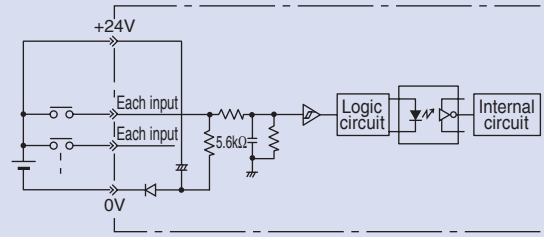
NPN specification



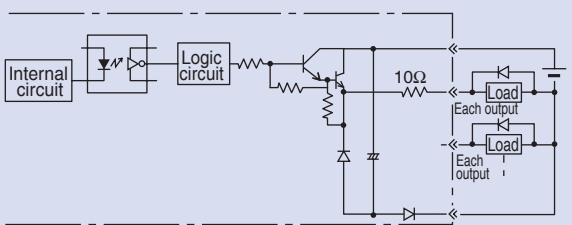
NPN specification



PNP specification



PNP specification



I/O Specifications

The SCON-C supports all of the control methods shown below.
It supports a maximum of 512 positioning points in the positioner mode and up to seven points in the solenoid valve mode.

■ Controller Functions by Type

Type	SCON-C	Features
Positioner mode	○	A basic operation mode in which the actuator is operated by specifying a position number and then inputting a start signal.
Teaching mode	○	In this mode, the slider (rod) can be moved by means of an external signal to store the achieved position as position data.
Solenoid valve mode	○	The actuator can be moved simply by ON/OFF of position signals. This mode supports the same control actions you are already familiar with on solenoid valves of air cylinders.
Pulse train mode	○	In this mode, you can operate the actuator freely using pulse trains without inputting position data.
Network support	○	The controller can be connected directly to a field network by selecting an applicable network option.

Explanation of I/O Signal Functions

The table below explains the functions assigned to the respective I/O signals of the controller.
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.

■ Controller Functions by Type

Category	Abbreviation	Signal name	Function description
Input	CSTR	PTP strobe signal (start signal)	Input this signal to cause the actuator to start moving to the position set by the command position number signal.
	PC1~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	This signal can switch the running mode when the MODE switch on the controller is set to AUTO (AUTO when this signal is OFF, or MANU when 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 OFF 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 performs 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	The actuator can be jogged with JOG+ and JOG- while this signal is OFF. The actuator performs inching operation with JOG+ and JOG- while this signal is ON.
	JOG+ JOG–	+/-Jog/inching movement	The actuator will start jogging or inching in the positive/negative direction at an ON edge of this signal
	PWRT	Teaching signal	In the teaching mode, specify a desired position number and then turn this signal ON for at least 20 ms to write the current position under the specified position number.
	ST0~ST6	Start position command	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 TLR signal turns ON if torque has reached the specified value.
	DCLR	Deviation counter clear signal	The position deviation counter is continuously cleared while this signal is ON.
Output	PEND/INP	Position complete 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~PM256	Completed position number signal	This signal is used to output the position number achieved at completion of positioning (binary output).
	HEND	Home return complete signal	This signal turns ON upon completion of home return.
	ZONE1	Zone signal	This signal turns ON when the current actuator position has entered the range specified by parameters.
	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 signal is used to output the running mode status.
	* ALM	Controller alarm status signal	This signal remains ON while the controller is normal, and turns OFF if an alarm has generated.
	MOVE	Moving signal	This signal remains ON while the actuator is moving (including the periods during home return and push-motion operation).
	SV	Servo ON status signal	This signal remains ON while the 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.
	MODES	Mode status signal	This signal turns ON when the controller has switched to the teaching mode via MODE signal input. It turns OFF upon returning to the normal mode.
	WEND	Write 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~PE6	Current position number signal	This signal turns ON after the controller has completed moving to the target position in the solenoid valve mode.
	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.
	LSO~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.
	TRQS	Torque level status signal	This signal outputs when the current value of the motor reaches the limitation value, before the JOG operation returns to the starting point and the slider (rod) collides to the mechanical end or an obstacle.

I/O Signal Table

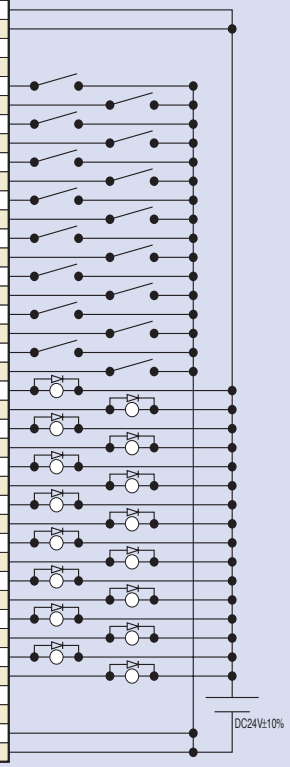
Pin number	Category		Parameter (PIO pattern) selection						Pulse train mode
			0	1	2	3	4	5	0
			Positioning mode	Teaching mode	256-point mode	512-point mode	Solenoid valve mode 1	Solenoid valve mode 2	Pulse train mode
		Number of positioning points	64 points	64 points	256 points	512 points	7 points	3 points	–
		Zone signal	○	x	x	x	○	○	x
		P zone signal	○	○	○	x	○	○	x
1A	24V		P24						P24
2A	24V		P24						P24
3A	–		NC						NC
4A	–		NC						NC
5A	Input	IN0	PC1	PC1	PC1	PC1	ST0	ST0	SON
6A		IN1	PC2	PC2	PC2	PC2	ST1	ST1 (JOG+)	RES
7A		IN2	PC4	PC4	PC4	PC4	ST2	ST2 (–)	HOME
8A		IN3	PC8	PC8	PC8	PC8	ST3	–	TL
9A		IN4	PC16	PC16	PC16	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	–	–	–
14A		IN9	BKRL	JOG-	BKRL	BKRL	BKRL	BKRL	–
15A		IN10	RMOD	RMOD	RMOD	RMOD	RMOD	RMOD	–
16A		IN11	HOME	HOME	HOME	HOME	HOME	–	–
17A		IN12	* STP	* STP	* STP	* STP	* STP	–	–
18A		IN13	CSTR	CSTR/PWRT	CSTR	CSTR	–	–	–
19A		IN14	RES	RES	RES	RES	RES	RES	–
20A		IN15	SON	SON	SON	SON	SON	SON	–
1B	Output	OUT0	PM1	PM1	PM1	PM1	PE0	LSO	PWR
2B		OUT1	PM2	PM2	PM2	PM2	PE1	LS1 (TRQS)	SV
3B		OUT2	PM4	PM4	PM4	PM4	PE2	LS2(–)	INP
4B		OUT3	PM8	PM8	PM8	PM8	PE3	–	HEND
5B		OUT4	PM16	PM16	PM16	PM16	PE4	–	TLR
6B		OUT5	PM32	PM32	PM32	PM32	PE5	–	* ALM
7B		OUT6	MOVE	MOVE	PM64	PM64	PE6	–	* EMGS
8B		OUT7	ZONE1	MODES	PM128	PM128	ZONE1	ZONE1	RMDS
9B		OUT8	PZONE	PZONE	PZONE	PM256	PZONE	PZONE	ALM1
10B		OUT9	RMDS	RMDS	RMDS	RMDS	RMDS	RMDS	ALM2
11B		OUT10	HEND	HEND	HEND	HEND	HEND	HEND	ALM4
12B		OUT11	PEND	PEND/WEND	PEND	PEND	PEND	–	ALM8
13B		OUT12	SV	SV	SV	SV	SV	SV	–
14B		OUT13	* EMGS	* EMGS	* EMGS	* EMGS	* EMGS	* EMGS	–
15B		OUT14	* ALM	* ALM	* ALM	* ALM	* ALM	* ALM	–
16B		OUT15	* BLM	* BLM	* BLM	* BLM	* BLM	* BLM	–
17B			–						–
18B			–						–
19B	0V		N						N
20B	0V		N						N

Wiring Diagram

■ Connection Diagram for Positioner Mode

PIO connector (NPN)

Pin number	Category	Signal name
1A	Power supply	24V
2A		24V
3A	—	Not used
4A	—	Not used
5A	Input	IN0
6A		IN1
7A		IN2
8A		IN3
9A		IN4
10A		IN5
11A		IN6
12A		IN7
13A		IN8
14A		IN9
15A		IN10
16A		IN11
17A		IN12
18A		IN13
19A		IN14
20A		IN15
1B	Output	OUT0
2B		OUT1
3B		OUT2
4B		OUT3
5B		OUT4
6B		OUT5
7B		OUT6
8B		OUT7
9B		OUT8
10B		OUT9
11B		OUT10
12B		OUT11
13B		OUT12
14B		OUT13
15B		OUT14
16B		OUT15
17B	—	Not used
18B	—	Not used
19B	Power supply	0V
20B		0V

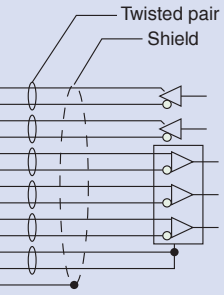


* Connect 24V between pins 1A and 2A, and 0V between pins 19B and 20B.

■ Connection Diagram for Pulse-Train Control Mode (Differential Output)

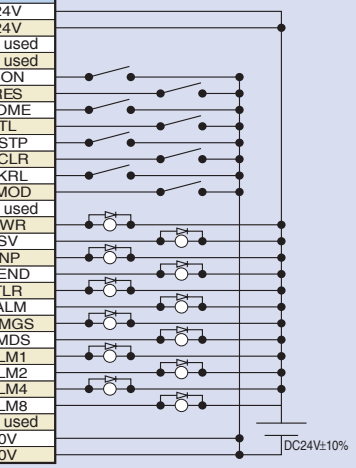
PULSE connector (NPN)

Pin number	Category	Signal name
1		Not used
2		Not used
3	Input	PP
4		/PP
5		NP
6		/NP
7	Output	AFB
8		/AFB
9		BFB
10		/BFB
11		ZFB
12		/ZFB
13	Ground	GND
14		GND
Shell	Shield	Shield



PIO connector (NPN)

Pin number	Category	Signal name
1A	Power supply	24V
2A		24V
3A		Not used
4A		Not used
5A	Input	SON
6A		RES
7A		HOME
8A		TL
9A		CSTP
10A		DCLR
11A		BKRL
12A		RMOD
13A~20A	—	Not used
1B	Output	PWR
2B		SV
3B		INP
4B		HEND
5B		TLR
6B		*ALM
7B		*EMGS
8B		RMDS
9B		ALM1
10B		ALM2
11B		ALM4
12B		ALM8
13B~18B	—	Not used
19B	Power supply	0V
20B		0V

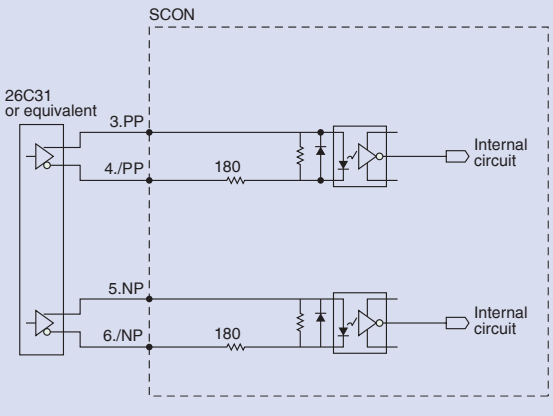


* The shield of the twisted pair cable connected to the PULSE connector must be connected to the shell. Keep the cable length to 10 m or less.
* Connect 24V between pins 1A and 2A, and 0V between pins 19B and 20B.

Input/Output Specifications of Pulse-Train Control Type (Differential Line Driver Specifications)

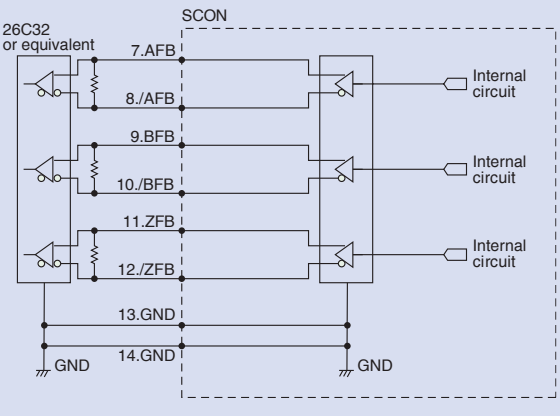
■ Input Part

Maximum input pulses: Line driver interface 500kpps
Open collector interface 200kpps (AK-04 is needed)
Insulation method: Photocoupler insulation

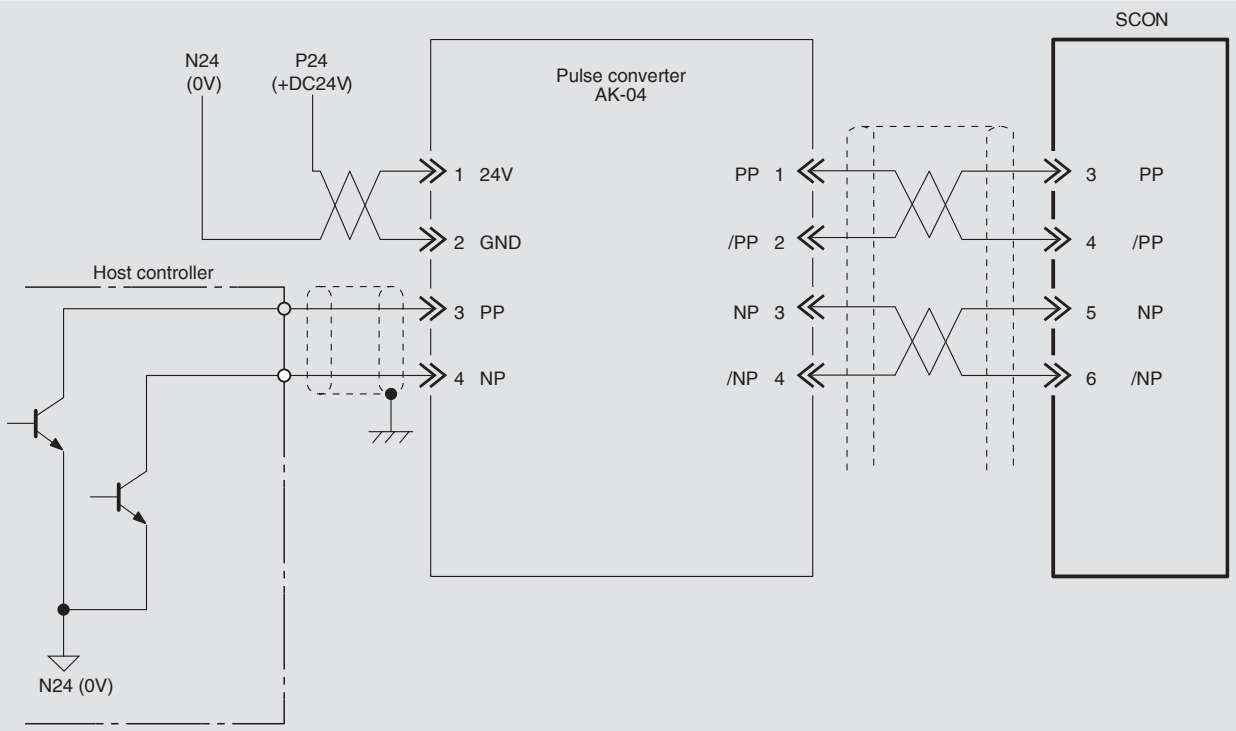


■ Output Part

Output method: Line driver output
Insulated/not insulated: Not insulated



Input/Output Specifications of Pulse-Train Control Type (Open Collector Specifications)



* Use the PIO interface power supply as the 24-VDC power supply to be connected to the AK-04.
* Minimize the cable length between the pulse output unit (PLC) and AK-04. Also keep the cable length between the AK-04 and PULSE connector to 2 m or less.

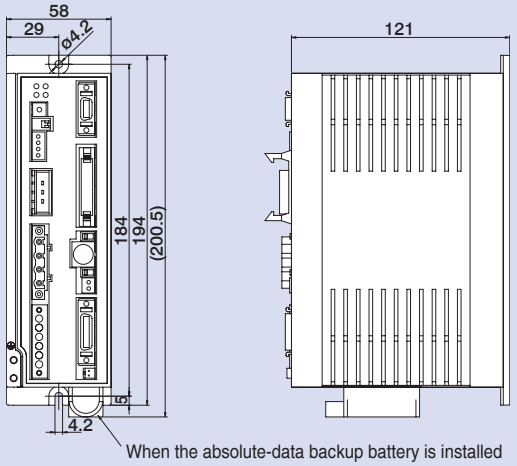
Specification Table

Item	Specification	
Motor capacity	Less than 400W	400W or more
Connectable actuators	RCS2 series actuator / Single-axis robot / Linear servo actuator	
Number of controlled axes	1 axis	
Operation method	Positioner type / Pulse-train control type	
Number of positioning points	max. 512 points	
Backup memory	EEPROM	
I/O connector	40-pin connector	
Number of I/O points	16 input points / 16 output points	
I/O power supply	Externally supplied 24VDC ± 10%	
Serial communication	RS485	
Peripheral communication cable	CB-PAC-PIO □□□	
Command pulse-train input method	Differential line driver method / Open collector method (Conversion of open collector pulses to differential pulses using a pulse converter (Note 1))	
Maximum input pulse frequency	Differential line driver method: 500kpps max. / Open collector method (with a pulse converter): 200kpps max.	
Position detection method	Incremental encoder / Absolute encoder	
Emergency stop function	Available (built-in relay) / Class B	
Forced release of electromagnetic brake	Brake release switch ON/OFF	
Motor cable	CB-XEU-MA □□□ (30m max.)	
Encoder cable	CB-XEU1-PA □□□ (30m max.)	
Input power supply	Single-phase 100~115VAC±10% Single-phase 200~230VAC±10%	Single-phase 200~230VAC±10%
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 10~57Hz One-side amplitude 0.035mm (continuous), 0.075mm (intermittent) 58~150Hz 4.9m/s2 (continuous), 9.8m/s2 (intermittent)	
Ambient operating temperature	0~40°C	
Ambient operating humidity	10~95% (non-condensing)	
Operating ambience	Free from corrosive gases	
Protection class	IP20	
Weight	Approx. 800g (+25g for absolute specification)	Approx. 1.1kg
External dimensions	58mm(W)×194mm(H)×121mm (D)	72mm (W) ×194mm (H) ×121mm (D)

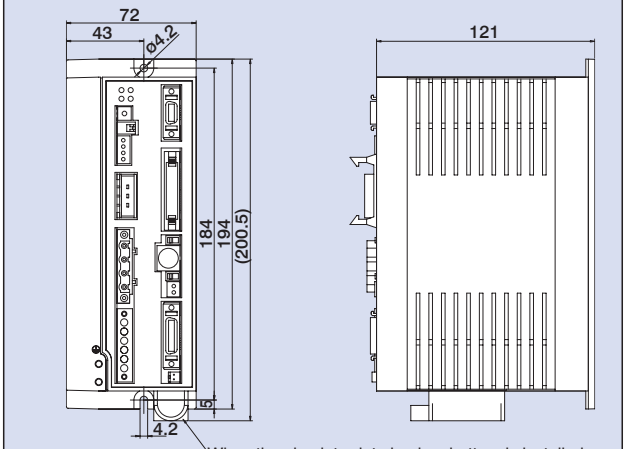
(Note 1) For the command-pulse input method, use the differential line driver method offering higher noise resistance. If the open collector method must be used, use an optional pulse converter (AK-04) to convert open collector pulses to differential pulses.

External Dimensions

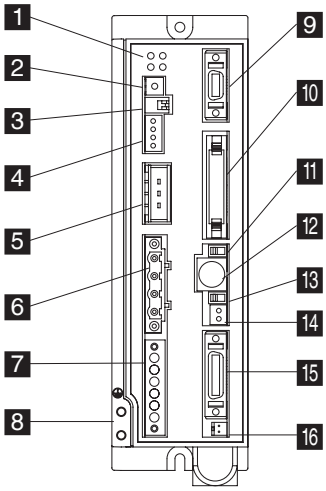
Less than 400W

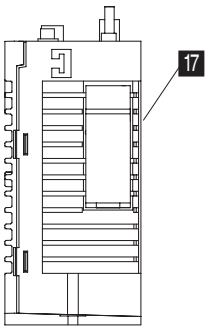


400W or more



Name of Each Part





1 LED indicators

These LED indicate the condition of the controller.

Name	Color	Description
PWR		This LED comes on when the system becomes ready (= the CPU is functioning properly after the power has been turned on).
SV		This LED comes on when the servo turns on.
ALM		This LED remains lit while an alarm is present.
EMG		This LED remains lit while an emergency stop is actuated.

2 Rotary switch

This switch sets an address to identify each controller when multiple controllers are linked.

3 Piano switches

Controller system switches.

Name	Description
1	Operation mode selector switch OFF: Positioner mode, ON: Pulse-train control mode * The setting will become effective after the power is reconnected.
2	Remote update switch (normally set to OFF) OFF: Normal operation mode, ON: Update mode * The setting will become effective after the power is reconnected or following a software reset.

4 System I/O connector

A connector for the emergency stop switch, etc.

5 Regenerative unit connector

A connector for the resistor unit that absorbs regenerative current produced when the actuator decelerates to a stop.

6 Motor connector

(compatible with XSEL, ECON and RCS)

A connector for the actuator's motor cable.

7 Power-supply connector

An AC power-supply connector. Divided into the control power input and motor power input.

8 Grounding screw

A screw for protective grounding. Always connect this screw to ground.

9 Dedicated pulse-train control connector

A connector used to operate the controller in the pulse-train control mode. It remains unconnected if the controller is operated in the positioner mode.

10 PIO connector

A connector for a cable used to perform parallel communication with a PLC and other peripherals.

11 Running mode selector switch

Name	Description
MANU	Do not accept PI commands.
AUTO	Accept PI 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

A connector for a teaching-pendant or PC communication cable.

13 Brake release switch

A switch to forcibly release the electromagnetic brake equipped on the actuator.

* A 24-VDC power supply for driving the brake must be connected.

14 Brake power-supply connector

A connector for supplying 24-VDC brake power. (Required only when an actuator with brake is connected.)

15 Encoder/sensor connector (compatible with XSEL-P/Q)

A connector for the encoder/sensor cables.

16 Absolute-data backup battery connector

A connector for the absolute-data backup battery. (Required only when an absolute-encoder actuator is used.)

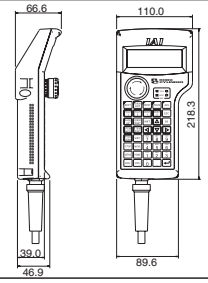
17 Absolute-data backup battery holder

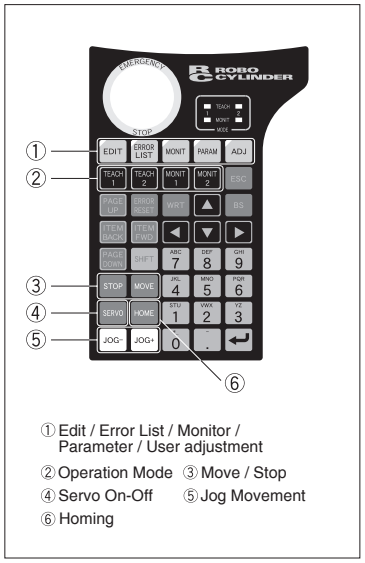
A battery holder into which the absolute-data backup battery is set.

Options

■ Teaching Pendant

An input device that provides all functions you need for trial operation and adjustment, such as position data input, test ope ration, as well as monitor ing of current axis positions and input/output signals.

Name	Teaching Pendant
Model	CON-T-ENG (english version)
Protection grade	IP54
Applicable controllers	PCON, ACON, SCON, ROBONET, RCP2-C, RCP2-CG, RCS-C, RCS-E, ECON
Features	A standard, user-friendly teaching pendant equipped with a LCD screen.
Safety standard	CE, UL
Display	20 characters x 4 lines on LCD
Weight	Approx. 400g
Cable length	5m
Ambient ope rating tempe rature, humidity	Temperature: 0~40°C, Humidity: 10~90% RH
External dimensions	



① Edit / Error List / Monitor / Parameter / User adjustment
② Operation Mode ③ Move / Stop
④ Servo On-Off ⑤ Jog Movement
⑥ Homing

■ PC Software

A software program that helps input position data and perform test operation.
It significantly facilitates debugging operation by offering wide-ranging functions including jogging, inching, step operation and continuous operation.

■ RS232 Communication Type

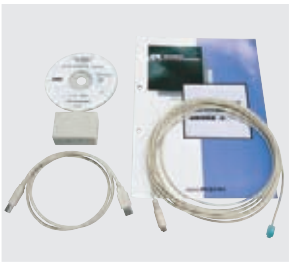
Model RCM-101-MW

<Content> PC software (CD-ROM), PC cable (communication cable + RS232 conversion unit)

■ USB Communication Type

Model RCM-101-USB

<Content> PC software (CD-ROM), PC cable (communication cable + USB conversion unit + USB cable)



■ Regenerative Resistance Unit

Features This unit returns regenerative electric current when the motor builds heat as it decelerates. Please verify the total W of the actuator from the chart at the right, as it is necessary to make preparations to the regenerative resistance.

Model **REU-2** (SCON/SSEL)

Specifications

Weight	0.9kg
Built-in regenerative resistor	220Ω 80W
Unit-controller connection cable (supplied)	CB-SC-REU010 (SSEL)

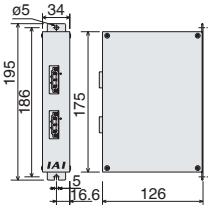
* Please arrange one each of REU-2 and REU-1 (page 372), when two regenerative units are necessary.

Guide for Determining Necessary Number of Units

	Horizontal	Vertical
0 unit	~200W	~100W
1 unit	~750W	~400W
2 units		~750W

* There may be times when more regenerative resistance is needed than listed above depending on operating conditions.

External Dimensions



■ Battery for Absolute Data Storage

Features This battery is for storing absolute data for the operating actuator.

Model AB-5

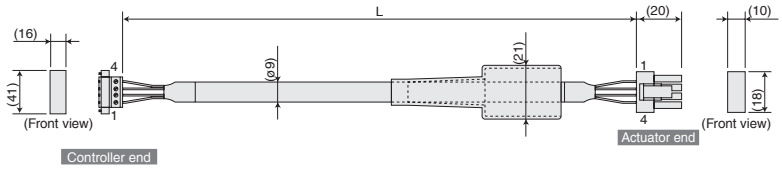
Spare Parts

Should you require spare parts after the purchase of your product for replacing the original cables, etc., refer to the model names specified below.

Motor Cable / Motor Robot Cable

Model CB-RCC-MA□□□/CB-RCC-MA□□□-RB

*□□□ indicates the cable length (L). Lengths up to 30 m can be specified. Example) 080 = 8 m



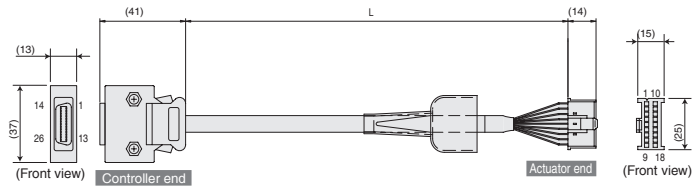
Wire	Color	Signal	No.
0.75sq	Green	PE	1
	Red	U	2
	White	V	3
	Black	W	4

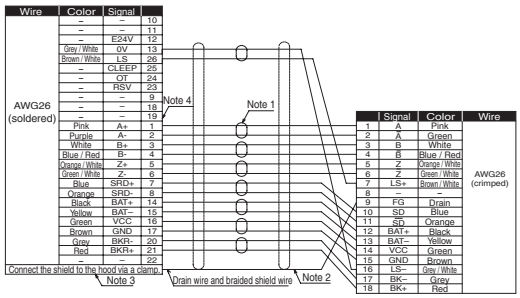
No.	Signal	Color	Wire
1	U	Red	0.75sq (crimped)
2	V	White	
3	W	Black	
4	PE	Green	

Encoder Cable / Encoder Robot Cable

Model CB-RCS2-PA□□□/CB-X2-PA□□□

*□□□ indicates the cable length (L). Lengths up to 30 m can be specified. Example) 080 = 8 m





Wire	Color	Signal	
AWG26 (soldered)	–	–	10
	–	–	11
	–	E24V	12
	Grey / White	0V	13
	Brown / White	LS	26
	–	CLEEP	25
	–	OT	24
	–	RSV	23
	–	–	9
	–	–	18
	–	–	19
	Pink	A+	1
	Purple	A-	2
	White	B+	3
	Blue / Red	B-	4
	Orange / White	Z+	5
	Green / White	Z-	6
	Blue	SRD+	7
	Orange	SRD-	8
	Black	BAT+	14
	Yellow	BAT–	15
	Green	VCC	16
	Brown	GND	17
	Grey	BKR-	20
	Red	BKR+	21
	–	–	22

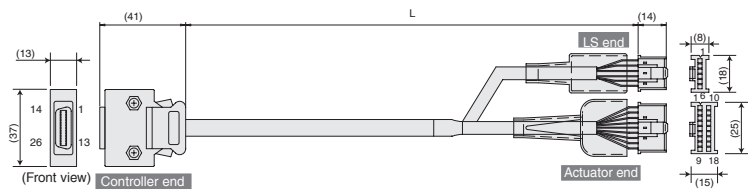
Connect the shield to the hood via a clamp.

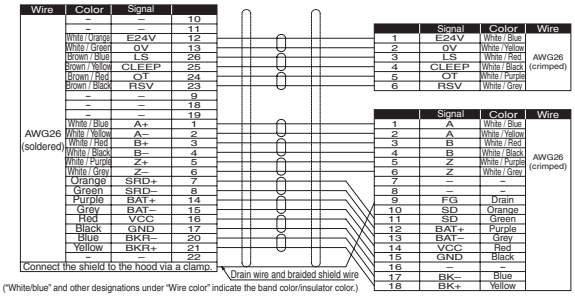
	Signal	Color	Wire
1	A	Pink	AWG26 (crimped)
2	Ā	Green	
3	B	White	
4	B̄	Blue / Red	
5	Z	Orange / White	
6	Z̄	Green / White	
7	LS+	Brown / White	
8	–	–	
9	FG	Drain	
10	SD	Blue	
11	SD	Orange	
12	BAT+	Black	
13	BAT–	Yellow	
14	VCC	Green	
15	GND	Brown	
16	LS–	Grey / White	
17	BK–	Grey	
18	BK+	Red	

Encoder Cable / Encoder Robot Cable for RCS2-RT6/RT6R/RT7

Model CB-RCS2-PLA□□□/CB-X2-PLA□□□

*□□□ indicates the cable length (L). Lengths up to 30 m can be specified. Example) 080 = 8 m





Wire	Color	Signal	
AWG26 (soldered)	–	–	10
	–	–	11
	White / Orange	E24V	12
	White / Green	0V	13
	Brown / Blue	LS	26
	Brown / Yellow	CLEEP	25
	Brown / Red	OT	24
	Brown / Black	RSV	23
	–	–	9
	–	–	18
	–	–	19
	White / Blue	A+	1
	White / Yellow	A–	2
	White / Red	B+	3
	White / Black	B–	4
	White / Purple	Z+	5
	White / Grey	Z–	6
	Orange	SRD+	7
	Green	SRD–	8
	Purple	BAT+	14
	Grey	BAT–	15
	Red	VCC	16
	Black	GND	17
	Blue	BKR–	20
	Yellow	BKR+	21
	–	–	22

Connect the shield to the hood via a clamp.

	Signal	Color	Wire
1	E24V	White / Blue	AWG26 (crimped)
2	0V	White / Yellow	
3	LS	White / Red	
4	CLEEP	White / Black	
5	OT	White / Purple	
6	RSV	White / Grey	

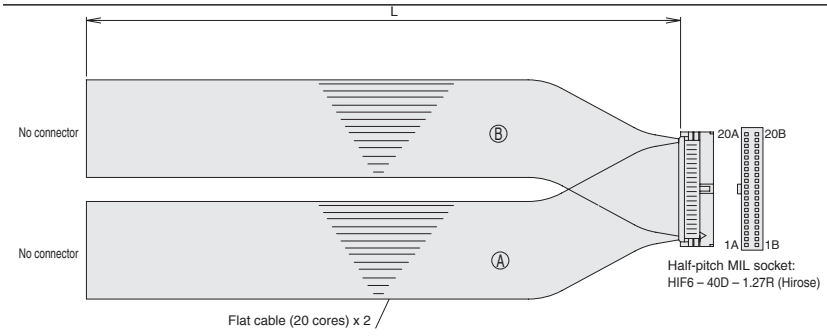
	Signal	Color	Wire
1	A	White	AWG26 (crimped)
2	Ā	White / Yellow	
3	B	White / Red	
4	B̄	White / Black	
5	Z	White / Purple	
6	Z̄	White / Grey	
7	–	–	
8	–	–	
9	FG	Drain	
10	SD	Orange	
11	SD	Green	
12	BAT+	Purple	
13	BAT–	Grey	
14	VCC	Red	
15	GND	Black	
16	–	–	
17	BK–	Blue	
18	BK+	Yellow	

("White/blue" and other designations under "Wire color" indicate the band color/insulator color.)

I/O Flat Cable

Model CB-PAC-PIO□□□

*□□□ indicates the cable length (L). Lengths up to 10 m can be specified. Example) 080 = 8 m



HIF6 – 40D – 1.27R

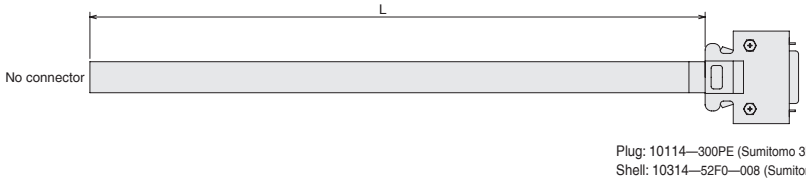
No.	Signal name	Cable color	Wire
1A	24V	Brown-1	Flat cable Ⓐ (pressure-welded) AWG28
2A	24V	Red-1	
3A	—	Orange-1	
4A	—	Yellow-1	
5A	IN0	Green-1	
6A	IN1	Blue-1	
7A	IN2	Purple-1	
8A	IN3	Grey-1	
9A	IN4	White-1	
10A	IN5	Black-1	
11A	IN6	Brown-2	
12A	IN7	Red-2	
13A	IN8	Orange-2	
14A	IN9	Yellow-2	
15A	IN10	Green-2	
16A	IN11	Blue-2	
17A	IN12	Purple-2	
18A	IN13	Grey-2	
19A	IN14	White-2	
20A	IN15	Black-2	

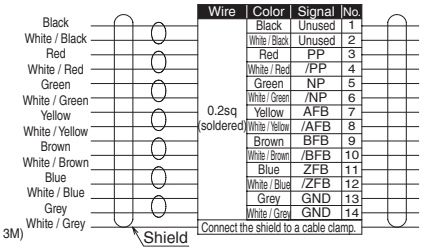
No.	Signal name	Cable color	Wire
1B	OUT0	Brown-3	Flat cable Ⓑ (pressure-welded) AWG28
2B	OUT1	Red-3	
3B	OUT2	Orange-3	
4B	OUT3	Yellow-3	
5B	OUT4	Green-3	
6B	OUT5	Blue-3	
7B	OUT6	Purple-3	
8B	OUT7	Grey-3	
9B	OUT8	White-3	
10B	OUT9	Black-3	
11B	OUT10	Brown-4	
12B	OUT11	Red-4	
13B	OUT12	Orange-4	
14B	OUT13	Yellow-4	
15B	OUT14	Green-4	
16B	OUT15	Blue-4	
17B	—	Purple-4	
18B	—	Grey-4	
19B	0V	White-4	
20B	0V	Black-4	

SCON Pulse-Train Control Cable

Model CB-SC-PIOS□□□

*□□□ indicates the cable length (L). Lengths up to 10 m can be specified. Example) 080 = 8 m



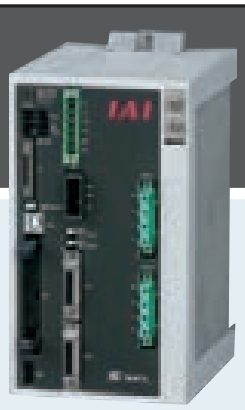


Wire	Color	Signal	No.
0.2sq (soldered)	Black	Unused	1
	White / Black	Unused	2
	Red	PP	3
	White / Red	/PP	4
	Green	NP	5
	White / Green	/NP	6
	Yellow	AFB	7
	White / Yellow	/AFB	8
	Brown	BFB	9
	White / Brown	/BFB	10
	Blue	ZFB	11
	White / Blue	/ZFB	12
	Grey	GND	13
	White / Grey	GND	14

Connect the shield to a cable clamp.

SSEL

RCS2 series
Program controller

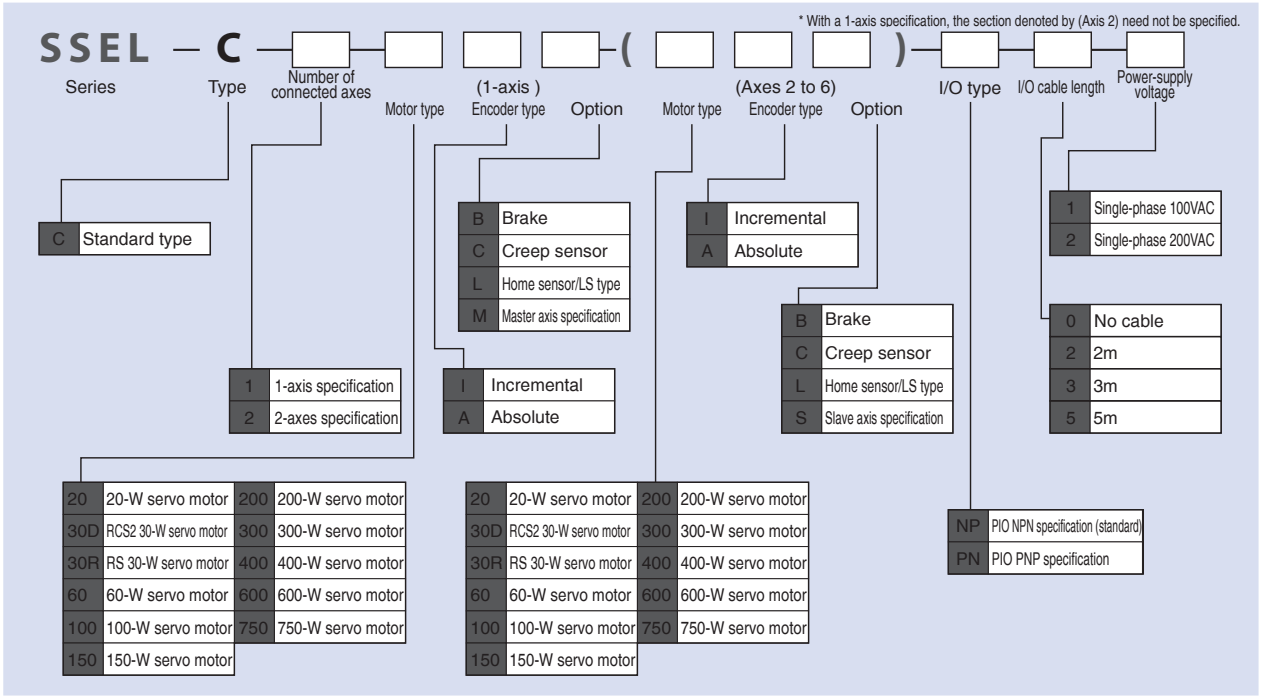


Type List

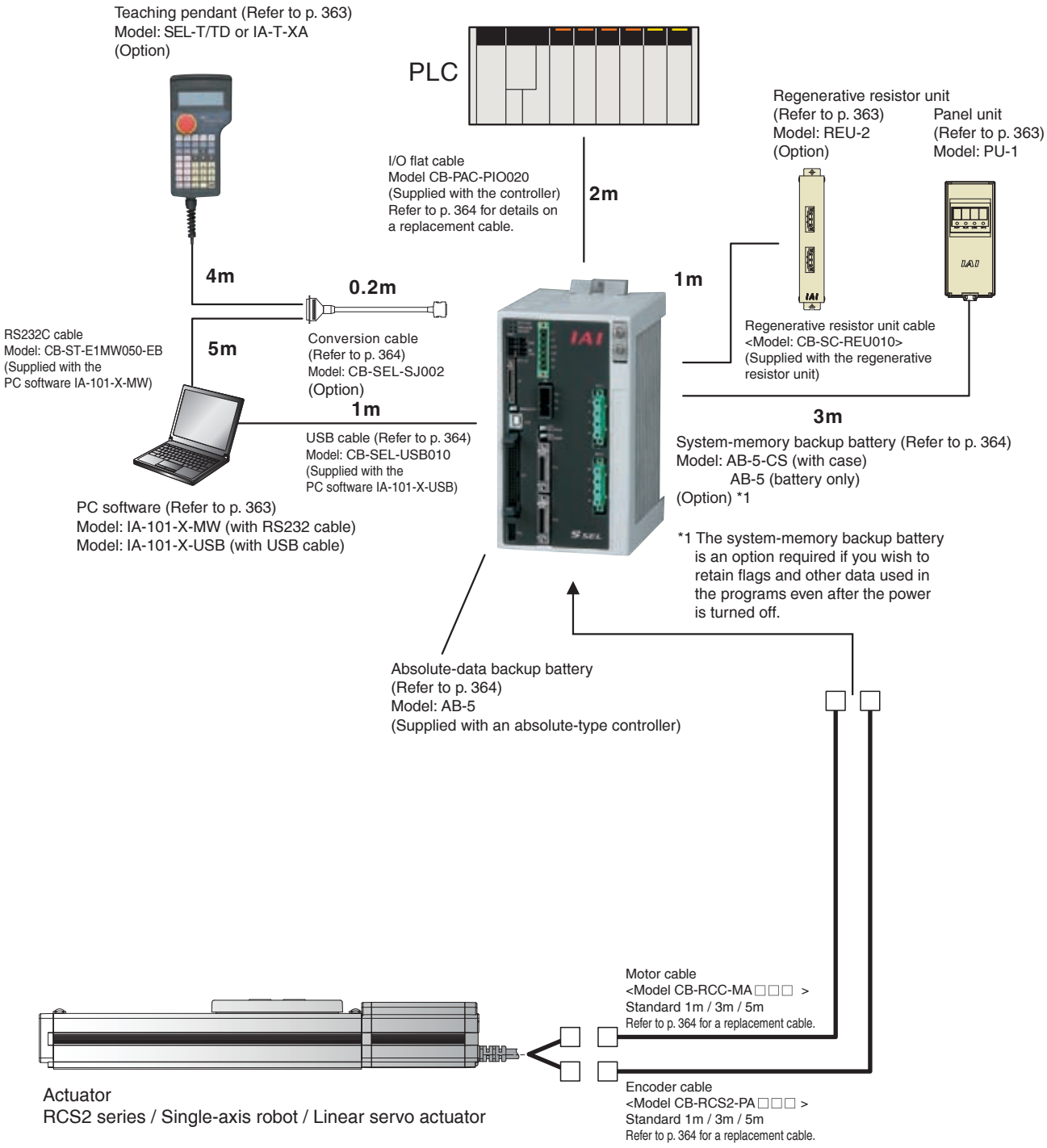
Program controller capable of operating RCS2 series actuator. Various control functions are combined into a single unit.

Type	C	
Name	Program mode	Positioner mode
External view		
Description	Both actuator operation and communication with external equipment can be handled by a single controller. When two axes are connected, arc interpolation and path operation can be performed.	Up to 1,500 positioning points are supported. Push-motion operation and teaching operation are also possible.
Number of position points	1,500 positions	

Model



System Configuration



I/O Specifications

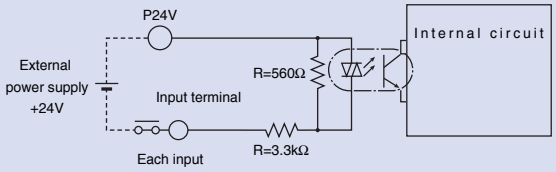
■ Input Part External input specifications

Item	Specification
Input voltage	DC24V ±10%
Input current	7mA/1circuit
ON/OFF voltage	ON voltage (Min.) NPN:DC16V/PNP:DC8V OFF voltage (Max.) NPN:DC5V/PNP:DC19V
Insulation method	Photocoupler

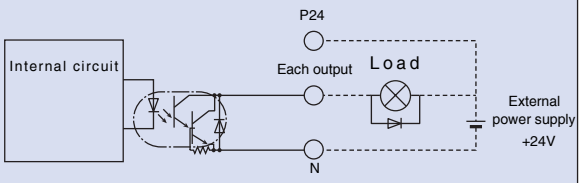
■ Output Part External output specifications

Item	Specification
Load voltage	DC24V
Max. load current	1mA/point 400mA/8point total
Leak current	Max. 0.1mA/1point
Insulation method	Photocoupler

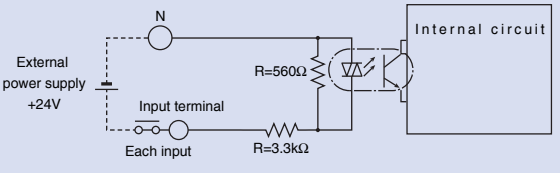
NPN specification



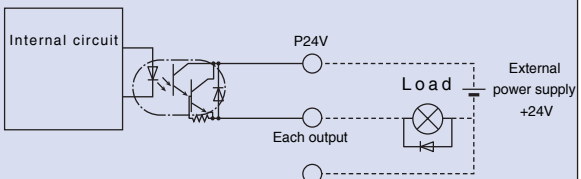
NPN specification



PNP specification



PNP specification



Explanation of I/O Functions

The SSEL controller lets you select either the “program mode” in which the actuator is operated by programs input to the controller, or the “positioner mode” in which the actuator moves to the positions specified by PLC signals received from the host. The positioner mode provides the following five input patterns each supporting different applications.

■ Controller Functions by Type

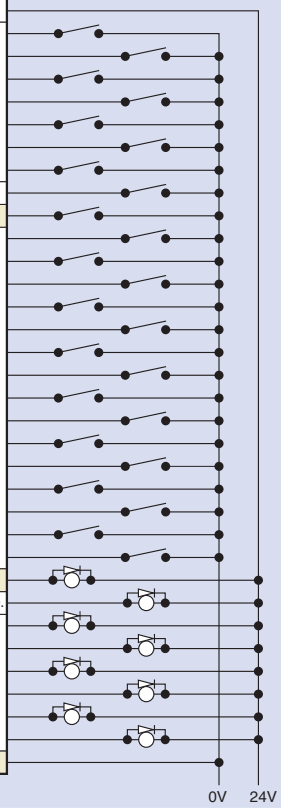
Operation mode		Features
Program mode		Various operations including linear/arc interpolation operation, path operation ideal for coating processes, etc., arch-motion operation and palletizing operation can be performed using the Super SEL language that lets you program complex control actions using simple commands.
Positioner mode	Standard mode	A basic operation mode in which a position number is specified and then a start signal is input to start operation. Push-motion operation and 2-axis linear interpolation operation are also supported.
	Product-type switchover mode	Multiple works 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	The slider (rod) can be moved via an external signal to store the achieved position as position data.
	DS-S-C1 compatible mode	If you were using a DS-S-C1 controller before, 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 Functions

Program mode

Pin number	Category	Port number	Program mode	Function
1A	P24		24-V input	Connect 24V.
1B	Input	016	Program No. 1 selection	These signals are used to select the program to be started. (BCD input using ports 016 to 022)
2A		017	Program No. 2 selection	
2B		018	Program No. 4 selection	
3A		019	Program No. 8 selection	
3B		020	Program No. 10 selection	
4A		021	Program No. 20 selection	
4B		022	Program No. 40 selection	
5A		023	CPU reset	This signal is used to reset the system to create the same condition after power reconnection.
5B		000	Start	This signal is used to start the program selected by port Nos. 016 to 022.
6A		001	General-purpose input	These signals are used with a program command to wait for external input.
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		015	General-purpose input	
13B	Output	300	Alarm	This signal is output upon an alarm. (Contact B)
14A		301	Ready	This signal is output once the controller has started properly and entered a ready state.
14B		302	General-purpose output	These signals can be turned ON/OFF freely using program commands.
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		0-V input	Connect 0V.

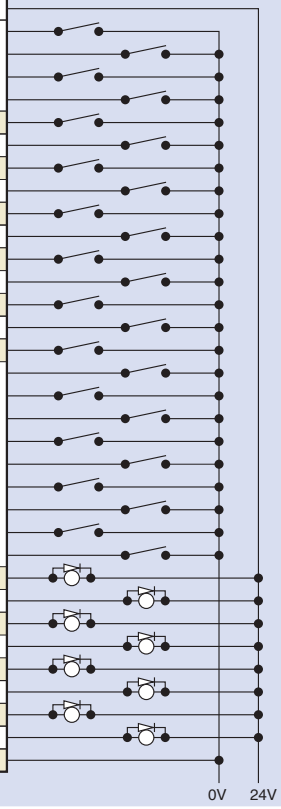
Wiring diagram (NPN)*



Positioner, Standard Mode

Pin number	Category	Port number	Positioner, standard mode	Function
1A	P24		24-V input	Connect 24V.
1B	Input	016	Position input 10	Port Nos. 007 to 019 are used to specify a target position number. Numbers can be specified either as BCD or binary codes.
2A		017	Position input 11	
2B		018	Position input 12	
3A		019	Position input 13	
3B		020	–	–
4A		021	–	–
4B		022	–	–
5A		023	Error reset	This signal is used to reset minor errors. (The power must be reconnected to reset serious errors.)
5B		000	Start	This signal is used to cause the actuator to start moving to the selected position.
6A		001	Home return	This signal is used to perform home return.
6B		002	Servo ON	This signal is used to switch the servo on/off.
7A		003	Push	This signal is used to perform push-motion operation.
7B		004	Pause	When this signal is turned OFF while the actuator is moving, the actuator will pause. When the signal is turned ON, the actuator will resume and complete the remaining operation.
8A		005	Cancellation	When this signal is turned OFF while the actuator is moving, the actuator will stop and the remaining operation will be cancelled.
8B		006	Interpolation setting	With a 2-axis specification, turning ON this signal causes the actuator to move via linear interpolation.
9A		007	Position input 1	Port Nos. 007 to 019 are used to specify a target position number. Numbers can be specified either as BCD or binary codes.
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	This signal is output upon an alarm. (Contact B)
14A		301	Ready	This signal is output once the controller has started properly and entered a ready state.
14B		302	Position complete	This signal is output upon completion of movement to the specified position.
15A		303	Home return complete	This signal is output upon completion of home return.
15B		304	Servo ON output	This signal is output while the servo is on.
16A		305	Push motion complete	This signal is output upon completion of push-motion operation.
16B		306	System-memory backup battery error	This signal is output when the system-memory backup battery voltage has dropped (to the warning level).
17A		307	Absolute-data backup battery error	This signal is output when the absolute-data backup battery voltage has dropped (to the warning level).
17B	N		0-V input	Connect 0V.

Wiring diagram (NPN)*



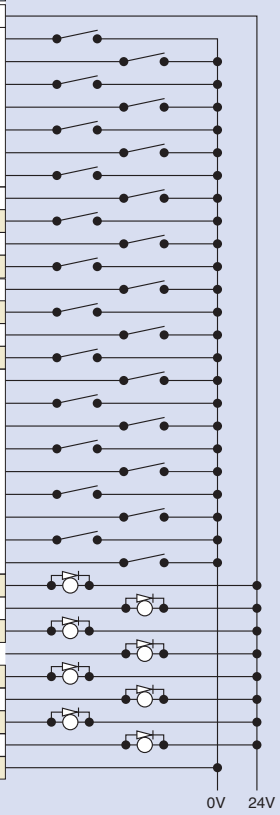
* With regard to PNP wiring diagram, please refer to S-SEL manual.

Explanation of I/O Functions

Positioner, Product-Type Switchover Mode

Pin number	Category	Port number	Positioner	Function
1A	P24		24-V input	Connect 24V.
1B	Input	016	Position/product type input 10	Port Nos. 007 to 022 are used to specify a target position number and a product type number. Position numbers and product type numbers are assigned by parameter settings. Numbers can be specified either as BCD or binary codes.
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	This signal is used to reset minor errors. (The power must be reconnected to reset serious errors.)
5B		000	Start	This signal is used to cause the actuator to start moving to the selected position.
6A		001	Home return	This signal is used to perform home return.
6B		002	Servo ON	This signal is used to switch the servo on/off.
7A		003	Push	This signal is used to perform push-motion operation.
7B		004	Pause	When this signal is turned OFF while the actuator is moving, the actuator will pause. When the signal is turned ON, the actuator will resume and complete the remaining operation.
8A		005	Cancellation	When this signal is turned OFF while the actuator is moving, the actuator will stop and the remaining operation will be cancelled.
8B		006	Interpolation setting	With a 2-axis specification, turning ON this signal causes the actuator to move via linear interpolation.
9A		007	Position/product type input 1	Port Nos. 007 to 022 are used to specify a target position number and a product type number. Position numbers and product type numbers are assigned by parameter settings. Numbers can be specified either as BCD or binary codes.
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	
12B		014	Position/product type input 8	
13A		015	Position/product type input 9	
13B	Output	300	Alarm	This signal is output upon an alarm. (Contact B)
14A		301	Ready	This signal is output once the controller has started properly and entered a ready state.
14B		302	Position complete	This signal is output upon completion of movement to the specified position.
15A		303	Home return complete	This signal is output upon completion of home return.
15B		304	Servo ON output	This signal is output while the servo is on.
16A		305	Push motion complete	This signal is output upon completion of push-motion operation.
16B		306	System-memory backup battery error	This signal is output when the system-memory backup battery voltage has dropped (to the warning level).
17A		307	Absolute-data backup battery error	This signal is output when the absolute-data backup battery voltage has dropped (to the warning level).
17B	N		0-V input	Connect 0V.

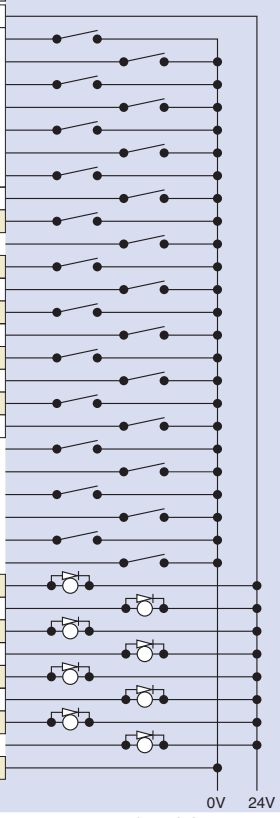
Wiring diagram (NPN)*



Positioner, 2-axis Independent Mode

Pin number	Category	Port number	Positioner	Function
1A	P24		24-V input	Connect 24V.
1B	Input	016	Position input 10	Port Nos. 010 to 022 are used to specify a target position number. Position numbers for axis 1 and those for axis 2 are assigned by parameter settings. Numbers can be specified either as BCD or binary codes.
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	This signal is used to reset minor errors. (The power must be reconnected to reset serious errors.)
5B		000	Start 1	This signal is used to cause the actuator to start moving to the selected position.
6A		001	Home return 1	This signal is used to move axis 1 to the home.
6B		002	Servo ON 1	This signal is used to switch on/off the servo for axis 1.
7A		003	Pause 1	When this signal is turned OFF while axis 1 is moving, the actuator will pause. When the signal is turned ON, the actuator will resume and complete the remaining operation.
7B		004	Cancellation 1	This signal is used to cancel the movement of axis 1.
8A		005	Start 2	This signal is used to cause axis 2 to start moving to the selected position.
8B		006	Home return 2	This signal is used to move axis 2 to the home.
9A		007	Servo ON 2	This signal is used to switch on/off the servo for axis 2.
9B		008	Pause 2	When this signal is turned OFF while axis 2 is moving, the actuator will pause. When the signal is turned ON, the actuator will resume and complete the remaining operation.
10A		009	Cancellation 2	This signal is used to cancel the movement of axis 2.
10B		010	Position input 1	Port Nos. 010 to 022 are used to specify a target position number. Position numbers for axis 1 and those for axis 2 are assigned by parameter settings. Numbers can be specified either as BCD or binary codes.
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	Output	300	Alarm	This signal is output upon an alarm. (Contact B)
14A		301	Ready	This signal is output once the controller has started properly and entered a ready state.
14B		302	Position complete 1	This signal is output upon completion of movement of axis 1 to the specified position.
15A		303	Home return complete 1	This signal is output upon completion of home return of axis 1.
15B		304	Servo ON output 1	This signal is output while the servo for axis 1 is on.
16A		305	Position complete 2	This signal is output upon completion of movement of axis 2 to the specified position.
16B		306	Home return complete 2	This signal is output upon completion of home return of axis 2.
17A		307	Servo ON output 2	This signal is output while the servo for axis 2 is on.
17B	N		0-V input	Connect 0V.

Wiring diagram (NPN)*



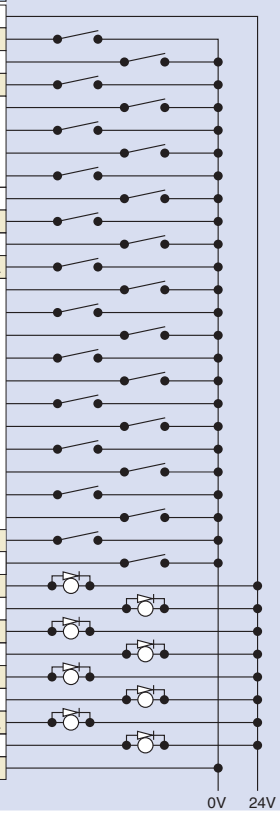
* With regard to PNP wiring diagram, please refer to S-SEL manual.

Explanation of I/O Functions

Positioner, Teaching Mode

Pin number	Category	Port number	Positioner	Function
1A	P24		24-V input	Connect 24V.
1B	Input	016	Axis 1 JOG-	While this signal is input, axis 1 moves in the negative direction.
2A		017	Axis 2 JOG+	While this signal is input, axis 2 moves in the positive direction.
2B		018	Axis 2 JOG-	While this signal is input, axis 2 moves in the negative direction.
3A		019	Inching specification (0.01mm)	These signals are used to specify an inching travel distance. (The travel distance is the sum of values specified by port Nos. 019 to 022.)
3B		020	Inching specification (0.1mm)	
4A		021	Inching specification (0.5mm)	
4B		022	Inching specification (1mm)	
5A		023	Error reset	This signal is used to reset minor errors. (The power must be reconnected to reset serious errors.)
5B		000	Start	This signal is used to cause the actuator to start moving to the selected position.
6A		001	Servo ON	This signal is used to switch the servo on/off.
6B		002	Pause	When this signal is turned OFF while the actuator is moving, the actuator will pause. When the signal is turned ON, the actuator will resume and complete the remaining operation.
7A		003	Position input 1	Port Nos. 003 to 013 are used to specify a target position number and a position number under which to input the current position. When the teaching mode specification signal at port No. 014 is ON, the current value will be written under the specified position number upon turning ON of the start signal at port No. 000.
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 specification	
13A		015	Axis 1 JOG+	While this signal is input, axis 1 moves in the positive direction.
13B	Output	300	Alarm	This signal is output upon an alarm. (Contact B)
14A		301	Ready	This signal is output once the controller has started properly and entered a ready state.
14B		302	Position complete	This signal is output upon completion of movement to the specified position.
15A		303	Home return complete	This signal is output upon completion of home return.
15B		304	Servo ON output	This signal is output while the servo is on.
16A		305	-	-
16B		306	System-memory backup battery error	This signal is output when the system-memory backup battery voltage has dropped (to the warning level).
17A		307	Absolute-data backup battery error	This signal is output when the absolute-data backup battery voltage has dropped (to the warning level).
17B	N		0-V input	Connect 0V.

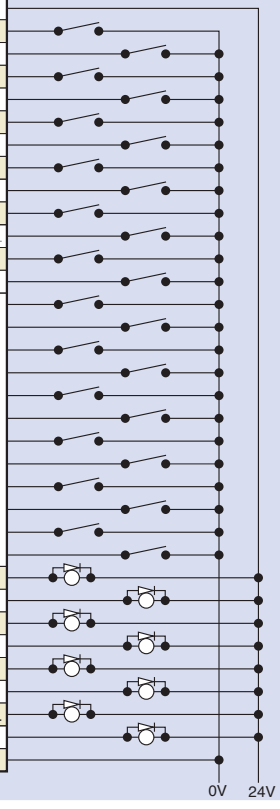
Wiring diagram (NPN)*



Positioner, DS-S-C1 Compatible Mode

Pin number	Category	Port number	Positioner	Function
1A	P24		24-V input	Connect 24V.
1B	Input	016	Position No.1000	(Same as port Nos. 004 to 015)
2A		017	–	–
2B		018	–	–
3A		019	–	–
3B		020	–	–
4A		021	–	–
4B		022	–	–
5A		023	CPU reset	This signal is used to reset the system to create the same condition after power reconnection.
5B		000	Start	This signal is used to cause the actuator to start moving to the selected position.T
6A		001	Hold (pause)	When this signal is turned OFF while the actuator is moving, the actuator will pause. When the signal is turned ON, the actuator will resume and complete the remaining operation.
6B		002	Cancellation	When this signal is turned OFF while the actuator is moving, the actuator will stop and the remaining operation will be cancelled.
7A		003	Interpolation setting	With a 2-axis specification, turning ON this signal causes the actuator to move via linear interpolation.
7B		004	Position No.1	Port Nos. 004 to 016 are used to specify a target position number. Numbers can be specified either as BCD or binary codes.
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	Output	300	Alarm	This signal is output upon an alarm. (Contact A)
14A		301	Ready	This signal is output once the controller has started properly and entered a ready state.
14B		302	Position complete	This signal is output upon completion of movement to the specified position.
15A		303	–	–
15B		304	–	–
16A		305	–	–
16B		306	System-memory backup battery error	This signal is output when the system-memory backup battery voltage has dropped (to the warning level).
17A		307	Absolute-data backup battery error	This signal is output when the absolute-data backup battery voltage has dropped (to the warning level).
17B	N		0-V input	Connect 0V.

Wiring diagram (NPN)*



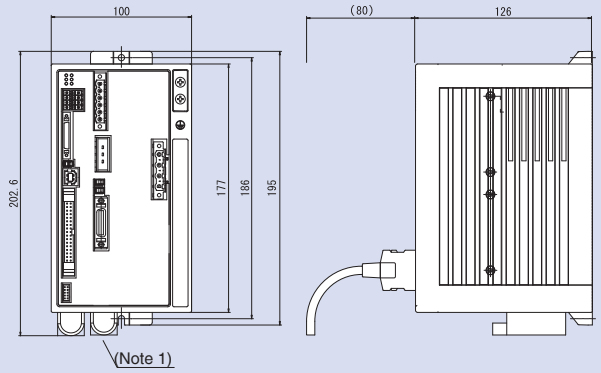
* With regard to PNP wiring diagram, please refer to S-SEL manual.

Specification Table

	Item	Specification	
Basic specifications	Connectable actuators	RCS2 series actuator / Single-axis robot / Linear servo actuator	
	Input power supply	Single-phase 100VAC ± 10%	Single-phase 200VAC ± 10%
	Power-supply capacity	1,660VA max. (400W, 2 axes operated)	
	Dielectric strength voltage	500VDC, 10MΩ or above	
	Breakdown resistance	500VAC, 1 minute	
	Rush current	30A max.	
	Vibration resistance	XYZ directions	One-side amplitude 0.035 mm (continuous), 0.075 (intermittent) 4.9m/s2 (continuous), 9.8m/s2 (intermittent)
Control specifications	Number of controlled axes	1 axis/2 axes	
	Maximum total output of connected axes	400W	800W
	Position detection method	Incremental encoder / Absolute encoder	
	Speed setting	From 1mm/s. The maximum limit varies depending on the actuator.	
	Acceleration setting	From 0.01G. The maximum limit varies depending on the actuator.	
	Operation method	Program operation / Positioner operation (switchable)	
Program	Programming language	Super SEL language	
	Number of programs	64 programs	
	Number of program steps	2,000 steps	
	Number of multi-tasking programs	8 programs	
	Number of positioning points	1,500 points	
	Data storage device	Flash ROM (A system-memory backup battery can be added as an option)	
	Data input method	Teaching pendant or PC software	
Communication	Number of I/O points	24 input points / 8 output points (NPN or PNP selectable)	
	I/O power supply	Externally supplied 24VDC ± 10%	
	PIO cable	CB-DS-PIO□□□(supplied with the controller)	
	Serial communication function	RS232C (D-sub, half-pitch connector) / USB connector	
	Field network	(To be supported in the future)	
	Motor cable	CB-XEU-MA□□□(30m max.)	
	Encoder cable	CB-XEU1-PA□□□(30m max.)	
General specifications	Protective functions	Motor overcurrent, motor driver temperature check, overload check, encoder open-circuit check, soft limit over, system error, battery error, etc.	
	Ambient operating temperature, humidity	0~40°C 10~95% (non-condensing)	
	Operating ambience	Free from corrosive gases. In particular, there shall be no significant powder dust.	
	Protection class	IP20	
	Weight	1.4kg	
	External dimensions	100mm (W) ×202.6mm (H) ×126mm (D)	

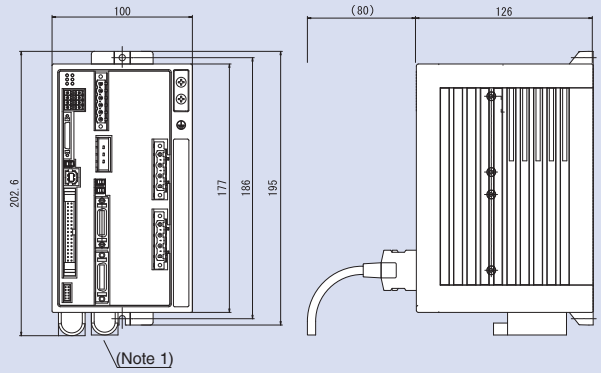
External Dimensions

SSEL 1-axis controller



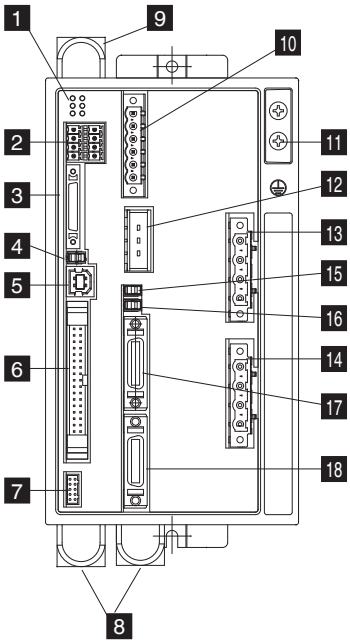
(Note 1) Absolute-data backup battery. This battery is not installed on an incremental-type controller.

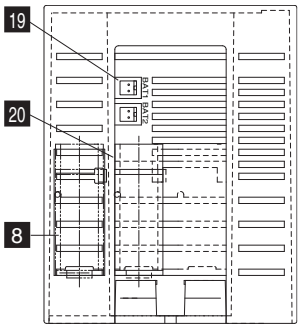
SSEL 2-axis controller

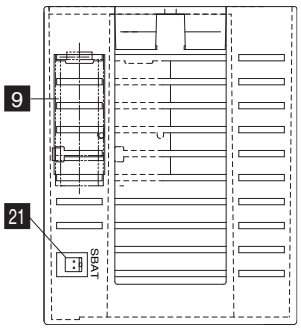


(Note 1) Absolute-data backup battery. This battery is not installed on an incremental-type controller.

Name of Each Part







1 Status indicator LEDs

These LEDs are used to indicate the operating condition of the controller.
Indication details are as follows:

PWR: This LED indicates that the controller is receiving power.
RDY: This LED indicates that the controller is ready to perform program operation.
ALM: This LED indicates that the controller is abnormal.
EMG: This LED indicates that an emergency stop is actuated and the drive source is cut off.
SV1: This LED indicates that the axis 1 actuator servo is on.
SV2: This LED indicates that the axis 2 actuator servo is on.

2 System I/O connector

A connector for the emergency stop input, enable input, brake power input, etc.

3 Teaching pendant (TP) 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 D-sub, 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.
A 34-pin flat connector is used for the DIO (24 IN/8 OUT) interface.

The I/O power is also supplied to the controller through this connector (pins 1 and 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 (optional)

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

An AC power-supply connector. Divided into the control power input and motor power input.

11 Grounding screw

A screw for protective grounding. Always connect this screw to ground.

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

Connect the motor cable of the axis 1 actuator.

14 Motor connector for axis 2

Connect 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 when the actuator uses an absolute encoder. Secure installation of the battery is the customer's responsibility.

20 Absolute-data backup battery connector for axis 2

A connector for the battery that backs up absolute data when the actuator uses an absolute encoder. Secure installation of the battery is the customer's responsibility.

21 System-memory backup battery connector

A connector for the system-memory backup battery.

Option

Teaching pendant

Features A teaching device providing program/position input function, test operation function, monitoring function, and more.

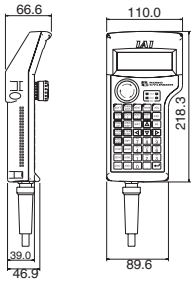
Model

Model	Description
SEL-T-J	Standard type with connector conversion cable
SEL-T	Standard type
SEL-TD-J	ANSI deadman switch type with connector conversion cable
SEL-TD	ANSI Deadman switch type
IA-T-XA-J	ANSI type with connector conversion cable
IA-T-XA	ANSI type

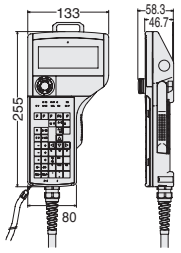

SEL-T/TD


CB-SEL-SJ002

SEL-T/TD



IA-T-XA



Specifications

Item	SEL-T/TD(-J)	IA-T-XA
Ambient operating temperature, humidity	Temperature 0~40°C, Humidity 10~90(85)% RH	
Protection structure	Conforming to IP54	
Weight	Approx. 400g	Approx. 600g (excluding cable)
Cable length	5m	
Display	LCD with 20 characters x 4 lines	LCD with 32 characters x 8 lines

Configuration

NOTE
The SSEL controller is supported by version 1.30 or later (or 1.20 or later with the ANSI type).

Conversion cable:CB-SEL-SJ002

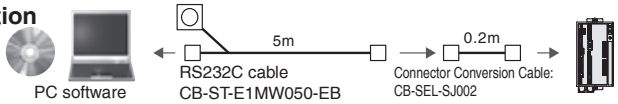
SEL-T/TD:5m
IA-T-XA:5m
0.2m

PC Software (Windows Only)

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.

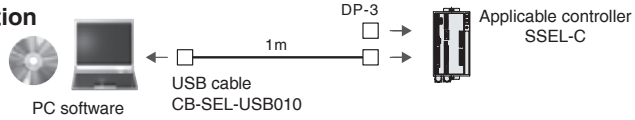
Model **IA-101-X-MW-J (with RS232C Cable + Connector Conversion Cable)**
IA-101-X-MW (with RS232C Cable)

Configuration



Model **IA-101-X-USB (with USB Cable)**

Configuration



NOTE
The SSEL controller is supported by version 6.0.0.0 or later.

Regenerative Resistor Unit

Features This unit converts to heat the regenerative current produced when the motor decelerates. Use the table shown to the right to check the total wattage of actuators operated by the controller, and purchase one or more regenerative resistor units if required.

Model **REU-2** (SCON/SSEL)

Specifications

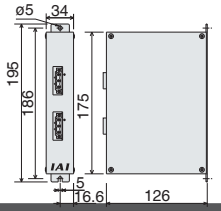
Weight	0.9kg
Built-in regenerative resistor	220Ω 80W
Unit-controller connection cable (supplied)	CB-SC-REU010 (SSEL)

Guide for Determining Necessary Number of Units

	Horizontal	Vertical
0 unit	~800W	~200W
1 unit		~600W
2 units		~800W

* More regenerative resistor units than the numbers specified above may be required depending on the operating conditions.

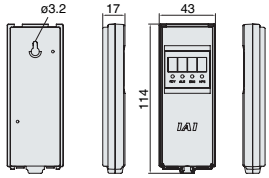
External Dimensions



Panel Unit

Features A display for checking controller error codes and active program numbers.

Model **PU-1(Cable Length 3m)**



Absolute-Data Backup Battery

Features This battery backs up absolute data when an absolute-type actuator is operated. Same as the system-memory backup battery.

Model **AB-5**

System-Memory Backup Battery

Features If your programs use global flags, etc., you need this battery to retain data even after the power is turned off.

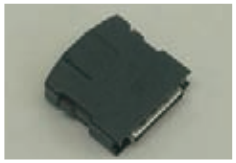
Model **AB-5-CS (with Case)**
AB-5 (Battery Only)

Options

Dummy plug

Features When connecting your SSEL controller to a PC using a USB cable, install this plug on the teaching port to cut off the enable circuit. (This plug comes with the PC software IA-101-X-USB.)

Model **DP-3**



USB cable

Features Use this cable to connect your controller with USB port to a PC.
If your controller has no USB port (XSEL), connect a RS232C cable to a USB cable via a USB conversion adapter and connect the USB cable to the USB port on the PC.
(Refer to the PC software IA-101-X-USBMW.)

Model **CB-SEL-USB010** (Cable Length 1m)

Connector conversion cable

Features This conversion cable is used to connect a D-sub, 25-pin connector for teaching pendant or PC software to the teaching connector (half-pitch) on the ASEL controller.

Model **CB-SEL-SJ002** (Cable Length 0.2m)

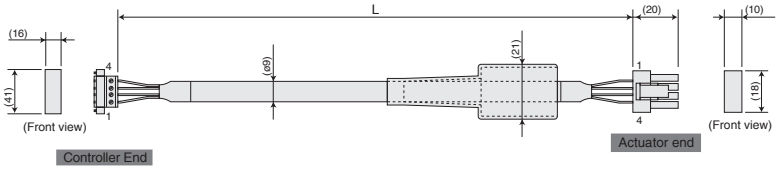
Spare Parts

Should you require spare parts after the purchase of your product for replacing the original cables, etc., refer to the model names specified below.

Motor Cable/ Motor Robot Cable

Model CB-RCC-MA□□□ / CB-RCC-MA□□□-RB

* □□□ indicates the cable length (L). Lengths up to 30 m can be specified.
Example) 080 = 8 m

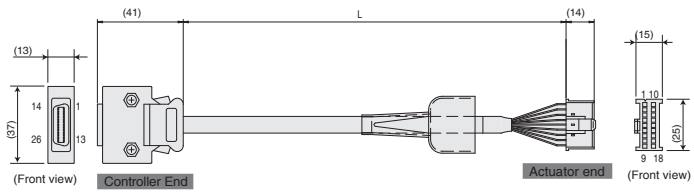


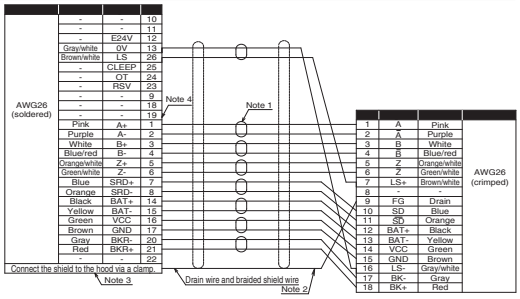
0.75sq	Green	PE	1	1	U	Red	0.75sq (crimped)
	Red	U	2	2	V	White	
	White	V	3	3	W	Black	
	Black	W	4	4	PE	Green	

Encoder Cable/ Encoder Robot Cable

Model CB-RCS2-PA□□□ / CB-X2-PA□□□

* □□□ indicates the cable length (L). Lengths up to 30 m can be specified.
Example) 080 = 8 m



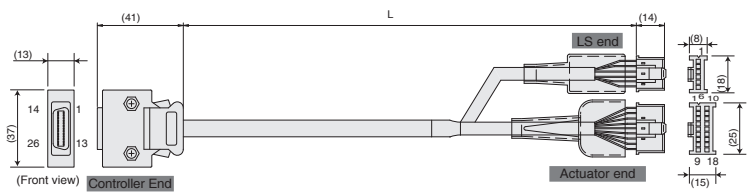


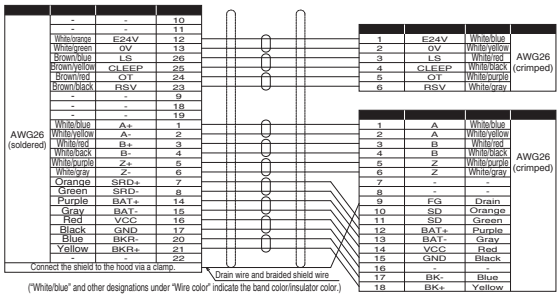
-	-	-	10	1	A	Pink	AWG26 (crimped)
-	-	-	11	2	A	Purple	
-	-	E24V	12	3	B	White	
Gray/white	-	0V	13	4	B	Blue/red	
Brown/white	-	LS	26	5	Z	Orange/white	
-	-	CLEEP	26	6	Z	Green/white	
-	-	OT	24	7	LS+	Brown/white	
-	-	RSV	23	8	-	-	
-	-	-	9	9	FG	Drain	
-	-	-	18	10	SD	Blue	
Pink	-	A+	1	11	SD	Orange	
Purple	-	A-	2	12	BAT+	Black	
White	-	B+	3	13	BAT-	Yellow	
Blue/red	-	B-	4	14	VCC	Green	
Orange/white	-	Z+	5	15	GND	Brown	
Green/white	-	Z-	6	16	LS-	Gray/white	
Blue	-	SRD+	7	17	BK-	Gray	
Orange	-	SRD-	8	18	BK+	Red	
Black	-	BAT+	14				
Yellow	-	BAT-	15				
Green	-	VCC	16				
Brown	-	GND	17				
Gray	-	BKR-	20				
Red	-	BKR+	21				
-	-	-	22				

Encoder Cable/ Encoder Robot Cable for RCS2-RT6/RT6R/RT7R

Model CB-RCS2-PLA□□□ / CB-X2-PLA□□□

* □□□ indicates the cable length (L). Lengths up to 30 m can be specified.
Example) 080 = 8 m



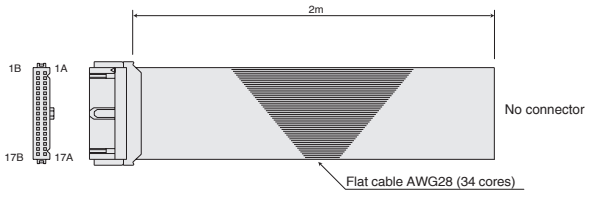


-	-	-	10	1	E24V	White/blue	AWG26 (crimped)
-	-	-	11	2	0V	White/yellow	
White/orange	-	E24V	12	3	LS	White/red	
White/green	-	0V	13	4	CLEEP	White/black	
Brown/blue	-	LS	26	5	OT	White/purple	
Brown/yellow	-	CLEEP	25	6	RSV	White/gray	
Brown/red	-	OT	24				
Brown/black	-	RSV	23				
-	-	-	9				
-	-	-	18				
-	-	-	19				
White/blue	-	A+	1	1	A	White/blue	AWG26 (crimped)
White/yellow	-	A-	2	2	A	White/yellow	
White/red	-	B+	3	3	B	White/red	
White/black	-	B-	4	4	B	White/black	
White/purple	-	Z+	5	5	Z	White/purple	
White/gray	-	Z-	6	6	Z	White/gray	
Orange	-	SRD+	7	7	-	-	
Green	-	SRD-	8	8	-	-	
Purple	-	BAT+	14	9	FG	Drain	
Gray	-	BAT-	15	10	SD	Orange	
Red	-	VCC	16	11	SD	Green	
Black	-	GND	17	12	BAT+	Purple	
Blue	-	BKR-	20	13	BAT-	Gray	
Yellow	-	BKR+	21	14	VCC	Red	
-	-	-	22	15	GND	Black	
				16	-	-	
				17	BK-	Blue	
				18	BK+	Yellow	

I/O Flat Cable (SSEL Types)

Model CB-DS-PIO□□□

* □□□ indicates the cable length (L). Lengths up to 10 m can be specified.
Example) 080 = 8 m



1A	Brown1	Flat cable pressure -welded	9B	Gray2	Flat cable pressure -welded
1B	Red1		10A	White2	
2A	Orange1		10B	Black2	
2B	Yellow1		11A	Brown-3	
3A	Green1		11B	Red3	
3B	Blue1		12A	Orange3	
4A	Purple1		12B	Yellow3	
4B	Gray1		13A	Green3	
5A	White1		13B	Blue3	
5B	Black1		14A	Purple3	
6A	Brown-2		14B	Gray3	
6B	Red2		15A	White3	
7A	Orange2		15B	Black3	
7B	Yellow2		16A	Brown-4	
8A	Green2		16B	Red4	
8B	Blue2		17A	Orange4	
9A	Purple2		17B	Yellow4	

X-SEL

RCS2 Series
Program controller

Type List

Multi-axis program controller for RCS2 series actuator. Up to six axes can be controlled simultaneously.

Type	J	K	P	Q
Name	Compact type	General-purpose type	Large-capacity type	Large-capacity type (meeting safety category)
External view				
Description	Compact, low-cost type ideal for operating low-output actuators	Standard type offering excellent expandability	Large-capacity type capable of controlling up to six axes or 2,400 W	Large-capacity type conforming to safety category 4
Maximum number of controlled axes	4 axes		6 axes	
Number of position points	3,000 positions		4,000 positions	
Total connectable wattage	800W	1600W	2400W	
Power supply	Single-phase 100VAC / Single-phase 200VAC		Three-phase 200VAC	
Safety category	B		B	Conforming to safety category 4
Safety standard	–	–	CE	CE, ANSI

Model

* To specify multiple options, enter them in alphabetical order. (Example: Brake + Home sensor → BL)

* Specification of the section denoted by (Axes 2 to 6) varies depending on the number of axes used.

XSEL – □ – □ – □ – □ – (□ – □ – □) – □ – □ – □ – □ – □ – □

Series | Type | Number of connected axes | Motor type | Encoder type | Option | (1-axis) | Motor type | Encoder type | Option | (Axes 2 to 6) | (Slot 1) Standard I/O | (Slot 2) (Slot 3) (Slot 4) Expansion I/O | I/O cable length | Power-supply voltage

Type

J	Compact type
K	General-purpose type
P	Large-capacity type
Q	Large-capacity type (meeting safety category)

Number of connected axes

1	1-axis specification	4	4-axes specification
2	2-axes specification	5	5-axes specification
3	3-axes specification	6	6-axes specification

Motor type (1-axis)

20	20-W servo motor	200	200-W servo motor
30D	RCS2 30-W servo motor	300	300-W servo motor
30R	RS 30-W servo motor	400	400-W servo motor
60	60-W servo motor	600	600-W servo motor
100	100-W servo motor	750	750-W servo motor
150	150-W servo motor		

Encoder type (1-axis)

I	Incremental
A	Absolute

Option (1-axis)

B	Brake
C	Creep sensor
L	Home sensor/LS type
M	Master axis specification
S	Slave axis specification

Motor type (Axes 2 to 6)

20	20-W servo motor	200	200-W servo motor
30D	RCS2 30-W servo motor	300	300-W servo motor
30R	RS 30-W servo motor	400	400-W servo motor
60	60-W servo motor	600	600-W servo motor
100	100-W servo motor	750	750-W servo motor
150	150-W servo motor		

Encoder type (Axes 2 to 6)

I	Incremental
A	Absolute

Option (Axes 2 to 6)

B	Brake
C	Creep sensor
L	Home sensor/LS type
M	Master axis specification
S	Slave axis specification

(Slot 1) Standard I/O

E	Not used
N1	Input 32 / Output 16 (NPN)
N2	Input 16 / Output 32 (NPN)
N3	Input 48 / Output 48 (NPN)
P1	Input 32 / Output 16 (PNP)
P2	Input 16 / Output 32 (PNP)
P3	Input 48 / Output 48 (PNP)
DV	DeviceNet connection board
CC	CC-Link connection board
PR	ProfiBus connection board
ET	Ethernet connection board
SA	Expansion SIO A type
SB	Expansion SIO B type
SC	Expansion SIO C type

(Slot 2) (Slot 3) (Slot 4) Expansion I/O

Same as (Slot 1) Standard I/O.

Power-supply voltage

1	Single-phase 100VAC
2	Single-phase 200VAC
3	Three-phase 200VAC

* The XSEL-J/K types supports both single-phase 100 VAC and single-phase 200 VAC, so you can select whichever power-supply voltage is appropriate. However, the XSEL-P/Q types only support three-phase 200 VAC.

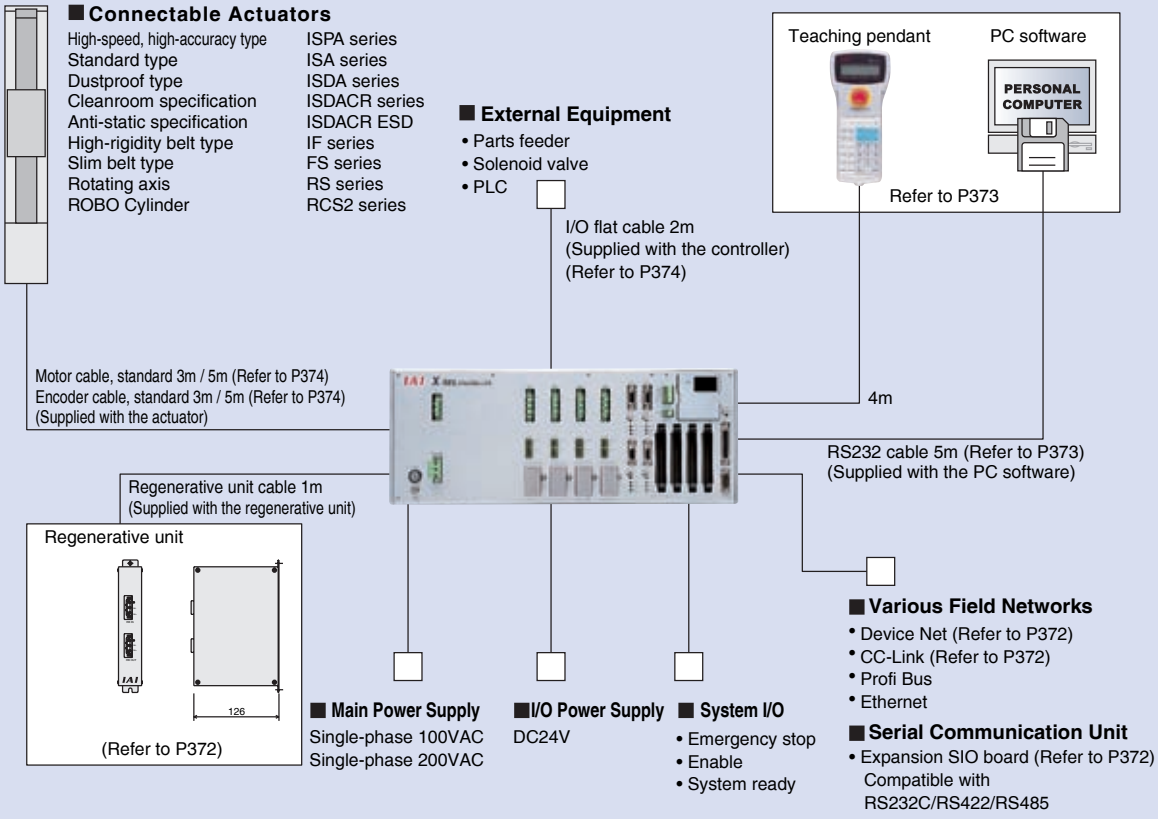
I/O cable length

0	No cable
2	2m
3	3m
5	5m

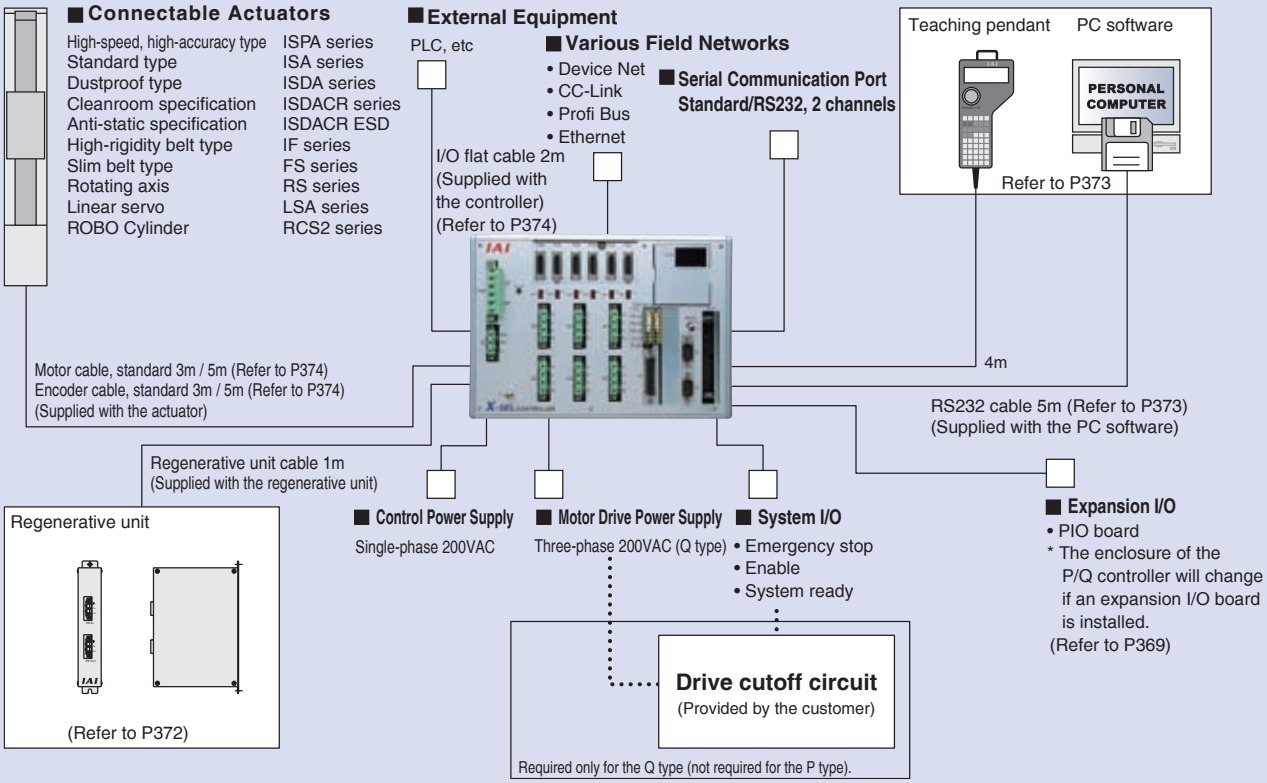
* When selecting standard I/O, expansion I/O by DV, CC, PR, or ET, please select 0 for the I/O cable length.

System Configuration

J (Compact) / K (General-Purpose) / KE (CE) Types



P (Large-Capacity) / Q (Large-Capacity Global) Types

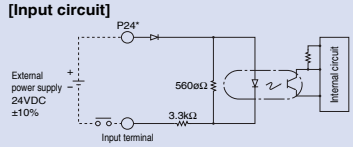


I/O Wiring Diagram

Input Part External input specifications (NPN specifications)

Item	Specification
Input voltage	24VDC ±10%
Input current	7mA / 1 circuit
ON/OF voltage	ON voltage…Min DC16.0V OFF voltage…Max DC5.0V
Insulation method	Photocoupler insulation
Externally connected equipment	1 No-voltage contacts (minimum load of approx. 5VDC, 1mA) 2 Photoelectric/proximity sensor (NPN type) 3 Sequencer transistor output (open collector type) 4 Sequencer contact output (minimum load of approx. 5VDC, 1mA)

[Input circuit]

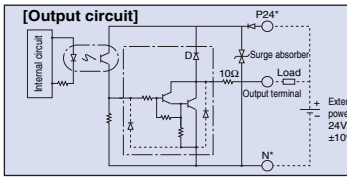


*	K type	J/P/Q type
P24	IO 24-V connector 24VIN	I/O interface pin No. 1

Output Part External output specifications (NPN specifications)

Item	Specification	
Load voltage	24VDC	TD62084 (or equivalent)
Maximum load current	100mA / 1 circuit 400mA Peak (full current)	
Leak current	Max 0.1mA / 1point	
Insulation method	Photocoupler insulation	
Externally connected equipment	1 Miniature relay 2 Sequencer input unit	

[Output circuit]

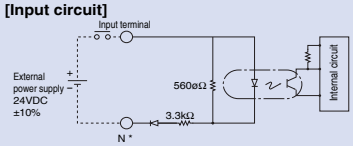


*	K type	J/P/Q type
P24	IO 24-V connector 24VIN	I/O interface pin No. 1
N	IO 24-V connector 0VIN	I/O interface pin No. 50

Input Part External input specifications (PNP specifications)

Item	Specification
Input voltage	24VDC ±10%
Input current	7mA / 1 circuit
ON/OF voltage	ON voltage…Min DC8V OFF voltage…Max DC19V
Insulation method	Photocoupler insulation
Externally connected equipment	1 No-voltage contacts (minimum load of approx. 5VDC, 1mA) 2 Photoelectric/proximity sensor (PNP type) 3 Sequencer transistor output (open collector type) 4 Sequencer contact output (minimum load of approx. 5VDC, 1mA)

[Input circuit]



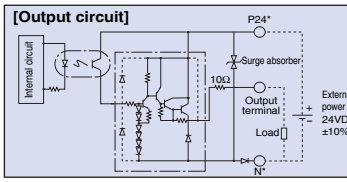
*	K type	J/P/Q type
P24	IO 24-V connector 24VIN	I/O interface pin No. 1

Output Part External output specifications (PNP specifications)

Item	Specification	
Load voltage	24VDC	TD62784 (or equivalent)
Maximum load current	100mA / 1 circuit 400mA/8 ports (Note)	
Leak current	Max 0.1mA / 1point	
Insulation method	Photocoupler insulation	
Externally connected equipment	1 Miniature relay 2 Sequencer input unit	

(Note) 400 mA represents the maximum total load current for each set of eight ports from output port No. 300. (The maximum total current output for output port Nos. 300+n to No. 300+n+7 must be 400 mA, where n = 0 or a multiple of eight.)

[Output circuit]



*	K type	J/P/Q type
P24	IO 24-V connector 24VIN	I/O interface pin No. 1
N	IO 24-V connector 0VIN	I/O interface pin No. 50

I/O Signal Table

Standard I/O Signal Table (N1 or P1 Selected)

Pin number	Category	Port number	Standard setting
1		—	(J/P/Q types: Connected to 24V / 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		014	General-purpose input
17	Input	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		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	Output	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		—	(J/P/Q types: Connected to 0V / K type: NC)

Expansion I/O Signal Table (N1 or P1 Selected)

Pin number	Category	Standard setting
1		(J/P/Q types: Connected to 24V / 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		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	Input	General-purpose input
18		General-purpose input
19		General-purpose input
20		General-purpose input
21		General-purpose input
22		General-purpose input
23		General-purpose input
24		General-purpose input
25		General-purpose input
26		General-purpose input
27		General-purpose input
28		General-purpose input
29		General-purpose input
30		General-purpose input
31		General-purpose input
32		General-purpose input
33		General-purpose input
34		General-purpose output
35		General-purpose output
36		General-purpose output
37		General-purpose output
38		General-purpose output
39		General-purpose output
40		General-purpose output
41		General-purpose output
42	Output	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		(J/P/Q types: Connected to 0V / K type: NC)

Expansion I/O Signal Table (N2 or P2 Selected)

Pin number	Category	Standard setting
1		(J/P/Q types: Connected to 24V / 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 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		(J/P/Q types: Connected to 0V / K type: NC)

Specification Table

J (Compact) / K (General-Purpose) Types

Item	Description							
Controller series, type	J (compact) type				K (general-purpose) type / KE (CE) type			
Connectable actuators	RCS2 / ISA / ISPA / ISP / ISDA / ISDACR / ISPDACR / IF / FS / RS							
Motor output (W)	20 / 30 / 60 / 100 / 150 / 200 / 300 / 400 / 600 / 750							
Number of controlled axes	1 axis	2 axes	3 axes	4 axes	1 axis	2 axes	3 axes	4 axes
Maximum output of connected axes (W)	Max800(at power-supply voltage of 200V) Max400(at power-supply voltage of 100V)				Max 800	Max1600(at power-supply voltage of 200V) Max800(at power-supply voltage of 100V)		
Input power supply	100-V specification: Single-phase 100~115VAC 200-V specification: Single-phase 200~230VAC							
Operating power-supply voltage range	±10%							
Power-supply frequency	50Hz/60Hz							
Power-supply capacity	Max 1670VA		Max 1720VA	Max 1810VA	Max 1670VA	Max 3120VA	Max 3220VA	Max 3310VA
Position detection method	Incremental encoder (wire-saving type) Absolute encoder with rotation data backup (wire-saving type)							
Speed setting	From 1mm/s. The maximum limit varies depending on the actuator.							
Acceleration setting	From 0.01G. The maximum limit varies depending on the actuator.							
Programming language	Super SEL language							
Number of programs	64 programs							
Number of program steps	6,000 steps (total)							
Number of multi-tasking programs	16 programs							
Number of positioning points	3,000 positions							
Data storage device	Flash ROM + SRAM battery backup							
Data input method	Teaching pendant or PC software							
Standard inputs/outputs	32 points (total of dedicated inputs + general-purpose inputs) / 16 points (total of dedicated outputs + general-purpose outputs)							
Expansion inputs/outputs	None		48 points per unit (1 unit can be added)		48 points per unit (Up to 3 units can be added)			
Serial communication function	RS232 port (D-sub, 25-pin) – Standard accessory				Standard RS232 port + Expansion SIO board (optional)			
Other inputs/outputs	System I/Os (emergency stop input, enable input, system ready output)							
Protective functions	Motor overcurrent, overload, motor driver temperature check, overload check, encoder open-circuit check, soft limit over, system error, battery error, etc.							
Ambient operating temperature, humidity	Temperature 0~40°C, humidity 30~85% (non-condensing)							
Operating ambience	Free from corrosive gases. In particular, there shall be no significant powder dust.							
Weight	2.6kg	3.3kg	5.0kg		6.0kg	7.0kg		
Accessory	I/O flat cable							

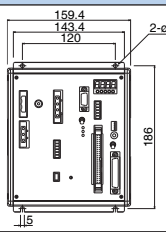
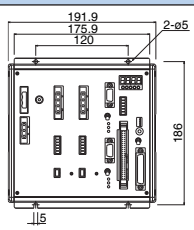
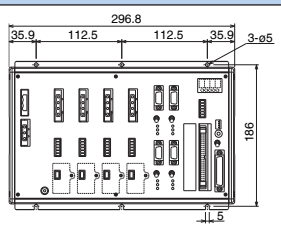
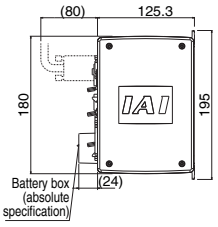
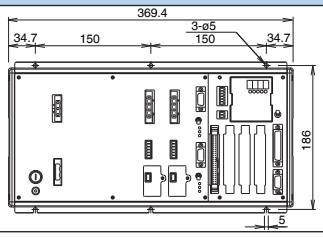
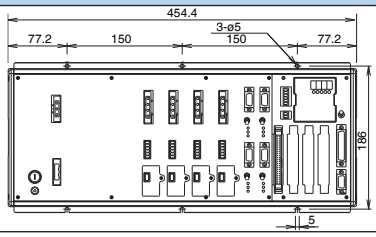
P (Large-Capacity) / Q (Large-Capacity Meeting Safety Category) Types

Item	Description											
Controller series, type	P (standard) type						Q (global) type					
Connectable actuators	RCS2 / ISA / ISPA / ISP / ISDA / ISDACR / ISPDACR / IF / FS / RS / LSA											
Motor output (W)	20 / 30 / 60 / 100 / 150 / 200 / 300 / 400 / 600 / 750											
Number of controlled axes	1 axis	2 axes	3 axes	4 axes	5 axes	6 axes	1 axis	2 axes	3 axes	4 axes	5 axes	6 axes
Maximum output of connected axes (W)	Max2400W											
Control power input	AC200 / 230 Single-phase -15%, +10%						AC200 / 230 Single-phase -15%, +10%					
Motor power input	AC200 / 230 Three-phase -10%, +10%						AC200 / 230 Three-phase -10%, +10%					
Power-supply frequency	50 / 60Hz											
Dielectric strength voltage	10M? or more (between the power-supply terminal and I/O terminals, and between all external terminals and case, at 500VDC)											
Breakdown voltage	1,500VAC (1 minute)						1,500VAC (1 minute)					
Power-supply capacity	Max 1744VA	Max 3266VA	Max 4787VA	Max 4878VA	Max 4931VA	Max 4998VA	Max 1744VA	Max 3266VA	Max 4787VA	Max 4878VA	Max 4931VA	Max 4998VA
Position detection method	Incremental encoder (wire-saving type) Absolute encoder with rotation data backup (wire-saving type)											
Safety circuit configuration	Redundancy not supported						Redundancy supported					
Drive-source cutoff method	Internal cutoff relay						External safety circuit					
Enable input	Contact-B input (powered internally)						Contact-B input (powered externally, redundant)					
Speed setting	From 1mm/s. The maximum limit varies depending on the actuator.											
Acceleration/deceleration setting	From 0.01G. The maximum limit varies depending on the actuator.											
Programming language	Super SEL language											
Number of programs	64 programs											
Number of program steps	6,000 steps (total)											
Number of multi-tasking programs	16 programs											
Number of positioning points	4,000 steps (total)											
Data storage device	Flash ROM + SRAM battery backup											
Data input method	Teaching pendant or PC software											
Standard inputs/outputs	PIO board with 48 input/output points (NPN/PNP) or PIO board with 96 input/output points (NPN/PNP) – 1 board can be installed											
Expansion inputs/outputs	PIO board with 48 input/output points (NPN/PNP) or PIO board with 96 input/output points (NPN/PNP) – Up to 3 boards can be installed											
Serial communication function	Teaching port (D-sub, 25-pin) + 2-channel RS232C port (D-sub, 9-pin x 2) – Standard accessory											
Protective functions	Motor overcurrent, overload, motor driver temperature check, overload check, encoder open-circuit check, soft limit over, system error, battery error, etc.											
Ambient operating temperature, humidity	0~40°C, 10~95% (non-condensing). Free from corrosive gases. In particular, there shall be no significant powder dust.											
Weight	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.

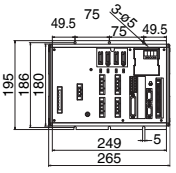
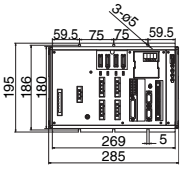
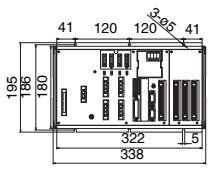
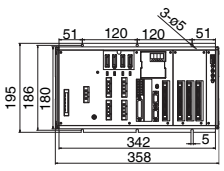
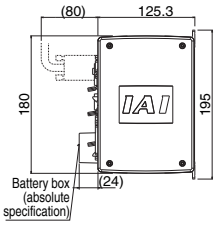
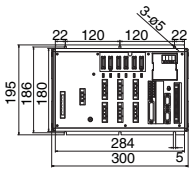
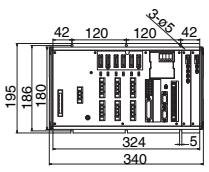
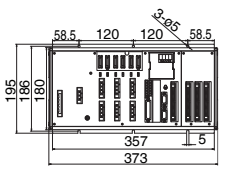
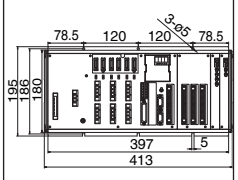
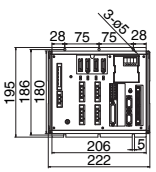
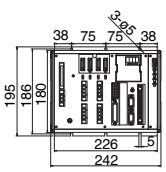
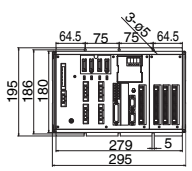
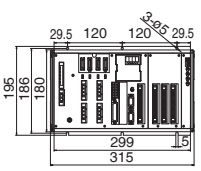
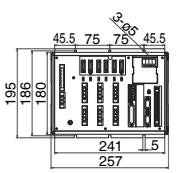
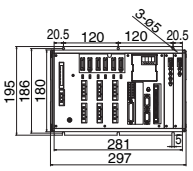
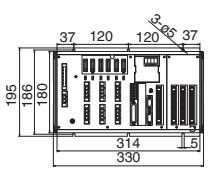
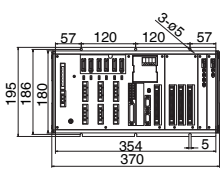
External Dimensions

■ J (Compact) / K (General-Purpose) Types

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

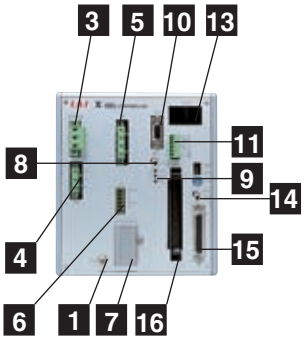
■ P (Large-Capacity Standard) / Q (Large-Capacity Global) Types

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 four possible shapes are shown below. Check the dimensions of the controller type and number of axes you desire.

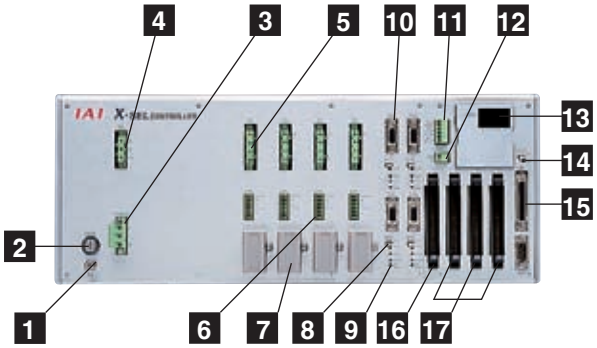
		Basic shape (incremental specification)	With brake/absolute unit	With I/O expansion base	With brake/absolute unit + I/O expansion base	Side view
Controller specifications	Encoder	Incremental	Absolute	Incremental	Absolute	
	Brake	Without	With	Without	With	
	I/O	Standard only	Standard only	Standard + Expansion	Standard + Expansion	
P (Large-Capacity)	1 to 4-axis specification					
	5 to 6-axis specification					
Q (Large-Capacity Meeting Safety Category)	1 to 4-axis specification					
	5 to 6-axis specification					

Name of Each Part

J Type (Compact)



K Type (General-Purpose)



1 FG connection terminal

A terminal for connecting to the FG terminal on the enclosure. The PE at the AC input part is connected to the enclosure inside the controller.

2 Fuse holder (K type only)

A half-cut fuse holder provided for overcurrent protection of the AC input part.

3 Main power input connector

A connector for 100/200-VAC single-phase input.
(The cable comes with a matching plug. Refer to the facing page.)

4 Regenerative resistor unit connector

A connector for the regenerative resistor unit (optional/REU-1) that must be connected when the built-in regenerative resistor alone does not offer sufficient capacity in high-acceleration/high-load operation, 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

A battery unit for backing up the encoder when an absolute encoder is used. This battery is not connected for a non-absolute axis.

8 Brake release switch (brake specification only)

An alternate switch with lock 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 LEDs

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

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

10 Encoder cable connector

A 15-pin, D-sub connector for the actuator's encoder cable.

11 System I/O connector

A connector for three input/output points including two inputs used to control controller operation, and one system status output. (The cable comes with a matching plug. Refer to the facing page.)

Name		
EMG	Emergency stop input	ON: The controller is ready. OFF: An emergency stop is actuated.
ENB	Safety gate input	ON: The controller is ready. OFF: The servo is off.
RDY	System ready relay output	This signal outputs the status of this controller. Cascade connection is supported. Shorted: Ready. Open: Not ready.

12 I/O 24-V power-supply connector (K type only)

If DIs and DOs are installed in the I/O boards (16 and 17), this connector is used to externally supply the I/O power for the insulated part.

13 Panel window

This window has a 4-digit, 7-segment LED and five LED lamps showing the system status.

14 Mode switch

This alternate switch with lock is used to specify the running mode of the controller. 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 as manual operation, and automatic operation using external I/Os is not possible in the MANU mode.

15 Teaching connector

A D-sub, 25-pin connector for connecting a teaching pendant or PC to input program positions.

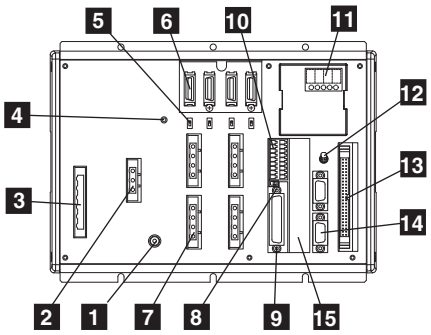
16 Standard I/O slot (slot 1)

The controller comes standard with a PIO board offering 32 input points and 16 output points.

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

Install an expansion I/O board in each of these slots. (Optional)

P type (Standard, 4 axes)



1 FG connection terminal

A terminal for connecting to the FG terminal on the enclosure.
The PE at the AC input part is connected to the enclosure inside the controller.

2 External regenerative 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

A three-phase 200-VAC input connector. It consists of six terminals including motor power-supply, control power-supply and PE terminals.
The controller only comes standard with a terminal block.

Note Do not touch the connector while the power is supplied, as it may cause electric shock.

4 Control power-supply monitor LED

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

5 Enable/disable switch for absolute-data backup battery

This switch is used to enable or disable encoder backup using the absolute-data backup battery. Encoder backup has been disabled prior to the 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 sensors are optional.

7 Motor connector

A connector for driving the motor in the actuator.

8 Teaching-pendant type selector switch

This switch is used to select the type of the teaching pendant to be connected to the teaching connector (9). Specifically, you can switch between IAI's standard teaching pendant and the ANSI teaching pendant. Operate the switch on the front face of the board in accordance with the teaching pendant used.

9 Teaching connector

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

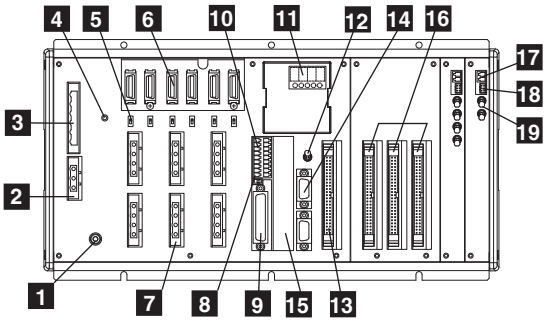
10 System I/O connector

An I/O connector that governs the safety operation functions of the controller. 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.

Q type (Absolute brake unit + Expansion base, 6 axes)



Description of 5 LEDs

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

12 Mode switch

This alternate switch with lock is used to specify the running mode of the controller. 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 as manual operation, and automatic operation using external I/Os is not possible in the MANU mode.

13 Standard I/O connector

A 50-pin flat connector constituting 32-input/16-output DIOs.

Overview of standard I/O interface specifications

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

14 General-purpose RS232C port connector

A port for connecting general-purpose RS232 equipment. (Two channels are available.)

15 Field network board slot

A slot that accepts a fieldbus interface module.

16 Expansion I/O board slots (optional)

Slots that accept optional expansion I/O boards.

17 Brake power input connector

A power input connector for driving the actuator brake. 24 VDC must be supplied externally. If the specified power is not supplied, the actuator brake cannot be released. Always supply 24 VDC for an axis with brake. Use a shield cable as the brake power-supply cable and connect the shield on the 24-V 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 BKMRL* 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

An alternate switch with lock 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.

Option

Regenerative Resistor Unit

Model **REU-1**

Description

This unit converts to heat the regenerative current produced when the motor decelerates. Although the controller has a built-in regenerative resistor, 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 shown to the right.)

Specifications

Item	Specification
Dimensions	W34mm×H195mm×D126mm
Weight	0.9kg
Built-in regenerative resistor	220? 80W
Accessory	Controller cable (model CB-ST-REU010) 1m

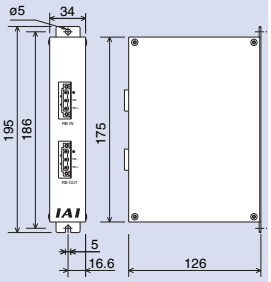
Installation Standard Determined by the total motor capacity of vertical axes connected.

Horizontal application

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

Vertical application

Motor wattage	P/Q type	J type	K type
~100W	Not required	Not required	Not required
~200W	1 unit	Not required	Not required
~400W	1 unit	1 unit	Not required
~600W	1 unit	1 unit	1 unit
~800W	1 unit	2 unit	1 unit
~1200W	2 unit	–	2 unit
~1600W	3 unit	–	To be discussed separately
~2000W	4 unit	–	–
~2400W	5 unit	–	–



Absolute-Data Retention Battery (XSEL-J/K/KE/KT/KET)

Model **IA-XAB-BT**

Features A battery that retains the data stored in an absolute-type controller. Replace the battery promptly once the controller generated a battery alarm.

Packaging Sold individually. (One battery is needed for each axis. Specify a quantity corresponding to the number of axes used.)

Absolute-Data Backup Battery

Model **AB-5**

Features A battery that backs up absolute data when an absolute-type actuator is operated.

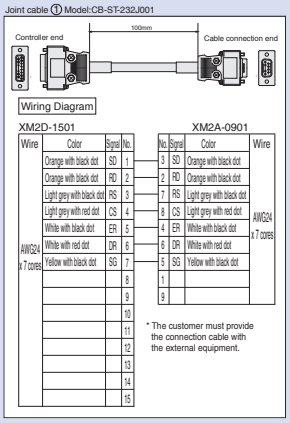
Expansion PIO Board

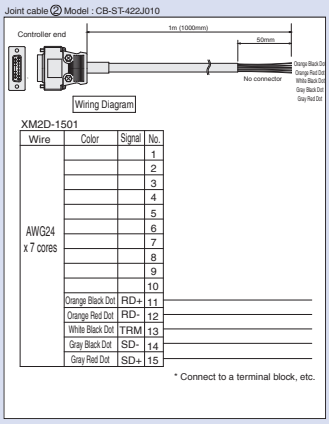
Description An optional board for adding I/O (input/output) points.
With the general-purpose and large-capacity types, up to three expansion PIO boards can be installed in the expansion slots.
(With the compact types, only one expansion PIO board can be installed in the expansion slot provided that the controller is of 3 or 4-axis specification.)

Expansion SIO Board (General-Purpose Type Only)

Model/ Specification
IA-105-X-MW-A (Board + 2 joint cables)
IA-105-X-MW-B (Board + 1 joint cables)
IA-105-X-MW-C (Board + 1 joint cables)

Description A board for serial communication with external equipment. This board has two port channels and implements three communication modes using the supplied joint cable(s).





DeviceNet Connection Board

A board for connecting the XSEL controller to DeviceNet.

Item	Specification			
Number of input/output points	1 board, 256 input points / 256 output points * Only 1 board can be installed.			
Communication standard	Interface module certified under DeviceNet 2.0 (certification to be obtained)			
	Group 2 only server			
	Insulated node operating on network power supply			
Communication specifications	Master slave connection	Bit strobe		
		Polling		
		Cyclic		
Baud rate	500k/250k/125kbps (switched using DIP switches)			
Communication cable length	Baud rate	Maximum network length	Maximum branch length	Total branch length
	500kbps	100m	6m	39m
	250kbps	250m		78m
	125kbps	500m		156m
	Note) When a large-size DeviceNet cable is used.			
Communication power supply	24VDC (supplied from DeviceNet)			
Communication power consumption	60mA min.			
Number of occupied 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		Specification					
Number of input/output points	Remote device	1 board, 256 input points / 256 output points * Only 1 board can be installed.					
	Remote I/Os	1 board, 16 input points / 16 output points * Up to 3 boards can be installed (in expansion slots).					
Communication standard		CC-Link Version 1.10 (already certified)					
Baud rate		(switched using a rotary switch)					
Communication method		Broadcast polling method					
Synchronization method		Frame synchronization method					
Encoding method		NRZI					
Transmission path type		Bus type (conforming to EIA RS485)					
Transmission format		Conforming to HDLC					
Error control method		CRC($X^{16}+X^{12}+X^5+X1$)					
Number of occupied stations		1 to 3 stations (remote device stations)					
Communication cable length		Baud rate (bps)	10M	5M	2.5M	625k	156k
		Cable length (m)	100	160	400	900	1200
Connector (controller end)		MSTBA2.5/5-G.08AUM by Phoenix Contact (*1)					

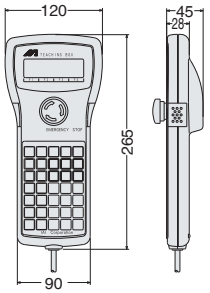
(*1) The connector on the cable (SMSTB2.5/5-ST-5.08AU by Phoenix Contact) is a standard accessory.

Option

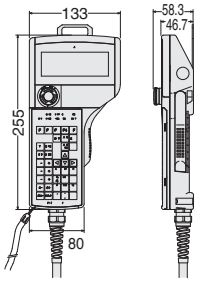
Teaching pendant

Features A teaching device providing program/position input function, test operation function, monitoring function, and more.

IA-T-X/XD



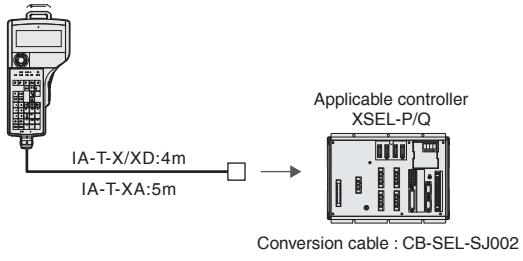
IA-T-XA



Model

Model	Description
IA-T-X	Standard type
IA-T-XD	Deadman switch type
IA-T-XA	ANSI type

Configuration

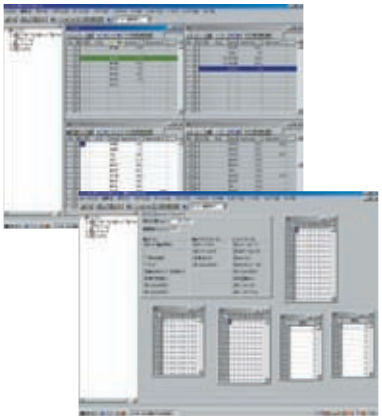


Specifications

Item	IA-T-X/XD	IA-T-XA
Ambient operating temperature, humidity	Temperature 0~40°C, Humidity 85% RH or below	
Operating ambience	Free from corrosive gases. In particular, there shall be no significant powder dust.	Protective structure conforming to IP54
Weight	Approx. 650g	Approx. 600g (excluding cable)
Cable length	4m	5m
Display	LCD with 20 characters x 4 lines	LCD with 32 characters x 8 lines

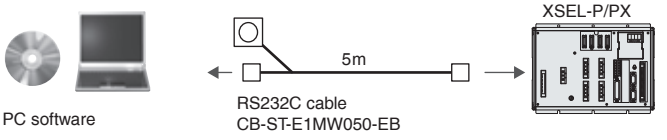
PC Software (Windows Only)

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.



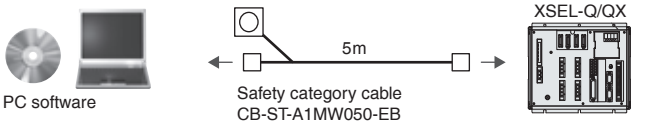
Model IA-101-X-MW(with RS232C Cable)

Configuration



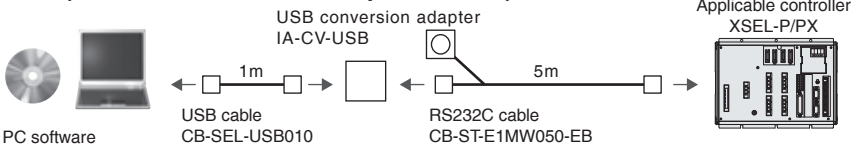
Model IA-101-XA-MW(with Safety Category 4 Cable)

Configuration



Model IA-101-X-USBMW(with USB Conversion Adapter + Cable)

Configuration



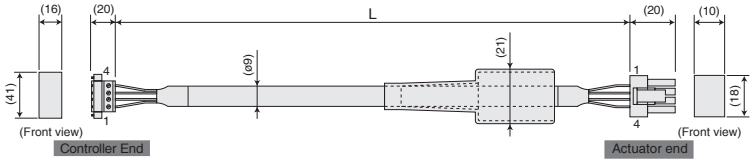
Spare Parts

Should you require spare parts after the purchase of your product for replacing the original cables, etc., refer to the model names specified below.

Motor Cable/ Motor Robot Cable

Model CB-RCC-MA□□□/ CB-RCC-MA□□□-RB

* □□□ indicates the cable length (L). Lengths up to 20 m can be specified.
Example) 080 = 8 m



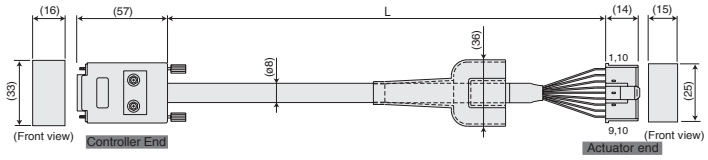
0.75sq	PE	1	1	U	0.75sq (crimped)
	U	2	2	V	
	V	3	3	W	
	W	4	4	PE	

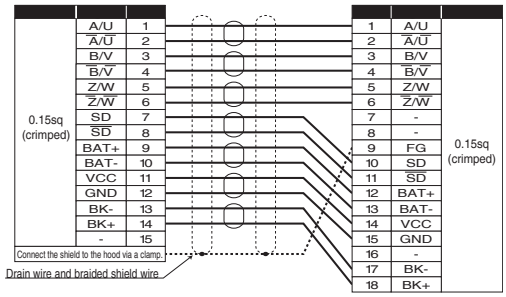
Spare Parts

Encoder Cable/ Encoder Robot Cable (XSEL-J/K Types)

Model CB-RCBC-PA□□□/ CB-RCBC-PA□□□-RB

* □□□ indicates the cable length (L). Lengths up to 15 m can be specified.
Example) 080 = 8 m

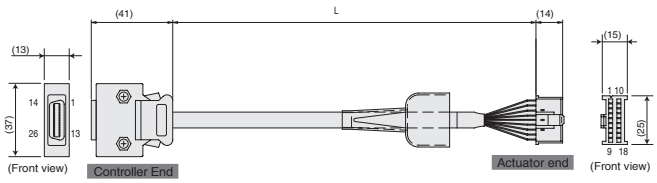


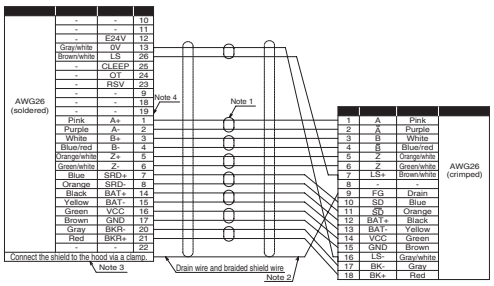


Encoder Cable/ Encoder Robot Cable (XSEL-P/Q Types)

Model CB-RCS2-PA□□□/ CB-X2-PA

* □□□ indicates the cable length (L). Lengths up to 20 m can be specified.
Example) 080 = 8 m

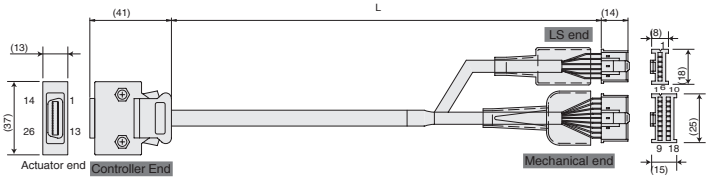


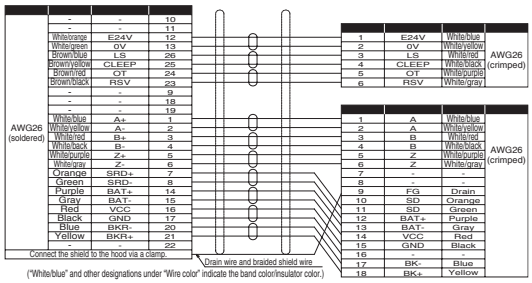


Encoder Cable/ Encoder Robot Cable

Model CB-RCS2-PLA□□□/ CB-X2-PLA

* □□□ indicates the cable length (L). Lengths up to 30 m can be specified.
Example) 080 = 8 m

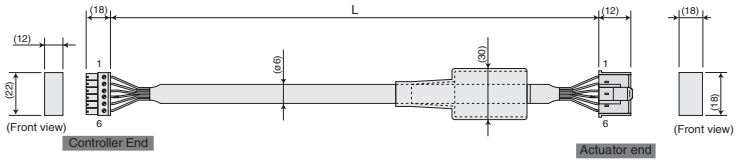


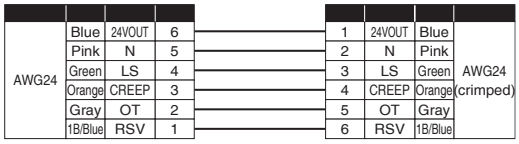


Limit Switch Cable (XSEL-J/K Types)

Model CB-X-LC□□□

* □□□ indicates the cable length (L). Lengths up to 20 m can be specified.
Example) 080 = 8 m



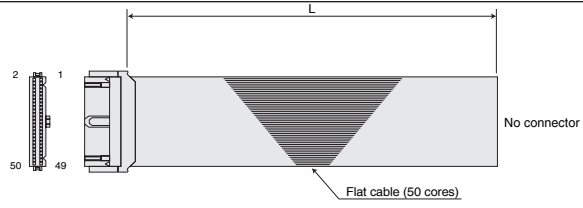


Note)"1B" indicates one black dot.

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

Model CB-X-PIO□□□

* □□□ indicates the cable length (L). Lengths up to 10 m can be specified.
Example) 080 = 8 m

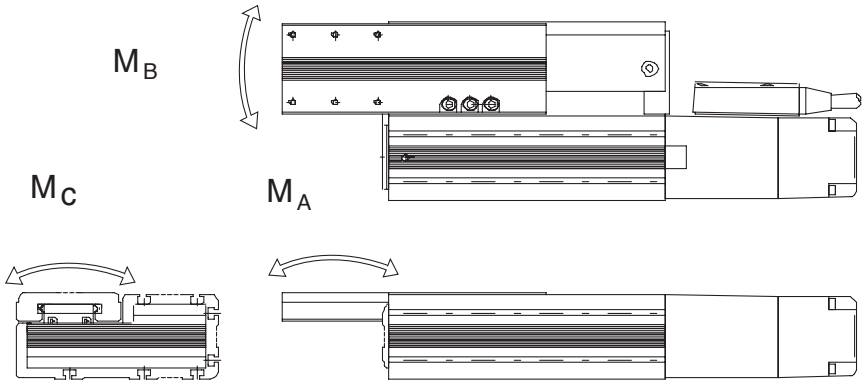


No.	Color	Wire	No.	Color	Wire	No.	Color	Wire
1	Brown1	Flat cable pressure-welded	18	Gray2	Flat cable pressure-welded	35	Green4	Flat cable pressure-welded
2	Red1		19	White2		36	Blue4	
3	Orange1		20	Black2		37	Purple4	
4	Yellow1		21	Brown-3		38	Gray4	
5	Green1		22	Red3		39	White4	
6	Blue1		23	Orange3		40	Black4	
7	Purple1		24	Yellow3		41	Brown-5	
8	Gray1		25	Green3		42	Red5	
9	White1		26	Blue3		43	Orange5	
10	Black1		27	Purple3		44	Yellow5	
11	Brown-2		28	Gray3		45	Green5	
12	Red2		29	White3		46	Blue5	
13	Orange2		30	Black3		47	Purple5	
14	Yellow2		31	Brown-4		48	Gray5	
15	Green2		32	Red4		49	White5	
16	Blue2		33	Orange4		50	Black5	
17	Purple2		34	Yellow4				

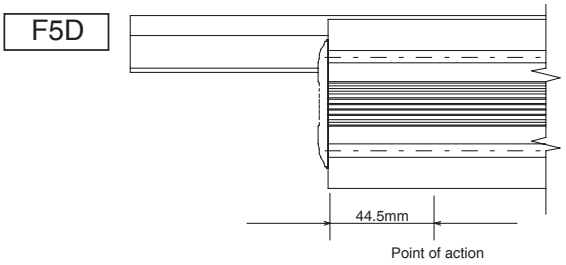
Technical Reference on Flat Type F5D

Moment and Load Capacity of Flat Type (F5D)

On the flat type, moments apply in the directions shown below.



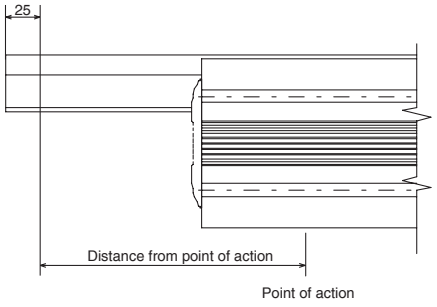
The points of action of Ma and Mb moments are as follows.



When using the flat type horizontally, be careful not to allow the load applied at the tip of the plate to exceed the Ma moment.

For your reference, the table below lists the load at the tip allowable for each stroke, calculated from the corresponding Ma moment.

Stroke		50	100	150	200	250	300
F5D type	Distance from point of action (m)	0.07	0.12	0.17	0.22	0.27	0.32
	N	64.3	37.5	26.5	20.5	16.7	14.1
	(kgf)	6.56	3.83	2.70	2.09	1.70	1.43



Technical Reference on Rotary Types RT6/RT6R/RT7R

Selection Guide

Check the following two points to determine if each ROBO Rotary can meet your desired operating conditions.

1 Inertial Moment

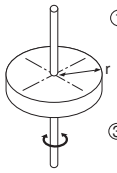
Inertial moment indicates inertia in rotating motion and corresponds to weight in linear motion.
The greater the inertial moment, the more difficult it becomes for the target object to move or stop. In other words, whether or not the inertial moment of the rotating object can be controlled holds a key to selecting an appropriate ROBO Rotary model.
The inertial moment varies depending on the weight and shape of the rotating object. Refer to the calculation formula in the representative example shown to the right.

The allowable inertial moment of each ROBO Rotary is indicated by load inertia.
The candidate ROBO Rotary can be used if the calculated inertial moment is smaller than the load inertia of the ROBO Rotary.

How to Calculate Inertial Moment for Representative Shapes

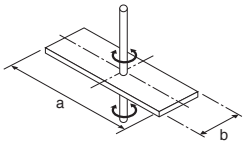
J: Inertial moment (kg-m²) / M: Mass (kg) / r: Radius (m) / a, b: Lengths of sides (m)

①Circular column
(including thin disc)



$J=M\bullet\frac{r^2}{2}$

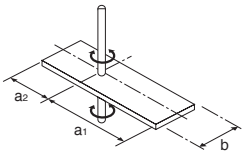
②Thin rectangle (rectangular solid)
Rotating shaft position: Passing the center of gravity of the plate and vertical to the plate.
(The same applies to a thicker rectangular solid)



$J=M\bullet\frac{a^2+b^2}{12}$

③Thin rectangular plate (rectangular solid)
Rotating shaft position: Vertical to the plate and passing one end

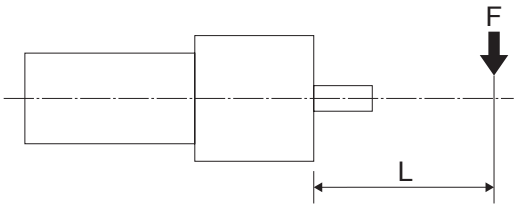
M_1: Mass on a_1 side (kg)
M_2: Mass on a_2 side (kg)



$J=M_1\bullet\frac{4a_1^2+b^2}{12}+M_2\bullet\frac{4a_2^2+b^2}{12}$

2 Load Moment

If inertial moment provides a guide for (electrical) control, load moment provides a guide for strength (mechanical) limit of operation.
Use the end face of the actuator at the base of the output shaft as the reference moment position to check if the load moment applied to the output shaft is within the allowable load moment specified in the catalog.
If the allowable load moment is exceeded, the service life of the actuator may decrease or breakdown may result.



Load Moment (N•m)=F(N)xL(m)

Notes on Operating Range and Home Return

Take note that when performing home return, the rotating direction of home-return operation may vary depending on the standstill position of the shaft, as explained below.

The home-return operation of the ROBO Rotary is such that when the shaft turns and detects the home detection sensor, the shaft will reverse and home return will complete at the position where phase Z is detected. In this case, the rotating direction of the shaft is counterclockwise (①) when viewed from the shaft direction. When the shaft detects the sensor, the shaft will reverse (②) and subsequently stop when phase Z is detected (③). (Fig. 1)

If the shaft already detects the sensor at the start of home return, the shaft will turn clockwise from that position (④) and subsequently stop when phase Z is detected (⑤). (Fig. 2)

Although the operating range of the ROBO Rotary is 300 degrees, there are no stoppers and thus the actuator may operate beyond this range in certain conditions such as when the shaft is turned by hand while the servo is off.
Take note that when the actuator goes outside its operating range, the sensor may have already detected.

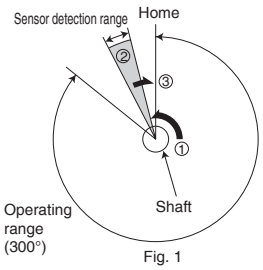


Fig. 1

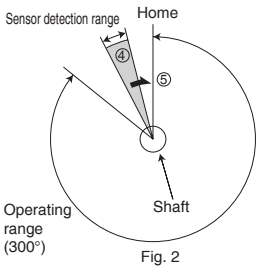


Fig. 2

RCP2 Series
Extract Cat. No. 0707-E

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