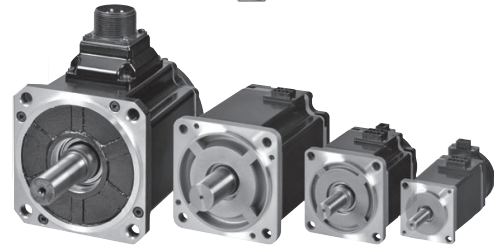


AC Servomotors Incremental Encoder Type [1S-series]

R88M-1L□/-1M□

Contents

- Ordering Information
- Specifications
- Names and Functions
- External Dimensions



Ordering Information

Refer to the Ordering Information.

Specifications

General Specifications

Item		Specifications
Operating ambient temperature and humidity		0 to 40°C 20% to 90% (with no condensation)
Storage ambient temperature and humidity		-20 to 65°C 20% to 90% (with no condensation)
Operating and storage atmosphere		No corrosive gases
Vibration resistance *		Acceleration of 49 m/s ² 24.5 m/s ² max. in X, Y, and Z directions when the motor is stopped
Impact resistance		Acceleration of 98 m/s ² max. 3 times each in X, Y, and Z directions
Insulation resistance		Between power terminals and FG terminals: 10 MΩ min. (at 500 VDC Megger)
Dielectric strength		Between power terminals and FG terminals: 1,500 VAC for 1 min (voltage 100 V, 200 V) Between power terminals and FG terminals: 1,800 VAC for 1 min (voltage 400 V) Between brake terminal and FG terminals: 1,000 VAC for 1 min
Insulation class		Class F
Protective structure		IP67 (except for the through-shaft part and connector pins) IP20 if you use a 30-meter or longer encoder cable.
International standard	EU Directives	EN 60034-1/-5 UL 1004-1/-6 CSA C22.2 No.100 (with cUL mark)
	Low Voltage Directive	
	UL standards	
	CSA standards	

* The amplitude may be increased by machine resonance. As a guideline, 80% of the specified value must not be exceeded.

Note: 1. Do not use the cable when it is laying in oil or water.

2. Do not expose the cable outlet or connections to stress due to bending or its own weight.

Encoder Specifications

Item	Specifications
Encoder system	Optical incremental encoder
Resolution per rotation	23 bits
Power supply voltage	5 VDC±10%
Current consumption	230 mA max.
Output signal	Serial communications
Output interface	RS485 compliant

AC Servomotors Incremental Encoder Type 1S-series

Characteristics

3,000-r/min Servomotors

Item		Model (R88M-) Unit	200 VAC			
			1M10030H	1M20030H	1M40030H	1M75030H
Rated output *1 *2		W	100	200	400	750
Rated torque *1 *2		N·m	0.318	0.637	1.27	2.39
Rated rotation speed *1 *2		r/min	3,000			
Maximum rotation speed		r/min	6,000			
Momentary maximum torque *1		N·m	1.11	2.2	4.5	8.4
Rated current *1 *2		A (rms)	0.84	1.5	2.5	4.6
Momentary maximum current *1		A (rms)	3.10	5.6	9.1	16.9
Rotor inertia	Without brake	$\times 10^{-4}$ kg·m ²	0.0890	0.2232	0.4452	1.8242
	With brake	$\times 10^{-4}$ kg·m ²	0.0968	0.2832	0.5052	2.0742
Applicable load inertia		$\times 10^{-4}$ kg·m ²	1.62	4.80	8.40	19.4
Torque constant *1		N·m/ A (rms)	0.42	0.48	0.56	0.59
Power rate *1 *3		kW/s	11.9	18.5	36.6	31.4
Mechanical time constant *3		ms	1.2	0.78	0.56	0.66
Electrical time constant		ms	0.83	2.4	2.6	3.3
Allowable radial load *4		N	68	245	245	490
Allowable thrust load *4		N	58	88	88	196
Weight	Without brake	kg	0.52	1.0	1.4	2.9
	With brake	kg	0.77	1.3	1.9	3.9
Radiator plate dimensions (material)		mm	250 × 250 × t6 (aluminum)			
Brake specifications	Excitation voltage *5	V	24 VDC \pm 10%			
	Current consumption (at 20°C)	A	0.27	0.32	0.32	0.37
	Static friction torque	N·m	0.32 min.	1.37 min.	1.37 min.	2.55 min.
	Attraction time	ms	25 max.	30 max.	30 max.	40 max.
	Release time *6	ms	15 max.	20 max.	20 max.	35 max.
	Backlash	°	1.2 max.	1.2 max.	1.2 max.	1.0 max.
	Allowable braking work	J	9	60	60	250
	Allowable total work	J	9,000	60,000	60,000	250,000
	Allowable angular acceleration	rad/s ²	10,000 max.			
	Brake lifetime (acceleration/ deceleration)	---	10 million times min.			
Insulation class		---	Class F			

AC Servomotors Incremental Encoder Type 1S-series

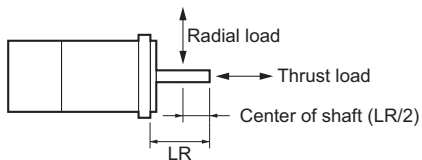
Item	Model (R88M-)	Unit	200 VAC	
			1L1K030H	1L1K530H
Rated output *1 *2		W	1,000	1,500
Rated torque *1 *2		N·m	3.18	4.77
Rated rotation speed *1 *2		r/min	3,000	
Maximum rotation speed		r/min	5,000	
Momentary maximum torque *1		N·m	9.55	14.3
Rated current *1 *2		A (rms)	5.2	8.8
Momentary maximum current *1		A (rms)	16.9	28.4
Rotor inertia	Without brake	$\times 10^{-4}$ kg·m ²	2.1042	2.1042
	With brake	$\times 10^{-4}$ kg·m ²	2.5542	2.5542
Applicable load inertia		$\times 10^{-4}$ kg·m ²	35.3	47.6
Torque constant *1		N·m/ A (rms)	0.67	0.58
Power rate *1 *3		kW/s	48	108
Mechanical time constant *3		ms	0.58	0.58
Electrical time constant		ms	5.9	6.1
Allowable radial load *4		N	490	
Allowable thrust load *4		N	196	
Weight	Without brake	kg	5.7	5.7
	With brake	kg	7.4	7.4
Radiator plate dimensions (material)		mm	400 × 400 × t20 (aluminum)	
Brake specifications	Excitation voltage *5	V	24 VDC \pm 10%	
	Current consumption (at 20°C)	A	0.70	0.70
	Static friction torque	N·m	9.3 min.	9.3 min.
	Attraction time	ms	100 max.	100 max.
	Release time *6	ms	30 max.	30 max.
	Backlash	°	1.0 max.	1.0 max.
	Allowable braking work	J	500	500
	Allowable total work	J	900,000	900,000
	Allowable angular acceleration	rad/s ²	10,000 max.	
	Brake lifetime (acceleration/ deceleration)	---	10 million times min.	
	Insulation class	---	Class F	

*1. This is a typical value for when the Servomotor is used at a normal temperature (20°C, 65%) in combination with a Servo Drive.

*2. The rated values are the values with which continuous operation is possible at an ambient temperature of 40°C when the Servomotor is horizontally installed on a specified radiator plate.

*3. This value is for models without options.

*4. The allowable radial and thrust loads are the values determined for a limit of 20,000 hours at normal operating temperatures. The allowable radial loads are applied as shown in the following diagram.



*5. This is a non-excitation brake. It is released when excitation voltage is applied.

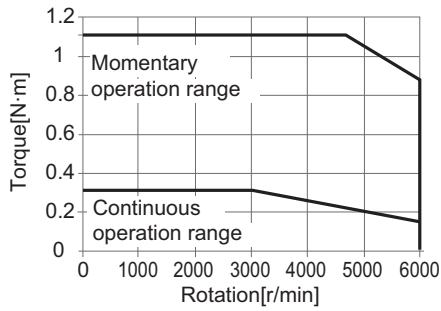
*6. This value is a reference value.

AC Servomotors Incremental Encoder Type 1S-series

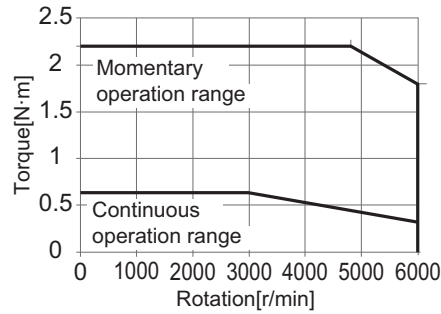
Torque-Rotation Speed Characteristics for 3,000-r/min Servomotors (200 VAC)

The following graphs show the characteristics with a 3-m standard cable and a 3-phase 200-VAC or single-phase 220-VAC input.

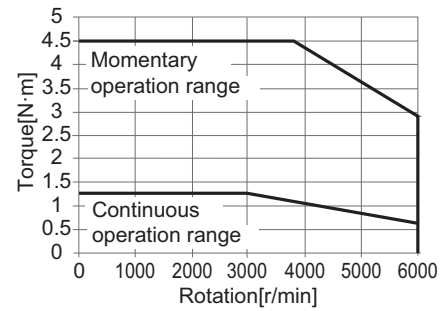
• R88M-1M10030T



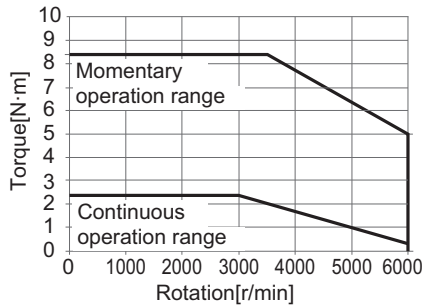
• R88M-1M20030T



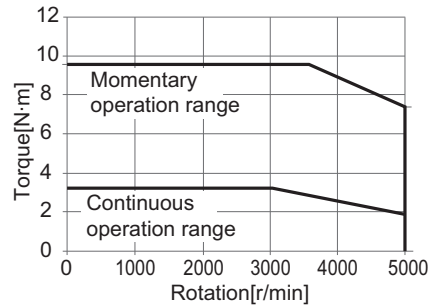
• R88M-1M40030T



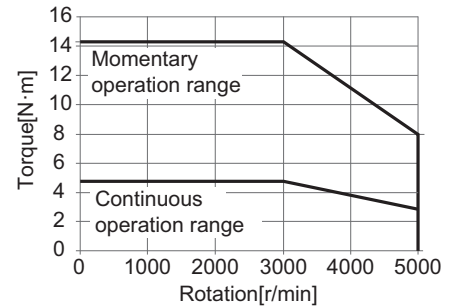
• R88M-1M75030T



• R88M-1L1K030T



• R88M-1L1K530T



Note: The continuous operation range is the range in which continuous operation is possible at an ambient temperature of 40°C when the Servomotor is horizontally installed on a specified radiator plate. Continuous operation at the maximum speed is also possible. However, doing so will reduce the output torque.

AC Servomotors Incremental Encoder Type 1S-series

2,000-r/min Servomotors

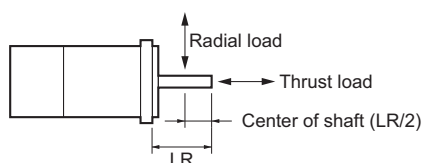
Item		Model (R88M-) Unit	200 VAC	
			1M1K020H	1M1K520H
Rated output *1 *2		W	1,000	1,500
Rated torque *1 *2		N·m	4.77	7.16
Rated rotation speed *1 *2		r/min	2,000	
Maximum rotation speed		r/min	3,000	
Momentary maximum torque *1		N·m	14.3	21.5
Rated current *1 *2		A (rms)	5.2	8.6
Momentary maximum current *1		A (rms)	16.9	28.4
Rotor inertia	Without brake	$\times 10^{-4}$ kg·m ²	6.0042	9.0042
	With brake	$\times 10^{-4}$ kg·m ²	6.5042	9.5042
Applicable load inertia		$\times 10^{-4}$ kg·m ²	59.0	79.9
Torque constant *1		N·m/ A (rms)	0.93	0.83
Power rate *1 *3		kW/s	38	57
Mechanical time constant *3		ms	0.94	0.78
Electrical time constant		ms	13	15
Allowable radial load *4		N	490	
Allowable thrust load *4		N	196	
Weight	Without brake	kg	6.6	8.5
	With brake	kg	8.6	10.5
Radiator plate dimensions (material)		mm	400 × 400 × t20 (aluminum)	470 × 470 × t20 (aluminum)
Brake specifications	Excitation voltage *5	V	24 VDC \pm 10%	
	Current consumption (at 20°C)	A	0.51	0.51
	Static friction torque	N·m	9.0 min.	9.0 min.
	Attraction time	ms	100 max.	100 max.
	Release time *6	ms	30 max.	30 max.
	Backlash	°	0.6 max.	0.6 max.
	Allowable braking work	J	1,000	1,000
	Allowable total work	J	3,000,000	3,000,000
	Allowable angular acceleration	rad/s ²	10,000 max.	
	Brake lifetime (acceleration/ deceleration)	---	10 million times min.	
	Insulation class	---	Class F	

*1. This is a typical value for when the Servomotor is used at a normal temperature (20°C, 65%) in combination with a Servo Drive.

*2. The rated values are the values with which continuous operation is possible at an ambient temperature of 40°C when the Servomotor is horizontally installed on a specified radiator plate.

*3. This value is for models without options.

*4. The allowable radial and thrust loads are the values determined for a limit of 20,000 hours at normal operating temperatures. The allowable radial loads are applied as shown in the following diagram.



*5. This is a non-excitation brake. It is released when excitation voltage is applied.

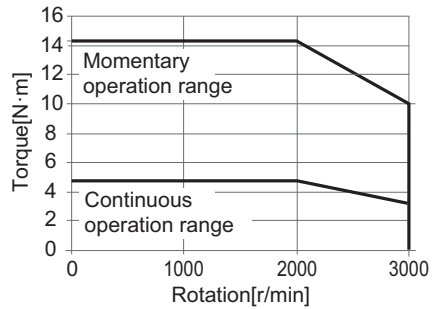
*6. This value is a reference value.

AC Servomotors Incremental Encoder Type 1S-series

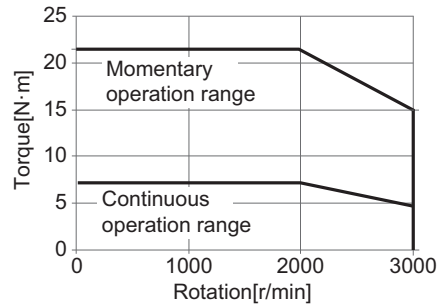
Torque-Rotation Speed Characteristics for 2,000-r/min Servomotors (200 VAC)

The following graphs show the characteristics with a 3-m standard cable and a 3-phase 200-VAC or single-phase 220-VAC input.

• R88M-1M1K020T



• R88M-1M1K520T

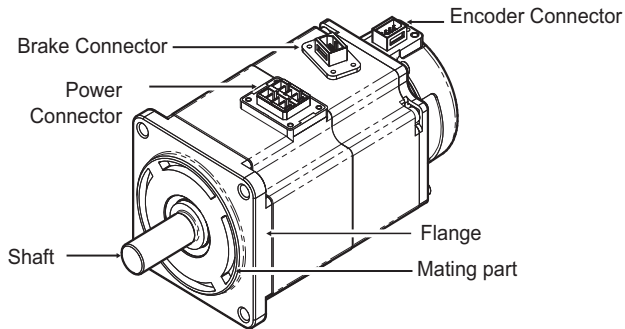


Note: The continuous operation range is the range in which continuous operation is possible at an ambient temperature of 40°C when the Servomotor is horizontally installed on a specified radiator plate.
Continuous operation at the maximum speed is also possible. However, doing so will reduce the output torque.

Part Names

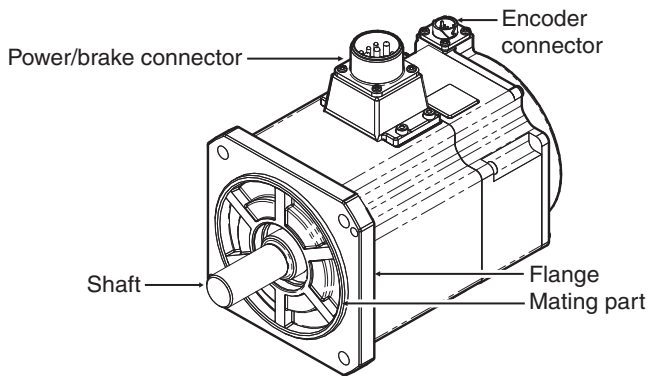
Servomotor Part Names

Flange Size of 80 × 80 or less



200 VAC 200 W Servomotors (with Brake)

Flange Size of 100 × 100 or more



200 VAC 1.5 kW Servomotors (with Brake)

Servomotor Functions

Shaft

The load is mounted on this shaft.

The direction which is in parallel with the shaft is called the thrust direction, and the direction which is perpendicular to the shaft is called the radial direction.

Flange

Used for mounting the Servomotor on the equipment.

Fit the mating part into the equipment and use the mounting holes to screw the Servomotor.

Power Connector

Used for supplying power to the phase U, V, and W of the Servomotor.

For Servomotors with a brake and flange size of 100 × 100 or more, the pins for power and brake are set on the same connector.

Encoder Connector

Used for supplying power to the encoder of the Servomotor and communicating with the Servo Drive.

Brake Connector

Used for supplying power to the brake coil of the Servomotor.

This part is attached only to the Servomotors with a brake and flange size of 80 × 80 or less.

AC Servomotors Incremental Encoder Type 1S-series

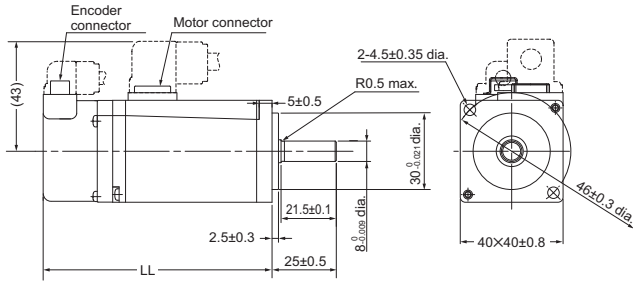
External Dimensions

(Unit: mm)

3,000-r/min Servomotors (200 V)

100 W (without Brake)

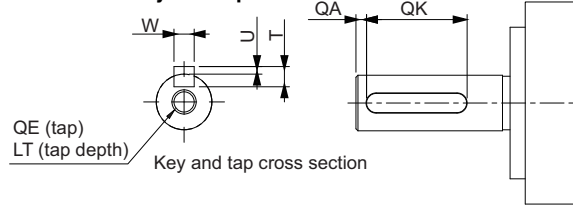
R88M-1M10030H-S2



Model	Dimensions [mm]	
	LL	
R88M-1M10030H-S2	89±1	

Note: The standard shaft type is a shaft with a key and tap.

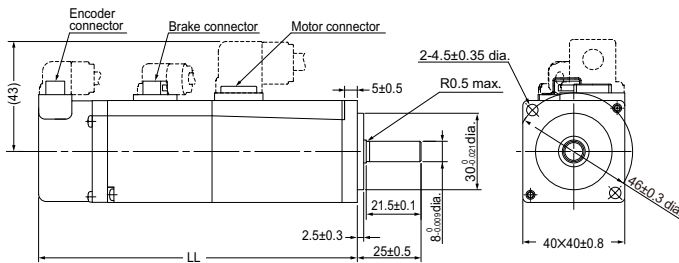
Shaft-end with key and tap



Model	Dimensions [mm]						
	QA	QK	W	T	U	QE	LT
R88M-1M10030H-S2	2	12	3 ⁰ _{-0.025}	3	1.2 ⁰ _{-0.2}	M3	8

100 W (with Brake)

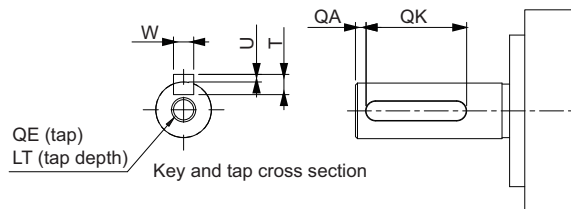
R88M-1M10030H-BS2



Model	Dimensions [mm]	
	LL	
R88M-1M10030H-BS2	125±1	

Note: The standard shaft type is a shaft with a key and tap.

Shaft-end with key and tap

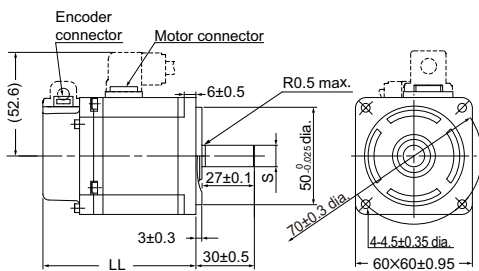


Model	Dimensions [mm]						
	QA	QK	W	T	U	QE	LT
R88M-1M10030H-BS2	2	12	3 ⁰ _{-0.025}	3	1.2 ⁰ _{-0.2}	M3	8

200 W/400 W (without Brake)

R88M-1M20030H-S2

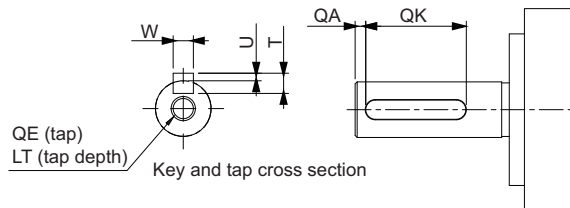
R88M-1M40030H-S2



Model	Dimensions [mm]	
	S	LL
R88M-1M20030H-S2	11 ⁰ _{-0.011} dia.	78.5±1
R88M-1M40030H-S2	14 ⁰ _{-0.011} dia.	104.5±1

Note: The standard shaft type is a shaft with a key and tap.

Shaft-end with key and tap

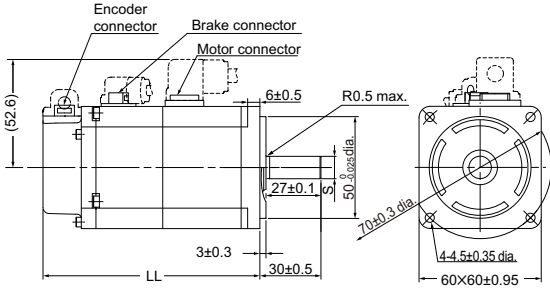


Model	Dimensions [mm]						
	QA	QK	W	T	U	QE	LT
R88M-1M20030H-S2	2	20	4 ⁰ _{-0.03}	4	1.5 ⁰ _{-0.2}	M4	10
R88M-1M40030H-S2	2	20	5 ⁰ _{-0.03}	5	2 ⁰ _{-0.2}	M5	12

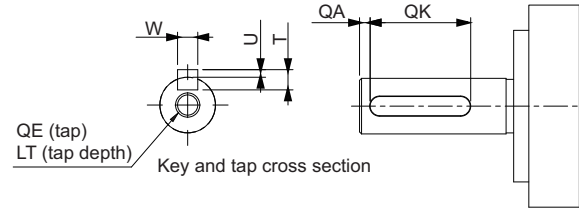
AC Servomotors Incremental Encoder Type 1S-series

200 W/400 W (with Brake)

R88M-1M20030H-BS2
R88M-1M40030H-BS2



Shaft-end with key and tap



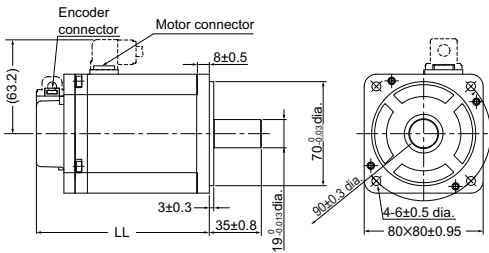
Model	Dimensions [mm]	
	S	LL
R88M-1M20030H-BS2	11 ⁰ _{-0.011} dia.	106.5±1
R88M-1M40030H-BS2	14 ⁰ _{-0.011} dia.	132.5±1

Model	Dimensions [mm]						
	QA	QK	W	T	U	QE	LT
R88M-1M20030H-BS2	2	20	4 ⁰ _{-0.03}	4	1.5 ⁰ _{-0.2}	M4	10
R88M-1M40030H-BS2	2	20	5 ⁰ _{-0.03}	5	2 ⁰ _{-0.2}	M5	12

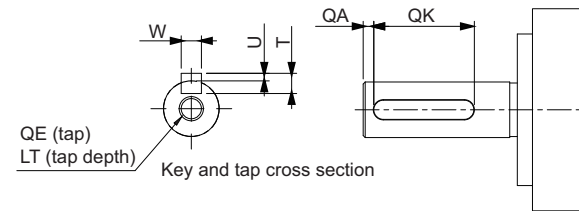
Note: The standard shaft type is a shaft with a key and tap.

750 W (without Brake)

R88M-1M75030H-S2



Shaft-end with key and tap



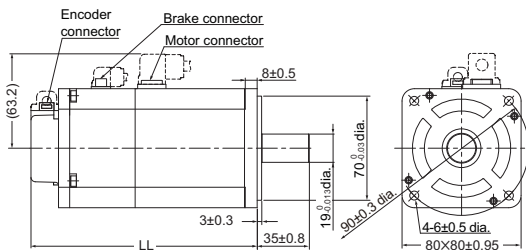
Model	Dimensions [mm]
	LL
R88M-1M75030H-S2	116.3±1

Model	Dimensions [mm]						
	QA	QK	W	T	U	QE	LT
R88M-1M75030H-S2	3	24	6 ⁰ _{-0.03}	6	2.5 ⁰ _{-0.2}	M5	12

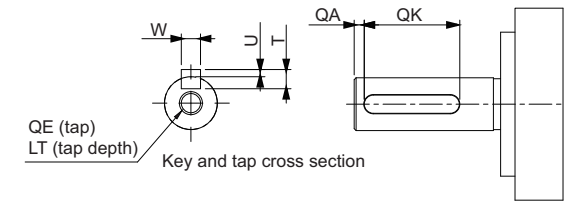
Note: The standard shaft type is a shaft with a key and tap.

750 W (with Brake)

R88M-1M75030H-BS2



Shaft-end with key and tap



Model	Dimensions [mm]
	LL
R88M-1M75030H-BS2	152±1

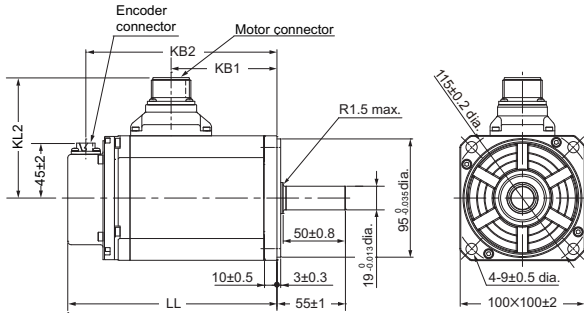
Model	Dimensions [mm]						
	QA	QK	W	T	U	QE	LT
R88M-1M75030H-BS2	3	24	6 ⁰ _{-0.03}	6	2.5 ⁰ _{-0.2}	M5	12

Note: The standard shaft type is a shaft with a key and tap.

AC Servomotors Incremental Encoder Type 1S-series

1 kW/1.5 kW (without Brake)

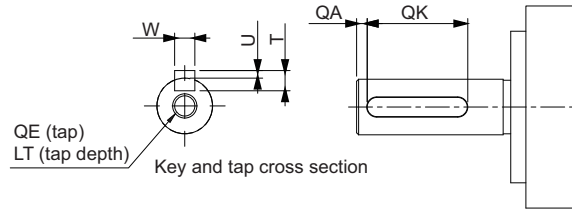
R88M-1L1K030H-S2
R88M-1L1K530H-S2



Model	Dimensions [mm]			
	LL	KB1	KB2	KL2
R88M-1L1K030H-S2	168±2	85±1	153±2	97±2
R88M-1L1K530H-S2	168±2	85±1	153±2	97±2

Note: The standard shaft type is a shaft with a key and tap.

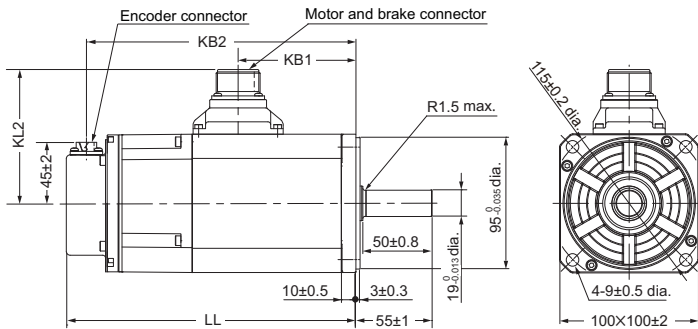
Shaft-end with key and tap



Model	Dimensions [mm]						
	QA	QK	W	T	U	QE	LT
R88M-1L1K030H-S2	3	42	6 ⁰ _{-0.03}	6	2.5 ⁰ _{-0.2}	M5	12
R88M-1L1K530H-S2	3	42	6 ⁰ _{-0.03}	6	2.5 ⁰ _{-0.2}	M5	12

1 kW/1.5 kW (with Brake)

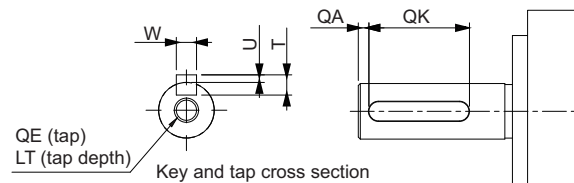
R88M-1L1K030H-BS2
R88M-1L1K530H-BS2



Model	Dimensions [mm]			
	LL	KB1	KB2	KL2
R88M-1L1K030H-BS2	209±3	85±1	194±2	97±2
R88M-1L1K530H-BS2	209±3	85±1	194±2	97±2

Note: The standard shaft type is a shaft with a key and tap.

Shaft-end with key and tap



Model	Dimensions [mm]						
	QA	QK	W	T	U	QE	LT
R88M-1L1K030H-BS2	3	42	6 ⁰ _{-0.03}	6	2.5 ⁰ _{-0.2}	M5	12
R88M-1L1K530H-BS2	3	42	6 ⁰ _{-0.03}	6	2.5 ⁰ _{-0.2}	M5	12

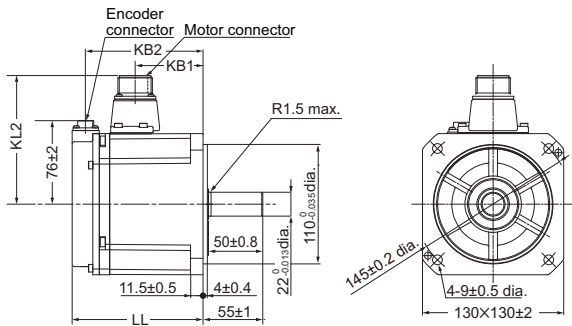
AC Servomotors Incremental Encoder Type 1S-series

2,000-r/min Servomotors (200 V)

1 kW/1.5 kW (without Brake)

R88M-1M1K020H-S2

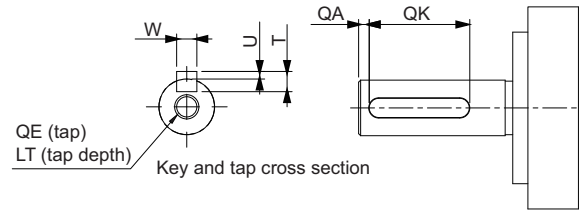
R88M-1M1K520H-S2



Model	Dimensions [mm]			
	LL	KB1	KB2	KL2
R88M-1M1K020H-S2	120.5±2	63±1	109±2	118±2
R88M-1M1K520H-S2	138±2	79±1	125±2	118±2

Note: The standard shaft type is a shaft with a key and tap.

Shaft-end with key and tap

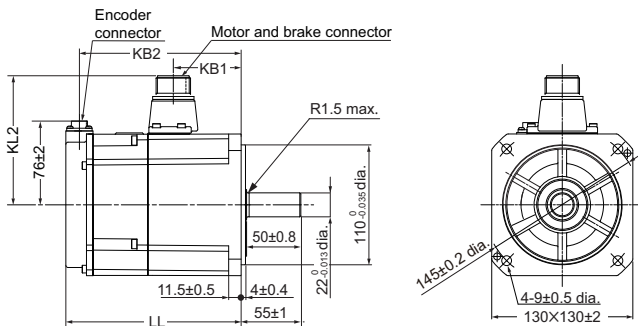


Model	Dimensions [mm]						
	QA	QK	W	T	U	QE	LT
R88M-1M1K020H-S2	3	42	8 ⁰ _{-0.036}	7	3 ⁰ _{-0.4}	M5	12
R88M-1M1K520H-S2	3	42	8 ⁰ _{-0.036}	7	3 ⁰ _{-0.4}	M5	12

1 kW/1.5 kW (with Brake)

R88M-1M1K020H-BS2

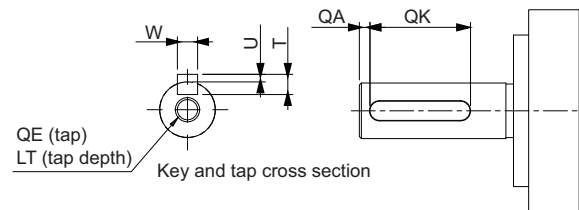
R88M-1M1K520H-BS2



Model	Dimensions [mm]			
	LL	KB1	KB2	KL2
R88M-1M1K020H-BS2	162±2	63±1	149±2	118±2
R88M-1M1K520H-BS2	179±2	79±1	166±2	118±2

Note: The standard shaft type is a shaft with a key and tap.

Shaft-end with key and tap



Model	Dimensions [mm]						
	QA	QK	W	T	U	QE	LT
R88M-1M1K020H-BS2	3	42	8 ⁰ _{-0.036}	7	3 ⁰ _{-0.4}	M5	12
R88M-1M1K520H-BS2	3	42	8 ⁰ _{-0.036}	7	3 ⁰ _{-0.4}	M5	12

MEMO

Ordering Information

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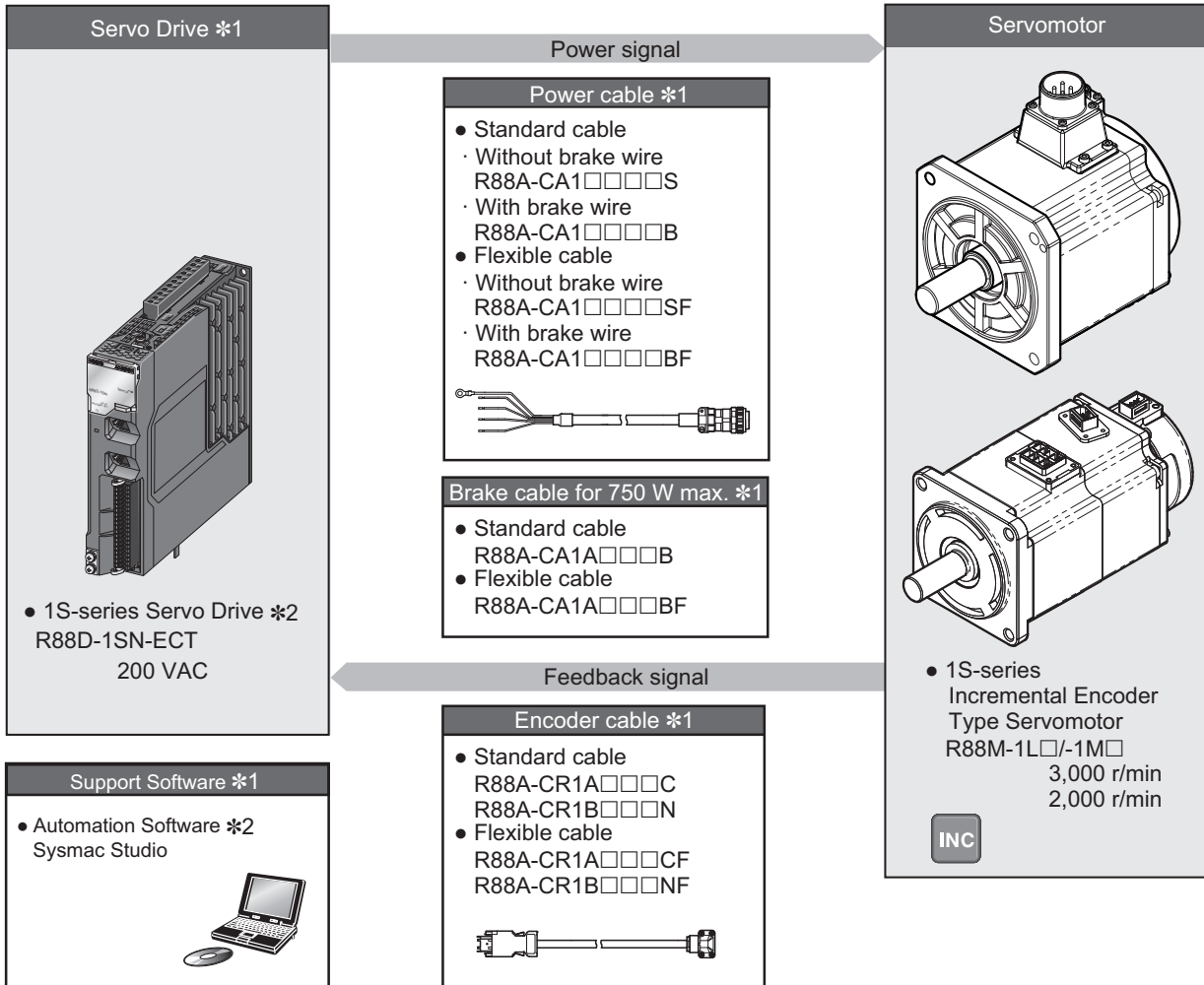
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AC Servomotors Incremental Encoder Type 1S-series

System Configuration



*1. This datasheet provides information about 1S-series Servomotor with an incremental encoder (INC). Refer to the Servo System 1S Series Catalog (Cat.No.I821) for details of applicable drives, cables, and support software.

*2. Use the 1S-series Servomotor with an incremental encoder together with the 1S-series Servo Drive unit version 1.2 or later and the Sysmac Studio version 1.22 or higher.

AC Servomotors Incremental Encoder Type 1S-series

Interpreting Model Numbers

1S-series Servomotor Incremental Encoder Type

R88M-1 M 100 30 H -BOS2

(1) (2) (3) (4) (5) (6)

No	Item	Symbol	Specifications
(1)	1S-series Servomotor		
(2)	Servomotor Type	L	Low inertia
		M	Middle inertia
(3)	Rated output	100	100 W
		200	200 W
		400	400 W
		750	750 W
		1K0	1 kW
		1K5	1.5 kW
(4)	Rated rotation speed	20	2,000 r/min
		30	3,000 r/min
(5)	Servo Drive main power supply voltage and encoder type	H	200 VAC Incremental Encoder
(6)	Options		
	Brake	None	Without brake
		B	With 24-VDC brake
	Oil seal	None	Without oil seal
		O	With oil seal
	Key and tap	None	Straight shaft
S2		With key and tap	

Table of AC Servomotor Variations

R88M-1 -

(2) (3) (4) (5) (6) (7) (8)

Type	Rated output	Rotation speed	Model	(5)	(6)		(7)		(8)	
				Power supply specifications	Brake		Oil seal		Shaft type	
				INC						
				200	None	B	None	O	None	S2
M	100 W	3,000 r/min	R88M-1M10030	✓	✓	✓	✓			✓
	200 W		R88M-1M20030	✓	✓	✓	✓			✓
	400 W		R88M-1M40030	✓	✓	✓	✓			✓
	750 W		R88M-1M75030	✓	✓	✓	✓			✓
L	1 kW		R88M-1L1K030	✓	✓	✓	✓			✓
	1.5 kW		R88M-1L1K530	✓	✓	✓	✓			✓
M	1 kW	2,000 r/min	R88M-1M1K020	✓	✓	✓	✓			✓
	1.5 kW		R88M-1M1K520	✓	✓	✓	✓			✓
M: Middle inertia L: Low inertia	100: 100 W 1K0: 1 kW	20: 2,000 r/min 30: 3,000 r/min		H: 200 VAC (Incremental) INC	None: Without brake B: With 24-VDC brake		None: Without oil seal O: With oil seal		None: Straight shaft S2: With key and tap	

AC Servomotors Incremental Encoder Type 1S-series

Ordering Information

1S-series Servomotor Incremental Encoder Type

● 3,000-r/min Servomotors

Specifications			Model			
			Without oil seal		With oil seal	
			Straight shaft	With key and tap	Straight shaft	With key and tap
Without brake	200 VAC	100 W	-	R88M-1M10030H-S2	-	-
		200 W	-	R88M-1M20030H-S2	-	-
		400 W	-	R88M-1M40030H-S2	-	-
		750 W	-	R88M-1M75030H-S2	-	-
		1 kW	-	R88M-1L1K030H-S2	-	-
		1.5 kW	-	R88M-1L1K530H-S2	-	-
With brake	200 VAC	100 W	-	R88M-1M10030H-BS2	-	-
		200 W	-	R88M-1M20030H-BS2	-	-
		400 W	-	R88M-1M40030H-BS2	-	-
		750 W	-	R88M-1M75030H-BS2	-	-
		1 kW	-	R88M-1L1K030H-BS2	-	-
		1.5 kW	-	R88M-1L1K530H-BS2	-	-

● 2,000-r/min Servomotors

Specifications			Model			
			Without oil seal		With oil seal	
			Straight shaft	With key and tap	Straight shaft	With key and tap
Without brake	200 VAC	1 kW	-	R88M-1M1K020H-S2	-	-
		1.5 kW	-	R88M-1M1K520H-S2	-	-
With brake	200 VAC	1 kW	-	R88M-1M1K020H-BS2	-	-
		1.5 kW	-	R88M-1M1K520H-BS2	-	-

Combination table

Servo Drive and Servomotor Combinations

The following tables show the possible combinations of 1S-series Servo Drives and Servomotors.

The Servomotors and Servo Drives can only be used in the listed combinations. "□" at the end of the motor model number is for options, such as the shaft type and brake.

3,000-r/min Servomotors and Servo Drives

Main circuit power supply voltage	Servomotor rated output	Servomotor	Servo Drive
Single-phase/3-phase 200 VAC	100 W	R88M-1M10030H-□	R88D-1SN01H-ECT
	200 W	R88M-1M20030H-□	R88D-1SN02H-ECT
	400 W	R88M-1M40030H-□	R88D-1SN04H-ECT
	750 W	R88M-1M75030H-□	R88D-1SN08H-ECT
3-phase 200 VAC	1 kW	R88M-1L1K030H-□	R88D-1SN10H-ECT
Single-phase/3-phase 200 VAC	1.5 kW	R88M-1L1K530H-□	R88D-1SN15H-ECT

2,000-r/min Servomotors and Servo Drives

Main circuit power supply voltage	Servomotor rated output	Servomotor	Servo Drive
3-phase 200 VAC	1 kW	R88M-1M1K020H-□	R88D-1SN10H-ECT
Single-phase/3-phase 200 VAC	1.5 kW	R88M-1M1K520H-□	R88D-1SN15H-ECT

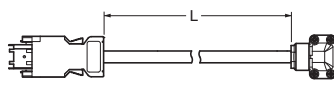
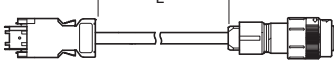
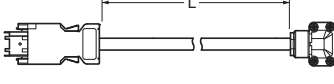
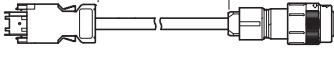
Servomotor and Decelerator Combinations

You cannot use a 1S-series Incremental Encoder Type Servomotor in combination with a Decelerator.

AC Servomotors Incremental Encoder Type 1S-series

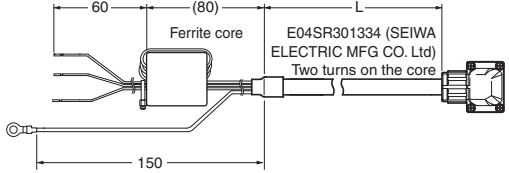
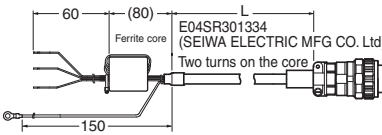
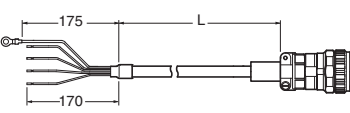
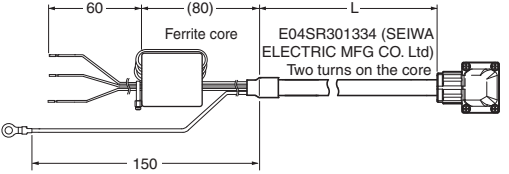
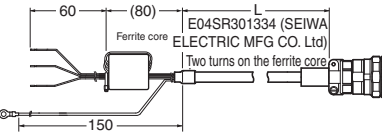
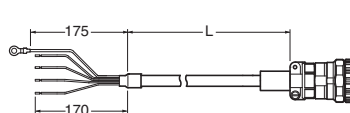
Cable Connection Configuration

Encoder Cables

Connected to	Model	Connection configuration and external dimensions [mm]	
200 V: 3,000-r/min Servomotors of 100 W, 200 W, 400 W, and 750 W	Standard Cable R88A-CR1A□□□□C The empty boxes in the model number are for the cable length. (3 to 20 m: 5.3 dia. 30 to 50 m: 6.0 dia.)	Servo Drive side connector Connector model Receptacle: 3E206-0100KV (3M) Shell kit: 3E306-3200-008 (3M)	 Servomotor side connector Angle clamp model JN6FR07SM1 (Japan Aviation Electronics) Connector pin model LY10-C1-A1-10000 (Japan Aviation Electronics)
200 V: 3,000-r/min Servomotors of 1 kW and 2,000-r/min Servomotors	Standard Cable R88A-CR1B□□□□N The empty boxes in the model number are for the cable length. (6.0 dia.)	Servo Drive side connector Connector model Receptacle: 3E206-0100KV (3M) Shell kit: 3E306-3200-008 (3M)	 Servomotor side connector Straight plug model JN2DS10SL1-R (Japan Aviation Electronics) Contact model JN1-22-22S-10000 (Japan Aviation Electronics)
200 V: 3,000-r/min Servomotors of 100 W, 200 W, 400 W and 750 W	Flexible Cable R88A-CR1A□□□□CF The empty boxes in the model number are for the cable length. (3 to 20 m: 5.3 dia. 30 to 50 m: 6.0 dia.)	Servo Drive side connector Connector model Receptacle: 3E206-0100KV (3M) Shell kit: 3E306-3200-008 (3M)	 Servomotor side connector Angle clamp model JN6FR07SM1 Connector pin model LY10-C1-A1-10000 (Japan Aviation Electronics)
200 V: 3,000-r/min Servomotors of 1 kW and 2,000-r/min Servomotors	Flexible Cable R88A-CR1B□□□□NF The empty boxes in the model number are for the cable length. (6.0 dia.)	Servo Drive side connector Connector model Receptacle: 3E206-0100KV (3M) Shell kit: 3E306-3200-008 (3M)	 Servomotor side connector Straight plug model JN2DS10SL1-R (Japan Aviation Electronics) Contact model JN1-22-22S-10000 (Japan Aviation Electronics)

Note: Cable length: 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m
The empty boxes in the model number are put as follows: 3 m = 003, 5 m = 005, 10 m = 010.

Power Cables without Brake Wire

Connected to	Model	Connection configuration and external dimensions [mm]	
200 V: 3,000-r/min Servomotors of 100 W, 200 W, 400 W, and 750 W	Standard Cable R88A-CA1A□□□□S The empty boxes in the model number are for the cable length. (6.8 dia.)	 E04SR301334 (SEIWA ELECTRIC MFG CO. Ltd) Two turns on the core	Note: Use the R88A- CN111A Power Connector/Socket Contact (Omron) for this cable.
200 V: 3,000-r/min Servomotors of 1 kW and 2,000-r/min Servomotors of 1 kW	Standard Cable R88A-CA1B□□□□S The empty boxes in the model number are for the cable length. (10.8 dia.)	 E04SR301334 (SEIWA ELECTRIC MFG CO. Ltd) Two turns on the core	Servomotor side connector Connector JL10-6A20-4SE-EB (Japan Aviation Electronics) Clamp JL04-2022CK(12)-R (Japan Aviation Electronics)
200 V: 3,000-r/min Servomotors of 1.5 kW and 2,000-r/min Servomotors of 1.5 kW	Standard Cable R88A-CA1C□□□□S The empty boxes in the model number are for the cable length. (10.8 dia.)	 E04SR301334 (SEIWA ELECTRIC MFG CO. Ltd) Two turns on the core	Servomotor side connector Connector JL10-6A20-4SE-EB (Japan Aviation Electronics) Clamp JL04-2022CK(12)-R (Japan Aviation Electronics)
200 V: 3,000-r/min Servomotors of 100 W, 200 W, 400 W, and 750 W	Flexible Cable R88A-CA1A□□□□SF The empty boxes in the model number are for the cable length. (6.8 dia.)	 E04SR301334 (SEIWA ELECTRIC MFG CO. Ltd) Two turns on the core	Note: Use the R88A- CN111A Power Connector/Socket Contact (Omron) for this cable.
200 V: 3,000-r/min Servomotors of 1 kW and 2,000-r/min Servomotors of 1 kW	Flexible Cable R88A-CA1B□□□□SF The empty boxes in the model number are for the cable length. (10.8 dia.)	 E04SR301334 (SEIWA ELECTRIC MFG CO. Ltd) Two turns on the ferrite core	Servomotor side connector Connector JL10-6A20-4SE-EB (Japan Aviation Electronics) Clamp JL04-2022CK(12)-R (Japan Aviation Electronics)
200 V: 3,000-r/min Servomotors of 1.5 kW and 2,000-r/min Servomotors of 1.5 kW	Flexible Cable R88A-CA1C□□□□SF The empty boxes in the model number are for the cable length. (10.8 dia.)	 E04SR301334 (SEIWA ELECTRIC MFG CO. Ltd) Two turns on the ferrite core	Servomotor side connector Connector JL10-6A20-4SE-EB (Japan Aviation Electronics) Clamp JL04-2022CK(12)-R (Japan Aviation Electronics)

Note: Cable length: 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m
The empty boxes in the model number are put as follows: 3 m = 003, 5 m = 005, 10 m = 010.

AC Servomotors Incremental Encoder Type 1S-series

Power Cables with Brake Wire

Connected to	Model	Connection configuration and external dimensions [mm]
200 V: 3,000-r/min Servomotors of 1 kW and 2,000-r/min Servomotors of 1 kW	Standard Cable R88A-CA1B□□□B The empty boxes in the model number are for the cable length. (12.5 dia.)	<p>60 (80) E04SR301334 (SEIWA ELECTRIC MFG CO. Ltd) Ferrite core Two turns on the ferrite core Ferrule 216-201 (WAGO) 150 160</p> <p>Servomotor side connector Connector JN6FS05SJ2 (Japan Aviation Electronics) Socket contact ST-JN6-S-C1B-2500 (Japan Aviation Electronics)</p>
200 V: 3,000-r/min Servomotors of 1.5 kW and 2,000-r/min Servomotors of 1.5 kW	Standard Cable R88A-CA1C□□□B The empty boxes in the model number are for the cable length. (12.5 dia.)	<p>175 L Ferrule 216-201 (WAGO) 170 180</p> <p>Servomotor side connector Connector JL10-6A20-18SE-EB (Japan Aviation Electronics) Clamp JL04-2022CK(12)-R (Japan Aviation Electronics)</p>
200 V: 3,000-r/min Servomotors of 1 kW and 2,000-r/min Servomotors of 1 kW	Flexible Cable R88A-CA1B□□□BF The empty boxes in the model number are for the cable length. (12.5 dia.)	<p>60 (80) E04SR301334 (SEIWA ELECTRIC MFG CO. Ltd) Ferrite core Two turns on the ferrite core Ferrule 216-201 (WAGO) 150 160</p> <p>Servomotor side connector Connector JL10-6A20-18SE-EB (Japan Aviation Electronics) Clamp JL04-2022CK(14)-R (Japan Aviation Electronics)</p>
200 V: 3,000-r/min Servomotors of 1.5 kW and 2,000-r/min Servomotors of 1.5 kW	Flexible Cable R88A-CA1C□□□BF The empty boxes in the model number are for the cable length. (12.5 dia.)	<p>175 L Ferrule 216-201 (WAGO) 170 180</p> <p>Servomotor side connector Connector JL10-6A20-18SE-EB (Japan Aviation Electronics) Clamp JL04-2022CK(12)-R (Japan Aviation Electronics)</p>

Note: Cable length: 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m
The empty boxes in the model number are put as follows: 3 m = 003, 5 m = 005, 10 m = 010.

Brake Cables

Connected to	Model	Connection configuration and external dimensions [mm]
200 V: 3,000-r/min Servomotors of 100 W, 200 W, 400 W, and 750 W	Standard Cable R88A-CA1A□□□B The empty boxes in the model number are for the cable length. (5.0 dia.)	<p>40 5 dia. L Ferrule 216-201 (WAGO)</p> <p>Servomotor side connector Connector JN6FR02SM1 (Japan Aviation Electronics) Socket contact LY10-C1-A1-10000 (Japan Aviation Electronics)</p>
200 V: 3,000-r/min Servomotors of 100 W, 200 W, 400 W, and 750 W	Flexible Cable R88A-CA1A□□□BF The empty boxes in the model number are for the cable length. (5.0 dia.)	<p>40 5 dia. L Ferrule 216-201 (WAGO)</p> <p>Servomotor side connector Connector JN6FR02SM1 (Japan Aviation Electronics) Socket contact LY10-C1-A1-10000 (Japan Aviation Electronics)</p>

Note: Cable length: 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m
The empty boxes in the model number are put as follows: 3 m = 003, 5 m = 005, 10 m = 010.

AC Servomotors Incremental Encoder Type 1S-series

Related Manuals

English Man.No.	Japanese Man.No.	Model	Manual name
I619	SBCE-432	R88M-1□/R88D-1SN□-ECT	AC Servomotors/Servo Drives 1S-series User's Manual for Incremental Encoder Type
I586	SBCE-377	R88M-1□/R88D-1SN□-ECT	AC Servomotors/Servo Drives 1S-Series with EtherCAT Communications User's Manual
W535	SBCA-418	NX701-□□□□	NX-series CPU Unit User's Manual (Hardware)
W578	SBCA-448	NX1P2-□□□□□□ NX1P2-□□□□□□1	NX-series NX1P2 CPU Unit User's Manual (Hardware)
W500	SBCA-358	NJ501-□□□□ NJ301-□□□□ NJ101-□□□□	NJ-series CPU Unit User's Manual (Hardware)
W501	SBCA-359	NX701-□□□□ NJ501-□□□□ NJ301-□□□□ NJ101-□□□□	NJ-series / NX-series CPU Unit User's Manual (Software)
W507	SBCE-363	NX701-□□□□ NJ501-□□□□ NJ301-□□□□ NJ101-□□□□	NJ-series / NX-series CPU Unit User's Manual (Motion Control)
Z930	SGFM-710	NX-SL□□□□ NX-SI□□□□ NX-SO□□□□	NX-series Safety Control Unit User's Manual
W504	SBCA-362	SYSMAC-SE2□□□	Sysmac Studio Version 1 Operation Manual
I589	SBCE-401	SYSMAC-SE2□□□	Sysmac Studio Drive Function Operation Manual
Z922	SJLB-306	G9SP-N10S G9SP-N10D G9SP-N20S	G9SP Series Safety Controller Operation Manual

Terms and Conditions Agreement

Read and Understand this Catalog

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Application Considerations

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Disclaimers

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