R88M-1□

1S servo motor

Simplified machine design and maintenance

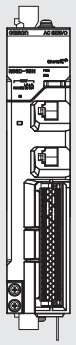
- 23-bit resolution encoder
- Compact and small motor size
- Multi-turn encoder design without mechanics: 16-bit, 65536 turns
- Battery-free absolute multi-turn encoder or incremental encoder
- Pre-assembled motor cables
- Designed for easy EMC compliance

Ratings

- 230 VAC from 100 W to 1.5 kW (rated torque from 0.318 to 8.59 Nm)
- 400 VAC from 400 W to 3 kW (rated torque from 1.91 to 28.7 Nm)

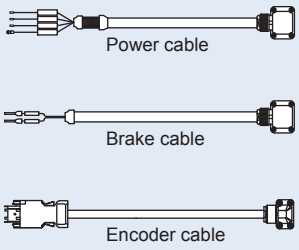
System configuration

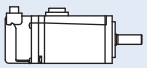
(Refer to servo drive chapter)



1S servo drive

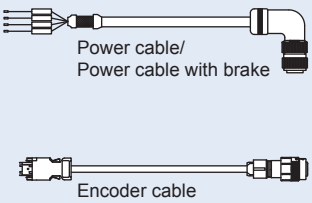
1S servo motor (Flange size 80 mm or less)

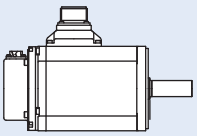




3000 rpm (100 W - 750 W)

1S servo motor (Flange size 100 mm or more)





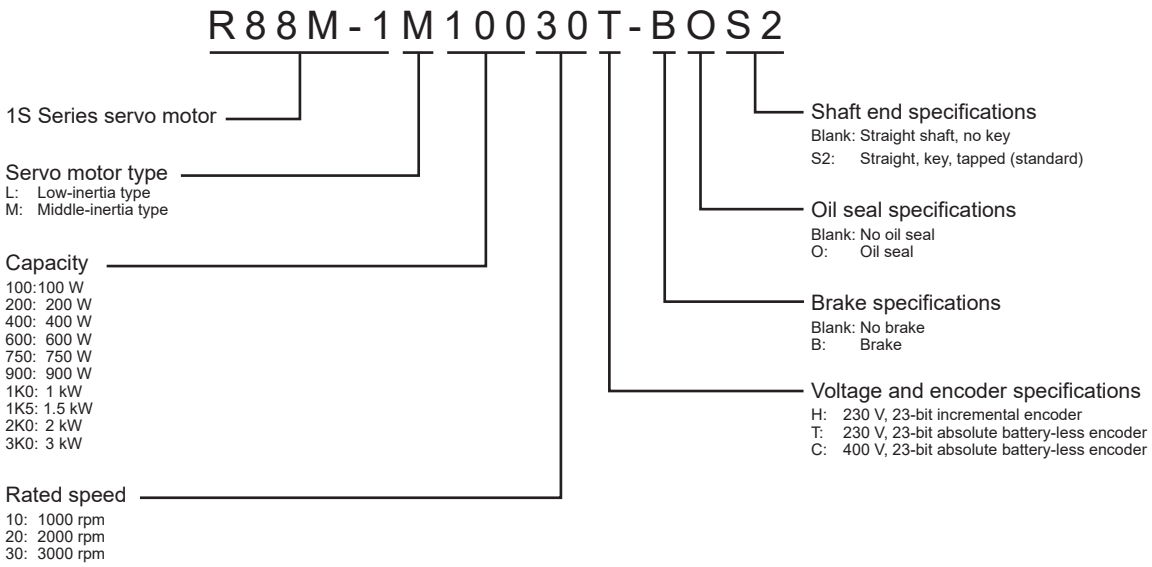
3000 rpm (1 kW - 3 kW)
2000 rpm (400 W - 3 kW)
1000 rpm (900 W - 3 kW)

Servo motor / Servo drive combination

1S servo motor						1S servo drive
Appearance	Speed	Voltage	Rated torque	Capacity	Model	
	3000 min^{-1}	230 V	0.318 Nm	100 W	R88M-1M10030(H/T)-□	R88D-1SN01H-ECT
			0.637 Nm	200 W	R88M-1M20030(H/T)-□	R88D-1SN02H-ECT
			1.27 Nm	400 W	R88M-1M40030(H/T)-□	R88D-1SN04H-ECT
			2.39 Nm	750 W	R88M-1M75030(H/T)-□	R88D-1SN08H-ECT
			3.18 Nm	1 kW	R88M-1L1K030(H/T)-□	R88D-1SN15H-ECT
			4.77 Nm	1.5 kW	R88M-1L1K530(H/T)-□	R88D-1SN15H-ECT
		400 V	2.39 Nm	750 W	R88M-1L75030C-□	R88D-1SN10F-ECT
			3.18 Nm	1 kW	R88M-1L1K030C-□	R88D-1SN10F-ECT
			4.77 Nm	1.5 kW	R88M-1L1K530C-□	R88D-1SN15F-ECT
			6.37 Nm	2 kW	R88M-1L2K030C-□	R88D-1SN20F-ECT
			9.55 Nm	3 kW	R88M-1L3K030C-□	R88D-1SN30F-ECT
	2000 min^{-1}	230 V	4.77 Nm	1 kW	R88M-1M1K020(H/T)-□	R88D-1SN15H-ECT
			7.16 Nm	1.5 kW	R88M-1M1K520(H/T)-□	R88D-1SN15H-ECT
		400 V	1.91 Nm	400 W	R88M-1M40020C-□	R88D-1SN06F-ECT
			2.86 Nm	600 W	R88M-1M60020C-□	R88D-1SN06F-ECT
			4.77 Nm	1 kW	R88M-1M1K020C-□	R88D-1SN10F-ECT
			7.16 Nm	1.5 kW	R88M-1M1K520C-□	R88D-1SN15F-ECT
			9.55 Nm	2 kW	R88M-1M2K020C-□	R88D-1SN20F-ECT
			14.3 Nm	3 kW	R88M-1M3K020C-□	R88D-1SN30F-ECT
	1000 min^{-1}	230 V	8.59 Nm	900 W	R88M-1M90010T-□	R88D-1SN15H-ECT
		400 V	8.59 Nm	900 W	R88M-1M90010C-□	R88D-1SN10F-ECT
			19.1 Nm	2 kW	R88M-1M2K010C-□	R88D-1SN20F-ECT
			28.7 Nm	3 kW	R88M-1M3K010C-□	R88D-1SN30F-ECT

Note: For servo motor and cable part numbers, refer to ordering information at the end of this chapter.
Note: Refer to the servo drive chapter for drive options selection and detailed specifications.

Type designation



Specifications

3000 r/min servo motors, 230 V

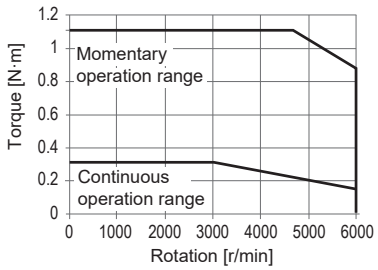
Ratings and specifications

Voltage			230 V					
Servo motor model: R88M-1□		23-bit incremental encoder	M10030H-□	M20030H-□	M40030H-□	M75030H-□	L1K030H-□	L1K530H-□
		23-bit absolute encoder	M10030T-□	M20030T-□	M40030T-□	M75030T-□	L1K030T-□	L1K530T-□
Rated output		W	100	200	400	750	1000	1500
Rated torque		Nm	0.318	0.637	1.27	2.39	3.18	4.77
Instantaneous peak torque		Nm	1.11	2.2	4.5	8.4	9.55	14.3
Rated current		A (rms)	0.84	1.5	2.5	4.6	5.2	8.8
Instantaneous max. current		A (rms)	3.1	5.6	9.1	16.9	16.9	28.4
Rated speed		min^{-1}	3000					
Max. speed		min^{-1}	6000				5000	
Torque constant		N·m/A	0.42	0.48	0.56	0.59	0.67	0.58
Rotor moment of inertia		$kg·m^2x10^{-4}$ (without brake)	0.089	0.2232	0.4452	1.8242	2.1042	
		$kg·m^2x10^{-4}$ (with brake)	0.0968	0.2832	0.5052	2.0742	2.5542	
Electrical time constant		ms	0.83	2.4	2.6	3.3	5.9	6.1
Allowable radial load		N	68	245		490		
Allowable thrust load		N	58	88		196		
Weight		kg (without brake)	0.52	1.0	1.4	2.9	5.7	
		kg (with brake)	0.77	1.3	1.9	3.9	7.4	
Brake specifications	Excitation voltage[*1]		24 VDC ±10%					
	Holding brake moment of inertia J	$kg·m^2x10^{-4}$	0.0078	0.06		0.25	0.45	
	Current consumption (at 20°C)	A	0.27	0.32		0.37	0.70	
	Static friction torque	Nm (minimum)	0.32	1.37		2.55	9.3	
Basic specifications	Insulation class		Type F					
	Ambient operating/storage temperature		0 to 40°C/-20 to 65°C					
	Ambient operating/storage humidity		20 to 90% (non-condensing)					
	Atmosphere		No corrosive gases					
	Insulation resistance		10 MΩ min. at 500 VDC between the power terminals and FG terminal					
	Vibration resistance		Vibration acceleration of 49 m/s^2					
	Impact resistance		Acceleration of 98 m/s^2 max. 3 times each in X, Y and Z directions					
	Enclosure		IP67 (except for through-shaft parts when connectors are inserted)					

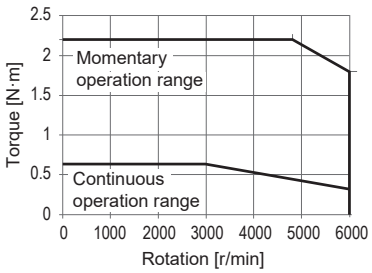
[*1] This is a non-excitable brake (it is released when excitation voltage is applied).

Torque-speed characteristics

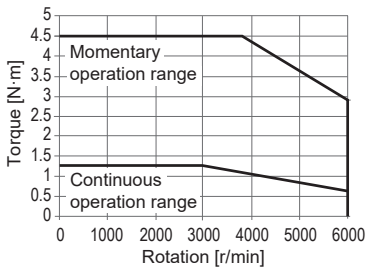
R88M-1M10030H/T (230 V, 100 W)



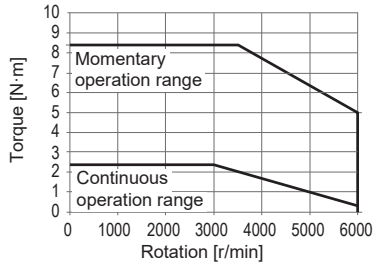
R88M-1M20030H/T (230 V, 200 W)



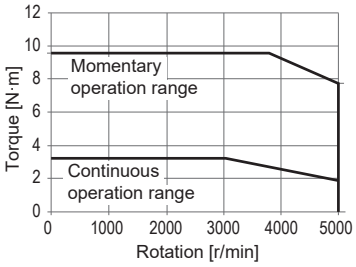
R88M-1M40030H/T (230 V, 400 W)



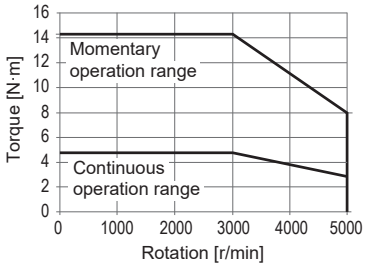
R88M-1M75030H/T (230 V, 750 W)



R88M-1L1K030H/T (230 V, 1 kW)



R88M-1L1K530H/T (230 V, 1.5 kW)



3000 r/min servo motors, 400 V

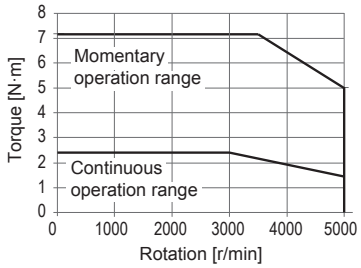
Ratings and specifications

Voltage			400 V				
Servo motor model: R88M-1□		23-bit absolute encoder	L75030C-□	L1K030C-□	L1K530C-□	L2K030C-□	L3K030C-□
Rated output		W	750	1000	1500	2000	3000
Rated torque		Nm	2.39	3.18	4.77	6.37	9.55
Instantaneous peak torque		Nm	7.16	9.55	14.3	19.1	28.7
Rated current		A (rms)	3.0	3.0	4.5	6.3	8.2
Instantaneous max. current		A (rms)	9.6	9.6	14.1	19.8	27.7
Rated speed		min^{-1}	3000				
Max. speed		min^{-1}	5000				
Torque constant		N·m/A	0.91	1.17	1.17	1.15	1.23
Rotor moment of inertia		$kg·m^2x10^{-4}$ (without brake)	1.3042	2.1042		2.4042	6.8122
		$kg·m^2x10^{-4}$ (with brake)	1.7542	2.5542		2.8542	7.3122
Electrical time constant		ms	4.3	5.9		6.3	11.0
Allowable radial load		N	490				
Allowable thrust load		N	196				
Weight		kg (without brake)	4.1	5.7		6.4	11.5
		kg (with brake)	5.8	7.4		8.1	12.5
Brake specifications	Excitation voltage*1		24 VDC ±10%				
	Holding brake moment of inertia J	$kg·m^2x10^{-4}$	0.45				0.50
	Current consumption (at 20°C)	A	0.70				0.66
	Static friction torque	Nm (minimum)	9.3				12.0
Basic specifications	Insulation class		Type F				
	Ambient operating/storage temperature		0 to 40°C/-20 to 65°C				
	Ambient operating/storage humidity		20 to 90% (non-condensing)				
	Atmosphere		No corrosive gases				
	Insulation resistance		10 MΩ min. at 500 VDC between the power terminals and FG terminal				
	Vibration resistance		Vibration acceleration of 49 m/s^2				
	Impact resistance		Acceleration of 98 m/s^2 max. 3 times each in X, Y and Z directions				
	Enclosure		IP67 (except for through-shaft parts when connectors are inserted)				

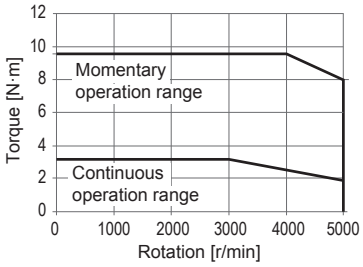
*1 This is a non-excitable brake (it is released when excitation voltage is applied).

Torque-speed characteristics

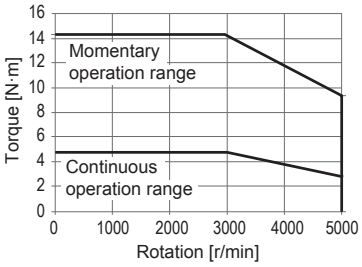
R88M-1L75030C (400 V, 750 W)



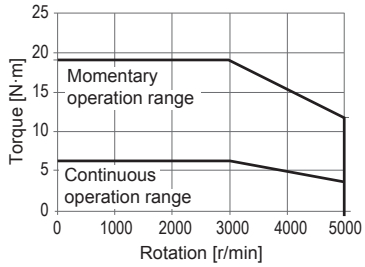
R88M-1L1K030C (400 V, 1 kW)



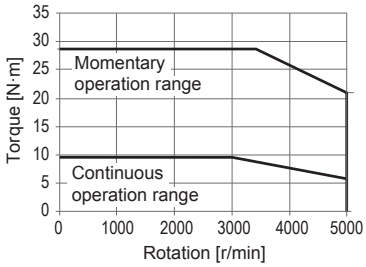
R88M-1L1K530C (400 V, 1.5 kW)



R88M-1L2K030C (400 V, 2 kW)



R88M-1L3K030C (400 V, 3 kW)



2000 r/min servo motors, 230 V/400 V

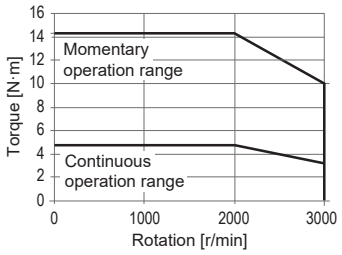
Ratings and specifications

Voltage			230 V		400 V					
Servo motor model: R88M-1□		23-bit incremental encoder	M1K020H-□	M1K520H-□						
		23-bit absolute encoder	M1K020T-□	M1K520T-□	M40020C-□	M60020C-□	M1K020C-□	M1K520C-□	M2K020C-□	M3K020C-□
Rated output		W	1000	1500	400	600	1000	1500	2000	3000
Rated torque		Nm	4.77	7.16	1.91	2.86	4.77	7.16	9.55	14.3
Instantaneous peak torque		Nm	14.3	21.5	5.73	8.59	14.3	21.5	28.7	43.0
Rated current		A (rms)	5.2	8.6	1.1	1.6	2.9	4.1	5.7	8.6
Instantaneous max. current		A (rms)	16.9	28.4	3.9	5.5	9.4	13.5	19.8	28.3
Rated speed		min^{-1}	2000							
Max. speed		min^{-1}	3000							
Torque constant		N·m/A	0.93	0.83	1.75	1.84	1.69	1.75		1.74
Rotor moment of inertia		$kg·m^2x10^{-4}$ (without brake)	6.0042	9.0042	2.5042	3.9042	6.0042	9.0042	12.2042	15.3122
		$kg·m^2x10^{-4}$ (with brake)	6.5042	9.5042	2.8472	4.2472	6.5042	9.5042	12.7042	17.4122
Electrical time constant		ms	13.0	15.0	6.8	7.8	13.0	13.0	14.0	20.0
Allowable radial load		N	490							784
Allowable thrust load		N	196							343
Weight		kg (without brake)	6.6	8.5	3.9	4.7	6.6	8.5	10.0	12.0
		kg (with brake)	8.6	10.5	4.8	5.8	8.6	10.5	12.0	15.0
Brake specifications	Excitation voltage*1		24 VDC ±10%							
	Holding brake moment of inertia J	$kg·m^2x10^{-4}$	0.5		0.343		0.5			2.1
	Current consumption (at 20°C)	A	0.51		0.3		0.51		0.66	0.6
	Static friction torque	Nm (minimum)	9.0		3.92		9.0		12.0	16.0
Basic specifications	Insulation class		Type F							
	Ambient operating/storage temperature		0 to 40°C/-20 to 65°C							
	Ambient operating/storage humidity		20 to 90% (non-condensing)							
	Atmosphere		No corrosive gases							
	Insulation resistance		10 MΩ min. at 500 VDC between the power terminals and FG terminal							
	Vibration resistance		Vibration acceleration of 49 m/s^2							
	Impact resistance		Acceleration of 98 m/s^2 max. 3 times each in X, Y and Z directions							
	Enclosure		IP67 (except for through-shaft parts when connectors are inserted)							

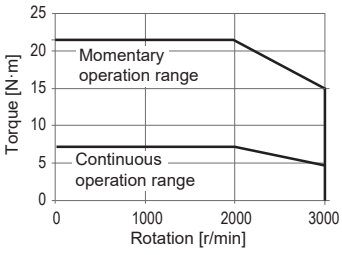
*1 This is a non-excitable brake (it is released when excitation voltage is applied).

Torque-speed characteristics

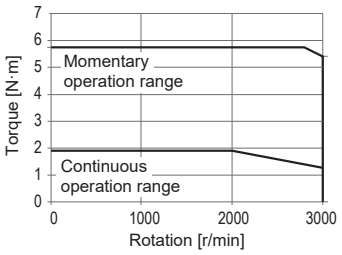
R88M-1M1K020H/T (230 V, 1 kW)



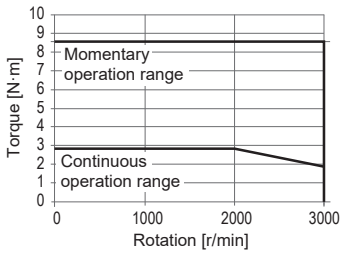
R88M-1M1K520H/T (230 V, 1.5 kW)



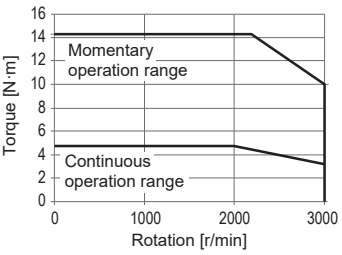
R88M-1M40020C (400 V, 400 W)



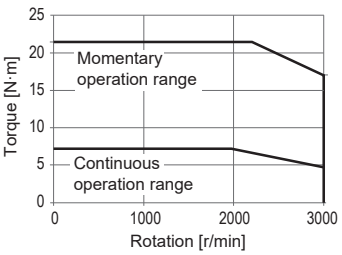
R88M-1M60020C (400 V, 600 W)



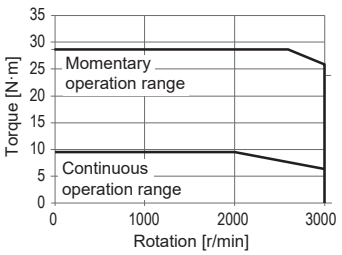
R88M-1M1K020C (400 V, 1 kW)



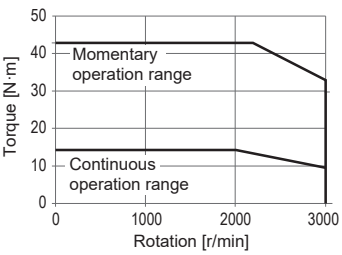
R88M-1M1K520C (400 V, 1.5 kW)



R88M-1M2K020C (400 V, 2 kW)



R88M-1M3K020C (400 V, 3 kW)



1000 r/min servo motors, 230 V/400 V

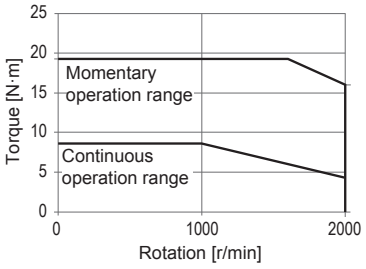
Ratings and specifications

Voltage			230 V	400 V		
Servo motor model: R88M-1□		23-bit absolute encoder	M90010T-□	M90010C-□	M2K010C-□	M3K010C-□
Rated output		W	900		2000	3000
Rated torque		Nm	8.59		19.1	28.7
Instantaneous peak torque		Nm	19.3		47.7	71.7
Rated current		A (rms)	6.7	3.6	7.1	10.6
Instantaneous max. current		A (rms)	16.9	9.0	19.5	27.7
Rated speed		min^{-1}	1000			
Max. speed		min^{-1}	2000			
Torque constant		N·m/A	1.28	2.41	3.00	2.97
Rotor moment of inertia		$kg·m^2x10^{-4}$ (without brake)	9.0042		40.0122	68.0122
		$kg·m^2x10^{-4}$ (with brake)	9.5042		45.1122	73.1122
Electrical time constant		ms	15.0	13.0	16.0	19.0
Allowable radial load		N	686		1176	1470
Allowable thrust load		N	196		490	
Weight		kg (without brake)	8.5		18.0	28.0
		kg (with brake)	10.5		22.0	33.0
Brake specifications	Excitation voltage*1		24 VDC ±10%			
	Holding brake moment of inertia J	$kg·m^2x10^{-4}$	0.5		5.1	
	Current consumption (at 20°C)	A	0.51		1.2	1.0
	Static friction torque	Nm (minimum)	9.0		22.0	42.0
Basic specifications	Insulation class		Type F			
	Ambient operating/storage temperature		0 to 40°C/-20 to 65°C			
	Ambient operating/storage humidity		20 to 90% (non-condensing)			
	Atmosphere		No corrosive gases			
	Insulation resistance		10 MΩ min. at 500 VDC between the power terminals and FG terminal			
	Vibration resistance		Vibration acceleration of 49 m/s^2			
	Impact resistance		Acceleration of 98 m/s^2 max. 3 times each in X, Y and Z directions			
	Enclosure		IP67 (except for through-shaft parts when connectors are inserted)			

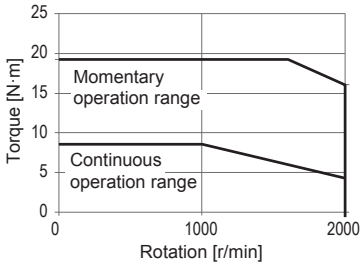
*1 This is a non-excitable brake (it is released when excitation voltage is applied).

Torque-speed characteristics

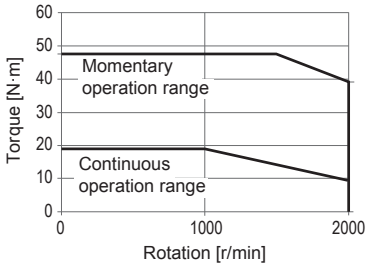
R88M-1M90010T (230 V, 900 W)



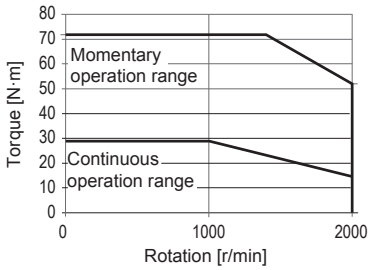
R88M-1M90010C (400 V, 900 W)



R88M-1M2K010C (400 V, 2 kW)



R88M-1M3K010C (400 V, 3 kW)

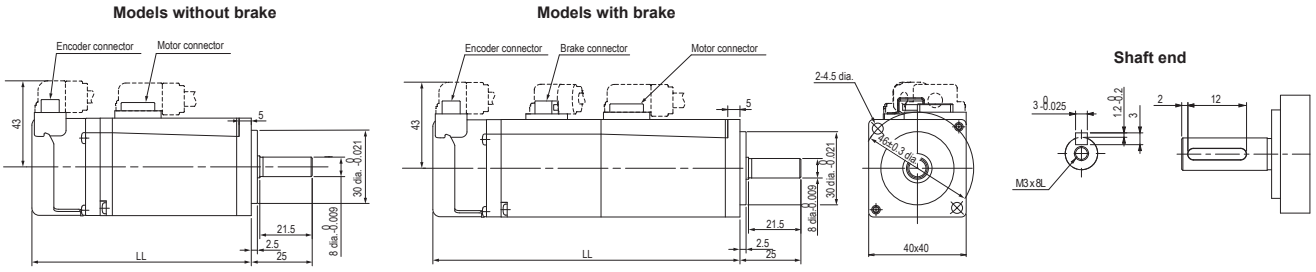


Dimensions

Servo motors

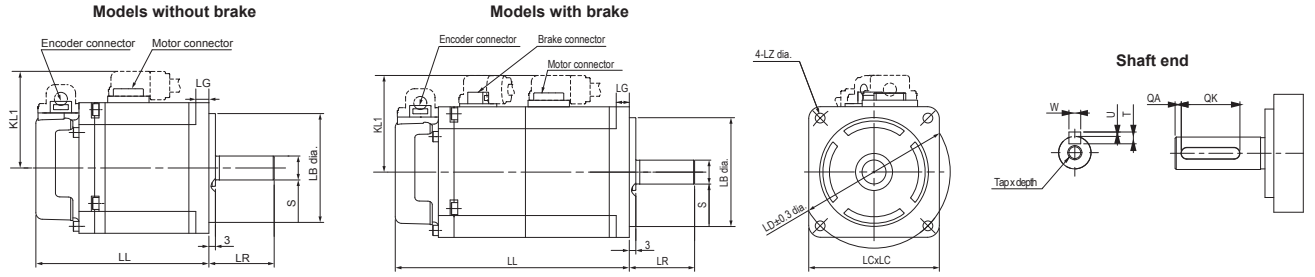
Type 3000 r/min motors (230 V, 100 W)

Dimensions (mm)	Without brake	With brake	Approx. mass (kg)	
Model: R88M-1□	LL	LL	Without brake	With brake
M10030(H/T)-□S2	90	126	0.52	0.77



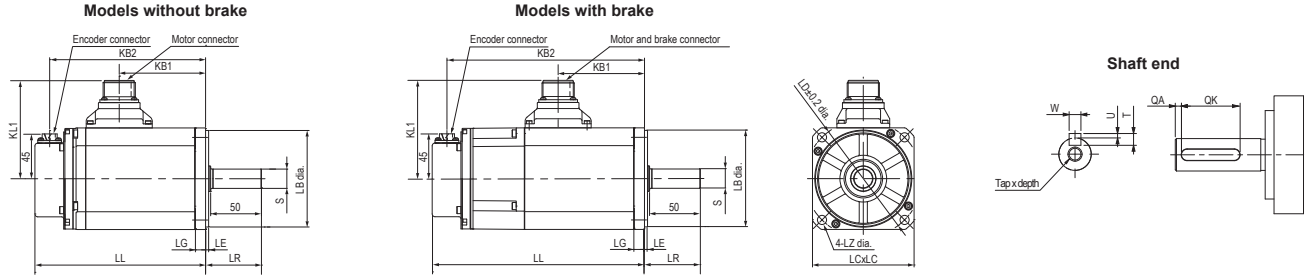
Type 3000 r/min motors (230 V, 200 W to 750 W)

Dimensions (mm)	Without brake		With brake		LR	Flange surface					Shaft end							Approx. mass (kg)	
Model: R88M-1□	LL	KL1	LL	KL1		LB	LC	LD	LG	LZ	S	QA	QK	W	U	T	Tap x depth	Without brake	With brake
M20030(H/T)-□S2	79.5	52.6	107.5	52.6	30	50 dia. $^{0}_{-0.025}$	60	70	6	4.5	11 dia. $^{0}_{-0.011}$	2	20	4 $^{0}_{-0.03}$	1.5 $^{0}_{-0.2}$	4	M4 x 10L	1.0	1.3
M40030(H/T)-□S2	105.5		133.5								14 dia. $^{0}_{-0.011}$			5 $^{0}_{-0.03}$	2 $^{0}_{-0.2}$	5	M5 x 12L	1.4	1.9
M75030(H/T)-□S2	117.3	63.2	153	63.2	35	70 dia. $^{0}_{-0.03}$	80	90	8	6	19 dia. $^{0}_{-0.013}$	3	24	6 $^{0}_{-0.03}$	2.5 $^{0}_{-0.2}$	6		2.9	3.9



Type 3000 r/min motors (230 V, 1 kW to 1.5 kW / 400 V, 750 W to 3 kW)

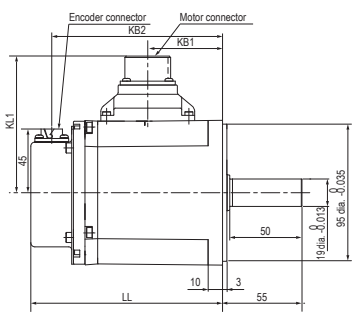
Dimensions (mm)	Without brake				With brake				LR	Flange surface						Shaft end							Approx. mass (kg)	
Model: R88M-1□	LL	KB1	KB2	KL1	LL	KB1	KB2	KL1		LB	LC	LD	LE	LG	LZ	S	QA	QK	W	U	T	Tap x depth	Without brake	With brake
L1K030(H/T)-□S2	168	85	153	97	209	85	194	97	55	95 dia. $^{0}_{-0.035}$	100	115	3	10	9	19 dia. $^{0}_{-0.013}$	3	42	6 $^{0}_{-0.03}$	2.5 $^{0}_{-0.2}$	6	M5 x 12L	5.7	7.4
L1K530(H/T)-□S2																								
L75030C-□S2	139	56	124		180	56	165	104															4.1	5.8
L1K030C-□S2	168	85	153		209	85	194																5.7	7.4
L1K530C-□S2																								
L2K030C-□S2	179	96	164		220	96	205																6.4	8.1
L3K030C-□S2	184	112	169	116	230	112	215	119		110 dia. $^{0}_{-0.035}$	130	145	4	12	9	22 dia. $^{0}_{-0.013}$			8 $^{0}_{-0.036}$	3 $^{0}_{-0.4}$	7		11.5	12.5



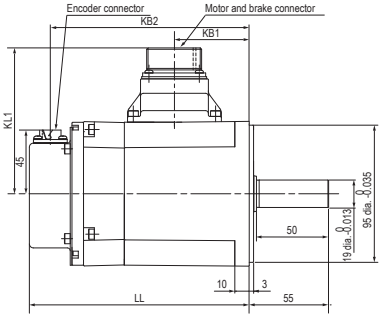
Type 2000 r/min motors (400 V, 400 W to 600 W)

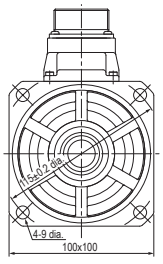
Dimensions (mm)	Without brake				With brake				Approx. mass (kg)	
Model: R88M-1□	LL	KB1	KB2	KL1	LL	KB1	KB2	KL1	Without brake	With brake
M40020C-□S2	134.8	52	120.5	97	152.3	52	138	104	3.9	4.8
M60020C-□S2	151.8	69	137.5		169.3	69	155		4.7	5.8

Models without brake

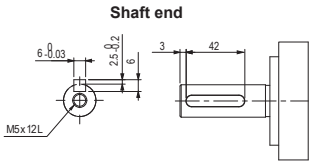


Models with brake





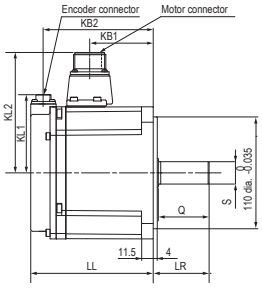
Shaft end



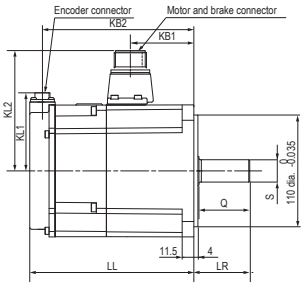
Type 2000 r/min motors (230 V, 1 kW to 1.5 kW / 400 V, 1 kW to 3 kW)

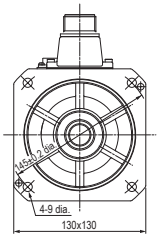
Dimensions (mm)	Without brake					With brake					LR	Shaft end							Approx. mass (kg)	
Model: R88M-1□	LL	KB1	KB2	KL1	KL2	LL	KB1	KB2	KL1	KL2		S	Q	QA	QK	W	U	T	Tap x depth	Without brake	With brake
M1K020(H/T)-□S2	120.5	63	109	76	118	162	63	149	76	118	55	22 dia. 0 -0.013	50	3	42	8 0 -0.036	3 0 -0.4	7	M5 x 12L	6.6	8.6
M1K520(H/T)-□S2	138	79	125			179	79	166												8.5	10.5
M1K020C-□S2	120.5	63	109			162	64	150		119										6.6	8.6
M1K520C-□S2	138	79	125			179	81	167												8.5	10.5
M2K020C-□S2	160	98	148			201	99	189												10.0	12.0
M3K020C-□S2	191	119	176	45	116	234	118	219	45	119	65	24 dia. 0 -0.013	60		52				M8 x 20L	12.0	15.0

Models without brake

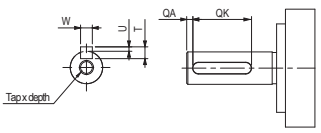


Models with brake





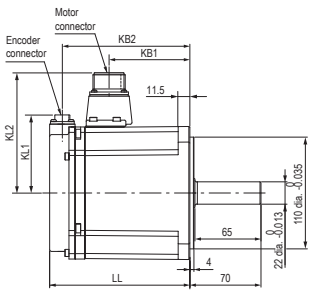
Shaft end



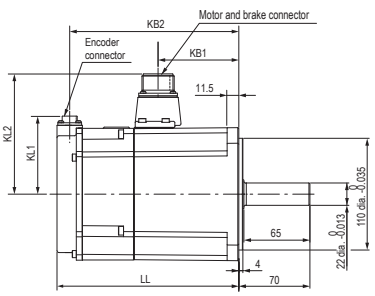
Type 1000 r/min motors (230 V, 900 W / 400 V, 900 W)

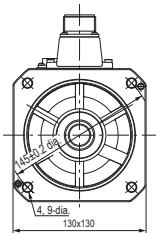
Dimensions (mm)	Without brake					With brake					Approx. mass (kg)	
Model: R88M-1□	LL	KB1	KB2	KL1	KL2	LL	KB1	KB2	KL1	KL2	Without brake	With brake
M90010T-□S2	138	79	125	76	118	179	79	166	76	118	8.5	10.5
M90010C-□S2							81	167		117		

Models without brake

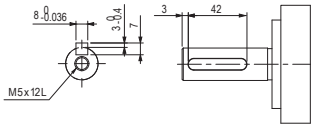


Models with brake





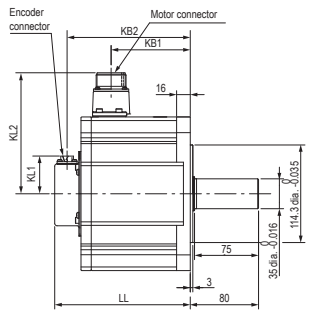
Shaft end



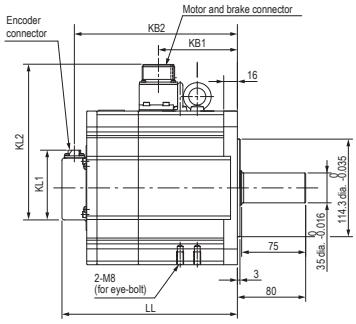
Type 1000 r/min motors (400 V, 2 kW)

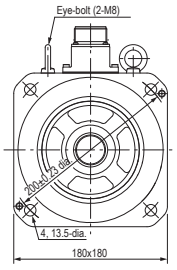
Dimensions (mm)	Without brake					With brake					Approx. mass (kg)	
Model: R88M-1□	LL	KB1	KB2	KL1	KL2	LL	KB1	KB2	KL1	KL2	Without brake	With brake
M2K010C-□S2	159	93	145	45	141	206	92	191	45	144	18.0	22.0

Models without brake

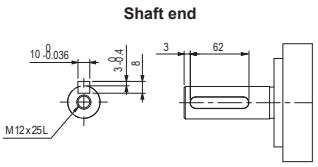


Models with brake





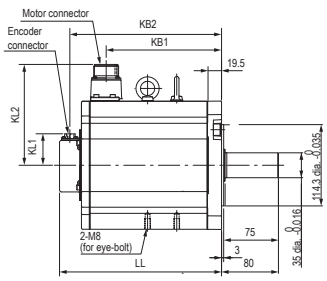
Shaft end



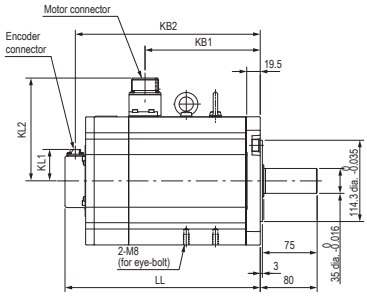
Type 1000 r/min motors (400 V, 3 kW)

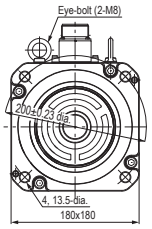
Dimensions (mm)	Without brake					With brake					Approx. mass (kg)	
Model: R88M-1□	LL	KB1	KB2	KL1	KL2	LL	KB1	KB2	KL1	KL2	Without brake	With brake
M3K010C-□S2	228	162	213	45	141	274	162	260	45	144	28.0	33.0

Models without brake

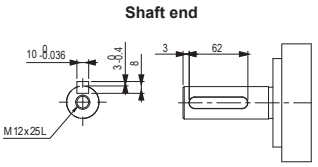


Models with brake



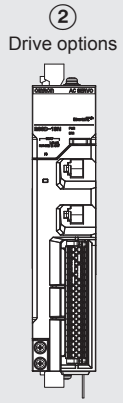


Shaft end

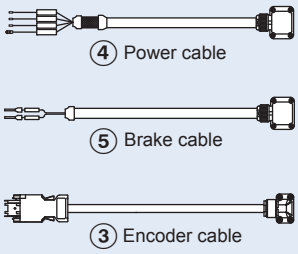


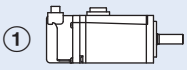
Ordering information

(Refer to servo drive chapter)



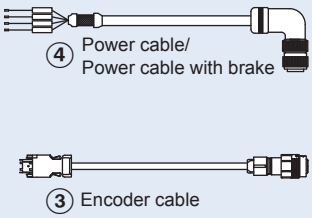
1S servo motor (Flange size 80 mm or less)

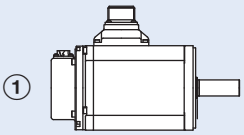




3000 rpm (100 W - 750 W)

1S servo motor (Flange size 100 mm or more)





3000 rpm (1 kW - 3 kW)
2000 rpm (400 W - 3 kW)
1000 rpm (900 W - 3 kW)

Servo motors

① Select motor from R88M-1□ family using motor tables in next pages.

Servo drives

② Refer to the 1S servo drive chapter for detailed drive specifications and selection of drive accessories.

Servo motors

Servo motors 3000 r/min (100 W to 3 kW)

Symbol	Specifications						Model	Compatible 1S servo drive
	Voltage	Encoder and design		Rated torque	Capacity	Flange size		
①	230 V	Incremental encoder (23-bit) Straight shaft with key and tap	Without brake	0.318 Nm	100 W	40 mm	R88M-1M10030H-S2	R88D-1SN01H-ECT
				0.637 Nm	200 W	60 mm	R88M-1M20030H-S2	R88D-1SN02H-ECT
				1.27 Nm	400 W		R88M-1M40030H-S2	R88D-1SN04H-ECT
				2.39 Nm	750 W	80 mm	R88M-1M75030H-S2	R88D-1SN08H-ECT
				3.18 Nm	1 kW	100 mm	R88M-1L1K030H-S2	R88D-1SN15H-ECT
				4.77 Nm	1.5 kW		R88M-1L1K530H-S2	R88D-1SN15H-ECT
			With brake	0.318 Nm	100 W	40 mm	R88M-1M10030H-BS2	R88D-1SN01H-ECT
				0.637 Nm	200 W	60 mm	R88M-1M20030H-BS2	R88D-1SN02H-ECT
				1.27 Nm	400 W		R88M-1M40030H-BS2	R88D-1SN04H-ECT
				2.39 Nm	750 W	80 mm	R88M-1M75030H-BS2	R88D-1SN08H-ECT
				3.18 Nm	1 kW	100 mm	R88M-1L1K030H-BS2	R88D-1SN15H-ECT
				4.77 Nm	1.5 kW		R88M-1L1K530H-BS2	R88D-1SN15H-ECT
		Absolute encoder (23-bit) Straight shaft with key and tap	Without brake	0.318 Nm	100 W	40 mm	R88M-1M10030T-S2	R88D-1SN01H-ECT
				0.637 Nm	200 W	60 mm	R88M-1M20030T-S2	R88D-1SN02H-ECT
				1.27 Nm	400 W		R88M-1M40030T-S2	R88D-1SN04H-ECT
				2.39 Nm	750 W	80 mm	R88M-1M75030T-S2	R88D-1SN08H-ECT
				3.18 Nm	1 kW	100 mm	R88M-1L1K030T-S2	R88D-1SN15H-ECT
				4.77 Nm	1.5 kW		R88M-1L1K530T-S2	R88D-1SN15H-ECT
			With brake	0.318 Nm	100 W	40 mm	R88M-1M10030T-BS2	R88D-1SN01H-ECT
				0.637 Nm	200 W	60 mm	R88M-1M20030T-BS2	R88D-1SN02H-ECT
				1.27 Nm	400 W		R88M-1M40030T-BS2	R88D-1SN04H-ECT
				2.39 Nm	750 W	80 mm	R88M-1M75030T-BS2	R88D-1SN08H-ECT
				3.18 Nm	1 kW	100 mm	R88M-1L1K030T-BS2	R88D-1SN15H-ECT
				4.77 Nm	1.5 kW		R88M-1L1K530T-BS2	R88D-1SN15H-ECT

Symbol	Specifications						Model	Compatible 1S servo drive
	Voltage	Encoder and design		Rated torque	Capacity	Flange size		
①	400 V	Absolute encoder (23-bit) Straight shaft with key and tap	Without brake	2.39 Nm	750 W	100 mm	R88M-1L75030C-S2	R88D-1SN10F-ECT
				3.18 Nm	1 kW		R88M-1L1K030C-S2	R88D-1SN10F-ECT
				4.77 Nm	1.5 kW		R88M-1L1K530C-S2	R88D-1SN15F-ECT
				6.37 Nm	2 kW		R88M-1L2K030C-S2	R88D-1SN20F-ECT
				9.55 Nm	3 kW	130 mm	R88M-1L3K030C-S2	R88D-1SN30F-ECT
			With brake	2.39 Nm	750 W	100 mm	R88M-1L75030C-BS2	R88D-1SN10F-ECT
				3.18 Nm	1 kW		R88M-1L1K030C-BS2	R88D-1SN10F-ECT
				4.77 Nm	1.5 kW		R88M-1L1K530C-BS2	R88D-1SN15F-ECT
				6.37 Nm	2 kW		R88M-1L2K030C-BS2	R88D-1SN20F-ECT
				9.55 Nm	3 kW	130 mm	R88M-1L3K030C-BS2	R88D-1SN30F-ECT

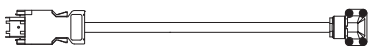
Servo motors 2000 r/min (400 W to 3 kW)

Symbol	Specifications						Model	Compatible 1S servo drive
	Voltage	Encoder and design		Rated torque	Capacity	Flange size		
①	230 V	Incremental encoder (23-bit) Straight shaft with key and tap	Without brake	4.77 Nm	1 kW	130 mm	R88M-1M1K020H-S2	R88D-1SN15H-ECT
				7.16 Nm	1.5 kW		R88M-1M1K520H-S2	R88D-1SN15H-ECT
			With brake	4.77 Nm	1 kW		R88M-1M1K020H-BS2	R88D-1SN15H-ECT
				7.16 Nm	1.5 kW		R88M-1M1K520H-BS2	R88D-1SN15H-ECT
		Absolute encoder (23-bit) Straight shaft with key and tap	Without brake	4.77 Nm	1 kW		R88M-1M1K020T-S2	R88D-1SN15H-ECT
				7.16 Nm	1.5 kW		R88M-1M1K520T-S2	R88D-1SN15H-ECT
			With brake	4.77 Nm	1 kW		R88M-1M1K020T-BS2	R88D-1SN15H-ECT
				7.16 Nm	1.5 kW		R88M-1M1K520T-BS2	R88D-1SN15H-ECT
	400 V		Without brake	1.91 Nm	400 W	100 mm	R88M-1M40020C-S2	R88D-1SN06F-ECT
				2.86 Nm	600 W		R88M-1M60020C-S2	R88D-1SN06F-ECT
				4.77 Nm	1 kW	130 mm	R88M-1M1K020C-S2	R88D-1SN10F-ECT
				7.16 Nm	1.5 kW		R88M-1M1K520C-S2	R88D-1SN15F-ECT
				9.55 Nm	2 kW		R88M-1M2K020C-S2	R88D-1SN20F-ECT
				14.3 Nm	3 kW		R88M-1M3K020C-S2	R88D-1SN30F-ECT
			With brake	1.91 Nm	400 W	100 mm	R88M-1M40020C-BS2	R88D-1SN06F-ECT
				2.86 Nm	600 W		R88M-1M60020C-BS2	R88D-1SN06F-ECT
				4.77 Nm	1 kW	130 mm	R88M-1M1K020C-BS2	R88D-1SN10F-ECT
				7.16 Nm	1.5 kW		R88M-1M1K520C-BS2	R88D-1SN15F-ECT
				9.55 Nm	2 kW		R88M-1M2K020C-BS2	R88D-1SN20F-ECT
				14.3 Nm	3 kW		R88M-1M3K020C-BS2	R88D-1SN30F-ECT

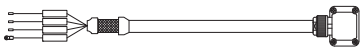
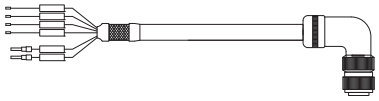
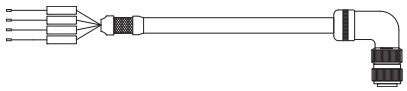
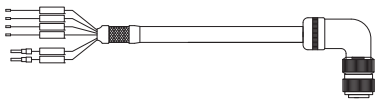
Servo motors 1000 r/min (900 W to 3 kW)

Symbol	Specifications						Model	Compatible 1S servo drive
	Voltage	Encoder and design		Rated torque	Capacity	Flange size		
①	230 V	Absolute encoder (23-bit) Straight shaft with key and tap	Without brake	8.59 Nm	900 W	130 mm	R88M-1M90010T-S2	R88D-1SN15H-ECT
			With brake	8.59 Nm	900 W		R88M-1M90010T-BS2	R88D-1SN15H-ECT
	400 V		Without brake	8.59 Nm	900 W		R88M-1M90010C-S2	R88D-1SN10F-ECT
				19.1 Nm	2 kW	180 mm	R88M-1M2K010C-S2	R88D-1SN20F-ECT
				28.7 Nm	3 kW		R88M-1M3K010C-S2	R88D-1SN30F-ECT
			With brake	8.59 Nm	900 W	130 mm	R88M-1M90010C-BS2	R88D-1SN10F-ECT
				19.1 Nm	2 kW	180 mm	R88M-1M2K010C-BS2	R88D-1SN20F-ECT
				28.7 Nm	3 kW		R88M-1M3K010C-BS2	R88D-1SN30F-ECT

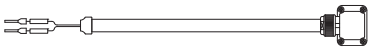
Encoder cables

Symbol	Specifications		Model	Appearance
③	Encoder cable for servo motors R88M-1M(100/200/400/750)30(H/T)-□	1.5 m	R88A-CR1A001-5CF-E	
		3 m	R88A-CR1A003CF-E	
		5 m	R88A-CR1A005CF-E	
		10 m	R88A-CR1A010CF-E	
		15 m	R88A-CR1A015CF-E	
		20 m	R88A-CR1A020CF-E	
	Encoder cable for servo motors R88M-1L(1K0/1K5)30(H/T)-□ R88M-1L(750/1K0/1K5/2K0/3K0)30C-□ R88M-1M(1K0/1K5)20(H/T)-□ R88M-1M(400/600/1K0/1K5/2K0/3K0)20C-□ R88M-1M90010T-□ R88M-1M(900/2K0/3K0)10C-□	1.5 m	R88A-CR1B001-5NF-E	
		3 m	R88A-CR1B003NF-E	
		5 m	R88A-CR1B005NF-E	
		10 m	R88A-CR1B010NF-E	
		15 m	R88A-CR1B015NF-E	
		20 m	R88A-CR1B020NF-E	

Power cables

Symbol	Specifications			Model	Appearance
④	For 230 V servo motors R88M-1M(100/200/400/750)30(H/T)-□S2 **Note:** For servo motors with brake R88M-1M(100/200/400/750)30(H/T)-BS2, the separate brake cable R88A-CA1A□□□BF-E is needed.	Without brake	1.5 m	R88A-CA1A001-5SF-E	
			3 m	R88A-CA1A003SF-E	
			5 m	R88A-CA1A005SF-E	
			10 m	R88A-CA1A010SF-E	
			15 m	R88A-CA1A015SF-E	
			20 m	R88A-CA1A020SF-E	
	For 230 V servo motors R88M-1L(1K0/1K5)30(H/T)-□S2 R88M-1M(1K0/1K5)20(H/T)-□S2 R88M-1M90010T-□S2	Without brake	1.5 m	R88A-CA1C001-5SF-E	
			3 m	R88A-CA1C003SF-E	
			5 m	R88A-CA1C005SF-E	
			10 m	R88A-CA1C010SF-E	
			15 m	R88A-CA1C015SF-E	
			20 m	R88A-CA1C020SF-E	
		With brake	1.5 m	R88A-CA1C001-5BF-E	
			3 m	R88A-CA1C003BF-E	
			5 m	R88A-CA1C005BF-E	
			10 m	R88A-CA1C010BF-E	
			15 m	R88A-CA1C015BF-E	
			20 m	R88A-CA1C020BF-E	
	For 400 V servo motors R88M-1L(750/1K0/1K5/2K0)30C-□S2 R88M-1M(400/600/1K0/1K5/2K0)20C-□S2 R88M-1M90010C-□S2	Without brake	1.5 m	R88A-CA1C001-5SF-E	
			3 m	R88A-CA1C003SF-E	
			5 m	R88A-CA1C005SF-E	
			10 m	R88A-CA1C010SF-E	
			15 m	R88A-CA1C015SF-E	
			20 m	R88A-CA1C020SF-E	
		With brake	1.5 m	R88A-CA1E001-5BF-E	
			3 m	R88A-CA1E003BF-E	
			5 m	R88A-CA1E005BF-E	
			10 m	R88A-CA1E010BF-E	
			15 m	R88A-CA1E015BF-E	
			20 m	R88A-CA1E020BF-E	
	For 400 V servo motors R88M-1L3K030C-□S2 R88M-1M3K020C-□S2 R88M-1M(2K0/3K0)10C-□S2	Without brake	1.5 m	R88A-CA1E001-5SF-E	
			3 m	R88A-CA1E003SF-E	
			5 m	R88A-CA1E005SF-E	
			10 m	R88A-CA1E010SF-E	
			15 m	R88A-CA1E015SF-E	
			20 m	R88A-CA1E020SF-E	
		With brake	1.5 m	R88A-CA1E001-5BF-E	
			3 m	R88A-CA1E003BF-E	
			5 m	R88A-CA1E005BF-E	
			10 m	R88A-CA1E010BF-E	
			15 m	R88A-CA1E015BF-E	
			20 m	R88A-CA1E020BF-E	

Brake cables (for 230 V, 100 W to 750 W servo motors)

Symbol	Specifications		Model	Appearance
⑤	Brake cable only For 230 V servo motors with brake R88M-1M(100/200/400/750)30(H/T)-BS2	1.5 m	R88A-CA1A001-5BF-E	
		3 m	R88A-CA1A003BF-E	
		5 m	R88A-CA1A005BF-E	
		10 m	R88A-CA1A010BF-E	
		15 m	R88A-CA1A015BF-E	
		20 m	R88A-CA1A020BF-E	

Connectors for encoder, power and brake cables

Specifications		Applicable servo motor	Model
Connectors for encoder cables	Drive side (CN2)	All models	R88A-CN101R
	Motor side	R88M-1M(100/200/400/750)30(H/T)-□	R88A-CNK02R
		R88M-1L(1K0/1K5)30(H/T)-□ R88M-1L(750/1K0/1K5/2K0/3K0)30C-□ R88M-1M(1K0/1K5)20(H/T)-□ R88M-1M(400/600/1K0/1K5/2K0/3K0)20C-□ R88M-1M90010T-□ R88M-1M(900/2K0/3K0)10C-□	R88A-CN104R
Connectors for power cables	Motor side	R88M-1M(100/200/400/750)30(H/T)-_S2	R88A-CN111A
		R88M-1L(1K0/1K5)30(H/T)-S2 R88M-1M(1K0/1K5)20(H/T)-S2 R88M-1M90010T-S2 R88M-1L(750/1K0/1K5/2K0)30C-S2 R88M-1M(400/600/1K0/1K5/2K0)20C-S2 R88M-1M90010C-S2	MS3108E20-4S
		R88M-1L(1K0/1K5)30(H/T)-BS2 R88M-1M(1K0/1K5)20(H/T)-BS2 R88M-1M90010T-BS2	MS3108E20-18S
		R88M-1L3K030C-S2 R88M-1M3K020C-S2 R88M-1M(2K0/3K0)10C-S2	MS3108E22-22S
		R88M-1L(750/1K0/1K5/2K0/3K0)30C-BS2 R88M-1M(400/600/1K0/1K5/2K0/3K0)20C-BS2 R88M-1M(900/2K0/3K0)10C-BS2	MS3108E24-11S
Connectors for brake cables	Motor side	R88M-1M(100/200/400/750)30(H/T)-BS2	R88A-CN111B

Cable clamp (spare parts)

Applicable 1S power cable	Model
230 V, 100 W to 750 W models	R88A-SC011S-E
230 V, 1.5 kW model 400 V, 600 W to 3 kW models	R88A-SC021S-E

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Cat. No. SysCat_I189E-EN-02 In the interest of product improvement, specifications are subject to change without notice.