
DataSheet

AC Servomotors/Drives G5-series Pulse Train Input Type

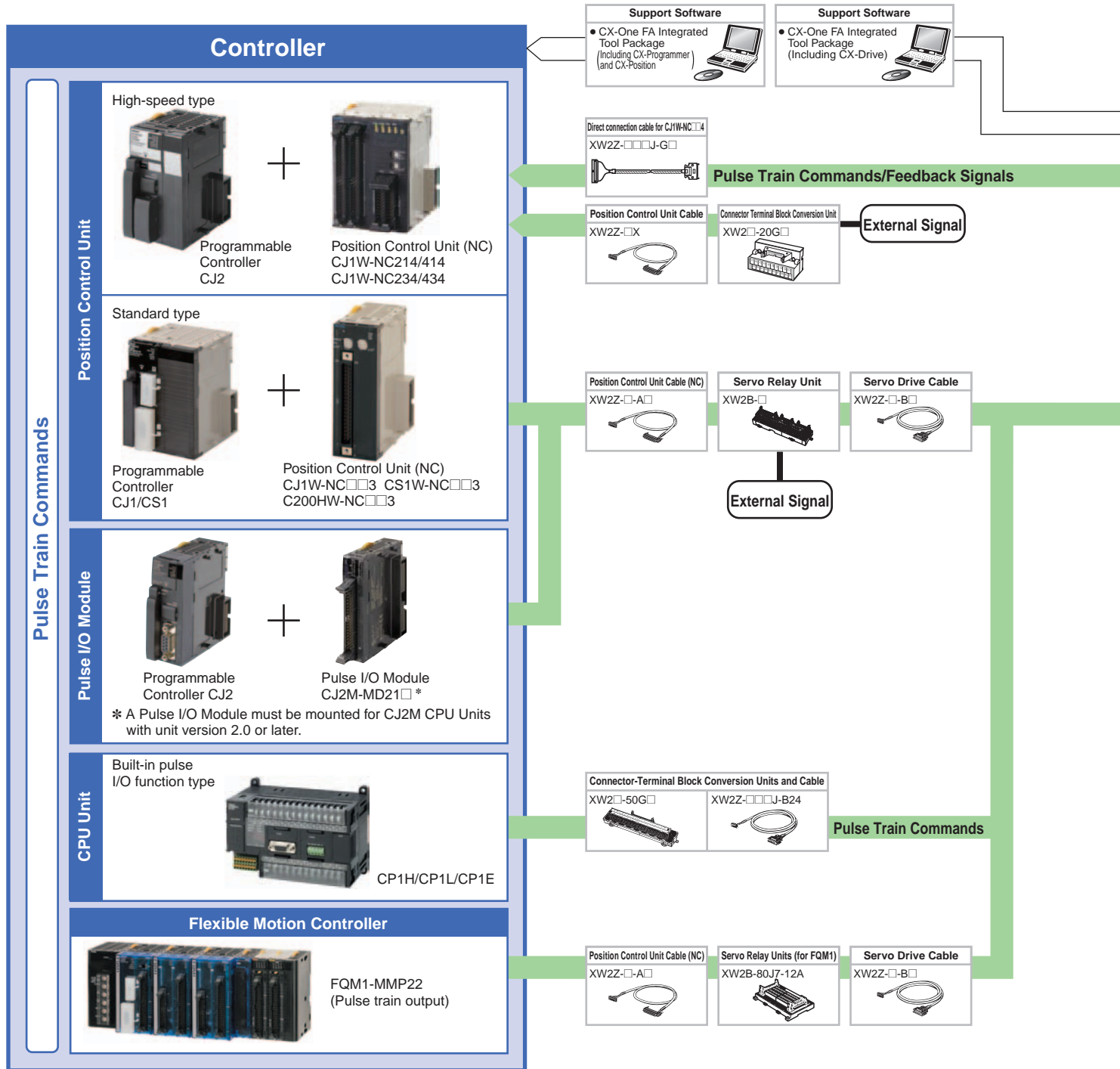
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G5-series Pulse Train Input Type AC Servomotors/Servo Drives

R88M-KE/R88D-KP

System Configuration





High-performance Servo Optimal for positioning Application.

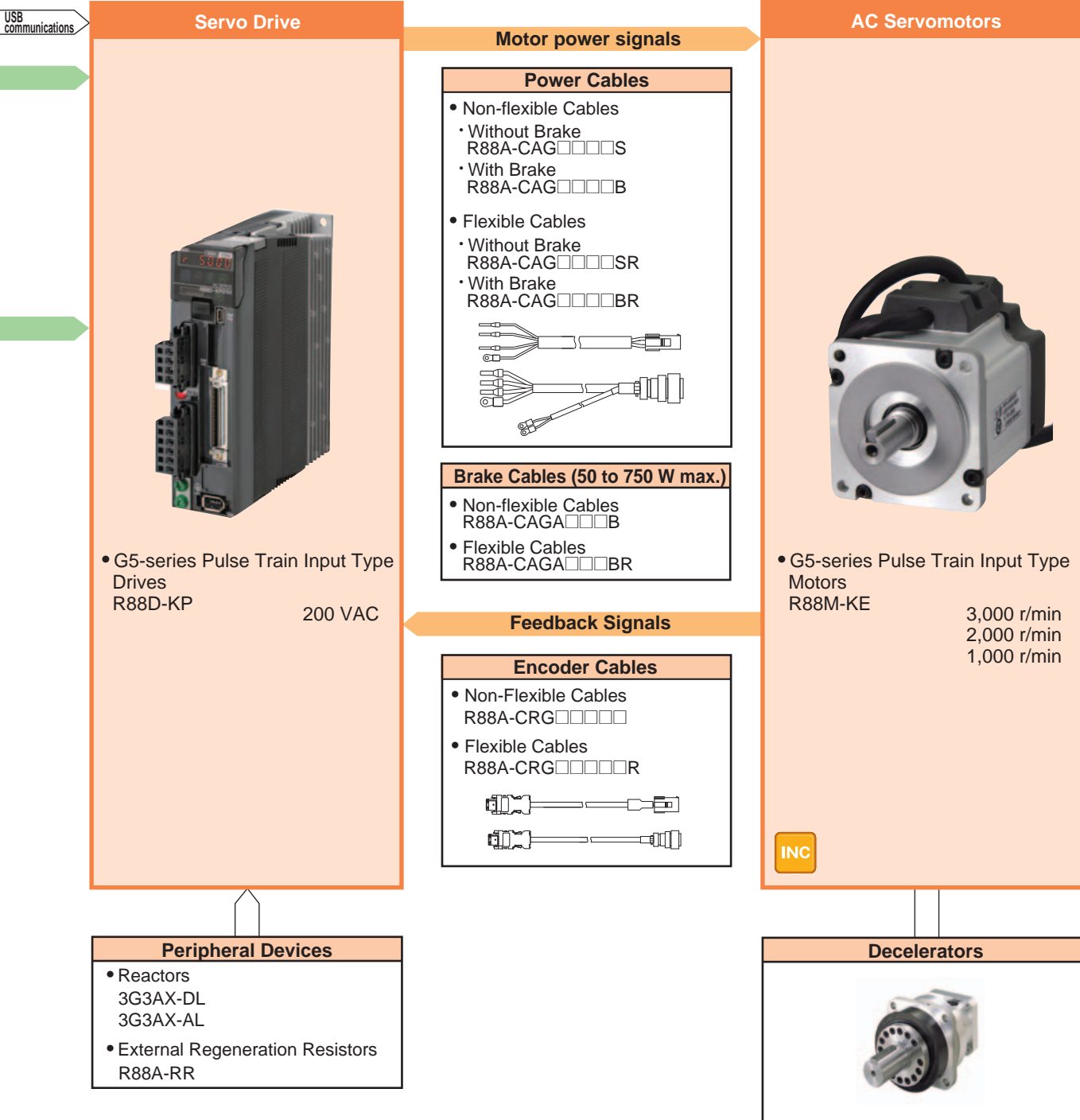
- Industry Top-class Tracking Performance.
Speed Response Frequency of 2 kHz.
- Outstanding Positioning Accuracy.
Featuring a 20-bit high-resolution incremental encoder.
- Easy Adjustment with Autotuning Function.
- Ideal for Applications That Require High Accuracy.
Improved vibration control function.

System Configuration

AC Servo Drive

AC Servomotor

Ordering Information



USB communications

Servo Drive



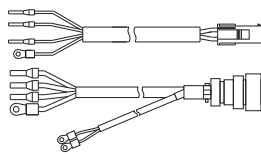
• G5-series Pulse Train Input Type Drives
R88D-KP

200 VAC

Motor power signals

Power Cables

- Non-flexible Cables
 - Without Brake
R88A-CAG□□□□S
 - With Brake
R88A-CAG□□□□B
- Flexible Cables
 - Without Brake
R88A-CAG□□□□SR
 - With Brake
R88A-CAG□□□□BR



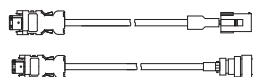
Brake Cables (50 to 750 W max.)

- Non-flexible Cables
R88A-CAGA□□□□B
- Flexible Cables
R88A-CAGA□□□□BR

Feedback Signals

Encoder Cables

- Non-Flexible Cables
R88A-CRG□□□□□
- Flexible Cables
R88A-CRG□□□□□R



AC Servomotors



• G5-series Pulse Train Input Type Motors
R88M-KE

3,000 r/min
2,000 r/min
1,000 r/min

INC

Peripheral Devices

- Reactors
3G3AX-DL
3G3AX-AL
- External Regeneration Resistors
R88A-RR

Decelerators



R88D-KP

Contents



- Ordering Information
- Specifications
 - General Specifications
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- Components and Functions
 - Servo Drive Part Names
 - Functions
- Dimensions

Ordering Information

Refer to the Ordering Information.

Specifications

General Specifications

Item		Specifications	
Ambient operating temperature and operating humidity		0 to +50°C, 20 to 85%RH max. (with no condensation)	
Storage ambient temperature and humidity		-20 to +65°C, 20 to 85%RH. (with no condensation) Maximum allowable temperature: 80°C for 72 hours maximum (with no condensation)	
Operating and storage atmosphere		No corrosive gases	
Vibration resistance		10 to 60 Hz and at an acceleration of 5.88 m/s ² or less (Not to be run continuously at the resonance point)	
Insulation resistance		Between power supply/power line terminals and FG terminal: 0.5 MΩ min. (at 500 VDC Megger)	
Dielectric strength		Between power supply/power line terminals and FG terminal: 1,500 VAC for 1 min at 50/60 Hz	
Protective structure		Built into panel	
International standard	EC directives	EMC directive	EN55011, EN61000-6-2, IEC61800-3
		Low voltage directive	EN61800-5-1
	UL standards		UL508C
	CSA standards		CSA22.2 No.14

Note: 1. The above items reflect individual evaluation testing. The results may differ under compound conditions.

Note: 2. Never perform dielectric strength or other megameter tests on the Servo Drive. Failure to follow this guideline may result in damaging the internal elements.

Note: 3. Depending on the operating conditions, some Servo Drive parts will require maintenance. For details, refer to the G5-series Pulse Train Input Type USER'S MANUAL. Man.No. I584

AC Servomotor/Drive G5-series Pulse Train Input Type

Characteristics

● Servo Drives with 200VAC Input Power for Single-phase/Three-phase input type

Item			R88D-KP01H	R88D-KP02H	R88D-KP04H	R88D-KP08H	R88D-KP10H	R88D-KP15H
Continuous output current (rms)			1.2A	1.6A	2.6A	4.1A	5.9A	9.4A
Input power supply	Main circuit	Power supply capacity	0.5KVA	0.5KVA	0.9KVA	1.3KVA	1.8KVA	2.3KVA
		Power supply voltage	Single-phase or Three-phase 200 to 240 VAC (170 to 264 V) 50/60 Hz					
		Rated current	1.6/0.9A *2	2.4/1.3A *2	4.1/2.4A *2	6.6/3.6A *2	9.1/5.2A *2	14.2/8.1A *2
		Heat value *1	14.3/13.7W *2	23/19W *2	33/24W *2	30/35.5W *2	57/49W *2	104/93W *2
	Control circuit	Power supply voltage	Single-phase 200 to 240 VAC (170 to 264 V) 50/60 Hz					
		Heat value *1	4W	4W	4W	4W	7W	7W
Weight			Approx. 0.8 kg	Approx. 0.8kg	Approx. 1.0kg	Approx. 1.6kg	Approx. 1.8kg	Approx. 1.8kg
Maximum applicable motor capacity			100W	200W	400W	750W	1kW	1.5kW
Applicable Servomotors	3,000 r/min Servomotors	INC	KE05030H KE10030H	KE20030H	KE40030H	KE75030H	–	KE1K030H KE1K530H
	2,000 r/min Servomotors	INC	–	–	–	–	KE1K020H	KE1K520H
	1,000 r/min Servomotors	INC	–	–	–	–	–	KE90010H

*1. The heat value is given for rated operation.

*2. The first value is for single-phase input power and the second value is for 3-phase input power.

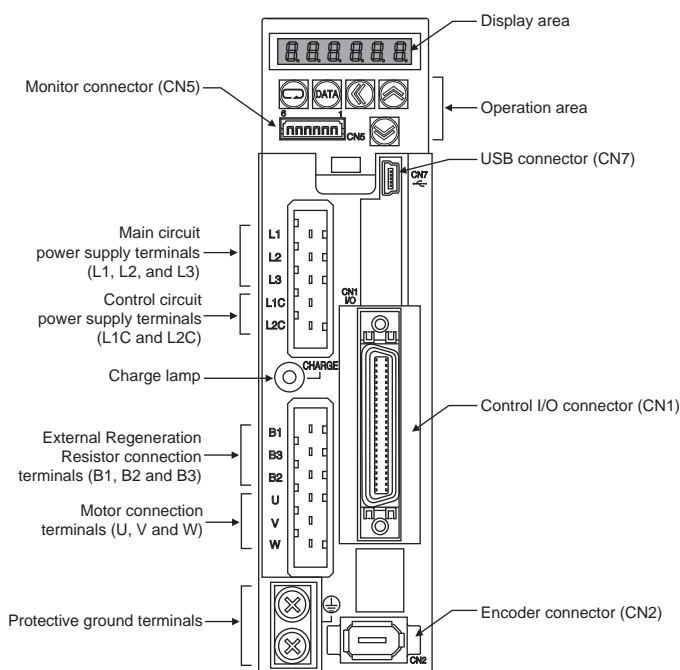
● Servo Drives with 200VAC Input Power for Three-phase input type

Item			R88D-KP20H	R88D-KP30H	R88D-KP50H
Continuous output current (rms)			13.4A	18.7A	33.0A
Input power supply	Main circuit	Power supply capacity	3.3KVA	4.5KVA	6.0KVA
		Power supply voltage	Three-phase 200 to 230 VAC (170 to 253 V) 50/60 Hz		
		Rated current	11.8A	15.1A	21.6A
		Heat value *1	139W	108W	328W
	Control circuit	Power supply voltage	Single-phase 200 to 230 VAC (170 to 253 V) 50/60 Hz		
		Heat value *1	10W	13W	13W
Weight			Approx.2.7kg	Approx.4.8kg	Approx.4.8kg
Maximum applicable motor capacity			2kW	3kW	5kW
Applicable Servomotors	3,000 r/min Servomotors	INC	KE2K030H	KE3K030H	KE4K030H KE5K030H
	2,000 r/min Servomotors	INC	KE2K020H	KE3K020H	KE4K020H KE5K020H
	1,000 r/min Servomotors	INC	–	KE2K010H	KE3K010H

*1. The heat value is given for rated operation.

Components and Functions

Servo Drive Part Names



Display area

A 6-digit 7-segment LED display shows the Servo Drive status, alarm codes, parameters, and other information.

Operation area

Monitors the parameter setting and driver condition.

Charge Lamp

Lits when the main circuit power supply is turned ON.

Control I/O Connector (CN1)

Used for command input signals and I/O signals.

Encoder connector (CN2)

Connector for the encoder installed in the Servomotor.

Monitor Connector (CN5)

Uses a specified cable to monitor the motor rotation speed, torque command value, etc.

USB connector (CN7)

Communications connector for the computer.

Functions

Basic control

Position control	Internally set speed control
Switching control	

Advanced control

Vibration control	Gain switching	Friction torque compensation function
Adaptive filter	Torque limit	Inertia ratio switching function
Notch filter	Sequence I/O signal	Hybrid Vibration Suppression Function
Electronic gear function	Forward and reverse drive prohibition functions	Feed-forward function
Encoder dividing function	Disturbance observer function	Instantaneous speed observer function
Brake interlock	Gain switching 3 function	

Other functions

Realtime autotuning

Manual tuning

Various parameters

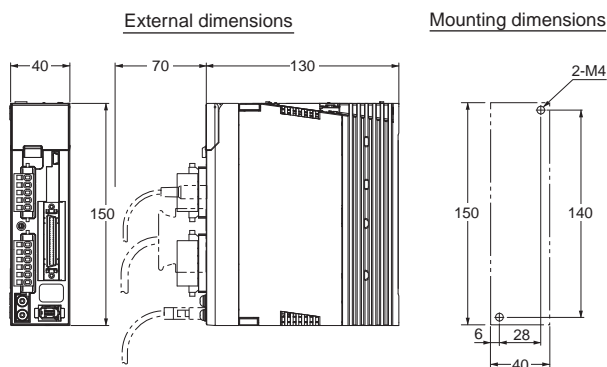
Basic Parameters	Interface Monitor Setting Parameters
Gain Parameters	Extended Parameters
Vibration Suppression Parameters	Special Parameters
Analog Control Parameters	

AC Servomotor/Drive G5-series Pulse Train Input Type

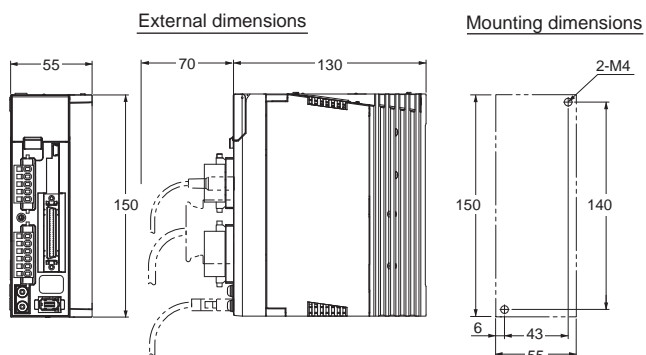
Dimensions

<Wall Mounting>

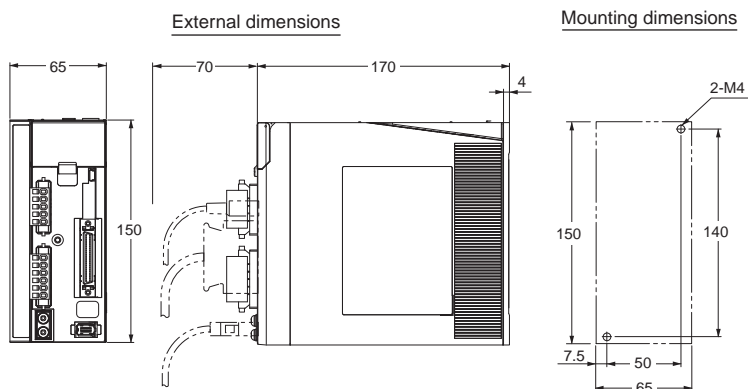
Single-phase/Three-phase 200 VAC R88D-KP01H/-KP02H (100 to 200W)



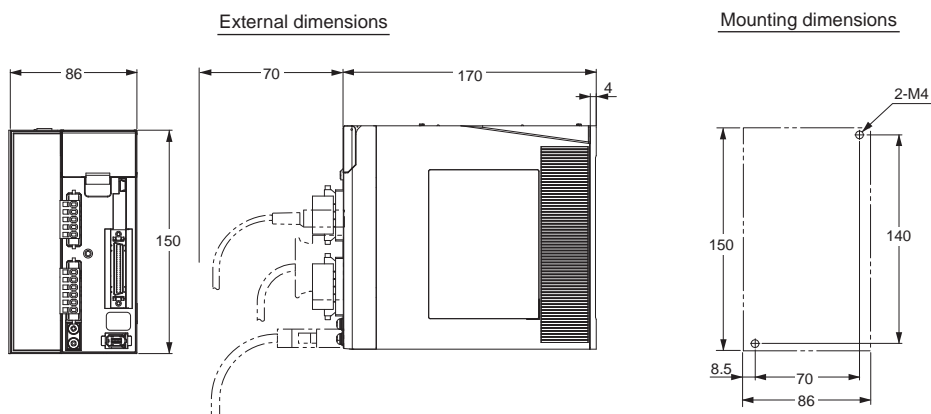
Single-phase/Three-phase 200 VAC R88D-KP04H (400W)



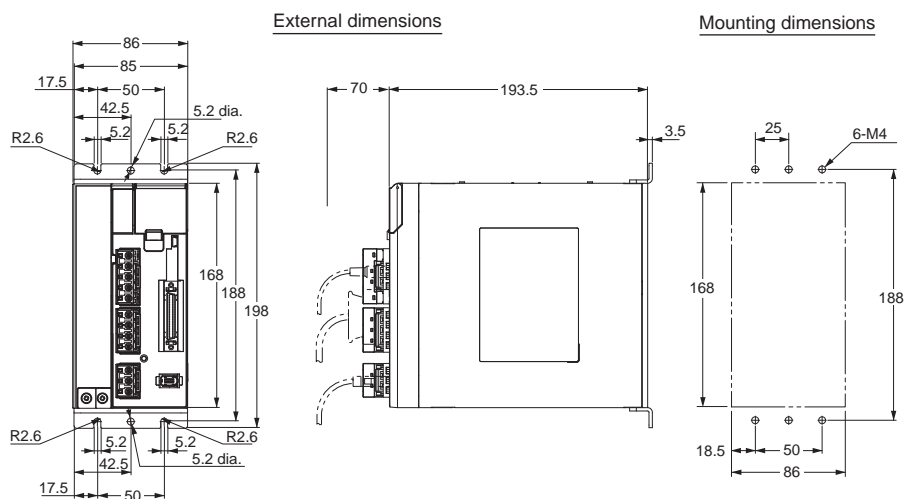
Single-phase/Three-phase 200 VAC R88D-KP08H (750W)



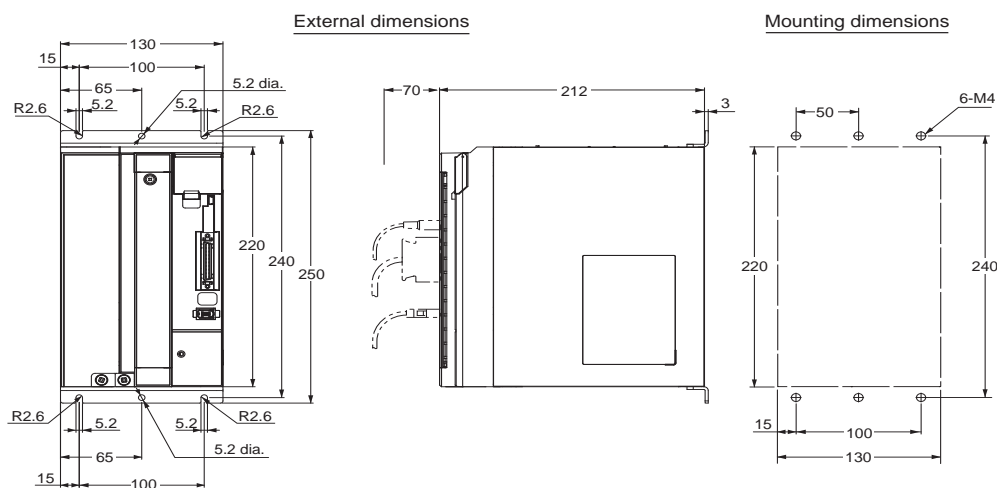
Single-phase/Three-phase 200 VAC R88D-KP10H/-KP15H (900W to 1.5kW)



Three-phase 200 VAC R88D-KP20H(2kW)



Three-phase 200 VAC R88D-KP30H/-KP50H (3 to 5kW)



G5-series Pulse Train Input Type series AC Servomotors

R88M-KE INC

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 - 2,000r/min servomotors(200V)
 - 1,000r/min servomotors(200V)
 - Encoder Specifications
- Dimensions

Ordering Information

Refer to the Ordering Information.

Specifications

General Specifications

Item	3,000-r/min motors	2,000-r/min motors 3,000-r/min motors	1,000-r/min motors
	50 to 750W	1 to 5kW	900 W to 3kW
Ambient operating temperature and operating humidity	0 to 40°C 20 to 85% RH (with no condensation)		
Storage ambient temperature and humidity	-20 to +65°C, 20% to 85% RH (with no condensation) Maximum allowable temperature: 80°C for 72 hours maximum (standard humidity)		
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 terminal and FG terminal: 20 MΩ min. (at 500 VDC Megger)		
Dielectric strength	1,500 VAC between power terminal and FG terminal for 1 min (voltage 200 V) 1,000 VAC between brake terminal and FG terminal for 1 min		
Insulation class	Type B	Type F	
Protective structure	IP65 (except for through-shaft parts and motor and encoder connector pins)		
International standard	EC directive	Low voltage directive	EN60034-1/-5
	UL standards		UL1004-1
	CSA standards		CSA 22.2 No.100

* The amplitude may be amplified by machine resonance. Do not exceed 80% of the specified value for extended periods of time.

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

Note: 2. Do not expose the cable outlet or connections to stress due to bending or the weight of the cable itself.

Characteristics/Torque and Rotation Speed Characteristics

Characteristics

<Cylinder type>

3,000 r/min Servomotors (200 VAC Input Power)

Model (R88M-)		KE05030H	KE10030H	KE20030H	KE40030H	KE75030H	KE1K030H	KE1K530H	KE2K030H	KE3K030H	KE4K030H	KE5K030H	
Rated output *1	W	50	100	200	400	750	1,000	1,500	2,000	3,000	4,000	5,000	
Rated torque *1	N • m	0.16	0.32	0.64	1.3	2.4	3.18	4.77	6.37	9.55	12.7	15.9	
Rated rotation speed	r/min	3,000											
Momentary maximum rotation speed	r/min	5,000				4,500		5,000				4,500	
Momentary maximum torque*1	N • m	0.48	0.95	1.91	3.8	7.1	9.55	14.3	19.1	28.6	38.2	47.7	
Rated current *1	A (rms)	1.1	1.1	1.6	2.6	4.0	6.6	8.2	11.3	18.1	19.6	24.0	
Momentary maximum current*1	A (rms)	4.7	4.7	6.9	11.0	17.0	28	35	48	77	83	102	
Rotor inertia	Without brake	kg • m ²	0.025×10 ⁻⁴	0.051×10 ⁻⁴	0.14×10 ⁻⁴	0.26×10 ⁻⁴	0.87×10 ⁻⁴	2.03×10 ⁻⁴	2.84×10 ⁻⁴	3.68×10 ⁻⁴	6.50×10 ⁻⁴	12.9×10 ⁻⁴	17.4×10 ⁻⁴
	With brake	kg • m ²	0.027×10 ⁻⁴	0.054×10 ⁻⁴	0.16×10 ⁻⁴	0.28×10 ⁻⁴	0.97×10 ⁻⁴	2.35×10 ⁻⁴	3.17×10 ⁻⁴	4.01×10 ⁻⁴	7.85×10 ⁻⁴	14.2×10 ⁻⁴	18.6×10 ⁻⁴
Applicable load inertia	–	30 times the rotor inertia max. *2				20 times the rotor inertia max. *2	15 times the rotor inertia max. *2						
Torque constant *1	N • m/A	0.10±10%	0.21±10%	0.29±10%	0.36±10%	0.45±10%	0.37	0.45	0.44	0.41	0.49	0.49	
Power rate *1	Without brake	kW/s	10.4	20.1	30.3	62.5	66.0	49.8	80.1	110	140	126	146
	With brake	kW/s	9.3	19.0	25.8	57.2	58.9	43.0	71.8	101	116	114	136
Mechanical time constant	Without brake	ms	1.56	1.08	0.71	0.52	0.45	0.61	0.49	0.44	0.41	0.51	0.50
	With brake	ms	1.74	1.14	0.84	0.57	0.51	0.71	0.55	0.48	0.49	0.56	0.54
Electrical time constant	ms	0.70	0.79	2.6	3.0	4.6	5.8	6.3	6.7	11	12	13	
Allowable radial load *3	N	68.6	68.6	245	245	392	490	490	490	490	784	784	
Allowable thrust load *3	N	58.8	58.8	98	98	147	196	196	196	196	343	343	
Weight	Without brake	kg	Approx. 0.32	Approx. 0.47	Approx. 0.82	Approx. 1.2	Approx. 2.3	Approx. 3.5	Approx. 4.4	Approx. 5.3	Approx. 8.3	Approx. 11.0	Approx. 14.0
	With brake	kg	Approx. 0.53	Approx. 0.68	Approx. 1.3	Approx. 1.7	Approx. 3.1	Approx. 4.5	Approx. 5.4	Approx. 6.3	Approx. 9.4	Approx. 12.6	Approx. 16.0
Radiator plate dimensions (material)		100×80×t10 (Al)		130×120×t12 (Al)		170×160×t12 (Al)	320×300×t20 (Al)		380×350×t30 (Al)				
Applicable drivers (R88D-)		KP01H	KP01H	KP02H	KP04H	KP08H	KP15H	KP15H	KP20H	KP30H	KP50H	KP50H	
Brake specifications	Brake inertia	kg • m ²	2×10 ⁻⁷	2×10 ⁻⁷	1.8×10 ⁻⁶	1.8×10 ⁻⁶	7.5×10 ⁻⁶	0.33×10 ⁻⁴	0.33×10 ⁻⁴	0.33×10 ⁻⁴	0.33×10 ⁻⁴	1.35×10 ⁻⁴	1.35×10 ⁻⁴
	Excitation voltage *4	V	24 VDC±5%					24 VDC±10%					
	Power consumption (at 20°C)	W	7	7	9	9	10	19	19	19	19	22	22
	Current consumption (at 20°C)	A	0.3	0.3	0.36	0.36	0.42	0.81±10%	0.81±10%	0.81±10%	0.81±10%	0.90±10%	0.90±10%
	Static friction torque	N • m	0.29 min.	0.29 min.	1.27 min.	1.27 min.	2.45min.	7.8min.	7.8min.	7.8min.	11.8min.	16.1min.	16.1min.
	Attraction time *5	ms	35 max.	35 max.	50 max.	50 max.	70max.	50max.	50max.	50max.	80max.	110max.	110max.
	Release time *5	ms	20 max.	20 max.	15 max.	15 max.	20max.*6	15max.*6	15max.*6	15max.*6	15max.*6	50max.*7	50max.*7
	Backlash		±1°										
	Allowable work per braking	J	39.2	39.2	137	137	196	392	392	392	392	1,470	1,470
	Allowable total work	J	4.9×10 ³	4.9×10 ³	44.1×10 ³	44.1×10 ³	1.47×10 ⁵	4.9×10 ⁵	4.9×10 ⁵	4.9×10 ⁶	4.9×10 ⁶	2.2×10 ⁶	2.2×10 ⁶
	Allowable angular acceleration	rad/s ²	30,000 max. (Speed of 2,800 r/min or more must not be changed in less than 10 ms)					10,000					
	Brake limit	–	10 million times min.										
Rating	–	Continuous											
Insulation class	–	Type F											

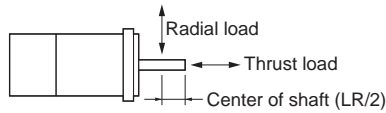
*1. These are the values when the motor is combined with a driver at normal temperature (20°C, 65%). The momentary maximum torque indicates the standard value.

*2. Applicable load inertia.

- The operable load inertia ratio (load inertia/rotor inertia) depends on the mechanical configuration and its rigidity. For a machine with high rigidity, operation is possible even with high load inertia. Select an appropriate motor and confirm that operation is possible.
- If the dynamic brake is activated frequently with high load inertia, the Dynamic Brake Resistor may burn. Do not repeatedly turn the servo ON/OFF while the dynamic brake is enabled.
- The dynamic brake is designed only for emergency stops. Design the system so that the Servomotor remains stopped for at least 3 minutes after applying the dynamic brake. Otherwise the dynamic brake circuits may fail.

*3. 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.

AC Servomotor/Drive G5-series Pulse Train Input Type

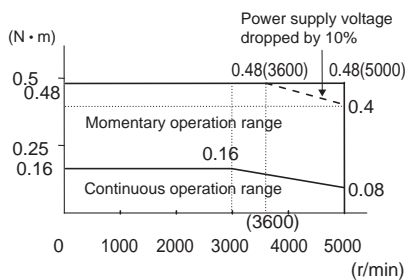


- *4. This is a non-excitation brake. (It is released when excitation voltage is applied.)
- *5. The operation time is the value (reference value) measured with a surge suppressor (CR50500 by Okaya Electric Industries Co., Ltd.).
- *6. Direct current switching with a varistor (Z15D151 by Ishizuka Electronics Co.).
- *7. Direct current switching with a varistor (TNR9G820K by Nippon Chemi-Con Corporation).

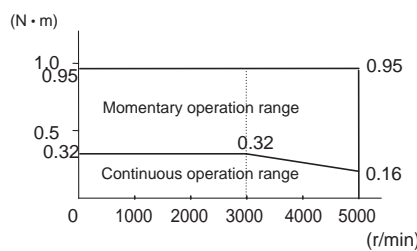
Torque and Rotation Speed Characteristics 3,000 r/min Servomotors (200 VAC Input Power)

The following graphs show the characteristics with a 3 m standard cable and a 200 VAC input.

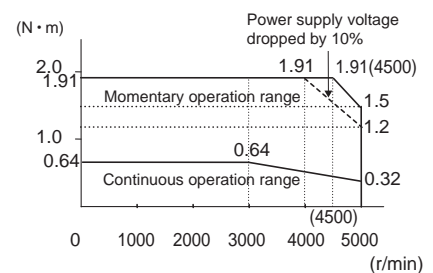
• R88M-KE05030H (50W)



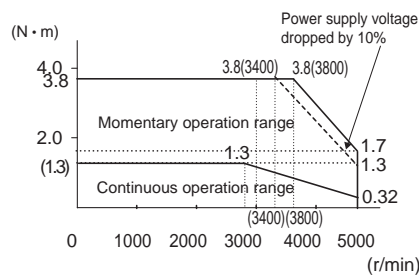
• R88M-KE10030H (100W)



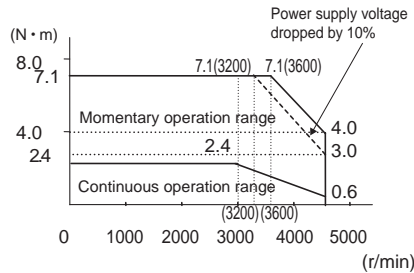
• R88M-KE20030H (200W)



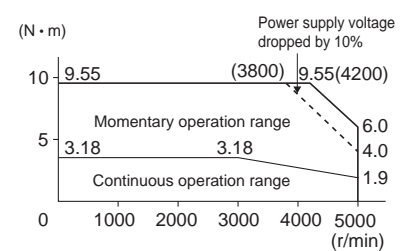
• R88M-KE40030H (400W)



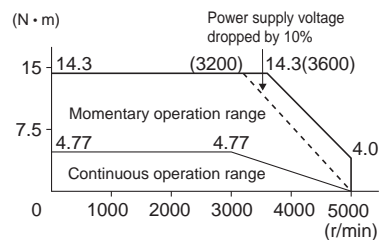
• R88M-KE75030H (750W)



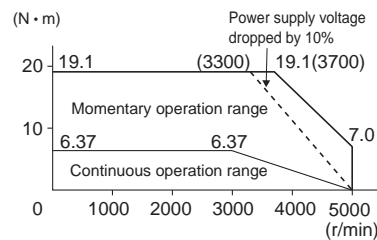
• R88M-KE1K030H (1kW)



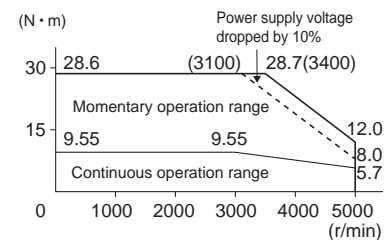
• R88M-KE1K530H (1.5kW)



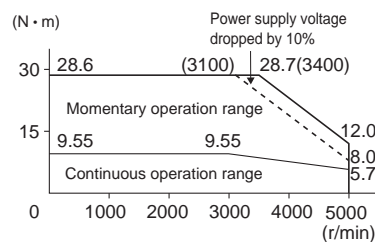
• R88M-KE2K030H (2kW)



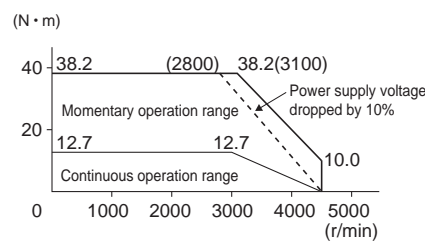
• R88M-KE3K030H (3kW)



• R88M-KE4K030H (4kW)



• R88M-KE5K030H (5kW)



Note 1: The continuous operation range is the range in which continuous operation is possible. Continuous operation at the maximum speed is also possible. However, doing so will reduce the output torque.

Note 2: If the motor power cable exceeds 20 m, the voltage drop will increase and the momentary operation range will become narrower.

Characteristics

<Cylinder type>

2,000 r/min Servomotors (200 VAC Input Power)

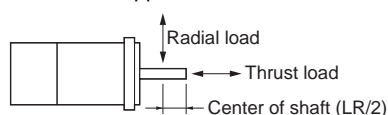
Model (R88M-)		KE1K020H	KE1K520H	KE2K020H	KE3K020H	KE4K020H	KE5K020H	
Rated output *1	W	1,000	1,500	2,000	3,000	4,000	5,000	
Rated torque *1	N • m	4.77	7.16	9.55	14.3	19.1	23.9	
Rated rotation speed	r/min	2,000						
Momentary maximum rotation speed]	r/min	3,000						
Momentary maximum torque *1	N • m	14.3	21.5	28.6	43.0	57.3	71.6	
Rated current *1	A (rms)	5.7	9.4	11.5	17.4	21.0	25.9	
Momentary maximum current *1	A (rms)	24	40	49	74	89	110	
Rotor inertia	Without brake	kg • m ²	4.60×10 ⁻⁴	6.70×10 ⁻⁴	8.72×10 ⁻⁴	12.9×10 ⁻⁴	37.6×10 ⁻⁴	48.0×10 ⁻⁴
	With brake	kg • m ²	5.90×10 ⁻⁴	7.99×10 ⁻⁴	10.0×10 ⁻⁴	14.2×10 ⁻⁴	38.6×10 ⁻⁴	48.8×10 ⁻⁴
Applicable load inertia	–	10 times the rotor inertia max. *2						
Torque constant *1	N • mA	0.63	0.58	0.64	0.59	0.70	0.70	
Power rate *1	Without brake	kW/s	49.5	76.5	105	159	97.1	119
	With brake	kW/s	38.6	64.2	91.2	144	94.5	117
Mechanical time constant	Without brake	ms	0.80	0.66	0.66	0.57	0.65	0.63
	With brake	ms	1.02	0.80	0.76	0.63	0.66	0.64
Electrical time constant	ms	9.4	10	10	12	20	19	
Allowable radial load *3	N	490	490	490	784	784	784	
Allowable thrust load *3	N	196	196	196	343	343	343	
Weight	Without brake	kg	Approx.5.2	Approx.6.7	Approx.8.0	Approx.11.0	Approx.15.5	Approx.18.6
	With brake	kg	Approx.6.7	Approx.8.2	Approx.9.5	Approx.12.6	Approx.18.7	Approx.21.8
Radiator plate dimensions (material)		275×260×t15 (Al)			380×350×t30 (Al)		470×440×t30 (Al)	
Applicable drives (R88D-)		KP10H	KP15H	KP20H	KP30H	KP50H	KP50H	
Brake specifications	Brake inertia	kg • m ²	1.35×10 ⁻⁴	1.35×10 ⁻⁴	1.35×10 ⁻⁴	1.35×10 ⁻⁴	4.7×10 ⁻⁴	4.7×10 ⁻⁴
	Excitation voltage *4	V	DC24V±10%					
	Power consumption (at 20°C)	W	14	19	19	22	31	31
	Current consumption (at 20°C)	A	0.59±10%	0.79±10%	0.79±10%	0.90±10%	1.3±10%	1.3±10%
	Static friction torque	N • m	4.9min.	13.7min.	13.7min.	16.2min.	24.5min.	24.5min.
	Attraction time *5	ms	80max.	100max.	100max.	110max.	80max.	80max.
	Release time *5	ms	70max. *6	50max. *6	50max. *6	50max. *6	25max. *7	25max. *7
	Backlash		±1°					
	Allowable work per braking	J	588	1,176	1,176	1,470	1,372	1,372
	Allowable total work	J	7.8×10 ⁵	1.5×10 ⁶	1.5×10 ⁶	2.2×10 ⁶	2.9×10 ⁶	2.9×10 ⁶
	Allowable angular acceleration	rad/s ²	10,000					
	Brake limit	–	10 million times min.					
	Rating	–	Continuous					
Insulation class	–	Type F						

*1. These are the values when the motor is combined with a driver at normal temperature (20°C, 65%). The momentary maximum torque indicates the standard value.

*2. Applicable load inertia.

- The operable load inertia ratio (load inertia/rotor inertia) depends on the mechanical configuration and its rigidity. For a machine with high rigidity, operation is possible even with high load inertia. Select an appropriate motor and confirm that operation is possible.
- If the dynamic brake is activated frequently with high load inertia, the Dynamic Brake Resistor may burn. Do not repeatedly turn the servo ON/ OFF while the dynamic brake is enabled.
- The dynamic brake is designed only for emergency stops. Design the system so that the Servomotor remains stopped for at least 3 minutes after applying the dynamic brake. Otherwise the dynamic brake circuits may fail.

*3. 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.



*4. This is a non-excitation brake. (It is released when excitation voltage is applied.)

*5. The operation time is the value (reference value) measured with a surge suppressor (CR50500 by Okaya Electric Industries Co., Ltd.).

*6. Direct current switching with a varistor (Z15D151 by Ishizuka Electronics Co.).

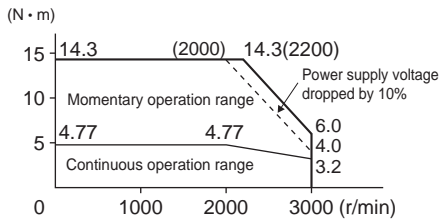
*7. Direct current switching with a varistor (TNR9G820K by Nippon Chemi-Con Corporation).

AC Servomotor/Drive G5-series Pulse Train Input Type

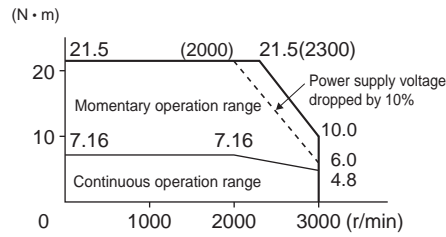
Torque and Rotation Speed Characteristics 2,000 r/min Servomotors (200 VAC Input Power)

The following graphs show the characteristics with a 3 m standard cable and a 200 VAC input.

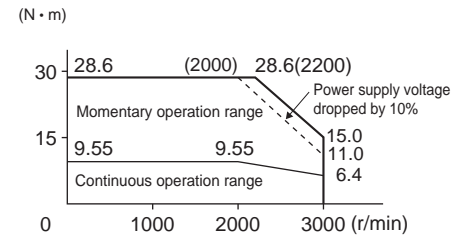
- R88M-KE1K020H (1kW)



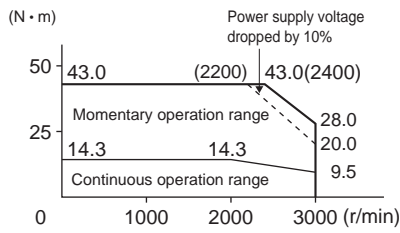
- R88M-KE1K520H (1.5kW)



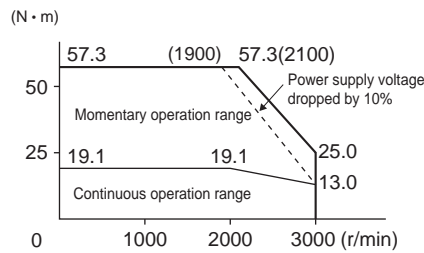
- R88M-KE2K020H (2kW)



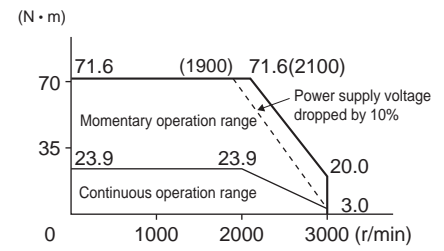
- R88M-KE3K020H (3kW)



- R88M-KE4K020H (4kW)



- R88M-KE5K020H (5kW)



Note 1: The continuous operation range is the range in which continuous operation is possible. Continuous operation at the maximum speed is also possible. However, doing so will reduce the output torque.

Note 2: If the motor power cable exceeds 20 m, the voltage drop will increase and the momentary operation range will become narrower.

Characteristics

<Cylinder type>

1,000 r/min Servomotors (200 VAC Input Power)

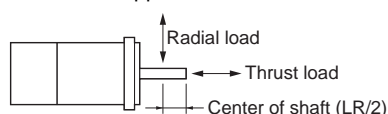
Model (R88M-)			KE90010H	KE2K010H	KE3K010H
Item	Unit				
Rated output *1	W		900	2000	3000
Rated torque *1	N • m		8.59	19.1	28.7
Rated rotation speed	r/min		1000		
Momentary maximum rotation speed	r/min		2000		
Momentary maximum torque*1	N • m		19.3	47.7	71.7
Rated current *1	A (rms)		7.6	17.0	22.6
Momentary maximum current *1	A (rms)		24	60	80
Rotor inertia	Without brake	kg • m ²	6.70×10 ⁻⁴	30.3×10 ⁻⁴	48.4×10 ⁻⁴
	With brake	kg • m ²	7.99×10 ⁻⁴	31.4×10 ⁻⁴	49.2×10 ⁻⁴
Applicable load inertia	–		10 times the rotor inertia max. *2		
Torque constant *1	N • m/A		0.86	0.88	0.96
Power rate *1	Without brake	kW/s	110	120	170
	With brake	kW/s	92.4	116	167
Mechanical time constant	Without brake	ms	0.66	0.75	0.63
	With brake	ms	0.78	0.78	0.64
Electrical time constant	ms		11	18	21
Allowable radial load *3	N		686	1176	1470
Allowable thrust load *3	N		196	490	490
Weight	Without brake	kg	Approx.6.7	Approx.14.0	Approx.20.0
	With brake	kg	Approx.8.2	Approx.17.5	Approx.23.5
Radiator plate dimensions (material)			270×260×t15 (Al)		
Applicable drives (R88D-)			KP15H	KP30H	KP50H
Brake specifications	Brake inertia	kg • m ²	1.35×10 ⁻⁴	4.7×10 ⁻⁴	4.7×10 ⁻⁴
	Excitation voltage *4	V	DC24V±10		
	Power consumption (at 20°C)	W	19	31	34
	Current consumption (at 20°C)	A	0.79±10%	1.3±10%	1.4±10%
	Static friction torque	N • m	13.7min.	24.5min.	58.8min.
	Attraction time *5	ms	100max.	80max.	150max.
	Release time *5	ms	50max. *6	25max. *7	50max. *7
	Backlash		±1°		
	Allowable work per braking	J	1176	1372	1372
	Allowable total work	J	1.5×10 ⁶	2.9×10 ⁶	2.9×10 ⁶
	Allowable angular acceleration	rad/s ²	10,000		
	Brake limit	–	10 million times min.		
	Rating	–	Continuous		
Insulation class	–	Type F			

*1. These are the values when the motor is combined with a driver at normal temperature (20°C, 65%). The momentary maximum torque indicates the standard value.

*2. Applicable load inertia.

- The operable load inertia ratio (load inertia/rotor inertia) depends on the mechanical configuration and its rigidity. For a machine with high rigidity, operation is possible even with high load inertia. Select an appropriate motor and confirm that operation is possible.
- If the dynamic brake is activated frequently with high load inertia, the Dynamic Brake Resistor may burn. Do not repeatedly turn the servo ON/ OFF while the dynamic brake is enabled.
- The dynamic brake is designed only for emergency stops. Design the system so that the Servomotor remains stopped for at least 3 minutes after applying the dynamic brake. Otherwise the dynamic brake circuits may fail.

*3. 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.



*4. This is a non-excitation brake. (It is released when excitation voltage is applied.)

*5. The operation time is the value (reference value) measured with a surge suppressor (CR50500 by Okaya Electric Industries Co., Ltd.).

*6. Direct current switching with a varistor (Z15D151 by Ishizuka Electronics Co.).

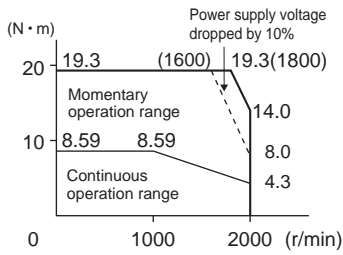
*7. Direct current switching with a varistor (TNR9G820K by Nippon Chemi-Con Corporation).

AC Servomotor/Drive G5-series Pulse Train Input Type

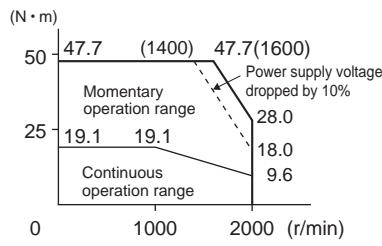
Torque and Rotation Speed Characteristics 1,000 r/min Servomotors (200 VAC Input Power)

The following graphs show the characteristics with a 3 m standard cable and a 200 VAC input.

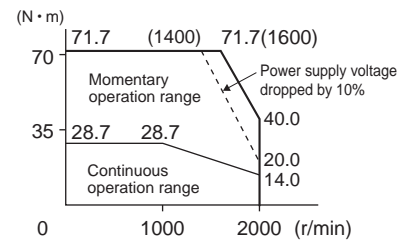
- R88M-KE90010H (900W)



- R88M-KE2K010H (2kW)



- R88M-KE3K010H (3kW)



Note 1: The continuous operation range is the range in which continuous operation is possible. Continuous operation at the maximum speed is also possible. However, doing so will reduce the output torque.

Note 2: If the motor power cable exceeds 20 m, the voltage drop will increase and the momentary operation range will become narrower.

Encoder Specifications

Incremental Encoders

Item	Specifications
Encoder system	Optical encoder
	20 bits
No. of output pulses	Phases A and B: 262,144 pulses/rotation Phase Z: 1 pulse/rotation
Power supply voltage	5 VDC±5%
Power supply current	180 mA (max.)
Output signals	+S, -S
Output interface	RS-485 compliance

Dimensions

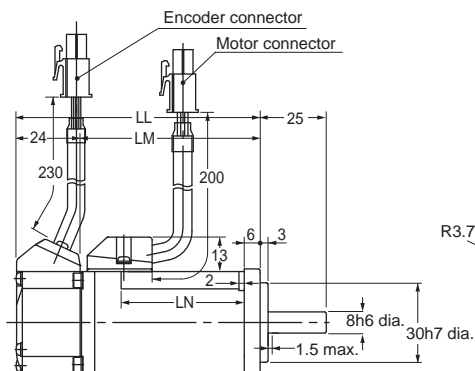
<Cylinder type>

3,000 r/min Servomotors (200 VAC)

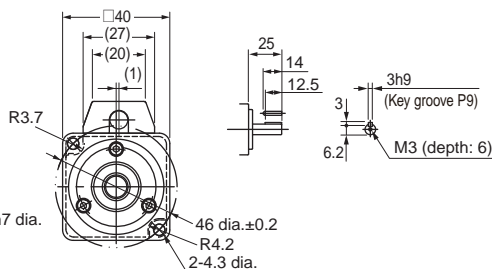
50W/100W

Without brake

- R88M-KE05030H(-S2) **INC**
- R88M-KE10030H(-S2) **INC**



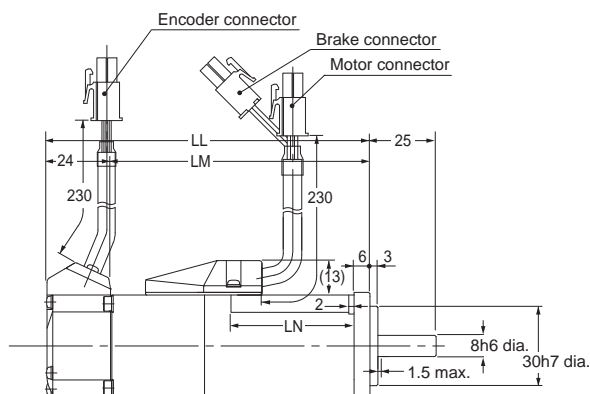
(Dimensions of shaft end with key and tap)



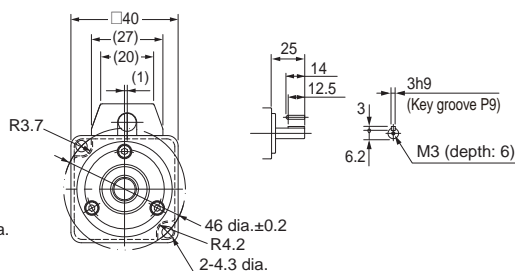
Model	Dimensions (mm)		
	LL	LM	LN
R88M-KE05030□	72	48	26.5
R88M-KE10030□	92	68	46.5

• With brake

- R88M-KE05030H-B(S2) **INC**
- R88M-KE10030H-B(S2) **INC**



(Dimensions of shaft end with key and tap)

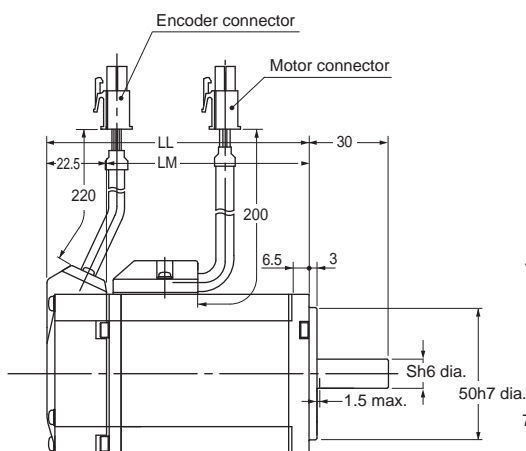


Model	Dimensions (mm)		
	LL	LM	LN
R88M-KE05030□-B□	102	78	26.5
R88M-KE10030□-B□	122	98	46.5

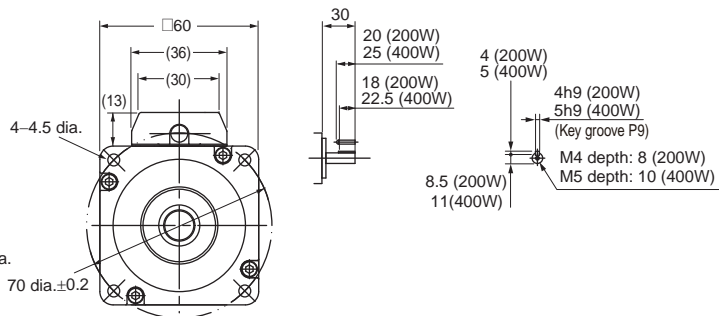
200W/400W

• Without brake

- R88M-KE20030H(-S2) **INC**
- R88M-KE40030H(-S2) **INC**



(Dimensions of shaft end with key and tap)



Model	Dimensions (mm)		
	LL	LM	LN
R88M-KE20030□	79.5	57	11
R88M-KE40030□	99	76.5	14

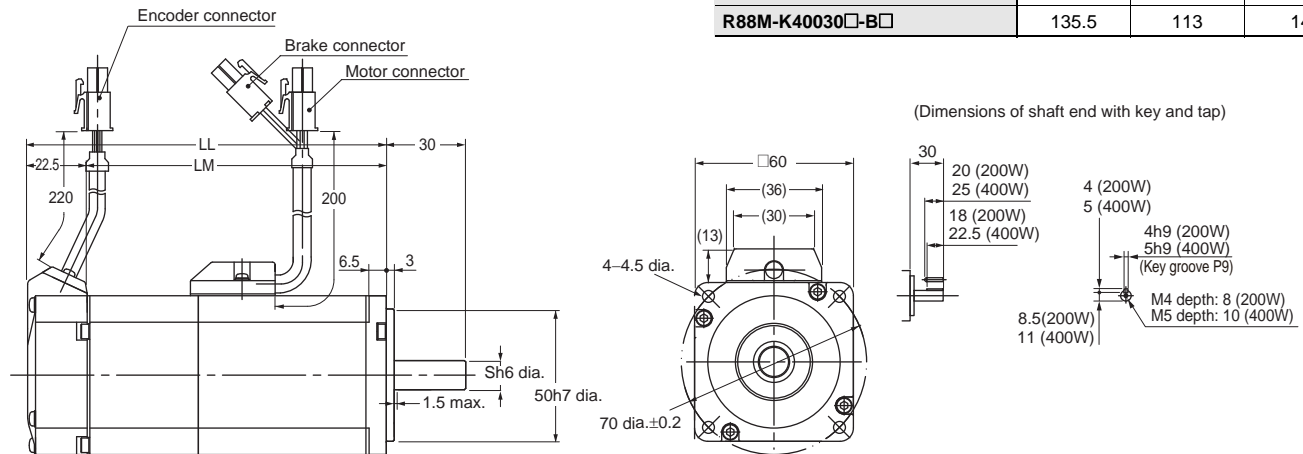
Note: The standard models have a straight shaft. A model with a key and tap is indicated by adding "S2" to the end of the model number. Models with an oil seal are indicated with O at the end of the model number. The motor dimensions do not change.

AC Servomotor/Drive G5-series Pulse Train Input Type

• With brake

- R88M-KE20030H-B(S2) **INC**
- R88M-KE40030H-B(S2) **INC**

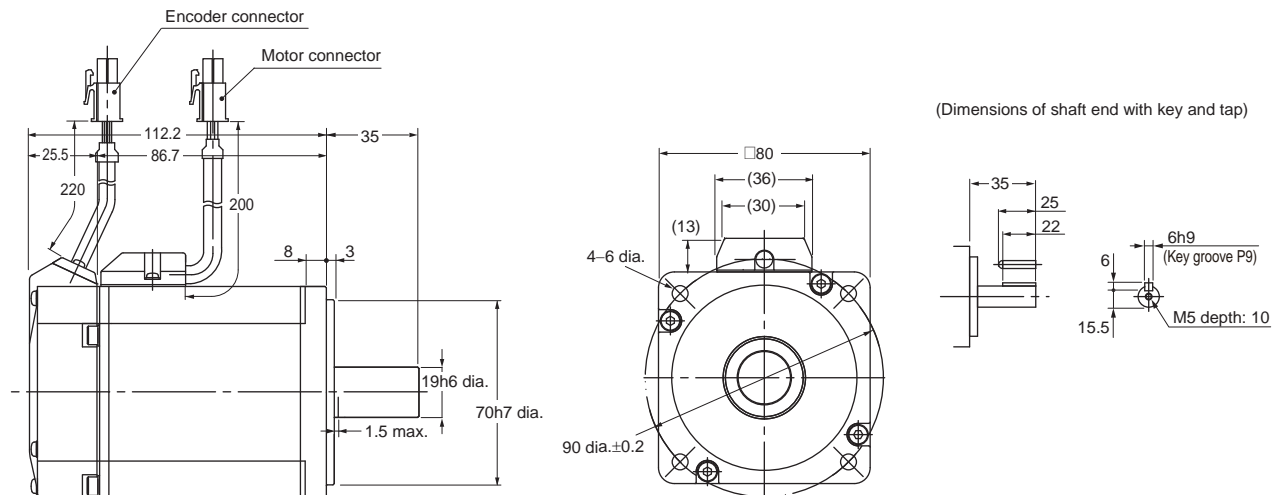
Model	Dimensions (mm)		
	LL	LM	S
R88M-K20030□-B□	116	93.5	11
R88M-K40030□-B□	135.5	113	14



750W

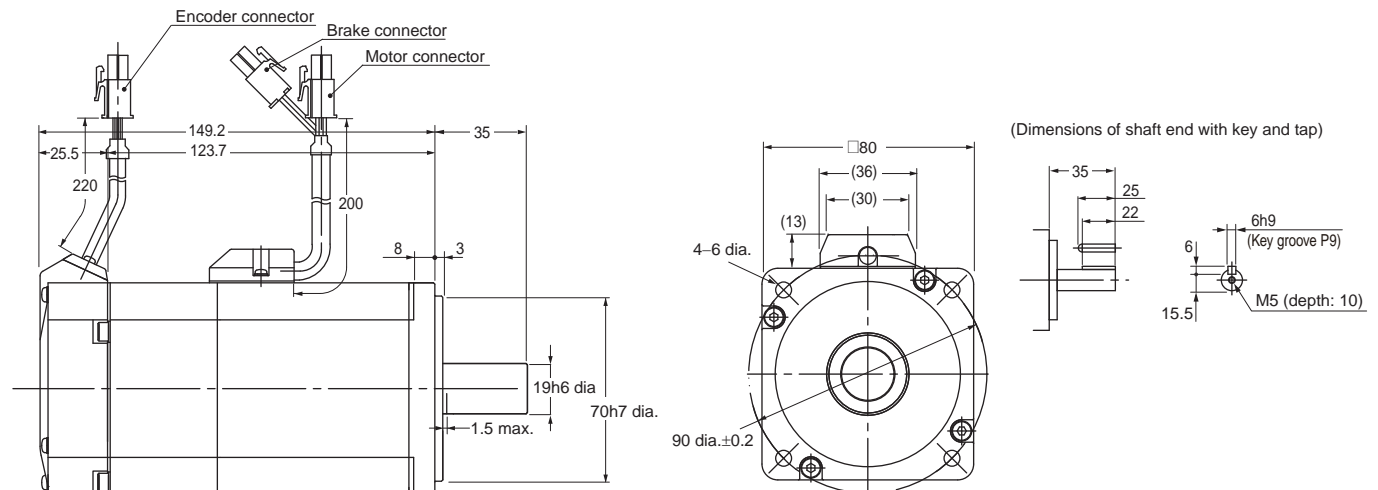
• Without brake

- R88M-KE75030H(-S2) **INC**



• With brake

- R88M-KE75030H-B(S2) **INC**



Note: The standard models have a straight shaft. A model with a key and tap is indicated by adding "S2" to the end of the model number. Models with an oil seal are indicated with O at the end of the model number. The motor dimensions do not change.

1kW/1.5kW/2kW

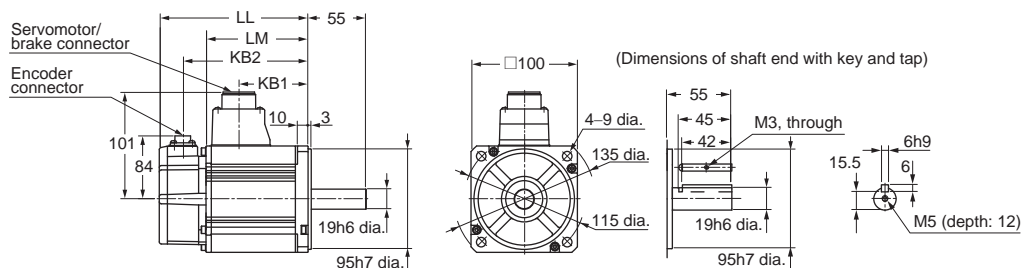
• Without brake

- R88M-KE1K030H(-S2) **INC**
- R88M-KE1K530H(-S2) **INC**
- R88M-KE2K030H(-S2) **INC**

• With brake

- R88M-KE1K030H-B(S2) **INC**
- R88M-KE1K530H-B(S2) **INC**
- R88M-KE2K030H-B(S2) **INC**

Model	Dimensions (mm)			
	LL	LM	KB1	KB2
R88M-KE1K030□	142	97	66	122
R88M-KE1K530□	160.5	115.5	84.5	140.5
R88M-KE2K030□	179.5	134.5	103.5	159.5
R88M-KE1K030□-B□	169	124	66	149
R88M-KE1K530□-B□	187.5	142.5	84.5	167.5
R88M-KE2K030□-B□	206.5	161.5	103.5	186.5



3kW

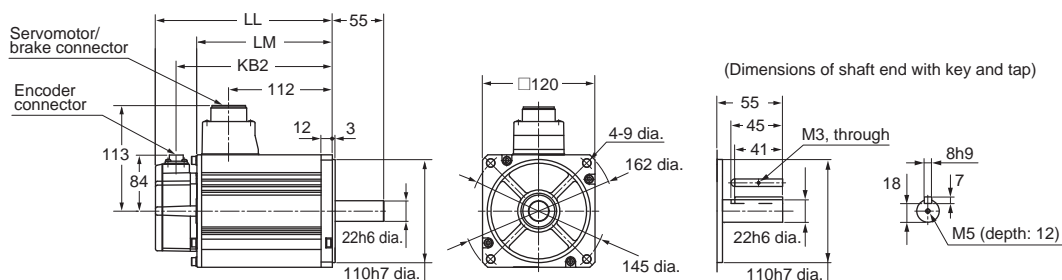
• Without brake

- R88M-KE3K030H(-S2) **INC**

• With brake

- R88M-KE3K030H-B(S2) **INC**

Model	Dimensions (mm)		
	LL	LM	LN
R88M-KE3K030□	191	146	171
R88M-KE3K030□-B□	216	171	196



4kW/5kW

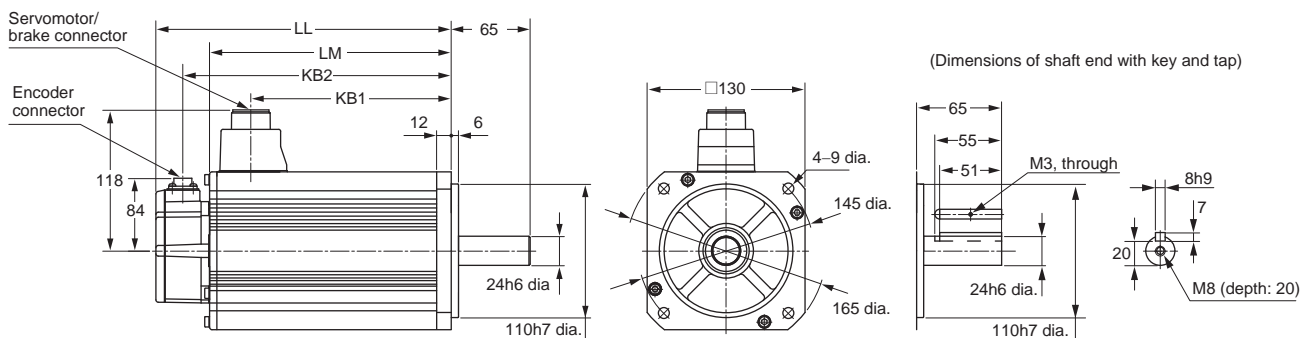
• Without brake

- R88M-KE4K030H(-S2) **INC**
- R88M-KE5K030H(-S2) **INC**

• With brake

- R88M-KE4K030H-B(S2) **INC**
- R88M-KE5K030H-B(S2) **INC**

Model	Dimensions (mm)			
	LL	LM	KB1	KB2
R88M-KE4K030□	209	164	127	189
R88M-KE5K030□	244	199	162	224
R88M-KE4K030□-B□	237	192	127	217
R88M-KE5K030□-B□	272	227	162	252



AC Servomotor/Drive G5-series Pulse Train Input Type

<Cylinder type> 2,000 r/min Servomotors (200 VAC)

1kW/1.5kW/2kW/3kW

• Without brake

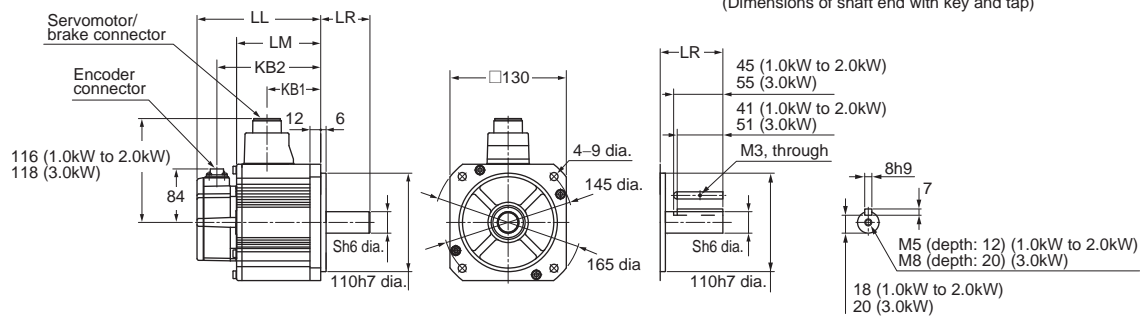
- R88M-KE1K020H(-S2) **INC**
- R88M-KE1K520H(-S2) **INC**
- R88M-KE2K020H(-S2) **INC**
- R88M-KE3K020H(-S2) **INC**

• With brake

- R88M-KE1K020H-B(S2) **INC**
- R88M-KE1K520H-B(S2) **INC**
- R88M-KE2K020H-B(S2) **INC**
- R88M-KE3K020H-B(S2) **INC**

Model	Dimensions (mm)					
	LL	LR	LM	S	KB1	KB2
R88M-KE1K020□	139	55	94	22	60	119
R88M-KE1K520□	156.5	55	111.5	22	77.5	136.5
R88M-KE2K020□	174	55	129	22	95	154
R88M-KE3K020□	209	65	164	24	127	189
R88M-KE1K020□-B□	167	55	122	22	60	147
R88M-KE1K520□-B□	184.5	55	139.5	22	77.5	164.5
R88M-KE2K020□-B□	202	55	157	22	95	182
R88M-KE3K020□-B□	237	65	192	24	127	217

(Dimensions of shaft end with key and tap)



4kW/5kW

• Without brake

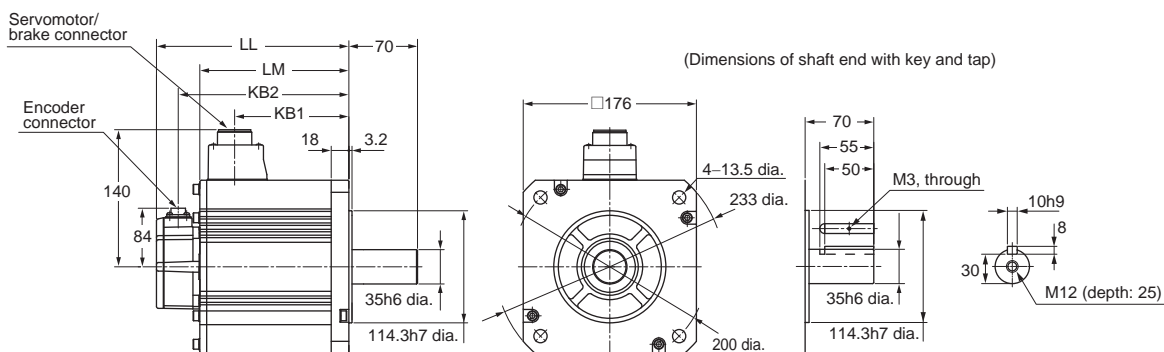
- R88M-KE4K020H(-S2) **INC**
- R88M-KE5K020H(-S2) **INC**

• With brake

- R88M-KE4K020H-B(S2) **INC**
- R88M-KE5K020H-B(S2) **INC**

Model	Dimensions (mm)			
	LL	LM	KB1	KB2
R88M-KE4K020□	178	133	96	158
R88M-KE5K020□	197	152	115	177
R88M-KE4K020□-B□	207	162	96	187
R88M-KE5K020□-B□	226	181	115	206

(Dimensions of shaft end with key and tap)



Note: The standard models have a straight shaft. A model with a key and tap is indicated by adding "S2" to the end of the model number. Models with an oil seal are indicated with O at the end of the model number. The motor dimensions do not change.

<Cylinder type>

1,000 r/min Servomotors (200 VAC)

900W

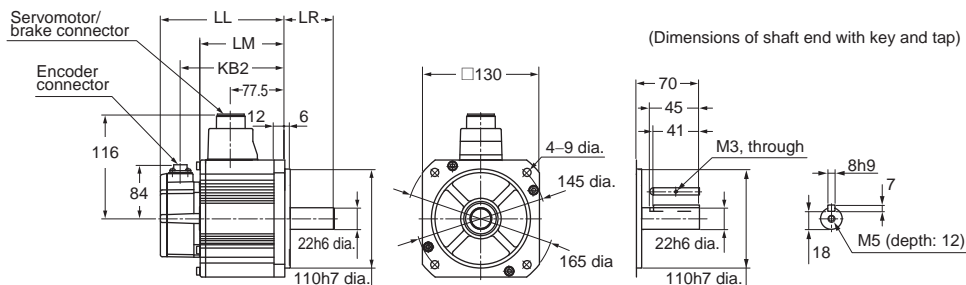
• **Without brake**

- R88M-KE90010H(-S2) **INC**

• **With brake**

- R88M-KE90010H-B(S2) **INC**

Model	Dimensions (mm)		
	LL	LM	KB2
R88M-KE90010□	156.5	111.5	136.5
R88M-KE90010□-B□	184.5	139.5	164.5



2kW/3kW

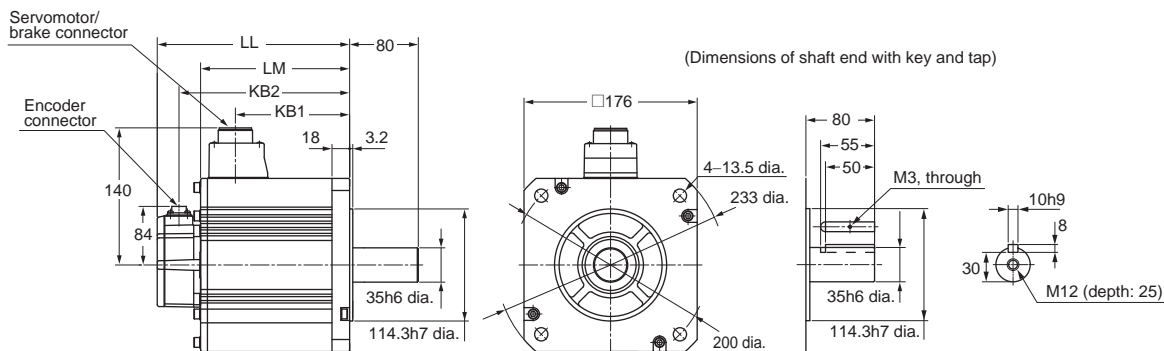
• **Without brake**

- R88M-KE2K010H(-S2) **INC**
- R88M-KE3K010H(-S2) **INC**

• **With brake**

- R88M-KE2K010H-B(S2) **INC**
- R88M-KE3K010H-B(S2) **INC**

Model	Dimensions (mm)			
	LL	LM	KB1	KB2
R88M-KE2K010□	164.5	119.5	82.5	144.5
R88M-KE3K010□	210.5	165.5	128.5	190.5
R88M-KE2K010□-B□	193.5	148.5	82.5	173.5
R88M-KE3K010□-B□	239.5	194.5	128.5	219.5



Note: The standard models have a straight shaft. A model with a key and tap is indicated by adding "S2" to the end of the model number. Models with an oil seal are indicated with O at the end of the model number. The motor dimensions do not change.

Ordering Information

	AC Servomotor/Drives
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AC Servomotor/Drive G5-series Pulse Train Input Type

Interpreting Model Numbers

Servo Drive Model Numbers

R88D-K P 01 H

(1) (2) (3) (4)

No	Item	Symbol	Specifications
(1)	G5-series Servo Drive		
(2)	Drive Type	P	Pulse train input type
(3)	Maximum Applicable Servomotor Capacity	01	100 W
		02	200 W
		04	400 W
		08	750 W
		10	1 kW
		15	1.5 kW
		20	2 kW
		30	3 kW
(4)	Power Supply Voltage	H	200 VAC

Servomotor Model Numbers

R88M-K E 100 30 H -BO S2

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

No	Item	Symbol	Specifications
(1)	G5-series Servomotor		
(2)	Motor Type	E	Economy type
(3)	Servomotor Capacity	–	–
		050	50 W
		100	100 W
		200	200 W
		400	400 W
		750	750 W
		900	900 W
		1K0	1 kW
		1K5	1.5 kW
		2K0	2 kW
		3K0	3 kW
		4K0	4 kW
		5K0	5 kW
		(4)	Rated Rotation Speed
20	2,000 r/min		
30	3,000 r/min		
(5)	Applied Voltage	H	200 VAC INC
(6)	Option	Blank	Straight shaft
		B	With brake
		O	With oil seal
		S2	With key and tap

Note: **INC** incremental encoder: 20bit

Understanding Decelerator Model Numbers (Backlash = 3' Max./Backlash = 15' Max.)

Backlash = 3' Max.

R88G-HPG 14A 05 100 S B J

(1) (2) (3) (4) (5) (6) (7)

No	Item	Symbol	Specifications
(1)	Decelerator for G□-Series Servomotors Backlash = 3' Max.		
(2)	Flange Size Number	11B	□40
		14A	□60
		20A	□90
		32A	□120
		50A	□170
		65A	□230
(3)	Gear Ratio	05	1/5
		09	1/9 (only frame number 11B)
		11	1/11 (except frame number 65A)
		20	1/20 (only frame number 65A)
		21	1/21 (except frame number 65A)
		25	1/25 (only frame number 65A)
		33	1/33
45	1/45		
(4)	Applicable Servomotor Capacity	050	50 W
		100	100 W
		200	200 W
		400	400 W
		750	750 W
		900	900 W
		1K0	1 kW
		1K5	1.5 kW
		2K0	2 kW
		3K0	3 kW
		4K0	4 kW
5K0	5 kW		
(5)	Motor Type	Blank	3,000-r/min cylindrical servomotors
		S	2,000-r/min cylindrical servomotors
		T	1,000-r/min cylindrical servomotors
(6)	Backlash	B	Backlash = 3' Max
(7)	Option	Blank	Straight shaft
		J	With key and tap

Backlash = 15' Max.

R88G-VRSF 09 B 100 C J

(1) (2) (3) (4) (5) (6) (7)

No	Item	Symbol	Specifications
(1)	Decelerator for G□-Series Servomotors Backlash = 15' Max.		
(2)	Gear Ratio	05	1/5
		09	1/9
		15	1/15
		25	1/25
(3)	Flange Size Number	B	□52
		C	□78
		D	□98
(4)	Applicable Servomotor Capacity	050	50 W
		100	100 W
		200	200 W
		400	400 W
		750	750 W
(5)	Motor Type	Blank	3,000-r/min cylindrical servomotors
		-	-
(6)	Backlash	C	Backlash = 15' Max
(7)	Option	J	With key (without tap)

AC Servomotor/Drive G5-series Pulse Train Input Type

Ordering Information

AC Servo Drives Pulse train input type

Specifications		Model
Power Supply Voltage	Applicable Servomotor Capacity	
Single-phase 200VAC	100W	R88D-KP01H
	200W	R88D-KP02H
	400W	R88D-KP04H
	750W	R88D-KP08H
	1kW	R88D-KP10H
Three-phase 200VAC	1.5kW	R88D-KP15H
	2kW	R88D-KP20H
	3kW	R88D-KP30H
	5kW	R88D-KP50H

AC Servomotors <Cylinder Type> 3,000-r/min servomotor

	Specifications		Model
	Voltage	Rated output	Straight shaft with key and tap
			Without oil seals
Without brake	200 V	50 W	R88M-KE05030H-S2
		100 W	R88M-KE10030H-S2
		200 W	R88M-KE20030H-S2
		400 W	R88M-KE40030H-S2
		750 W	R88M-KE75030H-S2
		1 kW	R88M-KE1K030H-S2
		1.5 kW	R88M-KE1K530H-S2
		2 kW	R88M-KE2K030H-S2
		3 kW	R88M-KE3K030H-S2
		4 kW	R88M-KE4K030H-S2
With brake	200 V	50 W	R88M-KE05030H-BS2
		100 W	R88M-KE10030H-BS2
		200 W	R88M-KE20030H-BS2
		400 W	R88M-KE40030H-BS2
		750 W	R88M-KE75030H-BS2
		1 kW	R88M-KE1K030H-BS2
		1.5 kW	R88M-KE1K530H-BS2
		2 kW	R88M-KE2K030H-BS2
		3 kW	R88M-KE3K030H-BS2
		4 kW	R88M-KE4K030H-BS2
5 kW	R88M-KE5K030H-BS2		

Note: Models with oil seals are also available.

	Specifications		Model
	Voltage	Rated output	Straight shaft without key
			Without oil seals
Without brake	200 V	50 W	R88M-KE05030H
		100 W	R88M-KE10030H
		200 W	R88M-KE20030H
		400 W	R88M-KE40030H
		750 W	R88M-KE75030H
		1 kW	R88M-KE1K030H
		1.5 kW	R88M-KE1K530H
		2 kW	R88M-KE2K030H
		3 kW	R88M-KE3K030H
		4 kW	R88M-KE4K030H
With brake	200 V	50 W	R88M-KE05030H-B
		100 W	R88M-KE10030H-B
		200 W	R88M-KE20030H-B
		400 W	R88M-KE40030H-B
		750 W	R88M-KE75030H-B
		1 kW	R88M-KE1K030H-B
		1.5 kW	R88M-KE1K530H-B
		2 kW	R88M-KE2K030H-B
		3 kW	R88M-KE3K030H-B
		4 kW	R88M-KE4K030H-B
5 kW	R88M-KE5K030H-B		

Note: Models with oil seals are also available.

2,000-r/min servomotor

Specifications			Model
			Straight shaft with key and tap
	Voltage	Rated output	Without oil seals
			Without brake
1.5kW	R88M-KE1K520H-S2		
2kW	R88M-KE2K020H-S2		
3kW	R88M-KE3K020H-S2		
4kW	R88M-KE4K020H-S2		
5kW	R88M-KE5K020H-S2		
With brake	200 V	1kW	R88M-KE1K020H-BS2
		1.5kW	R88M-KE1K520H-BS2
		2kW	R88M-KE2K020H-BS2
		3kW	R88M-KE3K020H-BS2
		4kW	R88M-KE4K020H-BS2
		5kW	R88M-KE5K020H-BS2

Note: Models with oil seals are also available.

Specifications			Model
			Straight shaft without key
	Voltage	Rated output	Without oil seals
			Without brake
1.5kW	R88M-KE1K520H		
2kW	R88M-KE2K020H		
3kW	R88M-KE3K020H		
4kW	R88M-KE4K020H		
5kW	R88M-KE5K020H		
With brake	200 V	1kW	R88M-KE1K020H-B
		1.5kW	R88M-KE1K520H-B
		2kW	R88M-KE2K020H-B
		3kW	R88M-KE3K020H-B
		4kW	R88M-KE4K020H-B
		5kW	R88M-KE5K020H-B

Note: Models with oil seals are also available.

1,000-r/min servomotor

Specifications			Model
			Straight shaft with key and tap
	Voltage	Rated output	Without oil seals
			Without brake
2 kW	R88M-KE2K010H-S2		
3 kW	R88M-KE3K010H-S2		
With brake	200 V	900 W	R88M-KE90010H-BS2
		2 kW	R88M-KE2K010H-BS2
		3 kW	R88M-KE3K010H-BS2

Note: Models with oil seals are also available.

Specifications			Model
			Straight shaft without key
	Voltage	Rated output	Without oil seals
			Without brake
2 kW	R88M-KE2K010H		
3 kW	R88M-KE3K010H		
With brake	200 V	900 W	R88M-KE90010H-B
		2 kW	R88M-KE2K010H-B
		3 kW	R88M-KE3K010H-B

Note: Models with oil seals are also available.

AC Servomotor/Drive G5-series Pulse Train Input Type

Decelerators (Backlash = 3' Max./Backlash = 15' Max.)

Backlash = 3' Max
<Cylinder Type>

● 3,000-r/min servomotors

Straight shaft without key

Motor capacity	Gear Ratio	Model (Straight shaft)
50 W	1/5	R88G-HPG11B05100B
	1/9	R88G-HPG11B09050B
	1/21	R88G-HPG14A21100B
	1/33	R88G-HPG14A33050B
	1/45	R88G-HPG14A45050B
100 W	1/5	R88G-HPG11B05100B
	1/11	R88G-HPG14A11100B
	1/21	R88G-HPG14A21100B
	1/33	R88G-HPG20A33100B
	1/45	R88G-HPG20A45100B
200 W	1/5	R88G-HPG14A05200B
	1/11	R88G-HPG14A11200B
	1/21	R88G-HPG20A21200B
	1/33	R88G-HPG20A33200B
	1/45	R88G-HPG20A45200B
400 W	1/5	R88G-HPG14A05400B
	1/11	R88G-HPG20A11400B
	1/21	R88G-HPG20A21400B
	1/33	R88G-HPG32A33400B
	1/45	R88G-HPG32A45400B
750 W	1/5	R88G-HPG20A05750B
	1/11	R88G-HPG20A11750B
	1/21	R88G-HPG32A21750B
	1/33	R88G-HPG32A33750B
	1/45	R88G-HPG32A45750B
1 kW	1/5	R88G-HPG32A052K0B
	1/11	R88G-HPG32A112K0B
	1/21	R88G-HPG32A211K5B
	1/33	R88G-HPG50A332K0B
	1/45	R88G-HPG50A451K5B
1.5 kW	1/5	R88G-HPG32A052K0B
	1/11	R88G-HPG32A112K0B
	1/21	R88G-HPG32A211K5B
	1/33	R88G-HPG50A332K0B
	1/45	R88G-HPG50A451K5B
2 kW	1/5	R88G-HPG32A052K0B
	1/11	R88G-HPG32A112K0B
	1/21	R88G-HPG50A212K0B
	1/33	R88G-HPG50A332K0B
3 kW	1/5	R88G-HPG32A053K0B
	1/11	R88G-HPG50A113K0B
	1/21	R88G-HPG50A213K0B
4 kW	1/5	R88G-HPG32A054K0B
	1/11	R88G-HPG50A115K0B
5 kW	1/5	R88G-HPG50A055K0B
	1/11	R88G-HPG50A115K0B

Note: 1. The standard models have a straight shaft.
2. To order a Servomotor with a straight shaft with key, add "J" to the end of the model number, in the place indicated by the box.

● 2,000-r/min servomotors

Straight shaft without key

Motor capacity	Gear Ratio	Model (Straight shaft)
1 kW	1/5	R88G-HPG32A053K0B
	1/11	R88G-HPG32A112K0SB
	1/21	R88G-HPG32A211K0SB
	1/33	R88G-HPG50A332K0SB
	1/45	R88G-HPG50A451K0SB
1.5 kW	1/5	R88G-HPG32A053K0B
	1/11	R88G-HPG32A112K0SB
	1/21	R88G-HPG50A213K0B
	1/33	R88G-HPG50A332K0SB
2 kW	1/5	R88G-HPG32A053K0B
	1/11	R88G-HPG32A112K0SB
	1/21	R88G-HPG50A213K0B
3 kW	1/33	R88G-HPG50A332K0SB
	1/5	R88G-HPG32A054K0B
	1/11	R88G-HPG50A115K0B
4 kW	1/21	R88G-HPG50A213K0SB
	1/25	R88G-HPG65A253K0SB
	1/5	R88G-HPG50A055K0SB
5 kW	1/11	R88G-HPG50A115K0SB
	1/20	R88G-HPG65A205K0SB
	1/25	R88G-HPG65A255K0SB

Note: 1. The standard models have a straight shaft.
2. To order a Servomotor with a straight shaft with key, add "J" to the end of the model number, in the place indicated by the box.

● 1,000-r/min servomotors

Straight shaft without key

Motor capacity	Gear Ratio	Model (Straight shaft)
900 W	1/5	R88G-HPG32A05900TB
	1/11	R88G-HPG32A11900TB
	1/21	R88G-HPG50A21900TB
	1/33	R88G-HPG50A33900TB
2 kW	1/5	R88G-HPG32A052K0TB
	1/11	R88G-HPG50A112K0TB
	1/21	R88G-HPG50A212K0TB
	1/25	R88G-HPG65A255K0SB
3 kW	1/5	R88G-HPG50A055K0SB
	1/11	R88G-HPG50A115K0SB
	1/20	R88G-HPG65A205K0SB
	1/25	R88G-HPG65A255K0SB

- Note: 1.** The standard models have a straight shaft.
2. To order a Servomotor with a straight shaft with key, add "J" to the end of the model number, in the place indicated by the box.

Backlash = 15' Max
<Cylinder Type>

● 3,000-r/min servomotors

Straight shaft with key

Motor capacity	Gear Ratio	Model (Straight shaft)
50 W	1/5	R88G-VRSF05B100CJ
	1/9	R88G-VRSF09B100CJ
	1/15	R88G-VRSF15B100CJ
	1/25	R88G-VRSF25B100CJ
100 W	1/5	R88G-VRSF05B100CJ
	1/9	R88G-VRSF09B100CJ
	1/15	R88G-VRSF15B100CJ
	1/25	R88G-VRSF25B100CJ
200 W	1/5	R88G-VRSF05B200CJ
	1/9	R88G-VRSF09C200CJ
	1/15	R88G-VRSF15C200CJ
	1/25	R88G-VRSF25C200CJ
400 W	1/5	R88G-VRSF05C400CJ
	1/9	R88G-VRSF09C400CJ
	1/15	R88G-VRSF15C400CJ
	1/25	R88G-VRSF25C400CJ
750 W	1/5	R88G-VRSF05C750CJ
	1/9	R88G-VRSF09D750CJ
	1/15	R88G-VRSF15D750CJ
	1/25	R88G-VRSF25D750CJ

AC Servomotor/Drive G5-series Pulse Train Input Type

Accessories and Cables

■ Connection Cables (Power Cables, Brake Cables, Encoder Cables)

<Non-flexible Cables>

Power cable

Specifications		Without brake Model	With brake Model
[200 V] 3,000-r/min Servomotors of 50 to 750 W	3 m	R88A-CAGA003S	-
	5 m	R88A-CAGA005S	
	10 m	R88A-CAGA010S	
	15 m	R88A-CAGA015S	
	20 m	R88A-CAGA020S	
[200 V] 3,000-r/min Servomotors of 1 to 2 kW 2,000-r/min Servomotors of 1 to 2 kW 1,000-r/min Servomotors of 900 W	3 m	R88A-CAGB003S	R88A-CAGB003B
	5 m	R88A-CAGB005S	R88A-CAGB005B
	10 m	R88A-CAGB010S	R88A-CAGB010B
	15 m	R88A-CAGB015S	R88A-CAGB015B
	20 m	R88A-CAGB020S	R88A-CAGB020B
[200 V] 3,000-r/min Servomotors of 3 to 5 kW 2,000-r/min Servomotors of 3 to 5 kW 1,000-r/min Servomotors of 2 to 3 kW	3 m	R88A-CAGD003S	R88A-CAGD003B
	5 m	R88A-CAGD005S	R88A-CAGD005B
	10 m	R88A-CAGD010S	R88A-CAGD010B
	15 m	R88A-CAGD015S	R88A-CAGD015B
	20 m	R88A-CAGD020S	R88A-CAGD020B

Note: Different connectors are used for the motor power and the brake on 200-V, 3,000-r/min Servomotors of 50 to 750 W.
When using a Servomotor with a brake, two cables are required: a Power Cable without Brake and a Brake cable.

Brake Cable

Specifications		Model
[200 V] 3,000-r/min Servomotors of 50 to 750 W	3 m	R88A-CAGA003B
	5 m	R88A-CAGA005B
	10 m	R88A-CAGA010B
	15 m	R88A-CAGA015B
	20 m	R88A-CAGA020B

Encoder Cable

Specifications		Model
[200 V] 3,000-r/min Servomotors of 50 to 750 W	3 m	R88A-CRGB003C
	5 m	R88A-CRGB005C
	10 m	R88A-CRGB010C
	15 m	R88A-CRGB015C
	20 m	R88A-CRGB020C
[200 V] 3,000-r/min Servomotors of 1 to 5 kW 2,000-r/min Servomotors of 1 to 5 kW 1,000-r/min Servomotors of 900W to 3kW	3 m	R88A-CRGC003N
	5 m	R88A-CRGC005N
	10 m	R88A-CRGC010N
	15 m	R88A-CRGC015N
	20 m	R88A-CRGC020N

<Flexible Cables>

Power cable

Specifications	Without brake Model		With brake Model
[200 V] 3,000-r/min Servomotors of 50 to 750 W	3 m	R88A-CAGA003SR	-
	5 m	R88A-CAGA005SR	
	10 m	R88A-CAGA010SR	
	15 m	R88A-CAGA015SR	
	20 m	R88A-CAGA020SR	
[200 V] 3,000-r/min Servomotors of 1 to 2 kW 2,000-r/min Servomotors of 1 to 2 kW 1,000-r/min Servomotors of 900 W	3 m	R88A-CAGB003SR	R88A-CAGB003BR
	5 m	R88A-CAGB005SR	R88A-CAGB005BR
	10 m	R88A-CAGB010SR	R88A-CAGB010BR
	15 m	R88A-CAGB015SR	R88A-CAGB015BR
	20 m	R88A-CAGB020SR	R88A-CAGB020BR
[200 V] 3,000-r/min Servomotors of 3 to 5 kW 2,000-r/min Servomotors of 3 to 5 kW 1,000-r/min Servomotors of 2 to 3 kW	3 m	R88A-CAGD003SR	R88A-CAGD003BR
	5 m	R88A-CAGD005SR	R88A-CAGD005BR
	10 m	R88A-CAGD010SR	R88A-CAGD010BR
	15 m	R88A-CAGD015SR	R88A-CAGD015BR
	20 m	R88A-CAGD020SR	R88A-CAGD020BR

Note: Different connectors are used for the motor power and the brake on 200-V, 3,000-r/min Servomotors of 50 to 750 W .
When using a Servomotor with a brake, two cables are required: a Power Cable without Brake and a Brake cable.

Brake Cable

Specifications	Model	
[200 V] 3,000-r/min Servomotors of 50 to 750 W	3 m	R88A-CAGA003BR
	5 m	R88A-CAGA005BR
	10 m	R88A-CAGA010BR
	15 m	R88A-CAGA015BR
	20 m	R88A-CAGA020BR

Encoder Cable

Specifications	Model	
[200 V] 3,000-r/min Servomotors of 50 to 750 W	3 m	R88A-CRGB003CR
	5 m	R88A-CRGB005CR
	10 m	R88A-CRGB010CR
	15 m	R88A-CRGB015CR
	20 m	R88A-CRGB020CR
[200 V] 3,000-r/min Servomotors of 1 to 5 kW 2,000-r/min Servomotors of 1 to 5 kW 1,000-r/min Servomotors of 900W to 3kW	3 m	R88A-CRGC003NR
	5 m	R88A-CRGC005NR
	10 m	R88A-CRGC010NR
	15 m	R88A-CRGC015NR
	20 m	R88A-CRGC020NR

AC Servomotor/Drive G5-series Pulse Train Input Type

■ Cable/Connector

Connector

Specifications	Model
Control I/O Connector (CN1)	R88A-CNU11C
Encoder Connector (CN2)	R88A-CNW01R

Servomotor Connector

Specifications	Model
Servomotor Connector for Encoder Cable	[200 V] 3,000 r/min (50 to 750 W) R88A-CNG02R
Power Cable Connector	(750 W max.) R88A-CNG01A
Brake Cable Connector	(750 W max.) R88A-CNG01B

Analog Monitor Cable

Name	Length	Model
Analog Monitor Cable	1 m	R88A-CMK001S

■ Control Cables

Control Cables(for Connector Terminal Block)

Name	Specifications	Model
Connector Terminal Block Cables	1m 2m	XW2Z-100J-B24 XW2Z-200J-B24
Connector Terminal Block Conversion Unit	M3 screws M3.5 screws M3 screws	XW2B-50G4 XW2B-50G5 XW2D-50G6

Connection Cables (for CN1)

Specifications Name	Unit	The number of axes	Length	Model		
Position Control Unit (High-speed type) for Line-driver output	CJ1W-NC234/434	for 1 axis	1 m	XW2Z-100J-G9		
			5 m	XW2Z-500J-G9		
			10 m	XW2Z-10MJ-G9		
		for 2 axis	1 m	XW2Z-100J-G1		
			5 m	XW2Z-500J-G1		
			10 m	XW2Z-10MJ-G1		
Position Control Unit (High-speed type) for Open collector output	CJ1W-NC214/NC414	for 1 axis	1 m	XW2Z-100J-G13		
			3 m	XW2Z-300J-G13		
		for 2 axis	1 m	XW2Z-100J-G5		
			3 m	XW2Z-300J-G5		
		General-purpose Control Connector on One End		–	1 m	R88A-CPG001S
				–	2 m	R88A-CPG002S

Servo Relay Units (for CN1)

Specifications	The number of axes	Model
Position Control Unit: For CJ1W-NC113/NC133 For CS1W-NC113/NC133 For C200HW-NC113	for 1 axis	XW2B-20J6-1B
Position Control Unit: For CJ1W-NC213/NC233/NC413/NC433 For CS1W-NC213/NC233/NC413/NC433 For C200HW-NC213/NC413	for 2 axis	XW2B-40J6-2B
For CJ2M-CPU31/CPU32/CPU33/CPU34/CPU35 For CJ2M-CPU11/CPU12/CPU13/CPU14/CPU15	for 1 axis	XW2B-20J6-8A
	for 2 axis	XW2B-40J6-9A
For FQM1-MMP22 (Pulse train output)	for 2 axis	XW2B-80J7-12A
For CQM1-CPU43-V1	for 1 axis	XW2B-20J6-3B

Servo Relay Unit cable (for Servo Drive/CN1)

Specifications	Length	Model
Position Control Unit: For CJ1W-NC□□3□ For CS1W/C200HW-NC□□□ (XW2B-20J6-1B, XW2B-40J6-2B)	1 m	XW2Z-100J-B25
	2 m	XW2Z-200J-B25
For CJ2M-CPU31/CPU32/CPU33/CPU34/CPU35 For CJ2M-CPU11/CPU12/CPU13/CPU14/CPU15 (XW2B-20J6-8A, XW2B-40J6-9A)	1 m	XW2Z-100J-B31
	2 m	XW2Z-200J-B31
For FQM1-MMP22 (Pulse train output) (XW2B-80J7-12A)	1 m	XW2Z-100J-B26
	2 m	XW2Z-200J-B26

Servo Relay Unit cable (for Position Control Unit)

Specifications	The number of axes	Length	Model
CS1W/C200HW open collector output type For CS1W-NC113 For C200HW-NC113 (XW2B-20J6-1B)	for 1 axis	0.5 m	XW2Z-050J-A6
		1 m	XW2Z-100J-A6
CS1W/C200HW open collector output type For CS1W-NC213/NC413 For C200HW-NC213/NC413 (XW2B-40J6-2B)	for 2 axis	0.5 m	XW2Z-050J-A7
		1 m	XW2Z-100J-A7
CS1W line-driver output type For CS1W-NC133 (XW2B-20J6-1B)	for 1 axis	0.5 m	XW2Z-050J-A10
		1 m	XW2Z-100J-A10
CS1W line-driver output type For CS1W-NC233/NC433 (XW2B-40J6-2B)	for 2 axis	0.5 m	XW2Z-050J-A11
		1 m	XW2Z-100J-A11
CJ1W open collector output type For CJ1W-NC113 (XW2B-20J6-1B)	for 1 axis	0.5 m	XW2Z-050J-A14
		1 m	XW2Z-100J-A14
CJ1W open collector output type For CJ1W-NC213/NC413 (XW2B-40J6-2B)	for 2 axis	0.5 m	XW2Z-050J-A15
		1 m	XW2Z-100J-A15
CJ1W line-driver output type For CJ1W-NC133 (XW2B-20J6-1B)	for 1 axis	0.5 m	XW2Z-050J-A18
		1 m	XW2Z-100J-A18
CJ1W line-driver output type For CJ1W-NC233/NC433 (XW2B-40J6-2B)	for 2 axis	0.5 m	XW2Z-050J-A19
		1 m	XW2Z-100J-A19
CJ1M open collector output type For CJ2M-CPU31/CPU32/CPU33/CPU34/CPU35 For CJ2M-CPU11/CPU12/CPU13/CPU14/CPU15 (XW2B-20J6-8A, XW2B-40J6-9A)	for 1 axis	0.5 m	XW2Z-050J-A33
		1 m	XW2Z-100J-A33
For FQM1-MMP22 (Pulse train output) (XW2B-80J7-12A)	General purpose I/O (26 pin)	0.5 m	XW2Z-050J-A28
		1 m	XW2Z-100J-A28
		2 m	XW2Z-200J-A28
	Special I/O (40 pin)	0.5 m	XW2Z-050J-A30
		1 m	XW2Z-100J-A30
		2 m	XW2Z-200J-A30

AC Servomotor/Drive G5-series Pulse Train Input Type

■ Peripheral Devices (External Regeneration Resistors, Reactors, Mounting Brackets)

External Regeneration Resistors

Specifications	Model
80 W 50 Ω	R88A-RR08050S
80 W 100 Ω	R88A-RR080100S
220 W 47 Ω	R88A-RR22047S1
500 W 20 Ω	R88A-RR50020S

Reactors

Specifications	Model
R88D-KP01H(For single-phase input)	3G3AX-DL2002
R88D-KP02H(For single-phase input)	3G3AX-DL2004
R88D-KP04H(For single-phase input)	3G3AX-DL2007
R88D-KP08H/-KP10H(For single-phase input)	3G3AX-DL2015
R88D-KP15H(For single-phase input)	3G3AX-DL2022
R88D-KP01H/-KP02H/-KP04H/KP08H/-KP10H/ -KP15H(For three-phase input)	3G3AX-AL2025
R88D-KP20H/-KP30H	3G3AX-AL2055
R88D-KP50H	3G3AX-AL2110

Mounting Brackets (L Brackets for Rack Mounting)

Specifications	Model
R88D-KP01H/-KP02H	R88A-TK01K
R88D-KP04H	R88A-TK02K
R88D-KP08H	R88A-TK03K
R88D-KP10H/-KP15H	R88A-TK04K

■ Software

FA Integrated Tool Package CX-One

Product name	Specifications			Model	Standards
		Number of licenses	Media		
FA Integrated Tool Package CX-One Ver. 4.□	<p>The CX-One is a comprehensive software package that integrates Support Software for OMRON PLCs and components.</p> <p>CX-One runs on following OS. OS: Windows XP (Service Pack 3 or higher), Vista or 7 Note: Except for Windows XP 64-bit version.</p> <p>CX-One Version.4.□ includes CX-Drive Ver.2.□. For details, refer to the CX-One catalog(Cat.No.R134).</p>	1 license *1	DVD *2	CXONE-AL01D-V4	-

*1. Multi licenses are available for the CX-One (3, 10, 30, or 50 licenses).

*2. The CX-One is also available on CD (CXONE-AL□□C-V4).

Combination table

Servo Drive and Servomotor Combinations (3,000 r/min, 2,000 r/min, 1,000 r/min)

<Cylinder Type>

● 3,000-r/min servomotors

Power Supply Voltage	Servo Drive Model Numbers	Servomotor Model Numbers	
		Output	With incremental encoder
Single-phase/ three-phase 200VAC	R88D-KP01H *	50 W *	R88M-KE05030H-□ *
	R88D-KP01H	100 W	R88M-KE10030H-□
	R88D-KP02H	200 W	R88M-KE20030H-□
	R88D-KP04H	400 W	R88M-KE40030H-□
	R88D-KP08H	750 W	R88M-KE75030H-□
	R88D-KP15H *	1 kW *	R88M-KE1K030H-□ *
Three-phase 200VAC	R88D-KP15H	1.5 kW	R88M-KE1K530H-□
	R88D-KP20H	2 kW	R88M-KE2K030H-□
	R88D-KP30H	3 kW	R88M-KE3K030H-□
	R88D-KP50H*	4 kW *	R88M-KE4K030H-□ *
	R88D-KP50H	5 kW	R88M-KE5K030H-□

* Please note the capacity of Servo Drive and Servomotor are not same in this combination.

● 2,000-r/min servomotors

Power Supply Voltage	Servo Drive Model Numbers	Servomotor Model Numbers	
		Output	With incremental encoder
Single-phase/ three-phase 200VAC	R88D-KP10H	1 kW	R88M-KE1K020H-□
	R88D-KP15H	1.5 kW	R88M-KE1K520H-□
Three-phase 200VAC	R88D-KP20H	2 kW	R88M-KE2K020H-□
	R88D-KP30H	3 kW	R88M-KE3K020H-□
	R88D-KP50H *	4 kW *	R88M-KE4K020H-□ *
	R88D-KP50H	5 kW	R88M-KE5K020H-□

* Please note the capacity of Servo Drive and Servomotor are not same in this combination.

● 1,000-r/min servomotors

Power Supply Voltage	Servo Drive Model Numbers	Servomotor Model Numbers	
		Output	With incremental encoder
Single-phase/ three-phase 200VAC	R88D-KP15H *	900 W *	R88M-KE90010H-□ *
Three-phase 200VAC	R88D-KP30H *	2 kW *	R88M-KE2K010H-□ *
	R88D-KP50H *	3 kW *	R88M-KE3K010H-□ *

* Please note the capacity of Servo Drive and Servomotor are not same in this combination.

AC Servomotor/Drive G5-series Pulse Train Input Type

Servomotor and Decelerator Combinations (3,000 r/min, 2,000 r/min, 1,000 r/min)

<Cylinder Type>

● 3,000-r/min servomotors

Motor model	1/5	1/11 (1/9 for flange size No.11)	1/21	1/33	1/45
R88M-KE05030□	R88G-HPG11B05100B□ (Also used with R88M-KE10030□)	R88G-HPG11B09050B□ (Gear ratio 1/9)	R88G-HPG14A21100B□ (Also used with R88M-KE10030□)	R88G-HPG14A33050B□	R88G-HPG14A45050B□
R88M-KE10030□	R88G-HPG11B05100B□	R88G-HPG14A11100B□	R88G-HPG14A21100B□	R88G-HPG20A33100B□	R88G-HPG20A45100B□
R88M-KE20030□	R88G-HPG14A05200B□	R88G-HPG14A11200B□	R88G-HPG20A21200B□	R88G-HPG20A33200B□	R88G-HPG20A45200B□
R88M-KE40030□	R88G-HPG14A05400B□	R88G-HPG20A11400B□	R88G-HPG20A21400B□	R88G-HPG32A33400B□	R88G-HPG32A45400B□
R88M-KE75030□	R88G-HPG20A05750B□	R88G-HPG20A11750B□	R88G-HPG32A21750B□	R88G-HPG32A33750B□	R88G-HPG32A45750B□
R88M-KE1K030□	R88G-HPG32A052K0B□ (Also used with R88M-KE2K030□)	R88G-HPG32A112K0B□ (Also used with R88M-KE2K030□)	R88G-HPG32A211K5B□ (Also used with R88M-KE1K5030□)	R88G-HPG50A332K0B□ (Also used with R88M-KE2K030□)	R88G-HPG50A451K5B□ (Also used with R88M-KE1K530□)
R88M-KE1K530□	R88G-HPG32A052K0B□ (Also used with R88M-KE2K030□)	R88G-HPG32A112K0B□ (Also used with R88M-KE2K030□)	R88G-HPG32A211K5B□	R88G-HPG50A332K0B□ (Also used with R88M-KE2K030□)	R88G-HPG50A451K5B□
R88M-KE2K030□	R88G-HPG32A052K0B□	R88G-HPG32A112K0B□	R88G-HPG50A212K0B□	R88G-HPG50A332K0B□	-
R88M-KE3K030□	R88G-HPG32A053K0B□	R88G-HPG50A113K0B□	R88G-HPG50A213K0B□	-	-
R88M-KE4K030□	R88G-HPG32A054K0B□	R88G-HPG50A115K0B□ (Also used with R88M-KE5K030□)	-	-	-
R88M-KE5K030□	R88G-HPG50A055K0B□	R88G-HPG50A115K0B□	-	-	-

● 2,000-r/min servomotors

Motor model	1/5	1/11	1/21 (1/20 for flange size No.65)	1/33 (1/25 for flange size No.65)	1/45
R88M-KE1K020□	R88G-HPG32A053K0B□ (Also used with R88M-KE3K030□)	R88G-HPG32A112K0SB□ (Also used with R88M-KE2K020□)	R88G-HPG32A211K0SB□	R88G-HPG50A332K0SB□ (Also used with R88M-KE2K020□)	R88G-HPG50A451K0SB□
R88M-KE1K520□	R88G-HPG32A053K0B□ (Also used with R88M-KE3K030□)	R88G-HPG32A112K0SB□ (Also used with R88M-KE2K020□)	R88G-HPG50A213K0B□ (Also used with R88M-KE3K030□)	R88G-HPG50A332K0SB□ (Also used with R88M-KE2K020□)	-
R88M-KE2K020□	R88G-HPG32A053K0B□ (Also used with R88M-KE3K030□)	R88G-HPG32A112K0SB□	R88G-HPG50A213K0B□ (Also used with R88M-KE3K030□)	R88G-HPG50A332K0SB□	-
R88M-KE3K020□	R88G-HPG32A054K0B□ (Also used with R88M-KE4K030□)	R88G-HPG50A115K0B□ (Also used with R88M-KE5K030□)	R88G-HPG50A213K0SB□	R88G-HPG65A253K0SB□	-
R88M-KE4K020□	R88GHPG50A055K0SB□ (Also used with R88M-KE5K020□)	R88G-HPG50A115K0SB□ (Also used with R88M-KE3K030□)	R88G-HPG65A205K0SB□ (Also used with R88M-KE3K030□)	R88G-HPG65A255K0SB□ (Also used with R88M-KE5K020□)	-
R88M-KE5K020□	R88GHPG50A055K0SB□	R88G-HPG50A115K0SB□	R88G-HPG65A205K0SB□	R88G-HPG65A255K0SB□	-

● 1,000-r/min servomotors

Motor model	1/5	1/11	1/21 (1/20 for flange size No.65)	1/33 (1/25 for flange size No.65)
R88M-KE90010□	R88G-HPG32A05900TB□	R88G-HPG32A11900TB□	R88G-HPG50A21900TB□	R88G-HPG50A33900TB□
R88M-KE2K010□	R88G-HPG32A052K0TB□	R88G-HPG50A112K0TB□	R88G-HPG50A212K0TB□ (Also used with R88M-KE5K020□)	R88G-HPG65A255K0SB□ (Also used with R88M-KE5K020□)
R88M-KE3K010□	R88G-HPG50A055K0SB□ (Also used with R88M-KE5K020□)	R88G-HPG50A115K0SB□ (Also used with R88M-KE5K020□)	R88G-HPG65A205K0SB□ (Also used with R88M-KE5K020□)	R88G-HPG65A255K0SB□ (Also used with R88M-KE5K020□)

Controller Combinations

● Servo Relay Units and Cables

Select the Servo Relay Unit and Cable according to the model number of the Position Control Unit being used.

Position Control Unit	Position Control Unit Cable		Servo Relay Unit		Servo Drive Cable
CS1W-NC113	XW2Z-□□□J-A6		XW2B-20J6-1B		XW2Z-□□□J-B25
C200HW-NC113					
CS1W-NC213	XW2Z-□□□J-A7		XW2B-40J6-2B		
CS1W-NC413					
C200HW-NC213					
C200HW-NC413					
CS1W-NC133	XW2Z-□□□J-A10		XW2B-20J6-1B		
CS1W-NC233	XW2Z-□□□J-A11		XW2B-40J6-2B		
CS1W-NC433					
CJ1W-NC113	XW2Z-□□□J-A14		XW2B-20J6-1B		
CJ1W-NC213	XW2Z-□□□J-A15		XW2B-40J6-2B		
CJ1W-NC413					
CJ1W-NC133					
CJ1W-NC233	XW2Z-□□□J-A19		XW2B-40J6-2B		
CJ1W-NC433					
CJ2M-CPU31 CJ2M-CPU32 CJ2M-CPU33 CJ2M-CPU34 CJ2M-CPU35 CJ2M-CPU11 CJ2M-CPU12 CJ2M-CPU13 CJ2M-CPU14 CJ2M-CPU15	XW2Z-□□□J-A33		For 1 axis	XW2B-20J6-8A	XW2Z-□□□J-B31
For 2 axis			XW2B-40J6-9A		
FQM1-MMP22	General purpose I/O	XW2Z-□□□J-A28	XW2B-80J7-12A		XW2Z-□□□J-B26
	Special I/O	XW2Z-□□□J-A30			

Note: 1. Insert the cable length into the boxes in the model number (□□□). Position Control Unit cables come in two lengths: 0.5 m and 1 m (some are also available in lengths of 2 m). Servo Driver Cables also come in two lengths: 1 m and 2 m.

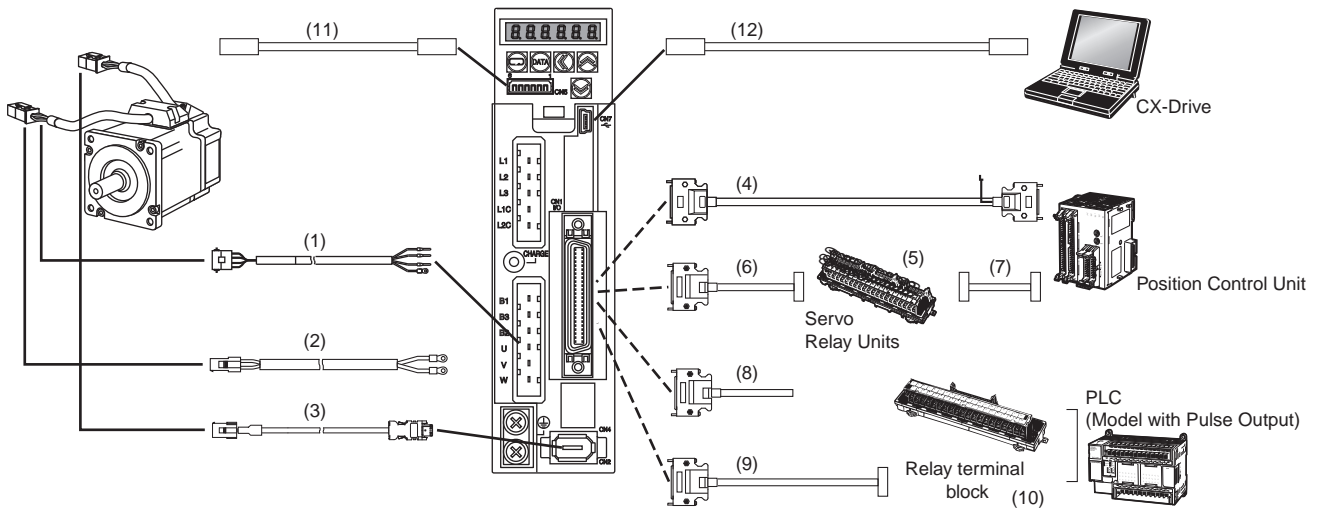
2. Two Servo Driver Cables are required if 2-axis control is performed using one Position Control Unit.

3. Direct cable is available for CJ1W-NC□□4 Position Control Unit (High-Speed type).

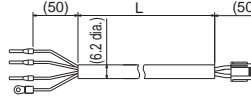
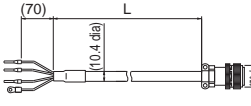
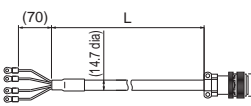
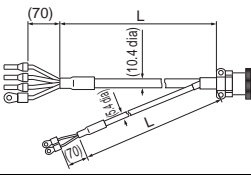
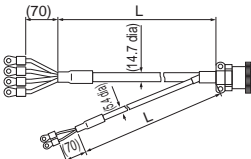
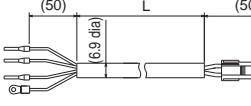
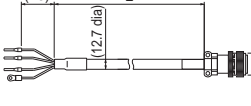
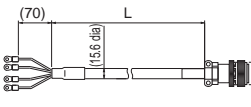
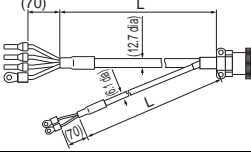
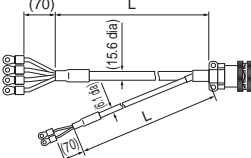
Specifications	The number of axes	Model
For CJ1W-NC214/-NC414 (open collector output type)	1 axis	XW2Z-□□□J-G13
For CJ1W-NC214/-NC414 (open collector output type)	2 axis	XW2Z-□□□J-G5
For CJ1W-NC234/-NC434 (line-driver output type)	1 axis	XW2Z-□□□J-G9
For CJ1W-NC234/-NC434 (line-driver output type)	2 axis	XW2Z-□□□J-G1

AC Servomotor/Drive G5-series Pulse Train Input Type

Cable Combinations



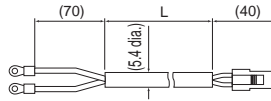
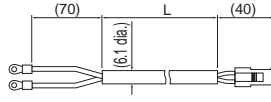
Servomotor Power Cables (For CNB)

Symbol		Name	Connected to	Model	Description	
(1)	Non-flexible Cables	Without Brakes	Power Cables for Servomotors without Brakes	[200 V] Cylindrical Servomotors, 3,000 r/min, 50 to 750 W	R88A-CAGA□□□S The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, or 20 m long.	 [Servomotor Connector] Connector: 172159-1 (Tyco Electronics AMP KK) Connector pins: 170362-1 (Tyco Electronics AMP KK) 170366-1 (Tyco Electronics AMP KK)
				[200 V] Cylindrical Servomotors, 3,000 r/min, 1 to 2 kW Cylindrical Servomotors, 2,000 r/min, 1 to 2 kW Cylindrical Servomotors, 1,000 r/min, 900 W	R88A-CAGB□□□S The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, or 20 m long.	 [Servomotor Connector] Straight plug: N/MS3106B20-4S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-12A (Japan Aviation Electronics Industry, Ltd.)
				[200 V] Cylindrical Servomotors, 3,000 r/min, 3 to 5 kW Cylindrical Servomotors, 2,000 r/min, 3 to 5 kW Cylindrical Servomotors, 1,000 r/min, 2 to 3 kW	R88A-CAGD□□□S The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, or 20 m long.	 [Servomotor Connector] Straight plug: N/MS3106B22-22S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-12A (Japan Aviation Electronics Industry, Ltd.)
		With Brakes	Power Cables for Servomotors with Brakes	Note: Different connectors are used for the motor power and the brake on 200-V, 3,000-r/min Servomotors of 50 to 750 W. When using a Servomotor with a brake, two cables are required: a Power Cable without Brake and a Brake Cable.		
				[200 V] Cylindrical Servomotors, 3,000 r/min, 1 to 2 kW Cylindrical Servomotors, 2,000 r/min, 1 to 2 kW Cylindrical Servomotors, 1,000 r/min, 900 W	R88A-CAGB□□□B The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, or 20 m long.	 [Servomotor Connector] Straight plug: N/MS3106B20-18S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-12A (Japan Aviation Electronics Industry, Ltd.)
				[200 V] Cylindrical Servomotors, 3,000 r/min, 3 to 5 kW Cylindrical Servomotors, 2,000 r/min, 3 to 5 kW Cylindrical Servomotors, 1,000 r/min, 2 to 3 kW	R88A-CAGD□□□B The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, or 20 m long.	 [Servomotor Connector] Straight plug: N/MS3106B24-11S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-16A (Japan Aviation Electronics Industry, Ltd.)
	Flexible Cables	Without Brakes	Power Cables for Servomotors without Brakes	[200 V] Cylindrical Servomotors, 3,000 r/min, 50 to 750 W	R88A-CAGA□□□SR The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, or 20 m long.	 [Servomotor Connector] Connector: 172159-1 (Tyco Electronics AMP KK) Connector pins: 170362-1 (Tyco Electronics AMP KK) 170366-1 (Tyco Electronics AMP KK)
				[200 V] Cylindrical Servomotors, 3,000 r/min, 1 to 2 kW Cylindrical Servomotors, 2,000 r/min, 1 to 2 kW	R88A-CAGB□□□SR The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, or 20 m long.	 [Servomotor Connector] Straight plug: N/MS3106B20-4S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-12A (Japan Aviation Electronics Industry, Ltd.)
				[200 V] Cylindrical Servomotors, 3,000 r/min, 3 to 5 kW Cylindrical Servomotors, 2,000 r/min, 3 to 5 kW Cylindrical Servomotors, 1,000 r/min, 2 to 3 kW	R88A-CAGD□□□SR The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, or 20 m long.	 [Servomotor Connector] Straight plug: N/MS3106B22-22S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-12A (Japan Aviation Electronics Industry, Ltd.)
		With Brakes	Power Cables for Servomotors with Brakes	Note: Different connectors are used for the motor power and the brake on 200-V, 3,000-r/min Servomotors of 50 to 750 W. When using a Servomotor with a brake, two cables are required: a Power Cable without Brake and a Brake Cable.		
				[200 V] Cylindrical Servomotors, 3,000 r/min, 1 to 2 kW Cylindrical Servomotors, 2,000 r/min, 1 to 2 kW Cylindrical Servomotors, 1,000 r/min, 900 W	R88A-CAGB□□□BR The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, or 20 m long.	 [Servomotor Connector] Straight plug: N/MS3106B20-18S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-12A (Japan Aviation Electronics Industry, Ltd.)
				[200 V] Cylindrical Servomotors, 3,000 r/min, 3 to 5 kW Cylindrical Servomotors, 2,000 r/min, 3 to 5 kW Cylindrical Servomotors, 1,000 r/min, 2 to 3 kW	R88A-CAGD□□□BR The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, or 20 m long.	 [Servomotor Connector] Straight plug: N/MS3106B24-11S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-16A (Japan Aviation Electronics Industry, Ltd.)

Note: Insert the cable length into the boxes in the model number of cables. (3 m: 003, 5 m: 005, 10 m: 010)

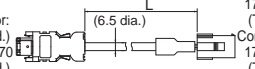
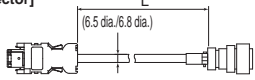

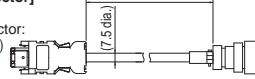
AC Servomotor/Drive G5-series Pulse Train Input Type

Brake Cables

Symbol	Name	Connected to	Model	Description
(2)	Non-flexible Cables	[200 V] Cylindrical Servomotors, 3,000 r/min, 50 to 750 W	R88A-CAGA□□□B	 <p>[Servomotor Connector] Connector: 172157-1 (Tyco Electronics AMP KK) Connector pins: 170362-1 (Tyco Electronics AMP KK) 170366-1 (Tyco Electronics AMP KK)</p>
	Brake Cables		The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, or 20 m long.	
(2)	Flexible Cables	[200 V] Cylindrical Servomotors, 3,000 r/min, 50 to 750 W	R88A-CAGA□□□BR	 <p>[Servomotor Connector] Connector: 172157-1 (Tyco Electronics AMP KK) Connector pins: 170362-1 (Tyco Electronics AMP KK) 170366-1 (Tyco Electronics AMP KK)</p>
	Brake Cables		The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, or 20 m long.	

Note: Insert the cable length into the boxes in the model number of cables. (3 m: 003, 5 m: 005, 10 m: 010)

Encoder Cables (for CN2)

Symbol	Name	Connected to	Model	Description	
(3)	Non-flexible Cables	[200 V] Cylindrical Servomotors, 3,000 r/min, 50 to 750 W (Incremental encoder)	R88A-CRGB□□□C	 <p>[Servo Drive Connector] Connector: 3 to 20 m: Crimped I/O connector: (Molex Japan Co., Ltd.) 30 to 50 m: 55100-0670 (Molex Japan Co., Ltd.) Connector pins: 50639-8028 (Molex Japan Co., Ltd.)</p> <p>[Servomotor Connector] Connector: 172160 (Tyco Electronics AMP KK) Connector pins: 170365-1 (Tyco Electronics AMP KK) 171639-1 (Tyco Electronics AMP KK)</p>	
			Encoder Cables with Connectors		The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, or 20 m long.
	Flexible Cables	Encoder Cables with Connectors	[200 V] Cylindrical Servomotors, 3,000 r/min, 1kW to 5kW Cylindrical Servomotors, 2,000 r/min, 1kW to 5kW Cylindrical Servomotors, 1,000 r/min, 900W to 3kW	R88A-CRGC□□□N	 <p>[Servo Drive Connector] Connector: Crimped I/O connector: (Molex Japan Co., Ltd.) 30 to 50 m: 55100-0670 (Molex Japan Co., Ltd.) Connector pins: 50639-8028 (Molex Japan Co., Ltd.)</p> <p>[Servomotor Connector] Straight plug: N/MS3106B20-29S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-12A (Japan Aviation Electronics Industry, Ltd.)</p>
				The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, or 20 m long.	
		Encoder Cables with Connectors	Cylindrical Servomotors, 3,000 r/min, 50 to 750 W	R88A-CRGB□□□CR	 <p>[Servo Drive Connector] Connector: Crimped I/O connector: (Molex Japan Co., Ltd.) Connector pins: 50639-8028 (Molex Japan Co., Ltd.)</p> <p>[Servomotor Connector] Connector: 172160-1 (Tyco Electronics AMP KK) Connector pins: 170365-1 (Tyco Electronics AMP KK)</p>
				The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, or 20 m long. (3 to 20 m: 5.2 dia, 30 to 50 m: 6.8 dia)	
Encoder Cables with Connectors	Cylindrical Servomotors, 3,000 r/min, 1kW to 5kW Cylindrical Servomotors, 2,000 r/min, 1kW to 5kW Cylindrical Servomotors, 1,000 r/min, 900W to 3kW	R88A-CRGC□□□NR	 <p>[Servo Drive Connector] Connector: Crimped I/O connector: (Molex Japan Co., Ltd.) Connector pins: 50639-8028 (Molex Japan Co., Ltd.)</p> <p>[Servomotor Connector] Straight plug: N/MS3106B20-29S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-12A (Japan Aviation Electronics Industry, Ltd.)</p>		
		The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, or 20 m long.			

Note: Insert the cable length into the boxes in the model number of cables. (3 m: 003, 5 m: 005, 10 m: 010)

AC Servomotor/Drive G5-series Pulse Train Input Type

Symbol	Name		Connected to		Model	
(4)	Control Cables	Direct connection cable for Position Control Unit (High-speed type)	Line-driver output type (High-speed type) for CJ1W-NC234/434	For 1 axis	XW2Z-□□□J-G9 The empty boxes in the model number are for the cable length. The cable can be 1, 5, or 10 m long.	
			Line-driver output type (High-speed type) for CJ1W-NC234/434	For 2 axis	XW2Z-□□□J-G1 The empty boxes in the model number are for the cable length. The cable can be 1, 5, or 10 m long.	
			Open collector output type (High-speed type) for CJ1W-NC214/NC414	For 1 axis	XW2Z-□□□J-G13 The empty boxes in the model number are for the cable length. The cable can be 1, or 3 m long.	
			Open collector output type (High-speed type) for CJ1W-NC214/NC414	For 2 axis	XW2Z-□□□J-G5 The empty boxes in the model number are for the cable length. The cable can be 1, or 3 m long.	
(5)	Servo Relay Units/Connection Cables	Servo Relay Units	Position Control Unit: For CJ1W-NC113/NC133 For CS1W-NC113/NC133 (For C200HW-NC113)	For 1 axis	XW2B-20J6-1B	
			Position Control Unit: For CJ1W-NC213/NC233/NC413/NC433 For CS1W-NC213/NC233/NC413/NC433 (For C200HW-NC213/NC413)	For 2 axis	XW2B-40J6-2B	
			For CJ1M-CPU21/CPU22/CPU23	For 1 axis	XW2B-20J6-8A	
				For 2 axis	XW2B-40J6-9A	
			For FQM1-MMP22 (Pulse train output)	For 2 axis	XW2B-80J7-12A	
(6)	Servo Relay Units/Connection Cables	Connection Cables	Servo Relay Unit Cables for Servo Drives	Position Control Unit: For CJ1W-NC□□3, CS1W/C200HW-NC□□□ (XW2B-20J6-1B, XW2B-40J6-2B)	XW2Z-□□□J-B25 The empty boxes in the model number are for the cable length. The cable can be 1, or 2 m long.	
				For CJ1M-CPU21/CPU22/CPU23 (XW2B-20J6-8A, XW2B-40J6-9A)	XW2Z-□□□J-B31 The empty boxes in the model number are for the cable length. The cable can be 1, or 2 m long.	
				For FQM1-MMP22 (Pulse train output) (XW2B-80J7-12A)	XW2Z-□□□J-B26 The empty boxes in the model number are for the cable length. The cable can be 1, or 2 m long.	
(7)	Servo Relay Units/Connection Cables	Connection Cables	Servo Relay Unit Cables for Position Control Units	CJ1W line-driver output type for CJ1W-NC133	For 1 axis	XW2Z-□□□J-A18 The empty boxes in the model number are for the cable length. The cable can be 0.5, or 1 m long.
				CJ1W line-driver output type for CJ1W-NC233/NC433	For 2 axis	XW2Z-□□□J-A19 The empty boxes in the model number are for the cable length. The cable can be 0.5, or 1 m long.
				CS1W line-driver output type for CS1W-NC133	For 1 axis	XW2Z-□□□J-A10 The empty boxes in the model number are for the cable length. The cable can be 0.5, or 1 m long.
				CS1W line-driver output type for CS1W-NC233/NC433	For 2 axis	XW2Z-□□□J-A11 The empty boxes in the model number are for the cable length. The cable can be 0.5, or 1 m long.
				CJ1W open collector output type for CJ1W-NC113	For 1 axis	XW2Z-□□□J-A14 The empty boxes in the model number are for the cable length. The cable can be 0.5, or 1 m long.
				CJ1W open collector output type for CJ1W-NC213/NC413	For 2 axis	XW2Z-□□□J-A15 The empty boxes in the model number are for the cable length. The cable can be 0.5, or 1 m long.
				CS1W/C200HW open collector output type for CS1W-NC113 for C200HW-NC113	For 1 axis	XW2Z-□□□J-A6 The empty boxes in the model number are for the cable length. The cable can be 0.5, or 1 m long.
				CS1W/C200HW open collector output type for CS1W-NC213/NC413 for C200HW-NC213/NC413	For 2 axis	XW2Z-□□□J-A7 The empty boxes in the model number are for the cable length. The cable can be 0.5, or 1 m long.

Note: Insert the cable length into the boxes in the model number of cables. (3 m: 003, 5 m: 005, 10 m: 010)

System Configuration

AC Servo Drive

AC Servomotor

Ordering Information

AC Servomotor/Drive G5-series Pulse Train Input Type

Symbol	Name		Connected to		Model		
(7)	Servo Relay Units/Connection Cables	Connection Cables	Servo Relay Unit Cables for Position Control Units	CSW/C200HW open collector output type for CJ2M-CPU31/CPU32/CPU33/CPU34/CPU35 for CJ2M-CPU11/CPU12/CPU13/CPU14/CPU15	For 1 axis	XW2Z-□□□J-A33 The empty boxes in the model number are for the cable length. The cable can be 0.5, 1, or 1 m long.	
				For FQM1-MMP22 (Pulse train output)	General-purpose I/O (26 pin)	For 2 axis	XW2Z-□□□J-A28 The empty boxes in the model number are for the cable length. The cable can be 0.5, 1, or 2 m long.
				For FQM1-MMP22 (Pulse train output)	Special I/O (40 pin)	For 2 axis	XW2Z-□□□J-A30 The empty boxes in the model number are for the cable length. The cable can be 0.5, 1, or 2 m long.
(8)	General-purpose Control Cables with Connector on One End		Cables for General-purpose Controllers		R88A-CPG□□□S The empty boxes in the model number are for the cable length. The cable can be 1, or 2 m long.		
(9)	For Connector Terminal Block	Connector Terminal Block Cables	Cable for General-purpose Controllers		XW2Z-□□□J-B24 The empty boxes in the model number are for the cable length. The cable can be 1, or 2 m long.		
(10)		Connector-Terminal Block Conversion Units	Cable for General-purpose Controllers	M3 screws	XW2B-50G4		
				M3.5 screws	XW2B-50G5		
				M3 screws	XW2D-50G6		

Note: Insert the cable length into the boxes in the model number of cables. (3 m: 003, 5 m: 005, 10 m: 010)

Monitor Connector (for CN5)

Symbol	Name	Lengths	Model
(11)	Analog Monitor Cable	1 m	R88A-CMK001S

Communications Connector (for CN7)

Symbol	Name	Description
(12)	USB communications cable	General purpose USB cable can be used

Note: Use a commercially available USB cable that is shield, equipped with a ferrite core for noise immunity, and Supporting for USB2.0. The Mini B type USB cable can be used.

Connectors

Connectors	Name	Model
CN1	Control I/O Connector (General-purpose Input)	R88A-CNU11C
CN2	Encoder Connector	R88A-CNW01R

Servomotor Connector

Connectors	Name	Connected to	Model
-	Motor connector for encoder cable	3,000 r/min, 50 to 750 W	R88A-CNG02R
-	Power cable connector	750 W max. (100 V/200 V)	R88A-CNG01A
-	Brake cable connector	750 W max. (100 V/200 V)	R88A-CNG01B

About Manuals

Please read the relevant manuals of G5-series Pulse Train input Type

English Cat. No.	Japanese Cat. No.	Type	Name
I584	-	R88D-KP/R88M-KE	G5-series Pulse Train Input Type AC SERVOMOTORS AND SERVO DRIVE USER'S MANUAL
W446	SBCA-337	CXONE-AL□□C-V□/-AL□□D-V□	CX-Programmer Operation Manual
W453	SBCE-337	CXONE-AL□□C/D-V□ WS02-DRVC01	CX-Drive OPERATION MANUAL

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OMRON Corporation Industrial Automation Company

Tokyo, JAPAN

Contact: www.ia.omron.com

Regional Headquarters

OMRON EUROPE B.V.

Wegalaan 67-69-2132 JD Hoofddorp
The Netherlands

Tel: (31)2356-81-300/Fax: (31)2356-81-388

OMRON ELECTRONICS LLC

One Commerce Drive Schaumburg,
IL 60173-5302 U.S.A.

Tel: (1) 847-843-7900/Fax: (1) 847-843-7787

OMRON ASIA PACIFIC PTE. LTD.

No. 438A Alexandra Road # 05-05/08 (Lobby 2),
Alexandra Technopark,
Singapore 119967

Tel: (65) 6835-3011/Fax: (65) 6835-2711

OMRON (CHINA) CO., LTD.

Room 2211, Bank of China Tower,
200 Yin Cheng Zhong Road,
PuDong New Area, Shanghai, 200120, China

Tel: (86) 21-5037-2222/Fax: (86) 21-5037-2200

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