OMRON

OMNUC W-series

AC Servomotors/Servodrivers

- Series now includes 1,500-r/min Servomotors.
- Servodrivers now available with capacities of up to 15 kW.

The advanced W Series of Servomotores and Servodrivers are loaded with functions. They can also be connected to DeviceNet networks, allowing easier distributed control and information management.

realizing

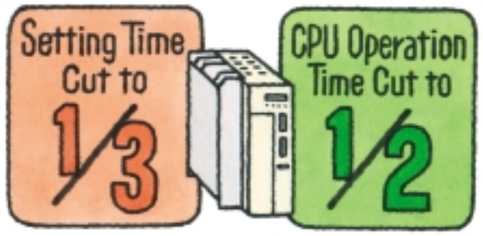
CE cULus

W Series

The OMNUC W Series provides the per formance demanded in today's workplace.
Their fast response, high speed, and pr ecise control will dramatically improve machine performance and pro ductivity.

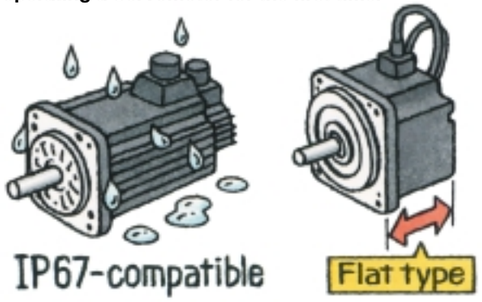
1 Dramatically improved basic performance.

To realize the productivity improvements demanded of equipment today, you have to maximize the equipment's performance with the best possible control. The OMNUC W-series CPU operation time has been cut in half and the settling time has been slashed to one-third compared to the OMNUC U Series. These improvements and others, such as upgraded control algorithms, have helped to dramatically improve basic performance.



2 More variety to suit different applications.

The OMNUC W Series has a wide range of variations to help build the ideal system. Space-saving flat Servomotors, water-resistant IP67-compatible Servomotors, and Servomotors with gears are all available even with capacities over 1 kW, which could not be handled with earlier models. Of course, absolute encoder compatibility and braking are still available and the Servomotors conform to safety standards, such as CE and UL/cUL. The built-in online autotuning function is effective in applications with machinery that has variable loads. The autotuning function makes it easy to adjust parameters, even for users operating a Servomotor for the first time.



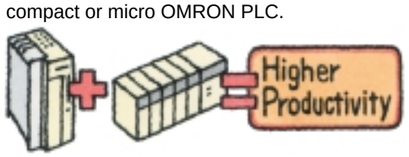
60 to 70 % of U Series.

Contents

This catalog provides information and specifications needed to select Servomotors and Servodrivers. It does not provide precautions for operating these products. Always refer to the OMNUC W-series AC Servomotors/Servodriver User's Manual for precautions and other information before operating these products.

+ Improve productivity even more by connecting to a PLC.

Even more advanced control and system configurations can be achieved by connecting to an OMRON Position Control Unit (such as a CS1W-NC□□□) or Motion Control Unit (such as a CS1-MC□□□) mounted to an OMRON PLC. Debugging can be performed using convenient Windows-based tools. For smaller scale systems, it is possible to connect to a compact or micro OMRON PLC.



+ Compatible with the open field network DeviceNet.

A DeviceNet Option Unit is also available. As a Position Control Unit, it can be connected directly to an OMNUC W-series Servodriver, and is equipped with communications functions for DeviceNet. This means that parameters can be set, the operating status can be monitored, and faults can be predicted from a PLC up to 500 m away.

The OMNUC W Series provides high performance and a multitude of functions. They are easy-to-use and the full line-up of variations can be used in a wide range of applications.

W Series High Performance

New Additions

The Series has been expanded to include 1,500-r/min Servomotors (for both incremental and absolute encoders) with capacities ranging from 450 W to 15 kW and Servodrivers with capacities of 7.5 kW and 15 kW.

Reduced Settling Time

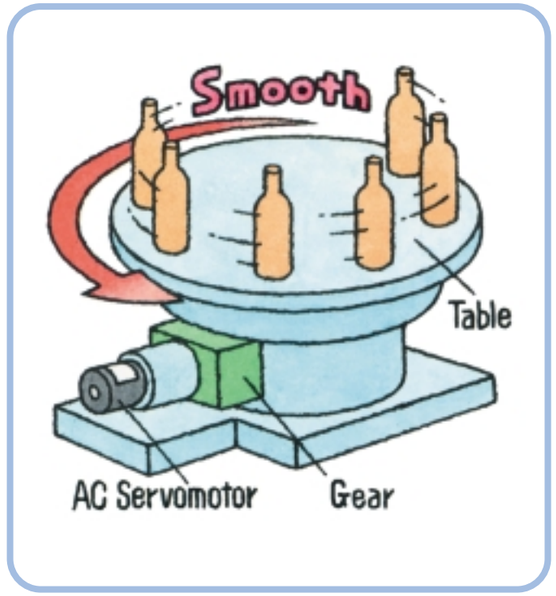
Vibration-suppression has been improved with upgraded control algorithms. Even with low-rigidity machinery, the upgraded vibration-suppression can slash the settling time to 1/3 the time required in the U Series.

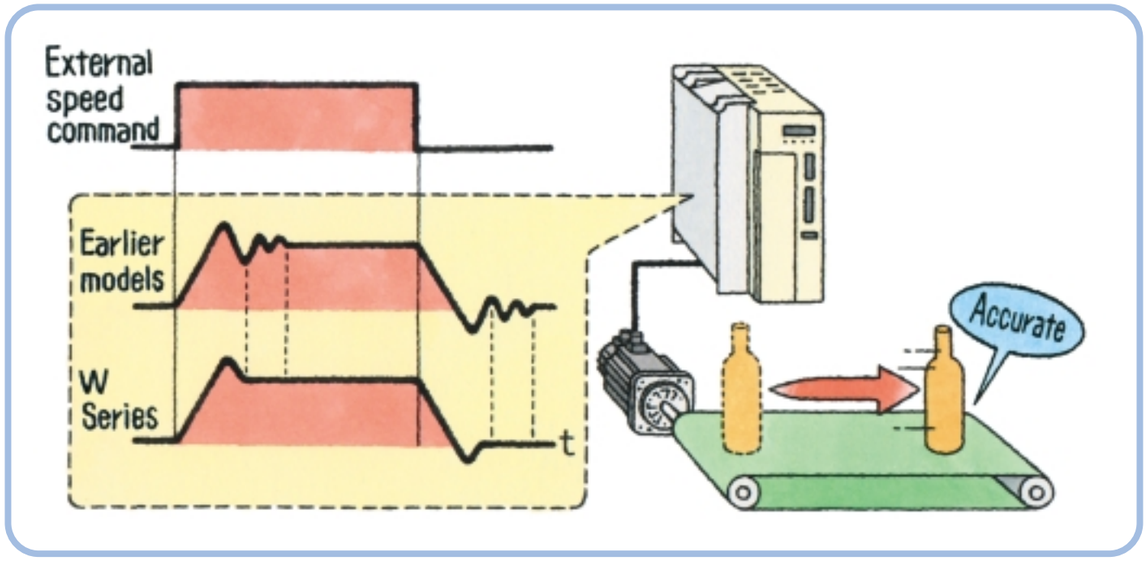
High-speed, High-precision Drive

A maximum speed of 5,000 r/min has been achieved in most models. Positioning precision can be improved by using a high-resolution serial encoder (16,384 pulses/revolution or 32,768 pulses/revolution). Torque control precision (reproducibility) has also been improved to –2%.

Smooth Operation

Motor speed ripple has been reduced substantially. Operation is smooth at low speeds.





W Series Easy Setup

Online Autotuning

Automatically measures machine characteristics and sets required servo gains. Settings can be made quickly even by first-time users.

Automatic Motor Discrimination Function

The Servodriver automatically determines the Servomotor's capacity and model and sets the motor parameters accordingly.

Personal Computer Monitoring Software

Windows-based monitoring software is available. The software can be used to easily perform tasks such as setting up the system, monitoring operation, and editing parameters. Of course the U-series models (including the UE models) can be connected, too.

W Series Flexibility

Comprehensive Motor Line

A full line of variations is available, including motors with brakes, motors with gears, and flat-profile motors. Also, three different rated motor speeds are available: 3,000 r/min, 1,500 r/min, and 1,000 r/min. The wide variety allows you to choose the best model for your application.

Compatible with Long Cables

Unlike conventional models, long power cables and encoder cables (up to 70 m) can be used.

All-in-one Control

Torque, position, and speed control can be achieved just by switching parameters.

Regenerative Resistance Terminals Standard

External regenerative resistance terminals are standard equipment, so regenerative resistance can be connected very easily.

W Series Reliability

Conformance to International Standards

The W-series Servomotors and Servodrivers can be exported and used overseas because they conform to UL/cUL standards.

Environmentally Resistant Models

Enclosures can conform to IP67 standards (possible for flat-profile motors, 3,000-r/min motors with capacities of 1 kW or more, 1,000-r/min motors, and 1,500-r/min motors). These motors are ideal for applications where waterproofing is required.

Countermeasures Against Power Supply Harmonics

A DC reactor connection terminal is provided.

W Series Easy Maintenance

Simple Replacement of OMRON Servomotors

OMRON S-, R-, H-, V-, and M-series Servomotors can now be replaced with W-series Servomotors.

Built-in Parameter Setting Device

Parameters can be input directly from the Servodriver.

Reduced Wiring

When a serial encoder is used, the number of encoder signal wires is 1/2 of earlier models.
Absolute encoder: Wires reduced from 15 to just 7.
Incremental encoder: Wires reduced from 9 to just 5.

Separate Main and Control Power Supplies

The main and control power supplies have been separated completely. If an alarm occurs, the alarm code can be read and the appropriate countermeasures can be taken even with the main power supply turned OFF for safety.

W Series DeviceNet Communications Functions

Trace Function

When trigger conditions are satisfied, up to two analog elements and two ON/OFF elements can be recorded in the DeviceNet Option Unit and read from the PLC.

Monitor Item Reading Function

The contents of AC Servodriver monitor display can be read from the PLC.

Parameter Reading/Writing Function

Parameters can be checked from the PLC using DeviceNet communications, and reading/writing performed according to the operating status.

Note: If the DeviceNet Option Unit is mounted to an AC Servodriver, the AC Servodriver will automatically be set to operate in position control mode. No other operating mode can be used.

Servomotor/Servodriver Combinations

Choose the Servomotor/Servodriver for Each Application to Maximize Performance

R88M Servomotors						R88D Servodrivers			Application
Style	Rated speed	Capacity	International standards CE, UL/cUL	Shaft end (without reduction gear)	Enclosure rating	100 V	200 V Single phase	200 V Three phase	
Cylinder style	3,000 r/min. (5,000 r/min.)	30 W	Approved	Straight With key With key and tap Straight with tap	IP55 (excluding shaft opening)	WTA3HL	WTA3H	---	Low-inertia machines Machines with fast tact times (Robots, Assembly machines, Conveyance machines)
		50 W				WTA5HL	WTA5H	---	
		100 W				WT01HL	WT01H	---	
		200 W				WT02HL	WT02H	---	
		400 W				---	WT04H	---	
		750 W				---	WT08H (See note.)	WT08H	
		1 kW		With key and tap Straight	IP67 (excluding shaft opening)	---	---	WT10H	
		1.5 kW				---	---	WT15H	
		2 kW				---	---	WT20H	
		3 kW				---	---	WT30H	
		4 kW				---	---	WT50H	
		5 kW				---	---	WT50H	
	1,500 r/min. (3,000 r/min.)	450 W	Approved	With key and tap Straight	IP67 (excluding shaft opening)	---	---	WT05H	Machines requiring high torque (Simple processing machines, Assembly machines, Transfer machines)
		850 W				---	---	WT10H	
		1.3 kW				---	---	WT15H	
		1.8 kW				---	---	WT20H	
		2.9 kW				---	---	WT30H	
		4.4 kW				---	---	WT50H	
		5.5 kW				---	---	WT60H	
		7.5 kW				---	---	WT75H	
	1,500 r/min. (2,000 r/min.)	11 kW				---	---	WT150H	
		15 kW				---	---	WT150H	
	1,000 r/min. (2,000 r/min.)	300 W	Approved	With key and tap Straight	IP67 (excluding shaft opening)	---	---	WT05H	Machines requiring high torque (Simple processing machines, Assembly machines, Transfer machines)
		600 W				---	---	WT08H	
		900 W				---	---	WT10H	
		1.2 kW				---	---	WT15H	
		2 kW				---	---	WT20H	
		3 kW				---	---	WT30H	
		4 kW				---	---	WT50H	
		5.5 kW				---	---	WT60H	
Flat style	3,000 r/min. (5,000 r/min.)	100 W	Approved	Straight With key With key and tap Straight with tap	IP55 (excluding shaft opening) IP67 (including shaft opening)	WT01HL	WT01H	---	Machines allowing little motor depth Machines requiring waterproof motor (Semiconductor-manufacturing machines, Food-processing machines, AGVs)
		200 W				WT02HL	WT02H	---	
		400 W				---	WT04H	---	
		750 W				---	WT08H (See note.)	WT08H	
		1.5 kW				---	---	WT15H	

Note: When using a 200-V single-phase Servomotor, it is necessary to change part of the power supply wiring. Refer to the relevant connection diagram for details. The power supply specification is 220 to 230 VAC (+10%/–15%).

■ Available Models

AC Servodrivers

R88D-WT□□H□
1 2 3 4 5 6

Part	Item	Code	Specification
1	R88D indicates the product is a Servodriver.		
2	Series	W	W-series
3	Input signal	T	Analog or pulse-train input
4	Max. output capacity	A3	30 W
		A5	50 W
		01	100 W
		02	200 W
		04	400 W
		05	500 W
		08	750 W
		10	1 kW
		15	1.5 kW
		20	2 kW
		30	3 kW
		50	5 kW
		60	6 kW
		75	7.5 kW
		150	15 kW
5	---	H	---
6	Power supply	Blank	200 VAC
		L	100 VAC

AC Servomotors (Without Reduction Gear)

R88M-W□□□□□□□-□□□□
1 2 3 4 5 6 7 8 9

Part	Item	Code	Specification
1	R88M indicates the product is a Servomotor.		
2	Series	W	W-series
3	Style	Blank	Cylinder style
		P	Flat style
4	Motor capacity	030	30 W
		100	100 W
		1K0	1 kW
5	Speed	10	1000 r/min.
		15	1500 r/min.
		30	3000 r/min.
6	Motor power supply specifications	H	200 VAC, incremental encoder
		L	100 VAC, incremental encoder
		T	200 VAC, absolute encoder
		S	100 VAC, absolute encoder
7	Brake	Blank	No brake
		B	24-VDC brake
8	Waterproof/ oil seal specifications	Blank	No additional specifications
		O	With oil seal
		W	Waterproof
9	Shaft end	Blank	Straight
		S1	With key
		S2	With key and tap
		S3	Straight with tap

Note: Waterproof specifications are available for only flat-style motors.

AC Servomotors (With Reduction Gear)

R88M-W□□□□□□□-□G□□□□
1 2 3 4 5 6 7 8 9 10

Part	Item	Code	Specification
1	R88M indicates the product is a Servomotor.		
2	Series	W	W-series
3	Style	Blank	Cylinder style
		P	Flat style
4	Motor capacity	030	30 W
		100	100 W
		1K0	1 kW
5	Speed	10	1000 r/min.
		15	1500 r/min.
		30	3000 r/min.
6	Motor power supply specifications	H	200 VAC, incremental encoder
		L	100 VAC, incremental encoder
		T	200 VAC, absolute encoder
		S	100 VAC, absolute encoder
7	Brake	Blank	No brake
		B	24-VDC brake
8	Gear ratio (See note.)	G05 to G45	G05: 1/5, G09: 1/9, G11: 1/11, G15: 1/15, G20: 1/20, G21: 1/21, G25: 1/25, G29: 1/29, G33: 1/33, G45: 1/45
9	Backlash	B	3 minutes max.
		C	About 45 minutes
10	Brake shaft end	Blank	Straight
		J	With key

Note: Not all motors can be combined with a reduction gear. See “Servomotor and Reduction Gear Combinations” on page 10 for more details.

Servomotor Combinations (Models without Reduction Gears)

R88M-W□□□□□□□-□□□□
3 4 5 6 7 8 9

3	4	5	Basic model	6				7		8			9			
Type	Capacity	Rotation speed		Motor power supply specification				With/without brake		Wateproof/oil seal specifications			Shaft shape			
				H	L	T	S	Blank	B	Blank	O	W	Blank	S1	S2	S3
Cylinder	30 W	3,000 r/min	R88M-W03030	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes
	50 W		R88M-W05030	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes
	100 W		R88M-W10030	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes
	200 W		R88M-W20030	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes
	400 W		R88M-W40030	Yes		Yes		Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes
	750 W		R88M-W75030	Yes		Yes		Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes
	1 kW		R88M-W1K030	Yes		Yes		Yes	Yes	Yes	Yes		Yes		Yes	
	1.5 kW		R88M-W1K530	Yes		Yes		Yes	Yes	Yes	Yes		Yes		Yes	
	2 kW		R88M-W2K030	Yes		Yes		Yes	Yes	Yes	Yes		Yes		Yes	
	3 kW		R88M-W3K030	Yes		Yes		Yes	Yes	Yes	Yes		Yes		Yes	
	4 kW		R88M-W4K030	Yes		Yes		Yes	Yes	Yes	Yes		Yes		Yes	
	5 kW		R88M-W5K030	Yes		Yes		Yes	Yes	Yes	Yes		Yes		Yes	
	450 W	1,500 r/min	R88M-W45015			Yes		Yes	Yes	Yes	Yes		Yes		Yes	
	850 W		R88M-W85015			Yes		Yes	Yes	Yes	Yes		Yes		Yes	
	1.3 kW		R88M-W1K315			Yes		Yes	Yes	Yes	Yes		Yes		Yes	
	1.8 kW		R88M-W1K815			Yes		Yes	Yes	Yes	Yes		Yes		Yes	
	2.9 kW		R88M-W2K915			Yes		Yes	Yes	Yes	Yes		Yes		Yes	
	4.4 kW		R88M-W4K415			Yes		Yes	Yes	Yes	Yes		Yes		Yes	
	5.5 kW		R88M-W5K515			Yes		Yes	Yes	Yes	Yes		Yes		Yes	
	7.5 kW		R88M-W7K515			Yes		Yes	Yes	Yes	Yes		Yes		Yes	
	11 kW		R88M-W11K015			Yes		Yes	Yes	Yes	Yes		Yes		Yes	
	15 kW		R88M-W15K015			Yes		Yes	Yes	Yes	Yes		Yes		Yes	
	300 W	1,000 r/min	R88M-W30010	Yes		Yes		Yes	Yes	Yes	Yes		Yes		Yes	
	600 W		R88M-W60010	Yes		Yes		Yes	Yes	Yes	Yes		Yes		Yes	
	900 W		R88M-W90010	Yes		Yes		Yes	Yes	Yes	Yes		Yes		Yes	
	1.2 kW		R88M-W1K210	Yes		Yes		Yes	Yes	Yes	Yes		Yes		Yes	
	2 kW		R88M-W2K010	Yes		Yes		Yes	Yes	Yes	Yes		Yes		Yes	
	3 kW		R88M-W3K010	Yes		Yes		Yes	Yes	Yes	Yes		Yes		Yes	
	4 kW		R88M-W4K010	Yes		Yes		Yes	Yes	Yes	Yes		Yes		Yes	
	5.5 kW		R88M-W5K510	Yes		Yes		Yes	Yes	Yes	Yes		Yes		Yes	
Flat	100 W	3,000 r/min	R88M-WP10030	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	200 W		R88M-WP20030	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	400 W		R88M-WP40030	Yes		Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	750 W		R88M-WP75030	Yes		Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	1.5 kW		R88M-WP1K530	Yes		Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: 1,500-r/min motors are equipped with absolute encoders only. (These encoders can, however, be used as incremental encoders.)

Servomotor and Reduction Gear Combinations

■ How to Use the Servomotor Combination Tables

Use the table on the right, *Motor and Reduction Gear Combinations*, to check whether or not the desired combination is possible. Next, check the configuration details using the table for the corresponding Servomotor category.

• The model numbers are basically configured with the motor capacity (1) and the gear ratio option specification (2).

R88M-W□-□
1 2

• The meanings of the symbols used in the tables are as follows:

□ Blank: Without brake
B: With brake

▲ Blank: Straight shaft
J: With key

✻ H: 200 VAC with incremental encoder
L: 100 VAC with incremental encoder
T: 200 VAC with absolute encoder
S: 100 VAC with absolute encoder

☆ H: 200 VAC with incremental encoder
T: 200 VAC with absolute encoder

Motor and Reduction Gear Combinations

Motor type	Capacity	Reduction gear type		Standalone Reduction Gear (See note 1.)
		Standard (Backlash: 30' max.)	Economy (Backlash: Approx. 45')	Standard (Backlash: 30' max.)
Cylinder-style motor (3,000 r/min)	30 W to 750 W	Yes	Yes	Yes
	1 kW to 5 kW	Yes		
Cylinder-style motor (1,500 r/min)	450 W to 15 kW	Yes		
Cylinder-style motor (1,000 r/min)	300 W to 5.5 kW	Yes		
Flat-style motor	100 W to 750 W	Yes	Yes	Yes
	1.5 kW	Yes		

Note: 1. The SMARTSTEP Reduction Gear (backlash: 3 min max.) can be combined with the 3,000-r/min, 50- to 750-W motor. The actual installation work to combine the Reduction Gear and Servomotor should be done by the customer.
2. "Yes" represents compatible combinations. Any combinations without "Yes" cannot be used.

■ 30-W to 750-W Cylinder-style Motors (3,000 r/min)

Motor capacity	Basic model	Reduction gear ratio				
		1/5	1/9	1/11	1/21	1/33
		-□G05B▲	-□G09B▲	-□G11B▲	-□G21B▲	-□G33B▲
30 W	R88M-W03030✻-□	Yes	Yes		Yes	Yes
50 W	R88M-W05030✻-□	Yes	Yes		Yes	Yes
100 W	R88M-W10030✻-□	Yes		Yes	Yes	Yes
200 W	R88M-W20030✻-□	Yes		Yes	Yes	Yes
400 W	R88M-W40030☆-□	Yes		Yes	Yes	Yes
750 W	R88M-W75030☆-□	Yes		Yes	Yes	Yes

Note: "Yes" represents compatible combinations. Any combinations without "Yes" cannot be used.

Economy Reduction Gears (Backlash: Approx. 45')

Motor capacity	Basic model	Reduction gear ratio			
		1/5	1/9	1/15	1/25
		-□G05CJ	-□G09CJ	-□G15CJ	-□G25CJ
30 W	R88M-W03030✻-□				
50 W	R88M-W05030✻-□				
100 W	R88M-W10030✻-□	Yes	Yes	Yes	Yes
200 W	R88M-W20030✻-□	Yes	Yes	Yes	Yes
400 W	R88M-W40030☆-□	Yes	Yes	Yes	Yes
750 W	R88M-W75030☆-□	Yes	Yes	Yes	Yes

Note: 1. "Yes" represents compatible combinations. Any combinations without "Yes" cannot be used.
2. These reduction gears can be attached to only shafts with key.

■ 1-kW to 5-kW Cylinder-style Motors (3,000 r/min)

Motor capacity	Basic model	Reduction gear ratio				
		1/5	1/9	1/20	1/29	1/45
		-□G05BJ	-□G09BJ	-□G20BJ	-□G29BJ	-□G45BJ
1 kW	R88M-W1K030☆-□	Yes	Yes	Yes	Yes	Yes
1.5 kW	R88M-W1K030☆-□	Yes	Yes	Yes	Yes	Yes
2 kW	R88M-W2K030☆-□	Yes	Yes	Yes	Yes	Yes
3 kW	R88M-W3K030☆-□	Yes	Yes	Yes	Yes	Yes
4 kW	R88M-W4K030☆-□	Yes	Yes	Yes	Yes	
5 kW	R88M-W5K030☆-□	Yes	Yes	Yes		

Note: 1. "Yes" represents compatible combinations. Any combinations without "Yes" cannot be used.
2. These reduction gears can be attached to only shafts with key.

■ 100-W to 1.5-kW Flat-style Motors (3,000 r/min)

Standard Reduction Gears (Backlash: 3' max.)

Motor capacity	Basic model	Reduction gear ratio			
		1/5	1/11	1/21	1/33
		-□G05B▲	-□G11B▲	-□G21B▲	-□G33B▲
100 W	R88M-WP10030✻-□	Yes	Yes	Yes	Yes
200 W	R88M-WP20030✻-□	Yes	Yes	Yes	Yes
400 W	R88M-WP40030☆-□	Yes	Yes	Yes	Yes
750 W	R88M-WP75030☆-□	Yes	Yes	Yes	Yes
1.5 kW	R88M-WP1K530☆-□	Yes	Yes	Yes	Yes

Note: "Yes" represents compatible combinations.

Economy Reduction Gears (Backlash: Approx. 45')

Motor capacity	Basic model	Reduction gear ratio			
		1/5	1/9	1/15	1/25
		-□G05CJ	-□G09CJ	-□G15CJ	-□G25CJ
100 W	R88M-WP10030✻-□	Yes	Yes	Yes	Yes
200 W	R88M-WP20030✻-□	Yes	Yes	Yes	Yes
400 W	R88M-WP40030☆-□	Yes	Yes	Yes	Yes
750 W	R88M-WP75030☆-□	Yes	Yes	Yes	Yes
1.5 kW	R88M-WP1K530☆-□				

Note: 1. "Yes" represents compatible combinations. Any combinations without "Yes" cannot be used.
2. These reduction gears can be attached to only shafts with key.

■ 450-W to 15-kW Cylinder-style Motors (1,500 r/min)

Motor capacity	Basic model	Reduction gear ratio				
		1/5	1/9	1/20	1/29	1/45
		-□G05BJ	-□G09BJ	-□G20BJ	-□G29BJ	-□G45BJ
450 W	R88M-W45015☆-□	Yes	Yes	Yes	Yes	Yes
850 W	R88M-W85015☆-□	Yes	Yes	Yes	Yes	Yes
1.3 kW	R88M-W1K315☆-□	Yes	Yes	Yes	Yes	Yes
1.8 kW	R88M-W1K815☆-□	Yes	Yes	Yes	Yes	
2.9 kW	R88M-W2K915☆-□	Yes	Yes	Yes		
4.4 kW	R88M-W4K415☆-□	Yes	Yes			
5.5 kW	R88M-W5K515☆-□					
7.5 kW	R88M-W7K515☆-□					
11 kW	R88M-W11K015☆-□					
15 kW	R88M-W15K015☆-□					

Note: 1. "Yes" represents compatible combinations. Any combinations without "Yes" cannot be used.
2. These reduction gears can be attached to only shafts with key.
3. The motors are equipped with absolute encoders only. (These encoders can, however, be used as incremental encoders.)

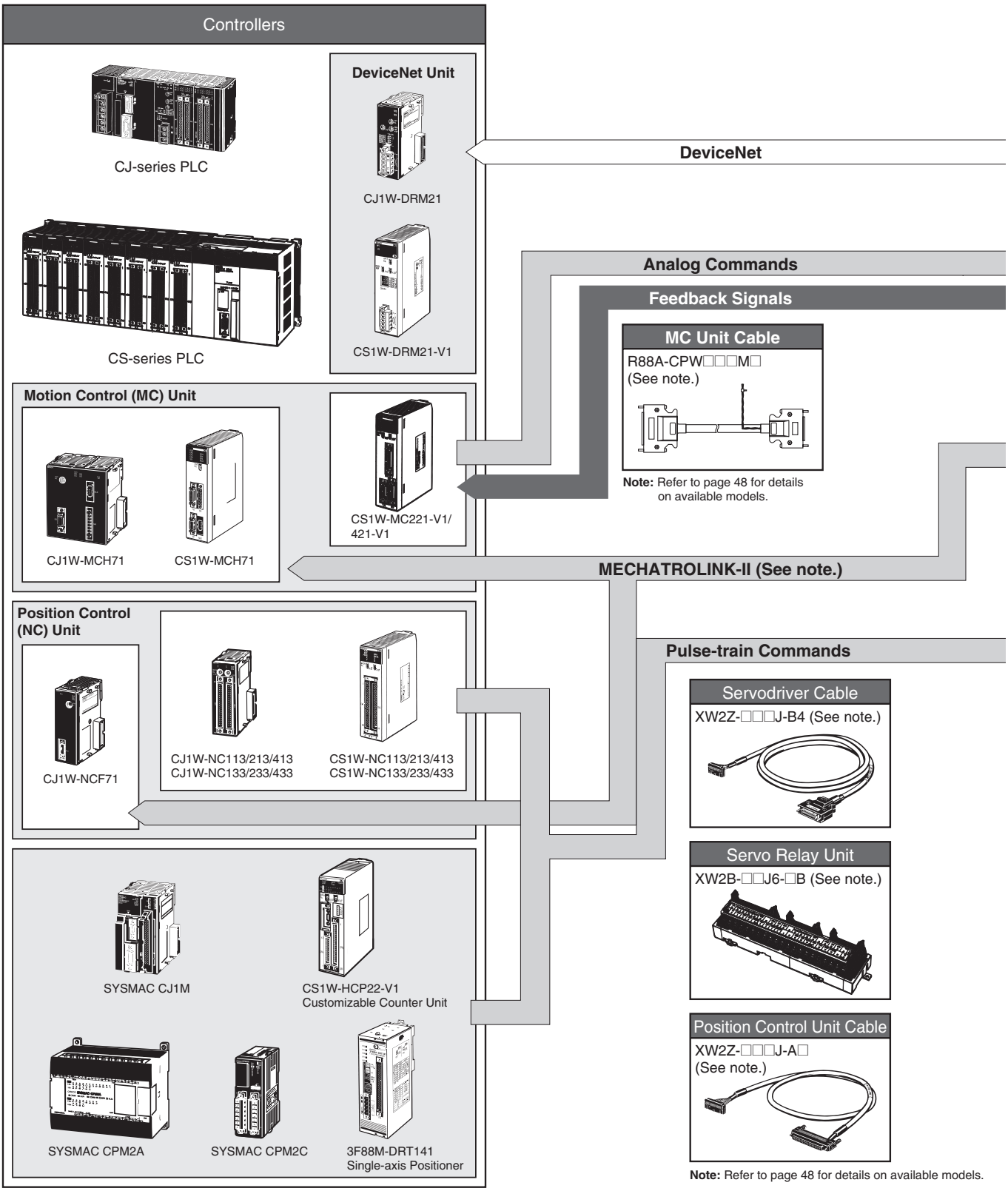
■ 300-W to 5.5-kW Cylinder-style Motors (1,000 r/min)

Motor capacity	Basic model	Reduction gear ratio				
		1/5	1/9	1/20	1/29	1/45
		-□G05BJ	-□G09BJ	-□G20BJ	-□G29BJ	-□G45BJ
300 W	R88M-W30010☆-□	Yes	Yes	Yes	Yes	Yes
600 W	R88M-W60010☆-□	Yes	Yes	Yes	Yes	Yes
900 W	R88M-W90010☆-□	Yes	Yes	Yes	Yes	Yes
1.2 kW	R88M-W1K210☆-□	Yes	Yes	Yes		
2 kW	R88M-W2K010☆-□	Yes	Yes	Yes		
3 kW	R88M-W3K010☆-□	Yes	Yes			
4 kW	R88M-W4K010☆-□					
5.5 kW	R88M-W5K510☆-□					

Note: 1. "Yes" represents compatible combinations. Any combinations without "Yes" cannot be used.
2. These reduction gears can be attached to only shafts with key.

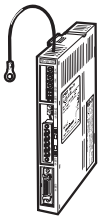
System Configuration

Flexible System Configuration That Can Be Matched to the Application



AC Servodrivers

DeviceNet Option Unit

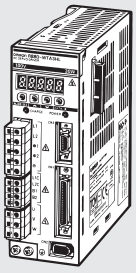


R88A-NCW152-DRT

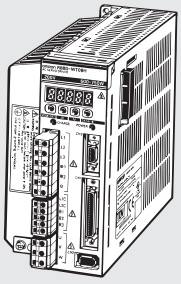
MECHATROLINK-II Interface Unit

Yaskawa model number JUSP-NS115 (OMRON ordering model number FNY-NS115) (See note.)

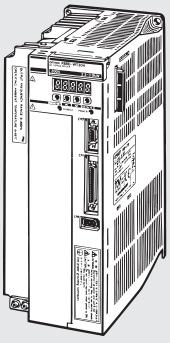
Note: Use the OMRON ordering model number (FNY-NS115) when ordering. The product is marked only with the Yaskawa model number (JUSP-NS115).



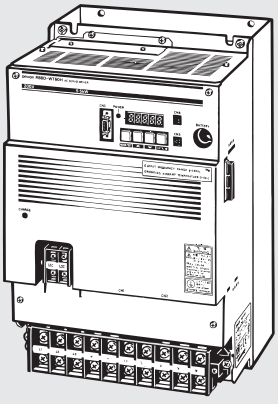
R88D-WTA3HL



R88D-WT08H



R88D-WT30H

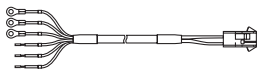


R88D-WT60H

Note: The illustrations shown here are examples only.

Power Cables (See note.)

For motors without brake:
R88A-CAW□□□□S
For motors with brake:
R88A-CAW□□□□B



Note: Refer to page 48 for details on available models.

Power Signals

Feedback Signals

Encoder Cables (See note.)

R88A-CRWA□□□C
For cylinder-style motors (3,000 r/min): 30 W to 75 W

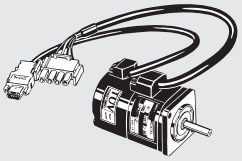
R88A-CRWB□□□N
For cylinder-style motors (3,000 r/min): 1 kW to 5 kW

For cylinder-style motors (1,000 r/min): 300 W to 5.5 kW

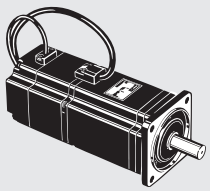
For cylinder-style motors (1,500 r/min): 450 W to 15 kW

Note: Refer to page 48 for details on available models.

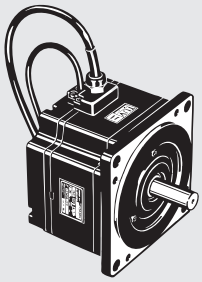
AC Servomotors



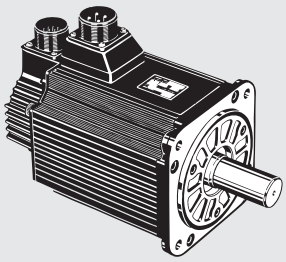
R88M-W03030L



R88M-W75030T-B



R88M-WP75030H



R88M-W3K030H

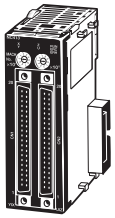
Note: The illustrations shown here are examples only.

Controllers

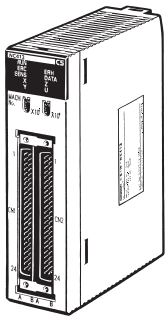
Combining the Servodriver with a Controller from Simple Positioning Can Improve Machine Productivity to Advanced Positioning

■ Position Control (NC) Units

Perform simple positioning just by writing position data from the CPU Unit.

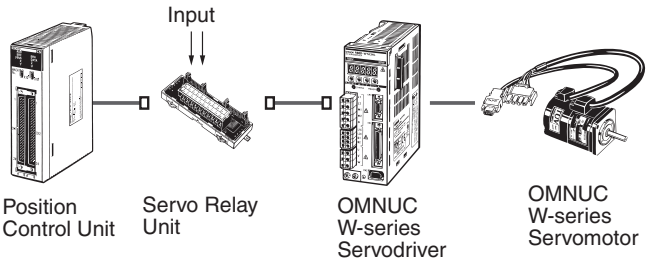


CJ1W-NC113/213/413
CJ1W-NC133/233/433



CS1W-NC113/213/413
CS1W-NC133/233/433
C200HW-NC113/213/413

- The Position Control Unit can respond to commands from the CPU Unit and produce a pulse output at high speed (2 ms when using the CS1W-NC or CJ1W-NC.)
- To suppress machine vibration, an S-shape curve can be specified for the acceleration/deceleration curve instead of a trapezoidal curve.
- When the CS1W-NC or CJ1W-NC is being used, the Unit's data and parameters can be created and stored easily using the Windows-based WS02-NCTC1-E Support Software.
- Position data can be stored in the Position Control Unit's flash memory, which eliminates the need to periodically replace the backup battery.



Open Loop Method, Pulse Output

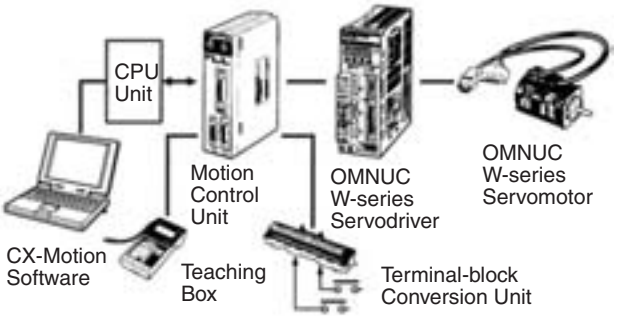
- Simple positioning can be performed with the direct operation function.

■ Motion Control (MC) Units

These high-speed, highly accurate, 2-axis/4-axis Motion Controllers are equipped with the multi-tasking G language and are compatible with absolute and incremental encoders.

CS1W-MC221/421

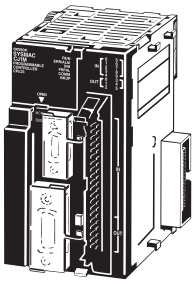
C200H-MC221



- The multi-tasking G language allows 4 axes to be controlled simultaneously and it is also possible to control each axis independently. The G language can simplify the PLC's ladder program by reducing position-control-related ladder programming.
- Winding operations can be simplified and speeded up. (Instructions providing a 2-axis traverse function are available.)
- The encoder response frequency is 2 Mpps for x4 operation, which is compatible with applications requiring high-speed and high-accuracy.
- A D code (interrupt code) can be output to the CPU Unit when positioning is completed or an important position is passed.
- Programming is easy with the WIndows-based CX-Motion Support Software.
- A manual pulse generator can be used.

■ SYSMAC CJ1M

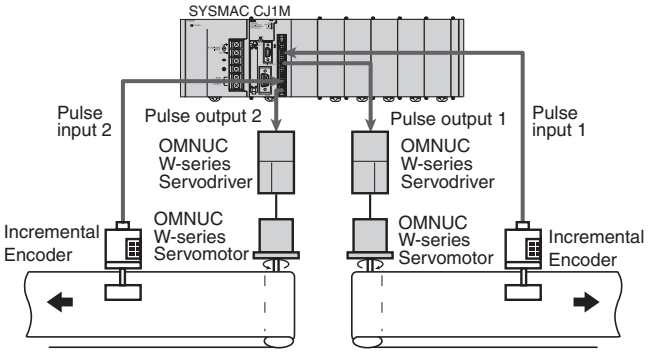
The CJ1M is a high-performance, compact PLC for distributed control.
Built-in I/O boards and special instructions support simple positioning and pulse I/O.



SYSMAC CJ1M

Simple Positioning

The Pulse I/O board is equipped with two ports each for input and output, supporting high-speed input at up to 100 kHz and output at up to 100 kHz. Connection with a Servodriver enables simple positioning.



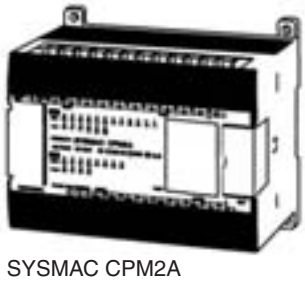
Special Instructions for Simple Positioning

Equipped with special pulse I/O instructions, the CJ1M can be operated by writing easy ladder programs.

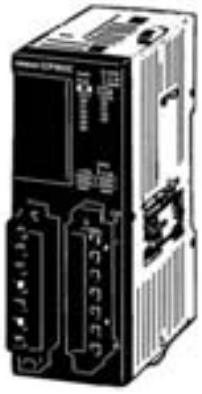
Instruction example: Search for origin (ORG), speed instruction (ACC), pulse output (PLS2)

■ SYSMAC CPM2A/CPM2C

The CPM2A/CPM2C PLCs are equipped with synchronized pulse control and position control functions. Meets the needs for higher line speed and multiple-product small-lot production.



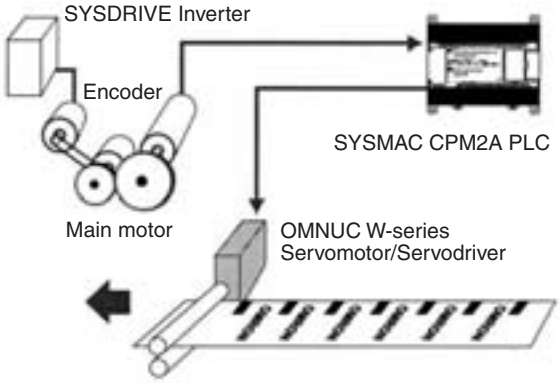
SYSMAC CPM2A



SYSMAC CPM2C

Synchronized Pulse Control

The output pulse frequency can be set to be a specified multiple of the input pulse frequency and that multiple can be changed from the ladder program. This function can be used to adjust the feed rate of packaging film so that the brand name or other printing remains in the correct location during packaging.



Position Control Function

This function supports 1-axis pulse outputs with trapezoidal acceleration/deceleration (10 kHz) and 2-axis simple pulse outputs. A Servomotor can be used for operations such as adjusting the feed rate of workpieces (constant feed) and the amount of fillings (constant amount) such as jam or custard.

Servomotor Specifications

■ Performance Specifications

Cylinder-style Motors (3,000 r/min)

Item			200 VAC										
Servomotor (R88M-)			W03030□	W05030□	W10030□	W20030□	W40030□	W75030□	W1K030□	W1K530□	W2K030□	W3K030□	W4K030□	W5K030□
Servodriver (R88D-)			WTA3H	WTA5H	WT01H	WT02H	WT04H	WT08H	WT10H	WT15H	WT20H	WT30H	WT50H	WT50H
Rated output		W	30	50	100	200	400	750	1 k	1.5 k	2 k	3 k	4 k	5 k
Rated torque		N·m	0.0955	0.159	0.318	0.637	1.27	2.39	3.18	4.90	6.36	9.80	12.6	15.8
Max. momentary torque		N·m	0.286	0.477	0.955	1.91	3.82	7.16	9.54	14.7	19.1	29.4	37.8	47.6
Rated speed		r/min	3,000											
Max. momentary speed		r/min	5,000											
Rated current		A(rms)	0.44	0.64	0.91	2.1	2.8	4.4	5.7	9.7	12.7	18.8	25.4	28.6
Rotor inertia (without brake)		kg·m^2 × 10^{-4}	0.0166	0.022	0.0364	0.106	0.173	0.672	1.74	2.47	3.19	7.0	9.6	12.3
Power rate		kW/s	5.49	11.5	27.8	38.2	93.7	84.8	57.9	97.2	127	137	166	202
Applicable load inertia		Multiple	100 (Restricted, however, by the regenerative processing capacity.)						10					
Allowable radial load on shaft		N	68		78	245		392	686			980	1176	
Allowable thrust load on shaft		N	54			74		147	196			392		
Approx. weight (without brake)		kg	0.3	0.4	0.5	1.1	1.7	3.4	4.6	5.8	7.0	11.0	14.0	17.0
Approx. weight (with brake)		kg	0.6	0.7	0.8	1.6	2.2	4.3	6.0	7.5	8.5	14.0	17.0	20.0
Encoder resolution (See note.)		INC	A, B phase: 2,048 pulses/rev.						A, B phase: 32,768 pulses/rev.					
		ABS	A, B phase: 16,384 pulses/rev.						A, B phase: 32,768 pulses/rev.					
Brake specifications														
	Inertia	kg·m^2 × 10^{-4}	0.0085			0.058		0.14	0.325			2.1		
	Excitation voltage	V	24 VDC ±10%						24 VDC ±10%					
	Power consumption	W	6			6.9		7.7	7			9.85		
	Current consumption	A	0.25			0.29		0.32	0.29			0.41		
	Static friction torque	N•m	0.2min.		0.34 min.	1.47 min.		2.45 min.	7.84 min.			20 min.		
	Absorption time	ms	30 max.			60 max.		80 max.	180 max.					
	Release time	ms	60 max.			20 max.		20 max.	100 max.					
	Backlash	---	1° (reference value)											
	Rating	---	Continuous											
	Insulation	---	Type F											

Note: The encoder resolution for the Z phase is 1 pulse/rev.

Cylinder-style Motors (3,000 r/min)

Item			100 VAC			
Servomotor (R88M-)			W03030□	W05030□	W10030□	W20030□
Servodriver (R88D-)			WTA3HL	WTA5HL	WT01HL	WT02HL
Rated output		W	30	50	100	200
Rated torque		N·m	0.0955	0.159	0.318	0.637
Max. momentary torque		N·m	0.286	0.477	0.955	1.91
Rated speed		r/min	3,000			
Max. momentary speed		r/min	5,000			
Rated current		A(rms)	0.66	0.95	2.4	3.0
Rotor inertia (without brake)		kg·m^2 × 10^{-4}	0.0166	0.022	0.0364	0.106
Power rate		kW/s	5.49	11.5	27.8	38.2
Applicable load inertia		Multiple	100 (Restricted, however, by the regenerative processing capacity.)			
Allowable radial load on shaft		N	68		78	245
Allowable thrust load on shaft		N	54			74
Approx. weight (without brake)		kg	0.3	0.4	0.5	1.1
Approx. weight (with brake)		kg	0.6	0.7	0.8	16
Encoder resolution		INC	A, B phase: 2,048 pulses/rev.; Z phase: 1 pulse/rev.			
		ABS	A, B phase: 16,384 pulses/rev.; Z phase: 1 pulse/rev.			
Brake specifications						
	Inertia	kg·m^2 × 10^{-4}	0.0085			0.058
	Excitation voltage	V	24 VDC ±10%			
	Power consumption	W	6			6.5
	Current consumption	A	0.25			0.27
	Static friction torque	N·m	0.2 min.		0.34 min.	1.5 min.
	Absorption time	ms	30 max.			60 max.
	Release time	ms	60 max.			20 max.
	Backlash	---	1° (reference value)			
	Rating	---	Continuous			
	Insulation	---	Type F			

■ General Motor Specifications

Cylinder-style Motors (3,000 r/min)

Item		30 to 750 W	1 to 5 kW
Ambient temperature		Operating: 0 to +40°C Storage: –20 to +60°C	
Ambient humidity (with no condensation)		Operating: 20% to 80% Storage: 20% to 80%	
Atmosphere		No corrosive gases	
Vibration resistance		49 m/s^2	24.5 m/s^2
Shock resistance		490 m/s^2 (twice in vertical direction)	
Insulation resistance		10 MΩ min. at 500 VDC	
Dielectric strength		1,500 VAC for 1 min	
Operating position		Any direction	
Insulation class		Type B	Type F
Construction		Totally-enclosed self-cooling	
Enclosure rating		IP55 (See note.)	IP67 (See note.)
Vibration class		V-15	
EC directives	EMC directive	EN55011 class A group1	
		EN61000-6-2	
	Low-voltage directive	IEC60034-1, 5, 8, 9 EN60034-1, 9	
UL standards		UL1004	
cUL standards		cUL C22.2 No.100	

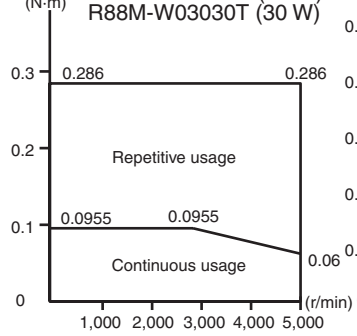
Note: Enclosure ratings do not include the shaft opening.

■ Torque and Rotation Speed Characteristics

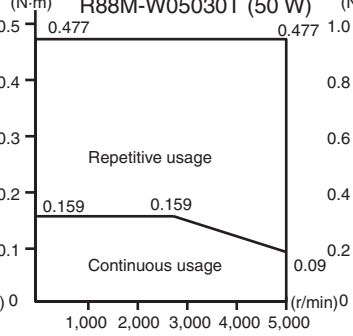
Cylinder-style Motors with 200-VAC Power Supply (3,000 r/min)

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

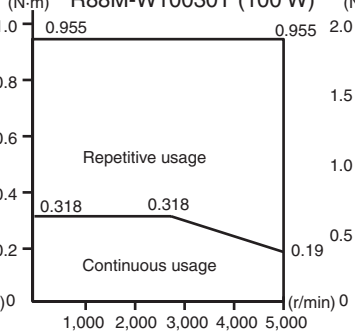
R88M-W03030H (30 W)
R88M-W03030T (30 W)



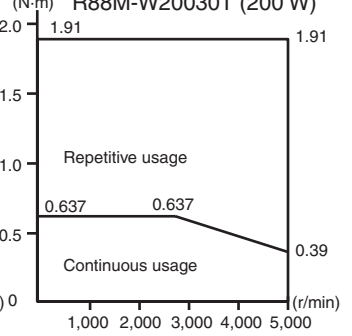
R88M-W05030H (50 W)
R88M-W05030T (50 W)



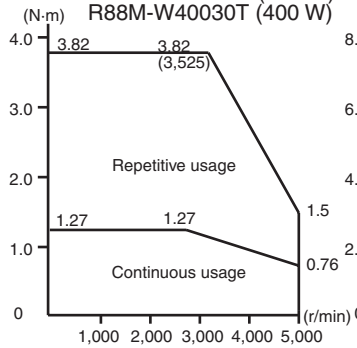
R88M-W10030H (100 W)
R88M-W10030T (100 W)



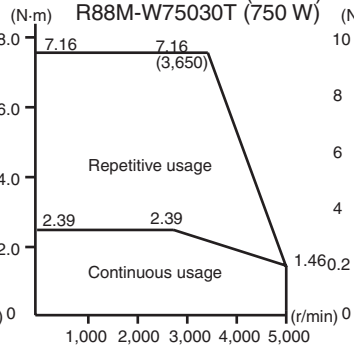
R88M-W20030H (200 W)
R88M-W20030T (200 W)



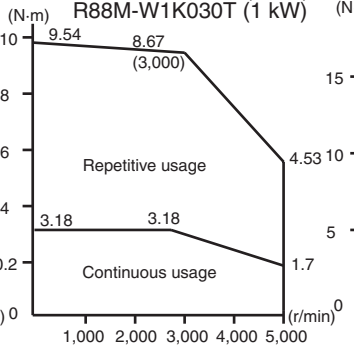
R88M-W40030H (400 W)
R88M-W40030T (400 W)



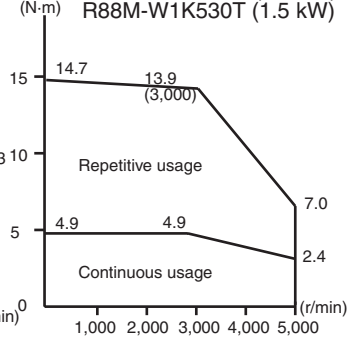
R88M-W75030H (750 W)
R88M-W75030T (750 W)



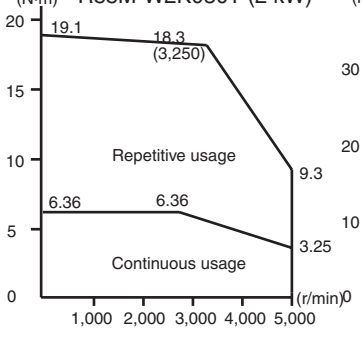
R88M-W1K030H (1 kW)
R88M-W1K030T (1 kW)



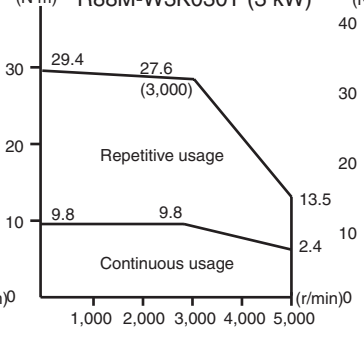
R88M-W1K530H (1.5 kW)
R88M-W1K530T (1.5 kW)



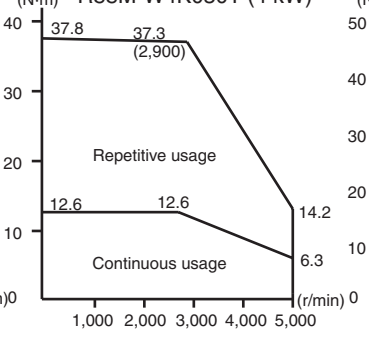
R88M-W2K030H (2 kW)
R88M-W2K030T (2 kW)



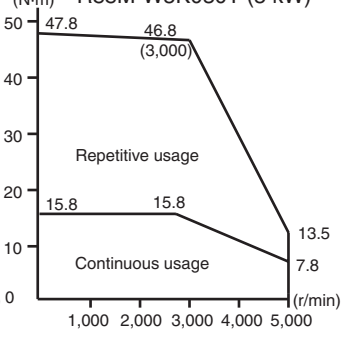
R88M-W3K030H (3 kW)
R88M-W3K030T (3 kW)



R88M-W4K030H (4 kW)
R88M-W4K030T (4 kW)



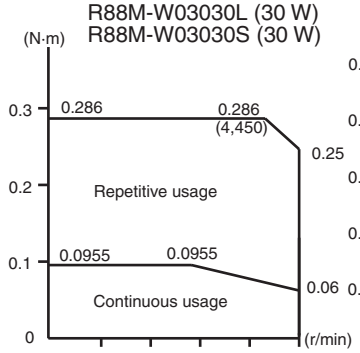
R88M-W5K030H (5 kW)
R88M-W5K030T (5 kW)



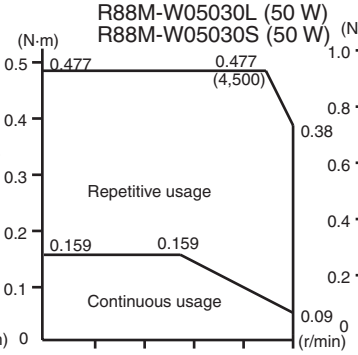
■ Cylinder-style Motors with 100-VAC Power Supply (3,000 r/min)

The following graphs show characteristics with a standard 3-m cable and 100-VAC input.

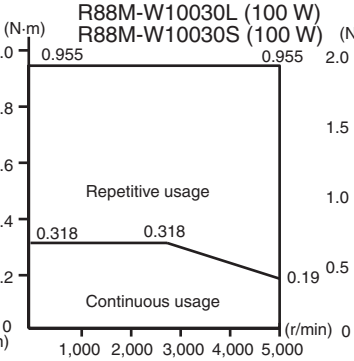
R88M-W03030L (30 W)
R88M-W03030S (30 W)



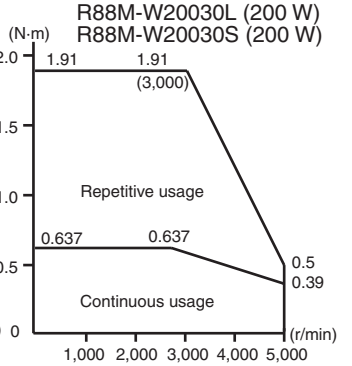
R88M-W05030L (50 W)
R88M-W05030S (50 W)



R88M-W10030L (100 W)
R88M-W10030S (100 W)



R88M-W20030L (200 W)
R88M-W20030S (200 W)



Cylinder-style Motors (1,500 r/min)

Item		200 VAC									
Servomotor (R88M-)		W45015T	W85015T	W1K315T	W1K815T	W2K915T	W4K415T	W5K515T	W7K515T	W11K015T	W15K015T
Servodriver (R88D-)		WT05H	WT10H	WT15H	WT20H	WT30H	WT50H	WT60H	WT75H	WT150H	WT150H
Rated output	W	450	850	1,300	1,800	2,900	4,400	5,500	7,500	11,000	15,000
Rated torque	N·m	2.84	5.39	8.34	11.5	18.6	28.4	35.0	48.0	70.0	95.4
Max. momentary torque	N·m	8.92	13.8	23.3	28.7	45.1	71.1	87.6	119	175	224
Rated speed	r/min	1,500									
Max. momentary speed	r/min	3,000								2,000	
Rated current	A(rms)	3.8	7.1	10.7	16.7	23.8	32.8	42.1	54.7	58.6	78.0
Rotor inertia (without brake)	kg·m^2 × 10^{-4}	7.24	13.9	20.5	31.7	46.0	67.5	89.0	125	281	315
Power rate	kW/s	11.2	20.9	33.8	41.5	75.3	120	137	184	174	289
Applicable load inertia	Multiple	5									
Allowable radial load on shaft	N	490		686	1,176	1,470		1,764			4,998
Allowable thrust load on shaft	N	98		343	490			588			2,156
Approx. weight (without brake)	kg	Approx. 5.5	Approx. 7.6	Approx. 9.6	Approx. 14	Approx. 18	Approx. 23	Approx. 30	Approx. 40	Approx. 57.5	Approx. 86
Approx. weight (with brake)	kg	Approx. 7.5	Approx. 9.6	Approx. 12	Approx. 19	Approx. 23.5	Approx. 28.5	Approx. 35	Approx. 45.5	Approx. 65	Approx. 100
Encoder resolution	INC	---									
	ABS	A, B phase: 32,768 pulses/rev. Z phase: 1 pulse/rev.									
Brake specifications											
Inertia	kg·m^2 × 10^{-4}	2.1			8.5					18.8	37.5
Excitation voltage	V	24 VDC ±10% (nonpolar)									
Power consumption	W	9.85			18.5			23.5		32	35
Current consumption	A	0.41			0.77			0.98		1.33	1.46
Static friction torque	N·m	4.41	12.7		43.1			72.6		84.3	114.6
Absorption time	ms	180 max.								170 max.	250 max.
Release time	ms	100 max.								80 max.	
Backlash	---	1° max.									
Rating	---	Continuous									
Insulation	---	Type F									

■ General Motor Specifications

Cylinder-style Motors (1,500 r/min)

Item		450 W to 15 kW (standard type: 1,500 r/min)
Ambient temperature		Operating: 0 to +40°C Storage: –20 to +60°C
Ambient humidity (with no condensation)		Operating: 20% to 80% Storage: 20% to 80%
Atmosphere		No corrosive gases
Vibration resistance		24.5 m/s^2
Shock resistance		490 m/s^2 (twice in vertical direction)
Insulation resistance		10 MΩ min. at 500 VDC
Dielectric strength		1,500 VAC for 1 min
Operating position		Any direction
Insulation class		Type F
Construction		Totally-enclosed self-cooling
Enclosure rating		IP67 (See note.)
Vibration class		V-15
EC directives	EMC directive	EN55011 class A group1
		EN61000-6-2
	Low-voltage directive	IEC60034-1, 5, 8, 9 EN60034-1, 9
UL standards		UL1004
cUL standards		cUL C22.2 No.100

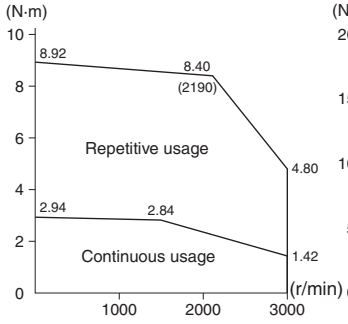
Note: Enclosure ratings do not include the shaft opening.

■ Torque and Rotation Speed Characteristics

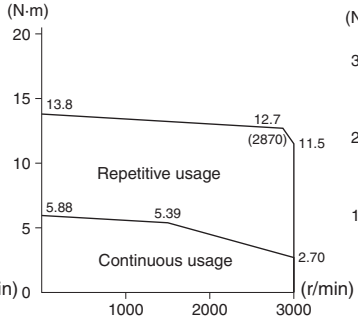
Cylinder-style Motors with 200-VAC Power Supply (1,500 r/min)

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

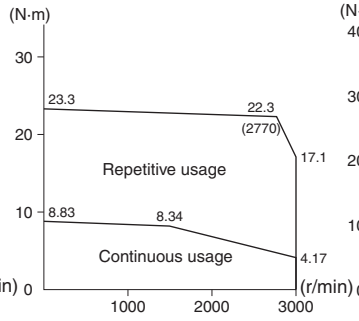
R88M-W45015T (450 W)



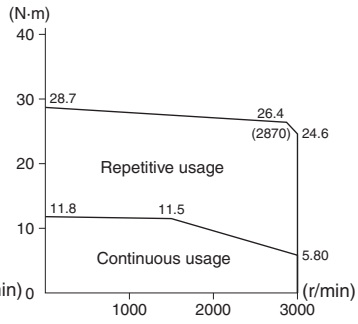
R88M-W85015T (850 W)



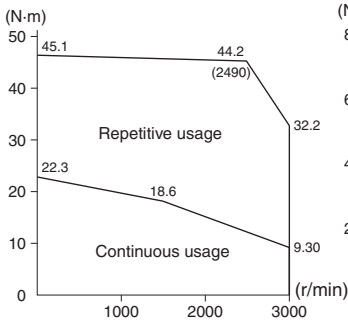
R88M-W1K315T (1.3 kW)



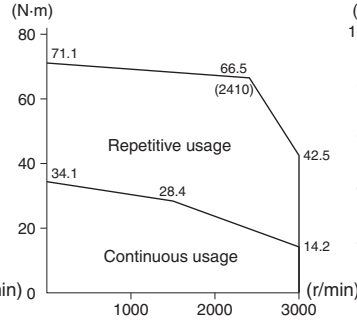
R88M-W1K815T (1.8 kW)



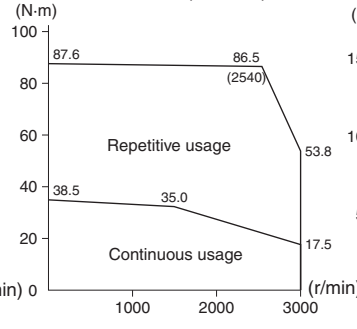
R88M-W2K915T (2.9 kW)



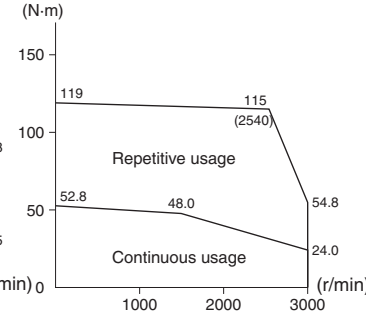
R88M-W4K415T(4.4 kW)



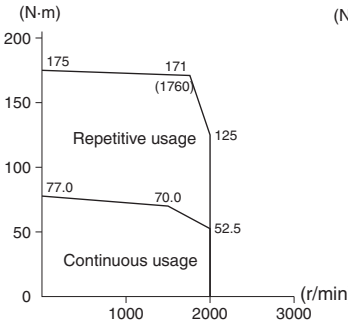
R88M-W5K515T (5.5 kW)



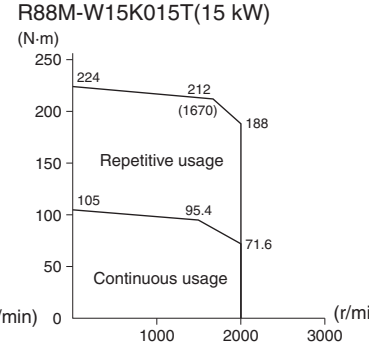
R88M-W7K515T(7.5 kW)



R88M-W11K015T (11 kW)



R88M-W15K015T(15 kW)



■ Performance Specifications

Cylinder-style Motors (1,000 r/min)

Item			200 VAC							
Servomotor (R88M-)			W30010□	W60010□	W90010□	W1K210□	W2K010□	W3K010□	W4K010□	W5K510□
Servodriver (R88D-)			WT05H	WT08H	WT10H	WT15H	WT20H	WT30H	WT50H	WT60H
Rated output		W	300	600	900	1.2k	2k	3k	4k	5.5k
Rated torque		N·m	2.84	5.68	8.62	11.5	19.1	28.4	38.2	52.6
Max. momentary torque		N·m	7.17	14.1	19.3	28.0	44.0	63.7	107	137
Rated speed		r/min	1,000							
Max. momentary speed		r/min	2,000							
Rated current		A(rms)	3	5.7	7.6	11.6	18.5	24.8	30	43.2
Rotor inertia (without brake)		$kg·m^2 \times 10^{-4}$	7.24	13.9	20.5	31.7	46.0	67.5	89.0	125
Power rate		kW/s	11.2	23.2	36.3	41.5	79.4	120	164	221
Applicable load inertia		Multiple	10							
Allowable radial load on shaft		N	490		686	1176	1470		1764	
Allowable thrust load on shaft		N	98		343	490			588	
Approx. weight (without brake)		kg	5.5	7.6	9.6	14	18	23	30	40
Approx. weight (with brake)		kg	7.5	9.6	12	19	23.5	28.5	35	45.5
Encoder resolution		INC	A, B phase: 32,768 pulses/rev.; Z phase: 1 pulse/rev.							
		ABS								
Brake specifications										
	Inertia	$kg·m^2 \times 10^{-4}$	2.1			8.5				
	Excitation voltage	V	24 VDC±10%							
	Power consumption	W	9.85			18.5			23.5	
	Current consumption	A	0.41			0.77			0.98	
	Static friction torque	N·m	4.41	12.7		43.1			72.6	
	Absorption time	ms	180 ms max.							
	Release time	ms	100 ms max.							
	Backlash	---	1° max.							
	Rating	---	Continuous							
	Insulation	---	Type F							

■ General Motor Specifications

Cylinder-style Motors (1,000 r/min)

Item		300 to 5.5 kW
Ambient temperature		Operating: 0 to +40°C Storage: –20 to +60°C
Ambient humidity (with no condensation)		Operating: 20% to 80% Storage: 20% to 80%
Atmosphere		No corrosive gases
Vibration resistance		24.5 m/s^2
Shock resistance		490 m/s^2 (twice in vertical direction)
Insulation resistance		10 MΩ min. at 500 VDC
Dielectric strength		1,500 VAC for 1 min
Operating position		Any direction
Insulation class		Type F
Construction		Totally-enclosed self-cooling
Enclosure rating		IP67 (See note.)
Vibration class		V-15
EC directives	EMC directive	EN55011 class A group1
		EN61000-6-2
	Low-voltage directive	IEC60034-1, 5, 8, 9 EN60034-1, 9
UL standards		UL1004
cUL standards		cUL C22.2 No.100

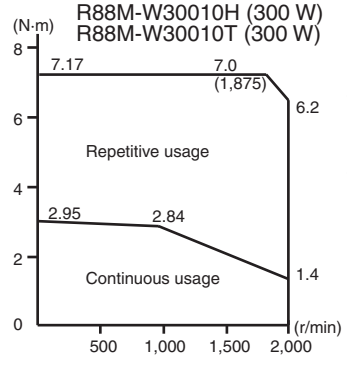
Note: Enclosure ratings do not include the shaft opening.

■ Torque and Rotation Speed Characteristics

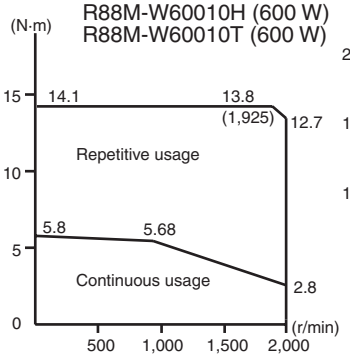
Cylinder-style Motors with 200-VAC Power Supply (1,000 r/min)

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

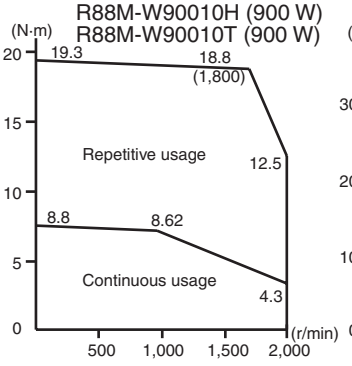
R88M-W30010H (300 W)
R88M-W30010T (300 W)



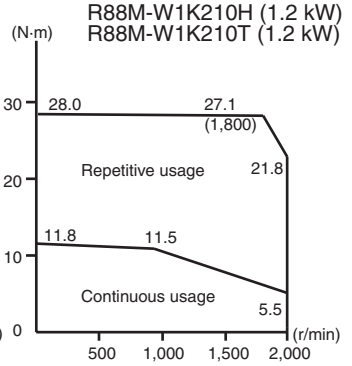
R88M-W60010H (600 W)
R88M-W60010T (600 W)



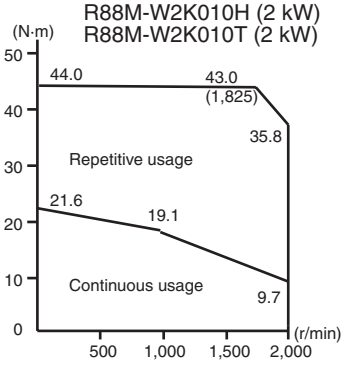
R88M-W90010H (900 W)
R88M-W90010T (900 W)



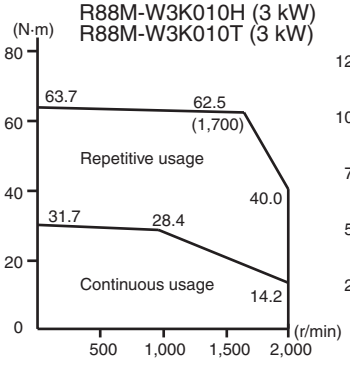
R88M-W1K210H (1.2 kW)
R88M-W1K210T (1.2 kW)



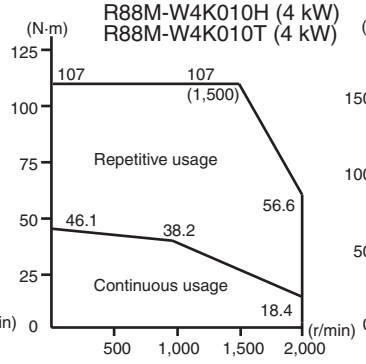
R88M-W2K010H (2 kW)
R88M-W2K010T (2 kW)



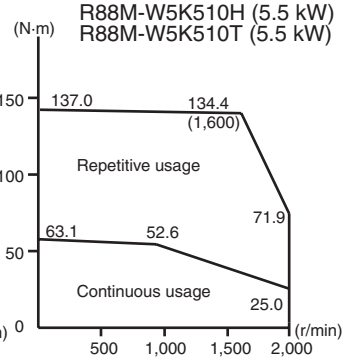
R88M-W3K010H (3 kW)
R88M-W3K010T (3 kW)



R88M-W4K010H (4 kW)
R88M-W4K010T (4 kW)



R88M-W5K510H (5.5 kW)
R88M-W5K510T (5.5 kW)



■ Performance Specifications

Flat-style Motors

Item			200 VAC					100 VAC	
Servomotor (R88M-)			WP10030□	WP20030□	WP40030□	WP75030□	WP1K530□	WP10030□	WP20030□
Servodriver (R88D-)			WT01H	WT02H	WT04H	WT08H	WT15H	WT01HL	WT02HL
Rated output		W	100	200	400	750	1.5k	100	200
Rated torque		N·m	0.318	0.637	1.27	2.39	4.77	0.318	0.637
Max. momentary torque		N·m	0.955	1.91	3.82	7.16	14.3	0.955	1.91
Rated speed		r/min	3,000					3,000	
Max. momentary speed		r/min	5,000					5,000	
Rated current		A (rms)	0.89	2.0	2.6	4.1	7.5	2.2	2.7
Rotor inertia (without brake)		$kg·m^2 \times 10^{-4}$	0.0491	0.193	0.331	2.1	4.02	0.0491	0.193
Power rate		kW/s	20.6	21.0	49.0	27.1	56.7	20.6	21.0
Applicable load inertia		Multiple	100 (Restricted, however, by the regenerative processing capacity.)						
Allowable radial load on shaft		N	78	245		392	490	78	245
Allowable thrust load on shaft		N	49	68		147		49	68
Approx. weight (without brake)		kg	0.7	1.4	2.1	4.2	6.6	0.7	1.4
Approx. weight (with brake)		kg	0.9	1.9	2.6	5.7	8.1	0.9	1.9
Encoder resolution		INC	A, B phase: 2,048 pulses/rev., Z phase: 1 pulse/rev.						
		ABS	A, B phase: 16,384 pulses/rev., Z phase: 1 pulse/rev.						
Brake specifications									
	Inertia	$kg·m^2 \times 10^{-4}$	0.029	0.109		0.875		0.029	0.109
	Excitation voltage	V	24 VDC±10%					24 VDC±10%	
	Power consumption	W	8.2	7.6	8.2	7.5	10	8.2	7.6
	Current consumption	A	0.34	0.32	0.34	0.31	0.42	0.34	0.32
	Static friction torque	N·m	0.4 min.	0.9 min.	1.9 min.	3.5 min.	7.1 min.	0.4 min.	0.9 min.
	Absorption time	ms	20 ms max.		60 ms max.	20 ms max.		20 ms max.	
	Release time	ms	40 ms max.		20 ms max.	20 ms max.		40 ms max.	
	Backlash	---	1° max.					1° max.	
	Rating	---	Continuous					Continuous	
	Insulation	---	Type F					Type F	

■ General Motor Specifications

Flat-style Motors (3,000 r/min)

Item		100 W to 1.5 kW
Ambient temperature		Operating: 0 to +40°C, Storage: –20 to +60°C
Ambient humidity (with no condensation)		Operating: 20% to 80%, Storage: 20% to 80%
Atmosphere		No corrosive gases
Vibration resistance		49 m/s^2
Shock resistance		490 m/s^2 (twice in vertical direction)
Insulation resistance		10 MΩ min. at 500 VDC
Dielectric strength		1,500 VAC for 1 min
Operating position		Any direction
Insulation class		Type B
Construction		Totally-enclosed self-cooling
Enclosure rating		IP55 (See note.) or IP67
Vibration class		V-15
EC directives	EMC directive	EN55011 class A group1
		EN61000-6-2
	Low-voltage directive	IEC60034-1, 5, 8, 9; EN60034-1, 9
UL standards		UL1004
cUL standards		cUL C22.2 No.100

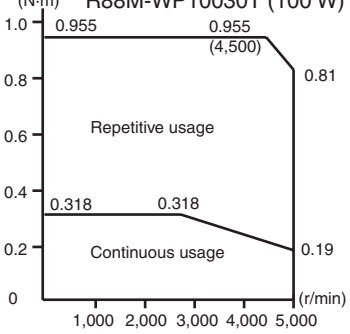
Note: Enclosure ratings do not include the shaft opening.

■ Torque and Rotation Speed Characteristics

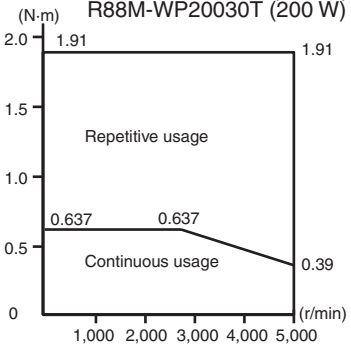
Flat-style Motors with 200-VAC Power Supply

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

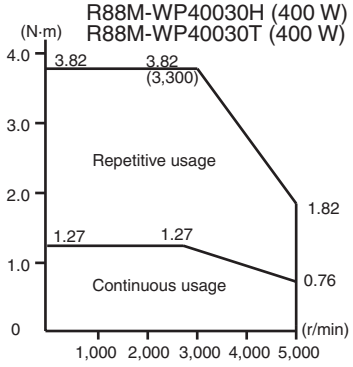
R88M-WP10030H (100 W)
R88M-WP10030T (100 W)



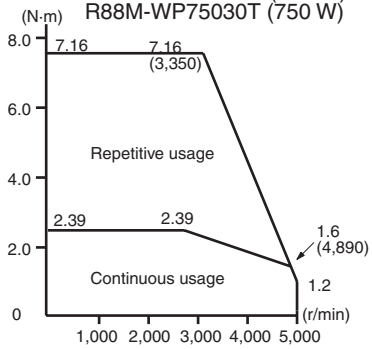
R88M-WP20030H (200 W)
R88M-WP20030T (200 W)



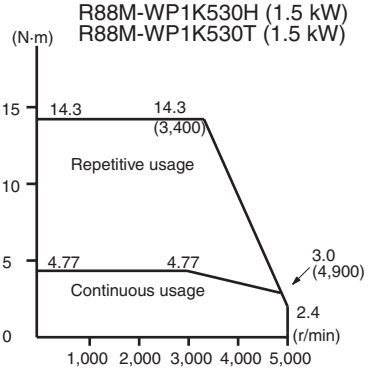
R88M-WP40030H (400 W)
R88M-WP40030T (400 W)



R88M-WP75030H (750 W)
R88M-WP75030T (750 W)



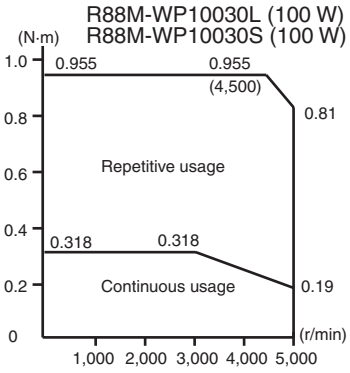
R88M-WP1K530H (1.5 kW)
R88M-WP1K530T (1.5 kW)



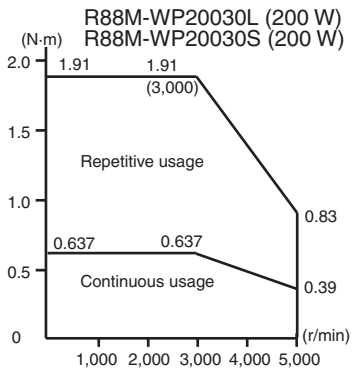
Flat-style Motors with 100-VAC Power Supply

The following graphs show characteristics with a standard 3-m cable and 100-VAC input.

R88M-WP10030L (100 W)
R88M-WP10030S (100 W)



R88M-WP20030L (200 W)
R88M-WP20030S (200 W)



Servodriver Specifications

■ Performance Specifications

Servodrivers

Item			200 VAC														
		Servomotor (R88M-)	WTA3H	WTA5H	WT01H	WT02H	WT04H	WT05H	WT08H	WT10H	WT15H	WT20H	WT30H	WT50H	WT60H	WT75H	WT150H
Maximum servomotor output			30 W	50 W	100 W	200 W	400 W	500 W	750 W	1 kW	1.5 kW	2 kW	3 kW	5 kW	5.5 kW	7.5 kW	15 kW
Continuous output current (rms)			0.44 A	0.64 A	0.91 A	2.1 A	2.8 A	3.8 A	5.7 A	7.6 A	11.6 A	18.5 A	24.8 A	32.9 A	46.9 A	54.7 A	78 A
Momentary maximum output current (rms)			1.3 A	2.0 A	2.8 A	6.5 A	8.5 A	11.0 A	13.9 A	17 A	28 A	42 A	56 A	84 A	110 A	130 A	170 A
Weight			0.8 kg				1.1 kg	1.7 kg			2.8 kg	3.8 kg		5.5 kg	15 kg		26 kg
Input power supply		Main circuits	Single-phase 200 to 230 VAC, +10% to –15%, 50/60 Hz				Three-phase 200 to 230 VAC, +10% to –15%, 50/60 Hz (See note 2.)				Three-phase 200 to 230 VAC, +10% to –15%, 50/60 Hz						
		Control circuits	Single-phase 200 to 230 VAC, +10% to –15%, 50/60 Hz														
Control method			All-digital servo														
Seed feedback			Serial encoder, 13/16/17 bits (incremental and absolute encoders)														
Capacity	Analog inputs	Speed control range	1:5,000														
		Load fluctuation rate	±0.01% max. at 0% to 100% (at rated rotation speed)														
		Voltage fluctuation rate	0% at rated voltage ±10% (at rated rotation speed)														
		Temperature fluctuation rate	±0.1% max. at 25 ± 25°C (at rated rotation speed)														
		Frequency characteristics	400 Hz (at the same load as the rotor inertia)														
		Torque control repeatability	±2%														
		Acceleration time setting	0 to 10 s (acceleration and deceleration set separately)														
	Pulse train inputs	Maximum response pulse frequency	Line driver input: 500 Kpps Open collector input: 200 Kpps														
		Positioning range	0 to 250 (command unit)														
		Feed-forward compensation	0% to 100%														
		Bias setting	0 to 450 r/min														
Input signals		Position command pulse	Feed pulse, forward/reverse signal, forward pulse, reverse pulse, 90° phase difference (phases A/B) signal														
		Speed command voltage	±2 to 10 VDC / rated rotation speed (motor forward rotation by +voltage) Mechanical impedance: Approx. 14 kΩ; circuit time constant: Approx. 47 μs														
		Torque command voltage	±1 to 10 VDC / rated torque (motor forward torque by +voltage) Mechanical impedance: Approx. 14 kΩ; circuit time constant: Approx. 47 μs														
		Sequence input	Run command, gain deceleration, position lock command, control mode switch, gain switch, direction command, pulse prohibit, forward/reverse current limit, speed selection command, forward/reverse drive prohibit, alarm reset														
Output signals		Position feedback output	Phase A, phase B, phase Z, absolute phase (for absolute encoders only): Line driver output														
		Speed monitor output	1 V/1,000 r/min														
		Current monitor output	1 V/rated torque														
		Sequence output	Servo alarm, alarm code (3-bit output): CN1 output terminal fixed, speed conformity, positioning completion 1, motor rotation detection, servo ready, current limit detection, brake interlock, warning, positioning completion 2, speed limit detection														
Dynamic brake stopping			Operates when the power supply turns off, a servo alarm is generated, an overrun occurs, or the servo turns off.														
Other protective functions			Parameter destruction, main circuit detector error, parameter setting error, motor mismatch, overcurrent, regenerative error, regenerative overload, overvoltage, undervoltage, overspeeding, overload, dynamic brake overload, inrush resistance overload, heating plate overheating, backup error (absolute), checksum error (absolute), battery error (absolute), absolute error (absolute), overspeed error (absolute), encoder overheating, speed command input read error, torque command input read error, system error, overrun detection, excessive rotation data error (absolute), encoder communications error, encoder parameter error, encoder data error, multiple rotation limit mismatch (absolute), error counter count-up, phase-failure detection, Parameter Unit transmission error														

Note: 1. Applicable rotor inertia differs according to the motor. Refer to the motor specifications.

2. Input power supply specification when using the R88D-WT08H at single-phase 200 V: single-phase 200 to 230 VAC, +10% to –15%, 50/60 Hz.

Servodrivers

Item				100 VAC			
			Servomotor (R88M-)	WTA3HL	WTA5HL	WT01HL	WT02HL
Maximum servomotor output				30 W	50 W	100 W	200 W
Continuous output current (rms)				0.66 A	0.95 A	2.4 A	3.0 A
Momentary maximum output current (rms)				2.0 A	2.9 A	7.2 A	9.0 A
Weight				0.8 kg			1.1 kg
Input power supply			Main circuits	Single-phase 100 to 115 VAC, +10% to –15%, 50/60 Hz			
			Control circuits	Single-phase 100 to 115 VAC, +10% to –15%, 50/60 Hz			
Control method				All-digital servo			
Seed feedback				Serial encoder, 13/16/17 bits (incremental and absolute encoders)			
Capacity	Analog inputs	Speed control range		1:5000			
		Load fluctuation rate		±0.01% max. at 0% to 100% (at rated rotation speed)			
		Voltage fluctuation rate		0% at rated voltage ±10% (at rated rotation speed)			
		Temperature fluctuation rate		±0.1% max. at 25 ± 25°C (at rated rotation speed)			
		Frequency characteristics		400 Hz (at the same load as the rotor inertia)			
		Torque control repeatability		±2%			
		Acceleration time setting		0 to 10 s (acceleration and deceleration set separately)			
	Pulse train inputs	Maximum response pulse frequency		Line driver input: 500 Kpps Open collector input: 200 Kpps			
		Positioning range		0 to 250 (command unit)			
		Feed-forward compensation		0% to 100%			
		Bias setting		0 to 450 r/min			
Input signals		Position command pulse		Feed pulse, forward/reverse signal, forward pulse, reverse pulse, 90° phase difference (phases A/B) signal			
		Speed command voltage		±2 to 10 VDC / rated rotation speed (motor forward rotation by +voltage) Mechanical impedance: Approx. 14 kΩ; circuit time constant: Approx. 47 μs			
		Torque command voltage		±1 to 10 VDC / rated torque (motor forward torque by +voltage) Mechanical impedance: Approx. 14 kΩ; circuit time constant: Approx. 47 μs			
		Sequence input		Run command, gain deceleration, position lock command, control mode switch, gain switch, direction command, pulse prohibit, forward/reverse current limit, speed selection command, forward/reverse drive prohibit, alarm reset			
Output signals		Position feedback output		Phase A, phase B, phase Z, absolute phase (for absolute encoders only): Line driver output			
		Speed monitor output		1 V/1000 r/min			
		Current monitor output		1 V/rated torque			
		Sequence output		Servo alarm, alarm code (3-bit output): CN1 output terminal fixed, speed conformity, positioning completion 1, motor rotation detection, servo ready, current limit detection, brake interlock, warning, positioning completion 2, speed limit detection			
Dynamic brake stopping				Operates when the power supply turns OFF, a servo alarm is generated, an overrun occurs, or the servo turns OFF.			
Other protective functions				Parameter destruction, main circuit detector error, parameter setting error, motor mismatch, overcurrent, regenerative error, regenerative overload, overvoltage, undervoltage, overspeeding, overload, dynamic brake overload, inrush resistance overload, heating plate overheating, backup error (absolute), checksum error (absolute), battery error (absolute), absolute error (absolute), overspeed error (absolute), encoder overheating, speed command input read error, torque command input read error, system error, overrun detection, excessive rotation data error (absolute), encoder communications error, encoder parameter error, encoder data error, multiple rotation limit mismatch (absolute), error counter count-up, phase-failure detection, Parameter Unit transmission error			

Note: Applicable rotor inertia differs according to the motor. Refer to the motor specifications.

■ General Specifications

Item		Specifications
Ambient temperature		Operating: 0 to +55°C Storage: –20 to +85°C
Ambient humidity (with no condensation)		Operating: 20 to 90% max. Storage: 20 to 90% max.
Atmosphere		No corrosive gases
Vibration resistance		4.9 m/s^2
Shock resistance		19.6 m/s^2 (3 times each in X, Y, and Z directions)
Insulation resistance		1 MΩ min. at 500 VDC
Dielectric strength		1,500 VAC for 1 min
Protective structure		Built into control panel (IP10)
Vibration class		V-15
EC directives	EMC directive	EN55011
		EN61000-6-2
	Low-voltage directive	EN50178
UL standards		UL508C
cUL standards		cUL C22.2 No. 14

External Dimensions

■ AC Servomotors

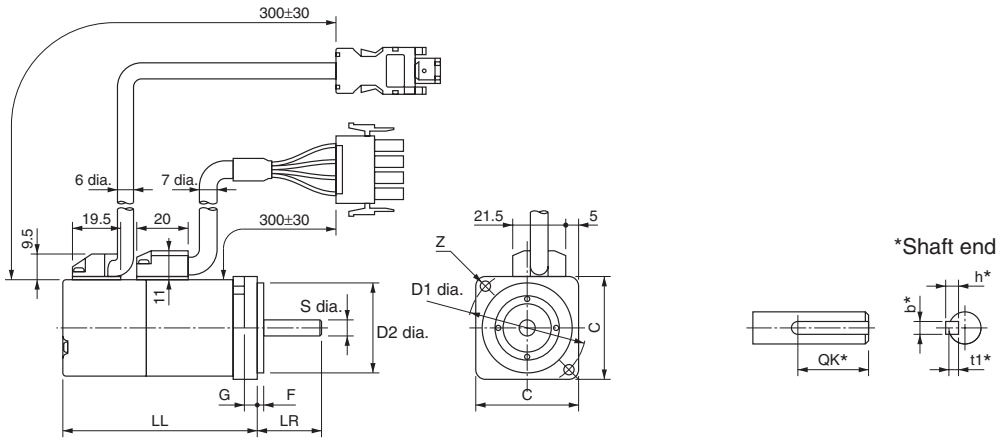
Cylinder-style Motors without Brakes (3,000 r/min)

200 VAC: 30 W/50 W/100 W

R88M-W03030H (-S1)/W05030H (-S1)/W10030H (-S1)
R88M-W03030T (-S1)/W05030T (-S1)/W10030T (-S1)

100 VAC: 30 W/50 W/100 W

R88M-W03030L (-S1)/W05030L (-S1)/W10030L (-S1)
R88M-W03030S (-S1)/W05030S (-S1)/W10030S (-S1)



* These dimensions are applicable to R88M-W□-S1 with key.

Dimensions (mm)	LL	LR	Flange surface						Shaft end				
Model			C	D1	D2	F	G	Z	S	QK*	b*	h*	t1*
R88M-W03030□ (-S1)	69.5	25	40	46	30^{h7}	2.5	5	Two, 4.3 dia.	6^{h6}	14	2	2	1.2
R88M-W05030□ (-S1)	77												
R88M-W10030□ (-S1)	94.5								8^{h6}		3	3	1.8

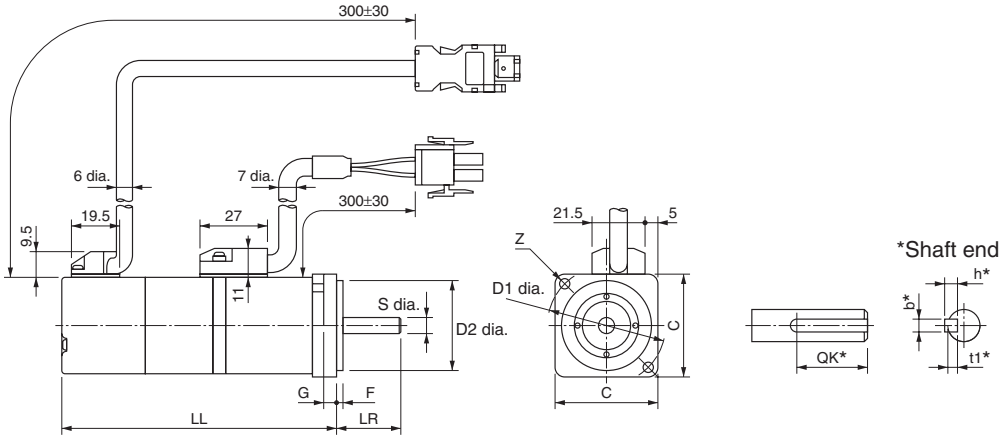
Cylinder-style Motors with Brakes (3,000 r/min)

200 VAC: 30 W/50 W/100 W

R88M-W03030H-B (S1)/W05030H-B (S1)/W10030H-B (S1)
R88M-W03030T-B (S1)/W05030T-B (S1)/W10030T-B (S1)

100 VAC: 30 W/50 W/100 W

R88M-W03030L-B (S1)/W05030L-B (S1)/W10030L-B (S1)
R88M-W03030S-B (S1)/W05030S-B (S1)/W10030S-B (S1)



* These dimensions are applicable to R88M-W□-BS1 with key.

Dimensions (mm)	LL	LR	Flange surface						Shaft end				
Model			C	D1	D2	F	G	Z	S	QK*	b*	h*	t1*
R88M-W03030□-B (S1)	101	25	40	46	30^{h7}	2.5	5	Two, 4.3 dia.	6^{h6}	14	2	2	1.2
R88M-W05030□-B (S1)	108.5												
R88M-W10030□-B (S1)	135								8^{h6}		3	3	1.8

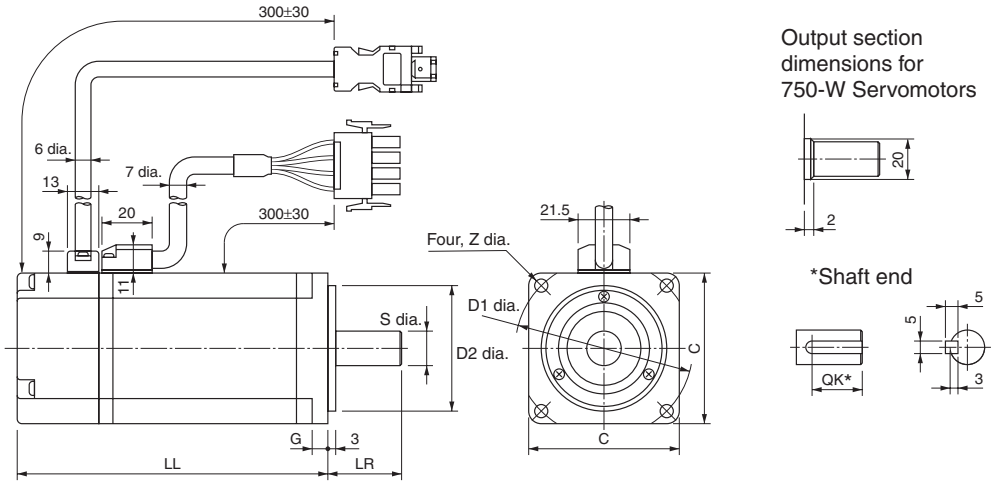
Cylinder-style Motors without Brakes (3,000 r/min)

200 VAC: 200 W/400 W/750 W

R88M-W20030H (-S1)/W40030H (-S1)/W75030H (-S1)
R88M-W20030T (-S1)/W40030T (-S1)/W75030T (-S1)

100 VAC: 200 W

R88M-W20030L (-S1)
R88M-W20030S (-S1)



* These dimensions are applicable to R88M-W□-S1 with key.

Dimensions (mm)	LL	LR	Flange surface						Shaft end				
Model			C	D1	D2	F	G	Z	S	QK*	b*	h*	t1*
R88M-W20030□ (-S1)	96.5	30	60	70	50^{h7}	3	6	Four, 5.5 dia.	14^{h6}	20	5	5	3
R88M-W40030□ (-S1)	124.5												
R88M-W75030□ (-S1)	145	40	80	90	70^{h7}	3	8	Four, 7 dia.	16^{h6}	30			

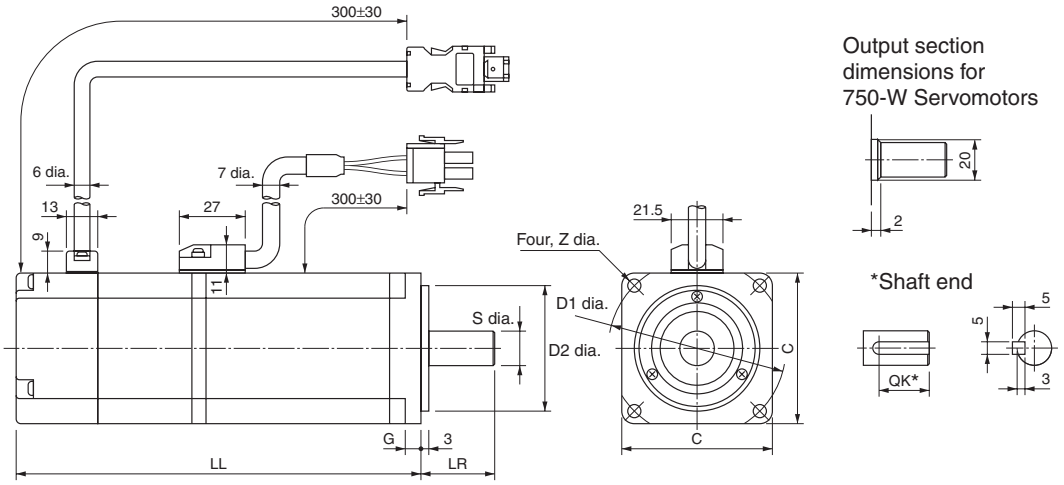
Cylinder-style Motors with Brakes (3,000 r/min)

200 VAC: 200 W/400 W/750 W

R88M-W20030H-B (S1)/W40030H-B (S1)/W75030H-B (S1)
R88M-W20030T-B (S1)/W40030T-B (S1)/W75030T-B(S1)

100 VAC: 200 W

R88M-W20030L-B (S1)
R88M-W20030S-B (S1)



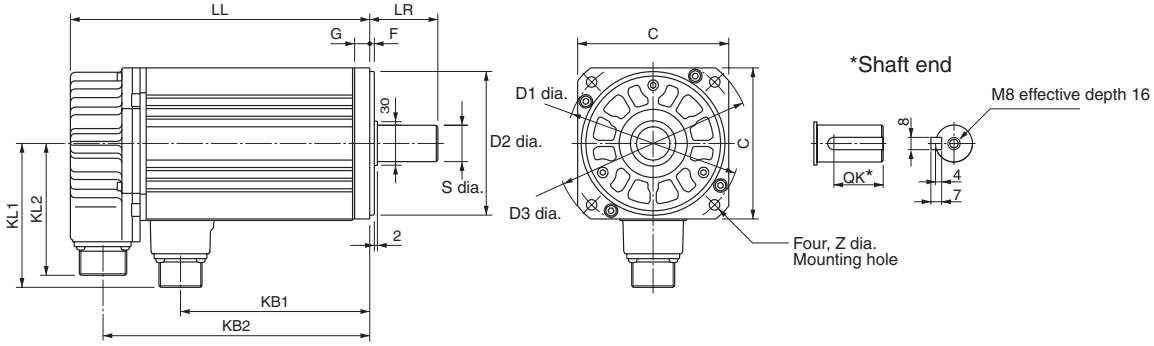
* These dimensions are applicable to R88M-W□-BS1 with key.

Dimensions (mm)	LL	LR	Flange surface						Shaft end				
Model			C	D1	D2	F	G	Z	S	QK*	b*	h*	t1*
R88M-W20030□-B (S1)	136	30	60	70	50^{h7}	3	6	Four, 5.5 dia.	14^{h6}	20	5	5	3
R88M-W40030□-B (S1)	164												
R88M-W75030□-B (S1)	189.5	40	80	90	70^{h7}	3	8	Four, 7 dia.	16^{h6}	30			

Cylinder-style Motors without Brakes (3,000 r/min)

200 VAC: 1 kW/1.5 kW/2 kW/3 kW/4 kW/5 kW

R88M-W1K030H (-S2)/W1K530H (-S2)/W2K030H (-S2)/W3K030H (-S2)/W4K030H (-S2)/W5K030H (-S2)
R88M-W1K030T (-S2)/W1K530T (-S2)/W2K030T (-S2)/W3K030T (-S2)/W4K030T (-S2)/W5K030T (-S2)



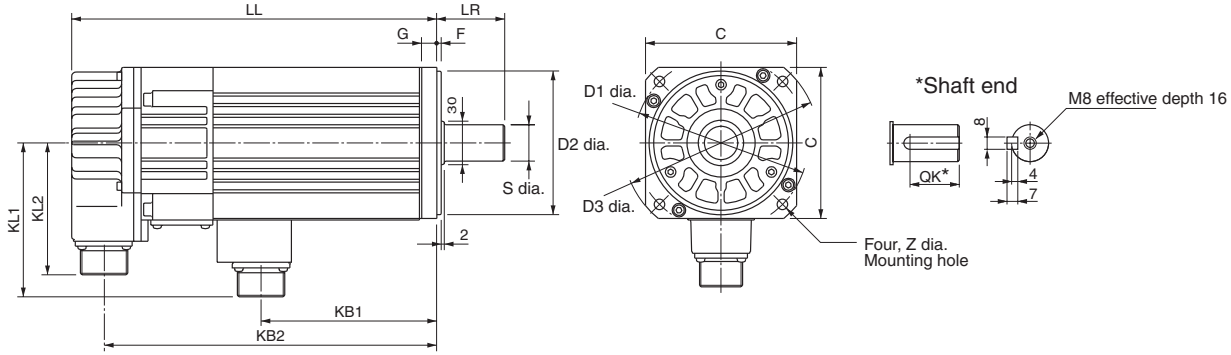
* These dimensions are applicable to R88M-W□-S2 with key and tap.

Dimensions (mm)	LL	LR	KB1	KB2	KL1	KL2	Flange surface							Shaft end	
Model							C	D1	D2	D3	F	G	Z	S	QK*
R88M-W1K030□ (-S2)	149	45	76	128	96	88	100	115	95^{h7}	130	3	10	7	24^{h6}	32
R88M-W1K530□ (-S2)	175		102	154											
R88M-W2K030□ (-S2)	198		125	177											
R88M-W3K030□ (-S2)	199	63	124	178	114	88	130	145	110^{h7}	165	6	12	9	28^{h6}	50
R88M-W4K030□ (-S2)	236		161	215											
R88M-W5K030□ (-S2)	276		201	255											

Cylinder-style Motors with Brakes (3,000 r/min)

200 VAC: 1 kW/1.5 kW/2 kW/3 kW/4 kW/5 kW

R88M-W1K030H-B (S2)/W1K530H-B (S2)/W2K030H-B (S2)/W3K030H-B (S2)/W4K030H-B (S2)/W5K030H-B (S2)
R88M-W1K030T-B (S2)/W1K530T-B (S2)/W2K030T-B (S2)/W3K030T-B (S2)/W4K030T-B (S2)/W5K030T-B (S2)



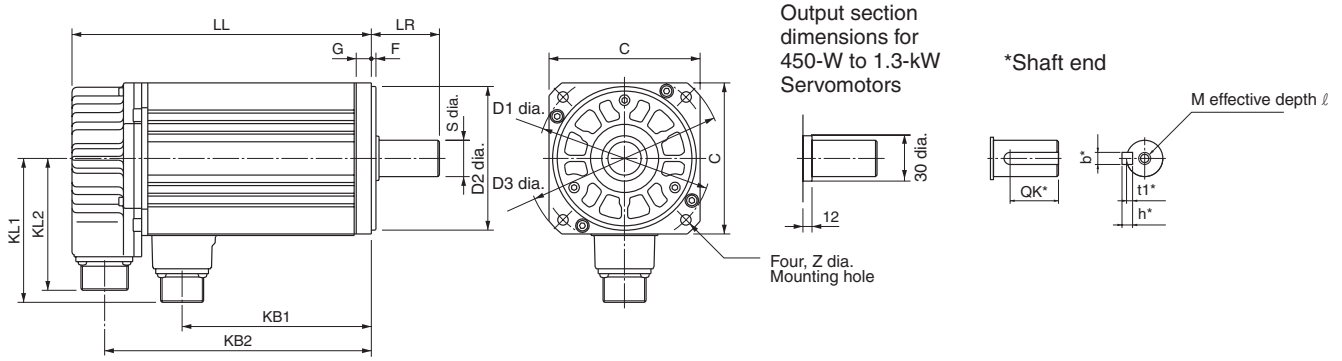
* These dimensions are applicable to R88M-W□-BS2 with key and tap.

Dimensions (mm)	LL	LR	KB1	KB2	KL1	KL2	Flange surface							Shaft end	
Model							C	D1	D2	D3	F	G	Z	S	QK*
R88M-W1K030□-B (S2)	193	45	67	171	102	88	100	115	95^{h7}	130	3	10	7	24^{h6}	32
R88M-W1K530□-B (S2)	219		93	197											
R88M-W2K030□-B (S2)	242		116	220											
R88M-W3K030□-B (S2)	237	63	114	216	119	88	130	145	110^{h7}	165	6	12	9	28^{h6}	50
R88M-W4K030□-B (S2)	274		151	253											
R88M-W5K030□-B (S2)	314		191	293											

Cylinder-style Motors without Brakes (1,500 r/min)

200 VAC: 450 W/850 W/1.3 kW/1.8 kW/2.9 kW/4.4 kW

R88M-W45015T (-S2)/W85015T (-S2)/W1K315T (-S2)/W1K815T (-S2)/W2K915T (-S2)/W4K415T (-S2)



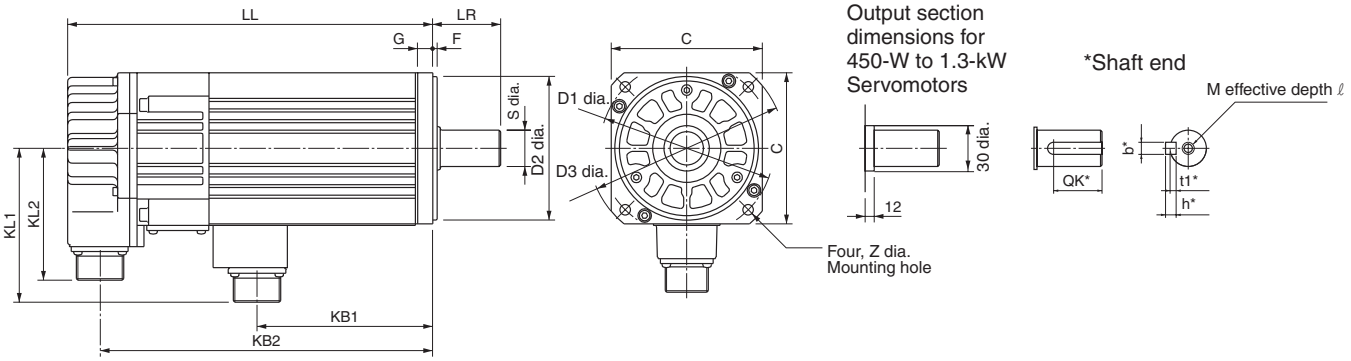
* These dimensions are applicable to R88M-W□-S2 with key and tap.

Dimensions (mm)	LL	LR	KB1	KB2	KL1	KL2	Flange surface							Shaft end						
Model							C	D1	D2	D3	F	G	Z	S	QK*	b*	h*	t1*	M	ℓ
R88M-W45015T (-S2)	138	58	65	117	109	88	130	145	110^{h7}	165	6	12	9	19^{h6}	25	5	5	3	M5	12
R88M-W85015T (-S2)	161		88	140																
R88M-W1K315T (-S2)	185		112	164										22^{h6}		6	6	3.5		
R88M-W1K815T (-S2)	166	79	89	144	140	88	180	200	$114.3_{-0.025}^{0}$	230	3.2	18	13.5	$35^{+0.01}_{0}$	60	10	8	5	M12	25
R88M-W2K915T (-S2)	192		115	170																
R88M-W4K415T (-S2)	226		149	204																

Cylinder-style Motors with Brakes (1,500 r/min)

200 VAC: 450 W/850 W/1.3 kW/1.8 kW/2.9 kW/4.4 kW

R88M-W45015T-B (S2)/W85015T-B (S2)/W1K315T-B (S2)/W1K815T-B (S2)/W2K915T-B (S2)/W4K415T-B (S2)



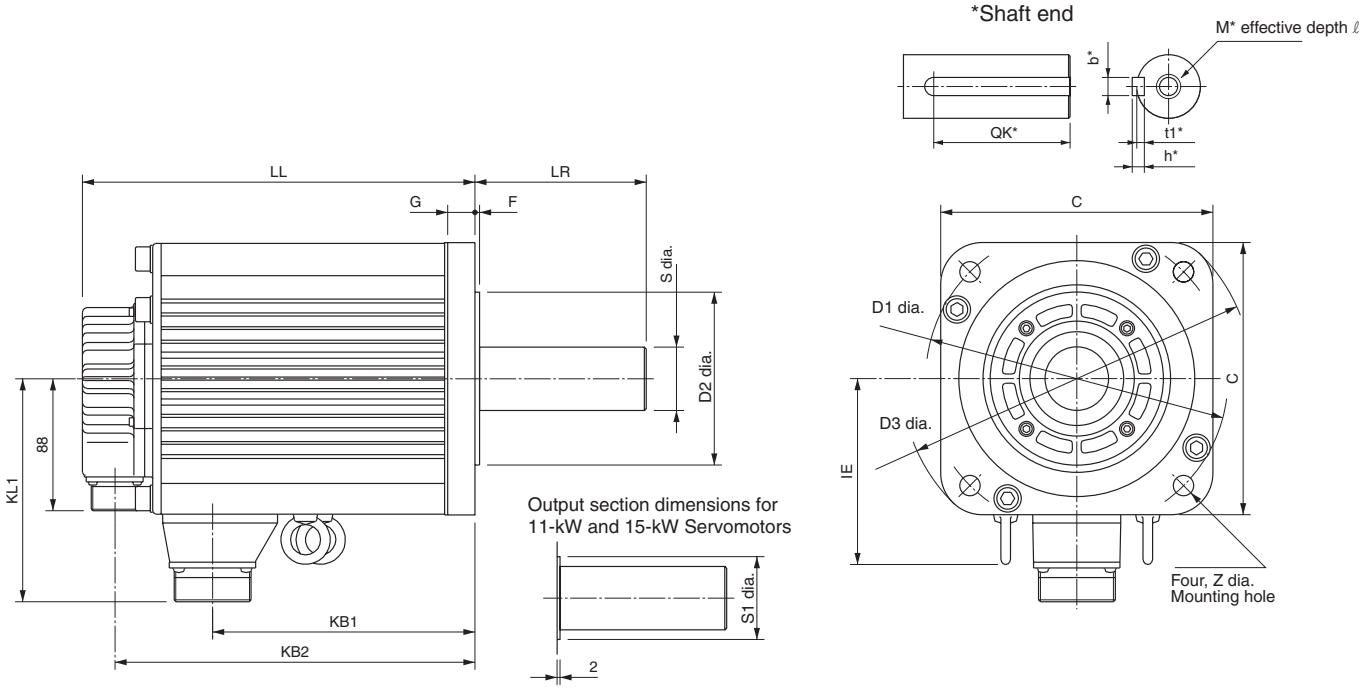
* These dimensions are applicable to R88M-W□-BS2 with key and tap.

Dimensions (mm)	LL	LR	KB1	KB2	KL1	KL2	Flange surface							Shaft end						
Model							C	D1	D2	D3	F	G	Z	S	QK*	b*	h*	t1*	M	ℓ
R88M-W45015T-B (-S2)	176	58	56	154	120	88	130	145	110^{h7}	165	6	12	9	19^{h6}	25	5	5	3	M5	12
R88M-W85015T-B (-S2)	199		79	177																
R88M-W1K315T-B (-S2)	223		103	201										22^{h6}		6	6	3.5		
R88M-W1K815T-B (-S2)	217	79	79	195	146	88	180	200	$114.3_{-0.025}^{0}$	230	3.2	18	13.5	$35^{+0.01}_{0}$	60	10	8	5	M12	25
R88M-W2K915T-B (-S2)	243		105	221																
R88M-W4K415T-B (-S2)	277		139	255																

Cylinder-style Motors without Brakes (1,500 r/min)

200 VAC: 5.5 kW/7.5 kW/11 kW/15 kW

R88M-W5K515T (-S2)/W7K515T (-S2)/W11K015T (-S2)/W15K015T (-S2)



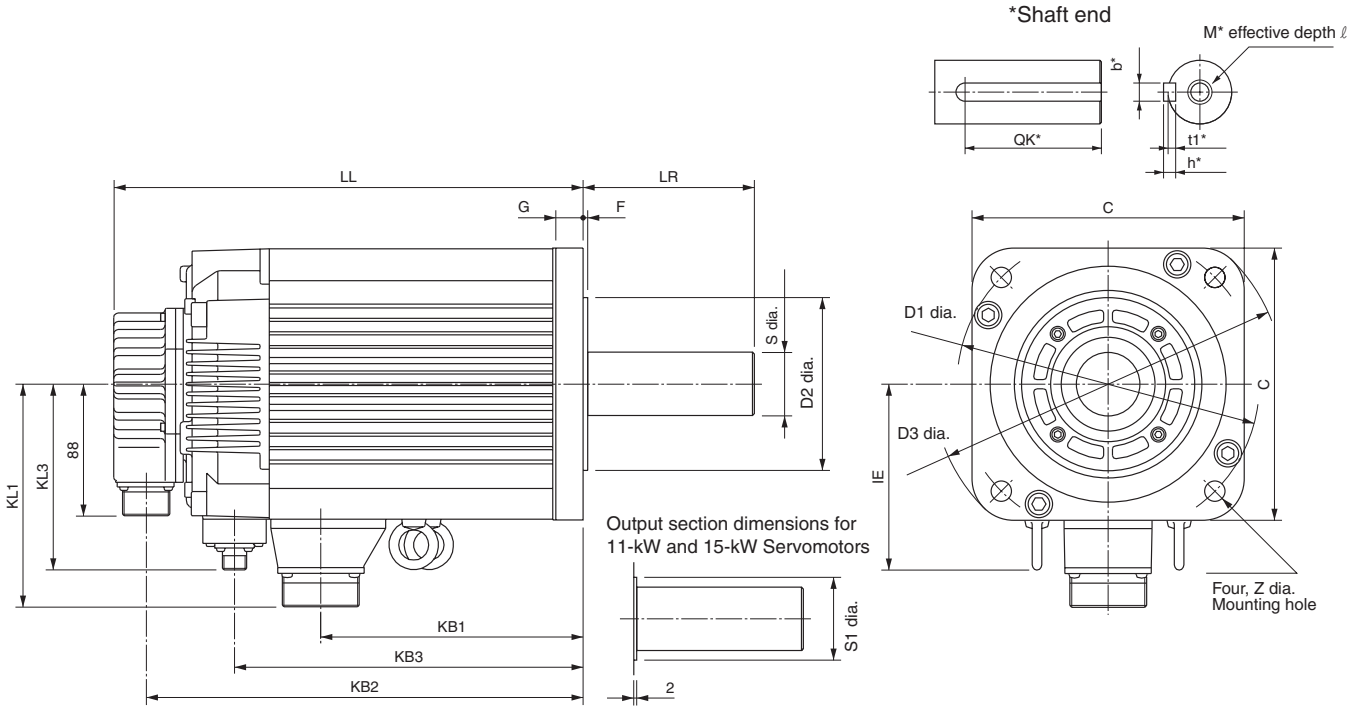
* These dimensions are applicable to R88M-W□-S2 with key and tap.

Dimensions (mm)	LL	LR	KB1	KB2	KL1	IE	Flange surface							Shaft end							
Model							C	D1	D2	D3	F	G	Z	S	S1	QK*	b*	h*	t1*	M	ℓ
R88M-W5K515T (-S2)	260	113	174	238	150	123	180	200	$114.3_{-0.025}^{0}$	230	3.2	18	13.5	42^{h6}	---	90	12	8	5	M16	32
R88M-W7K515T (-S2)	334		248	312																	
R88M-W11K015T (-S2)	338	116	251	317	168	142	220	235	200^{h7}	270	4				45						
R88M-W15K015T (-S2)	457		343	435		150						20		$55_{+0.011}^{+0.030}$	65		16	10	6	M20	40

Cylinder-style Motors with Brakes (1,500 r/min)

200 VAC: 5.5 kW/7.5 kW/11 kW/15 kW

R88M-W5K515T-B (-S2)/W7K515T-B (-S2)/W11K015T-B (-S2)/W15K015T-B (-S2)



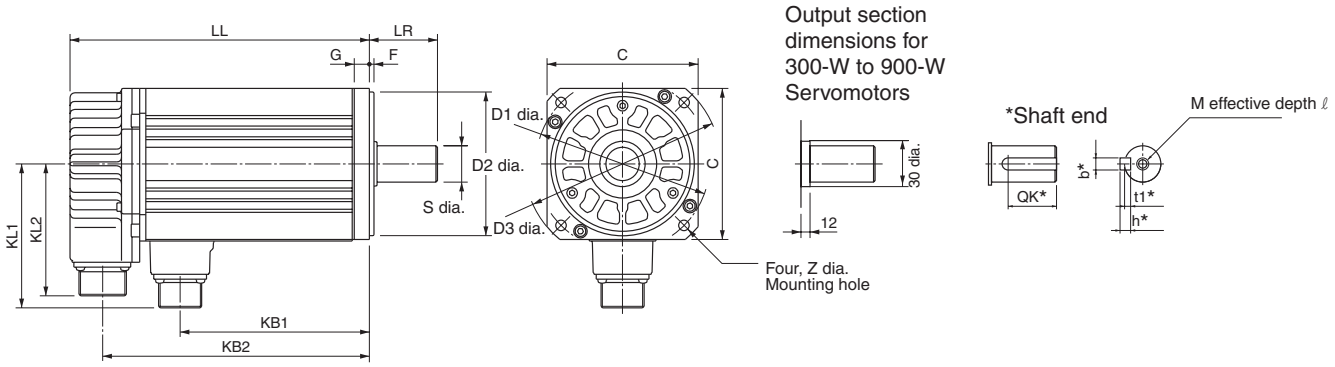
* These dimensions are applicable to R88M-W□-BS2 with key and tap.

Dimensions (mm)	LL	LR	KB1	KB2	KB3	KL1	KL3	IE	Flange surface							Shaft end							
Model									C	D1	D2	D3	F	G	Z	S	S1	QK*	b*	h*	t1*	M	ℓ
R88M-W5K515T-B (-S2)	311	113	174	289	231	150	123	123	180	200	$114.3_{-0.025}^{0}$	230	3.2	18	13.5	42^{h6}	---	90	12	8	5	M16	32
R88M-W7K515T-B (-S2)	385		248	363	305																		
R88M-W11K015T-B (-S2)	383	116	258	362	315	168	142	142	220	235	200^{h7}	270	4				45						
R88M-W15K015T-B (-S2)	519		343	497	415			150						20		$55^{+0.030}_{+0.011}$	65		16	10	6	M20	40

Cylinder-style Motors without Brakes (1,000 r/min)

200 VAC: 300 W/600 W/900 W/1.2 kW/2 kW/3 kW

R88M-W30010H (-S2)/W60010H (-S2)/W90010H (-S2)/W1K210H (-S2)/W2K010H (-S2)/W3K010H (-S2)
R88M-W30010T (-S2)/W60010T (-S2)/W90010T (-S2)/W1K210T (-S2)/W2K010T (-S2)/W3K010T (-S2)



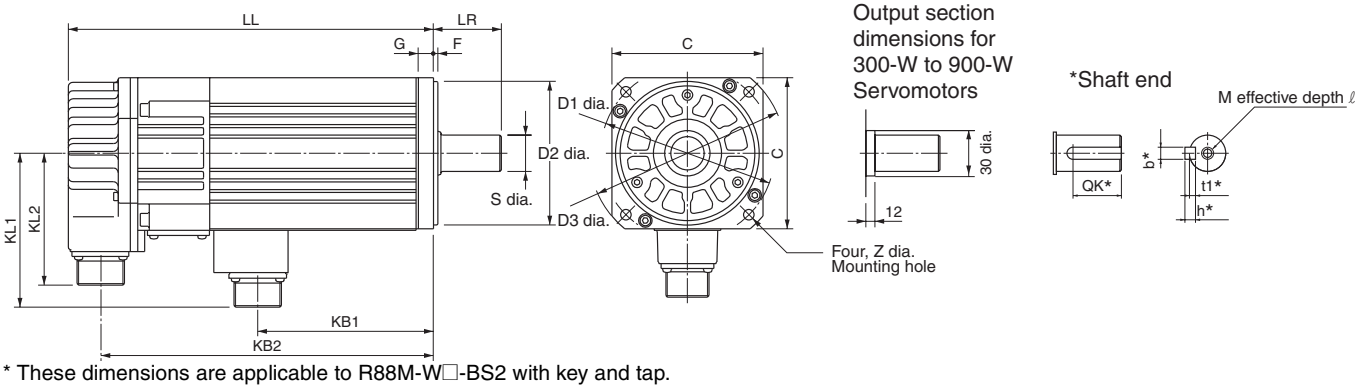
* These dimensions are applicable to R88M-W□-S2 with key and tap.

Dimensions (mm)	LL	LR	KB1	KB2	KL1	KL2	Flange surface							Shaft end						
Model							C	D1	D2	D3	F	G	Z	S	QK*	b*	h*	t1*	M	ℓ
R88M-W30010□ (-S2)	138	58	65	117	109	88	130	145	110^{h7}	165	6	12	9	19^{h6}	25	5	5	3	M5	12
R88M-W60010□ (-S2)	161		88	140																
R88M-W90010□ (-S2)	185		112	164										22^{h6}		6	6	3.5		
R88M-W1K210□ (-S2)	166	79	89	144	140	88	180	200	$114.3\ ^{0}_{-0.025}$	230	3.2	18	13.5	$35\ ^{+0.01}_{0}$	60	10	8	5	M12	25
R88M-W2K010□ (-S2)	192		115	170																
R88M-W3K010□ (-S2)	226		149	204																

Cylinder-style Motors with Brakes (1,000 r/min)

200 VAC: 300 W/600 W/900 W/1.2 kW/2 kW/3 kW

R88M-W30010H-B (S2)/W60010H-B (S2)/W90010H-B (S2)/W1K210H-B (S2)/W2K010H-B (S2)/W3K010H-B (S2)
R88M-W30010T-B (S2)/W60010T-B (S2)/W90010T-B (S2)/W1K210T-B (S2)/W2K010T-B (S2)/W3K010T-B (S2)



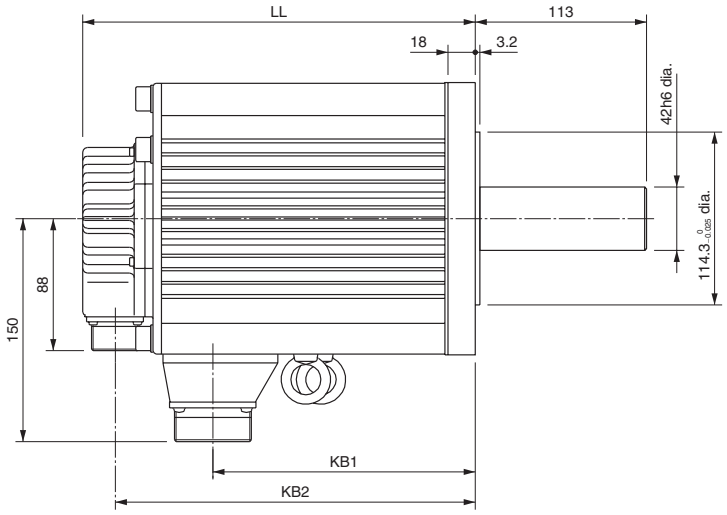
* These dimensions are applicable to R88M-W□-BS2 with key and tap.

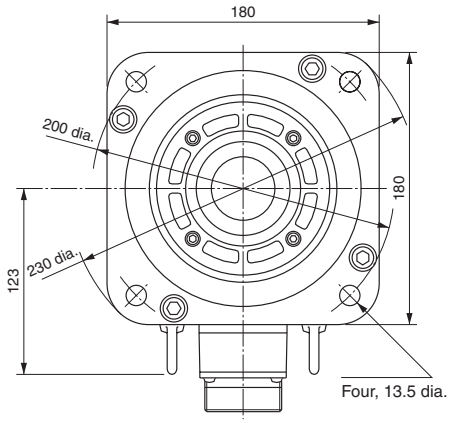
Dimensions (mm)	LL	LR	KB1	KB2	KL1	KL2	Flange surface							Shaft end						
Model							C	D1	D2	D3	F	G	Z	S	QK*	b*	h*	t1*	M	ℓ
R88M-W30010□-B (S2)	176	58	56	154	120	88	130	145	110^{h7}	165	6	12	9	19^{h6}	25	5	5	3	M5	12
R88M-W60010□-B (S2)	199		79	177																
R88M-W90010□-B (S2)	223		103	201										22^{h6}		6	6	3.5		
R88M-W1K210□-B (S2)	217	79	79	195	146	88	180	200	$114.3\ ^{0}_{-0.025}$	230	3.2	18	13.5	$35\ ^{+0.01}_{0}$	60	10	8	5	M12	25
R88M-W2K010□-B (S2)	243		105	221																
R88M-W3K010□-B (S2)	277		139	255																

Cylinder-style Motors without Brakes (1,000 r/min)

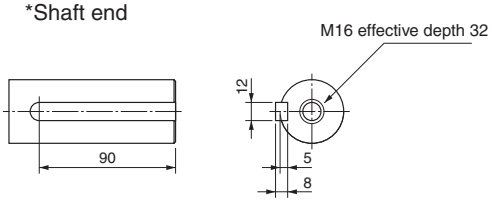
200 VAC: 4 kW/5.5 kW

R88M-W4K010H (-S2)/W5K510H (-S2)
R88M-W4K010T (-S2)/W5K510T (-S2)





*Shaft end

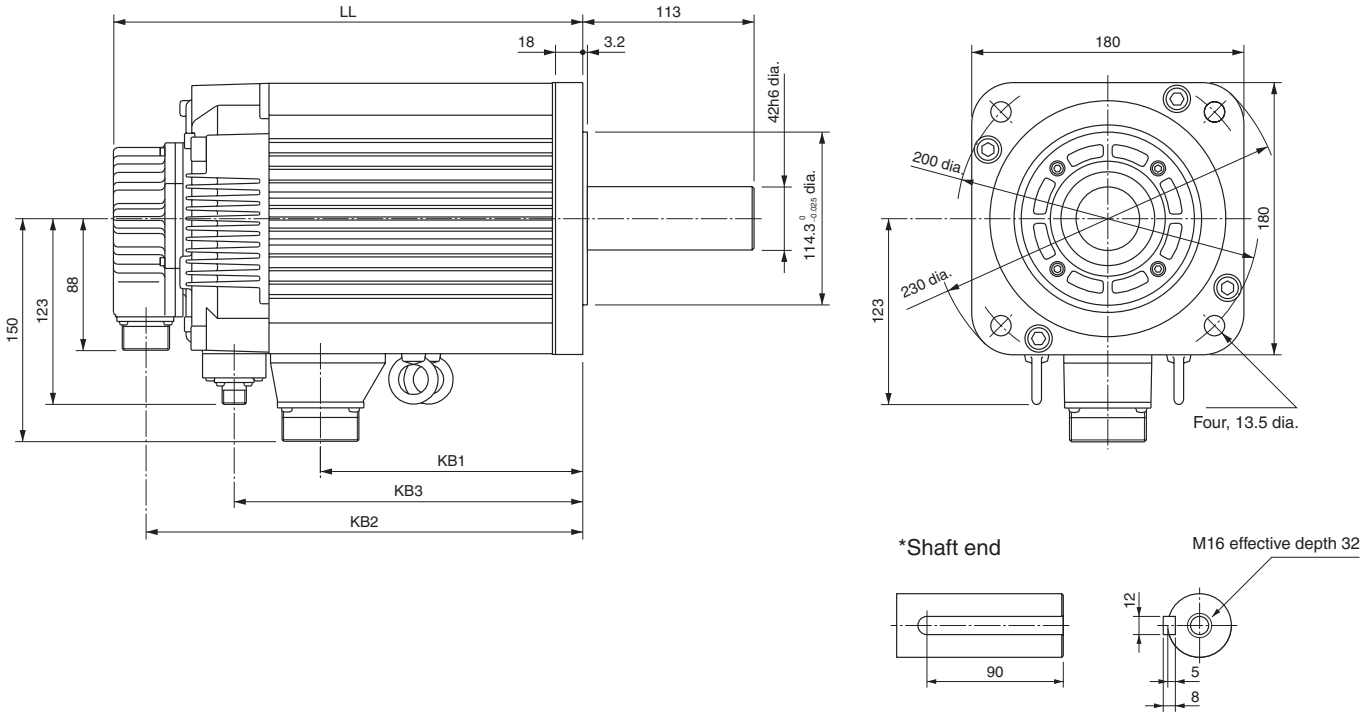


Dimensions (mm) / Model	LL	KB1	KB2
R88M-W4K010□ (-S2)	260	174	238
R88M-W5K010□ (-S2)	334	248	312

Cylinder-style Motors with Brakes (1,000 r/min)

200 VAC: 4 kW/5.5 kW

R88M-W4K010H-B (S2)/W5K510H-B (S2)
R88M-W4K010T-B (S2)/W5K510T-B (S2)



Dimensions (mm) / Model	LL	KB1	KB2	KB3
R88M-W4K010□-B (S2)	311	174	289	231
R88M-W5K510□-B (S2)	385	248	363	305

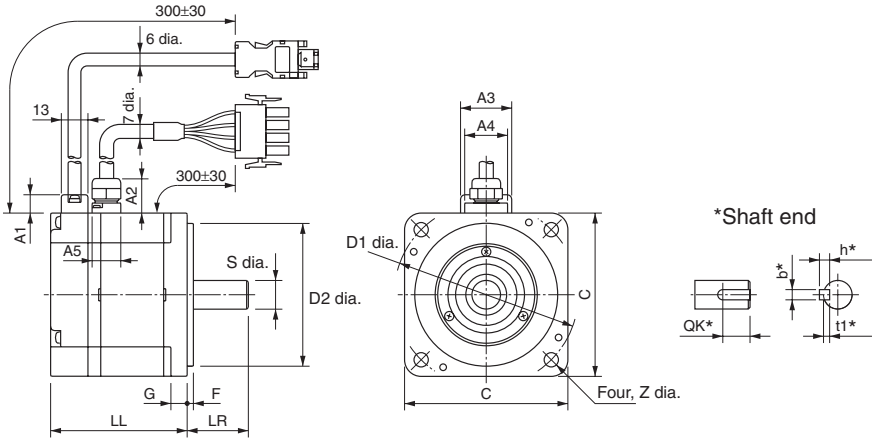
Flat-style Motors without Brakes

200 VAC: 100 W/200 W/400 W/750 W/1.5 kW

R88M-WP10030H (-S1)/WP20030H (-S1)/WP40030H (-S1)/WP75030H (-S1)/WP1K530H (-S1)
R88M-WP10030T (-S1)/WP20030T (-S1)/WP40030T (-S1)/WP75030T (-S1)/WP1K530T (-S1)

100 VAC: 100 W/200 W

R88M-WP10030L (-S1)/WP20030L (-S1)
R88M-WP10030S (-S1)/WP20030S (-S1)



* These dimensions are applicable to R88M-W□-S1 with key.

Dimensions (mm)	LL	LR	Flange surface						Shaft end					Cable pull-out section				
Model			C	D1	D2	F	G	Z	S	QK*	b*	h*	t1*	A1	A2	A3	A4	A5
R88M-WP10030□ (-S1)	62	25	60	70	50^{h7}	3	6	5.5	8^{h6}	14	3	3	1.8	9	18	25	21	14
R88M-WP20030□ (-S1)	67	30	80	90	70^{h7}	3	8	7	14^{h6}	16	5	5	3					
R88M-WP40030□ (-S1)	87																	
R88M-WP75030□ (-S1)	86.5	40	120	145	110^{h7}	3.5	10	10	16^{h6}	22					28		38	19
R88M-WP1K530□ (-S1)	114.5								19^{h6}		6	6	3.5					

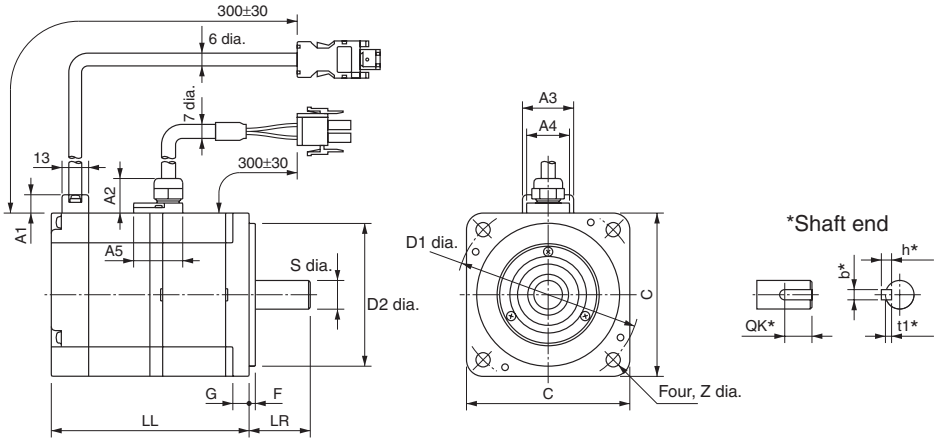
Flat-style Motors with Brakes

200 VAC: 100 W/200 W/400 W/750 W/1.5 kW

R88M-WP10030H-B (S1)/WP20030H-B (S1)/WP40030H-B (S1)/WP75030H-B (S1)/WP1K530H-B (S1)
R88M-WP10030T-B (S1)/WP20030T-B (S1)/WP40030T-B (S1)/WP75030T-B (S1)/WP1K530T-B (S1)

100 VAC: 100 W/200 W

R88M-WP10030L-B (S1)/WP20030L-B (S1)
R88M-WP10030S-B (S1)/WP20030S-B (S1)



* These dimensions are applicable to R88M-W□-BS1 with key.

Dimensions (mm)	LL	LR	Flange surface						Shaft end					Cable pull-out section				
Model			C	D1	D2	F	G	Z	S	QK*	b*	h*	t1*	A1	A2	A3	A4	A5
R88M-WP10030□-B (S1)	91	25	60	70	50^{h7}	3	6	5.5	8^{h6}	14	3	3	1.8	9	18	25	21	23
R88M-WP20030□-B (S1)	98.5	30	80	90	70^{h7}	3	8	7	14^{h6}	16	5	5	3					
R88M-WP40030□-B (S1)	118.5																	
R88M-WP75030□-B (S1)	120	40	120	145	110^{h7}	3.5	10	10	16^{h6}	22					28		38	26
R88M-WP1K530□-B (S1)	148								19^{h6}		6	6	3.5					

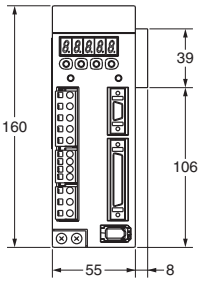
■ AC Servodrivers

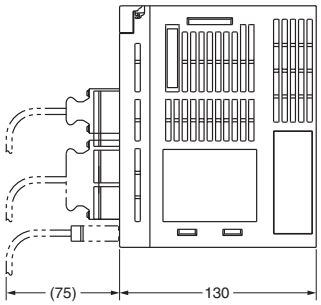
200 VAC: 30 W/50 W/100 W/200 W

R88D-WTA3H/WTA5H/WT01H/WT02H

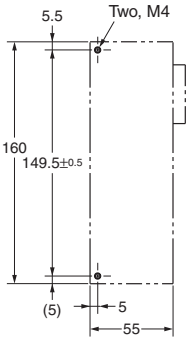
100 VAC: 30 W/50 W/100 W

R88D-WTA3HL/WTA5HL/WT01HL





Mounting hole dimensions

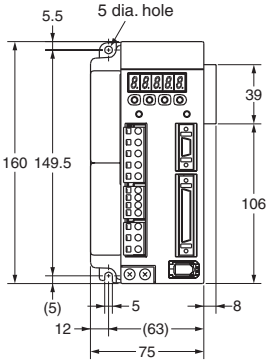


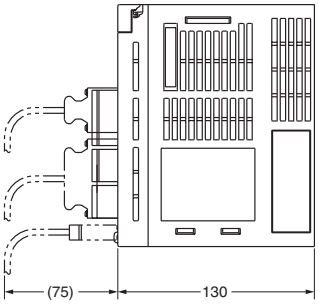
200 VAC: 400 W

R88D-WT04H

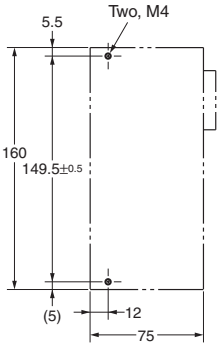
100 VAC: 200 W

R88D-WT02HL



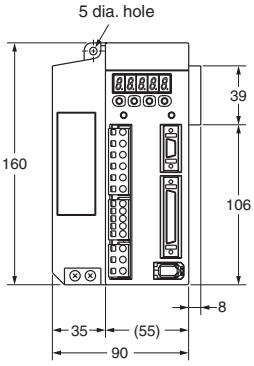


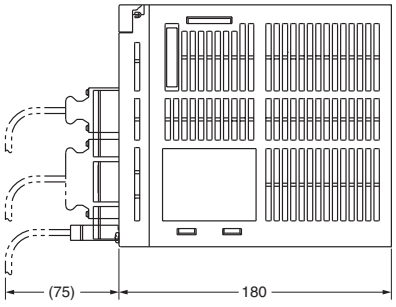
Mounting hole dimensions



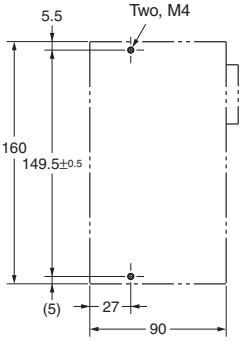
200 VAC: 500 W/750 W/1 kW

R88D-WT05H/WT08H/WT10H



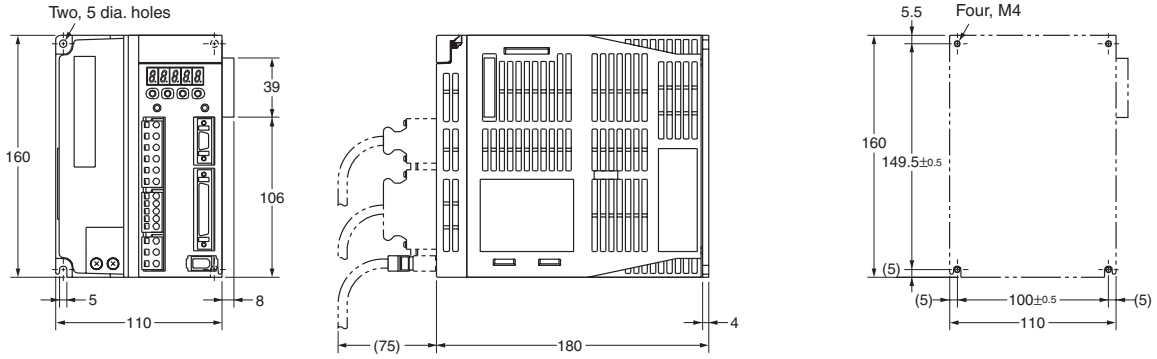


Mounting hole dimensions



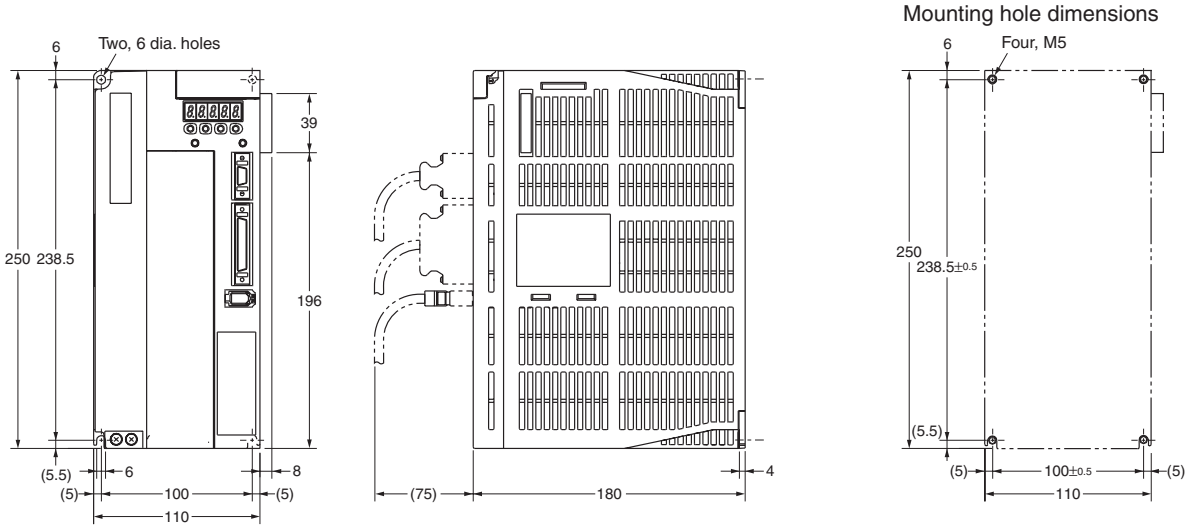
200 VAC: 1.5 kW

R88D-WT15H



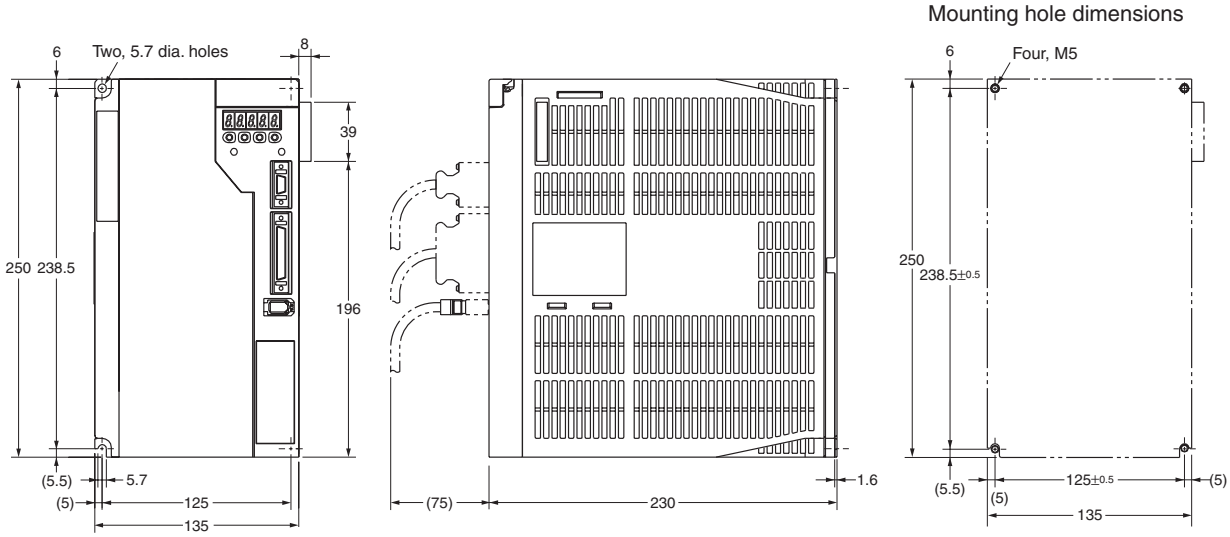
200 VAC: 2 kW/3 kW

R88D-WT20H/WT30H



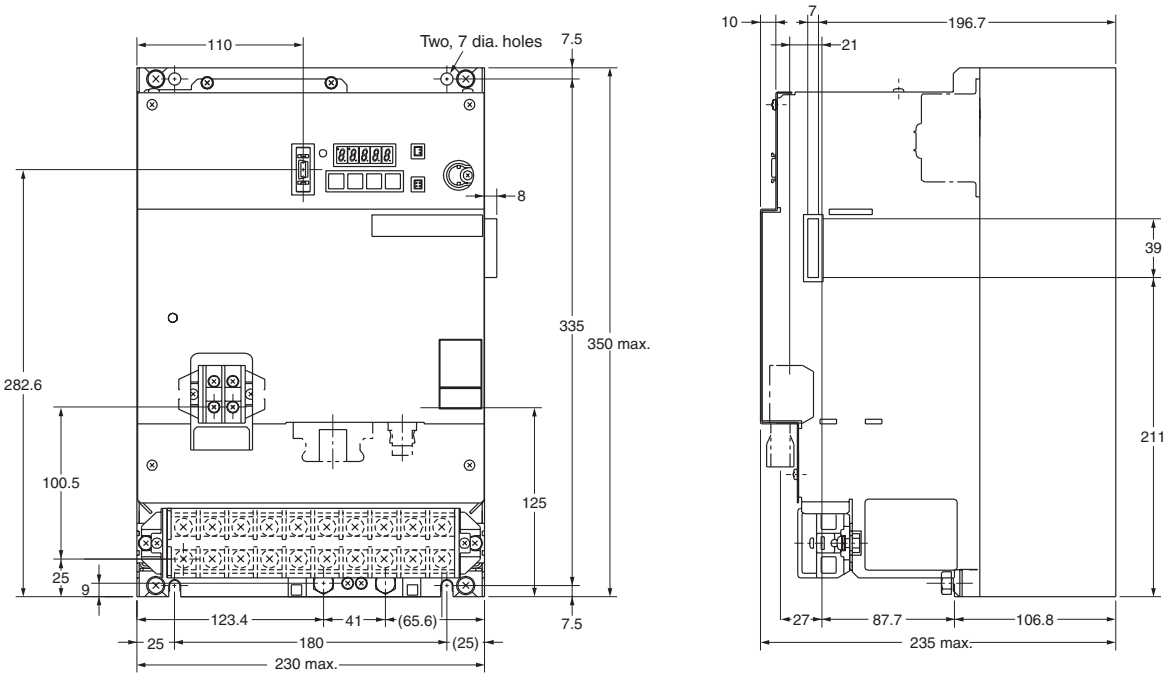
200 VAC: 5 kW

R88D-WT50H

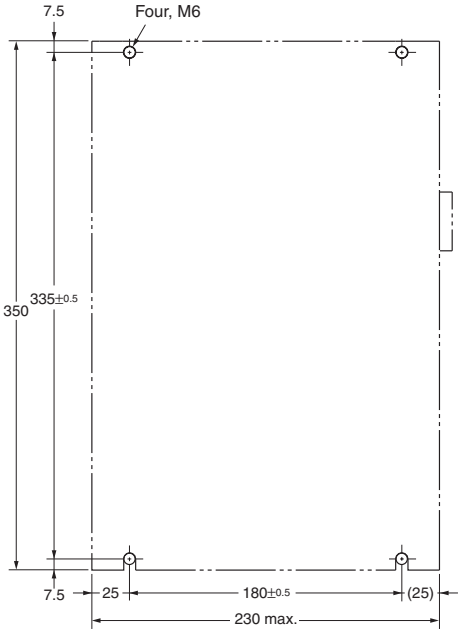


200 VAC: 6 kW/7.5 kW

R88D-WT60H/WT75H

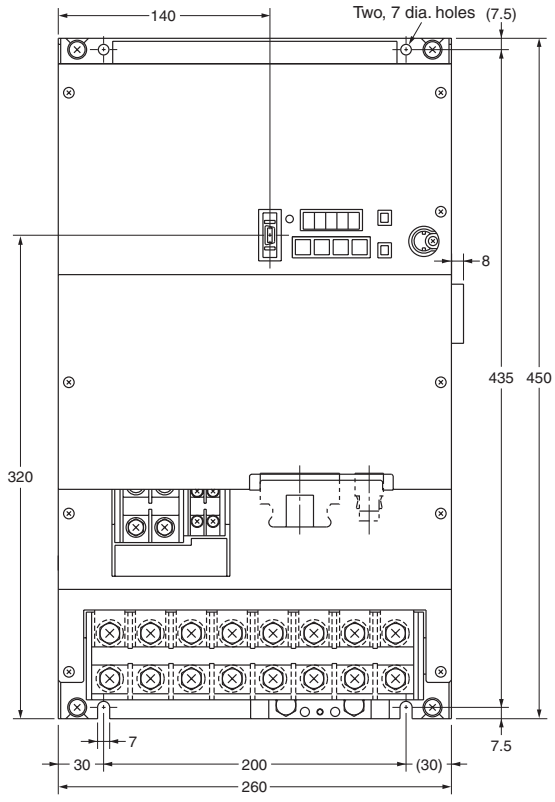


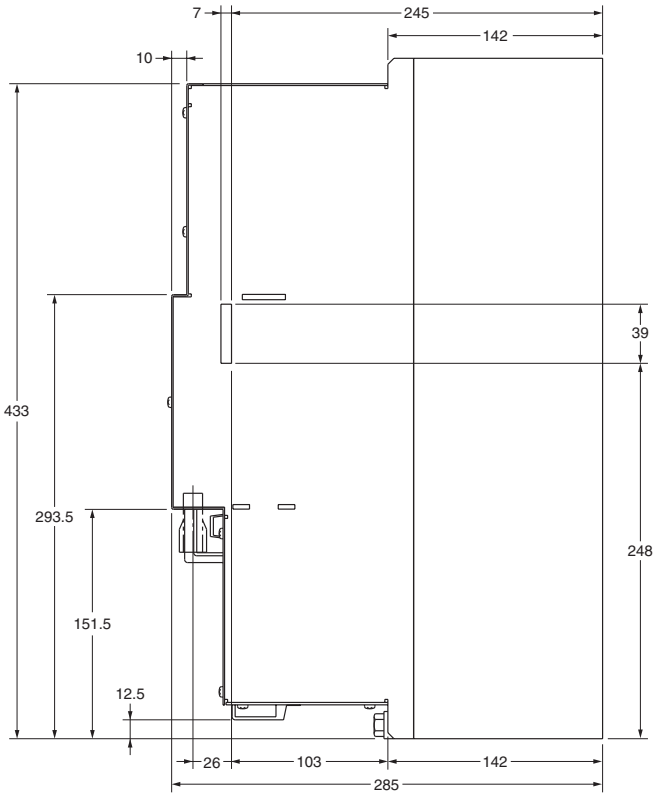
Mounting hole dimensions



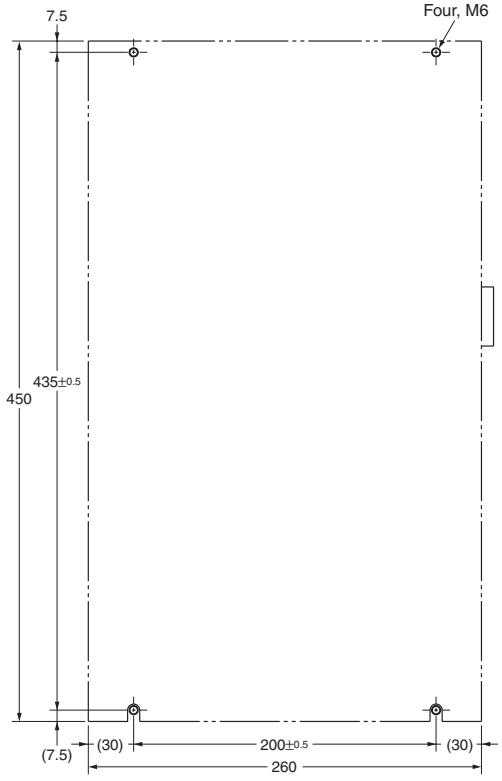
200 VAC: 15 kW

R88D-WT150H

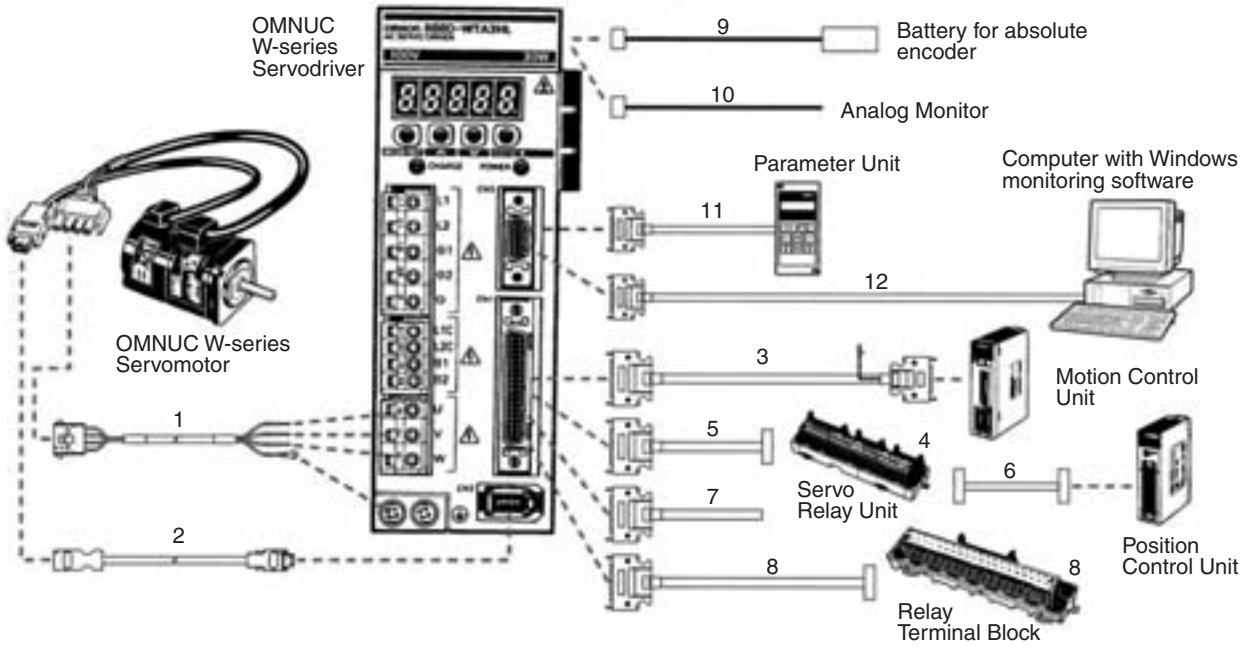




Mounting hole dimensions



Cable Specifications



■ Power Cables

Symbol	Description	Connect to:	Model	Remarks
1	Power Cables for Servomotors without Brakes	Cylinder-style Servomotors (3,000 r/min): 30 to 750 W Flat-style Servomotors (3,000 r/min): 100 to 750 W	R88A-CAWA□□□S □ represents one of the following cable lengths: 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Connector on motor end (manufactured by AMP Japan, Ltd.) Connector cap: 350780-1 Connector socket: 350689-3 
		Flat-style Servomotors (3,000 r/min): 1.5 kW	R88A-CAWB□□□S □ represents one of the following cable lengths: 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Connector on motor end (manufactured by AMP Japan, Ltd.) Connector cap: 350780-1 Connector socket: 350551-6 (pins 1 to 3) 350551-3 (pin 4) 
		Cylinder-style Servomotors (3,000 r/min): 1 to 2 kW Cylinder-style Servomotors (1,500 r/min): 450 W to 1.3 kW Cylinder-style Servomotors (1,000 r/min): 300 to 900 W	R88A-CAWC□□□S □ represents one of the following cable lengths: 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Connector on motor end (manufactured by Daiichi Denshi Kogyo Co., Ltd.) Connector cap: MS3106B18-10S Cable clamp: MS3057-10A 
		Cylinder-style Servomotors (3,000 r/min): 3 to 5 kW Cylinder-style Servomotors (1,500 r/min): 1.8 to 4.4 kW Cylinder-style Servomotors (1,000 r/min): 1.2 to 3 kW	R88A-CAWD□□□S □ represents one of the following cable lengths: 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Connector on motor end (manufactured by Daiichi Denshi Kogyo Co., Ltd.) Connector cap: MS3106B22-22S Cable clamp: MS3057-12A 

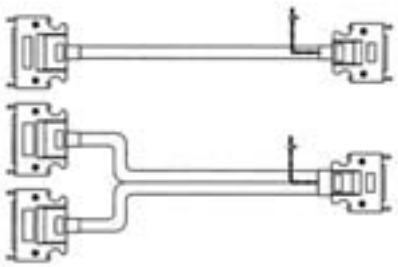
Symbol	Description		Connect to:	Model	Remarks
1	Power Cables for Servomotors without Brakes, and Servomotors with Brakes (See note.)	Power connectors (See note.)	Cylinder-style Servomotors (1,000 r/min): 4 kW	R88A-CAWE□□□S □ represents one of the following cable lengths: 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Connector on motor end (manufactured by Daiichi Denshi Kogyo Co., Ltd.) Connector cap: MS3106B32-17S Cable clamp: MS3057-20A 
			Cylinder-style Servomotors (1,500 r/min): 5.5 to 11 kW Cylinder-style Servomotors (1,000 r/min): 5.5 kW	R88A-CAWF□□□S □ represents one of the following cable lengths: 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Connector on motor end (manufactured by Daiichi Denshi Kogyo Co., Ltd.) Connector cap: MS3106B32-17S Cable clamp: MS3057-20A 
		Brake connectors (See note.)	Cylinder-style Servomotors (1,500 r/min): 5.5 to 11 kW Cylinder-style Servomotors (1,000 r/min): 4 to 5.5 kW **Note:** Must be used in combination with an R88A-CAWE□□□S or R88A-CAWF□□□S Power Cable.	R88A-CAWE□□□B □ represents one of the following cable lengths: 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Connector on motor end (manufactured by Daiichi Denshi Kogyo Co., Ltd.) Connector cap: MS3106A10SL-3S Cable clamp: MS3057-4A 
	Power Cables for Servomotors with Brakes		Cylinder-style Servomotors (3,000 r/min): 30 to 750 W Flat-style Servomotors (3,000 r/min): 100 to 750 W	R88A-CAWA□□□B □ represents one of the following cable lengths: 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Connector on motor end (manufactured by AMP Japan, Ltd.) Connector cap: 350781-1 Connector socket: 350689-3 
			Flat-style Servomotors (3,000 r/min): 1.5 kW	R88A-CAWB□□□B □ represents one of the following cable lengths: 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Connector on motor end (manufactured by AMP Japan, Ltd.) Connector cap: 350781-1 Connector socket: 350551-6 (pins 1 to 3) 350551-3 (pin 4) 
			Cylinder-style Servomotors (3,000 r/min): 1 to 2 kW Cylinder-style Servomotors (1,500 r/min): 450 W to 1.3 kW Cylinder-style Servomotors (1,000 r/min): 300 to 900 W	R88A-CAWC□□□B □ represents one of the following cable lengths: 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Connector on motor end (manufactured by Daiichi Denshi Kogyo Co., Ltd.) Connector cap: MS3106B20-15S Cable clamp: MS3057-12A 
			Cylinder-style Servomotors (3,000 r/min): 3 to 5 kW Cylinder-style Servomotors (1,500 r/min): 1.8 to 4.4 kW Cylinder-style Servomotors (1,000 r/min): 1.2 to 3 kW	R88A-CAWD□□□B □ represents one of the following cable lengths: 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Connector on motor end (manufactured by Daiichi Denshi Kogyo Co., Ltd.) Connector cap: MS3106B24-10S Cable clamp: MS3057-16A 

Note: Power connectors and brake connectors are separate for Servomotors with a capacity of 4 kW min. (1,000 r/min) and 5.5 kW min. (1,500 r/min). This means that two cables are necessary when using Servomotors with Brakes: an R88A-CAWE□□□S or R88A-CAWF□□□S Power Connector and an R88A-CAWF□□□B Brake Connector. The R88A-CAWF□□□B Brake Connector is wired (2 conductors) only for braking.

■ Encoder Cables (for CN2)

Symbol	Description	Connect to:	Model	Remarks
2	Encoder Cable	Cylinder-style Servomotors (3,000 r/min): 30 to 750 W Flat-style Servomotors (3,000 r/min): 100 W to 1.5 kW	R88A-CRWA□□□C □represents one of the following cable lengths: 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Connector on motor end (manufactured by MOLEX JAPAN CO., Ltd.) Connector socket: 54280-0600 Connector on driver end (manufactured by MOLEX JAPAN CO., Ltd.) Crimp terminal: 50639-8091 Connector plug: 55101-0600 
		Cylinder-style Servomotors (3,000 r/min): 1 to 5 kW Cylinder-style Servomotors (1,500 r/min): 450 W to 15 kW Cylinder-style Servomotors (1,000 r/min): 300 W to 5.5 kW	R88A-CRWB□□□N □represents one of the following cable lengths: 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Connector on motor end (manufactured by Daiichi Denshi Kogyo Co., Ltd.) Connector socket: MS3106B20-29S Cable clamp: MS3057-12A Connector on driver end (manufactured by MOLEX JAPAN CO., Ltd.) Crimp terminal: 50639-8091 Connector plug: 55101-0600 

■ Control Cables (for CN1)

Symbol	Description	Connect to	Model	Remarks
3	Control Cable	Motion Control Units (for all SYSMAC CS1, C200H, and CV PCs)	R88A-CPW□□□M◊ □represents one of the following cable lengths: 1 m, 2 m, 3 m, 5 m ◊ represents the number of axes: 1: 1 axis 2: 2 axes	
4	Servo Relay Unit	1-axis Position Control Unit	XW2B-20J6-1B	---
		2-axis Position Control Unit	XW2B-40J6-2B	
		1-axis CJ1M	XW2B-20J6-8A	
		2-axis CJ1M	XW2B-40J6-9A	
5	Servodriver Connecting Cable	XW2B-20J6-1B, XW2B-40J6-2B, XW2B-20J6-3B, XW2B-20J6-8A, or XW2B-40J6-9A Servo Relay Unit	XW2Z-□□□J-B4 □ represents either of the following cable lengths: 1 m, 2 m	
		XW2B-40J6-4A Servo Relay Unit	XW2Z-□□□J-B8 □ represents either of the following cable lengths: 1 m, 2 m	
6	Position Control Unit Connecting Cable	CS1W-NC113 or C200HW-NC113 Position Control Unit	XW2Z-□□□J-A6 □ represents either of the following cable lengths: 50 cm, 1 m	
		CS1W-NC213/413 or C200HW-NC213/413 Position Control Unit	XW2Z-□□□J-A7 □ represents either of the following cable lengths: 50 cm, 1 m	
		CJ1W-NC113 Position Control Unit	XW2Z-□□□J-A14 □ represents either of the following cable lengths: 50 cm, 1m	
		CJ1W-NC213/413 Position Control Unit	XW2Z-□□□J-A15 □ represents either of the following cable lengths: 50 cm, 1m	
		CJ1M (CJ1M-CPU22/23)	XW2Z-100J-A27	
7	Control Cable	General-purpose Controller	R88A-CPW□□□S □ represents either of the following cable lengths: 1 m, 2 m	---

Symbol	Description	Connect to	Model	Remarks
8	Relay Terminal Block Cable	General-purpose Controller	R88A-CTW□□□N □ represents either of the following cable lengths: 1 m, 2 m	---
	Relay Terminal Block		XW2B-50G5	
---	Control I/O Connector CN1	---	R88A-CNU11C	

■ CN3 Options

Symbol	Description	Connect to:	Model
11	Parameter Unit with Cable (1 m)	---	R88A-PR02W
	Parameter Unit Connecting Cable (2 m)	R88A-PR02U/ PR02W	R88A-CCW002C
12	Computer Connecting Cable (2 m)	IBM PC/AT or compatibles	R88A-CCW002P2

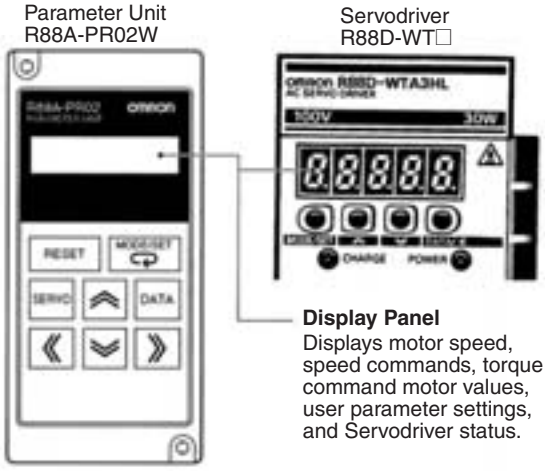
■ Other Options

Symbol	Description	Connect to:	Model
9	Backup Battery	R88D-WT□H (□: 50 or less)	R88A-BAT01W
		R88D-WT60H/ 75H/150H	R88A-BAT02W
10	Analog Monitor Cable (1 m)	---	R88A-CMW001S
---	Encoder Cable Connector	Servodriver side	R88A-CNW01R
		Servomotor side	R88A-CNW02R

Note: For details, refer to *Ordering Information* on page 67.

Operation and Display

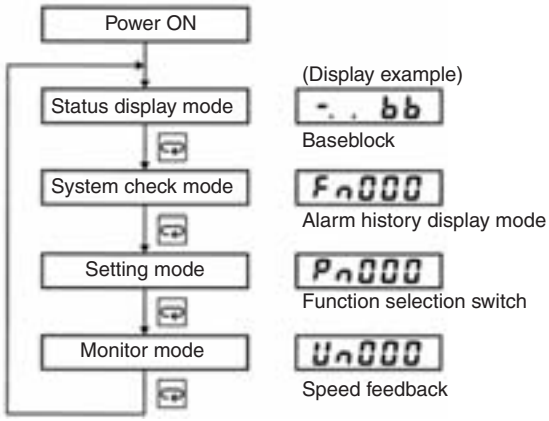
■ Operating Functions



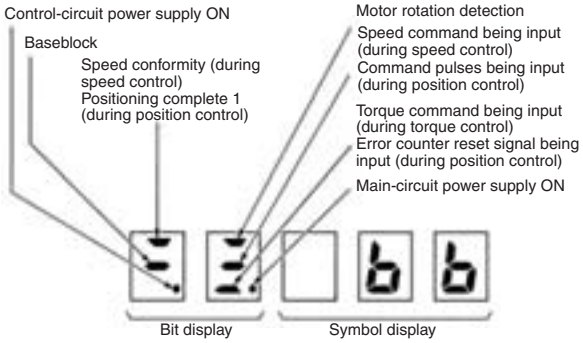
Display Panel
Displays motor speed, speed commands, torque command motor values, user parameter settings, and Servodriver status.

■ Changing Modes

To change modes, press the MODE/SET Key.



■ Status Display Mode

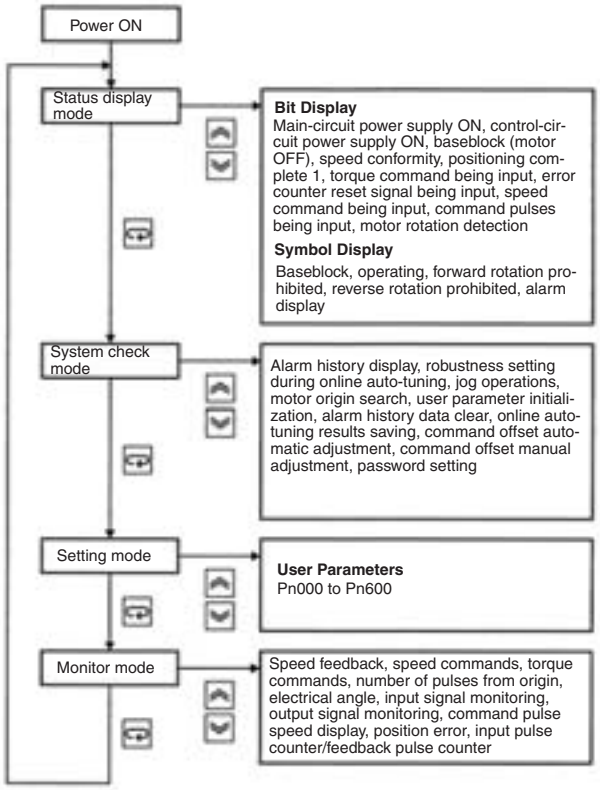


Symbol	Status
bb	Baseblock (motor OFF)
run	Operating
Pot	Forward rotation prohibited (forward overtravel)
not	Reverse rotation prohibited (reverse overtravel)
A.02	Alarm display (refer to *Alarm List* on page 51)

■ Unit Keys

R88A-PR02W	R88D-WT□	Function
RESET		Resets an alarm.
MODE/SET		Switches between status display mode, system check mode, setting mode, and monitor mode. Used as a data setting key while in setting mode.
SERVO		Turns ON or OFF the Servo while jog operations are being performed.
DATA		Switches between parameter display and data display, and records data.
		Increments parameter settings. Used as a forward rotation start key during jog operation.
		Decrements parameter settings. Used as a reverse rotation start key during jog operation.
		Selects the digit whose setting is to be changed. When selected, the digit flashes.

■ Mode Details



Monitor Item and Alarm List

■ Monitor Mode

Monitor No.	Monitor item	Unit	Explanation
Un000	Speed Feedback	r/min	Displays the actual motor speed.
Un001	Speed Command	r/min	Displays the speed command value or internally set speed value during speed control. 0 is displayed during pulse-train input control.
Un002	Torque Command	%	Displays the command value for a current loop that is expressed by treating the rated torque as 100%.
Un003	Number of Pulses from Z-Phase	Pulses	Displays the number of pulses from Z-Phase in encoder resolution units (times 4).
Un004	Electrical Angle	degrees	Displays the motor electrical angle.
Un005	Input Signal Monitor	---	Displays driver I/O signal status by turning ON or OFF each signal bit.
Un006	Output Signal Monitor	---	
Un007	Command Pulse Speed Display	r/min	Displays command pulse frequency converted in r/min.
Un008	Position Deviation (Error Counter)	Reference units	Displays the number of pulses accumulated in the error counter (Position Deviation) that are converted in reference units (input pulse references).
Un009	Motor Load Rate	%	Displays effective torque at intervals of 10 s that is expressed by treating the rated torque as 100%.
Un00A	Regeneration Load Rate	%	Displays the amount of regeneration energy absorbed at intervals of 10 s that is expressed by treating the Pn600 setting (Regenerative Resistor Capacity) as 100%.
Un00B	Dynamic Brake Resistance Load Rate	%	Displays the resistance load factor at intervals of 10 s that is expressed by treating the rated load factor as 100%.
Un00C	Input Pulse Counter	Reference units	Displays the number of counted input pulses in hexadecimal notation.
Un00D	Feedback Pulse Counter	Pulses	Displays the number of counted encoder feedback pulses in hexadecimal notation (multiplied by 4).

■ Alam Displays

In addition to the displays listed below, error codes for the Option Unit are also output.

Display	Alarm code			Alarm details
	AL01	AL02	AL03	
A.02	OFF	OFF	OFF	Parameter destruction, Servodriver EEP-ROM data error
A.03				Main circuit detector error
A.04				Parameter setting error
A.05				Motor mismatch, Servomotor and Servodriver capacity mismatch
A.10	ON	OFF	OFF	Overcurrent or heat sink overheating (1.5 kW min.)
A.30	ON	ON	OFF	Regeneration error (broken resistor wiring, transistor short-circuit)
A.32				Regeneration overload
A.33				Main-circuit power supply setting error
A.40	OFF	OFF	ON	Overvoltage
A.41				Undervoltage
A.51	ON	OFF	ON	Overspeed
A.71	ON	ON	ON	Overload (maximum momentary load)
A.72				Overload (maximum continuous load)
A.73				Dynamic brake overload
A.74				Inrush resistance overload
A.7A				Radiation shield overheating (Displayed for 30 W to 1.0 kW models only)
A.81	OFF	OFF	OFF	Backup error
A.82				Checksum error
A.83				Parity error
A.84				Absolute error
A.85				Overspeed error
A.86				Encoder overheating
A.b1				Speed command input read error
A.b2				Torque command input read error
A.bF				System error

Display	Alarm code			Alarm details
	AL01	AL02	AL03	
A.C1	ON	OFF	ON	Overrun detection
A.C8				Excessive rotation data error
A.C9				Encoder communications error
A.CA				Encoder parameter error
A.Cb				Encoder data error
A.CC	ON	OFF	ON	Multiple rotation limit mismatch
A.d0	ON	ON	OFF	Error counter count-up
A.d1				Motor-load deviation over
A.E7	OFF	ON	ON	Option detection error
A.F1	OFF	ON	OFF	Phase-failure detected
A.F5	OFF	ON	OFF	Motor current error
A.F6	OFF	ON	OFF	Motor conduction error

Note: Alarm codes are output to pin 37 (AL01), pin 38 (AL02), and pin 39 (AL03) of the CN1 connector on the Servodriver.

User Parameters

Function Selection Parameters

PRM. No.	Parameter name	Digit	Function name	Setting	Explanation	Factory setting	Unit	Setting range
Pn000	Function Selection Basic Switches	0	Reverse Rotation Mode	0	Defines forward rotation as counter-clockwise (CCW) rotation.	0010	---	---
				1	Defines forward rotation as clockwise (CW) rotation.			
		1	Control Mode Selection	0	Speed control (analog command)			
				1	Position control (pulse-train command)			
				2	Torque control (analog command)			
				3	Internally set speed control			
				4	Internally set speed control ↔ Speed control (analog command)			
				5	Internally set speed control ↔ Position control (pulse-train command)			
				6	Internally set speed control ↔ Torque control (analog command)			
				7	Position control (pulse-train command) ↔ Speed control (analog command)			
				8	Position control (pulse-train command) ↔ Torque control (analog command)			
				9	Torque control (analog command) ↔ Speed control (analog command)			
				A	Speed control with position lock function (analog command)			
				B	Position control with pulse prohibit function (pulse-train command)			
		2	Unit No. Setting	0 to F	Sets the unit No. of the device communicating with Servodriver.			
		3	Not Used					
Pn001	Function Selection Application Switches 1	0	Servo OFF or Alarm Stop Mode	0	Uses the dynamic brake to stop the Servomotor.	1002	---	---
				1	Uses the dynamic brake to stop the Servomotor, and releases the dynamic brake after the Servomotor stops.			
				2	Coasts the Servomotor to a stop.			
		1	Run Prohibit Input Stop Mode	0	Stops the Servomotor according to the Pn001.0 setting.			
				1	Decelerates the Servomotor to a stop at the torque specified in Pn406 and then locks the Servomotor.			
				2	Decelerates the Servomotor to a stop at the torque specified in Pn406 and then turns OFF the Servomotor.			
		2	Main Circuit Power Supply AC/DC Input Selection	0	Supplies AC power from L1, L2, and (L3) terminals.			
				1	Supplies DC power from (+) 1 and (–) terminals.			
		3	Warning Code Output Selection	0	Outputs only alarm codes from AL01, AL02, and AL03.			
				1	Outputs both alarm codes and warning codes from AL01, AL02, and AL03.			

Note: 1. Do not change the factory settings of any “Not Used” parameters.

2. When changing the Pn000, Pn001, or Pn002 parameter, always turn OFF and then ON the main circuit and control circuit power supplies to make the settings valid.

PRM. No.	Parameter name	Digit	Function name	Setting	Explanation	Factory setting	Unit	Setting range
Pn002	Function Selection Application Switches 2	0	Torque Command Input Switch during Position/Speed Control	0	None.	0000	---	---
				1	Uses TREF for analog torque limit input.			
				2	Uses TREF for torque feed-forward input.			
				3	Uses TREF for analog torque limit input when PCL and NCL are ON.			
		1	Speed Command Input Switch during Torque Control	0	None.			
				1	Uses REF for analog torque limit input.			
		2	Absolute Encoder Usage	0	Uses the absolute encoder as an absolute encoder.			
				1	Uses the absolute encoder as an incremental encoder.			
		3	Fully Closed Encoder Usage	0	Fully closed encoder is not used.			
				1	Fully closed encoder is used without phase Z.			
				2	Fully closed encoder is used with phase Z.			
				3	Fully closed encoder is used in Reverse Rotation Mode without phase Z.			
				4	Fully closed encoder is used in Reverse Rotation Mode with phase Z.			
Pn003	Function Selection Application Switches 3	0	Analog Monitor 1	0	Motor speed: 1 V/1,000 r/min	0002	---	---
				1	Speed command: 1 V/1,000 r/min			
				2	Torque command: 0.05 V/rated torque			
				3	Position error: 0.05 V/1 command unit			
				4	Position error: 0.05 V/100 command units			
				5	Reference pulse frequency: 1 V/1,000 r/min			
				6	Motor speed: 1 V/250 r/min			
				7	Motor speed: 1 V/125 r/min			
				8 to F	Reserved			
		1	Analog Monitor 2	0 to F	Same as Analog Monitor 1			
		2 to 3	Not Used					
Pn004 and Pn005	Not Used					0000	---	---

Note: 1. Do not change the factory settings of any “Not Used” parameters.

2. When changing the Pn000, Pn001, or Pn002 parameter, always turn OFF and then ON the main circuit and control circuit power supplies to make the settings valid.

Gain-related Parameters

PRM. No.	Parameter name	Digit	Function name	Setting	Explanation	Factory setting	Unit	Setting range
Pn100	Speed Loop Gain	Adjusts speed loop response.				80	Hz	1 to 2000
Pn101	Speed Loop Integral Time Constant	Speed loop integral time constant				2000	0.01 ms	15 to 51200
Pn102	Position Loop Gain	Adjusts speed loop response.				40	1/s	1 to 2000
Pn103	Inertia Ratio	Sets the ratio for the mechanical inertia relative to the Servomotor rotor inertia.				300	%	0 to 20000
Pn104	Speed Loop Gain 2	Adjusts speed loop response (enabled by gain selector input).				80	Hz	1 to 2000
Pn105	Speed Loop Integral Time Constant 2	Speed loop integral time constant (enabled by gain selector input).				2000	0.01 ms	15 to 51200
Pn106	Position Loop Gain 2	Adjusts speed loop response (enabled by gain selector input).				40	1/s	1 to 2000
Pn107	Bias Rotational Speed	Position control bias setting				0	r/min	0 to 450
Pn108	Bias Addition Baud	Uses the deviation counter pulse width to set the operation start for the position control bias function.				7	Command units	0 to 250
Pn109	Feed-forward Amount	Position control feed-forward compensating gain value				0	%	0 to 100
Pn10A	Feed-forward Command Filter	Sets the command filter for position control feed-forward.				0	0.01 ms	0 to 6400
Pn10B	Speed Control Settings	0	P Control Switching Condition	0	Uses an internal torque command value as the switching condition (level setting: Pn10C).	0004	---	---
				1	Uses a speed command value as the switching condition (level setting: Pn10D).			
				2	Uses an acceleration command value as the switching condition (level setting: Pn10E).			
				3	Uses the number of error pulses as the switching condition (level setting: Pn10F).			
				4	Does not use the P control switching function.			
		1	Speed Control Loop Switch	0	PI control			
				1	IP control			
		2	Automatic Gain Switching Selection	0	Automatic gain switching disabled			
				1	Gain switching using position commands			
				2	Gain switching using position deviation			
				3	Gain switching using position commands and position deviation			
		3	Not Used					
Pn10C	P Control Switching (Torque Command)	Sets the torque command level for switching from PI control to P control.				200	%	0 to 800
Pn10D	P Control Switching (Speed Command)	Sets the speed command level for switching from PI control to P control.				0	r/min	0 to 10000
Pn10E	P Control Switching (Acceleration Command)	Sets the acceleration command level for switching from PI control to P control.				0	10r/ min/s	0 to 3000
Pn10F	P Control Switching (Deviation Pulse)	Sets the deviation pulse level for switching from PI control to P control.				10	Command units	0 to 10000

PRM. No.	Parameter name	Digit	Function name	Setting	Explanation	Factory setting	Unit	Setting range
Pn110	Online Autotuning Setting	0	Online Autotuning Selection	0	Performs autotuning only when the system runs for the first time after the power is turned ON.	0012	---	---
				1	Performs autotuning continuously.			
				2	Does not perform autotuning.			
		1	Speed Feedback Compensation Selection	0	Enabled			
				1	Disabled			
		2	Friction Compensation Selection	0	Friction compensation: Disabled			
				1	Friction compensation: Small rated torque ratio			
				2	Friction compensation: Large rated torque ratio			
		3	Not Used					
Pn111	Speed Feedback Compensating Gain	Adjusts the speed loop feedback gain.				100	%	0 to 500
Pn124	Automatic Gain Switching Timer	Sets the switching delay following the completion of the condition when using the automatic gain switching function (Pn10B.2 = 1 to 3).				100	ms	1 to 10000
Pn125	Automatic Gain Switching Width (Position Deviation Amount)	Sets the position deviation amount for the switching condition when using the automatic gain switching function based on position deviation (Pn10B.2 = 2, 3).				7	Command units	1 to 250

Note: Do not change the factory settings of any “Not Used” parameters.

Position Control-related Parameters

PRM. No.	Parameter name	Digit	Function name	Setting	Explanation	Factory setting	Unit	Setting range
Pn200	Position Control Setting 1	0	Command Pulse Mode	0	Feed pulse/forward-reverse signal: Positive logic	1011	---	---
				1	Forward rotation pulse/reverse rotation pulse: Positive logic			
				2	Phase-A/B signal with 90° phase differential (×1): Positive logic			
				3	Phase-A/B signal with 90° phase differential (×2): Positive logic			
				4	Phase-A/B signal with 90° phase differential (×4): Positive logic			
				5	Feed pulse/forward-reverse signal: Negative logic			
				6	Forward rotation pulse/reverse rotation pulse: Negative logic			
				7	Phase-A/B signal with 90° phase differential (×1): Negative logic			
				8	Phase-A/B signal with 90° phase differential (×2): Negative logic			
				9	Phase-A/B signal with 90° phase differential (×4): Negative logic			
		1	Error Counter Clear Signal Form	0	Clears the error counter when the clear signal goes high.			
				1	Clears the error counter on the rising edge of the clear signal.			
				2	Clears the error counter when the clear signal goes low.			
				3	Clears the error counter on the falling edge of the clear signal.			
		2	Error Counter Clear during Servo OFF or Alarm	0	Clears the error counter when the Servo is turned OFF or when an alarm is generated.			
				1	Does not clear the error counter when the Servo is turned OFF or when an alarm is generated.			
				2	Clears the error counter only when an alarm is generated.			
		3	Pulse Command Filter Selection	0	Uses command filter for line driver signal input (500 Kpps).			
				1	Uses command filter for open collector signal input (200 Kpps).			
Pn201	Encoder Divider Rate	Sets the number of output pulses from the driver.				1000	Pulses/ revolution	16 to 16384
Pn202	Electronic Gear Ratio G1 (Numerator)	Sets the pulse rate for the command pulse and amount of Servomotor movement. 0.01≤G1/G2≤100				4	---	1 to 65535
Pn203	Electronic Gear Ratio G2 (Denominator)					1	---	1 to 65535
Pn204	Position Command Filter Time Constant 1	Soft start setting for command pulse (soft start characteristic: primary filter)				0	0.01 ms	0 to 6400
Pn205	Absolute Encoder Multi-turn Limit Setting	Sets the multi-turn limit when using a Servomotor with an absolute encoder.				65535	Number of revolutions	0 to 65535
Pn206	Number of Fully Closed Encoder Pulses	Sets the number of fully closed encoder pulses per Servomotor revolution.				16384	P/R	25 to 65535

PRM. No.	Parameter name	Digit	Function name	Setting	Explanation	Factory setting	Unit	Setting range
Pn207	Position Control Setting 2	0	Position Command Filter Selection	0	Primary filter	0000	---	---
				1	Linear acceleration/deceleration			
		1	Speed Command Input Switch (during Position Control)	0	None			
				1	Uses REF for speed feed-forward input.			
		2 to 3	Not Used					
Pn208	Position Command Filter Time Constant 2 (Linear Acceleration and Deceleration)	Soft start setting for command pulse (soft start characteristic: linear acceleration and deceleration)				0	0.01 ms	0 to 6400
Pn217	Command Pulse Factor	Sets the factor for command pulse input.				1	Factor	1 to 99
Pn218	Position Control Setting 3	0	Command Pulse Factor Switching Selection	0	Disables function.	0000	---	---
				1	Uses command pulse factor switching selection.			
		1 to 3	Not Used					

Speed-related Parameters

PRM. No.	Parameter name	Digit	Function name	Setting	Explanation	Factory setting	Unit	Setting range
Pn300	Speed Command Scale	Sets the speed command voltage (REF) to rotate at the rated r/min.				1000	0.01 V/rated speed	150 to 3000
Pn301	No.1 Internal Speed Setting	r/min for No. 1 internal speed setting				100	r/min	0 to 10000
Pn302	No. 2 Internal Speed Setting	r/min for No. 2 internal speed setting				200	r/min	0 to 10000
Pn303	No. 3 Internal Speed Setting	r/min for No. 3 internal speed setting				300	r/min	0 to 10000
Pn304	Jog Speed	Sets the r/min for jog operation.				500	r/min	0 to 10000
Pn305	Soft Start Acceleration Time	Sets the acceleration time for speed-controlling soft start.				0	ms	0 to 10000
Pn306	Soft Start Deceleration Time	Sets the deceleration time for speed-controlling soft start.				0	ms	0 to 10000
Pn307	Speed Command Filter Time Constant	Sets the filter time constant for speed command voltage input (REF).				40	0.01 ms	0 to 65535
Pn308	Speed Feedback Filter Time Constant	Sets the filter time constant for speed feedback.				0	0.01 ms	0 to 65535

Note: 1. Do not change the factory settings of any “Not Used” parameters.

2. When changing any position control-related parameters (Pn200 to Pn208), always turn OFF and then ON the main circuit and control circuit power supplies to make the settings valid.

3. For 13-bit encoders, dividing will not occur if a value of 2048 or greater is specified in Pn201.

Torque-related Parameters

PRM. No.	Parameter name	Digit	Function name	Setting	Explanation	Factory setting	Unit	Setting range
Pn400	Torque Command Scale	Sets the torque command voltage (TREF) to output the rated torque.				30	0.1 V/rated torque	10 to 100
Pn401	Torque Command Filter Time Constant	Sets the filter time constant for internal torque command.				40	0.01 ms	0 to 65535
Pn402	Forward Torque Limit	Output torque limit (percentage of rated torque) for forward direction				350	%	0 to 800
Pn403	Reverse Torque Limit	Output torque limit (percentage of rated torque) for reverse direction				350	%	0 to 800
Pn404	Forward Rotation External Current Limit	Output torque limit (percentage of rated torque) for forward rotation external current limit input				100	%	0 to 800
Pn405	Reverse Rotation External Current Limit	Output torque limit (percentage of rated torque) for reverse rotation external current limit input				100	%	0 to 800
Pn406	Emergency Stop Torque	Deceleration torque (percentage of rated torque) for emergency stops				350	%	0 to 800
Pn407	Speed Limit	Sets the speed limit for the torque control mode				3000	r/min	0 to 10000

PRM. No.	Parameter name	Digit	Function name	Setting	Explanation	Factory setting	Unit	Setting range
Pn408	Torque Command Setting	0	Selects Notch Filter 1 Function.	0	None	0000	---	---
				1	Notch filter 1 used for torque commands.			
		1	Not Used					
		2	Selects Notch Filter 2 Function.	0	None			
				1	Notch filter 2 used for torque commands.			
		3	Not Used					
Pn409	Notch Filter 1 Frequency	Sets the notch filter 1 frequency for the torque command.				2000	Hz	50 to 2000
Pn40A	Notch Filter 1 Q Value	Sets the notch filter 1 Q value.				70	0.01	50 to 400
Pn40B	Notch Filter 2 Frequency	Sets the notch filter 2 frequency for the torque command.				2000	Hz	50 to 2000
Pn40C	Notch Filter 2 Q Value	Sets the notch filter 2 Q value.				70	0.01	50 to 400

Sequence-related Parameters

PRM. No.	Parameter name	Digit	Function name	Setting	Explanation	Factory setting	Unit	Setting range
Pn500	Positioning Completed Width 1	Sets the width for positioning completed output 1 (INP1).				3	Command units	0 to 250
Pn501	Position Lock Rotation Speed	Sets the r/min for position lock during speed control.				10	r/min	0 to 10000
Pn502	Rotation Speed For Motor Rotation Detection	Sets the r/min for the motor rotation detection output (TGON).				20	r/min	0 to 10000
Pn503	Speed Conformity Signal Output Width	Sets the allowable variation width (r/min) for the speed conformity output signal (VCMP).				10	r/min	0 to 100
Pn504	Positioning Completion Range 2	Sets the width for positioning completed output 1 (INP2).				3	Command units	1 to 250
Pn505	Deviation Counter Overflow Level	Sets the detection level for the deviation counter overflow alarm.				1024	Command units × 256	1 to 32767
Pn506	Brake Timing 1	Sets the amount of delay time from the brake command to the time the servomotor turns OFF.				0	10 ms	0 to 50
Pn507	Brake Command Speed	Sets the r/min for outputting the brake command.				100	r/min	0 to 10000
Pn508	Brake Timing 2	Sets the amount of wait time from the time the servomotor turns OFF until the brake command is output.				50	10 ms	10 to 100
Pn509	Momentary Hold Time	Sets the alarm detection disable time for generating a momentary hold.				20	ms	20 to 1000
Pn50A	Input Signal Selections 1	0	Input Signal Allocation Mode	0	Uses the same sequence input signal allocation setting as the R88D-UT. For details, refer to the OMNUC W-series AC SERVOMOTORS/ SERVO DRIVERS User's Manual) (I531-E1-□).	8100	---	---
				1	Enables any sequence input signal allocation settings.			

Note: 1. Do not change the factory settings of any "Not Used" parameters.

2. When changing any Input Signal Selection parameters (Pn50A to Pn50D), always turn OFF and then ON the main circuit and control circuit power supplies to make the settings valid.

PRM. No.	Parameter name	Digit	Function name	Setting	Explanation	Factory setting	Unit	Setting range
Pn50A	Input Signal Selections 1	1	RUN Signal Input Terminal Allocation	0	Allocates the signal to CN1-40 pin: Enabled when low.	8100	---	---
				1	Allocates the signal to CN1-41 pin: Enabled when low.			
				2	Allocates the signal to CN1-42 pin: Enabled when low.			
				3	Allocates the signal to CN1-43 pin: Enabled when low.			
				4	Allocates the signal to CN1-44 pin: Enabled when low.			
				5	Allocates the signal to CN1-45 pin: Enabled when low.			
				6	Allocates the signal to CN1-46 pin: Enabled when low.			
				7	Always enabled.			
				8	Always disabled.			
				9	Allocates the signal to CN1-40 pin: Enabled when high.			
				A	Allocates the signal to CN1-41 pin: Enabled when high.			
				B	Allocates the signal to CN1-42 pin: Enabled when high.			
				C	Allocates the signal to CN1-43 pin: Enabled when high.			
				D	Allocates the signal to CN1-44 pin: Enabled when high.			
				E	Allocates the signal to CN1-45 pin: Enabled when high.			
				F	Allocates the signal to CN1-46 pin: Enabled when high.			
		2	MING (Gain Reduction) Signal Input Terminal Allocation	0 to F	Same as Pn50A.1			
		3	POT (Forward Run Prohibit) Signal Input Terminal Allocation	0 to F	Same as Pn50A.1			
Pn50B	Input Signal Selection 2	0	NOT (Reverse Run Prohibit) Signal Input Terminal Allocation	0 to F	Same as Pn50A.1	6548	---	---
		1	RESET (Alarm Reset) Signal Input Terminal Allocation	0 to F	Same as Pn50A.1			
		2	PCL (Forward Torque Limit) Signal Input Terminal Allocation	0 to F	Same as Pn50A.1			
		3	NCL (Reverse Torque Limit) Signal Input Terminal Allocation	0 to F	Same as Pn50A.1			
Pn50C	Input Signal Selections 3	0	RDIR (Rotation Direction Command) Signal Input Terminal Allocation	0 to F	Same as Pn50A.1	8888	---	---
		1	SPD1 (Speed Selection Command 1) Signal Input Terminal Allocation	0 to F	Same as Pn50A.1			
		2	SPD2 (Speed Selection Command 2) Signal Input Terminal Allocation	0 to F	Same as Pn50A.1			
		3	CSEL (Control Mode Selection) Signal Input Terminal Allocation	0 to F	Same as Pn50A.1			

Note: 1. Do not change the factory settings of any “Not Used” parameters.

2. When changing any Input Signal Selection parameters (Pn50A to Pn50D), always turn OFF and then ON the main circuit and control circuit power supplies to make the settings valid.

3. When installing an external regenerative resistor, set the resistor capacity (W).

PRM. No.	Parameter name	Digit	Function name	Setting	Explanation	Factory setting	Unit	Setting range
Pn50D	Input Signal Selections 4	0	PLOCK (Position Lock Command) Signal Input Terminal Allocation	0 to F	Same as Pn50A.1	8888	---	---
		1	IPG (Pulse Prohibit) Signal Input Terminal Allocation	0 to F	Same as Pn50A.1			
		2	GSEL (Gain Selection) Signal Input Terminal Allocation	0 to F	Same as Pn50A.1			
		3	Not Used					
Pn50E	Output Signal Selections 1	0	INP1 (Positioning Completed 1) Signal Output Terminal Allocation	0	Disabled (Not used for the output signal)	3211	---	---
				1	Allocates the signal to CN1-25 and CN1-26 pins.			
				2	Allocates the signal to CN1-27 and CN1-28 pins.			
				3	Allocates the signal to CN1-29 and CN1-30 pins.			
		1	VCMP (Speed Coincidence) Signal Output Terminal Allocation	0 to 3	Same as Pn50E.0.			
		2	TGON (Motor Rotation Detection) Signal Output Terminal Allocation	0 to 3	Same as Pn50E.0.			
		3	READY (Servo Ready) Signal Output Terminal Allocation	0 to 3	Same as Pn50E.0.			
Pn50F	Output Signal Selections 2	0	CLMT (Torque Limit Detection) Signal Output Terminal Allocation	0 to 3	Same as Pn50E.0.	0000	---	---
		1	VLMT (Speed Limit Detection) Signal Output Terminal Allocation	0 to 3	Same as Pn50E.0.			
		2	BKIR (Brake Interlock) Signal Output Terminal Allocation	0 to 3	Same as Pn50E.0.			
		3	WRN (Warning) Signal Output Terminal Allocation	0 to 3	Same as Pn50E.0.			
Pn510	Output Signal Selections 3	0	INP2 (Positioning Completed 2) Signal Output Terminal Allocation	0 to 3	Same as Pn50E.0.	0000	---	---
		1	Not Used					
		2	PSON (Command Pulse Factor Enable) Signal Output Terminal Allocation	0 to 3	Same as Pn50E.0.			
		1 to 3	Not Used					
Pn511	Not Used					8888	---	---
Pn512	Output Signal Reversal	0	CN1-25/26 Pin Output Signal Reversal	0	Does not reverse output signal.	0000	---	---
				1	Reverses output signal.			
		1	CN1-27/28 Pin Output Signal Reversal	0, 1	Same as Pn512.0.			
		2	CN1-29/30 Pin Output Signal Reversal	0, 1	Same as Pn512.0.			
		3	Not Used					
Pn513	Input Signal Selection 5	0	PSEL (Command Pulse Factor Switching) Signal Input Terminal Allocation	0 to F	Same as Pn50A.1.	0088	---	---
Pn51A	Motor-load Deviation Over Level	Sets the allowable deviation level for fully closed and semi-closed encoders.				0	Pulse	0 to 32767
Pn51E	Deviation Counter Overflow Warning Level	Sets the detection level for the deviation counter overflow warning (set as a percentage of the Deviation Counter Overflow Level (Pn505)).				0	%	0 to 100

Note: Do not change the factory settings of any “Not Used” parameters.

Other Parameters

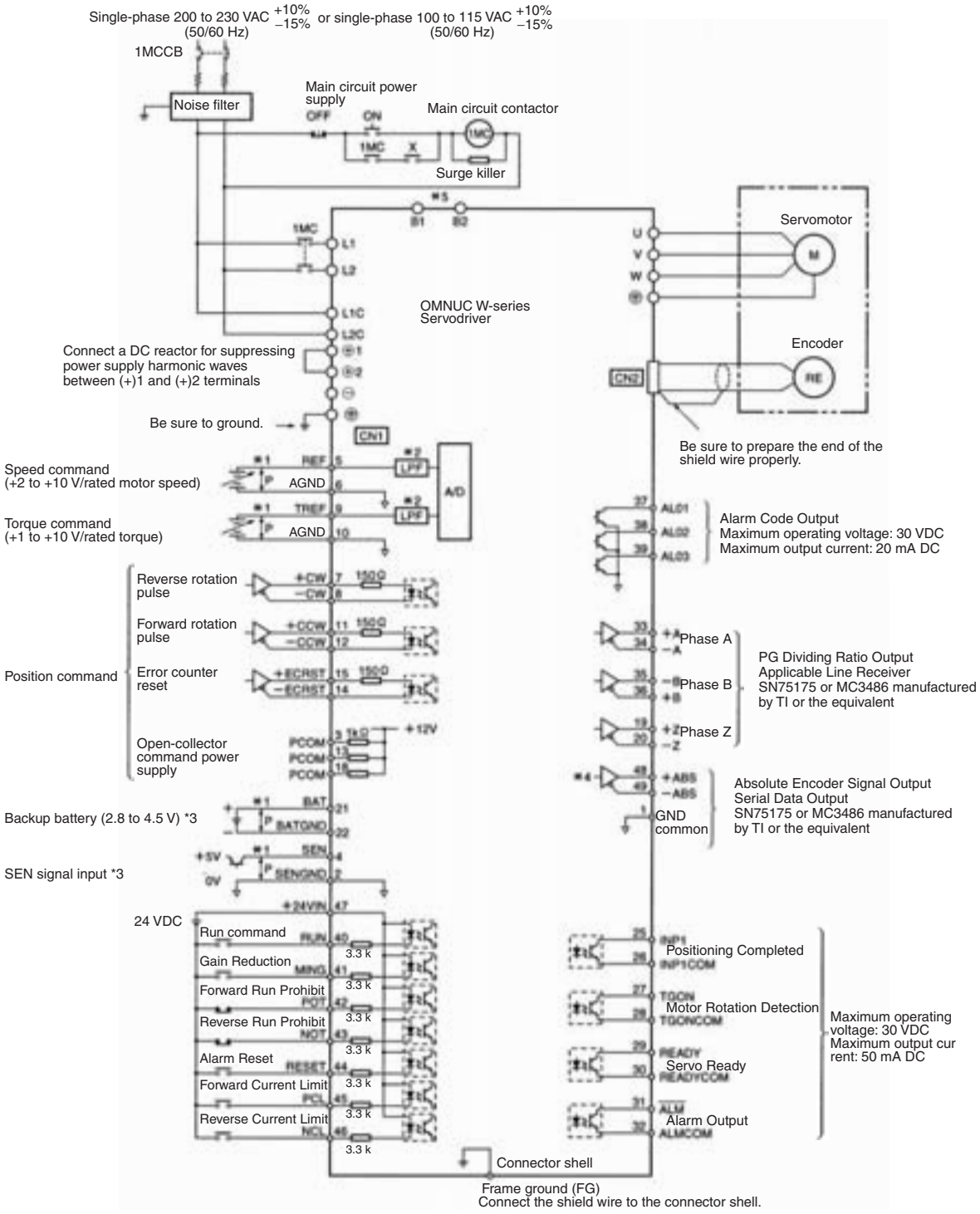
PRM. No.	Parameter name	Digit	Function name	Setting	Explanation	Factory setting	Unit	Setting range
Pn600	Regenerative Resistor Capacity	Sets the monitor calculation for the regenerative resistor load rate.				0	10 W	0 to maximum (depending on each model)
Pn601	Not Used					0		

Note: 1. Do not change the factory settings of any “Not Used” parameters.

2. When installing an external regenerative resistor, set the resistor capacity (W).

Connection Diagrams

■ Single-phase



*1. P represents a twisted-pair cable.

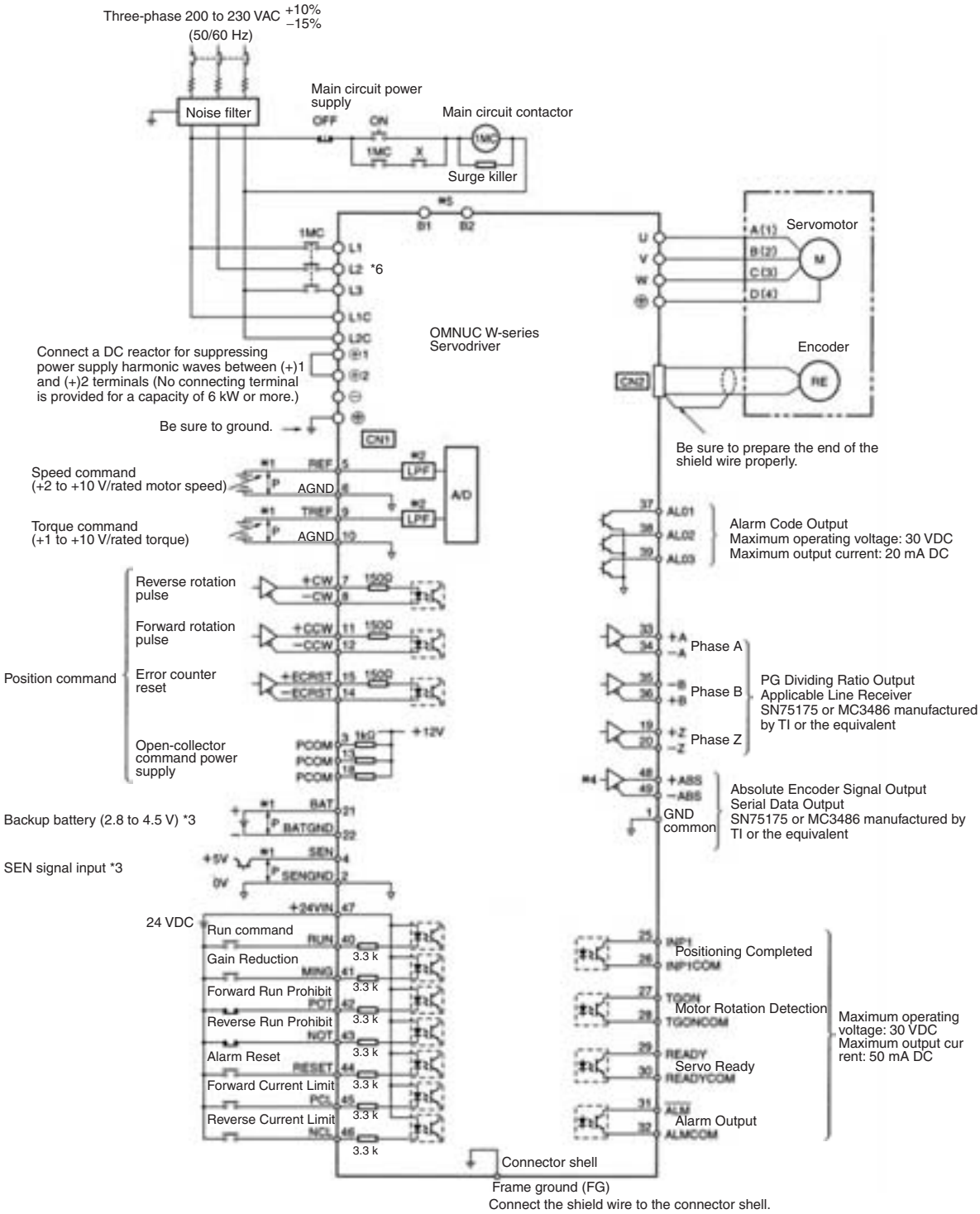
*2. Primary filter

*3. Connect when using an absolute encoder.

*4. Used only with an absolute encoder.

*5. A regenerative resistor can be connected between B1 and B2.

■ Three-phase



*1. P represents a twisted-pair cable.

*2. Primary filter

*3. Connect when using an absolute encoder.

*4. Used only with an absolute encoder.

*5. When using an external regenerative resistor, connect it between B1 and B2.
(When the capacity is 6 kW, connect a Regenerative Resistor Unit.)

*6. When using the R88D-WT08H at single-phase 200 V, connect single-phase 200 V to L1 and L3, and short-circuit L1 to L2.

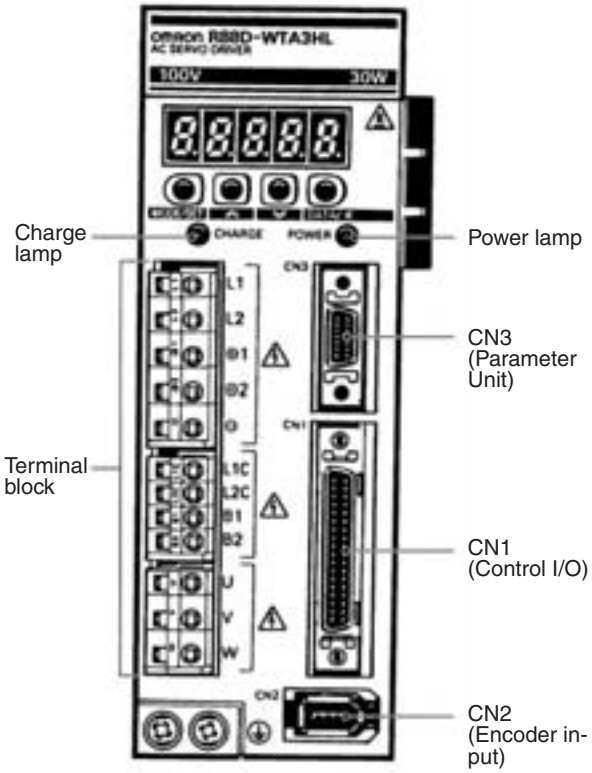
Terminal Blocks and Connectors

■ Terminal Blocks

Symbol	Name	Function	
L1, L2 or L1, L2, L3	Main circuit AC input terminal	AC power input terminals for the main circuit. R88D-WT□□ H (200 VAC): 200/230 VAC (170 to 253 V), 50/60 Hz R88D-WT□□ HL (100 VAC): 100/115 VAC (85 to 127 V), 50/60 = Hz	
U	Servomotor connection terminal	Red	Terminals for outputs to the Servomotor.
V		White	
W		Blue	
L1C, L2C	Control power input terminal	AC power input terminals for the control circuit. R88D-WT□□ H (200 VAC): 200/230 VAC (170 to 253 V), 50/60 Hz R88D-WT□□ HL (100 VAC): 100/115 VAC (85 to 127 V), 50/60 Hz	
⏚	Frame ground	Ground terminal. Ground to a maximum of 100 Ω. (class 3).	
B1, B2 or B1, B2, B3	Main circuit DC output terminal	5 kW or less: Connect an external regenerative resistor if regenerative energy is high. 5.5 kW: There is no internal regenerative resistor. Be sure to connect an external Regenerative Resistor Unit.	
⊕1, ⊕2	DC reactor connection terminal for suppressing power supply harmonic waves	Normally, short ⊕1 and ⊕2. If a countermeasure against power supply harmonic waves is needed, connect a DC reactor between ⊕1 and ⊕2. Note: These terminals do not exist on the R88D-WT60H/75H/150H.	
⊕	Main circuit DC output terminal (positive)	Normally, not connected. This terminal exists on the R88D-WT60H only.	
⊖	Main circuit DC output terminal (negative)	Normally, not connected.	

■ CN2 Encoder Inputs

Pin No.	Symbol	Signal name
1	E5V	Encoder power supply + 5V
2	E0V	Encoder power supply ground
3	BAT+	Battery + (used only with absolute encoder)
4	BAT–	Battery – (used only with absolute encoder)
5	S+	Encoder + serial signal input
6	S–	Encoder – serial signal input



■ CN1 Control Inputs

For Speed and Torque Control

Pin No.	Symbol	Signal name	Function/interface
5	REF	Speed command input	±2 to ±10 V/rated speed Can be changed using the Pn300 user parameter (Speed Command Scale).
6	AGND	Speed command input ground	
9	TRFF	Torque command input	±1 to ±10 V/rated torque Can be changed using the Pn400 user parameter (Torque Command Scale).
10	AGND	Torque command input ground	

For Position Control

Pin No.	Symbol	Signal name	Function/interface
3	PCOM	Open collector command power supply	Used to input CW, CCW, and ECRST signals as open-collector outputs. Connect + inputs to these terminals and connect – inputs to open-collector output terminals.
13			
18			
7	+PULS/CW/A	Feed pulse, reverse pulse, 90° phase difference pulse (phase A)	Line-driver input: 10 mA at 3 V; maximum response frequency: 500 kpps Open-collector input: 25 mA at 5 V; maximum response frequency: 200 kpps Switches between feed pulse and forward/reverse signal, between reverse pulse and forward pulse, or between phases A and B 90° phase difference pulses (×1, 2, 4) according to the Pn200 setting (Position Control Switches 1).
8	–PULS/CW/A		
11	+SIGN/CCW/B	Forward/reverse signal, forward pulse, 90° phase difference pulse (phase B)	
12	–SIGN/CCW/B		
14	–ECRST	Error counter reset	Line-driver input: 10 mA at 3 V Open-collector input: 25 mA at 5 V ON: Disables the command and resets the error counter.
15	+ECRST		

Shared Terminals

Pins 41 to 44 can be reassigned using the Pn50A to Pn50D user parameters.

Pin No.	Symbol	Signal name	Function/interface
40	RUN	Speed command input	ON: Servo ON
41 to 46	MING	Gain deceleration input	ON: Switches speed loop to P control to decrease speed loop gain.
	TVSEL	Control mode switch input	ON: Switches each control mode.
	PLOCK	Position lock command input	ON: Enables position lock when the motor speed drops below the position lock rotation speed set in Pn501.
	IPG	Pulse disable input	ON: Prohibits input command pulses.
	RDIR	Rotation direction command input	Rotation direction command for internal speed settings 1 to 3. (OFF: Forward rotation, ON: Reverse rotation)
	POT	Forward drive prohibit input	Forward rotation overtravel input (OFF when prohibited)
	NOT	Reverse drive prohibit input	Reverse rotation overtravel input (OFF when prohibited)
	RESET	Alarm reset input	ON: Resets Servo alarm status.
	PCL	Forward rotation current limit input	ON: Limits current according to the value specified in Pn404 (Forward External Torque Limit)
	NCL	Reverse rotation current limit input	ON: Limits current according to the value specified in Pn405 (Reverse External Torque Limit)
	SPD1	Speed selection command 1 input	Switches the internal speed settings (Pn301, Pn302, Pn303).
	SPD2	Speed selection command 2 input	
	GSEL	Gain selection input	ON: Switches to the second speed loop gain (Pn104, Pn105, Pn106).
47	+24VIN	+24 VDC control power supply input	+24 V input power supply for pins 40, 41, 42, 43, 44, 45, and 46
4	SEN	Sensor ON input (See note.)	ON: Supplies 5 V power to absolute encoder.
2	SENGND	Sensor ON input ground (See note.)	
21	BAT	Backup battery + input (See note.)	Backup battery connection terminals for absolute encoder in case of power interruption
22	BATGND	Backup battery – input (See note.)	

Note: These input signals are used with absolute encoder only.

■ CN1 Control Outputs

Pins 16 and 17 can be reassigned using the Pn003 user parameter. Pins 25 to 30 can be reassigned using the Pn50E to Pn510 user parameters.

Pin No.	Symbol	Signal name	Function/interface
1	GND	Ground common	Ground for encoder outputs and alarm codes.
19	+Z	Encoder Z-phase + output	Encoder Z-phase output (1 pulse/revolution). Line-driver output: Conforms to RS-422A
20	–Z	Encoder Z-phase – output	
25	INP1, INP2	Positioning completion output 1, 2	ON when the position error is within the positioning completed width specified in Pn500 while in position control mode. Always OFF while in other modes.
26 to 30	VCMP	Speed conformity output	ON when the speed error is within the speed coincidence signal output width specified in Pn503 while in speed control mode. Always OFF while in other modes.
	TGON	Servomotor rotation detection output	ON when the motor speed exceeds the motor rotation detection level specified in Pn502.
	READY	Servo ready output	ON if no errors are detected after the main circuit power supply is turned ON.
	CLIMT	Current limit detection output	If PCL (forward rotation current limit input) or NCL (reverse rotation current limit input) is ON, the CLIMT signal will turn ON when the output torque reaches the external torque limit specified in Pn404/405 or the torque limit specified in Pn402/403, whichever is lower. If PCL (forward rotation current limit input) or NCL (reverse rotation current limit input) is OFF, the CLIMT signal will turn ON when the output torque reaches the torque limit specified in Pn402/403.
	VLIMT	Speed limit detection output	ON when the motor speed is controlled by Pn407 in torque control mode. Always OFF while in other modes.
	BKIR	Brake interlock output	Outputs holding brake timing signals according to the Pn506, Pn507, and Pn508 user parameter settings.
	WARN	Warning output	OFF when an overload warning or a regeneration overload warning is detected.
31	ALM	Alarm output	Turns OFF the output when the Servodriver generates an alarm. Open-collector output: 30 VDC, 50 mA max.
32	ALMCOM	Alarm output ground	
33	+A	Encoder A-phase + output	Outputs encoder pulses divided according to the Pn201 setting (PG ratio). Line-driver output: Conforms to RS-422A
34	–A	Encoder A-phase – output	
35	–B	Encoder B-phase – output	Outputs encoder pulses divided according to the Pn201 setting (PG ratio). Line-driver output: Conforms to RS-422A
36	+B	Encoder B-phase + output	
37	AL01	Alarm code output 1	Outputs an alarm code when the Servodriver generates an alarm. Open-collector output: 30 VDC, 20 mA max.
38	AL02	Alarm code output 2	
39	AL03	Alarm code output 3	
48	+ABS	Absolute encoder signal + output (See note.)	Outputs absolute encoder data. Line-driver output: Conforms to RS-422A
49	–ABS	Absolute encoder signal – output (See note.)	
Shell	FG	Frame ground	Ground terminal for shield wire of cable and FG line

Note: These input signals are used with absolute encoder only.

Ordering Information

■ AC Servomotors

Cylinder-style Motors (3,000 r/min) with Incremental Encoders

Specifications				Model
Straight shafts without key	Without brake	200 VAC	30 W	R88M-W03030H
			50 W	R88M-W05030H
			100 W	R88M-W10030H
			200 W	R88M-W20030H
			400 W	R88M-W40030H
			750 W	R88M-W75030H
		100 VAC	30 W	R88M-W03030L
			50 W	R88M-W05030L
			100 W	R88M-W10030L
			200 W	R88M-W20030L
	With brake	200 VAC	30 W	R88M-W03030H-B
			50 W	R88M-W05030H-B
			100 W	R88M-W10030H-B
			200 W	R88M-W20030H-B
			400 W	R88M-W40030H-B
			750 W	R88M-W75030H-B
		100 VAC	30 W	R88M-W03030L-B
			50 W	R88M-W05030L-B
			100 W	R88M-W10030L-B
			200 W	R88M-W20030L-B

Specifications				Model
Straight shafts with key	Without brake	200 VAC	30 W	R88M-W03030H-S1
			50 W	R88M-W05030H-S1
			100 W	R88M-W10030H-S1
			200 W	R88M-W20030H-S1
			400 W	R88M-W40030H-S1
			750 W	R88M-W75030H-S1
			1 kW	R88M-W1K030H-S2
			1.5 kW	R88M-W1K530H-S2
			2 kW	R88M-W2K030H-S2
			3 kW	R88M-W3K030H-S2
			4 kW	R88M-W4K030H-S2
			5 kW	R88M-W5K030H-S2
		100 VAC	30 W	R88M-W03030L-S1
			50 W	R88M-W05030L-S1
			100 W	R88M-W10030L-S1
			200 W	R88M-W20030L-S1
	With brake	200 VAC	30 W	R88M-W03030H-BS1
			50 W	R88M-W05030H-BS1
			100 W	R88M-W10030H-BS1
			200 W	R88M-W20030H-BS1
			400 W	R88M-W40030H-BS1
			750 W	R88M-W75030H-BS1
			1 kW	R88M-W1K030H-BS2
			1.5 kW	R88M-W1K530H-BS2
			2 kW	R88M-W2K030H-BS2
			3 kW	R88M-W3K030H-BS2
			4 kW	R88M-W4K030H-BS2
			5 kW	R88M-W5K030H-BS2
		100 VAC	30 W	R88M-W03030L-BS1
			50 W	R88M-W05030L-BS1
			100 W	R88M-W10030L-BS1
			200 W	R88M-W20030L-BS1

Note: “S1” at the end of a model name represents models with key and without tap. “S2” at the end of a model name represents models with key and tap. Motors with a capacity of 1 kW or more do not have the S1 or S3 type.

Cylinder-style Motors (3,000 r/min) with Absolute Encoders

Specifications				Model
Straight shafts without key	Without brake	200 VAC	30 W	R88M-W03030T
			50 W	R88M-W05030T
			100 W	R88M-W10030T
			200 W	R88M-W20030T
			400 W	R88M-W40030T
			750 W	R88M-W75030T
		100 VAC	30 W	R88M-W03030S
			50 W	R88M-W05030S
			100 W	R88M-W10030S
			200 W	R88M-W20030S
	With brake	200 VAC	30 W	R88M-W03030T-B
			50 W	R88M-W05030T-B
			100 W	R88M-W10030T-B
			200 W	R88M-W20030T-B
			400 W	R88M-W40030T-B
			750 W	R88M-W75030T-B
		100 VAC	30 W	R88M-W03030S-B
			50 W	R88M-W05030S-B
			100 W	R88M-W10030S-B
			200 W	R88M-W20030S-B

Specifications				Model
Straight shafts with key	Without brake	200 VAC	30 W	R88M-W03030T-S1
			50 W	R88M-W05030T-S1
			100 W	R88M-W10030T-S1
			200 W	R88M-W20030T-S1
			400 W	R88M-W40030T-S1
			750 W	R88M-W75030T-S1
			1 kW	R88M-W1K030T-S2
			1.5 kW	R88M-W1K530T-S2
			2 kW	R88M-W2K030T-S2
			3 kW	R88M-W3K030T-S2
			4 kW	R88M-W4K030T-S2
			5 kW	R88M-W5K030T-S2
		100 VAC	30 W	R88M-W03030S-S1
			50 W	R88M-W05030S-S1
			100 W	R88M-W10030S-S1
			200 W	R88M-W20030S-S1
	With brake	200 VAC	30 W	R88M-W03030T-BS1
			50 W	R88M-W05030T-BS1
			100 W	R88M-W10030T-BS1
			200 W	R88M-W20030T-BS1
			400 W	R88M-W40030T-BS1
			750 W	R88M-W75030T-BS1
			1 kW	R88M-W1K030T-BS2
			1.5 kW	R88M-W1K530T-BS2
			2 kW	R88M-W2K030T-BS2
			3 kW	R88M-W3K030T-BS2
			4 kW	R88M-W4K030T-BS2
			5 kW	R88M-W5K030T-BS2
		100 VAC	30 W	R88M-W03030S-BS1
			50 W	R88M-W05030S-BS1
			100 W	R88M-W10030S-BS1
			200 W	R88M-W20030S-BS1

Note: “S1” at the end of a model name represents models with key and without tap. “S2” at the end of a model name represents models with key and tap. Motors with a capacity of 1 kW or more do not have the S1 or S3 type.

Cylinder-style Motors (1,500 r/min) with Incremental or Absolute Encoders

Specifications				Model
Straight shafts with key	Without brake	200 VAC	450 W	R88M-W45015T-S2
			850 W	R88M-W85015T-S2
			1.3 kW	R88M-W1K315T-S2
			1.8 kW	R88M-W1K815T-S2
			2.9 kW	R88M-W2K915T-S2
			4.4 kW	R88M-W4K415T-S2
			5.5 kW	R88M-W5K515T-S2
			7.5 kW	R88M-W7K515T-S2
			11 kW	R88M-W11K015T-S2
			15 kW	R88M-W15K015T-S2
	With brake		450 W	R88M-W45015T-BS2
			850 W	R88M-W85015T-BS2
			1.3 kW	R88M-W1K315T-BS2
			1.8 kW	R88M-W1K815T-BS2
			2.9 kW	R88M-W2K915T-BS2
			4.4 kW	R88M-W4K415T-BS2
			5.5 kW	R88M-W5K515T-BS2
			7.5 kW	R88M-W7K515T-BS2
			11 kW	R88M-W11K015T-BS2
			15 kW	R88M-W15K015T-BS2

Note: "S2" at the end of a model name represents models with key and tap. Motors with a speed of 1,500 r/min do not have the S1 or S3 type.

Cylinder-style Motors (1,000 r/min) with Incremental Encoders

Specifications				Model
Straight shafts with key	Without brake	200 VAC	300 W	R88M-W30010H-S2
			600 W	R88M-W60010H-S2
			900 W	R88M-W90010H-S2
			1.2 kW	R88M-W1K210H-S2
			2 kW	R88M-W2K010H-S2
			3 kW	R88M-W3K010H-S2
			4 kW	R88M-W4K010H-S2
			5.5 kW	R88M-W5K510H-S2
	With brake		300 W	R88M-W30010H-BS2
			600 W	R88M-W60010H-BS2
			900 W	R88M-W90010H-BS2
			1.2 kW	R88M-W1K210H-BS2
			2 kW	R88M-W2K010H-BS2
			3 kW	R88M-W3K010H-BS2
			4 kW	R88M-W4K010H-BS2
			5.5 kW	R88M-W5K510H-BS2

Note: "S2" at the end of a model name represents models with key and tap. Motors with a speed of 1,000 r/min do not have the S1 or S3 type.

Cylinder-style Motors (1,000 r/min) with Absolute Encoders

Specifications				Model
Straight shafts with key	Without brake	200 VAC	300 W	R88M-W30010T-S2
			600 W	R88M-W60010T-S2
			900 W	R88M-W90010T-S2
			1.2 kW	R88M-W1K210T-S2
			2 kW	R88M-W2K010T-S2
			3 kW	R88M-W3K010T-S2
			4 kW	R88M-W4K010T-S2
			5.5 kW	R88M-W5K510T-S2
	With brake		300 W	R88M-W30010T-BS2
			600 W	R88M-W60010T-BS2
			900 W	R88M-W90010T-BS2
			1.2 kW	R88M-W1K210T-BS2
			2 kW	R88M-W2K010T-BS2
			3 kW	R88M-W3K010T-BS2
			4 kW	R88M-W4K010T-BS2
			5.5 kW	R88M-W5K510T-BS2

Note: "S2" at the end of a model name represents models with key and tap. Motors with a speed of 1,000 r/min do not have the S1 or S3 type.

Flat-style Motors with Incremental Encoders

Specifications				Model
Straight shafts without key	Without brake	200 VAC	100 W	R88M-WP10030H
			200 W	R88M-WP20030H
			400 W	R88M-WP40030H
			750 W	R88M-WP75030H
			1.5 kW	R88M-WP1K530H
		100 VAC	100 W	R88M-WP10030L
			200 W	R88M-WP20030L
	With brake	200 VAC	100 W	R88M-WP10030H-B
			200 W	R88M-WP20030H-B
			400 W	R88M-WP40030H-B
			750 W	R88M-WP75030H-B
			1.5 kW	R88M-WP1K530H-B
		100 VAC	100 W	R88M-WP10030L-B
			200 W	R88M-WP20030L-B
Straight shafts with key	Without brake	200 VAC	100 W	R88M-WP10030H-S1
			200 W	R88M-WP20030H-S1
			400 W	R88M-WP40030H-S1
			750 W	R88M-WP75030H-S1
			1.5 kW	R88M-WP1K530H-S1
		100 VAC	100 W	R88M-WP10030L-S1
			200 W	R88M-WP20030L-S1
	With brake	200 VAC	100 W	R88M-WP10030H-BS1
			200 W	R88M-WP20030H-BS1
			400 W	R88M-WP40030H-BS1
			750 W	R88M-WP75030H-BS1
			1.5 kW	R88M-WP1K530H-BS1
		100 VAC	100 W	R88M-WP10030L-BS1
			200 W	R88M-WP20030L-BS1

Flat-style Motors with Absolute Encoders

Specifications				Model
Straight shafts without key	Without brake	200 VAC	100 W	R88M-WP10030T
			200 W	R88M-WP20030T
			400 W	R88M-WP40030T
			750 W	R88M-WP75030T
			1.5 kW	R88M-WP1K530T
		100 VAC	100 W	R88M-WP10030S
			200 W	R88M-WP20030S
	With brake	200 VAC	100 W	R88M-WP10030T-B
			200 W	R88M-WP20030T-B
			400 W	R88M-WP40030T-B
			750 W	R88M-WP75030T-B
			1.5 kW	R88M-WP1K530T-B
		100 VAC	100 W	R88M-WP10030S-B
			200 W	R88M-WP20030S-B
Straight shafts with key	Without brake	200 VAC	100 W	R88M-WP10030T-S1
			200 W	R88M-WP20030T-S1
			400 W	R88M-WP40030T-S1
			750 W	R88M-WP75030T-S1
			1.5 kW	R88M-WP1K530T-S1
		100 VAC	100 W	R88M-WP10030S-S1
			200 W	R88M-WP20030S-S1
	With brake	200 VAC	100 W	R88M-WP10030T-BS1
			200 W	R88M-WP20030T-BS1
			400 W	R88M-WP40030T-BS1
			750 W	R88M-WP75030T-BS1
			1.5 kW	R88M-WP1K530T-BS1
		100 VAC	100 W	R88M-WP10030S-BS1
			200 W	R88M-WP20030S-BS1

Flat-style Motors (Waterproof Type) with Incremental Encoders

Specifications				Model
Straight shafts without key	Without brake	200 VAC	100 W	R88M-WP10030H-W
			200 W	R88M-WP20030H-W
			400 W	R88M-WP40030H-W
			750 W	R88M-WP75030H-W
			1.5 kW	R88M-WP1K530H-W
		100 VAC	100 W	R88M-WP10030L-W
			200 W	R88M-WP20030L-W
	With brake	200 VAC	100 W	R88M-WP10030H-BW
			200 W	R88M-WP20030H-BW
			400 W	R88M-WP40030H-BW
			750 W	R88M-WP75030H-BW
			1.5 kW	R88M-WP1K530H-BW
		100 VAC	100 W	R88M-WP10030L-BW
			200 W	R88M-WP20030L-BW
Straight shafts with key	Without brake	200 VAC	100 W	R88M-WP10030H-WS1
			200 W	R88M-WP20030H-WS1
			400 W	R88M-WP40030H-WS1
			750 W	R88M-WP75030H-WS1
			1.5 kW	R88M-WP1K530H-WS1
		100 VAC	100 W	R88M-WP10030L-WS1
			200 W	R88M-WP20030L-WS1
	With brake	200 VAC	100 W	R88M-WP10030H-BWS1
			200 W	R88M-WP20030H-BWS1
			400 W	R88M-WP40030H-BWS1
			750 W	R88M-WP75030H-BWS1
			1.5 kW	R88M-WP1K530H-BWS1
		100 VAC	100 W	R88M-WP10030L-BWS1
			200 W	R88M-WP20030L-BWS1

Note: Precautions When Selecting Products

1. The standard cable (R88A-CAW□) can be connected, but it is not water resistant. Use a water-resistant cable in locations subject to water.
2. The cable attached to the Motor is water resistant, but the connector is not. Do not allow water to come into contact with the connector to protect the terminals.

Flat-style Motors (Waterproof Type) with Absolute Encoders

Specifications				Model
Straight shafts without key	Without brake	200 VAC	100 W	R88M-WP10030T-W
			200 W	R88M-WP20030T-W
			400 W	R88M-WP40030T-W
			750 W	R88M-WP75030T-W
			1.5 kW	R88M-WP1K530T-W
		100 VAC	100 W	R88M-WP10030S-W
			200 W	R88M-WP20030S-W
	With brake	200 VAC	100 W	R88M-WP10030T-BW
			200 W	R88M-WP20030T-BW
			400 W	R88M-WP40030T-BW
			750 W	R88M-WP75030T-BW
			1.5 kW	R88M-WP1K530T-BW
		100 VAC	100 W	R88M-WP10030S-BW
			200 W	R88M-WP20030S-BW
Straight shafts with key	Without brake	200 VAC	100 W	R88M-WP10030T-WS1
			200 W	R88M-WP20030T-WS1
			400 W	R88M-WP40030T-WS1
			750 W	R88M-WP75030T-WS1
			1.5 kW	R88M-WP1K530T-WS1
		100 VAC	100 W	R88M-WP10030S-WS1
			200 W	R88M-WP20030S-WS1
	With brake	200 VAC	100 W	R88M-WP10030T-BWS1
			200 W	R88M-WP20030T-BWS1
			400 W	R88M-WP40030T-BWS1
			750 W	R88M-WP75030T-BWS1
			1.5 kW	R88M-WP1K530T-BWS1
		100 VAC	100 W	R88M-WP10030S-BWS1
			200 W	R88M-WP20030S-BWS1

Note: Precautions When Selecting Products

1. The standard cable (R88A-CAW□) can be connected, but it is not water resistant. Use a water-resistant cable in locations subject to water.
2. The cable attached to the Motor is water resistant, but the connector is not. Do not allow water to come into contact with the connector to protect the terminals.

■ AC Servodrivers

Specifications			Model
Common to analog and pulse train inputs Common to incremental and absolute encoders	200 VAC	30 W	R88D-WTA3H
		50 W	R88D-WTA5H
		100 W	R88D-WT01H
		200 W	R88D-WT02H
		400 W	R88D-WT04H
		500 W	R88D-WT05H
		750 W	R88D-WT08H
		1 kW	R88D-WT10H
		1.5 kW	R88D-WT15H
		2 kW	R88D-WT20H
		3 kW	R88D-WT30H
		5 kW	R88D-WT50H
		6 kW	R88D-WT60H (See note.)
		7.5 kW	R88D-WT75H (See note.)
		15 kW	R88D-WT150H (See note.)
	100 VAC	30 W	R88D-WTA3HL
		50 W	R88D-WTA5HL
		100 W	R88D-WT01HL
		200 W	R88D-WT02HL

Note: When ordering the R88D-WT60H/75H/150H, a regenerative resistor must also be ordered.

■ Power Cables

Specification			Model
For motors without brakes	30-W to 750-W cylinder-style motors (3,000 r/min) 100-W to 750-W flat-style motors	3 m	R88A-CAWA003S
		5 m	R88A-CAWA005S
		10 m	R88A-CAWA010S
		15 m	R88A-CAWA015S
		20 m	R88A-CAWA020S
		30 m	R88A-CAWA030S
		40 m	R88A-CAWA040S
		50 m	R88A-CAWA050S
	1.5-kW flat-style motors	3 m	R88A-CAWB003S
		5 m	R88A-CAWB005S
		10 m	R88A-CAWB010S
		15 m	R88A-CAWB015S
		20 m	R88A-CAWB020S
		30 m	R88A-CAWB030S
		40 m	R88A-CAWB040S
		50 m	R88A-CAWB050S
	300-W to 900-W cylinder-style motors (1,000 r/min) 450-W to 1.3-kW cylinder-style motors (1,500 r/min) 1-kW to 2-kW cylinder-style motors (3,000 r/min)	3 m	R88A-CAWC003S
		5 m	R88A-CAWC005S
		10 m	R88A-CAWC010S
		15 m	R88A-CAWC015S
		20 m	R88A-CAWC020S
		30 m	R88A-CAWC030S
		40 m	R88A-CAWC040S
		50 m	R88A-CAWC050S
	1.2-kW to 3-kW cylinder-style motors (1,000 r/min) 1.8-kW to 4.4-kW cylinder-style motors (1,500 r/min) 3-kW to 5-kW cylinder-style motors (3,000 r/min)	3 m	R88A-CAWD003S
		5 m	R88A-CAWD005S
		10 m	R88A-CAWD010S
		15 m	R88A-CAWD015S
		20 m	R88A-CAWD020S
		30 m	R88A-CAWD030S
		40 m	R88A-CAWD040S
		50 m	R88A-CAWD050S

Specification			Model
Motors with brakes	30-W to 750-W cylinder-style motors (3,000 r/min) 100-W to 750-W flat-style motors	3 m	R88A-CAWA003B
		5 m	R88A-CAWA005B
		10 m	R88A-CAWA010B
		15 m	R88A-CAWA015B
		20 m	R88A-CAWA020B
		30 m	R88A-CAWA030B
		40 m	R88A-CAWA040B
		50 m	R88A-CAWA050B
	1.5-kW flat-style motors	3 m	R88A-CAWB003B
		5 m	R88A-CAWB005B
		10 m	R88A-CAWB010B
		15 m	R88A-CAWB015B
		20 m	R88A-CAWB020B
		30 m	R88A-CAWB030B
		40 m	R88A-CAWB040B
		50 m	R88A-CAWB050B
	300-W to 900-W cylinder-style motors (1,000 r/min) 450-W to 1.3-kW cylinder-style motors (1,500 r/min) 1-kW to 2-kW cylinder-style motors (3,000 r/min)	3 m	R88A-CAWC003B
		5 m	R88A-CAWC005B
		10 m	R88A-CAWC010B
		15 m	R88A-CAWC015B
		20 m	R88A-CAWC020B
		30 m	R88A-CAWC030B
		40 m	R88A-CAWC040B
		50 m	R88A-CAWC050B
	1.2-kW to 3-kW cylinder-style motors (1,000 r/min) 1.8-kW to 4.4-kW cylinder-style motors (1,500 r/min) 3-kW to 5-kW cylinder-style motors (3,000 r/min)	3 m	R88A-CAWD003B
		5 m	R88A-CAWD005B
		10 m	R88A-CAWD010B
		15 m	R88A-CAWD015B
		20 m	R88A-CAWD020B
		30 m	R88A-CAWD030B
		40 m	R88A-CAWD040B
		50 m	R88A-CAWD050B

Specification			Model
4-kW cylinder-style motors (1,000 r/min)	Power connector for the motor	3 m	R88A-CAWE003S
		5 m	R88A-CAWE005S
		10 m	R88A-CAWE010S
		15 m	R88A-CAWE015S
		20 m	R88A-CAWE020S
		30 m	R88A-CAWE030S
		40 m	R88A-CAWE040S
		50 m	R88A-CAWE050S
	Brake connector for the motor	3 m	R88A-CAWE003B (See note 1.)
		5 m	R88A-CAWE005B (See note 1.)
		10 m	R88A-CAWE010B (See note 1.)
		15 m	R88A-CAWE015B (See note 1.)
		20 m	R88A-CAWE020B (See note 1.)
		30 m	R88A-CAWE030B (See note 1.)
		40 m	R88A-CAWE040B (See note 1.)
		50 m	R88A-CAWE050B (See note 1.)
5.5-kW cylinder-style motors (1,000 r/min) 5.5-kW/11-kW cylinder-style motors (1,500 r/min)	Power connector for the motor	3 m	R88A-CAWF003S
		5 m	R88A-CAWF005S
		10 m	R88A-CAWF010S
		15 m	R88A-CAWF015S
		20 m	R88A-CAWF020S
		30 m	R88A-CAWF030S
		40 m	R88A-CAWF040S
		50 m	R88A-CAWF050S
	Brake connector for the motor	---	R88A-CAWE□□□B (See notes 1 and 2.)

Note: 1. When using a motor with brake, a cable for the power connector is required in addition to the cable for the brake connector.

2. The boxes (□□□) indicate cable length.

■ Encoder Cables

Specification		Model
30-W to 750-W cylinder-style motors (3,000 r/min) 100-W to 1.5-kW flat-style motors	3 m	R88A-CRWA003C
	5 m	R88A-CRWA005C
	10 m	R88A-CRWA010C
	15 m	R88A-CRWA015C
	20 m	R88A-CRWA020C
	30 m	R88A-CRWA030C
	40 m	R88A-CRWA040C
	50 m	R88A-CRWA050C
1-kW to 5-kW cylinder-style motors (3,000 r/min) 450-W to 15-kW cylinder-style motors (1,500 r/min) 300-W to 5.5-kW cylinder-style motors (1,000 r/min)	3 m	R88A-CRWB003N
	5 m	R88A-CRWB005N
	10 m	R88A-CRWB010N
	15 m	R88A-CRWB015N
	20 m	R88A-CRWB020N
	30 m	R88A-CRWB030N
	40 m	R88A-CRWB040N
	50 m	R88A-CRWB050N
Encoder Cable for 70-m connection (cable line material only)	1 m	R88A-CRW001

Note: All these cables are common to incremental and absolute encoders.

■ Control Cables and Relay Units

Specification				Model
For Motion Control Units	Control cables for 1 axis (common to SYSMAC CS1, C200H, and CV-series PCs)		1 m	R88A-CPW001M1
			2 m	R88A-CPW002M1
			3 m	R88A-CPW003M1
			5 m	R88A-CPW005M1
	Control cables for 2 axes (common to SYSMAC CS1, C200H, and CV-series PCs)		1 m	R88A-CPW001M2
			2 m	R88A-CPW002M2
			3 m	R88A-CPW003M2
			5 m	R88A-CPW005M2
For Position Control Units and SYSMAC CQM1	Servo Relay Units	For CS1W-NC113/133, CJ1W-NC113/133, C200HW-NC113, and 3F88M-DRT141		XW2B-20J6-1B
		For CS1W-NC213/413/233/433, CJ1W-NC213/413/233/433, and C200HW-NC213/413		XW2B-40J6-2B
		For CQM1-CPU43, CQM1H-PLB21		XW2B-20J6-3B
		For CJ1M-CPU22/23 (1 axis)		XW2B-20J6-8A
		For CJ1M-CPU22/23 (2 axes)		XW2B-40J6-9A
		For CJ1W-NC213/413/223/423 (with communications support)		XW2B-40J6-4A
		For CS1W-HCPP22-V1		XW2B-80J7-1A
	Servodriver cable	Relay Units other than those listed below	1 m	XW2Z-100J-B4
			2 m	XW2Z-200J-B4

Specification				Model
For Position Control Units and SYSMAC CQM1	Servodriver cable	XW2B-40J6-4A Communications support type	1 m	XW2Z-100J-B8
			2 m	XW2Z-200J-B8
		XW2B-80J7-1A For customizable counters	1 m	XW2Z-100J-B11
			2 m	XW2Z-200J-B11
	Cables on Position Control Unit end	For C200HW-NC113 and CS1W-NC113	0.5 m	XW2Z-050J-A6
			1 m	XW2Z-100J-A6
		For C200HW-NC213/413 and CS1W-NC213/413	0.5 m	XW2Z-050J-A7
			1 m	XW2Z-100J-A7
		For CS1W-NC133	0.5 m	XW2Z-050J-A10
			1 m	XW2Z-100J-A10
		For CS1W-NC233/433	0.5 m	XW2Z-050J-A11
			1 m	XW2Z-100J-A11
		For CJ1W-NC113	0.5 m	XW2Z-050J-A14
			1 m	XW2Z-100J-A14
		For CJ1W-NC213/413	0.5 m	XW2Z-050J-A15
			1 m	XW2Z-100J-A15
		For CJ1W-NC133	0.5 m	XW2Z-050J-A18
			1 m	XW2Z-100J-A18
		For CJ1W-NC233/433	0.5 m	XW2Z-050J-A19
			1 m	XW2Z-100J-A19
		For CQM1-CPU43-V1 and CQM1H-PLB21	0.5 m	XW2Z-050J-A3
			1 m	XW2Z-100J-A3
		For 3F88M-DRT141	0.5 m	XW2Z-050J-A24
			1 m	XW2Z-100J-A24
		For CS1W-HCP22-V1 (For 24-pin connectors) (See note.)	0.5 m	XW2Z-050J-A29
			1 m	XW2Z-100J-A29
		For CS1W-HCP22-V1 (For 40-pin connectors) (See note.)	0.5 m	XW2Z-050J-A32
			1 m	XW2Z-100J-A32
		For CJ1M-CPU22/23		XW2Z-100J-A27
For general-purpose controllers	Control cables with connector at one end		1 m	R88A-CPW001S
			2 m	R88A-CPW002S
	Cables for relay terminal block		1 m	R88A-CTW001N
			2 m	R88A-CTW002N
	Relay terminal block			XW2B-50G5

Note: When using the CS1W-HCP22-V1, cables for both 24-pin connectors and 40-pin connectors are required.

■ Parameter Units

Specification	Model
Handy type for OMNUC W-series (with 1-m cable)	R88A-PR02W
Cable for U-series (2 m) (See note.)	R88A-CCW002C

Note: This cable can be used to connect the R88A-PR02U Parameter Unit for U-series to the W-series Servodriver.

■ Backup Battery Unit for Absolute Encoder

Specification	Model
R88D-WT□H (□: 50 or less)	R88A-BAT01W
R88D-WT60H/75H/150H	R88A-BAT02W

■ External Regenerative Resistors

Specification	Model
220 W, 47 Ω	R88A-RR22047S
880 W, 6.25 Ω	R88A-RR88006

■ DC Reactors

Specification	Model
For R88D-WT30H	R88A-PX5059
For R88D-WT15H/WT20H	R88A-PX5060
For R88D-WT05H/WT08H/WT10H	R88A-PX5061
For R88D-WT02HL	R88A-PX5062
For R88D-WTA3HL/WTA5HL/WT01HL	R88A-PX5063
For R88D-WT50H	R88A-PX5068
For R88D-WT04H	R88A-PX5069
For R88D-WT02H	R88A-PX5070
For R88D-WTA3H/WTA5H/WT01H	R88A-PX5071

■ Front Panel Mounting Brackets

Specification	Model
For R88D-WTA3□ to WT10H	R88A-TK01W
For R88D-WT15H	R88A-TK02W
For R88D-WT20H/WT30H/WT50H	R88A-TK03W

■ Other Peripheral Cables and Connectors

Specification	Model
Analog monitoring cable (1 m)	R88A-CMW001S
Personal computer monitoring cable (2 m)	R88A-CCW002P2
Control I/O connector CN1	R88A-CNU11C
Encoder connector CN2	R88A-CNW01R
Encoder connector (for R88A-CRWA motor side)	R88A-CNW02R

■ Equipment for Replacing S/R/H/M-series Products

Mounting Brackets

Specifications	Model
R Series, 60 W/110 W	R88A-MF01W
S Series, 50 W/100 W; R Series, 100 W; H Series, 50 W/100 W	R88A-MF02W
S Series, 500 W/750 W; R Series, 450 W min., H Series, 500 W/750 W/1,100 W	R88A-MF03W

Power Cables

Specifications	Model
S Series, 50 W/100 W/200 W/300 W, without brake; R Series, 60 W/100 W/110 W/200 W/300 W/ 450 W, without brake	R88A-CAWR0R5S1
S Series, 500 W/750 W, without brake; R Series, 500 W/600 W/750 W/820 W, without brake	R88A-CAWR0R5S2
R Series, 820 W/1,100 W, with brake	R88A-CAWR0R5S3
S Series, 50 W/100 W/200 W/300 W, with brake; R Series, 60 W/100 W/110 W/200 W/300 W/ 450 W, with brake	R88A-CAWR0R5B1
S Series, 500 W/750 W, with brake; R Series, 500 W/600 W/750 W/820 W, with brake	R88A-CAWR0R5B2
R Series, 820 W/1,100 W, with brake	R88A-CAWR0R5B3
H Series, 50 W/100 W/200 W/300 W/500W/ 750 W, without brake	R88A-CAWH0R5S1
H Series, 1,100 W, without brake	R88A-CAWH0R5S2
H Series, 50 W/100 W/200 W/300 W/500 W/ 750 W, with brake	R88A-CAWH0R5B1
H Series, 1,100 W, with brake	R88A-CAWH0R5B2

Encoder Cables

Specifications	Model
S Series, Servodriver side	R88A-CRWS0R3D
S Series, 50 W/100 W/200 W/300 W, Servomotor side; R Series, 100 W/200 W/300 W/450 W, Servomotor side	R88A-CRWR0R5M1
S Series, 500 W/750 W, Servomotor side	R88A-CRWS0R5M
R Series, Servodriver side	R88A-CRWR0R3D
R Series, 60 W/110 W, Servomotor side; H Series, Servomotor side	R88A-CRWH0R5M
R Series, 500 W/600 W/750 W/820 W/ 1,100 W, Servomotor side	R88A-CRWR0R5M2
H Series, Servodriver side	R88A-CRWH0R3D

Control Cables

Specifications	Model
S/R Series, analog input	R88A-CPWR0R3A
S/R Series, pulse train input	R88A-CPWR0R3P
H Series, analog/pulse train input	R88A-CPWH0R3C
M Series, analog/pulse train input	R88A-CPWM0R3C

Note: Refer to *Replacement Set for S, R, and H Series* (I806-E1-□) for detailed specifications.

DeviceNet Option Unit for OMNUC W-series AC Servo Drivers R88A-NCW152-DRT

Distributed control with a built-in Single-axis Position Control Unit, information management via DeviceNet, and a failure prediction function for servo systems, can all be added to OMNUC W-series AC Servo Drivers with just one Unit.

NEW

- Two Roles Performed by One Unit
  The Option Unit has both DeviceNet communications functions and the positioning functions of a Position Control Unit. These functions can be added to a W-series AC Servo Driver simply by mounting the Option Unit directly to it.
- Distributed Control of up to 63 Units
  Using Option Units allows up to 63 W-series AC Servo Drivers to be connected as DeviceNet slaves to an open field network with a total network length of 500 m.
- Batch Handling of Operating Information for Servo Systems
  Information that can be displayed at W-series AC Servo Drivers using monitor functions (e.g., speed commands and speed feedback) can be read by a PLC using remote I/O functions.
- Failure Prediction and Diagnosis
  Up to 1,000 samples of sequential data, such as speed feedback and torque commands, can be recorded in units as small as 250 μs to approx. 8 seconds. Comparison with data recorded during normal operation allows failure prediction and effective cause analysis for incorrect operation.

Ordering Information

■ List of Models

Product name	Model number
DeviceNet Option Unit	R88A-NCW152-DRT
External I/O Connector	R88A-CNU01R
Cable for Setup Tool (IBM PC/AT or compatible: 2 m)	R88A-CCW002P4

Specifications

Position Control Function Specifications

Item		Specifications	
Number of control axes		1 axis per slave	
Control system		Semi-closed loop/full closed-loop control	
Controlled driver		R88D-WT Servo Drivers	
Positioning unit		User-specified position units (set freely). The amount moved per step can be set as an electronic gear ratio (setting range: 10,000,000 to 0.0000001)	
Operating specifications	Memory operation	Step operation and point table operation	
	Direct operation	Direct operation, interrupt feeding, notch signal output positioning, and multi-speed positioning	
Move command specifications	Type	Incremental (positioning according to relative coordinates) or absolute (positioning according to absolute coordinates)	
	Position commands	Signed, 32-bit data (setting range: −99,999,999 to 99,999,999 steps)	
	Speed commands	Unsigned, 32-bit data (units: step/min; setting range: 1 to 240,000 steps)	
	Acceleration/deceleration method	Fixed acceleration/deceleration	Single-step linear acceleration/deceleration, 2-step linear acceleration/deceleration, asymmetric linear acceleration/deceleration, S-curve acceleration/deceleration, asymmetric S-curve acceleration/deceleration
		Fixed acceleration/deceleration time	Exponential acceleration/deceleration, exponential acceleration/deceleration with bias, single-step linear acceleration/deceleration
	Acceleration/deceleration time	1 to 10,000 ms (time taken to reach maximum speed)	
	Coordinate system settings	Set whether to use the AC Servomotor as a linear axis or a rotary axis.	
	Speed changes	The speed can be switched between 16 settings while positioning during multi-speed operation.	
Operation management/compensation functions	Origin search operation	Without limit reversal	Use the ON/OFF signal of any of the following: Origin proximity signal + origin signal, origin signal, origin proximity signal + phase Z, or phase Z
		With limit reversal	Use the ON/OFF signal of any of the following: Origin proximity signal + origin signal, origin signal, or origin proximity signal + Phase Z
	Backlash compensation	0 to 32,767 steps	
	Jog operation	Based on the origin position when power is turned ON and after origin search	
	Indexing operation	Positioning performed with 1 motor revolution divided equally by a specified number (range: 1 to 32,767).	
	Software limits	Decelerates to a stop at a specified position. (The direction can be specified as either positive or negative in the range −99,999,999 to 99,999,999.)	
	Emergency stop/deceleration stop	Possible via remote I/O communications or using input signal.	
	Present position preset	Possible via remote I/O communications.	
	Trace function	Analog trace data (Select up to 2 elements.)	Command pulse speed (r/min), position deviation (command units), speed feedback (r/min), or torque commands (%)
		ON/OFF trace data (Select up to 2 elements.)	Sensor-ON input, alarm output, positioning completed output 1, speed coincidence output, motor revolution detection output, servo ready output, current limit detection output, speed control detection output, brake interlock output, warning output, positioning completed output 2, alarm code output 1, alarm code output 2, alarm code output 3
		Trigger data	Analog trace data (rising edge, falling edge, or rising/falling edge) ON/OFF trace data (rising edge, falling edge, or rising/falling edge)
		Data sampling	Sampling cycle: Set in 250-μs units (range: 250 to 8,191,750 μs) Number of samples: 1,000 samples (fixed)
	Reading monitor items	Monitor items	Speed feedback (r/min), torque commands (%), number of pulses from phase Z (pulses), electrical angle (°), input signal monitor (no units), output signal monitor (no units), command pulse speed display (r/min), position deviation (command units), cumulative load rate (%), regenerative load rate (%), dynamic brake resistance load rate (%), input pulse counter (rightmost 16 bits; command units), feedback pulse counter (rightmost 16 bits; pulses)

DeviceNet Communications Specifications

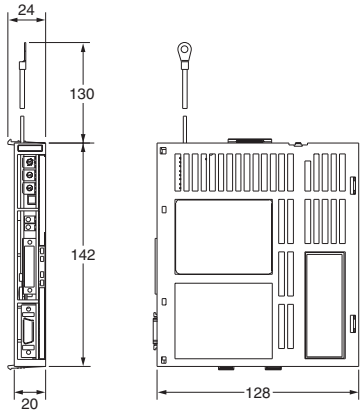
Item		Details	
DeviceNet Communications	Unit classification	Slave Unit	
	Baud rate	125, 250, or 500 kbps (selected with rotary switch)	
	Communications functions	Remote I/O communications (operates as slave) and explicit message communications (sends explicit messages)	
	Communications contents	Remote I/O communications	• Move commands for positioning • Origin compensation (when absolute encoder is used) • Reading and writing Servo Driver and DeviceNet Option Unit parameters • Reading monitor items • Present position compensation • Alarm reset
		Explicit message communications	• Setting trace function • Reading trace data • Reading and writing Servo Driver and DeviceNet Option Unit parameters
	Connection format	Combinations of multi-drop method and T-branch method	
	Maximum number of connectable nodes	64 (This figure includes the Master Unit, Slave Units, and Configurator (if connected).)	
	Node address setting	0 to 63 (selected with rotary switch)	

General Specifications

Item		Details
Applicable Servo Drivers		R88D-WT□ (software version 14 or later)
Mounting method		Mounted to the side of R88D-WT□ Servo Drivers
Basic specifications	Power supply voltage	Unit: Supplied from the Servo Driver DeviceNet: 11 to 25-VDC Isolated Power Supply Unit
	Power consumption	1.3 W (current consumption: 250 mA)
	Ambient operating temperature and humidity	0 to 55°C, 90% max. (with no condensation or corrosive gases)
	Ambient storage temperature and humidity	–20 to 85°C, 90% max. (with no corrosive gases)
	Vibration resistance	4.9 m/s^2
	External dimensions	20 × 142 × 128 mm (W × H × D)
	Approximate weight	0.2 kg

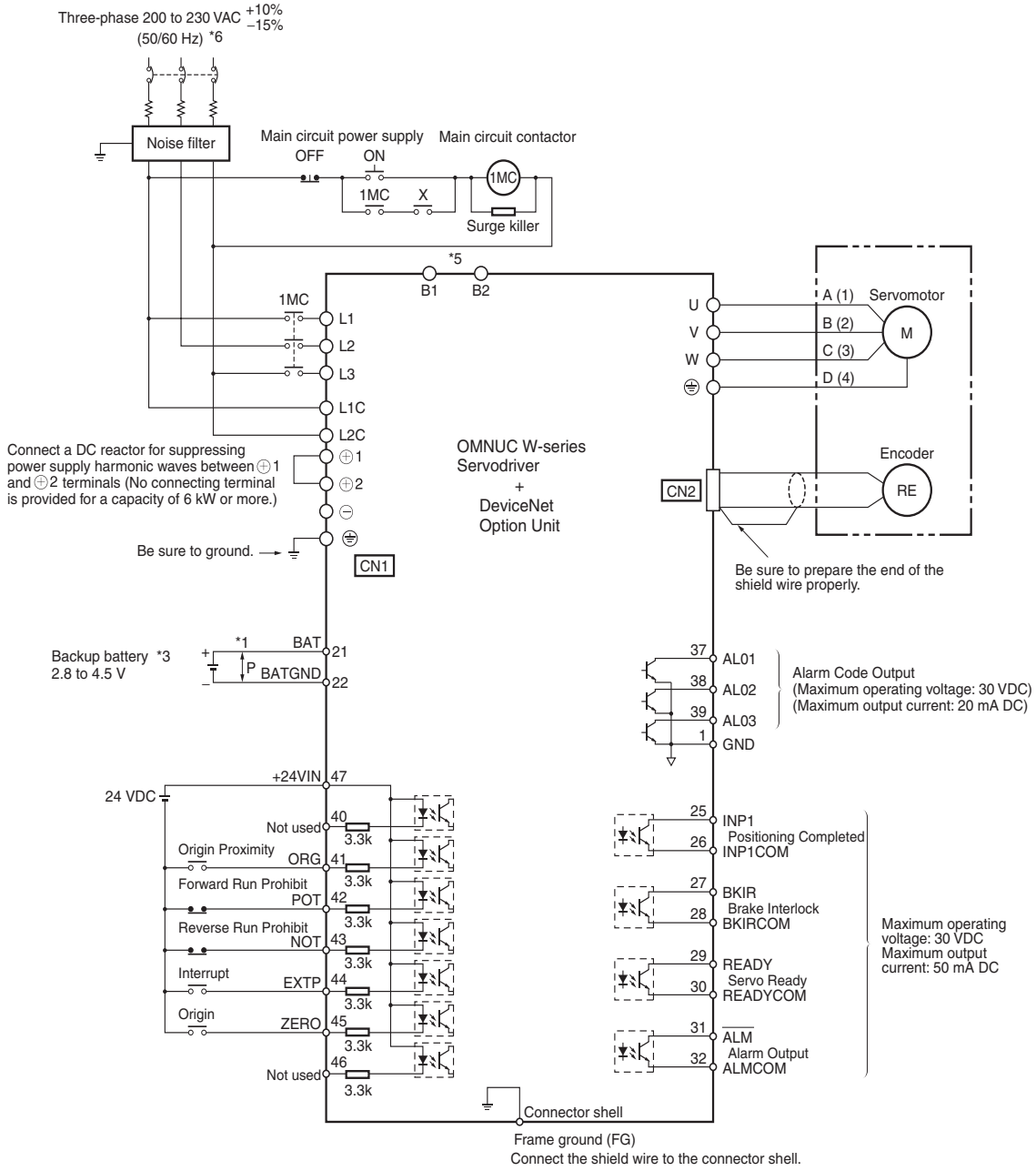
Dimensions (Unit: mm)

R88A-NCW152-DRT



Connection Diagram (for Mounting to OMNUC W-series Products)

Three-phase (See *6.)



∗1.  represents a twisted-pair cable.

∗2. Primary filter

∗3. Connect when using an absolute encoder.

∗4. Used only with an absolute encoder.

∗5. When using an external regenerative resistor, connect it between B1 and B2.
(When the capacity is 6 kW, connect a Regenerative Resistor Unit.)

∗6. For single-phase connection, refer to page 62. The wiring is different only around L1, L2, L3, L1C, L2C, the main circuit power supply, and the main circuit contactor.

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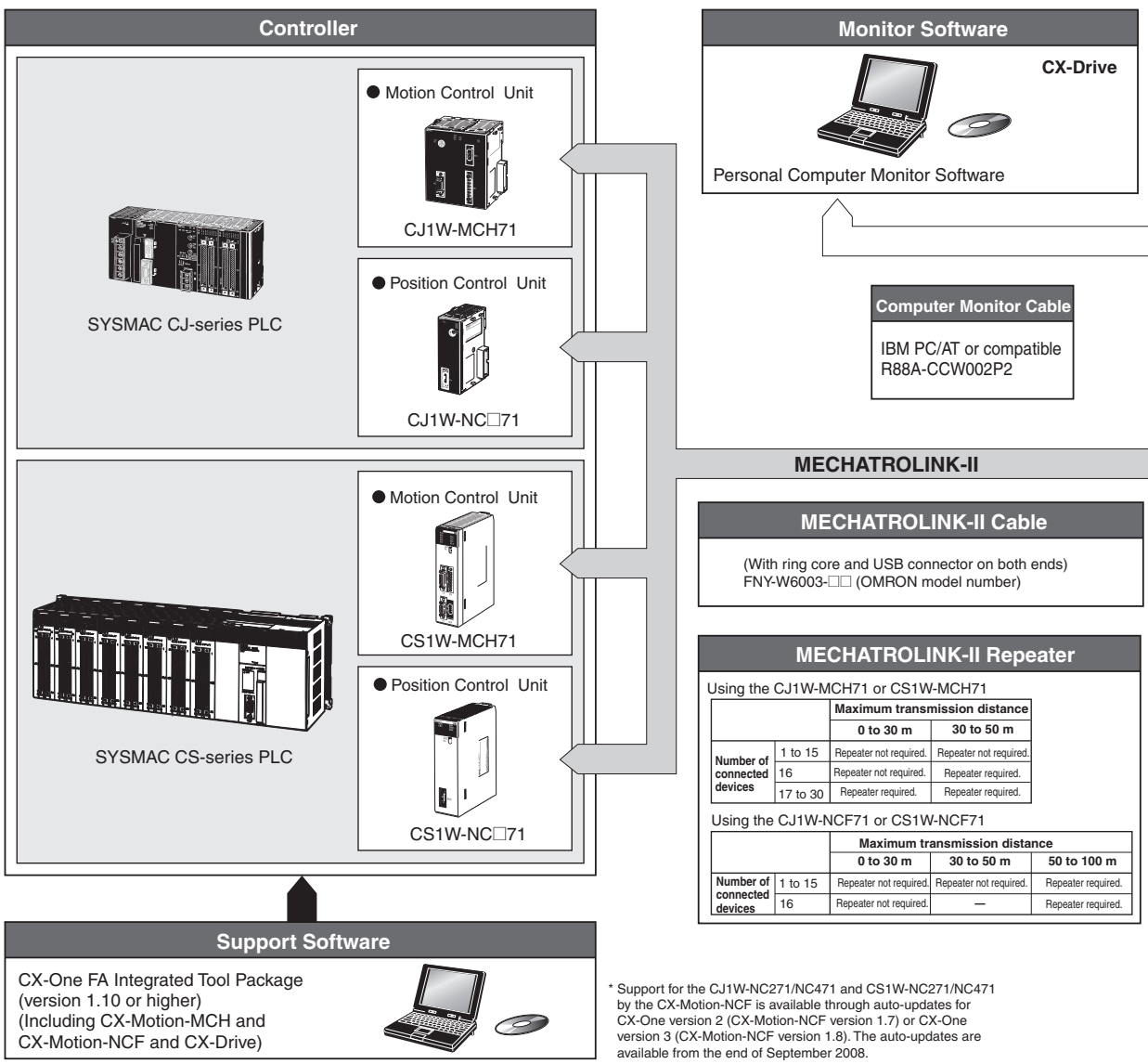
AC Servomotors and Servo Drives (OMNUC W Series with Built-in MECHATROLINK-II Communications)

R88M-W/R88D-WN□-ML2

Use MECHATROLINK-II Communications with the Controller and Save Space.

- Data Communications with MECHATROLINK-II:
  Data communications are used to transfer all control information between the Servo Drive and Controller. This enables using the performance of the Servo Motor to the limit because there are no restrictions imposed by the transmission performance of control signals.
- A communications module is built into the Servo Drive, thus saving space in the control panel by occupying less than 2/3 of the space required for a MECHATROLINK-II Interface Unit mounted to a W-series Servo Drive.
- W-series Servomotors:
  W-series Servomotors can be used as is, including Encoder Cables and Power Cables, so the System can be upgraded with no need to change the equipment design. (See note.)

System Configuration



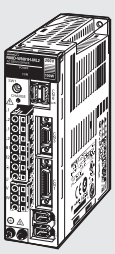
* Support for the CJ1W-NC271/NC471 and CS1W-NC271/NC471 by the CX-Motion-NCF is available through auto-updates for CX-One version 2 (CX-Motion-NCF version 1.7) or CX-One version 3 (CX-Motion-NCF version 1.8). The auto-updates are available from the end of September 2008.

- High-speed, high-precision motion control: No-deviation control and predictive control are provided for high-tracking capability.

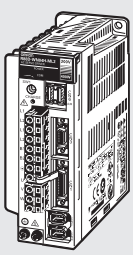
Note: 1. MECHATROLINK-II is a registered trademark of the MECHATROLINK Members Association.
2. When a Servomotor with an absolute encoder is used, a separate battery cable is required for the absolute encoder. For details, refer to D-14 Page.

AC Servo Drive

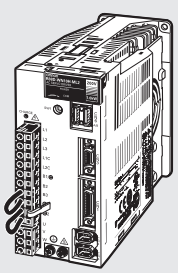
Drives



R88D-WN01H-ML2



R88D-WN04H-ML2



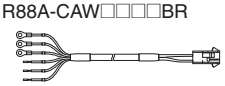
R88D-WN10H-ML2

Note: The illustrations shown here are examples only.

I/O signals

Power Cables (See note.)

- Standard Cables
  Without Brakes
  R88A-CAW□□□□S
  With Brakes
  R88A-CAW□□□□B
- Robot Cables
  Without Brakes
  R88A-CAW□□□□SR
  With Brakes
  R88A-CAW□□□□BR

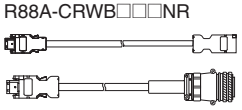


Power signals

Feedback signals

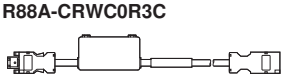
Encoder Cables (See note.)

- Standard Cables
  R88A-CRWA□□□C
  R88A-CRWB□□□N
- Robot Cables
  R88A-CRWA□□□CR
  R88A-CRWB□□□NR



Absolute Encoder Battery Cables

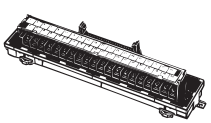
For absolute encoder 30 cm*
R88A-CRWC0R3C



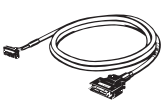
*Not required when the battery is connected to the control connector (CN1)

Terminal Block Conversion Unit and Cable

XW2□-20G□



XW2Z-□□□-J-B16



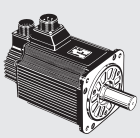
AC Servo Motors

- Without Decelerators

R88M-W05030H

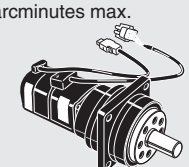
R88M-W75030T-B

R88M-WP75030H



R88M-W3K030H

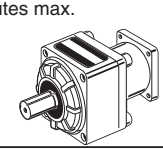
- With Decelerators
  Backlash: 3 arcminutes max.
  Backlash: 45 arcminutes max.



Note: The illustrations shown here are examples only.

Decelerator

- Backlash: 3 arcminutes max.
  R7G-VRSFPB



Peripheral Devices

- AC Reactor
  R88A-PX□□□□
- External Regeneration Resistor
  R88A-RR022047S

Interpreting Model Numbers

● AC Servomotors (without Decelerator)

R88M-W□□□□□□□-□□□□
1 2 3 4 5 6 7 8 9

No.	Item	Symbol	Specifications
1	Indicates a Servomotor.		
3	Series	W	W Series
4	Type	Blank	Cylinder
		P	Flat
4	Motor capacity	050	50 W
		100	100 W
		1K0	1 kW
5	Speed	10	1000 r/min
		15	1500 r/min
		30	3000 r/min
6	Power supply voltage	H	200 VAC, with incremental encoder
		T	200 VAC, with absolute encoder
7	Brake	Blank	Without a brake
		B	With 24-VDC brake
8	Waterproofing and/or oil seal (See note.)	Blank	Neither
		O	With oil seal
		W	With waterproofing
9	Shaft form	Blank	Straight shaft
		S1	With key
		S2	With key and with tab
		S3	Straight shaft with tab

Note: Waterproofing is available for Flat-type Servomotors only.

● AC Servo Drives

R88D-WN□□□ML2
1 2 3 4 5 6

No.	Item	Symbol	Specifications
1	Indicates a Servomotor.		
3	Series	W	W Series
3	Input signal specification	N	With built-in communications
4	Maximum output capacity	A5	50 W
		01	100 W
		10	1 kW
5	Power supply voltage	H	200 VAC
		L	100 VAC
6	Other	ML2	Built-in MECHATROLINK-II communications

● AC Servomotors (with Decelerator)

R88M-W□□□□□□□-□G□□□□
1 2 3 4 5 6 7 8 910

No.	Item	Symbol	Specifications
1	Indicates a Servomotor.		
2	Series	W	W Series
3	Type	Blank	Cylinder
		P	Flat
4	Motor capacity	050	50W
		100	100W
		1K0	1kW
5	Speed	10	1000r/min
		15	1500r/min
		30	3000r/min
6	Power supply voltage	H	200 VAC, with incremental encoder
		T	200 VAC, with absolute encoder
7	Brake	Blank	Without a brake
		B	With 24-VDC brake
8	Gear ratio (See note.)	G05 to G45	G05: 1/5, G09: 1/9, G11: 1/11, G15: 1/15, G20: 1/20, G21: 1/21, G25: 1/25, G29: 1/29, G33: 1/33, G45:1/45
9	Backlash	B	3 arcminutes max.
		C	Approx. 45 min
10	Decelerator shaft	Blank	Straight shaft
		J	With key

Note: Not all Servomotors and Decelerators can be used in combination. Refer to *Combining Servomotors and Decelerators* on page 60.

● Servo Drive and Servomotor Combinations (without Decelerator)

R88M-W□□□□□□□□-□□□□
1 2 3 4 5 6 7 8 9

3	4	5	Basic model (R88M-)	6		7		8			9			
Type	Motor capacity	Speed		Motor power supply specifications		Brake		Waterproofing and oil seal specifications			Shaft form			
				H	T	None	B	None	O	W	None	S1	S2	S3
Cylinder	50 W	3000 r/min	R88M-W05030	❍	❍	❍	❍	❍	❍		❍	❍	❍	❍
	100 W		R88M-W10030	❍	❍	❍	❍	❍	❍		❍	❍	❍	❍
	200 W		R88M-W20030	❍	❍	❍	❍	❍	❍		❍	❍	❍	❍
	400 W		R88M-W40030	❍	❍	❍	❍	❍	❍		❍	❍	❍	❍
	750 W		R88M-W75030	❍	❍	❍	❍	❍	❍		❍	❍	❍	❍
	1 kW		R88M-W1K030	❍	❍	❍	❍	❍	❍		❍		❍	
	1.5 kW		R88M-W1K530	❍	❍	❍	❍	❍	❍		❍		❍	
	2k W		R88M-W2K030	❍	❍	❍	❍	❍	❍		❍		❍	
	3 kW		R88M-W3K030	❍	❍	❍	❍	❍	❍		❍		❍	
	450 W	1500 r/min	R88M-W45015		❍	❍	❍	❍	❍		❍		❍	
	850 W		R88M-W85015		❍	❍	❍	❍	❍		❍		❍	
	1.3 kW		R88M-W1K315		❍	❍	❍	❍	❍		❍		❍	
	1.8 kW		R88M-W1K815		❍	❍	❍	❍	❍		❍		❍	
	300 W	1000 r/min	R88M-W30010	❍	❍	❍	❍	❍	❍		❍		❍	
	600 W		R88M-W60010	❍	❍	❍	❍	❍	❍		❍		❍	
	900 W		R88M-W90010	❍	❍	❍	❍	❍	❍		❍		❍	
	1.2 kW		R88M-W1K210	❍	❍	❍	❍	❍	❍		❍		❍	
	2 kW		R88M-W2K010	❍	❍	❍	❍	❍	❍		❍		❍	
Flat	100 W	3000 r/min	R88M-WP10030	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
	200 W		R88M-WP20030	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
	400 W		R88M-WP40030	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
	750 W		R88M-WP75030	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
	1.5 kW		R88M-WP1K530	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

Note: Only absolute encoders can be used with 1,500-r/min Servomotors. (They can be used as incremental encoders.)

Ordering Information

● AC Servomotors

Cylinder-type Servomotors (3000-r/min) (with Incremental Encoder)

Specifications			Model
Straight shaft without key	Without brake	50 W	**R88M-W05030H**
		100 W	**R88M-W10030H**
		200 W	**R88M-W20030H**
		400 W	**R88M-W40030H**
		750 W	**R88M-W75030H**
	With brake	50 W	**R88M-W05030H-B**
		100 W	**R88M-W10030H-B**
		200 W	**R88M-W20030H-B**
		400 W	**R88M-W40030H-B**
		75 W	**R88M-W75030H-B**
Straight shaft with key	Without brake	50 W	**R88M-W05030H-S1**
		100 W	**R88M-W10030H-S1**
		200 W	**R88M-W20030H-S1**
		400 W	**R88M-W40030H-S1**
		75 0W	**R88M-W75030H-S1**
		1 kW	**R88M-W1K030H-S2**
		1.5 kW	**R88M-W1K530H-S2**
		2 kW	**R88M-W2K030H-S2**
		3 kW	**R88M-W3K030H-S2**
	With brake	50 W	**R88M-W05030H-BS1**
		100 W	**R88M-W10030H-BS1**
		200 W	**R88M-W20030H-BS1**
		400 W	**R88M-W40030H-BS1**
		750 W	**R88M-W75030H-BS1**
		1 kW	**R88M-W1K030H-BS2**
		1.5 kW	**R88M-W1K530H-BS2**
		2k W	**R88M-W2K030H-BS2**
		3 kW	**R88M-W3K030H-BS2**

Cylinder-type Servomotors (3000-r/min) (with Absolute Encoder)

Specifications			Model
Straight shaft without key	Without brake	50 W	**R88M-W05030T**
		100 W	**R88M-W10030T**
		200 W	**R88M-W20030T**
		400 W	**R88M-W40030T**
		750 W	**R88M-W75030T**
	With brake	50 W	**R88M-W05030T-B**
		100 W	**R88M-W10030T-B**
		200 W	**R88M-W20030T-B**
		400 W	**R88M-W40030T-B**
		750 W	**R88M-W75030T-B**
Straight shaft with key	Without brake	50 W	**R88M-W05030T-S1**
		100 W	**R88M-W10030T-S1**
		200 W	**R88M-W20030T-S1**
		400 W	**R88M-W40030T-S1**
		750 W	**R88M-W75030T-S1**
		1 kW	**R88M-W1K030T-S2**
		1.5 kW	**R88M-W1K530T-S2**
		2 kW	**R88M-W2K030T-S2**
		3 kW	**R88M-W3K030T-S2**
	With brake	50 W	**R88M-W05030T-BS1**
		100 W	**R88M-W10030T-BS1**
		200 W	**R88M-W20030T-BS1**
		400 W	**R88M-W40030T-BS1**
		750 W	**R88M-W75030T-BS1**
		1 kW	**R88M-W1K030T-BS2**
		1.5 k W	**R88M-W1K530T-BS2**
		2 kW	**R88M-W2K030T-BS2**
		3 kW	**R88M-W3K030T-BS2**

Note: 1. The 100-VAC Servomotors cannot be connected. (Connect a 200-VAC Servomotor even for a 100-VAC Servo Drive.)

2. An S1 suffix indicates models with a key but no tap. An S2 suffix indicates models with both a key and tap. For Servomotors of 1 kW or more, there are no S1 or S3 models.

Cylinder-type Servomotors (1500-r/min) (for Incremental or Absolute Encoders)

Specifications			Model
Straight shaft with key	Without brake	450 W	**R88M-W45015T-S2**
		850 W	**R88M-W85015T-S2**
		1.3 kW	**R88M-W1K315T-S2**
		1.8 kW	**R88M-W1K815T-S2**
	With brake	450 W	**R88M-W45015T-BS2**
		850 W	**R88M-W85015T-BS2**
		1.3 kW	**R88M-W1K315T-BS2**
		1.8 kW	**R88M-W1K815T-BS2**

Cylinder-type Servomotors (1000-r/min) (with Incremental Encoder)

Specifications			Model
Straight shaft with key	Without brake	300 W	**R88M-W30010H-S2**
		600 W	**R88M-W60010H-S2**
		900 W	**R88M-W90010H-S2**
		1.2 kW	**R88M-W1K210H-S2**
		2 kW	**R88M-W2K010H-S2**
	With brake	300 W	**R88M-W30010H-BS2**
		600 W	**R88M-W60010H-BS2**
		900 W	**R88M-W90010H-BS2**
		1.2 kW	**R88M-W1K210H-BS2**
		2 kW	**R88M-W2K010H-BS2**

Note: An S2 suffix indicates models with both a key and tap. For 1,000 r/min-Servomotors, there are no S1 or S3 models.

Cylinder-type Servomotors (1000-r/min) (with Absolute Encoder)

Specifications			Model
Straight shaft with key	Without brake	300 W	**R88M-W30010T-S2**
		600 W	**R88M-W60010T-S2**
		900 W	**R88M-W90010T-S2**
		1.2 W	**R88M-W1K210T-S2**
		2 kW	**R88M-W2K010T-S2**
	With brake	300 W	**R88M-W30010T-BS2**
		600 W	**R88M-W60010T-BS2**
		900 W	**R88M-W90010T-BS2**
		1.2 kW	**R88M-W1K210T-BS2**
		2 kW	**R88M-W2K010T-BS2**

Note: An S2 suffix indicates models with both a key and tap. For 1,000 r/min-Servomotors, there are no S1 or S3 models.

Flat-type Servomotors (with Incremental Encoder)

Specifications			Model
Straight shaft without key	Without brake	100 W	**R88M-WP10030H**
		200 W	**R88M-WP20030H**
		400 W	**R88M-WP40030H**
		750 W	**R88M-WP75030H**
		1.5 kW	**R88M-WP1K530H**
	With brake	100 W	**R88M-WP10030H-B**
		200 W	**R88M-WP20030H-B**
		400 W	**R88M-WP40030H-B**
		750 W	**R88M-WP75030H-B**
		1.5 kW	**R88M-WP1K530H-B**
Straight shaft with key	Without brake	100 W	**R88M-WP10030H-S1**
		200 W	**R88M-WP20030H-S1**
		400 W	**R88M-WP40030H-S1**
		750 W	**R88M-WP75030H-S1**
		1.5 kW	**R88M-WP1K530H-S1**
	With brake	100 W	**R88M-WP10030H-BS1**
		200 W	**R88M-WP20030H-BS1**
		400 W	**R88M-WP40030H-BS1**
		750 W	**R88M-WP75030H-BS1**
		1.5 kW	**R88M-WP1K530H-BS1**

Flat-type Servomotor (with Absolute Encoder)

Specifications			Model
Straight shaft without key	Without brake	100 W	**R88M-WP10030T**
		200 W	**R88M-WP20030T**
		400 W	**R88M-WP40030T**
		750 W	**R88M-WP75030T**
		1.5 kW	**R88M-WP1K530T**
	With brake	100 W	**R88M-WP10030T-B**
		200 W	**R88M-WP20030T-B**
		400 W	**R88M-WP40030T-B**
		750 W	**R88M-WP75030T-B**
		1.5 kW	**R88M-WP1K530T-B**
Straight shaft with key	Without brake	100 W	**R88M-WP10030T-S1**
		200 W	**R88M-WP20030T-S1**
		400 W	**R88M-WP40030T-S1**
		750 W	**R88M-WP75030T-S1**
		1.5 kW	**R88M-WP1K530T-S1**
	With brake	100 W	**R88M-WP10030T-BS1**
		200 W	**R88M-WP20030T-BS1**
		400 W	**R88M-WP40030T-BS1**
		750 W	**R88M-WP75030T-BS1**
		1.5 kW	**R88M-WP1K530T-BS1**

Waterproof Flat-type Servomotors (See note 3.) (with Incremental Encoder)

Specifications			Model
Straight shaft without key	Without brake	100 W	**R88M-WP10030H-W**
		200 W	**R88M-WP20030H-W**
		400 W	**R88M-WP40030H-W**
		750 W	**R88M-WP75030H-W**
		1.5 kW	**R88M-WP1K530H-W**
	With brake	100 W	**R88M-WP10030H-BW**
		200 W	**R88M-WP20030H-BW**
		400 W	**R88M-WP40030H-BW**
		750 W	**R88M-WP75030H-BW**
		1.5 kW	**R88M-WP1K530H-BW**
Straight shaft with key	Without brake	100 W	**R88M-WP10030H-WS1**
		200 W	**R88M-WP20030H-WS1**
		400 W	**R88M-WP40030H-WS1**
		750 W	**R88M-WP75030H-WS1**
		1.5 kW	**R88M-WP1K530H-WS1**
	With brake	100 W	**R88M-WP10030H-BWS1**
		200 W	**R88M-WP20030H-BWS1**
		400 W	**R88M-WP40030H-BWS1**
		750 W	**R88M-WP75030H-BWS1**
		1.5 kW	**R88M-WP1K530H-BWS1**

Waterproof Flat-type Servomotors (See note 3.) (with Absolute Encoder)

Specifications			Model
Straight shaft without key	Without brake	100 W	**R88M-WP10030T-W**
		200 W	**R88M-WP20030T-W**
		400 W	**R88M-WP40030T-W**
		750 W	**R88M-WP75030T-W**
		1.5 kW	**R88M-WP1K530T-W**
	With brake	100 W	**R88M-WP10030T-BW**
		200 W	**R88M-WP20030T-BW**
		400 W	**R88M-WP40030T-BW**
		750 W	**R88M-WP75030T-BW**
		1.5 kW	**R88M-WP1K530T-BW**
Straight shaft with key	Without brake	100 W	**R88M-WP10030T-WS1**
		200 W	**R88M-WP20030T-WS1**
		400 W	**R88M-WP40030T-WS1**
		750 W	**R88M-WP75030T-WS1**
		1.5 kW	**R88M-WP1K530T-WS1**
	With brake	100 W	**R88M-WP10030T-BWS1**
		200 W	**R88M-WP20030T-BWS1**
		400 W	**R88M-WP40030T-BWS1**
		750 W	**R88M-WP75030T-BWS1**
		1.5 kW	**R88M-WP1K530T-BWS1**

Note: 1. The 100-VAC Servomotors cannot be connected. (Connect a 200-VAC Servomotor even for a 100-VAC Servo Drive.)

2. An S1 suffix indicates models with a key but with no tap. An S2 suffix indicates models with both a key and tap. For Servomotors of 1 kW or more, there are no S1 or S3 models.

3. Selecting a Servomotor

1.The Servomotor shaft and connectors are not waterproof. Do not expose them to water.

2.The Standard Cable (R88A-CAW□□□□□) can be used, but it is not waterproof. If waterproofing is required, the user must provide waterproof cable.

3.If the connectors or cable are to be exposed to water, it is recommended that the connectors (including at the Servomotor) be replaced with waterproof connectors to protect the terminals. For recommended waterproof connectors, refer to *3-1-2 Servomotor Installation Conditions* in OMNUC W Series User's Manual (Cat. No. I531).

● AC Servo Drives

Specifications			Model
MECHATROLINK-II Communications (incremental and absolute encoders)	200 VAC	50 W	R88D-WNA5H-ML2
		100 W	R88D-WN01H-ML2
		200 W	R88D-WN02H-ML2
		400 W	R88D-WN04H-ML2
		500 W	R88D-WN05H-ML2
		750 W	R88D-WN08H-ML2
		1.0 kW	R88D-WN10H-ML2
		1.5 kW	R88D-WN15H-ML2
		2.0 kW	R88D-WN20H-ML2
		3.0 kW	R88D-WN30H-ML2
	100 VAC	50 W	R88D-WNA5L-ML2
		100 W	R88D-WN01L-ML2
		200 W	R88D-WN02L-ML2
		400 W	R88D-WN04L-ML2

● Decelerators (Straight Shaft with Key: Nidec-Shimpo Corporation)

For Cylinder-type Motors (Backlash: 3 Arcminutes Max.)

Motor capacity	Model	Gear ratio			
		1/5	1/9	1/15	1/25
50 W	R7G-VRSFPB05B50	OK			
	R7G-VRSFPB09B50		OK		
	R7G-VRSFPB15B50			OK	
	R7G-VRSFPB25B50				OK
100 W	R7G-VRSFPB05B100	OK			
	R7G-VRSFPB09B100		OK		
	R7G-VRSFPB15B100			OK	
	R7G-VRSFPB25C100				OK
200 W	R7G-VRSFPB05B200	OK			
	R7G-VRSFPB09C400		OK		
	R7G-VRSFPB15C400			OK	
	R7G-VRSFPB25C200				OK
400 W	R7G-VRSFPB05C400	OK			
	R7G-VRSFPB09C400		OK		
	R7G-VRSFPB15C400			OK	
	R7G-VRSFPB25D400				OK
750 W	R7G-VRSFPB05C750	OK			
	R7G-VRSFPB09D750		OK		
	R7G-VRSFPB15D750			OK	
	R7G-VRSFPB25E750				OK

For Flat-type Motors (Backlash: 3 Arcminutes Max.)

Motor capacity	Model	Gear ratio			
		1/5	1/9	1/15	1/25
100 W	R7G-VRSFPB05B100P	OK			
	R7G-VRSFPB09B100P		OK		
	R7G-VRSFPB15B100P			OK	
	R7G-VRSFPB25C100P				OK
200 W	R7G-VRSFPB05B200P	OK			
	R7G-VRSFPB09C400P		OK		
	R7G-VRSFPB15C400P			OK	
	R7G-VRSFPB25C200P				OK
400 W	R7G-VRSFPB05C400P	OK			
	R7G-VRSFPB09C400P		OK		
	R7G-VRSFPB15C400P			OK	
	R7G-VRSFPB25D400P				OK
750 W	R7G-VRSFPB05C750P	OK			
	R7G-VRSFPB09D750P		OK		
	R7G-VRSFPB15D750P			OK	
	R7G-VRSFPB25E750P				OK

● Power Cable

Specifications			Model
Power Cables for Servomotors without Brakes	For 3000-r/min Cylinder-type Motors: 50 W to 750 W For Flat-type Motors: 100 W to 750 W	3 m	**R88A-CAWA003S**
		5 m	**R88A-CAWA005S**
		10 m	**R88A-CAWA010S**
		15 m	**R88A-CAWA015S**
		20 m	**R88A-CAWA020S**
		30 m	**R88A-CAWA030S**
		40 m	**R88A-CAWA040S**
		50 m	**R88A-CAWA050S**
	For Flat-type Motors: 1.5 kW	3 m	**R88A-CAWB003S**
		5 m	**R88A-CAWB005S**
		10 m	**R88A-CAWB010S**
		15 m	**R88A-CAWB015S**
		20 m	**R88A-CAWB020S**
		30 m	**R88A-CAWB030S**
		40 m	**R88A-CAWB040S**
		50 m	**R88A-CAWB050S**
	For 1000-r/min Cylinder-type Motors: 300 W to 900 W For 1500-r/min Cylinder-type Motors: 450 W to 1.3 kW For 3000-r/min Cylinder-type Motors: 1 kW to 2 kW	3 m	**R88A-CAWC003S**
		5 m	**R88A-CAWC005S**
		10 m	**R88A-CAWC010S**
		15 m	**R88A-CAWC015S**
		20 m	**R88A-CAWC020S**
		30 m	**R88A-CAWC030S**
		40 m	**R88A-CAWC040S**
		50 m	**R88A-CAWC050S**
	For 1000-r/min Cylinder-type Motors: 1.2 kW to 2 kW For1500-r/min Cylinder-type Motors: 1.8 W For 3000-r/min Cylinder-type Motors: 3 kW	3 m	**R88A-CAWD003S**
		5 m	**R88A-CAWD005S**
		10 m	**R88A-CAWD010S**
		15 m	**R88A-CAWD015S**
		20 m	**R88A-CAWD020S**
		30 m	**R88A-CAWD030S**
		40 m	**R88A-CAWD040S**
		50 m	**R88A-CAWD050S**
Power Cables for Servomotors with Brakes	For 3000-r/min Cylinder-type Motors: 50 W to 750 W For Flat-type Motors: 100 W to 750 W	3 m	**R88A-CAWA003B**
		5 m	**R88A-CAWA005B**
		10 m	**R88A-CAWA010B**
		15 m	**R88A-CAWA015B**
		20 m	**R88A-CAWA020B**
		30 m	**R88A-CAWA030B**
		40 m	**R88A-CAWA040B**
		50 m	**R88A-CAWA050B**
	For Flat-type Motors: 1.5 kW	3 m	**R88A-CAWB003B**
		5 m	**R88A-CAWB005B**
		10 m	**R88A-CAWB010B**
		15 m	**R88A-CAWB015B**
		20 m	**R88A-CAWB020B**
		30 m	**R88A-CAWB030B**
		40 m	**R88A-CAWB040B**
		50 m	**R88A-CAWB050B**
	For 1000-r/min Cylinder-type Motors: 300 W to 900 W For 1500-r/min Cylinder-type Motors: 450 W to 1.3 kW For 3000-r/min Cylinder-type Motors: 1 kW to 2 kW	3 m	**R88A-CAWC003B**
		5 m	**R88A-CAWC005B**
		10 m	**R88A-CAWC010B**
		15 m	**R88A-CAWC015B**
		20 m	**R88A-CAWC020B**
		30 m	**R88A-CAWC030B**
		40 m	**R88A-CAWC040B**
		50 m	**R88A-CAWC050B**
	For 1000-r/min Cylinder-type Motors: 1.2 kW to 2 kW For 1500-r/min Cylinder-type Motors: 1.8 kW For 3000-r/min Cylinder-type Motors: 3kW	3 m	**R88A-CAWD003B**
		5 m	**R88A-CAWD005B**
		10 m	**R88A-CAWD010B**
		15 m	**R88A-CAWD015B**
		20 m	**R88A-CAWD020B**
		30 m	**R88A-CAWD030B**
		40 m	**R88A-CAWD040B**
		50 m	**R88A-CAWD050B**

Note: If the cable must be bent, use a Robot Cable for the Power Cable. (Refer to the tables on the following pages.)

● Encoder Cables

Specifications		Model
For 3000-r/min Cylinder-type Motors: 50 W to 750 W For Flat-type Motors: 100 W to 1.5 kW	3 m	**R88A-CRWA003C**
	5 m	**R88A-CRWA005C**
	10 m	**R88A-CRWA010C**
	15 m	**R88A-CRWA015C**
	20 m	**R88A-CRWA020C**
	30 m	**R88A-CRWA030C**
	40 m	**R88A-CRWA040C**
	50 m	**R88A-CRWA050C**
For 3000-r/min Cylinder-type Motors: 1 kW to 3 kW For 1500-r/min Cylinder-type Motors: 450 W to 1.8 kW For 1000-r/min Cylinder-type Motors: 300 W to 2 kW	3 m	**R88A-CRWB003N**
	5 m	**R88A-CRWB005N**
	10 m	**R88A-CRWB010N**
	15 m	**R88A-CRWB015N**
	20 m	**R88A-CRWB020N**
	30 m	**R88A-CRWB030N**
	40 m	**R88A-CRWB040N**
	50 m	**R88A-CRWB050N**
Absolute Encoder Battery Cable	30 cm	**R88A-CRWC0R3C (See note 1.)**
Backup Battery		**R88A-BAT01W**

Note: 1. One R88A-BAT01W Battery is included.
2. All of the cables can be used for both incremental and absolute encoders.
3. If the cable must be bent, use a Robot Cable for the Encoder Cable. (Refer to the tables on the following pages.)

● External Regeneration Resistor

Specifications	Model
Regeneration capacity: 220 W, 47 Ω	**R88A-RR22047S**

● AC Reactors

Specifications	Model
For R88D-WNA5L-ML2/01L-ML2/02H-ML2	**R88A-PX5053**
For R88D-WN02L-ML2/04H-ML2	**R88A-PX5054**
For R88D-WN04L-ML2/08H-ML2	**R88A-PX5056**
For R88D-WNA5H-ML2/01H-ML2	**R88A-PX5052**
For R88D-WN05H-ML2/10H-ML2	**R88A-PX5061**
For R88D-WN15H-ML2/20H-ML2	**R88A-PX5060**
For R88D-WN30H-ML2	**R88A-PX5059**

● Front-panel Brackets

Specifications	Model
For R88D-WNA5L-ML2 to 04L-ML2	**R88A-TK05W**
For R88D-WNA5H-ML2 to 10H-ML2	
For R88D-WN15H-ML2	**R88A-TK06W**
For R88D-WN20H-ML2/30H-ML2	**R88A-TK07W**

Note: Required when mounting a Servo Drive from the front panel.

● Peripheral Cables and Connectors

Specifications	Model
Analog Monitor Cable (1 m)	**R88A-CMW001S**
Computer Monitor Cable (IBM PC/AT or compatible, 2 m)	**R88A-CCW002P2**
Control I/O Connector (CN1)	**R88A-CNW01C**
Encoder Connector for Driver End	**R88A-CNW01R**
Encoder Connector for Motor End	**R88A-CNW02R**
Connector Terminal Block Cables (1 m)	**XW2Z-100J-B16**
Connector Terminal Block Cables (2 m)	**XW2Z-200J-B16**

● MECHATROLINK-related Devices and Cables (Manufactured by Yaskawa Corporation)

Name		OMRON model number	Yaskawa model number
MECHATROLINK-II Cables (with ring core and USB connector on both ends)	0.5 m	**FNY-W6003-A5**	**JEPMC-W6003-A5**
	1.0 m	**FNY-W6003-01**	**JEPMC-W6003-01**
	3.0 m	**FNY-W6003-03**	**JEPMC-W6003-03**
	5.0 m	**FNY-W6003-05**	**JEPMC-W6003-05**
	10.0 m	**FNY-W6003-10**	**JEPMC-W6003-10**
	20.0 m	**FNY-W6003-20**	**JEPMC-W6003-20**
	30.0 m	**FNY-W6003-30**	**JEPMC-W6003-30**
MECHATROLINK-II Terminating Resistor	Terminating resistance	**FNY-W6022**	**JEPMC-W6022**
MECHATROLINK-II Repeater	Communications Repeater	**FNY-REP2000**	**JEPMC-REP2000**

Note: MECHATROLINK-related Devices and Cables are manufactured by Yaskawa Corporation, but they can be ordered directly from OMRON using the OMRON model numbers. (Yaskawa-brand products will be delivered even when they are ordered from OMRON.)

● Robot Cables

Power Cables

Specifications			Model
For Motors without brakes	For 3000-r/min Cylinder-type Motors: 30 W to 750 W For Flat-type Motors: 100 W to 750 W	3 m	**R88A-CAWA003SR**
		5 m	**R88A-CAWA005SR**
		10 m	**R88A-CAWA010SR**
		15 m	**R88A-CAWA015SR**
		20 m	**R88A-CAWA020SR**
		30 m	**R88A-CAWA030SR**
		40 m	**R88A-CAWA040SR**
		50 m	**R88A-CAWA050SR**
	For Flat-type Motors: 1.5 kW	3 m	**R88A-CAWB003SR**
		5 m	**R88A-CAWB005SR**
		10 m	**R88A-CAWB010SR**
		15 m	**R88A-CAWB015SR**
		20 m	**R88A-CAWB020SR**
		30 m	**R88A-CAWB030SR**
		40 m	**R88A-CAWB040SR**
		50 m	**R88A-CAWB050SR**
	For 1000-r/min Cylinder-type Motors: 300 W to 900 W For 1500-r/min Cylinder-type Motors: 450 W to 1.3 kW For 3000-r/min Cylinder-type Motors: 1 kW to 2 kW	3 m	**R88A-CAWC003SR**
		5 m	**R88A-CAWC005SR**
		10 m	**R88A-CAWC010SR**
		15 m	**R88A-CAWC015SR**
		20 m	**R88A-CAWC020SR**
		30 m	**R88A-CAWC030SR**
		40 m	**R88A-CAWC040SR**
		50 m	**R88A-CAWC050SR**
	For 1000-r/min Cylinder-type Motors: 1.2 kW to 2 kW For 1500-r/min Cylinder-type Motors: 1.8 kW For 3000-r/min Cylinder-type Motors: 3 kW	3 m	**R88A-CAWD003SR**
		5 m	**R88A-CAWD005SR**
		10 m	**R88A-CAWD010SR**
		15 m	**R88A-CAWD015SR**
		20 m	**R88A-CAWD020SR**
		30 m	**R88A-CAWD030SR**
		40 m	**R88A-CAWD040SR**
		50 m	**R88A-CAWD050SR**
For Motors with brakes	For 3000-r/min Cylinder-type Motors: 30 W to 750 W For Flat-type Motors: 100 W to 750 W	3 m	**R88A-CAWA003BR**
		5 m	**R88A-CAWA005BR**
		10 m	**R88A-CAWA010BR**
		15 m	**R88A-CAWA015BR**
		20 m	**R88A-CAWA020BR**
		30 m	**R88A-CAWA030BR**
		40 m	**R88A-CAWA040BR**
		50 m	**R88A-CAWA050BR**
	For Flat-type Motors: 1.5 kW	3 m	**R88A-CAWB003BR**
		5 m	**R88A-CAWB005BR**
		10 m	**R88A-CAWB010BR**
		15 m	**R88A-CAWB015BR**
		20 m	**R88A-CAWB020BR**
		30 m	**R88A-CAWB030BR**
		40 m	**R88A-CAWB040BR**
		50 m	**R88A-CAWB050BR**

Specifications			Model
For Motors with brakes	For 1000-r/min Cylinder-type Motors: 300 W to 900 W For 1500-r/min Cylinder-type Motors: 450 W to 1.3 kW For 3000-r/min Cylinder-type Motors: 1 kW to 2 kW	3 m	**R88A-CAWC003BR**
		5 m	**R88A-CAWC005BR**
		10 m	**R88A-CAWC010BR**
		15 m	**R88A-CAWC015BR**
		20 m	**R88A-CAWC020BR**
		30 m	**R88A-CAWC030BR**
		40 m	**R88A-CAWC040BR**
		50 m	**R88A-CAWC050BR**
	For 1000-r/min Cylinder-type Motors: 1.2 kW to 2 kW For 1500-r/min Cylinder-type Motors: 1.8 kW For 3000-r/min Cylinder-type Motors: 3 kW	3 m	**R88A-CAWD003BR**
		5 m	**R88A-CAWD005BR**
		10 m	**R88A-CAWD010BR**
		15 m	**R88A-CAWD015BR**
		20 m	**R88A-CAWD020BR**
		30 m	**R88A-CAWD030BR**
		40 m	**R88A-CAWD040BR**
		50 m	**R88A-CAWD050BR**

Encoder Cables

Specifications		Model
For 3000-r/min Cylinder-type Motors: 30 W to 750 W For Flat-type Motors: 100 W to 1.5 kW	3 m	**R88A-CRWA003CR**
	5 m	**R88A-CRWA005CR**
	10 m	**R88A-CRWA010CR**
	15 m	**R88A-CRWA015CR**
	20 m	**R88A-CRWA020CR**
	30 m	**R88A-CRWA030CR**
	40 m	**R88A-CRWA040CR**
	50 m	**R88A-CRWA050CR**
For 3000-r/min Cylinder-type Motors: 1 kW to 3 kW For 1500-r/min Cylinder-type Motors: 450 W to 1.8 kW For 1000-r/min Cylinder-type Motors: 300 W to 2 kW	3 m	**R88A-CRWB003NR**
	5 m	**R88A-CRWB005NR**
	10 m	**R88A-CRWB010NR**
	15 m	**R88A-CRWB015NR**
	20 m	**R88A-CRWB020NR**
	30 m	**R88A-CRWB030NR**
	40 m	**R88A-CRWB040NR**
	50 m	**R88A-CRWB050NR**

Servomotors and Decelerators Combinations

Interpreting the Servomotor Combination Tables

First check the *Servomotor and Decelerator Combinations* table to see whether or not the planned combination is possible. Then check the tables for Servomotor categories **1** to **5** to see whether or not specific configurations are possible.

- The model configurations are shown based on the Servomotor capacity and the optional Decelerator ratio specifications.

R88M-W□□-□□
1 2

- The following symbols are used in the tables.

□ **Blank: Without brake**
B: With brake

Δ **Blank: Straight shaft**
J: With key

❊ **H: 200 VAC, with incremental encoder**
T: 200 VAC, with absolute encoder

● Servomotor and Decelerator Combinations

Motor	Capacity range	Servomotors with Decelerators		Decelerator (See note 1.)
		Standard, Backlash: 3 min max.	Economy, Backlash: Approx. 45 min	Standard, Backlash: 3 min max.
3000-r/min Cylinder-type Servomotors	50 W to 750 W	❍	❍	❍
	1 kW to 3 kW	❍		
1500-r/min Cylinder-type Servomotors	450 W to 1.8 kW	❍		
1000-r/min Cylinder-type Servomotors	300 W to 2 kW	❍		
Flat-type Servomotors	100 W to 750 W	❍	❍	❍
	1.5 kW	❍		

Note: 1. The task of combining the Decelerator and Servomotor is performed by the user.
2. A circle indicates that the combination is possible. A blank indicates that it is not possible.

1 3000-r/min Cylinder-type Servomotors (50 W to 750 W)

Motor capacity	Model	Decelerator (Gear ratio)				
		1/5	1/9	1/11	1/21	1/33
		-□G05 B□	-□G09 B□	-□G11 B□	-□G21 B□	-□G33 B□
50 W	R88M-W05030❊-□	❍	❍		❍	❍
100 W	R88M-W10030❊-□	❍		❍	❍	❍
200 W	R88M-W20030❊-□	❍		❍	❍	❍
400 W	R88M-W40030❊-□	❍		❍	❍	❍
750 W	R88M-W75030❊-□	❍		❍	❍	❍

Note: A circle indicates that the combination is possible. A blank indicates that it is not possible.

● Economy Decelerators (Backlash: Approx. 45 min)

Motor capacity	Model	Decelerator (Gear ratio)			
		1/5	1/9	1/15	1/25
		-□G05CJ	-□G09CJ	-□G15CJ	-□G25CJ
50 W	R88M-W05030❊-□				
100 W	R88M-W10030❊-□	❍	❍	❍	❍
200 W	R88M-W20030❊-□	❍	❍	❍	❍
400 W	R88M-W40030❊-□	❍	❍	❍	❍
750 W	R88M-W75030❊-□	❍	❍	❍	❍

Note: 1. A circle indicates that the combination is possible. A blank indicates that it is not possible.
2. The Decelerator shaft has a key.

2 3000-r/min Cylinder-type Servomotors (1 kW to 3 kW)

Motor capacity	Model	Decelerator (Gear ratio)				
		1/5	1/9	1/20	1/29	1/45
		-□G05 BJ	-□G09 BJ	-□G20 BJ	-□G29 BJ	-□G45 BJ
1kW	R88M-W1K030❊-□	❍	❍	❍	❍	❍
1.5 kW	R88M-W1K530❊-□	❍	❍	❍	❍	❍
2 kW	R88M-W2K030❊-□	❍	❍	❍	❍	❍
3 kW	R88M-W3K030❊-□	❍	❍	❍	❍	❍

Note: 1. A circle indicates that the combination is possible. A blank indicates that it is not possible.
2. The Decelerator shaft has a key.

3 3000-r/min Flat-type Servomotors (100 W to 1.5 kW)

● **Standard Decelerators (Backlash: 3 Arcminutes Max.)**

Motor capacity	Model	Decelerator (Gear ratio)			
		1/5	1/11	1/21	1/33
		-□G05B△	-□G11B△	-□G21B△	-□G33B△
100 W	R88M-WP10030❊-□	❍	❍	❍	❍
200 W	R88M-WP20030❊-□	❍	❍	❍	❍
400 W	R88M-WP40030❊-□	❍	❍	❍	❍
750 W	R88M-WP75030❊-□	❍	❍	❍	❍
1.5 kW	R88M-WP1K530❊-□	❍	❍	❍	❍

Note: A circle indicates that the combination is possible.

● **Economy Decelerators (Backlash: Approx. 45 min)**

Motor capacity	Model	Decelerator (Gear ratio)			
		1/5	1/9	1/15	1/25
		-□G05CJ	-□G09CJ	-□G15CJ	-□G25CJ
100 W	R88M-WP10030❊-□	❍	❍	❍	❍
200 W	R88M-WP20030❊-□	❍	❍	❍	❍
400 W	R88M-WP40030❊-□	❍	❍	❍	❍
750 W	R88M-WP75030❊-□	❍	❍	❍	❍
1.5 kW	R88M-WP1K530❊-□				

Note: 1. A circle indicates that the combination is possible. A blank indicates that it is not possible.
2. The Decelerator shaft has a key.

4 1500-r/min Cylinder-type Servomotors (450 W to 1.8 kW)

Motor capacity	Model	Decelerator (Gear ratio)				
		1/5	1/9	1/20	1/29	1/45
		-□G05 BJ	-□G09 BJ	-□G20 BJ	-□G29 BJ	-□G45 BJ
450 W	R88M-W45015❊-□	❍	❍	❍	❍	❍
850 W	R88M-W85015❊-□	❍	❍	❍	❍	❍
1.3 kW	R88M-W1K315❊-□	❍	❍	❍	❍	❍
1.8 kW	R88M-W1K815❊-□	❍	❍	❍	❍	

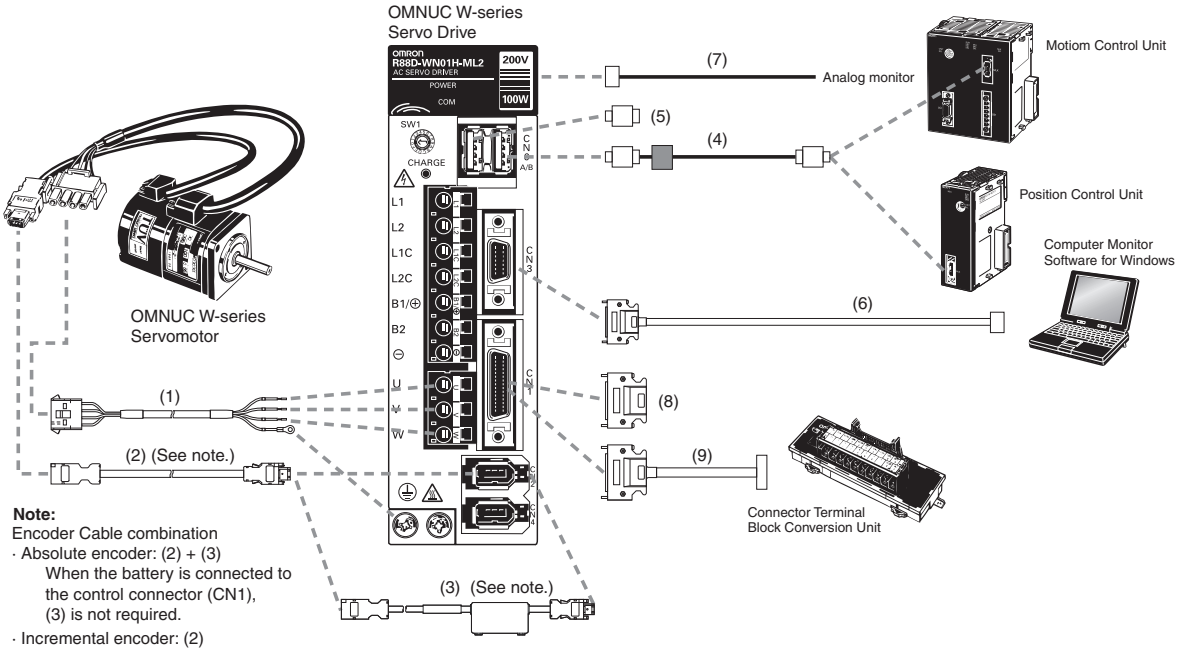
Note: 1. A circle indicates that the combination is possible. A blank indicates that it is not possible.
2. The Decelerator shaft has a key.
3. Only absolute encoders can be used with these Servomotors. (They can be used as incremental encoders.)

5 1000-r/min Cylinder-type Servomotors (300 W to 2 kW)

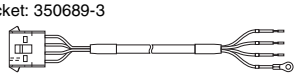
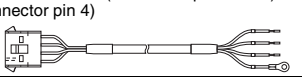
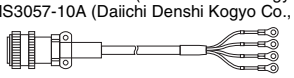
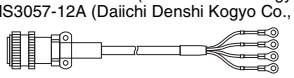
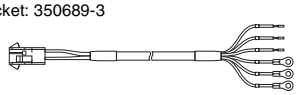
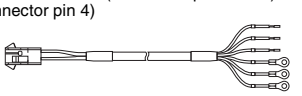
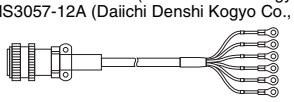
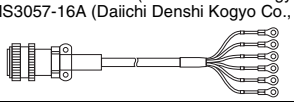
Motor capacity	Model	Decelerator (Gear ratio)				
		1/5	1/9	1/20	1/29	1/45
		-□G05 BJ	-□G09 BJ	-□G20 BJ	-□G29 BJ	-□G45 BJ
300 W	R88M-W30010❊-□	❍	❍	❍	❍	❍
600 W	R88M-W60010❊-□	❍	❍	❍	❍	❍
900 W	R88M-W90010❊-□	❍	❍	❍	❍	❍
1.2 kW	R88M-W1K210❊-□	❍	❍	❍	❍	❍
2 kW	R88M-W2K010❊-□	❍	❍	❍		

Note: 1. A circle indicates that the combination is possible. A blank indicates that it is not possible.
2. The Decelerator shaft has a key.

Cable Combinations

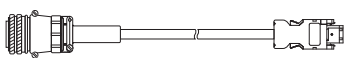
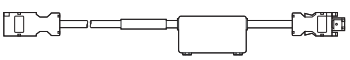


● Power Cables

Symbol	Name	Servomotor type	Model number	Description
(1)	Without brake	For 3,000-r/min Cylinder-type Servomotors: 50 W to 750 W For 3,000-r/min Flat-type Servomotors: 100 W to 750 W	R88A-CAWA□□□S The □□□ digits in the model number indicate the cable length. 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Servomotor connector (Tyco Electronics AMP KK) Connector cap: 350780-1 Connector socket: 350689-3 
		For 3,000-r/min Flat-type Servomotors: 1.5 kW	R88A-CAWB□□□S The □□□ digits in the model number indicate the cable length. 3 m, 5m, 10 m, 5 m, 20 m, 30 m, 40 m, 50 m	Servomotor connector (Tyco Electronics AMP KK) Connector cap: 350780-1 Connector socket: 350551-6 (Connector pins 1 to 3) 350551-3 (Connector pin 4) 
		For 3,000-r/min Cylinder-type Servomotors: 1 kW to 2 kW For 1,500-r/min Cylinder-type Servomotors: 450 W to 1.3 kW For 1,000-r/min Cylinder-type Servomotors: 300 W to 900 W	R88A-CAWC□□□S The □□□ digits in the model number indicate the cable length. 3 m, 5m, 10 m, 15 m, 20 m, 30 m, 40 m, 50m	Connector cap: MS3106B18-10S (Daiichi Denshi Kogyo Co., Ltd) Cable clamp: MS3057-10A (Daiichi Denshi Kogyo Co., Ltd) 
		For 3,000-r/min Cylinder-type Servomotors: 3 kW For 1,500-r/min Cylinder-type Servomotors: 1.8 kW For 1,000-r/min Cylinder-type Servomotors: 1.2 kW to 2 kW	R88A-CAWD□□□S The □□□ digits in the model number indicate the cable length. 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Connector cap: MS3106B22-22S (Daiichi Denshi Kogyo Co., Ltd) Cable clamp: MS3057-12A (Daiichi Denshi Kogyo Co., Ltd) 
	With brake	For 3,000-r/min Cylinder-type Servomotors: 50 W to 750 W For 3,000-r/min Flat-type Servomotors: 100 W to 750 W	R88A-CAWA□□□B The □□□ digits in the model number indicate the cable length. 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Servomotor connector (Tyco Electronics AMP KK) Connector cap: 350781-1 Connector socket: 350689-3 
		For 3,000-r/min Flat-type Servomotors: 1.5 kW	R88A-CAWB□□□B The □□□ digits in the model number indicate the cable length. 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Servomotor connector (Tyco Electronics AMP KK) Connector cap: 350781-1 Connector socket: 350551-6 (Connector pins 1 to 3) 350551-3 (Connector pin 4) 
		For 3,000-r/min Cylinder-type Servomotors: 1 kW to 2 kW For 1,500-r/min Cylinder-type Servomotors: 450 W to 1.3 kW For 1,000-r/min Cylinder-type Servomotors: 300 W to 900 W	R88A-CAWC□□□B The □□□ digits in the model number indicate the cable length. 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Connector cap: MS3106B20-15S (Daiichi Denshi Kogyo Co., Ltd) Cable clamp: MS3057-12A (Daiichi Denshi Kogyo Co., Ltd) 
		For 3,000-r/min Cylinder-type Servomotors: 3 kW For 1,500-r/min Cylinder-type Servomotors: 1.8 kW For 1,000-r/min Cylinder-type Servomotors: 1.2 kW to 2 kW	R88A-CAWD□□□B The □□□ digits in the model number indicate the cable length. 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Connector cap: MS3106B24-10S (Daiichi Denshi Kogyo Co., Ltd) Cable clamp: MS3057-16A (Daiichi Denshi Kogyo Co., Ltd) 

Note: Please refer to page 9 for details.

● Encoder Cables (CN2)

Symbol	Name	Servomotor type	Model number	Description
(2)	Encoder Cable	For 3,000-r/min Cylinder-style Servomotors: 50 W to 750 W For 3,000-r/min Flat-style Servomotors: 100 W to 1.5 kW	R88A-CRWA□□□C The □□□ digits in the model number indicate the cable length. 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Servomotor connector (Molex Japan Co., Ltd.) Connector socket: 54280-0600 Servo Drive connector (Molex Japan Co., Ltd.) Connector plug: 55101-0600 Crimp terminal: 50639-8091 
		For 3,000-r/min Cylinder-style Servomotors: 1 kW to 3 kW For 1,500-r/min Cylinder-style Servomotors: 450 W to 1.8 kW For 1,000-r/min Cylinder-style Servomotors: 300 W to 2 kW	R88A-CRWB□□□N The □□□ digits in the model number indicate the cable length. 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Servomotor connector (Daiichi Denshi Kangyo Co., Ltd) Connector socket: MS3106B20-29S Cable clamp: MS3057-12A Servo Drive connector (Molex Japan Co., Ltd.) Connector plug: 55101-0006 Crimp terminal: 50639-8091 
(3)	Absolute Encoder Battery Cable	Servomotors with absolute encoders	R88A-CRWC0R3C	Servomotor connector (Molex Japan Co., Ltd.) Connector socket: 54280-0600 Servo Drive connector (Molex Japan Co., Ltd.) Connector plug: 55101-0600 Crimp terminal: 50639-8091 
	Backup Battery	---	R88A-BAT01W	One Battery (R88A-BAT01W) is included.

Note: Please refer to page 9 for details.

● MECHATROLINK-II Cables (CN6)

Symbol	Name	Remarks	OMRON model number (See note.)	Yaskawa model number
(4)	MECHATROLINK-II Cables (Yaskawa Electric Corporation)	0.5 m	FNY-W6003-A5	JEPMC-W6003-A5
		1.0 m	FNY-W6003-01	JEPMC-W6003-01
		3.0 m	FNY-W6003-03	JEPMC-W6003-03
		5.0 m	FNY-W6003-05	JEPMC-W6003-05
		10 m	FNY-W6003-10	JEPMC-W6003-10
		20 m	FNY-W6003-20	JEPMC-W6003-20
		30 m	FNY-W6003-30	JEPMC-W6003-30
(5)	MECHATROLINK-II Terminating Resistor (Yaskawa Electric Corporation)	---	FNY-W6022	JEPMC-W6022

Note: When ordering Yaskawa products through OMRON, please use the OMRON model numbers. Only the Yaskawa model number is shown on the product, and not the OMRON model number.

● Options for CN3

Symbol	Name	Connected item	Model
(6)	2-m Cable for connecting Monitor Software	For IBM PC/AT or compatible	R88A-CCW002P2

● Other Options

Symbol	Name	Description	Model
---	Backup battery	1000 mAh 3.6 V	R88A-BAT01W
(7)	Analog Monitor Cable	1 m	R88A-CMW001S
(8)	Control I/O Connector (CN1)	Servo Drive side	R88A-CNW01C
---	Encoder Connector (CN2)	Servo Drive side	R88A-CNW01R
		Servomotor side	R88A-CNW02R
(9)	Connector Terminal Block Cable	1 m	XW2Z-100J-B16
		2 m	XW2Z-200J-B16
	Connector Terminal Block Conversion Unit	M3-screw Terminal Block	XW2B-20G4
		M3.5-screw Terminal Block	XW2B-20G5
		M3-screw Terminal Block	XW2D-20G6

AC Servo Drive Specifications (R88D-WN□-ML2)

● Performance Specifications

Item		Type	200-V AC Input Type (Single-phase Input)				
		Model (R88D-)	WNA5H-ML2	WN01H-ML2	WN02H-ML2	WN04H-ML2	WN08H-ML2
Continuous output current (rms)			0.66 A	0.91 A	2.1 A	2.8 A	5.5 A
Momentary maximum output current (rms)			2.1 A	2.8 A	6.5 A	8.5 A	16.9 A
Input power supply		Main circuits	Single-phase 100/115 V AC (85 to 127 V) 50/60 Hz				
		Control circuits	Single-phase 200/230 V AC (170 to 253 V) 50/60 Hz				
Heating value		Main circuits	4.6 W	6.7 W	13.3 W	20 W	47 W
		Control circuits	13 W	13 W	13 W	13 W	15 W
Control method			All-digital Servo				
Inverter method			PWM method based on IGBT				
PWM frequency			10.667 kHz				
Weight			Approx. 0.7 kg	Approx. 0.7 kg	Approx. 0. 7kg	Approx. 0.9 kg	Approx. 1.4 kg
Maximum applicable Servomotor wattage			50 W	100 W	200 W	400 W	750 W
Applicable Servomotor (R88M-)	3,000-r/min	INC	W05030H	W10030H	W20030H	W40030H	W75030H
		ABS	W05030T	W10030T	W20030T	W40030T	W75030T
	3,000-r/min Flat-style	INC	---	WP10030H	WP20030H	WP40030H	WP75030H
		ABS	---	WP10030T	WP20030T	WP40030T	WP75030T
	1,000-r/min	INC	---	---	---	---	---
		ABS	---	---	---	---	---
	1,500-r/min	ABS	---	---	---	---	---
Performance	Speed control range		1:5000				
	Load fluctuation rate		0.01% max. at 0% to 100% (at rated rotation speed)				
	Voltage fluctuation rate		0% at rated voltage ±10% (at rated rotation speed)				
	Temperature fluctuation rate		±0.1% max. at 0 to 50°C (at rated rotation speed)				
	Frequency characteristics		600 Hz (See note.)				
	Torque control repeatability		±1%				

Note: At a load inertia equivalent to the Servomotor's rotor inertia.

● General Specifications

Item			Specifications
Ambient operating temperature			0 to 55°C
Ambient operating humidity			90% (with no condensation)
Ambient storage temperature			–20 to 85°C
Ambient storage humidity			90% (with no condensation)
Storage and operating atmosphere			No corrosive gases
Vibration resistance			10 to 55 Hz in X, Y, and Z directions with 0.1-mm double amplitude; acceleration: 4.9 m/s² max.
Shock resistance			Acceleration 19.6 m/s² max., in X, Y, and Z directions, three times
Insulation resistance			Between power supply/power line terminals and frame ground: 0.5 MΩ min. (at 500 V DC)
Dielectric strength			Between power supply/power line terminals and frame ground: 1,500 V AC for 1 min at 50/60 Hz Between each control signal and frame ground: 500 V AC for 1 min
Degree of protection			Built into panel (IP10).
International standards	EC directives	EMC directive	EN55011 class A group 1
			EN61000-6-2
		Low-voltage directive	EN50178
	UL standards		UL508C
	cUL standards		cUL C22.2 No.14

200-V AC Input Type (Three-phase Input)					100 V AC			
WN05H-ML2	**WN10H-ML2**	**WN15H-ML2**	**WN20H-ML2**	**WN30H-ML2**	**WNA5L-ML2**	**WN01L-ML2**	**WN02L-ML2**	**WN04L-ML2**
3.8 A	7.6 A	11.6 A	18.5 A	18.9 A	0.66 A	0.91 A	2.1 A	2.8 A
11.0 A	17.0 A	28.0 A	42. 0A	56.0 A	2.1 A	2.8 A	6.5 A	8.5 A
Three-phase 200/230 V AC (170 to 253 V) 50/60 Hz					Single-phase 100/115 V AC (85 to 127 V) 50/60 Hz			
Single-phase 200/230 V AC (170 to 253 V) 50/60 Hz					Single-phase 100/115 V AC (85 to 127 V) 50/60 Hz			
27 W	55 W	92 W	120 W	155 W	5.2 W	12 W	16.4 W	24 W
15 W	15 W	15 W	15 W	15 W	13 W	13 W	13 W	13 W
All-digital Servo					All-digital Servo			
PWM method based on IGBT					PWM method based on IGBT			
10.667 kHz	8.000 kHz	4.000 kHz			10.667 kHz			
Approx. 1.4 kg	Approx. 1.4 kg	Approx. 2.1 kg	Approx. 2.8 kg	Approx. 2.8 kg	Approx. 0.7 kg	Approx. 0.7 kg	Approx. 0.7 kg	Approx. 1.4 kg
500 W	1 kW	1.5 kW	2 kW	3 kW	50 W	100 W	200 W	400 W
---	W1K030H	W1K530H	W2K030H	W3K030H	W05030H	W10030H	W20030H	W40030H
---	W1K030T	W1K530T	W2K030T	W3K030T	W05030T	W10030T	W20030T	W40030T
---	---	WP1K530H	---	---	---	WP10030H	WP20030H	WP40030H
---	---	WP1K530T	---	---	---	WP10030T	WP20030T	WP40030T
W30010H	W60010H W90010H	W1K210H	W2K010H	---	---	---	---	---
W30010T	W60010T W90010T	W1K210T	W2K010T	---	---	---	---	---
W45015T	W85015T	W1K315T	W1K815T	---	---	---	---	---
1:5000					1:5000			
0.01% max. at 0% to 100% (at rated rotation speed)					0.01% max. at 0% to 100% (at rated rotation speed)			
0% at rated voltage ±10% (at rated rotation speed)					0% at rated voltage ±10% (at rated rotation speed)			
±0.1% max. at 0 to 50°C (at rated rotation speed)					±0.1% max. at 0 to 50°C (at rated rotation speed)			
600 Hz (See note.)		400 Hz (See note.)			600 Hz (See note.)			
±1%					±1%			

Note: At a load inertia equivalent to the Servomotor's rotor inertia.

AC Servomotor Specifications (R88M-W)

● Performance Specifications

3,000-r/min Cylinder-type Servomotors

Power supply Specification			200 V AC (See note.)								
Model (R88M-)			W05030H	W10030H	W20030H	W40030H	W75030H	W1K030H	W1K530H	W2K030H	W3K030H
Item		Unit	W05030T	W10030T	W20030T	W40030T	W75030T	W1K030T	W1K530T	W2K030T	W3K030T
Applicable Servo Drive (R88D-)		100 V AC	WNA5L-ML2	WN01L-ML2	WN02L-ML2	WN04L-ML2	---	---	---	---	---
		200 V AC	WNA5H-ML2	WN01H-ML2	WN02H-ML2	WN04H-ML2	WN08H-ML2	WN10H-ML2	WN15H-ML2	WN20H-ML2	WN30H-ML2
Rated output		W	50	100	200	400	750	1000	1500	2000	3000
Rated torque		N·m	0.159	0.318	0.637	1.27	2.39	3.18	4.9	6.36	9.8
Rated rotation speed		r/min	3000								
Momentary maximum rotation speed		r/min	5000								
Momentary maximum torque		N·m	0.477	0.955	1.91	3.82	7.16	9.54	14.7	19.1	29.4
Rated current		A (irms)	0.64	0.91	2.1	2.8	4.4	5.7	9.7	12.7	18.8
Momentary maximum current		A (irms)	2.0	2.8	6.5	8.5	13.4	17	28	42	56
Rotor inertia		kg·m² (GD²/4)	2.20×10^{-6}	3.64×10^{-6}	1.06×10^{-5}	1.73×10^{-5}	6.72×10^{-5}	1.74×10^{-4}	2.47×10^{-4}	3.19×10^{-4}	7.00×10^{-4}
Torque constant		N·m/A	0.268	0.378	0.327	0.498	0.590	0.64	0.56	0.54	0.57
Power rate		kW/s	11.5	27.8	38.2	93.7	84.8	57.9	97.2	127	137
Mechanical time constant		ms	0.88	0.53	0.39	0.25	0.26	0.87	0.74	0.62	0.74
Electrical time constant		ms	1.1	1.2	4.6	5.4	8.7	7.1	7.7	8.3	13.0
Allowable radial load		N	68	78	245	245	392	686	686	686	980
Allowable thrust load		N	54	54	74	74	147	196	196	196	392
Weight	Without brake	kg	Approx. 0.4	Approx. 0.5	Approx. 1.1	Approx. 1.7	Approx. 3.4	Approx. 4.6	Approx. 5.8	Approx. 7.0	Approx. 11.0
	With brake	kg	Approx. 0.7	Approx. 0.8	Approx. 1.6	Approx. 2.2	Approx. 4.3	Approx. 6.0	Approx. 7.5	Approx. 8.5	Approx. 14.0
Radiation shield dimensions (material)			t6 × □250 (Al)					t12 × □300 (Al)			t20 × □400 (Al)
Applicable load inertia			30×			20×		5×			
Brake specifications	Brake inertia	kg·m² (GD²/4)	8.5×10^{-7}	8.5×10^{-7}	5.8×10^{-6}	5.8×10^{-6}	1.4×10^{-5}	2.5×10^{-5}	2.5×10^{-5}	2.5×10^{-5}	2.1×10^{-4}
	Excitation voltage	V	24 VDC±10%								
	Power consumption (at 20°C)	W	6	6	6.5	6.5	7.7	12	12	12	9.85
	Current consumption (at 20°C)	A	0.25	0.25	0.27	0.27	0.32	0.5	0.5	0.5	0.41
	Static friction torque	N·m	0.2 min.	0.34 min.	1.5 min.	1.5 min.	2.45 min.	7.8 min.	7.8 min.	7.8 min.	20 min.
	Attraction time	ms	30 max.	30 max.	100 max.	100 max.	80 max.	180 max.	180 max.	180 max.	180 max.
	Release time	ms	60 max.	60 max.	40 max.	40 max.	20 max.	100 max.	100 max.	100 ax.	100 max.
	Backlash		1° (reference value)								
	Rating	---	Continuous								
	Insulation grade	---	Type F								

Note: When using a W-series Servomotor with built-in MECHATROLINK-II communications, use a 200-VAC Servomotor regardless of whether the Servo Drive is 200 VAC or 100 VAC.

● General Specifications

3,000-r/min Cylinder-type Servomotors

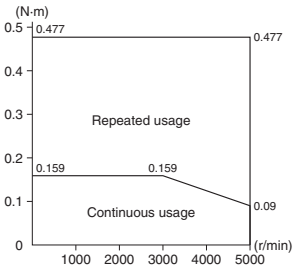
Item \ Type			3,000-r/min Servomotors	
			50 to 750 W	1 to 3 kW
Ambient operating temperature			0 to 40°C	
Ambient operating humidity			20% to 80% (with no condensation)	
Ambient storage temperature			−20 to 60°C	
Ambient storage humidity			20% to 80% (with no condensation)	
Storage and operating atmosphere			No corrosive gasses.	
Vibration resistance			10 to 2,500 Hz in X, Y, and Z directions with acceleration 49 m/s² max.	10 to 2,500 Hz in X, Y, and Z directions with acceleration 24.5 m/s² max.
Shock resistance			Acceleration 490 m/s² max., in X, Y, and Z directions, two times	
Insulation resistance			Between power line terminals and FG: 10 MΩ min. (at 500 V DC)	
Dielectric strength			Between power line terminals and FG: 1,500 V AC for 1 min at 50/60 Hz	
Run position			All directions	
Insulation grade			Type B	Type F
Structure			Totally-enclosed self-cooling	
Degree of protection			IP-55 (Excluding through-shaft portion)	IP-67 (Excluding through-shaft portion)
Vibration grade			V-15	
Mounting method			Flange-mounting	
International standards	EC Directives	EMC Directive	EN55011 class A group 1	
			EN61000-6-2	
		Low-voltage Directive	IEC60034-8 IEC60034-8, EN60034-1, -5, -9	
	UL standards		UL1004	
	cUL standards		cUL C22.2 No.100	

Torque and Rotation Speed Characteristics

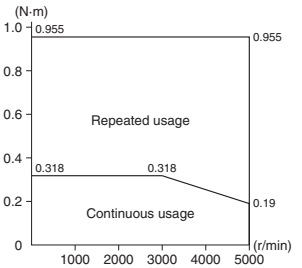
● 3,000-r/min Cylinder-type Servomotors (with a 200-VAC Servo Drive)

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

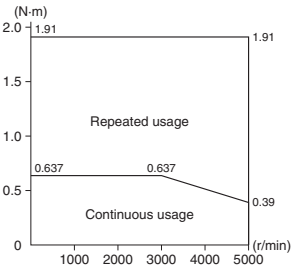
R88M-W05030H/T (50 W)



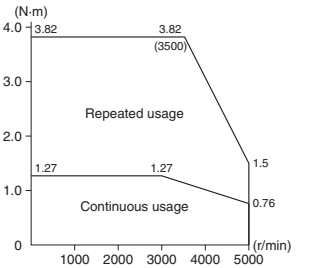
R88M-W10030H/T (100 W)



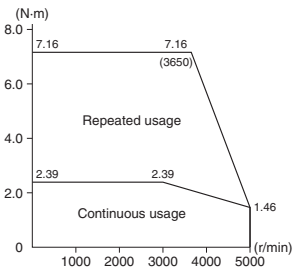
R88M-W20030H/T (200 W)



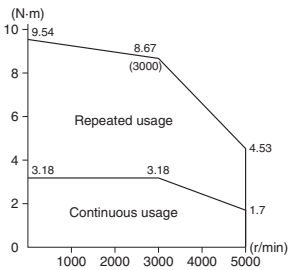
R88M-W40030H/T (400 W)



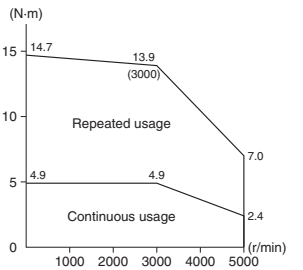
R88M-W75030H/T (750 W)



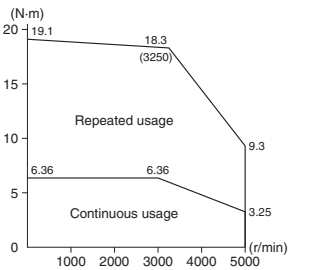
R88M-W1K030H/T (1 kW)



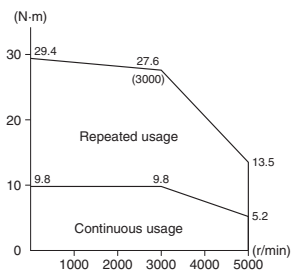
R88M-W1K530H/T (1.5 kW)



R88M-W2K030H/T (2 kW)



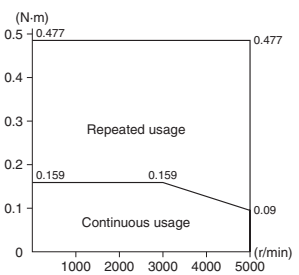
R88M-W3K030H/T (3 kW)



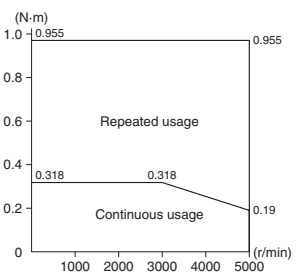
● 3,000-r/min Cylinder-type Servomotors (with a 100-VAC Servo Drive)

The following graphs show the characteristics with a 3-m standard cable and 100-V AC input.

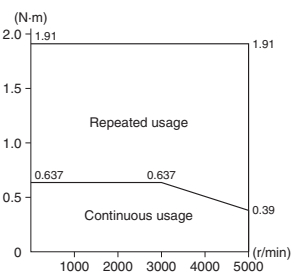
R88M-W05030H/T (50 W)



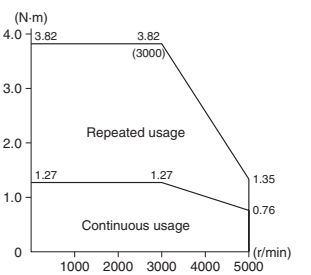
R88M-W10030H/T (100 W)



R88M-W20030H/T (200 W)



R88M-W40030H/T (400 W)



AC Servomotor Specifications (R88M-W)

● Performance Specifications

1,500-r/min Cylinder-type Servomotors

Power supply specification			200 V AC			
Item		Model (R88M-) / Unit	W45015T	W85015T	W1K315T	W1K815T
Applicable Servo Drive (R88D-)			WN05H-ML2	WN10H-ML2	WN15H-ML2	WN20H-ML2
Rated output		W	450	850	1300	1800
Rated torque		N·m	2.84	5.39	8.34	11.5
Rated rotation speed		r/min	1500			
Momentary maximum rotation speed		r/min	3000			
Momentary maximum torque		N·m	8.92	13.8	23.3	28.7
Rated current		A (rms)	3.8	7.1	10.7	16.7
Momentary maximum current		A (rms)	11	17	28	42
Rotor inertia		kg·m² (GD²/4)	7.24×10^{-4}	1.39×10^{-3}	2.05×10^{-3}	3.17×10^{-3}
Torque constant		N·m/A	0.82	0.83	0.84	0.73
Power rate		kW/s	11.2	20.9	33.8	41.5
Mechanical time constant		ms	5.0	3.1	2.8	2.2
Electrical time constant		ms	5.1	5.3	6.3	12.8
Allowable radial load		N	490	490	686	1176
Allowable thrust load		N	98	98	343	490
Weight	Without brake	kg	Approx. 5.5	Approx. 7.6	Approx. 9.6	Approx. 14
	With brake	kg	Approx. 7.5	Approx. 9.6	Approx. 12	Approx. 19
Radiation shield dimensions (material)			t20 × □400 (Fe)			t30 × □550 (Fe)
Applicable load inertia			5×			
Brake specifications	Brake inertia	kg·m² (GD²/4)	2.1×10^{-4}	2.1×10^{-4}	2.1×10^{-4}	8.5×10^{-4}
	Excitation voltage	V	24 VDC ±10%			
	Power consumption (at 20°C)	W	9.85	9.85	9.85	18.5
	Current consumption (at 20°C)	A	0.41	0.41	0.41	0.77
	Static friction torque	N·m	4.41 min.	12.7 min.	12.7 min.	43.1 min.
	Attraction time	ms	180 max.			
	Release time	ms	100 max.			
	Backlash		1° (reference value)			
	Rating	---	Continuous			
	Insulation grade	---	Type F			

● General Specifications

1,500-r/min Cylinder-type Servomotors

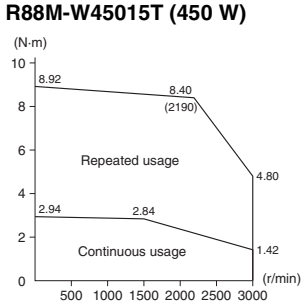
Item \ Type	1,500-r/min Servomotors
Ambient operating temperature	0 to 40°C
Ambient operating humidity	20% to 80% (with no condensation)
Ambient storage temperature	–20 to 60°C
Ambient storage humidity	20% to 80% (with no condensation)
Storage and operating atmosphere	No corrosive gases.
Vibration resistance	10 to 2,500 Hz in X, Y, and Z directions with acceleration 24.5 m/s² max.
Shock resistance	Acceleration 490 m/s² max., in X, Y, and Z directions, two times
Insulation resistance	Between power line terminals and FG: 10 MΩ min. (at 500 V DC)
Dielectric strength	Between power line terminals and FG: 1,500 V AC for 1 min at 50/60 Hz
Run position	All directions
Insulation grade	Type F
Structure	Totally-enclosed self-cooling
Degree of protection	IP-67 (Excluding through-shaft portion)
Vibration grade	V-15
Mounting method	Flange-mounting
International standards: EC Directives: EMC Directive	EN55011 class A group 1 / EN61000-6-2
International standards: EC Directives: Low-voltage Directive	IEC60034-8 IEC60034-8, EN60034-1, -5, -9
International standards: UL standards	UL1004
International standards: cUL standards	cUL C22.2 No.100

Torque and Rotation Speed Characteristics

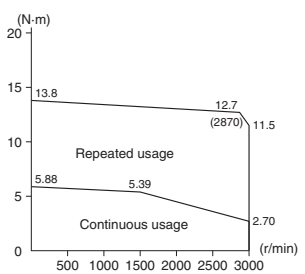
● 1,500-r/min Cylinder-type Servomotors (with a 200-VAC Servo Drive)

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

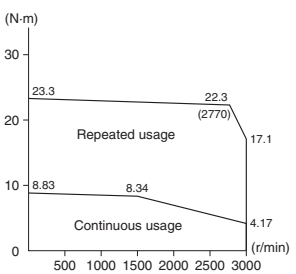
R88M-W45015T (450 W)



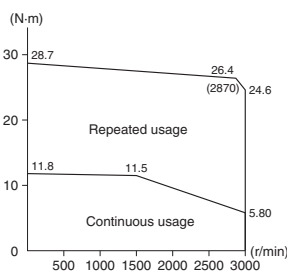
R88M-W85015T (850 W)



R88M-W1K315T (1.3 kW)



R88M-W1K815T (1.8 kW)



● Performance Specifications

1,000-r/min Cylinder-type Servomotors

Item	Unit	Power supply specification	200 V AC				
		Model (R88M-)	W30010H	W60010H	W90010H	W1K210H	W2K010H
			W30010T	W60010T	W90010T	W1K210T	W2K010T
Applicable Servo Drive (R88D-)			WN05H-ML2	WN10H-ML2	WN10H-ML2	WN15H-ML2	WN20H-ML2
Rated output	W		300	600	900	1200	2000
Rated torque	N·m		2.84	5.68	8.62	11.5	19.1
Rated rotation speed	r/min		1000				
Momentary maximum rotation speed	r/min		2000				
Momentary maximum torque	N·m		7.17	14.1	19.3	28.0	44.0
Rated current	A (rms)		3.0	5.7	7.6	11.6	18.5
Momentary maximum current	A (rms)		7.3	13.9	16.6	28	42
Rotor inertia	kg·m² (GD²/4)		7.24×10^{-4}	1.39×10^{-3}	2.05×10^{-3}	3.17×10^{-3}	4.60×10^{-3}
Torque constant	N·m/A		1.03	1.06	1.21	1.03	1.07
Power rate	kW/s		11.2	23.2	36.3	41.5	79.4
Mechanical time constant	ms		5.1	3.8	2.8	2.0	1.7
Electrical time constant	ms		5.1	4.7	5.7	13.5	13.9
Allowable radial load	N		490	490	686	1176	1470
Allowable thrust load	N		98	98	343	490	490
Weight	Without brake	kg	Approx. 5.5	Approx. 7.6	Approx. 9.6	Approx. 14	Approx. 18
	With brake	kg	Approx. 7.5	Approx. 9.6	Approx. 12	Approx. 19	Approx. 23.5
Radiation shield dimensions (material)			t20 × □400 (Fe)			t30 × □550 (Fe)	
Applicable load inertia			5×				
Brake specifications	Brake inertia	kg·m² (GD²/4)	2.1×10^{-4}	2.1×10^{-4}	2.1×10^{-4}	8.5×10^{-4}	8.5×10^{-4}
	Excitation voltage	V	24 VDC ±10%				
	Power consumption (at 20°C)	W	9.85	9.85	9.85	18.5	18.5
	Current consumption (at 20°C)	A	0.41	0.41	0.41	0.77	0.77
	Static friction torque	N·m	4.41 min.	12.7 min.	12.7 min.	43.1 min.	43.1 min.
	Attraction time	ms	180 max.				
	Release time	ms	100 max.				
	Backlash		1° (reference value)				
	Rating	---	Continuous				
	Insulation grade	---	Type F				

● General Specifications

1,000-r/min Cylinder-type Servomotors

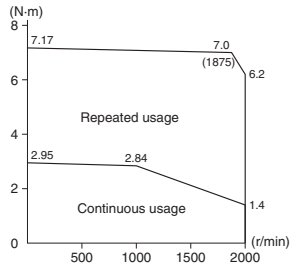
Item \ Type	1,000-r/min Servomotors
Ambient operating temperature	0 to 40°C
Ambient operating humidity	20% to 80% (with no condensation)
Ambient storage temperature	–20 to 60°C
Ambient storage humidity	20% to 80% (with no condensation)
Storage and operating atmosphere	No corrosive gases.
Vibration resistance	10 to 2,500 Hz in X, Y, and Z directions with acceleration 24.5 m/s² max.
Shock resistance	Acceleration 490 m/s² max., in X, Y, and Z directions, two times
Insulation resistance	Between power line terminals and FG: 10 MΩ min. (at 500 V DC)
Dielectric strength	Between power line terminals and FG: 1,500 V AC for 1 min at 50/60 Hz
Run position	All directions
Insulation grade	Type F
Structure	Totally-enclosed self-cooling
Degree of protection	IP-67 (Excluding through-shaft portion)
Vibration grade	V-15
Mounting method	Flange-mounting
International standards: EC Directives: EMC Directive	EN55011 class A group 1
International standards: EC Directives: EMC Directive	EN61000-6-2
International standards: EC Directives: Low-voltage Directive	IEC60034-8 IEC60034-8, EN60034-1, -5, -9
International standards: UL standards	UL1004
International standards: cUL standards	cUL C22.2 No.100

Torque and Rotation Speed Characteristics

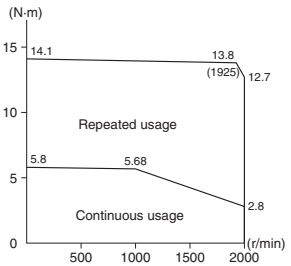
● 1,000-r/min Cylinder-type Servomotors (with a 200-VAC Servo Drive)

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

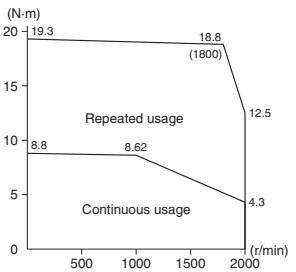
R88M-W30010H/T (300 W)



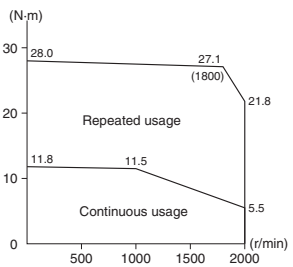
R88M-W60010H/T (600 W)



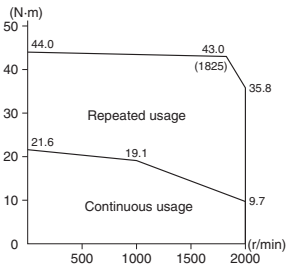
R88M-W90010H/T (900 W)



R88M-W1K210H/T (1.2 kW)



R88M-W2K010H/T (2 kW)



● Performance Specifications

Flat-type Servomotors

Item		Power supply Specification / Model (R88M-) / Unit	200 V AC (See note.)				
			WP10030H	WP20030H	WP40030H	WP75030H	WP1K530H
			WP10030T	WP20030T	WP40030T	WP75030T	WP1K530T
Applicable Servo Drive (R88D-)		100 V AC	WN01L-ML2	WN02L-ML2	WN04L-ML2	---	---
		200 V AC	WN01H-ML2	WN02H-ML2	WN04H-ML2	WN08H-ML2	WN15H-ML2
Rated output		W	100	200	400	750	1500
Rated torque		N·m	0.318	0.637	1.27	2.39	4.77
Rated rotation speed		r/min	3000				
Momentary maximum rotation speed		r/min	5000				
Momentary maximum torque		N·m	0.955	1.91	3.82	7.16	14.3
Rated current		A (rms)	0.89	2.0	2.6	4.1	7.5
Momentary maximum current		A (rms)	2.8	6.0	8.0	13.9	23.0
Rotor inertia		kg·m² (GD²/4)	4.91×10^{-6}	1.93×10^{-5}	3.31×10^{-5}	2.10×10^{-4}	4.02×10^{-4}
Torque constant		N·m/A	0.392	0.349	0.535	0.641	0.687
Power rate		kW/s	20.6	21.0	49.0	27.1	56.7
Mechanical time constant		ms	0.53	0.54	0.36	0.66	0.46
Electrical time constant		ms	3.7	7.4	8.6	18	22
Allowable radial load		N	78	245	245	392	490
Allowable thrust load		N	49	68	68	147	147
Weight	Without brake	kg	Approx. 0.7	Approx. 1.4	Approx. 2.1	Approx. 4.2	Approx. 6.6
	With brake	kg	Approx. 0.9	Approx. 1.9	Approx. 2.6	Approx. 5.7	Approx. 8.1
Radiation shield dimensions (material)			t6 × □250 (Al)			t12 × □300 (Al)	
Applicable load inertia			25×	15×	7×	5×	5×
Brake specifications	Brake inertia	kg·m² (GD²/4)	2.9×10^{-6}	1.09×10^{-5}	1.0×10^{-5}	8.75×10^{-5}	8.75×10^{-5}
	Excitation voltage	V	24 VDC±10%				
	Power consumption (at 20°C)	W	6	5	7.6	7.5	10
	Current consumption (at 20°C)	A	0.25	0.21	0.32	0.31	0.42
	Static friction torque	N·m	0.4 min.	0.9 min.	1.9 min.	3.5 min.	7.1 min.
	Attraction time	ms	20 max.	20 max.	60 max.	20 max.	20 max.
	Release time	ms	40 max.	40 max.	20 max.	40 max.	40 max.
	Backlash		1° (reference value)				
	Rating	---	Continuous				
	Insulation grade	---	Type F				

Note: When using a W-series Servomotor with built-in MECHATROLINK-II communications, use a 200-VAC Servomotor regardless of whether the Servo Drive is 200 VAC or 100 VAC.

● General Specifications

Flat-type Servomotors

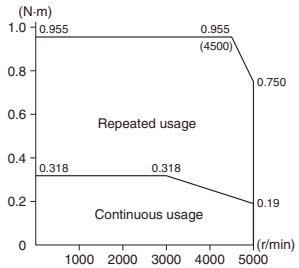
Item / Type			3,000-r/min Flat-type Servomotors
Ambient operating temperature			0 to 40°C
Ambient operating humidity			20% to 80% (with no condensation)
Ambient storage temperature			–20 to 60°C
Ambient storage humidity			20% to 80% (with no condensation)
Storage and operating atmosphere			No corrosive gases.
Vibration resistance			10 to 2,500 Hz in X, Y, and Z directions with acceleration 49 m/s² max.
Shock resistance			Acceleration 490 m/s² max., in X, Y, and Z directions, two times
Insulation resistance			Between power line terminals and FG: 10 MΩ min. (at 500 V DC)
Dielectric strength			Between power line terminals and FG: 1,500 V AC for 1 min at 50/60 Hz
Run position			All directions
Insulation grade			Type B
Structure			Totally-enclosed self-cooling
Degree of protection			IP-55 (Excluding through-shaft portion)
Vibration grade			V-15
Mounting method			Flange-mounting
International standards	EC Directives	EMC Directive	EN55011 class A group 1
			EN61000-6-2
		Low-voltage Directive	IEC60034-8 IEC60034-8, EN60034-1, -5, -9
	UL standards		UL1004
	cUL standards		cUL C22.2 No.100

Torque and Rotation Speed Characteristics

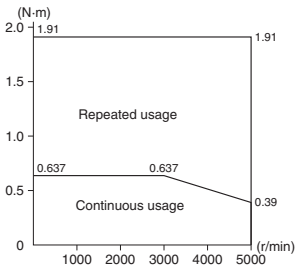
● Flat-type Servomotors (with a 200-VAC Servo Drive)

The following graphs show the characteristics with a 3-m standard cable and 200-V AC input

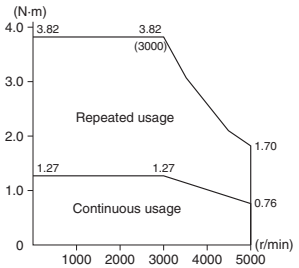
R88M-WP10030H/T (100 W)



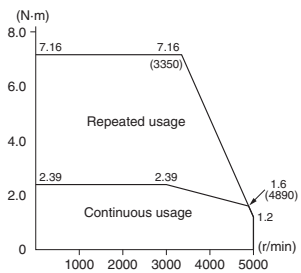
R88M-WP20030H/T (200 W)



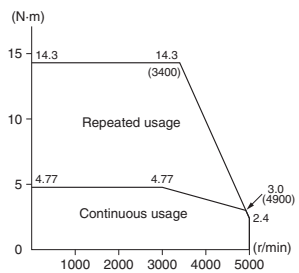
R88M-WP40030H/T (400 W)



R88M-WP75030H/T (750 W)



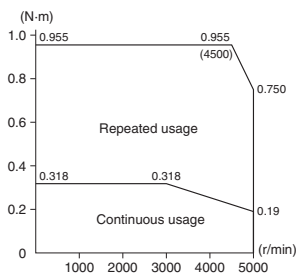
R88M-WP1K530H/T (1.5 kW)



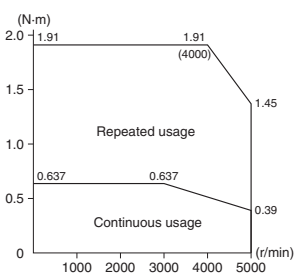
● Flat-type Servomotors (with a 100-VAC Servo Drive)

The following graphs show the characteristics with a 3-m standard cable and 100-V AC input

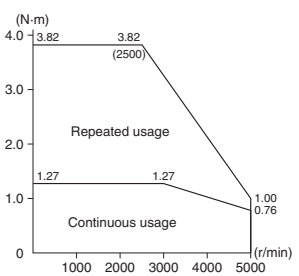
R88M-WP10030H/T (100 W)



R88M-WP20030H/T (200 W)



R88M-WP40030H/T (400 W)



Decelerator Specifications (R7G-VRSF)

● Performance Specifications

Backlash: 3 Arcminutes Max.

Motor capacity	Gear ratio	Model (R7G)		Rated speed	Rated torque	Ratio	Maximum momentary speed	Maximum momentary torque	Decelerator inertia (See note 1.)	Allowable radial load (See note 2.)	Allowable thrust load
		For Cylinder-type Servomotor	For Flat-type Servomotor	r/min	N·m	%	r/min	N·m	kg·m²	N	N
50 W	1/5	**VRSFPB05B50**	---	600	0.517	65	900	1.56	4.13×10^{-6}	392	196
	1/9	**VRSFPB09B50**	---	333	0.93	65	500	2.81	3.53×10^{-6}	441	220
	1/15	**VRSFPB15B50**	---	200	1.67	70	300	5.04	3.67×10^{-6}	588	294
	1/25	**VRSFPB25B50**	---	120	2.78	70	180	8.40	3.59×10^{-6}	686	343
100 W	1/5	**VRSFPB05B100**	**VRSFPB05B100P**	600	1.19	75	900	3.60	4.0×10^{-6}	392	196
	1/9	**VRSFPB09B100**	**VRSFPB09B100P**	333	2.29	80	500	6.91	3.43×10^{-6}	441	220
	1/15	**VRSFPB15B100**	**VRSFPB15B100P**	200	3.82	80	300	11.5	3.62×10^{-6}	588	294
	1/25	**VRSFPB25C100**	**VRSFPB25C100P**	120	6.36	80	180	19.2	3.92×10^{-6}	1323	661
200 W	1/5	**VRSFPB05B200**	**VRSFPB05B200P**	600	2.71	85	900	8.12	1.53×10^{-5}	392	196
	1/9	**VRSFPB09C400**	**VRSFPB09C400P**	333	3.78	66	500	11.3	2.68×10^{-5}	931	465
	1/15	**VRSFPB15C400**	**VRSFPB15C400P**	200	6.31	66	300	18.9	2.71×10^{-5}	1176	588
	1/25	**VRSFPB25C200**	**VRSFPB25C200P**	120	11.1	70	180	33.4	2.67×10^{-5}	1323	661
400 W	1/5	**VRSFPB05C400**	**VRSFPB05C400P**	600	5.40	85	900	16.2	3.22×10^{-5}	784	392
	1/9	**VRSFPB09C400**	**VRSFPB09C400P**	333	9.49	83	500	28.5	2.68×10^{-5}	931	465
	1/15	**VRSFPB15C400**	**VRSFPB15C400P**	200	15.8	83	300	47.6	2.71×10^{-5}	1176	588
	1/25	**VRSFPB25D400**	**VRSFPB25D400P**	120	26.4	83	180	79.3	2.79×10^{-5}	1617	808
750 W	1/5	**VRSFPB05C750**	**VRSFPB05C750P**	600	10.8	90	900	32.0	7.17×10^{-5}	784	392
	1/9	**VRSFPB09D750**	**VRSFPB09D750P**	333	18.3	85	500	54.3	6.50×10^{-5}	1176	588
	1/15	**VRSFPB15D750**	**VRSFPB15D750P**	200	30.5	85	300	90.5	7.09×10^{-5}	1372	686
	1/25	**VRSFPB25E750**	**VRSFPB25E750P**	120	50.8	85	180	151	7.05×10^{-5}	2058	1029

Note: 1. This the inertia for Cylinder-type Servomotors. For inertia values for Flat-type Servomotors, refer to *SMARTSTEP A Series User's Manual* (Cat. No. I533).
2. The allowable radial load is the value at the center of the shaft.
3. Use this Decelerator in combination with a Servomotor with a straight shaft and no key.
4. The Decelerator noise level is 79 dB.

Specifications for Servomotors with Decelerators

3,000-r/min Servomotors with Standard Decelerators (50 W to 3 kW)

Model			Rated speed	Rated torque	Ratio	Maximum momentary speed	Maximum momentary torque	Decelerator inertia	Allowable radial load	Allowable thrust load	Weight	
											Without brake	With brake
			r/min	N·m	%	r/min	N·m	kg·m²	N	N	kg	kg
50 W	1/5	R88M-W05030□-□G05BJ	600	0.557	70	800	1.67	3.60×10^{-6}	137	127	1.1	1.4
	1/9	R88M-W05030□-□G09BJ	333	1.00	70	444	3.01	3.30×10^{-6}	206	147	1.4	1.7
	1/21	R88M-W05030□-□G21BJ	143	2.67	80	190	8.01	1.80×10^{-6}	235	147	1.6	1.9
	1/33	R88M-W05030□-□G33BJ	91	4.20	80	121	12.6	1.3×10^{-6}	235	147	1.6	1.9
100 W	1/5	R88M-W10030□-□G05BJ	600	1.27	80	800	3.82	7.76×10^{-6}	167	147	1.4	1.7
	1/11	R88M-W10030□-□G11BJ	273	2.80	80	364	8.40	4.76×10^{-6}	216	147	1.7	2.0
	1/21	R88M-W10030□-□G21BJ	143	5.34	80	190	16.0	4.26×10^{-6}	392	235	2.7	3.0
	1/33	R88M-W10030□-□G33BJ	91	8.40	80	121	25.2	3.26×10^{-6}	431	235	2.7	3.0
200 W	1/5	R88M-W20030□-□G05BJ	600	2.55	80	800	7.64	3.35×10^{-5}	245	235	3.0	3.5
	1/11	R88M-W20030□-□G11BJ	273	5.96	85	364	17.9	8.50×10^{-6}	323	235	3.5	4.0
	1/21	R88M-W20030□-□G21BJ	143	11.4	85	190	34.1	1.10×10^{-5}	549	294	3.7	4.2
	1/33	R88M-W20030□-□G33BJ	91	17.9	85	121	53.6	6.50×10^{-6}	608	294	3.8	4.3
400 W	1/5	R88M-W40030□-□G05BJ	600	5.40	85	800	16.2	3.35×10^{-5}	245	235	3.6	4.1
	1/11	R88M-W40030□-□G11BJ	273	11.9	85	364	35.7	1.95×10^{-5}	441	294	4.3	4.8
	1/21	R88M-W40030□-□G21BJ	143	22.7	85	190	68.2	1.95×10^{-5}	568	314	4.7	5.2
	1/33	R88M-W40030□-□G33BJ	91	33.5	80	121	101	1.73×10^{-5}	657	314	7.1	7.6
750 W	1/5	R88M-W75030□-□G05BJ	600	10.2	85	800	30.4	5.83×10^{-5}	343	294	5.8	6.7
	1/11	R88M-W75030□-□G11BJ	273	22.3	85	364	67.0	5.28×10^{-5}	451	314	6.6	7.5
	1/21	R88M-W75030□-□G21BJ	143	42.7	85	190	128	5.93×10^{-5}	813	490	9.9	10.8
	1/33	R88M-W75030□-□G33BJ	91	67.0	85	121	201	2.63×10^{-5}	921	490	9.9	10.8
1 kW	1/5	R88M-W1K030□-□G05BJ	600	12.7	80	800	38.2	3.44×10^{-4}	833	1280	13	14.4
	1/9	R88M-W1K030□-□G09BJ	333	22.9	80	444	68.7	3.11×10^{-4}	980	1570	13	14.4
	1/20	R88M-W1K030□-□G20BJ	150	50.9	80	200	153	6.79×10^{-4}	2650	4220	30	31.4
	1/29	R88M-W1K030□-□G29BJ	103	73.8	80	138	221	4.88×10^{-4}	2940	4900	30	31.4
	1/45	R88M-W1K030□-□G45BJ	67	114	80	89	343	3.92×10^{-4}	3430	5690	30	31.4
1.5 kW	1/5	R88M-W1K530□-□G05BJ	600	19.6	80	800	58.8	3.44×10^{-4}	833	1280	14	15.7
	1/9	R88M-W1K530□-□G09BJ	333	35.3	80	444	106	4.77×10^{-4}	1960	3000	31	32.7
	1/20	R88M-W1K530□-□G20BJ	150	78.4	80	200	235	6.79×10^{-4}	2650	4220	31	32.7
	1/29	R88M-W1K530□-□G29BJ	103	114	80	138	341	4.88×10^{-4}	2940	4900	31	32.7
	1/45	R88M-W1K530□-□G45BJ	67	176	80	89	529	6.58×10^{-4}	8040	8830	51	52.5
2 kW	1/5	R88M-W2K030□-□G05BJ	600	25.4	80	800	76.4	3.44×10^{-4}	833	1280	15	16.5
	1/9	R88M-W2K030□-□G09BJ	333	45.8	80	444	138	4.77×10^{-4}	1960	3000	32	33.5
	1/20	R88M-W2K030□-□G20BJ	150	102	80	200	306	6.79×10^{-4}	2650	4220	32	33.5
	1/29	R88M-W2K030□-□G29BJ	103	148	80	138	443	1.03×10^{-3}	6860	7350	52	53.5
	1/45	R88M-W2K030□-□G45BJ	67	229	80	89	688	6.58×10^{-4}	8040	8830	52	53.5
3 kW	1/5	R88M-W3K030□-□G05BJ	600	39.2	80	800	118	1.02×10^{-3}	1670	1960	29	32
	1/9	R88M-W3K030□-□G09BJ	333	70.6	80	444	212	7.80×10^{-4}	1960	3000	36	39
	1/20	R88M-W3K030□-□G20BJ	150	157	80	200	470	2.02×10^{-3}	6080	6370	56	58.5
	1/29	R88M-W3K030□-□G29BJ	103	227	80	138	682	1.34×10^{-3}	6860	7350	56	58.5
	1/45	R88M-W3K030□-□G45BJ	67	353	80	89	1058	9.70×10^{-4}	8040	8830	56	58.5

Note: 1. The Decelerator inertia is the Servomotor shaft conversion value.
2. The enclosure rating for Servomotors with Decelerators is IP55 for 30- to 750-W models, and IP44 for 1- to 5-kW models.
3. The maximum momentary rotation speed for the motor shaft of Servomotors with Decelerators is 4,000 r/min.
4. The allowable radial loads are measured at a point 5 mm from the end of the shaft for 30- to 750-W Servomotors and in the center of the shaft for 1- to 5-kW Servomotors.

3,000-r/min Flat-style Servomotors with Standard Decelerators (100 W to 1.5 kW)

Model			Rated speed	Rated torque	Ratio	Maximum momentary speed	Maximum momentary torque	Decelerator inertia	Allowable radial load	Allowable thrust load	Weight	
											Without brake	With brake
			r/min	N·m	%	r/min	N·m	kg·m²	N	N	kg	kg
100 W	1/5	R88M-WP10030□-□G05BJ	600	1.27	80	800	3.82	9.39×10^{-6}	167	147	1.5	1.7
	1/11	R88M-WP10030□-□G11BJ	273	2.80	80	364	8.40	4.79×10^{-6}	216	147	1.5	1.7
	1/21	R88M-WP10030□-□G21BJ	143	5.34	80	190	16.0	4.29×10^{-6}	392	235	3.0	3.2
	1/33	R88M-WP10030□-□G33BJ	91	8.40	80	121	25.2	3.29×10^{-6}	431	235	3.0	3.2
200 W	1/5	R88M-WP20030□-□G05BJ	600	2.55	80	800	7.64	3.60×10^{-5}	245	235	3.5	4.0
	1/11	R88M-WP20030□-□G11BJ	273	5.96	85	364	17.9	8.80×10^{-6}	323	235	3.8	4.3
	1/21	R88M-WP20030□-□G21BJ	143	11.4	85	190	34.1	1.10×10^{-5}	549	294	4.1	4.6
	1/33	R88M-WP20030□-□G33BJ	91	17.9	85	121	53.6	6.50×10^{-6}	608	294	4.1	4.6
400 W	1/5	R88M-WP40030□-□G05BJ	600	5.40	85	800	16.2	3.60×10^{-5}	245	235	4.2	4.7
	1/11	R88M-WP40030□-□G11BJ	273	11.9	85	364	35.7	1.95×10^{-5}	441	294	4.8	5.3
	1/21	R88M-WP40030□-□G21BJ	143	22.7	85	190	68.2	1.95×10^{-5}	568	314	5.2	5.7
	1/33	R88M-WP40030□-□G33BJ	91	33.5	80	121	101	1.72×10^{-5}	657	314	7.7	8.2
750 W	1/5	R88M-WP75030□-□G05BJ	600	10.2	85	800	30.4	7.65×10^{-5}	343	294	6.9	8.4
	1/11	R88M-WP75030□-□G11BJ	273	22.3	85	364	67.0	5.23×10^{-5}	451	314	8.0	9.5
	1/21	R88M-WP75030□-□G21BJ	143	42.7	85	190	128	6.63×10^{-5}	813	490	11.0	12.5
	1/33	R88M-WP75030□-□G33BJ	91	67.0	85	121	201	4.35×10^{-5}	921	490	11.0	12.5
1.5 kW	1/5	R88M-WP1K530□-□G05BJ	600	20.3	85	800	60.8	1.54×10^{-4}	353	314	11.6	13.1
	1/11	R88M-WP1K530□-□G11BJ	273	44.6	85	364	134	2.09×10^{-4}	647	490	13.7	15.2
	1/21	R88M-WP1K530□-□G21BJ	143	80.1	80	190	*270	1.98×10^{-4}	1274	882	23.6	25.1
	1/33	R88M-WP1K530□-□G33BJ	91	126	80	121	*353	1.12×10^{-4}	1274	882	23.6	25.1

Note: 1. The Decelerator inertia is the Servomotor shaft conversion value
2. The degree of protection for Servomotors with Decelerators is IP55.
3. The maximum momentary rotation speed for the motor shaft of Servomotors with Decelerators is 4,000 r/min.
4. The maximum momentary torque values marked by asterisks are the maximum allowable torque for the Decelerators. Use torque limits so that these values are not exceeded.
5. The allowable radial loads are measured at a point 5 mm from the end of the shaft.

1,000-r/min Servomotors with Standard Decelerators (300 W to 2 kW)

Model			Rated speed	Rated torque	Ratio	Maximum momentary speed	Maximum momentary torque	Decelerator inertia	Allowable radial load	Allowable thrust load	Weight	
											Without brake	With brake
			r/min	N·m	%	r/min	N·m	kg·m²	N	N	kg	kg
300 W	1/5	R88M-W30010□-□G05BJ	200	11.4	80	400	28.7	1.26×10^{-4}	883	1280	14	16
	1/9	R88M-W30010□-□G09BJ	111	20.4	80	222	51.6	9.40×10^{-5}	980	1570	14	16
	1/20	R88M-W30010□-□G20BJ	50	45.4	80	100	115	1.40×10^{-4}	1270	2260	16	18
	1/29	R88M-W30010□-□G29BJ	34	65.9	80	69	166	2.76×10^{-4}	2940	4900	31	33
	1/45	R88M-W30010□-□G45BJ	22	102	80	44	258	1.81×10^{-4}	3430	5690	31	33
600 W	1/5	R88M-W60010□-□G05BJ	200	22.7	80	400	56.4	1.30×10^{-4}	833	1280	16	18
	1/9	R88M-W60010□-□G09BJ	111	40.9	80	222	*82.5	9.00×10^{-5}	980	1570	16	18
	1/20	R88M-W60010□-□G20BJ	50	90.9	80	100	226	4.70×10^{-4}	2650	4220	33	35
	1/29	R88M-W60010□-□G29BJ	34	132	80	69	327	2.80×10^{-4}	2940	4900	33	35
	1/45	R88M-W60010□-□G45BJ	22	204	80	44	508	4.50×10^{-4}	8040	8830	53	55
900 W	1/5	R88M-W90010□-□G05BJ	200	34.5	80	400	77.2	3.40×10^{-4}	833	1280	18	20.4
	1/9	R88M-W90010□-□G09BJ	111	62.1	80	222	139	4.80×10^{-4}	1960	3000	35	37.4
	1/20	R88M-W90010□-□G20BJ	50	138	80	100	309	6.90×10^{-4}	2650	4220	35	37.4
	1/29	R88M-W90010□-□G29BJ	34	200	80	69	448	1.04×10^{-3}	6860	7350	55	57.4
	1/45	R88M-W90010□-□G45BJ	22	310	80	44	695	6.70×10^{-4}	8040	8830	55	57.4
1.2 kW	1/5	R88M-W1K210□-□G05BJ	200	46.0	80	400	112	1.02×10^{-3}	1670	1960	32	37
	1/9	R88M-W1K210□-□G09BJ	111	82.8	80	222	202	7.80×10^{-4}	1960	3000	39	44
	1/20	R88M-W1K210□-□G20BJ	50	184	80	100	448	2.02×10^{-3}	6080	6370	59	64
	1/29	R88M-W1K210□-□G29BJ	34	267	80	69	650	1.34×10^{-3}	6860	7350	59	64
	1/45	R88M-W1K210□-□G45BJ	22	414	80	44	1008	9.70×10^{-4}	8040	8830	59	64
2 kW	1/5	R88M-W2K010□-□G05BJ	200	76.4	80	400	176	1.02×0^{-3}	1670	1960	36	41.5
	1/9	R88M-W2K010□-□G09BJ	111	138	80	222	317	7.80×10^{-4}	1960	3000	43	48.5
	1/20	R88M-W2K010□-□G20BJ	50	306	80	100	704	2.02×10^{-3}	6080	6370	63	68.5

Note: 1. The Decelerator inertia is the Servomotor shaft conversion value.
2. The degree of protection for Servomotors with Decelerators is IP44.
3. The maximum momentary torque values marked by asterisks are the maximum allowable torque for the Decelerators. Use torque limits so that these values are not exceeded.
4. The allowable radial load is the value at the center of the shaft.

1,500-r/min Servomotors with Standard Decelerators (450 W to 1.8 kW)

Model			Rated speed	Rated torque	Ratio	Maximum momentary speed	Maximum momentary torque	Decelerator inertia	Allowable radial load	Allowable thrust load	Weight	
											Without brake	With brake
			r/min	N·m	%	r/min	N·m	kg·m²	N	N	kg	kg
450 W	1/5	R88M-W45015T-□G05BJ	300	11.4	80	600	35.7	1.26×10^{-4}	883	1280	14	16
	1/9	R88M-W45015T-□G09BJ	167	20.4	80	333	64.2	9.40×10^{-5}	980	1570	14	16
	1/20	R88M-W45015T-□G20BJ	75	45.4	80	150	143	4.66×10^{-4}	2650	4220	31	33
	1/29	R88M-W45015T-□G29BJ	52	65.9	80	103	207	2.76×10^{-4}	2940	4900	31	33
	1/45	R88M-W45015T-□G45BJ	33	102	80	67	321	1.81×10^{-4}	3430	5690	31	33
850 W	1/5	R88M-W85015T-□G05BJ	300	21.6	80	600	55.2	1.30×10^{-4}	883	1280	16	18
	1/9	R88M-W85015T-□G09BJ	167	38.8	80	333	*74.5	9.00×10^{-5}	980	1570	16	18
	1/20	R88M-W85015T-□G20BJ	75	86.2	80	150	221	4.70×10^{-4}	2650	4220	33	35
	1/29	R88M-W85015T-□G29BJ	52	125	80	103	320	2.80×10^{-4}	2940	4900	33	35
	1/45	R88M-W85015T-□G45BJ	33	194	80	67	497	4.50×10^{-4}	8040	8830	53	55
1.3 kW	1/5	R88M-W1K315T-□G05BJ	300	33.4	80	600	93.2	7.20×10^{-4}	1670	1960	28	30.4
	1/9	R88M-W1K315T-□G09BJ	167	60.0	80	333	168	4.80×10^{-4}	1960	3000	35	37.4
	1/20	R88M-W1K315T-□G20BJ	75	133	80	150	373	6.90×10^{-4}	2650	4220	35	37.4
	1/29	R88M-W1K315T-□G29BJ	52	193	80	103	541	1.04×10^{-3}	6860	7350	55	57.4
	1/45	R88M-W1K315T-□G45BJ	33	300	80	67	839	6.70×10^{-4}	8040	8830	55	57.4
1.8 kW	1/5	R88M-W1K815T-□G05BJ	300	46.0	80	600	115	1.02×10^{-3}	1670	1960	32	37
	1/9	R88M-W1K815T-□G09BJ	167	82.8	80	333	207	7.80×10^{-4}	1960	3000	39	44
	1/20	R88M-W1K815T-□G20BJ	75	184	80	150	459	2.02×10^{-3}	6080	6370	59	64
	1/29	R88M-W1K815T-□G29BJ	52	267	80	103	666	1.34×10^{-3}	6860	7350	59	64

Note: 1. The Decelerator inertia is the Servomotor shaft conversion value.
2. The degree of protection for Servomotors with Decelerators is IP44.
3. The maximum momentary torque values marked by asterisks are the maximum allowable torque for the Decelerators. Use torque limits so that these values are not exceeded.
4. The allowable radial load is the value at the center of the shaft.

3,000-r/min Servomotors with Economy Decelerators (100 to 750 W)

Model			Rated speed	Rated torque	Ratio	Maximum momentary speed	Maximum momentary torque	Decelerator inertia	Allowable radial load	Allowable thrust load	Weight	
											Without brake	With brake
			r/min	N·m	%	r/min	N·m	kg·m²	N	N	kg	kg
100 W	1/5	R88M-W10030□-□G05CJ	600	1.19	75	1000	3.58	4.08×10^{-6}	392	196	1.05	1.35
	1/9	R88M-W10030□-□G09CJ	333	2.29	80	556	6.88	3.43×10^{-6}	441	220	1.05	1.35
	1/15	R88M-W10030□-□G15CJ	200	3.82	80	333	11.5	3.62×10^{-6}	588	294	1.2	1.5
	1/25	R88M-W10030□-□G25CJ	120	6.36	80	200	19.1	3.92×10^{-6}	1323	661	2.2	2.5
200 W	1/5	R88M-W20030□-□G05CJ	600	2.71	85	1000	8.12	1.53×10^{-5}	392	196	1.82	2.32
	1/9	R88M-W20030□-□G09CJ	333	3.78	66	556	11.3	2.68×10^{-5}	931	465	2.8	3.3
	1/15	R88M-W20030□-□G15CJ	200	6.31	66	333	18.9	2.71×10^{-5}	1176	588	3.2	3.7
	1/25	R88M-W20030□-□G25CJ	120	11.1	70	200	33.4	2.67×10^{-5}	1323	661	3.2	3.7
400 W	1/5	R88M-W40030□-□G05CJ	600	5.40	85	1000	16.2	3.22×10^{-5}	784	392	3.4	3.9
	1/9	R88M-W40030□-□G09CJ	333	9.49	83	556	28.5	2.68×10^{-5}	931	465	3.4	3.9
	1/15	R88M-W40030□-□G15CJ	200	15.8	83	333	47.6	2.71×10^{-5}	1176	588	3.8	4.3
	1/25	R88M-W40030□-□G25CJ	120	26.4	83	200	79.3	2.79×10^{-5}	1617	808	4.9	5.4
750 W	1/5	R88M-W75030□-□G05CJ	600	10.8	90	1000	32.2	7.17×10^{-5}	784	392	5.5	6.4
	1/9	R88M-W75030□-□G09CJ	333	18.2	85	556	54.7	6.50×10^{-5}	1176	588	6.8	7.7
	1/15	R88M-W75030□-□G15CJ	200	30.4	85	333	91.2	7.09×10^{-5}	1372	686	7.2	8.1
	1/25	R88M-W75030□-□G25CJ	120	50.7	85	200	152	7.05×10^{-5}	2058	1029	10.6	11.5

Note: 1. The Decelerator inertia indicates the Servomotor shaft conversion value.
2. The degree of protection for Servomotors with Decelerators is IP44.
3. The allowable radial loads are measured in the center of the shaft.

3,000-r/min Flat-style Servomotors with Economy Decelerators (100 to 750 W)

Model			Rated speed	Rated torque	Ratio	Maximum momentary speed	Maximum momentary torque	Decelerator inertia	Allowable radial load	Allowable thrust load	Weight	
											Without brake	With brake
			r/min	N·m	%	r/min	N·m	kg·m²	N	N	kg	kg
100 W	1/5	R88M-WP10030□-□G05CJ	600	1.19	75	1000	3.58	1.60×10^{-5}	392	196	1.42	1.62
	1/9	R88M-WP10030□-□G09CJ	333	2.29	80	556	6.88	1.37×10^{-5}	441	220	1.42	1.62
	1/15	R88M-WP10030□-□G15CJ	200	3.82	80	333	11.5	3.38×10^{-6}	588	294	1.47	1.67
	1/25	R88M-WP10030□-□G25CJ	120	6.36	80	200	19.1	3.68×10^{-6}	1323	661	2.5	2.7
200 W	1/5	R88M-WP20030□-□G05CJ	600	2.71	85	1000	8.12	1.53×10^{-5}	392	196	2.25	2.75
	1/9	R88M-WP20030□-□G09CJ	333	3.78	66	556	11.3	2.56×10^{-5}	931	465	3.2	3.7
	1/15	R88M-WP20030□-□G15CJ	200	6.31	66	333	18.9	2.71×10^{-5}	1176	588	3.6	4.1
	1/25	R88M-WP20030□-□G25CJ	120	11.1	70	200	33.4	2.67×10^{-5}	1323	661	3.6	4.1
400 W	1/5	R88M-WP40030□-□G05CJ	600	5.40	85	1000	16.2	3.23×10^{-5}	784	392	3.9	4.4
	1/9	R88M-WP40030□-□G09CJ	333	9.49	83	556	28.5	2.56×10^{-5}	931	465	3.9	4.4
	1/15	R88M-WP40030□-□G15CJ	200	15.8	83	333	47.6	2.71×10^{-5}	1176	588	4.3	4.8
	1/25	R88M-WP40030□-□G25CJ	120	26.4	83	200	79.3	2.79×10^{-5}	1617	808	5.4	5.9
750 W	1/5	R88M-WP75030□-□G05CJ	600	10.8	90	1000	32.2	7.17×10^{-5}	784	392	6.7	8.2
	1/9	R88M-WP75030□-□G09CJ	333	18.2	85	556	54.7	6.50×10^{-5}	1176	588	8.0	9.5
	1/15	R88M-WP75030□-□G15CJ	200	30.4	85	333	91.2	6.86×10^{-5}	1372	686	8.4	9.9
	1/25	R88M-WP75030□-□G25CJ	120	50.7	85	200	152	7.05×10^{-5}	2058	1029	11.8	13.3

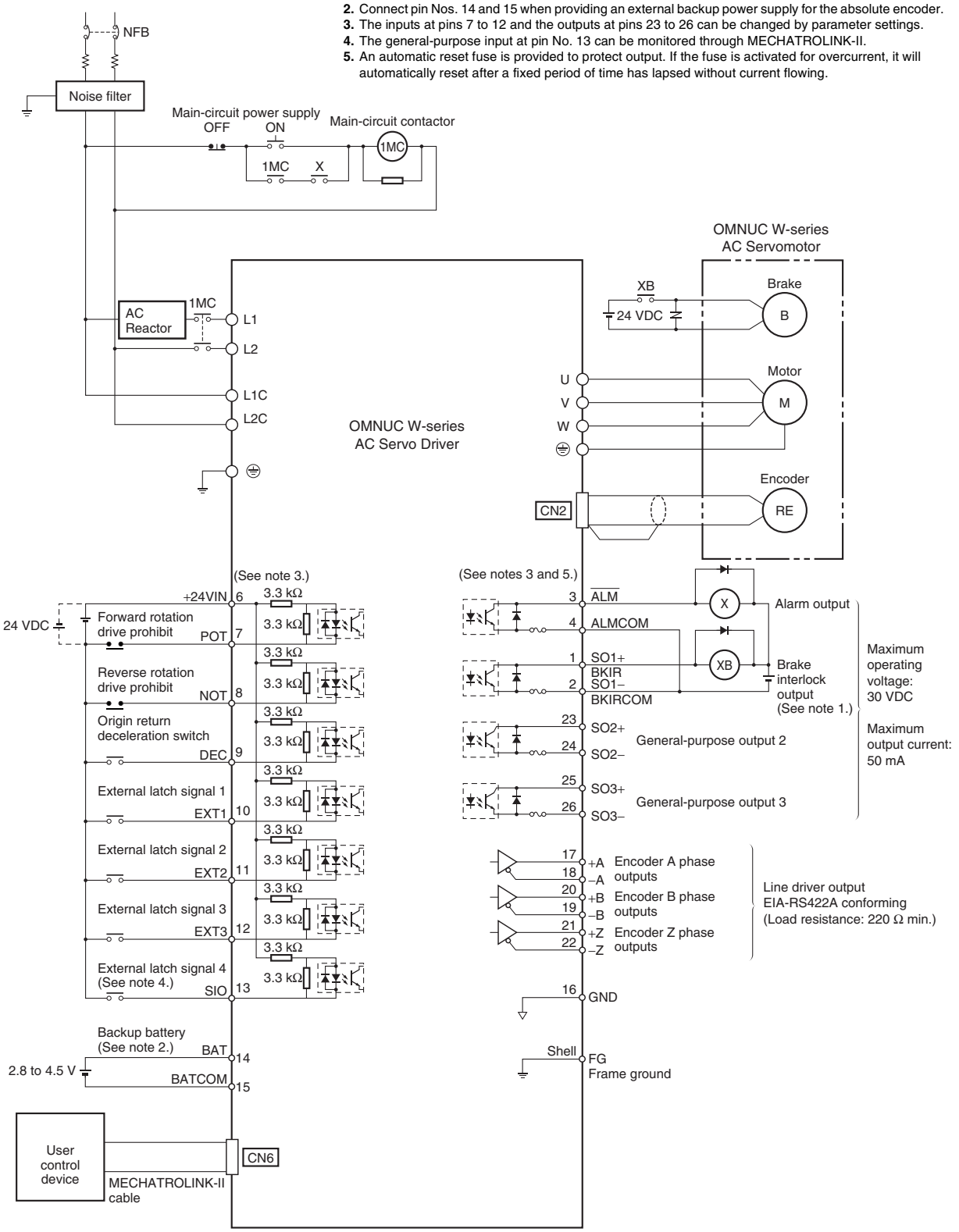
Note: 1. The Decelerator inertia indicates the Servomotor shaft conversion value.
2. The degree of protection for Servomotors with Decelerators is IP44.
3. The allowable radial loads are measured in the center of the shaft.

Connections

■ Standard Wiring Diagram: R88D-WN□□-ML2

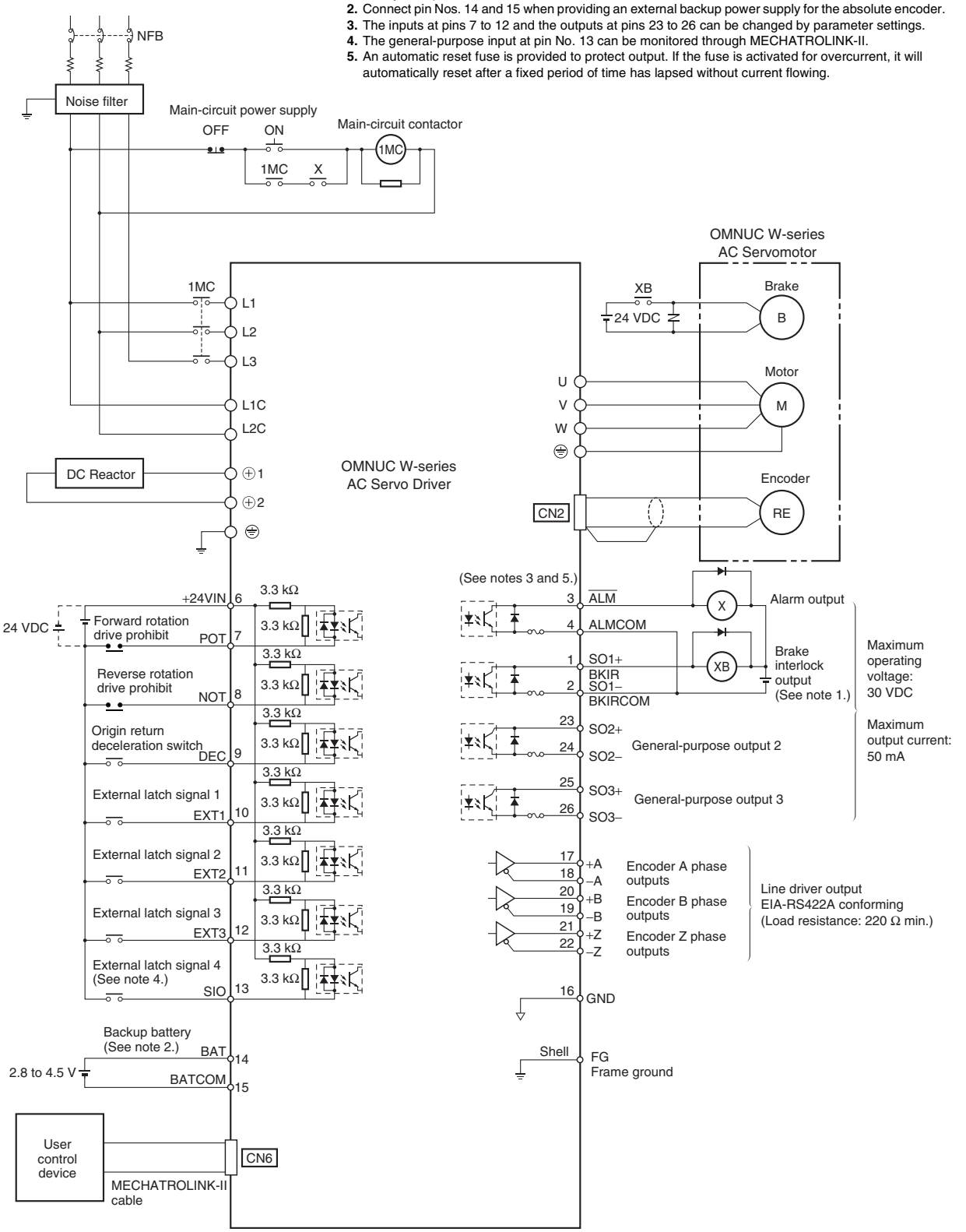
● Single-phase 200 to 230 VAC (or Single-phase 100 to 115 VAC)

Note: 1. Set by user parameter Pn50F.
2. Connect pin Nos. 14 and 15 when providing an external backup power supply for the absolute encoder.
3. The inputs at pins 7 to 12 and the outputs at pins 23 to 26 can be changed by parameter settings.
4. The general-purpose input at pin No. 13 can be monitored through MECHATROLINK-II.
5. An automatic reset fuse is provided to protect output. If the fuse is activated for overcurrent, it will automatically reset after a fixed period of time has lapsed without current flowing.



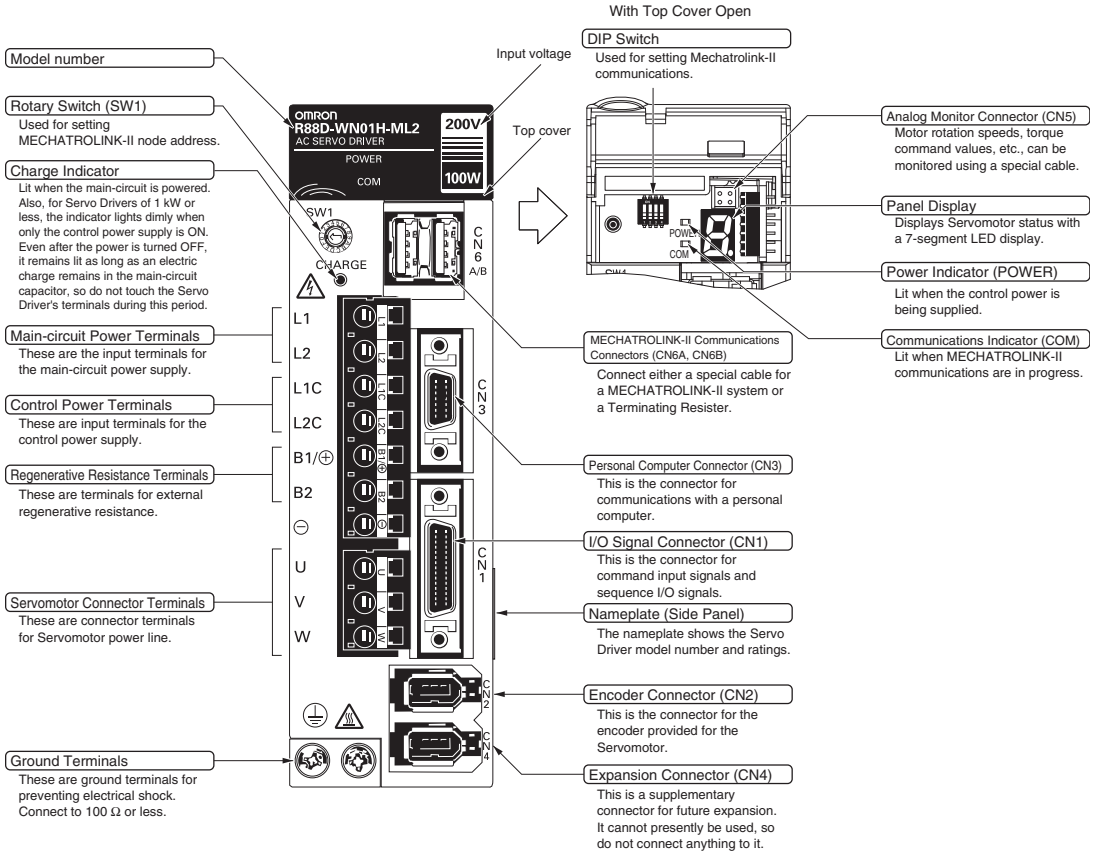
● Three-phase 200 to 230 V AC

Note: 1. Set by user parameter Pn50F.
2. Connect pin Nos. 14 and 15 when providing an external backup power supply for the absolute encoder.
3. The inputs at pins 7 to 12 and the outputs at pins 23 to 26 can be changed by parameter settings.
4. The general-purpose input at pin No. 13 can be monitored through MECHATROLINK-II.
5. An automatic reset fuse is provided to protect output. If the fuse is activated for overcurrent, it will automatically reset after a fixed period of time has lapsed without current flowing.



Components and Functions

■ Terminal Block and Connector Functions



● Terminal Block Specifications

Signal	Name	Functions	
L1 L2 L3	Main circuits power supply input	R88D-WN□H-ML2 (50 to 400 W): Single-phase 200/230 VAC (170 to 253 V), 50/60 Hz (No L3 terminal) R88D-WN08H-ML2 (750 W): Single-phase 200/230 VAC (170 to 253 V), 50/60 Hz **Note:** The L3 terminal is not used, so do not connect it. R88D-WN□H-ML2 (500 W to 3.0 kW): Single-phase 200/230 VAC (170 to 253 V), 50/60 Hz R88D-WN□L-ML2 (50 to 400 W): Single-phase 100/115 VAC (85 to 127 V), 50/60 Hz (No L3 terminal)	
⊖1 ⊖2	DC Reactor terminal for power supply harmonic control	R88D-WN□H-ML2 (500 W to 3.0 kW) Normally short-circuit between ⊖1 and ⊖2. If harmonic control measures are required, connect a DC Reactor between ⊖1 and ⊖2.	
B1/⊕	Main circuit positive terminal	Used for DC power supply input. The R88D-WN□H-ML2 (500 W to 3.0 kW) does not have a ⊖terminal. Use the ⊖2 terminal.	
⊖	Main circuit negative terminal		
L1C L2C	Control circuits power supply input	R88D-WN□H-ML2: Single-phase 200/230 V AC (170 to 253 V AC) 50/60 Hz R88D-WN□L-ML2: Single-phase 100/115 V AC (85 to 127 V AC) 50/60 Hz	
B1/⊕ B2 B3	External regeneration resistance connection terminal	R88D-WN□H-ML2 (50 W to 400 W) R88D-WN□L-ML2 (50 W to 400 W) This terminal does not normally need to be connected. If regenerative energy is high, connect an External Regeneration Resistor between B1 and B2. (There is no B3 terminal.) R88D-WN□H-ML2 (500 W to 3.0 kW) Short-circuit between B2 and B3. If regenerative energy is high, remove the short bar between B2 and B3 and connect an External Regeneration Resistor between B1 and B2.	
U V W ⏚	Servomotor connection terminals	Red White Blue Green/Yellow	These are the terminals for outputs to the Servomotor.
⏚	Frame ground	This is the ground terminal.	

● Encoder Connector Specifications (CN2)

Pin No.	Signal	Name
1	E5V	Encoder power supply, +5 V
2	E0V	Encoder power supply, GND
3	BAT+	Battery + ABS
4	BAT–	Battery – ABS
5	S+	Encoder phase +S input
6	S–	Encoder phase -S input
Shell	FG	Shield ground

● CN1 Control Inputs

Pin No.	Signal	Name	Function and interface
7 to 9	DEC (9) [SI3]	Origin return deceleration switch signal	This is the deceleration input for origin return.
	POT (7) [SI1]	Forward drive prohibit input	Forward rotation overtravel input.
	NOT (8) [SI2]	Reverse drive prohibit input	Reverse rotation overtravel input.
10 to 12	EXT1 (10) [SI4]	External latch signal 1	This is the external signal input for latching the present feedback pulse counter.
	EXT2 (11) [SI5]	External latch signal 2	
	EXT3 (12) [SI6]	External latch signal 3	
6	+24VIN	Sequence signal control power supply	This is the 24-VDC power supply input terminal for sequence inputs (pin Nos. 7 to 13).
14	BAT (+)	Backup battery inputs	These are the battery connection terminals for the absolute encoder power backup. **Note:** Connect the battery either to these terminals or to the absolute encoder battery cable.
15	BAT (–)		
13	(Not allocated) [SI0]	General-purpose input	This terminal can be monitored in the MECHATROLINK-II I/O monitor field.

Note: The numbers in parentheses ( ) show the default pin number allocations. The terminal name is shown in brackets [ ].

● CN1 Control Outputs

Pin No.	Signal	Name	Function and interface
3	ALM	Alarm output	When an alarm is generated for the Servo Drive, the output is OFF.
4	ALMCOM		
1 to 2 23 to 26	INP1	Positioning completed output 1	ON when the position deviation is within positioning completed range 1 (Pn522).
	INP1COM		
	INP2	Positioning completed output 2	ON when the position deviation is within positioning completed range 2 (Pn524).
	INP2COM		
	VCMP	Speed conformity output	ON when the Servomotor speed error is within the speed conformity signal output range (Pn503).
	VCMPCOM		
	TGON	Servomotor rotation detection output	ON when the Servomotor rotation speed exceeds the value set for the Servomotor rotation detection speed (Pn502).
	TGONCOM		
	READY	Servo ready output	ON if no errors are discovered after powering the main circuits.
	READYCOM		
	CLIMT	Current limit detection output	ON if the output current is limited.
	CLIMTCOM		
	VLIMT	Speed limit detection output	ON if the speed is limited.
	VLIMTCOM		
	BKIR (1) [SO1+]	Brake interlock output	Holding brake timing signals are output according to user parameters Pn506, Pn507, and Pn508.
	BKIRCOM (2) [SO1–]		
	WARN	Warning output	ON when an overload warning or regeneration overload warning is detected.F
	WARNCOM		
	(Not allocated) (23) [SO2+]	General-purpose outputs	Allocations are set by the user parameters.
	(Not allocated) (24) [SO2–]		
	(Not allocated) (25) [SO3+]		
	(Not allocated) (26) [SO3–]		
Shell	FG	Frame ground	Connection terminal for cable's shielded wire and FG line.

Note: The numbers in parentheses ( ) show the default pin number allocations. Terminal names are shown in brackets [ ].

Parameter

● Function Selection Parameters (from Pn000)

Parameter name	Explanation
Function selection basic switches	Reverse rotation
	Unit No. setting
Function selection application switches 1	Stop selection if an alarm occurs when Servomotor is OFF
	Stop selection when drive prohibited is input
	AC/DC power input selection
Function selection application switches 2	Torque command input change (during speed control)
	Speed command input change (during torque control)
	Operation switch when using absolute encoder
Function selection application switches 6	Analog monitor 1 (AM) signal selection
	Analog monitor 1 signal multiplier selection
Function selection application switches 7	Analog monitor 2 (NM) signal selection
	Analog monitor 2 signal multiplier selection
Function selection application switches 8	Lowered battery voltage alarm/warning selection
	Warning detection selection

● Servo Gain Parameters (from Pn100)

Parameter name	Explanation (See note 1.)
Speed loop	Adjusts speed loop response.
Speed loop integration constant	Speed loop integral time constant
Position loop gain	Adjusts position loop response.
Inertia ratio	Set using the ratio between the machine system inertia and the Servomotor rotor inertia.
Speed loop gain 2	Adjusts speed loop response (enabled by gain switching input).
Speed loop integration constant 2	Speed loop integral time constant (enabled by gain switching input).
Position loop gain 2	Adjusts position loop response (enabled by gain switching input).
Bias rotational speed	Sets position control bias.
Bias addition band	Sets the position control bias operation start using deviation counter pulse width.
Feed-forward amount	Position control feed-forward compensation value
Feed-forward command filter	Sets position control feed-forward command filter.
Speed control setting	P control switching conditions
	Speed control loop switching
	Position loop control method
P control switching (torque command)	Sets level of torque command to switch from PI control to P control.
P control switching (speed command)	Sets level of speed command to switch from PI control to P control.
P control switching (acceleration command)	Sets level of acceleration command to switch from PI control to P control.
P control switching (deviation pulse)	Sets level of deviation pulses to switch from PI control to P control.
Normal autotuning switches	Normal autotuning method
	Speed feedback compensation function selection
Speed feedback compensating gain	Adjusts speed loop feedback gain.
Position integral time constant	Position loop integral time constant
Gain switching time 1	Switching time from No. 1 gain to No. 2 gain
Gain switching time 2	Switching time from No. 2 gain to No. 1 gain
Gain switching waiting time 1	The time from when gain switching condition A is satisfied until switching from the No. 1 gain to the No. 2 gain begins.
Gain switching waiting time 2	The time from when gain switching condition B is satisfied until switching from the No. 2 gain to the No. 1 gain begins.
Automatic gain changeover related switches 1	Gain switching selection switch
	Gain switching condition A
	Gain switching condition B
Predictive control selection switches	Predictive control selection
	Predictive control type
Predictive control acceleration/deceleration gain	Adjusts acceleration and deceleration response for predictive control.
Predictive control weighting ratio	Adjusts position deviation for predictive control.
Servo rigidity	Adjusts the Servo rigidity for the No. 1 gain.
Servo rigidity 2	Adjusts the Servo rigidity for the No. 2 gain.
Speed feedback filter time constant	Sets the filter time constant for No. 1 gain speed feedback.
Speed feedback filter time constant 2	Sets the filter time constant for No. 2 gain speed feedback.
Torque command filter time constant 2	Sets the filter time constant for the torque command.
Utility control switches	Integral compensation processing
Utility integral gain	Adjusts the auxiliary integral responsive.
Position proportional gain	Adjusts the position proportional responsive.
Speed integral gain	Adjusts the speed integral responsive.
Speed proportional gain	Adjusts the speed proportional responsive.

Note: 1. Explanation for parameters set using 5 digits.
2. Explanation for parameters requiring each digit No. to be set separately.

● Position Control Parameters (from Pn200)

Parameter name	Explanation
Absolute encoder multi-turn limit setting	Sets the multi-turn limit for when a Servomotor with an absolute encoder is used.
Position control settings 2	Backlash compensation selection
Electronic gear ratio G1 (numerator)	Sets the pulse rate for the command pulses and Servomotor movement distance. 0.001 ≤ Pn20E/Pn210 ≤ 1000
Electronic gear ratio G2 (denominator)	
Encoder divider rate	Sets the number of output pulses per Servomotor rotation.
Backlash compensation amount	Mechanical system backlash amount (the mechanical gap between the drive shaft and the shaft being driven)
Backlash compensation time constant	Sets the backlash compensation time constant.

● Speed Control Parameters (from Pn300)

Parameter name	Explanation
Jog speed	Sets rotation speed during jog operation.
Soft start acceleration time	Sets acceleration time during speed control soft start.
Soft start deceleration time	Sets deceleration time during speed control soft start.
Speed feedback filter time constant	Sets constant during filter of speed feedback.
Vibration detection switches	Vibration detection selection
Vibration detection sensitivity	Sets the vibration detection sensitivity.
Vibration detection level	Sets the vibration detection level.

● Torque Control Parameters (from Pn400)

Parameter name	Explanation
1st step 1st torque command filter time constant	Sets the filter time constant for internal torque commands.
Forward torque limit	Forward rotation output torque limit (rated torque ratio).
Reverse torque limit	Reverse rotation output torque limit (rated torque ratio).
Forward rotation external current limit	Output torque limit during input of forward rotation current limit (rated torque ratio)
Reverse rotation external current limit	Output torque limit during input of reverse rotation current limit (rated torque ratio)
Emergency stop torque	Deceleration torque when an error occurs (rated torque ratio)
Speed limit	Sets the speed limit in torque control mode.
Torque command setting	Selects notch filter 1 function.
	Selects notch filter 2 function.
Notch filter 1 frequency	Sets notch filter 1 frequency for torque command.
Notch filter 1 Q value	Sets Q value of notch filter 1.
Notch filter 2 frequency	Sets notch filter 2 frequency for torque command.
Notch filter 2 Q value	Sets Q value of notch filter 2.
2nd step 2nd torque command filter frequency	Sets the filter frequency for internal torque commands.
2nd step 2nd torque command filter Q value	Sets the torque command filter Q value.
3rd step torque command filter time constant	Sets the filter time constant for internal torque commands.
1st step 2nd torque command filter time constant	Sets the filter time constant for No. 2 gain internal torque commands.
Damping for vibration suppression on stopping	Sets the vibration suppression value while stopped.
Vibration suppression starting time	Sets the time from when the position command becomes 0 until damping for vibration suppression on stopping begins.
Gravity compensation torque	Sets the gravity compensation torque.
Sweep torque command amplitude	Sets the sweep torque command amplitude.

● Sequence Parameters (from Pn500)

Parameter name	Explanation
Rotation speed for motor rotation detection	Sets the number of rotations for the Servomotor rotation detection output (TGON).
Speed conformity signal output width	Sets the allowable fluctuation (number of rotations) for the speed conformity output (VCMP).
Brake timing 1	Sets the delay from the brake command to the Servomotor turning OFF.
Brake command speed	Sets the number of rotations for outputting the brake command.
Brake timing 2	Sets the delay time from the Servomotor turning OFF to the brake command output.
Momentary hold time	Sets the time during which alarm detection is disabled when a power failure occurs.
Input signal selections 1	POT (forward drive prohibited input) signal Input terminal allocation
Input signal selections 2	NOT (reverse drive prohibited input) signal Input terminal allocation
Output signal selections 1	INP1 (positioning completed 1) signal output terminal allocation
	VCMP (speed conformity) signal output terminal allocation
	TGON (servomotor rotation detection) signal output terminal allocation
	READY (servo ready) signal output terminal allocation
Output signal selections 2	CLIMT (current limit detection) signal output terminal allocation
	VLIMT (speed limit detection) signal output terminal allocation
	BKIR (brake interlock) signal output terminal allocation
	WARN (warning) signal output terminal allocation
Output signal selections 3	INP2 (positioning completed 2) signal output terminal allocation
Input signal selections 5	DEC signal input terminal allocation
	EXT1 signal input terminal allocation
	EXT2 signal input terminal allocation
	EXT3 signal input terminal allocation
Output signal reverse	Output signal reverse for CN1 pins 1, 2
	Output signal reverse for CN1 pins 23, 24
	Output signal reverse for CN1 pins 25, 26
Deviation counter overflow warning level	Sets the detection level for the deviation counter overflow warning. (A warning is output for Pn520 × Pn51E/100 or higher.)
Deviation counter overflow level	Sets the deviation counter overflow alarm detection level. Pn520 ≥ (Max. feed speed [command unit/s]/ Pn102) x 2.0
Positioning completed range 1	Setting range for positioning completed range 1 (INP1)
Positioning completed range 2	Setting range for positioning completed range 2 (INP2)
Deviation counter overflow level at Servo-ON	Sets the deviation counter overflow alarm detection level for Servo ON.
Deviation counter overflow warning level at Servo-ON	Sets the deviation counter overflow warning detection level for Servo ON.
Speed limit level at Servo-ON	Sets the speed limit for when the Servo turns ON with position deviation accumulated.
Program JOG operation related switches	Program JOG operating pattern
Sets the program JOG movement distance.	Sets the program JOG movement distance.

Parameter name	Explanation
Program JOG movement speed	Sets the program JOG operation movement speed.
Program JOG acceleration/ deceleration time	Sets the acceleration/deceleration time for program JOG operation.
Program JOG waiting time	Sets the delay time from the program JOG operation start input until operation starts.
Number of program JOG movements	Sets the number of repetitions of the program JOG operations.
Gain limit	Sets the gain limit.
Analog monitor 1 offset voltage	Sets the analog monitor 1 offset voltage.
Analog monitor 2 offset voltage	Sets the analog monitor 2 offset voltage.

● Other Parameters (from Pn600)

Parameter name	Explanation
Regeneration resistor capacity (See note 1.)	Setting for regeneration resistance load ratio monitoring calculations
Communications control	MECHATROLINK- II communications check mask
	Warning check mask
	Communications error count at single transmission
Function selection application 6 (software LS)	Software limit function
	Software limit check using reference
Zero point width	Sets the origin position detection range.
Forward software limit	Sets the software limit for the positive direction. **Note:** Pn806 must be set lower than Pn804.
Reverse software limit	Sets the software limit for the negative direction. **Note:** Pn806 must be set lower than Pn804.
Absolute encoder zero point position offset	Sets the encoder position and machine coordinate system offsets for when an absolute encoder is used.
First step linear acceleration parameter	Sets the step 1 acceleration for when two-step acceleration is used.
Second step linear acceleration parameter	Sets the step 2 acceleration for when two-step acceleration is executed, or the one-step acceleration parameter for when one-step acceleration is executed.
Acceleration parameter switching speed	Sets the switching speed for the step 1 and step 2 acceleration when two-step acceleration is executed. **Note:** When used as one-step acceleration, 0 must be set.
First step linear deceleration parameter	Sets the step 1 deceleration for when two-step deceleration is used.
Second step linear deceleration parameter	Sets the step 2 deceleration for when two-step deceleration is executed, or the one-step deceleration parameter for when one-step deceleration is executed.
Deceleration parameter switching speed	Sets the switching speed for the step 1 and step 2 deceleration when two-step deceleration is executed. **Note:** When used as one-step deceleration, 0 must be set.
Exponential acceleration/ deceleration bias	Sets the bias for when an exponential filter is used for the position command filter.
Exponential acceleration/ deceleration time constant	Sets the time constant for when an exponential filter is used for the position command filter.
Moving average time	Sets the average movement time for when S-curve acceleration/ deceleration is used, and an average movement filter is used for the position command filter.
Final travel distance for external positioning	Sets the distance from the external signal input position when external positioning is executed. **Note:** For a negative direction or if the distance is short, operation is reversed after decelerating to a stop.
Zero point return mode settings	Zero point return direction
Zero point return approach speed 1	Sets the origin search speed after the deceleration limit switch signal turns ON.
Zero point return approach speed 2	Sets the origin search speed after the deceleration limit switch signal turns OFF.
Final travel distance to return to zero point	Sets the distance from the latch signal input position to the origin, for when origin search is executed. **Note:** If the final travel distance is in the opposite direction from the origin return direction or if the distance is short, opera-

Note: 1. The normal setting is 0. When using an External Regeneration Resistor, set the External Regeneration Resistor capacity (W).

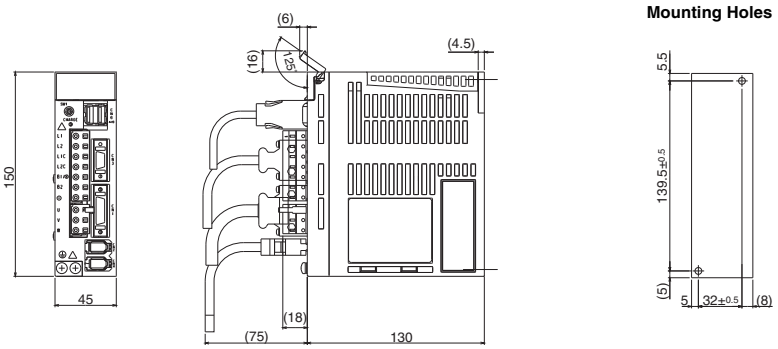
2. The upper limit is the maximum output capacity (W) of the applicable Servo Drive.

Dimensions

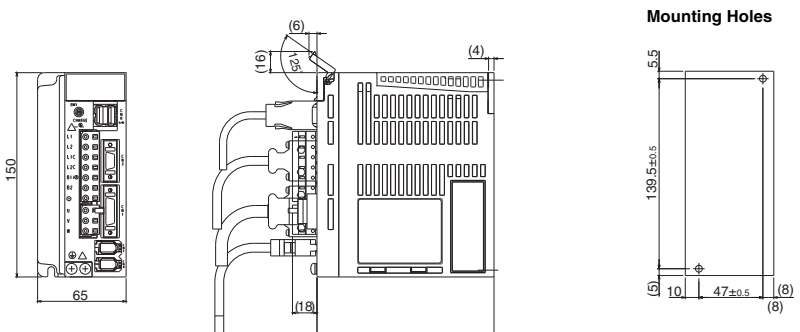
(Unit: mm)

● **AC Servo Drives**

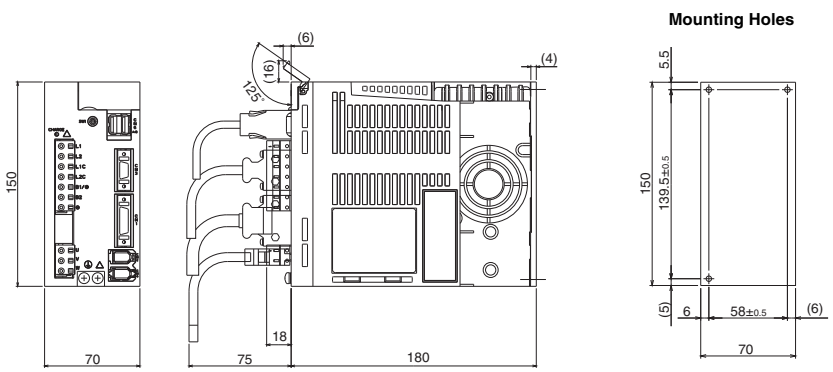
- **200 V AC: R88D-WNA5H-ML2/WN01H-ML2/WN02H-ML2 (50 W/100 W/200 W)**
- **100 V AC: R88D-WNA5L-ML2/WN01L-ML2/WN02L-ML2 (50 W/100 W/200 W)**



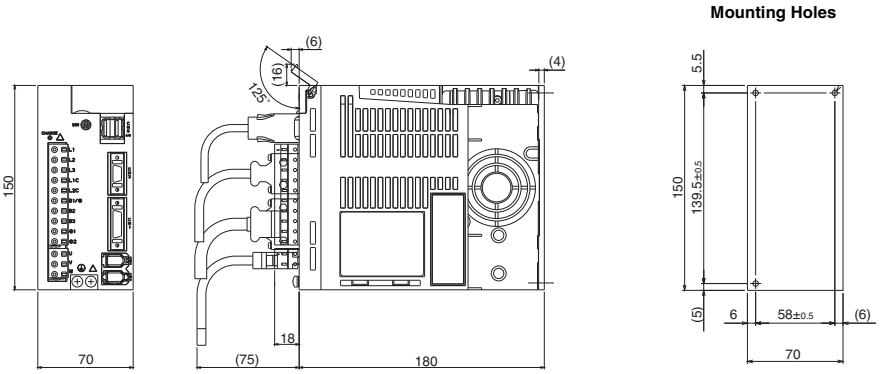
- **200 V AC: R88D-WN04H-ML2 (400 W)**



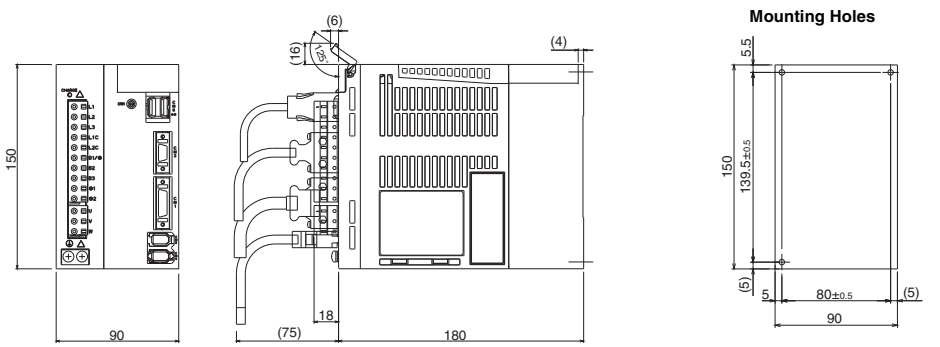
- **100 V AC: R88D-WN04L-ML2 (400 W)**



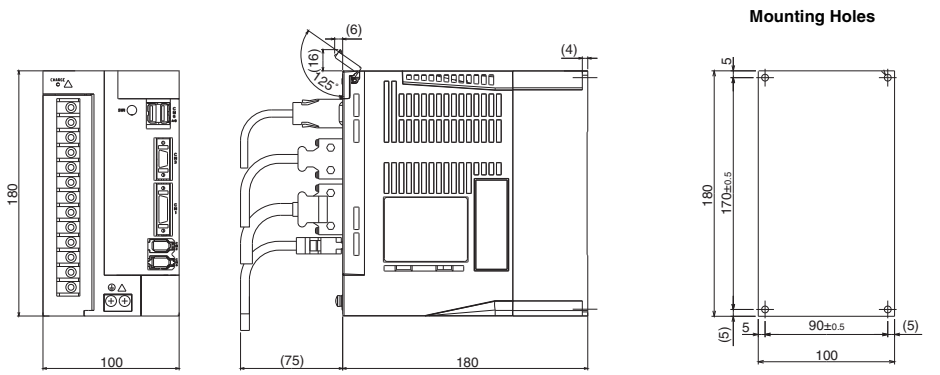
• **200 V AC: R88D-WN05H-ML2/WN08H-ML2/WN10H-ML2 (500 W/750 W/1 kW)**



• **200 V AC: R88D-WN15H-ML2 (1.5 kW)**



• **200 V AC: R88D-WN20H-ML2/WN30H-ML2 (2 kW/3 kW)**

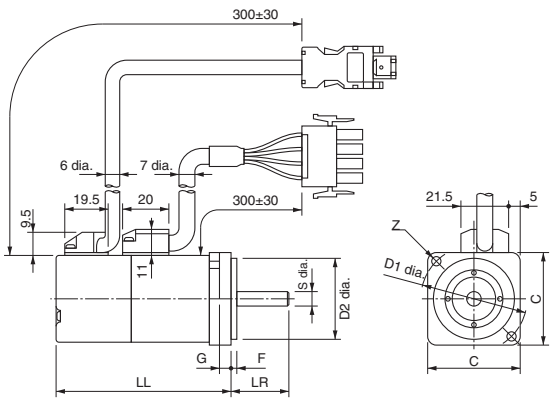


● **AC Servomotors**

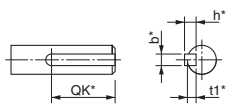
3,000-r/min Cylinder-type Servomotors without a Brake

• 200 V AC: 50 W/100 W

R88M-W05030H(-S1)/W10030H(-S1)
R88M-W05030T(-S1)/W10030T(-S1)



Dimensions of shaft end with key (-S1)



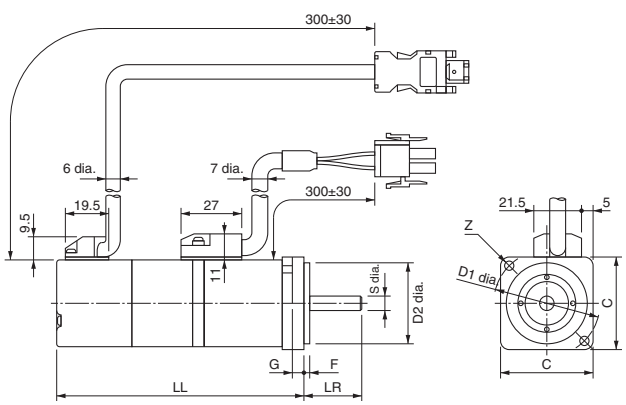
*These are the dimensions for the R88M-W□-S1 (with key).

Dimensions (mm) / Model	LL	LR	Flange dimensions						Shaft end dimensions				
			C	D1	D2	F	G	Z	S	QK*	b*	h*	t1*
R88M-W05030□(-S1)	77	25	40	46	30^{h7}	2.5	5	Two, 4.3 dia.	6^{h6}	14	2	2	1.2
R88M-W10030□(-S1)	94.5								8^{h6}		3	3	1.8

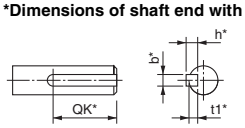
3,000-r/min Cylinder-type Servomotors with a Brake

• 200 V AC: 50 W/100 W

R88M-W05030H-B(S1)/W10030H-B(S1)
R88M-W05030T-B(S1)/W10030T-B(S1)



***Dimensions of shaft end with key (-BS1)**



*These are the dimensions for the R88M-W□-BS1 (with key).

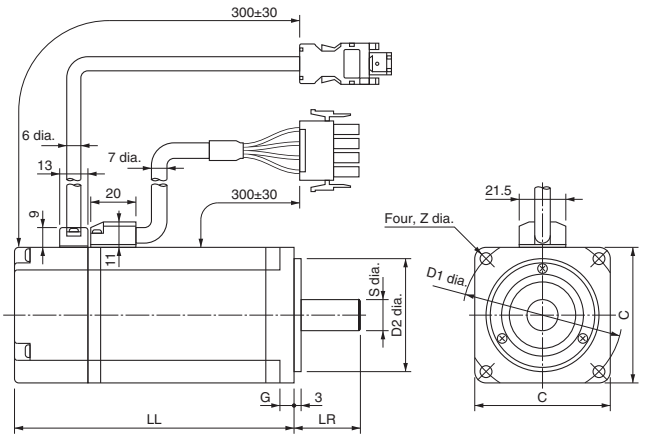
Dimensions (mm) / Model	LL	LR	Flange dimensions						Shaft end dimensions				
			C	D1	D2	F	G	Z	S	QK*	b*	h*	t1*
R88M-W05030□-B(S1)	108.5	25	40	46	30^{h7}	2.5	5	Two, 4.3 dia.	6^{h6}	14	2	2	1.2
R88M-W10030□-B(S1)	135								8^{h6}		3	3	1.8

3,000-r/min Cylinder-type Servomotors without a Brake

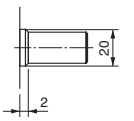
• 200 V AC: 200 W/400 W/750 W

R88M-W20030H(-S1)/W40030H(-S1)/W75030H(-S1)

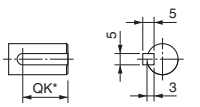
R88M-W20030T(-S1)/W40030T(-S1)/W75030T(-S1)



Dimensions of output section of 750-W Servomotors



***Dimensions of shaft end with key (-S1)**



*These are the dimensions for the R88M-W□-S1 (with key).

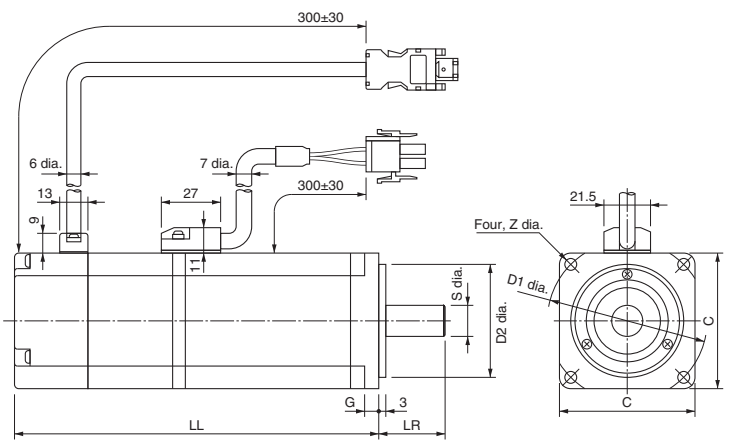
Dimensions (mm) / Model	LL	LR	Flange dimensions						Shaft end dimensions	
			C	D1	D2	F	G	Z	S	QK*
R88M-W20030□(-S1)	96.5	30	60	70	50h7	3	6	Four, 5.5 dia.	14h6	20
R88M-W40030□(-S1)	124.5									
R88M-W75030□(-S1)	145	40	80	90	70h7	3	8	Four, 7 dia.	16h6	30

3,000-r/min Cylinder-type Servomotors with a Brake

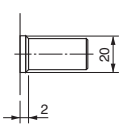
• 200 V AC: 200 W/400 W/750 W

R88M-W20030H-B(S1)/W40030H-B(S1)/W75030H-B(S1)

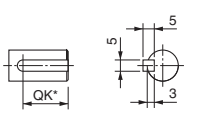
R88M-W20030T-B(S1)/W40030T-B(S1)/W75030T-B(S1)



Dimensions of output section of 750-W Servomotors



***Dimensions of shaft end with key (-BS1)**



*These are the dimensions for the R88M-W□-BS1 (with key).

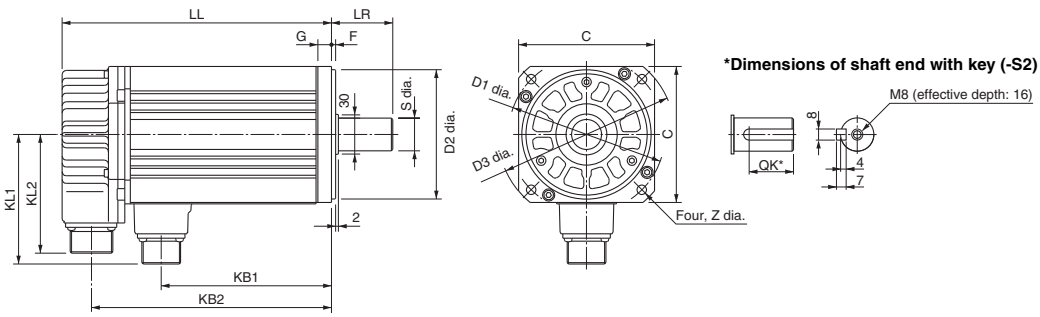
Dimensions (mm) / Model	LL	LR	Flange dimensions						Shaft end dimensions	
			C	D1	D2	F	G	Z	S	QK*
R88M-W20030□-B(S1)	136	30	60	70	50h7	3	6	Four, 5.5 dia.	14h6	20
R88M-W40030□-B(S1)	164									
R88M-W75030□-B(S1)	189.5	40	80	90	70h7	3	8	Four, 7 dia.	16h6	30

3,000-r/min Cylinder-type Servomotors without a Brake

• 200 V AC: 1 kW/1.5 kW/2 kW/3 kW

R88M-W1K030H-S2/W1K530H-S2/W2K030H-S2/W3K030H-S2

R88M-W1K030T-S2/W1K530T-S2/W2K030T-S2/W3K030T-S2



*These are the dimensions for the R88M-W□-S2 (with key and tap).

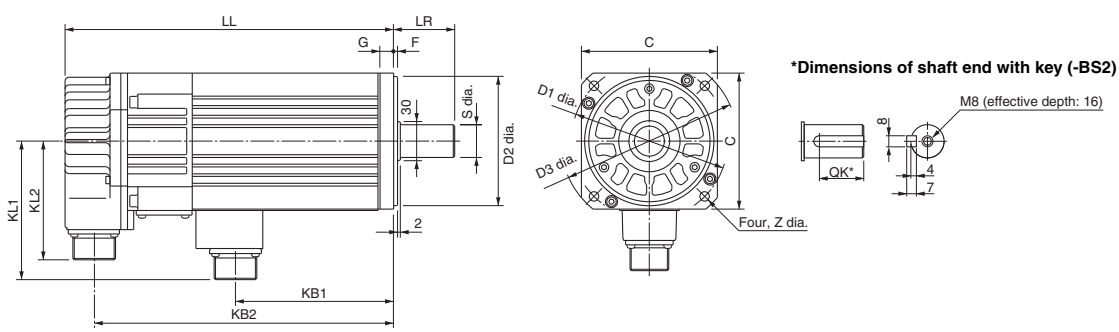
Dimensions (mm) / Model	LL	LR	KB1	KB2	KL1	KL2	Flange dimensions							Shaft end dimensions	
							C	D1	D2	D3	F	G	Z	S	QK*
R88M-W1K030□-S2	149	45	76	128	96	88	100	115	95^{h7}	130	3	10	7	24^{h6}	32
R88M-W1K530□-S2	175		102	154											
R88M-W2K030□-S2	198		125	177											
R88M-W3K030□-S2	199	63	124	178	114	88	130	145	110^{h7}	165	6	12	9	28^{h6}	50

3,000-r/min Cylinder-type Servomotors with a Brake

• 200 V AC: 1 kW/1.5 kW/2 kW/3 kW

R88M-W1K030H-BS2/W1K530H-BS2/W2K030H-BS2/W3K030H-BS2

R88M-W1K030T-BS2/W1K530T-BS2/W2K030T-BS2/W3K030T-BS2



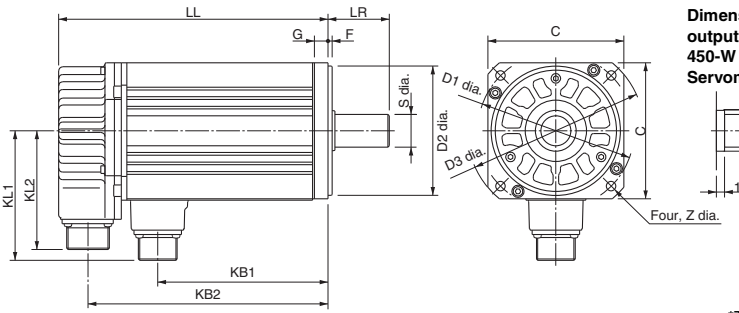
*These are the dimensions for the R88M-W□-BS2 (with key and tap).

Dimensions (mm) / Model	LL	LR	KB1	KB2	KL1	KL2	Flange dimensions							Shaft end dimensions	
							C	D1	D2	D3	F	G	Z	S	QK*
R88M-W1K030□-BS2	193	45	67	171	102	88	100	115	95^{h7}	130	3	10	7	24^{h6}	32
R88M-W1K530□-BS2	219		93	197											
R88M-W2K030□-BS2	242		116	220											
R88M-W3K030□-BS2	237	63	114	216	119	88	130	145	110^{h7}	165	6	12	9	28^{h6}	50

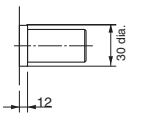
1,500-r/min Cylinder-type Servomotors without a Brake

• 200 V AC: 450 W/850 W/1.3 kW/1.8 kW

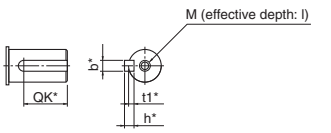
R88M-W45015T(-S2)/W85015T(-S2)/W1K315T(-S2)/W1K815T(-S2)



Dimensions of output section of 450-W to 1.3-kW Servomotors



***Dimensions of shaft end with key (-S2)**



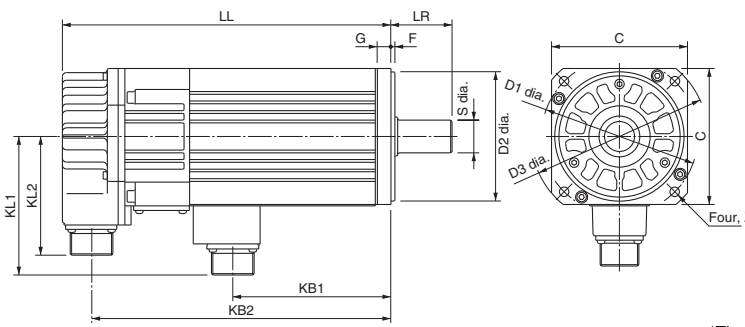
*These are the dimensions for the R88M-W□-S2 (with key and tap).

Dimensions (mm) / Model	LL	LR	KB 1	KB 2	KL 1	KL 2	Flange dimensions							Shaft end dimensions						
							C	D1	D2	D3	F	G	Z	S	QK*	b*	h *	t1*	M	l
R88M-W45015T□-(S2)	138	58	65	117	109	88	130	145	110^{h7}	165	6	12	9	19^{h6}	25	5	5	3	M5	12
R88M-W85015T□-(S2)	161		88	140																
R88M-W1K315T□-(S2)	185		112	164										22^{h6}		6	6	3.5		
R88M-W1K815T□-(S2)	166	79	89	144	140	88	180	200	$114.3^{0}_{-0.025}$	230	3.2	18	13.5	$35^{+0.01}_{0}$	60	10	8	5	M12	25

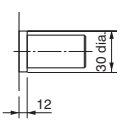
1,500-r/min Cylinder-type Servomotors with a Brake

• 200 V AC: 450 W/850 W/1.3 kW/1.8 kW

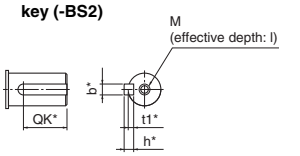
R88M-W45015T-B(S2)/W85015T-B(S2)/W1K315T-B(S2)/W1K815T-B(S2)



Dimensions of output section of 450-W to 1.3-kW Servomotors



***Dimensions of shaft end with key (-BS2)**



*These are the dimensions for the R88M-W□-BS2 (with key and tap).

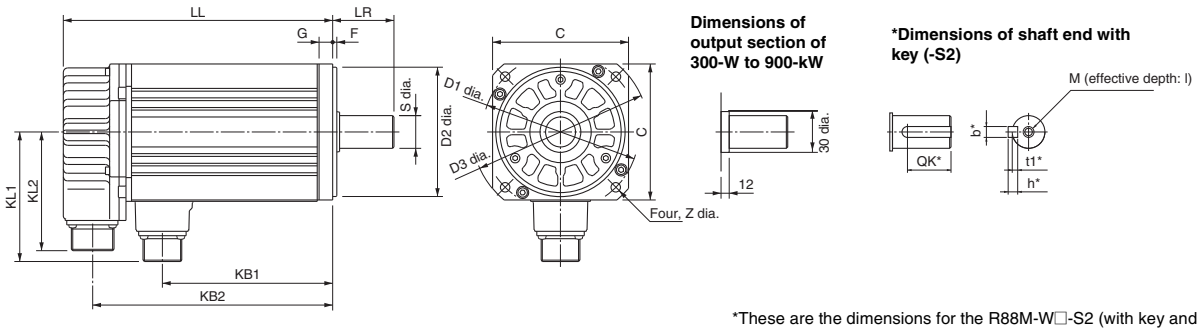
Dimensions (mm) / Model	LL	LR	KB1	KB2	KL1	KL2	Flange dimensions							Shaft end dimensions						
							C	D1	D2	D3	F	G	Z	S	QK*	b *	h*	t1*	M	l
R88M-W45015T-B(S2)	176	58	56	154	120	88	130	145	110^{h7}	165	6	12	9	19^{h6}	25	5	5	3	M5	12
R88M-W85015T-B(S2)	199		79	177																
R88M-W1K315T-B(S2)	223		103	201										22^{h6}		6	6	3.5		
R88M-W1K815T-B(S2)	217	79	79	195	146	88	180	200	$114.3^{0}_{-0.025}$	230	3.2	18	13.5	$35^{+0.01}_{0}$	60	10	8	5	M12	25

1,000-r/min Cylinder-type Servomotors without a Brake

• 200 V AC: 300 W/600 W/900 W/1.2 kW/2 kW

R88M-W30010H-S2/W60010H-S2/W90010H-S2/W1K210H-S2/W2K010H-S2

R88M-W30010T-S2/W60010T-S2/W90010T-S2/W1K210T-S2/W2K010T-S2



*These are the dimensions for the R88M-W□-S2 (with key and tap).

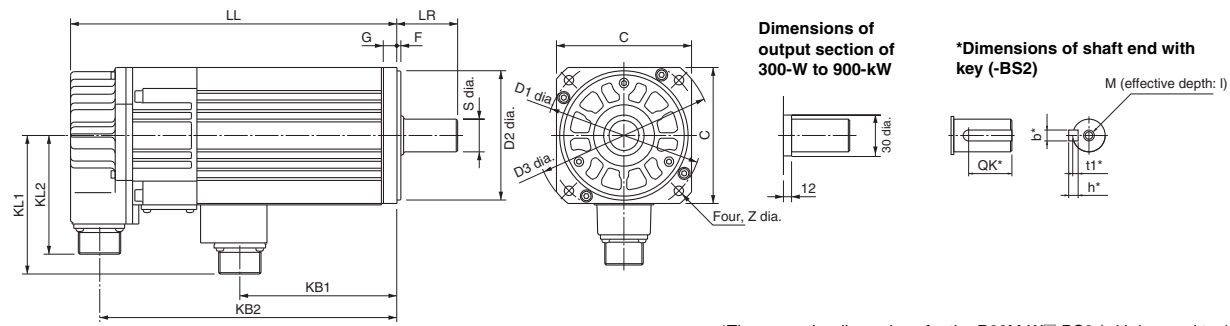
Dimensions (mm) / Model	LL	LR	KB1	KB2	KL1	KL2	Flange dimensions							Shaft end dimensions						
							C	D1	D2	D3	F	G	Z	S	QK*	b*	h*	t1*	M	l
R88M-W30010□-S2	138	58	65	117	109	88	130	145	110^{h7}	165	6	12	9	19^{h6}	25	5	5	3	M5	12
R88M-W60010□-S2	161		88	140																
R88M-W90010□-S2	185		112	164										22^{h6}		6	6	3.5		
R88M-W1K210□-S2	166	79	89	144	140	88	180	200	$114.3^{0}_{-0.025}$	230	3.2	18	13.5	$35^{+0.01}_{0}$	60	10	8	5	M12	25
R88M-W2K010□-S2	192		115	170																

1,000-r/min Cylinder-type Servomotors with a Brake

• 200 V AC: 300 W/600 W/900 W/1.2 kW/2 kW

R88M-W30010H-BS2/W60010H-BS2/W90010H-BS2/W1K210H-BS2/W2K010H-BS2

R88M-W30010T-BS2/W60010T-BS2/W90010T-BS2/W1K210T-BS2/W2K010T-BS2



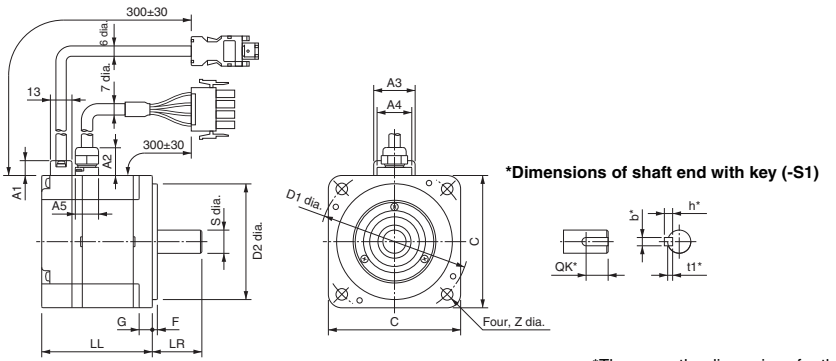
*These are the dimensions for the R88M-W□-BS2 (with key and tap).

Dimensions (mm) / Model	LL	LR	KB1	KB2	KL1	KL2	Flange dimensions							Shaft end dimensions						
							C	D1	D2	D3	F	G	Z	S	QK*	b*	h*	t1*	M	l
R88M-W30010□-BS2	176	58	56	154	120	88	130	145	110^{h7}	165	6	12	9	19^{h6}	25	5	5	3	M5	12
R88M-W60010□-BS2	199		79	177																
R88M-W90010□-BS2	223		103	201										22^{h6}		6	6	3.5		
R88M-W1K210□-BS2	217	79	79	195	146	88	180	200	$114.3^{0}_{-0.025}$	230	3.2	18	13.5	$35^{+0.01}_{0}$	60	10	8	5	M12	25
R88M-W2K010□-BS2	243		105	221																

Flat-type Servomotors without a Brake

• 200 V AC: 100 W/200 W/400 W/750 W/1.5 kW

R88M-WP10030H(-S1)/WP20030H(-S1)/WP40030H(-S1)/WP75030H(-S1)/WP1K530H(-S1)
R88M-WP10030T(-S1)/WP20030T(-S1)/WP40030T(-S1)/WP75030T(-S1)/WP1K530T(-S1)



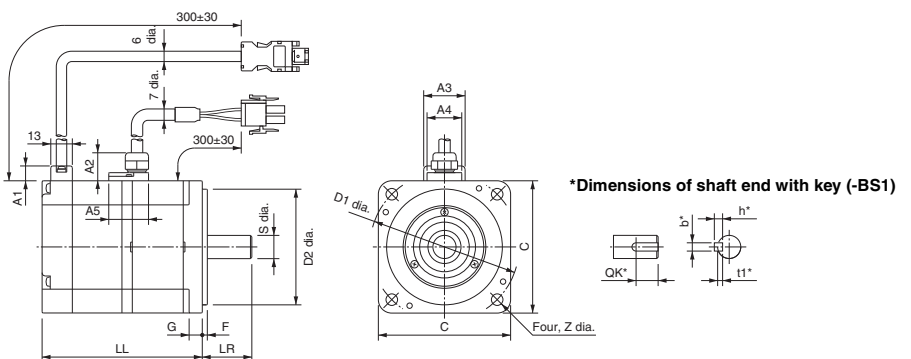
*These are the dimensions for the R88M-W□-S1 (with key).

Dimensions (mm) / Model	LL	LR	Flange dimensions						Shaft end dimensions					Cable lead-in section				
			C	D1	D2	F	G	Z	S	QK*	b *	h*	t1*	A1	A2	A3	A4	A5
R88M-WP10030□(-S1)	62	25	60	70	50h7	3	6	5.5	8h6	14	3	3	1.8	9	18	25	21	14
R88M-WP20030□(-S1)	67	30	80	90	70h7	3	8	7	14h6	16	5	5	3					
R88M-WP40030□(-S1)	87																	
R88M-WP75030□(-S1)	86.5	40	120	145	110h7	3.5	10	10	16h6	22					28		38	19
R88M-WP1K530□(-S1)	114.5								19h6		6	6	3.5					

Flat-type Servomotors with a Brake

• 200 V AC: 100 W/200 W/400 W/750 W/1.5 kW

R88M-WP10030H-B(S1)/WP20030H-B(S1)/WP40030H-B(S1)/WP75030H-B(S1)/WP1K530H-B(S1)
R88M-WP10030T-B(S1)/WP20030T-B(S1)/WP40030T-B(S1)/WP75030T-B(S1)/WP1K530T-B(S1)



*These are the dimensions for the R88M-W□-BS1 (with key).

Dimensions (mm) / Model	LL	LR	Flange dimensions						Shaft end dimensions					Cable lead-in section				
			C	D1	D2	F	G	Z	S	QK*	b*	h*	t1*	A1	A2	A3	A4	A5
R88M-WP10030□-B(S1)	91	25	60	70	50h7	3	6	5.5	8h6	14	3	3	1.8	9	18	25	21	23
R88M-WP20030□-B(S1)	98.5	30	80	90	70h7	3	8	7	14h6	16	5	5	3					
R88M-WP40030□-B(S1)	118.5																	
R88M-WP75030□-B(S1)	120	40	120	145	110h7	3.5	10	10	16h6	22					28		38	26
R88M-WP1K530□-B(S1)	148								19h6		6	6	3.5					

Related Manuals

English Cat. No.	Japanese Cat. No.	Type	Name
I544	SBCE-331	R88M-W/R88D-WN□-ML2	OMNUC Wseries AC Servomotors/Servo Drives with Built-in MECHATROLINK-II Communications User's Manual
—	SBCE-053	R88D-WN□-ML2/R88M-W	Moter Selection Program OMNUC G/W series SMARTSTEP2/Junior/A series CD-ROM
W453	SBCE-337	CXONE-AL□□C/D-V3	CX-Drive Operation Manual