

G-series AC Servomotors/Servo Drives with General-purpose Pulse-string or Analog Inputs

# R88M-G/R88D-GT

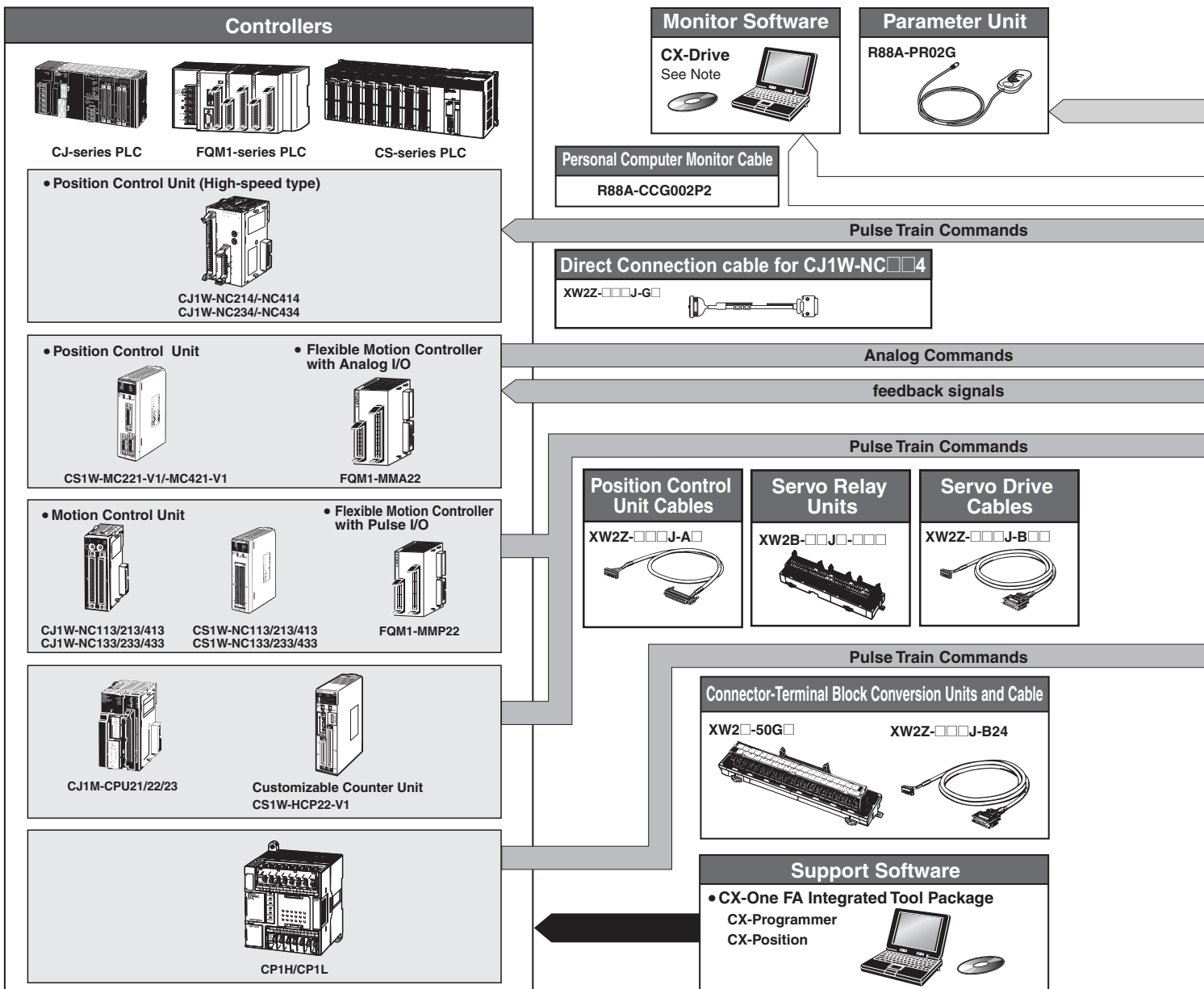
## Support for a Wide Range of Applications with Position Control, Speed Control, Torque Control.

- **High-speed Response**  
The G-series AC Servomotors and Servo Drives have achieved high-speed response capabilities, with a high-response frequency of 1 kHz.
- **Suppressing Vibration of Low-rigidity Mechanisms during Acceleration/Deceleration**  
The damping control function suppresses vibration of low-rigidity mechanisms or devices whose ends tend to vibrate. Two damping filters are provided to enable switching the vibration frequency automatically according to the direction of rotation and also via an external signal. In addition, the

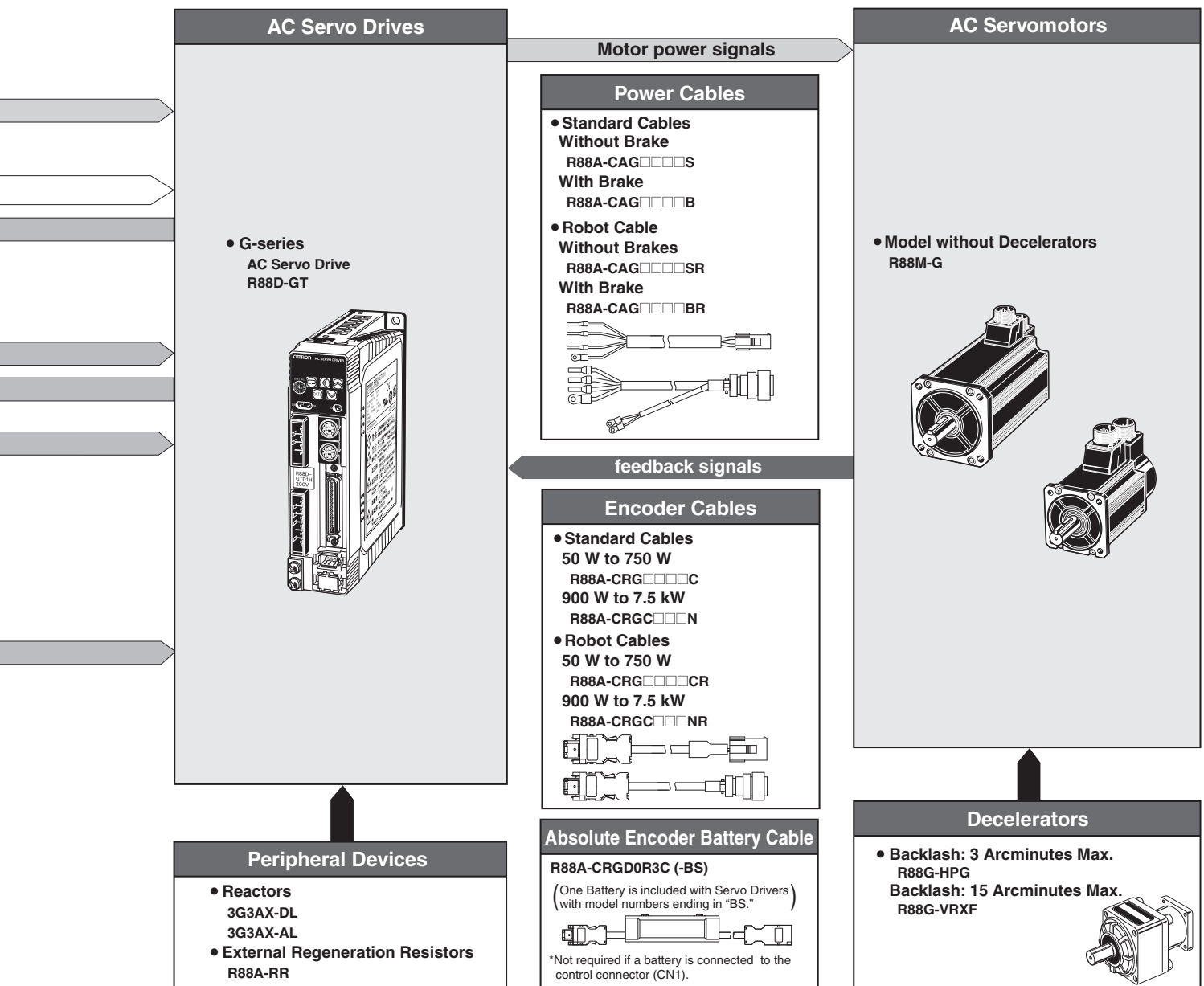
- settings can be made easily merely by setting the vibration frequency and filter values, and you are assured of stable operation even if the settings are inappropriate.
- **High-speed Positioning via Resonance Suppression Control**  
The realtime autotuning function automatically estimates the load inertia of the machine in realtime and sets the optimal gain. The adaptive filter automatically suppresses vibration caused by resonance. Also, two independent notch filters make it possible to reduce vibration of a mechanism with multiple resonance frequencies.

**Note:** CX-Drive (version 1.61) support for G-series Servo Drives can be obtained by using the CX-One V2 auto-update function from May 30, 2008.

### System Configuration



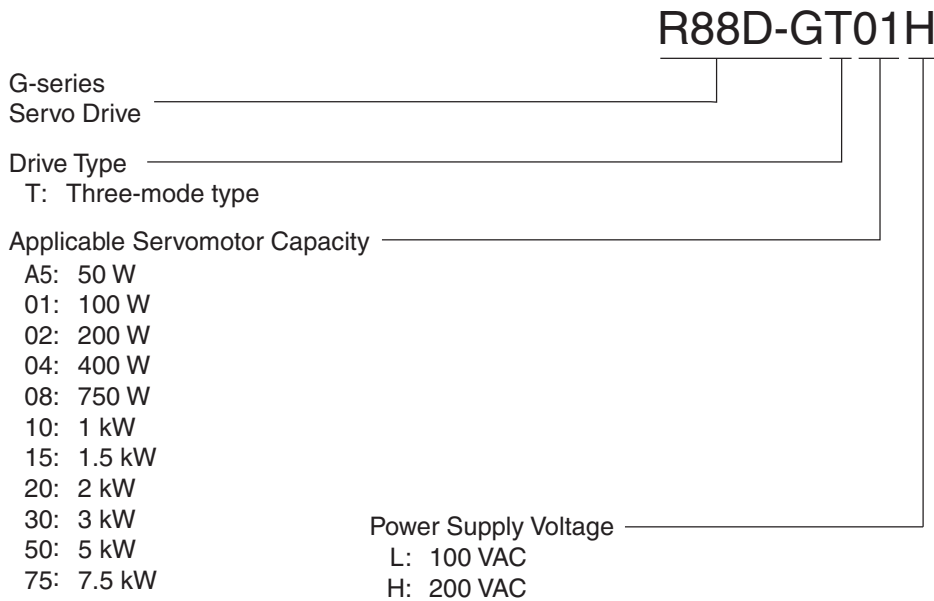
- **Command Control Mode Switching**  
Operation can be performed by switching between two of the following control modes: Position control, speed control (including internal speed) and torque control. Therefore, a variety of applications can be supported by one Servo Drive.
- **Simplified Speed Control with Internal Speed Settings**  
Eight internal speed settings allow you to change the speed easily by using external signals.



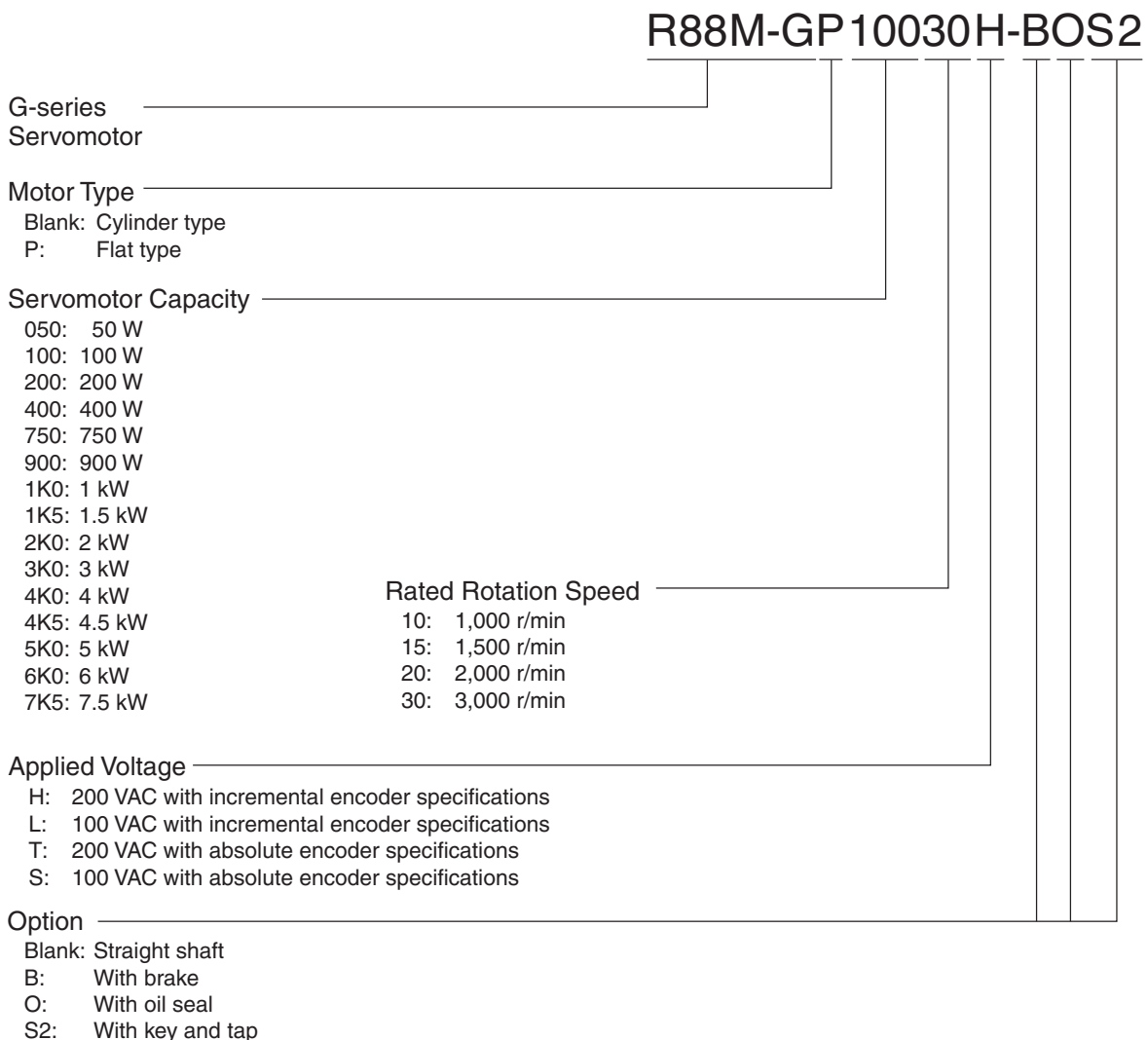
## Interpreting Model Numbers

### ● Servo Drive Model Numbers

The model number provides information such as the Servo Drive type, the applicable Servomotor capacity, and the power supply voltage.



### ● Servomotor Model Numbers



## Ordering Information

### ● Servo Drives

Specifications		Model
Single-phase 100 VAC	50 W	R88D-GTA5L
	100 W	R88D-GT01L
	200 W	R88D-GT02L
	400 W	R88D-GT04L
Single-phase 200 VAC	50 W	R88D-GT01H
	100 W	
	200 W	R88D-GT02H
	400 W	R88D-GT04H
Single-phase/three-phase 200 VAC	750 W	R88D-GT08H
	1 kW	R88D-GT10H
	900 W	R88D-GT15H
	1 kW	
Three-phase 200 VAC	2 kW	R88D-GT20H
	2 kW	R88D-GT30H
	3 kW	
	3 kW	R88D-GT50H
	4 kW	
	4.5 kW	
	5 kW	
	6 kW	R88D-GT75H
7.5 kW		

### ● Servomotors

#### **INC** 3,000-r/min Cylindrical Servomotors

Specifications			Model	
			Straight shaft	Straight shaft with key and tap
Without brake	100 V	50 W	R88M-G05030H	R88M-G05030H-S2
		100 W	R88M-G10030L	R88M-G10030L-S2
		200 W	R88M-G20030L	R88M-G20030L-S2
		400 W	R88M-G40030L	R88M-G40030L-S2
	200 V	50 W	R88M-G05030H	R88M-G05030H-S2
		100 W	R88M-G10030H	R88M-G10030H-S2
		200 W	R88M-G20030H	R88M-G20030H-S2
		400 W	R88M-G40030H	R88M-G40030H-S2
With brake	100 V	50 W	R88M-G05030H-B	R88M-G05030H-BS2
		100 W	R88M-G10030L-B	R88M-G10030L-BS2
		200 W	R88M-G20030L-B	R88M-G20030L-BS2
		400 W	R88M-G40030L-B	R88M-G40030L-BS2
	200 V	50 W	R88M-G05030H-B	R88M-G05030H-BS2
		100 W	R88M-G10030H-B	R88M-G10030H-BS2
		200 W	R88M-G20030H-B	R88M-G20030H-BS2
		400 W	R88M-G40030H-B	R88M-G40030H-BS2
		750 W	R88M-G75030H-B	R88M-G75030H-BS2

Note: Models with oil seals are also available.

Servo Drives with Single-phase 200-VAC Input Power

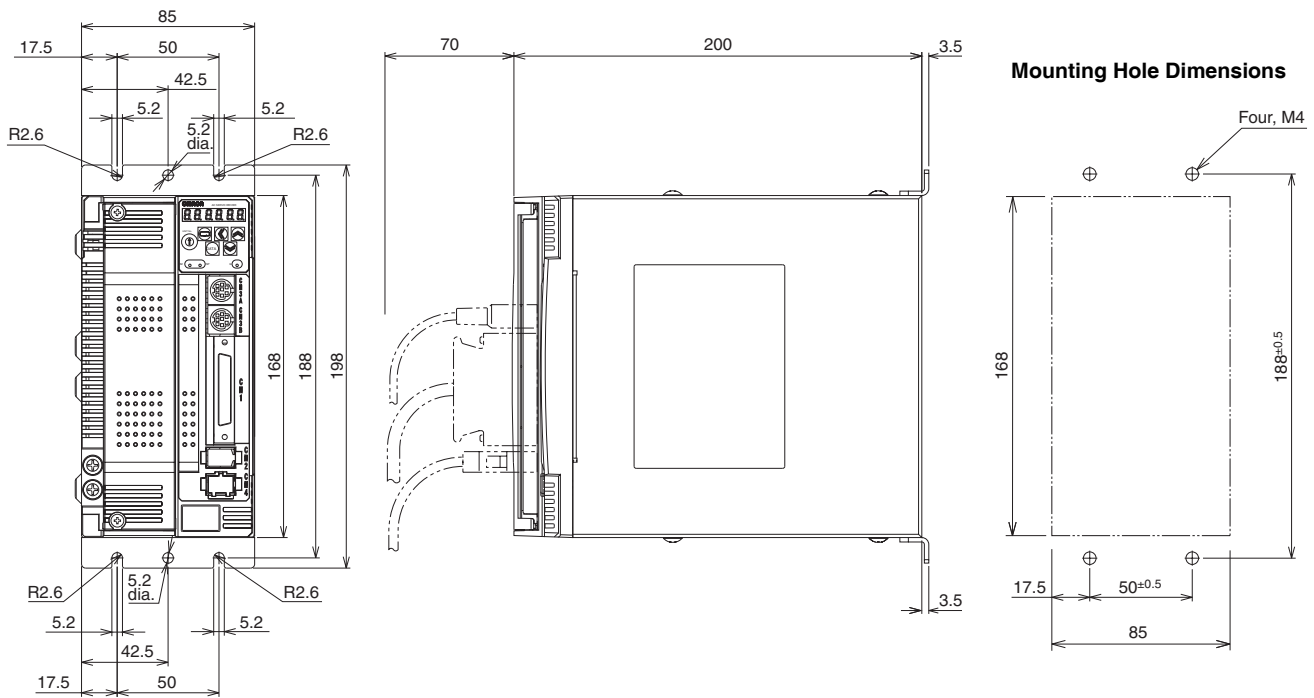
Item			R88D-GT01H	R88D-GT02H	R88D-GT04H	R88D-GT08H	R88D-GT10H	R88D-GT15H
Continuous output current (rms)			1.16 A	1.6 A	2.7 A	4.0 A	5.9 A	9.8 A
Momentary maximum output current (rms)			3.5 A	5.3 A	7.1 A	14.1 A	21.2 A	28.3 A
Input power supply	Main circuit	Power supply capacity	0.5 KVA	0.5 KVA	0.9 KVA	1.3 KVA	1.8 KVA	2.3 KVA
		Power supply voltage	Single-phase 200 to 240 VAC (170 to 264 V), 50/60 Hz			Single-phase or three-phase 200 to 240 VAC (170 to 264 V), 50/60 Hz		
		Rated current	1.3 A	2.0 A	3.7 A	5.0/3.3 <sup>*1</sup> A	7.5/4.1 <sup>*1</sup> A	11/8.0 <sup>*1</sup> A
	Control circuit	Power supply voltage	Single-phase 200 to 240 VAC (170 to 264 V), 50/60 Hz					
Rated current		0.05 A	0.05 A	0.05 A	0.05 A	0.07 A	0.07 A	
Heat generated	Main circuit		14.3 W	14.8 W	23.6 W	38.7 W	52.9 W	105.9 W
	Control circuit		4.5 W	4.5 W	4.5 W	4.3 W	6.1 W	6.1 W
PWM frequency			12.0 kHz			6.0 kHz		
Weight			Approx. 0.8 kg	Approx. 0.8 kg	Approx. 1.1 kg	Approx. 1.5 kg	Approx. 1.7 kg	Approx. 1.7 kg
Maximum applicable motor capacity			100 W	200 W	400 W	750 W	1 k W	1.5 kW
Applicable Servomotors (R88M-)	3,000-r/min Servomotors	INC	G05030H G10030H	G20030H	G40030H	G75030H	—	—
		ABS	G05030T G10030T	G20030T	G40030T	G75030T	—	G1K030T G1K530T
	3,000-r/min Flat Servomotors	INC	GP10030H	GP20030H	GP40030H	—	—	—
		ABS	GP10030T	GP20030T	GP40030T	—	—	—
	2,000-r/min Servomotors	ABS	—	—	—	—	G1K020T	G1K520T
	1,000-r/min Servomotors	ABS	—	—	—	—	—	G90010T
Control method			All-digital servo					
Inverter method			IGBT-driven PWM method					
Performance	Speed control range		1:5000					
	Speed variability: Load characteristic		0.01% or less at 0% to 100% (at rated speed)					
	Speed variability: Voltage characteristic		0% at ±10% of rated voltage (at rated speed)					
	Speed variability: Temperature characteristic		±0.1% or less at 0 to 50°C (at rated speed)					
	Torque control reproducibility		±3%					

\*1. The left value is for single-phase input power and the right value is for three-phase input power.

Servo Drives with Three-phase 200-VAC Input Power

Item			R88D-GT20H	R88D-GT30H	R88D-GT50H	R88D-GT75H
Continuous output current (rms)			14.3 A	17.4 A	31.0 A	45.4 A
Momentary maximum output current (rms)			45.3 A	63.6 A	84.8 A	170.0 A
Input power supply	Main circuit	Power supply capacity	3.3 KVA	4.5 KVA	7.5 KVA	11 KVA
		Power supply voltage	Three-phase 200 to 230 VAC (170 to 253 V), 50/60 Hz			
		Rated current	10.2 A	15.2 A	23.7 A	35.0 A
	Control circuit	Power supply voltage	Single-phase 200 to 230 VAC (170 to 253 V), 50/60 Hz			
Rated current		0.1 A	0.12 A	0.12 A	0.14 A	
Heat generated	Main circuit		112.3 W	219.6 W	391.7 W	376.2 W
	Control circuit		10.7 W	13.3 W	13.3 W	13.8 W
PWM frequency			6.0 kHz			
Weight			Approx. 3.2 kg	Approx. 6.0 kg	Approx. 6.0 kg	Approx. 16.4 kg
Maximum applicable motor capacity			2 kW	3 kW	5 kW	7.5 kW
Applicable Servomotors (R88M-)	3,000-r/min Servomotors	INC	—	—	—	—
		ABS	G2K030T	G3K030T	G4K030T G5K030T	—
	3,000-r/min Flat Servomotors	INC	—	—	—	—
		ABS	—	—	—	—
	2,000-r/min Servomotors	ABS	G2K020T	G3K020T	G4K020T G5K020T	G7K515T
	1,000-r/min Servomotors	ABS	—	G2K010T	G3K010T G4K510T	G6K010T
Control method			All-digital servo			
Inverter method			IGBT-driven PWM method			
Performance	Speed control range		1:5000			
	Speed variability: Load characteristic		0.01% or less at 0% to 100% (at rated speed)			
	Speed variability: Voltage characteristic		0% at ±10% of rated voltage (at rated speed)			
	Speed variability: Temperature characteristic		±0.1% or less at 0 to 50°C (at rated speed)			
	Torque control reproducibility		±3%			

• Three-phase 200 VAC (2 kW)  
R88D-GT20H



• Three-phase 200 VAC (2 to 5 kW)  
R88D-GT30H/-GT50H

