

AC Servomotors/Servo Drives



A wide selection of models with the functions and performance demanded in today's servo systems

- » Increase productivity
- » Solve equipment problems
- » Maximize performance
- » Improve accuracy

Automation...simple...powerful.

G-SERIES SERVOS

Complete functionality and performance demanded in today's Servo Systems.

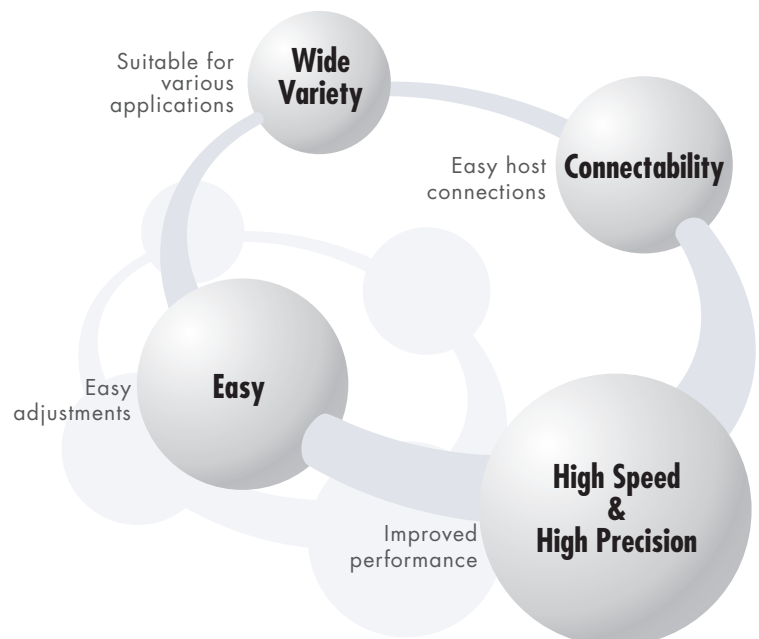


New G-Series

Let the G-Series solve your equipment problems.

Increase Productivity!

The G-Series Servo Drives and Motors provide a large variety of functions featuring high-precision positioning with improved response and vibration control, making it suitable for a wide range of applications.

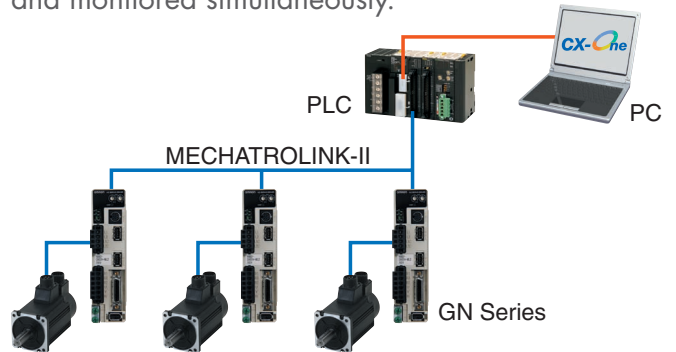




GN Series Network Drives

Connect the Controller and Multiple Servo Drives with a single cable to reduce wiring.

The parameters for many Servo Drives can be set and monitored simultaneously.



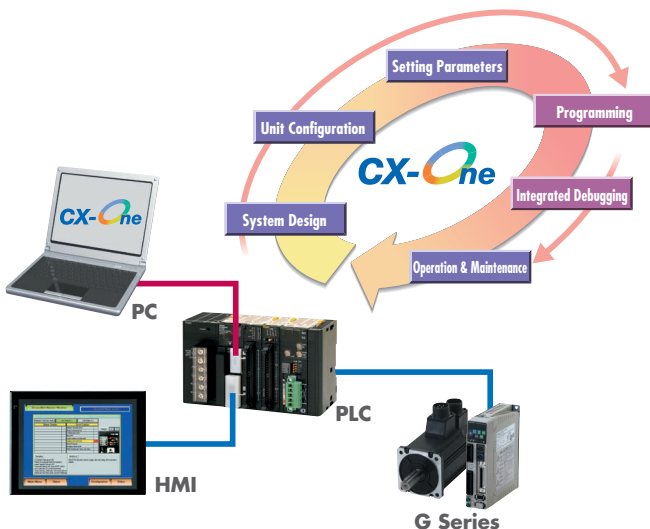
Note: MECHATROLINK-II is a registered trademark of the MECHATROLINK Members Association.

GT (Analog/Pulse) and GN Network Drive

Integrated development environment reduces your total cost of ownership from design to maintenance.

Easily Program Positioning and Communications

With the CX-One software suite, parameters settings, program design, debugging, operation monitoring, alarms, error monitoring, and maintenance of the Servo System can be handled with ease.



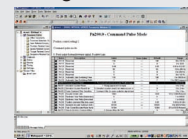
Setting & Programming

Easy programming with the Smart FB Library



Parameter Editing & Monitoring Available Soon

The Servomotor parameters can be edited, monitored, and saved with the CX-Drive.



Alarm & Maintenance

Easy monitoring of the NC Unit & Driver errors





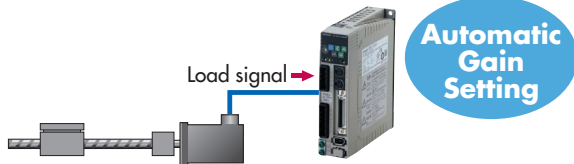
Wider Range of Servo Drives and Servomotors with fast positioning, improved frequency response and vibration control.

Easy!

Easy Adjustment

Real time autotuning sets the optimum gain.

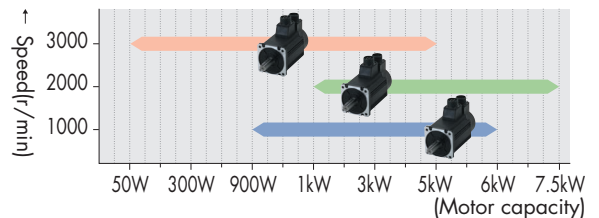
An auto-tuning function calculates the device load in real time and automatically sets the optimum gain to simplify the adjustment procedure.



Select the Optimum Motor

A wide range of Servomotors are available to meet your application needs.

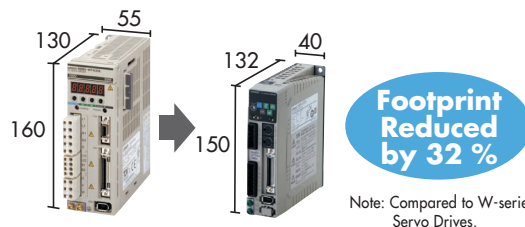
1,000, 1,500, 2,000, 3,000 RPM, brake, incremental or absolute encoder, straight or key shaft.



Reduce Control Panel Installation Space

Even Smaller Servo Drives.

The footprint of the Servo Drives has been reduced by 32% compared to previous OMRON models (see note), helping to reduce control panel size.





Advanced Performance!

Improve Machine Speed and Performance

Significantly better speed frequency response.

The speed frequency response has been improved by a factor of 2.5 compared to previous OMRON models. (See note.) The stabilization time has been reduced, increasing machine speed and response performance.

**Speed Frequency Response
1000 Hz**

2.5 times better than previous OMRON models

Note: Compared to W-series Servo Drivers.

Enable fast and accurate control

Fast positioning with improved command pulse frequency performance.

The command pulse frequency is 4 times faster than previous OMRON models. This enables fast, accurate control.

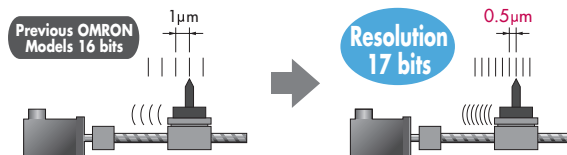
**Command Pulse Frequency
2,000,000 pps**

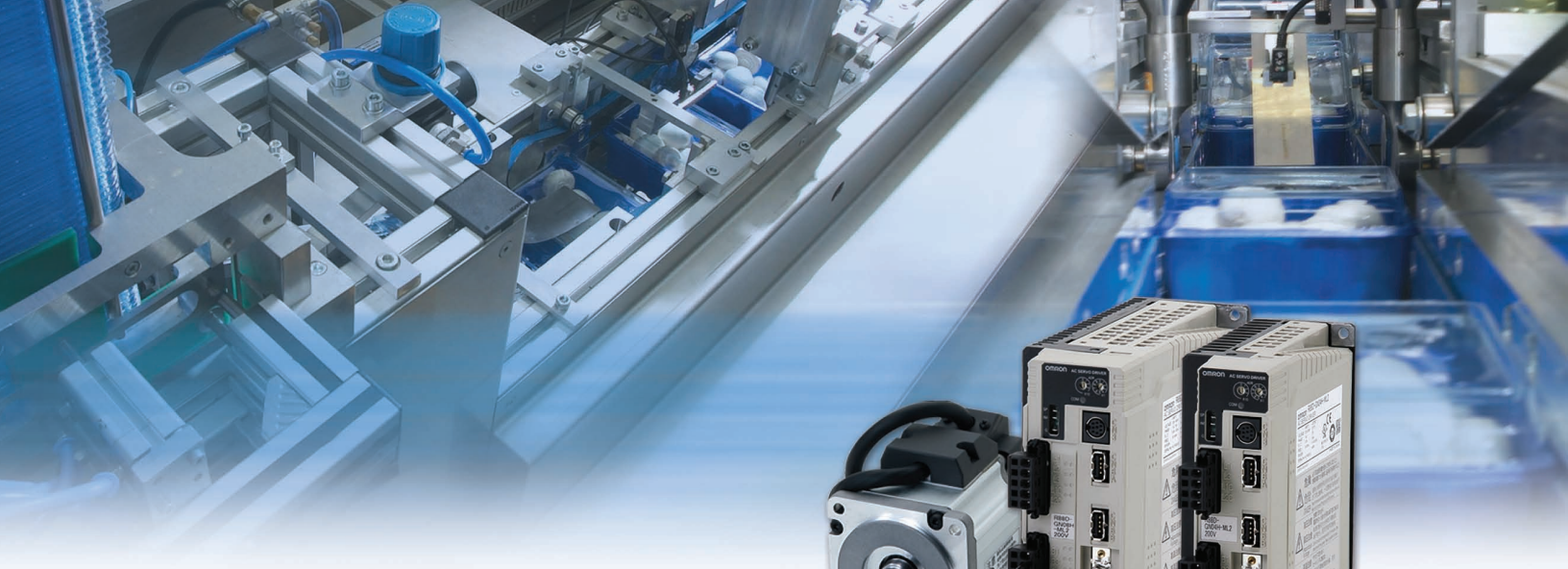
4 times faster than previous OMRON models

Improve positioning

All absolute encoders have a 17-bit resolution. Improving positioning accuracy.

Positioning is twice as accurate as previous OMRON models. This enables stable control in the low speed range G-Series motor.



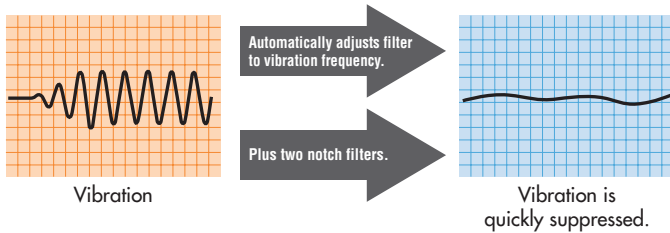


Advanced Functionality!

Reduce Mechanical Vibration

Quick suppression of vibration with an adaptive filter.

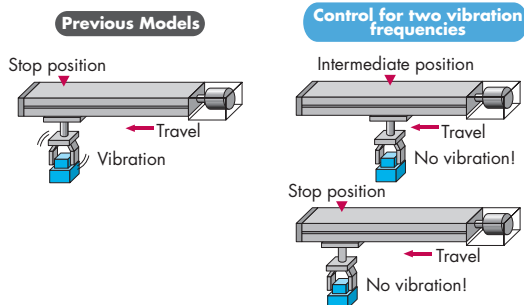
Even if the resonant frequency changes, real-time evaluation automatically follows the changes to reduce the effect of vibration due to low mechanical rigidity, such as in conveyor belts.



Reduce Time Needed for Manufacturing a Unit of Product

Reduce mechanical vibration with the vibration control function.

By removing the vibration frequency components between the stop position and the intermediate position, vibration that occurs due to low mechanical rigidity can be eliminated.



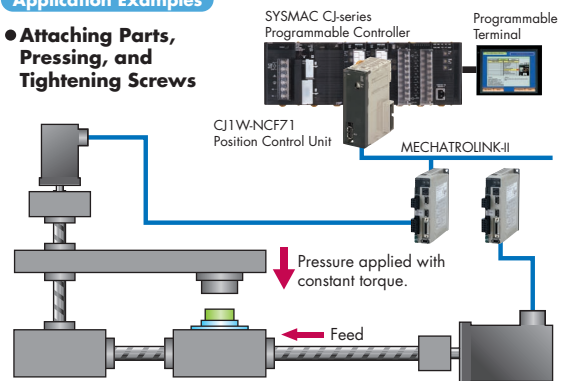
Flexible Application

Change the command control mode as required by the application.

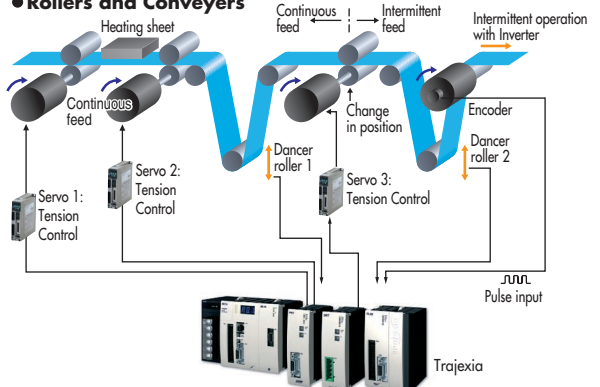
Select from position control, speed control, and torque control for use in applications such as pressing, tension, and injection.

Application Examples

Attaching Parts, Pressing, and Tightening Screws



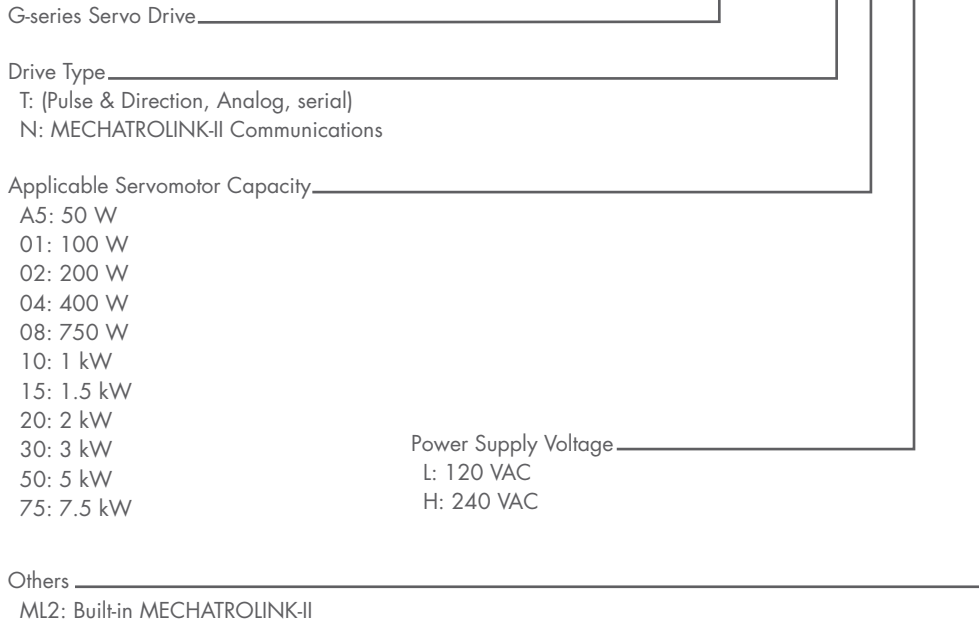
Rollers and Conveyers



Servo Drive Model Numbers

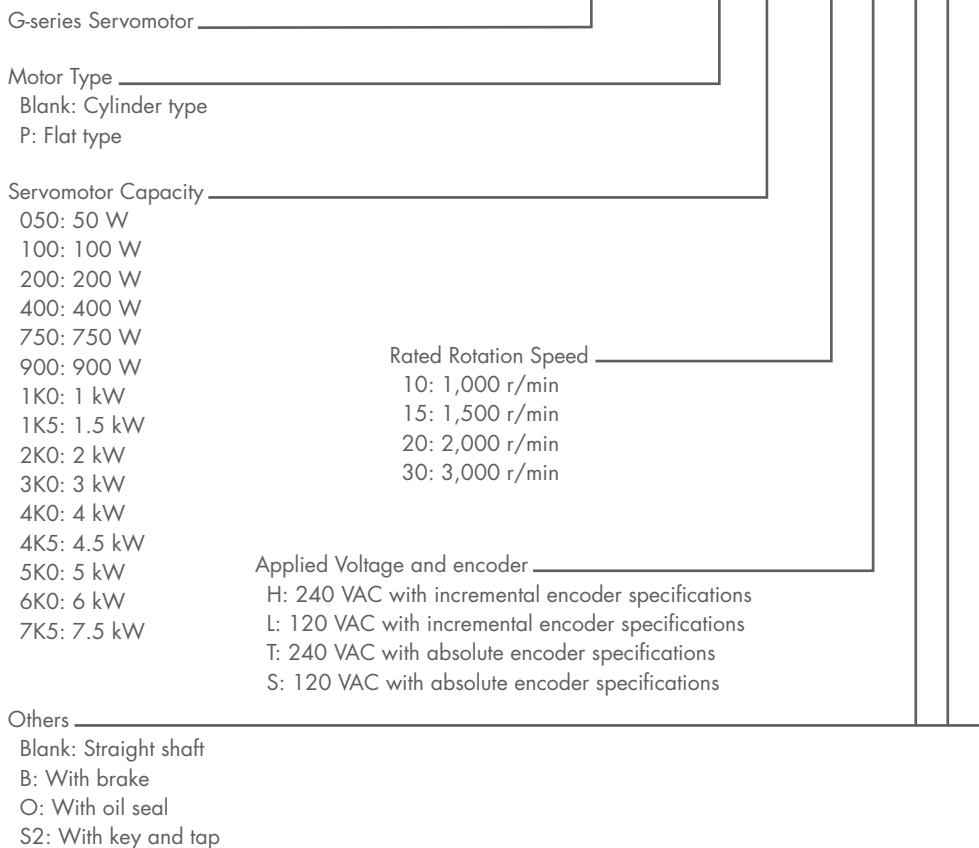
The model number provides information such as the Servo Drive type, the applicable Servomotor capacity, and the power supply voltage.

R88D-GT01H-ML2



Servomotor Model Numbers

R88M-GP10030H-BOS2



Only the Servomotor and Servo Drive combinations listed here can be used. Do not use other combinations.

3,000-r/min Cylindrical Servomotors and Servo Drives

Voltage	Servo Drive		Servomotor		
			Rated output	With incremental encoder	With absolute encoder
120 V	R88D-GTA5L	R88D-GNA5L-ML2	50 W	R88M-G05030H-S2	R88M-G05030T-S2
	R88D-GT01L	R88D-GN01L-ML2	100 W	R88M-G10030L-S2	R88M-G10030S-S2
	R88D-GT02L	R88D-GN02L-ML2	200 W	R88M-G20030L-S2	R88M-G20030S-S2
	R88D-GT04L	R88D-GN04L-ML2	400 W	R88M-G40030L-S2	R88M-G40030S-S2
Single-phase 240 V	R88D-GT01H	R88D-GN01H-ML2	50 W	R88M-G05030H-S2	R88M-G05030T-S2
	R88D-GT01H	R88D-GN01H-ML2	100 W	R88M-G10030H-S2	R88M-G10030T-S2
	R88D-GT02H	R88D-GN02H-ML2	200 W	R88M-G20030H-S2	R88M-G20030T-S2
	R88D-GT04H	R88D-GN04H-ML2	400 W	R88M-G40030H-S2	R88M-G40030T-S2
Single-phase/ three-phase 240 V	R88D-GT08H	R88D-GN08H-ML2	750 W	R88M-G75030H-S2	R88M-G75030T-S2
	R88D-GT15H	R88D-GN10H-ML2	1 kW	–	R88M-G1K030T-S2
	R88D-GT15H	R88D-GN15H-ML2	1.5 kW	–	R88M-G1K530T-S2
Three-phase 240 V	R88D-GT20H	R88D-GN20H-ML2	2 kW	–	R88M-G2K030T-S2
	R88D-GT30H	R88D-GN30H-ML2	3 kW	–	R88M-G3K030T-S2
	R88D-GT50H	R88D-GN50H-ML2	4 kW	–	R88M-G4K030T-S2
	R88D-GT50H	R88D-GN50H-ML2	5 kW	–	R88M-G5K030T-S2

3,000-r/min Flat Servomotors and Servo Drives

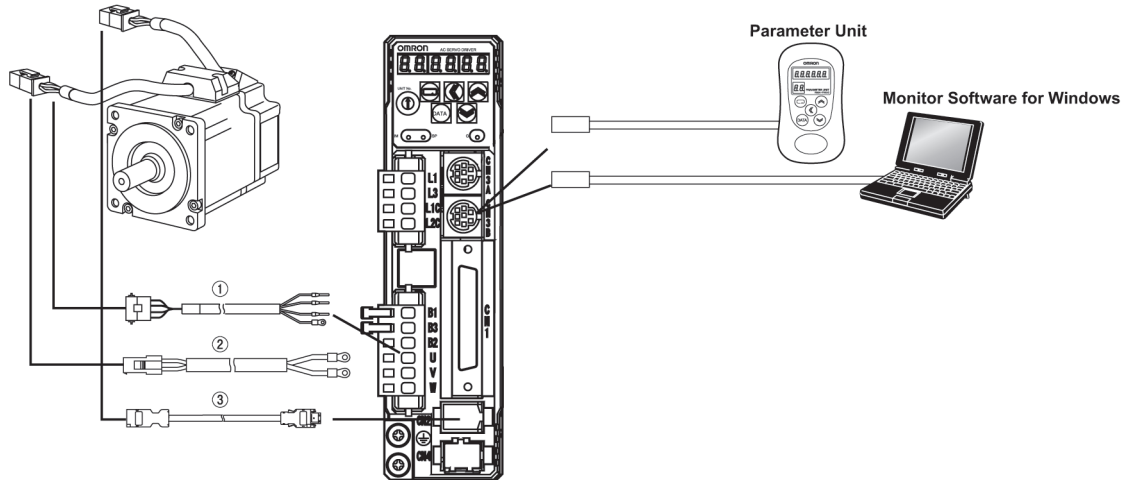
Voltage	Servo Drive		Servomotor		
			Rated output	With incremental encoder	With absolute encoder
120 V	R88D-GT01L	R88D-GN01L-ML2	100 W	R88M-GP10030L-S2	R88M-GP10030S-S2
	R88D-GT02L	R88D-GN02L-ML2	200 W	R88M-GP20030L-S2	R88M-GP20030S-S2
	R88D-GT04L	R88D-GN04L-ML2	400 W	R88M-GP40030L-S2	R88M-GP40030S-S2
Single-phase 240 V	R88D-GT01H	R88D-GN01H-ML2	100 W	R88M-GP10030H-S2	R88M-GP10030T-S2
	R88D-GT02H	R88D-GN02H-ML2	200 W	R88M-GP20030H-S2	R88M-GP20030T-S2
	R88D-GT04H	R88D-GN04H-ML2	400 W	R88M-GP40030H-S2	R88M-GP40030T-S2

2,000-r/min Cylindrical Servomotors and Servo Drives

Voltage	Servo Drive		Servomotor	
			Rated output	With absolute encoder
Single-phase/ three-phase 240 V	R88D-GT10H	R88D-GN10H-ML2	1 kW	R88M-G1K020T-S2
	R88D-GT15H	R88D-GN15H-ML2	1.5 kW	R88M-G1K520T-S2
Three-phase 240 V	R88D-GT20H	R88D-GN20H-ML2	2 kW	R88M-G2K020T-S2
	R88D-GT30H	R88D-GN30H-ML2	3 kW	R88M-G3K020T-S2
	R88D-GT50H	R88D-GN50H-ML2	4 kW	R88M-G4K020T-S2
	R88D-GT50H	R88D-GN50H-ML2	5 kW	R88M-G5K020T-S2
	R88D-GT75H	R88D-GN75H-ML2	7.5 kW	R88M-G7K515T-S2

1,000-r/min Cylindrical Servomotors and Servo Drives

Voltage	Servo Drive		Servomotor	
			Rated output	With absolute encoder
Single-phase/ three-phase 240 V	R88D-GT15H	R88D-GN15H-ML2	900 W	R88M-G90010T-S2
Three-phase 240 V	R88D-GT30H	R88D-GN50H-ML2	2 kW	R88M-G2K010T-S2
	R88D-GT50H	R88D-GN50H-ML2	3 kW	R88M-G3K010T-S2
	R88D-GT50H	R88D-GN50H-ML2	4.5 kW	R88M-G4K510T-S2
	R88D-GT75H	R88D-GN75H-ML2	6 kW	R88M-G6K010T-S2



Power Supply Cables (for CNB)

Symbol	Name	Connected to	Model
①	Standard Servomotor Power Cables for Servomotors without Brakes	Cylindrical Servomotors, 3,000 r/min., 50 to 750 W Flat Servomotors, 3,000 r/min., 100 to 400 W	3m = R88A-CAGA003S 5m = R88A-CAGA005S 10m = R88A-CAGA010S
		Cylindrical Servomotors, 3,000 r/min., 1 to 1.5 kW Cylindrical Servomotors, 2,000 r/min., 1 to 1.5 kW Cylindrical Servomotors, 1,000 r/min., 900 W	3m = R88A-CAGB003S 5m = R88A-CAGB005S 10m = R88A-CAGB010S
		Cylindrical Servomotors, 3,000 r/min., 2 kW Cylindrical Servomotors, 2,000 r/min., 2 kW	3m = R88A-CAGC003S 5m = R88A-CAGC005S 10m = R88A-CAGC010S
		Cylindrical Servomotors, 3,000 r/min., 3 to 5 kW Cylindrical Servomotors, 2,000 r/min., 3 to 5 kW Cylindrical Servomotors, 1,000 r/min., 2 to 4.5 kW	3m = R88A-CAGD003S 5m = R88A-CAGD005S 10m = R88A-CAGD010S
		Cylindrical Servomotors, 2,000 r/min., 7.5 kW Cylindrical Servomotors, 1,000 r/min., 6 kW	3m = R88A-CAGE003S 5m = R88A-CAGE005S 10m = R88A-CAGE010S
	Standard Servomotor Power Cables for Servomotors with Brakes	Cylindrical Servomotors, 3,000 r/min., 1 to 1.5 kW Cylindrical Servomotors, 2,000 r/min., 1 to 1.5 kW Cylindrical Servomotors, 1,000 r/min., 900 W	3m = R88A-CAGB003B 5m = R88A-CAGB005B 10m = R88A-CAGB010B
		Cylindrical Servomotors, 3,000 r/min., 2 kW Cylindrical Servomotors, 2,000 r/min., 2 kW	3m = R88A-CAGC003B 5m = R88A-CAGC005B 10m = R88A-CAGC010B
		Cylindrical Servomotors, 3,000 r/min., 3 to 5 kW Cylindrical Servomotors, 2,000 r/min., 3 to 5 kW Cylindrical Servomotors, 1,000 r/min., 2 to 4.5 kW	3m = R88A-CAGD003B 5m = R88A-CAGD005B 10m = R88A-CAGD010B

Brake Cables

Symbol	Name	Connected to	Model
②	Standard Brake Cables	Cylindrical Servomotors, 3,000 r/min., 50 to 750 W Flat Servomotors, 3,000 r/min., 100 to 400 W	3m = R88A-CAGA003B 5m = R88A-CAGA005B 10m = R88A-CAGA010B
		Cylindrical Servomotors, 2,000 r/min., 7.5 kW Cylindrical Servomotors, 1,000 r/min., 6 kW	3m = R88A-CAGE003B 5m = R88A-CAGE005B 10m = R88A-CAGE010B

Encoder Cables (for CN2)

Symbol	Name	Connected to	Model
③	Standard Encoder Cables with Connectors	Cylindrical Servomotors, 3,000 r/min., 50 to 750 W, absolute encoder Flat Servomotors, 3,000 r/min., 100 to 400 W, absolute encoder	3m = R88A-CRGA003C 5m = R88A-CRGA005C 10m = R88A-CRGA010C
		Cylindrical Servomotors, 3,000 r/min., 50 to 750 W, incremental encoder Flat Servomotors, 3,000 r/min., 100 to 400 W, incremental encoder	3m = R88A-CRGB003C 5m = R88A-CRGB005C 10m = R88A-CRGB010C
		Cylindrical Servomotors, 3,000 r/min., 1 to 1.5 kW Cylindrical Servomotors, 2,000 r/min., 1 to 5 kW Cylindrical Servomotors, 1,500 r/min., 7.5 kW Cylindrical Servomotors, 1,000 r/min., 900 W to 6 kW	3m = R88A-CRGC003N 5m = R88A-CRGC005N 10m = R88A-CRGC010N

Additional cable lengths available:

- 15m = 015
- 20m = 020
- 30m = 030
- 40m = 040
- 50m = 050

For High Flex cables please add a "R" at the end of the part number.

Cables for I/O connector (CN1) GN Servo Drive

Specifications	Model	
Connector Terminal Block Cables	1 m	XW2Z-100J-B33
	2 m	XW2Z-200J-B33
Connector Terminal Block	M3 screw type	XW2B-20G4
	M3.5 screw type	XW2B-20G5
	M3 screw type	XW2D-20G6

Cables for I/O connector (CN1) GT Servo Drive

Specifications	Model	
General-purpose Control Cables with Connector on One End	1 m	R88A-CPG001S
	2 m	R88A-CPG002S
	1 m	XW2Z-100J-B24
	2 m	XW2Z-200J-B24
Connector Terminal Block Cables	M3 screw type	XW2B-50G4
	M3.5 screw type	XW2B-50G5
	M3 screw type	XW2D-50G6



Terminal Block Units and Cables for R88D-GT series Servo Drives

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

Position Control Unit	④ Position Control Unit Cable	⑤ Servo Terminal block	⑥ Servo Drive Cable	
CQM1H-PLB21	0.5m = XW2Z-050J-A3 1m = XW2Z-100J-A3	XW2B-20J6-3B	1m = XW2Z-100J-B25 2m = XW2Z-200J-B25	
CS1W-NC113	0.5m = XW2Z-050J-A6 1m = XW2Z-100J-A6	XW2B-20J6-1B		
C200HW-NC113				
CS1W-NC213	0.5m = XW2Z-050J-A7 1m = XW2Z-100J-A7	XW2B-40J6-2B		
CS1W-NC413				
C200HW-NC213				
C200HW-NC413				
CS1W-NC133	0.5m = XW2Z-050J-A10 1m = XW2Z-100J-A10	XW2B-20J6-1B		
CS1W-NC233	0.5m = XW2Z-050J-A11 1m = XW2Z-100J-A11	XW2B-40J6-2B		
CS1W-NC433				
CJ1W-NC113	0.5m = XW2Z-050J-A14 1m = XW2Z-100J-A14	XW2B-20J6-1B		
CJ1W-NC213	0.5m = XW2Z-050J-A15 1m = XW2Z-100J-A15	XW2B-40J6-2B		
CJ1W-NC413				
CJ1W-NC133	0.5m = XW2Z-050J-A18 1m = XW2Z-100J-A18	XW2B-20J6-1B		
CJ1W-NC233	0.5m = XW2Z-050J-A19 1m = XW2Z-100J-A19	XW2B-40J6-2B		
CJ1W-NC433				
CJ1M-CPU21	0.5m = XW2Z-050J-A33 1m = XW2Z-100J-A33	XW2B-20J6-8A (for 1 axes)		1m = XW2Z-100J-B31 2m = XW2Z-200J-B31
CJ1M-CPU22		XW2B-40J6-9A (for 2 axes)		
CJ1M-CPU23				

Motion Control Unit Cable

There are special cables for 1-axis and 2-axis Motion Control Unit operation. Select the appropriate cable for the number of axes to be connected.

Motion Control Unit	Cable	Remarks
CS1W-MC221-V1/421-V1	For 1 axis	R88A-CPG□□□M1
	For 2 axes	R88A-CPG□□□M2

The □□□ digits in the model number indicate the cable length. Motion Control Unit Cables come in four lengths: 1 m, 2 m, 3 m, and 5 m. Example model number for 2-m 1-axis cable: R88A-CPG002M1.

Terminal block (Servo Relay Units) and Cables, Motion Control Unit Cable (continued)

MECHATROLINK-related Devices and Cables

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

Communication Cables

Specifications		Model
RS-232 Communications Cable	2 m	R88A-CCG002P2
RS-485 Communications Cable	0.5 m	R88A-CCG0R5P4
	1 m	R88A-CCG001P4

Connectors

Specifications		Model
Servomotor Connector for Encoder Cable	Absolute Encoder	R88A-CNG01R
	Incremental Encoder	R88A-CNG02R
Control I/O Connector (CN1)		R88A-CNU11C
Encoder Connector (CN2)		R88A-CNW01R
GN Control I/O Connector (CN1)		R88A-CNU01C

Mounting Brackets (L Brackets for Rack Mounting)

Specifications	Model
R88D-GTA5L/-GT01L/-GT01H/-GT02H	R88A-TK01G
R88D-GT02L/-GT04L	R88A-TK02G
R88D-GT04L/-GT08H	R88A-TK03G
R88D-GT10H/GT15H	R88A-TK04G

External Regeneration Resistors for GT or GN

Specifications	Model
80 W 50 Ω	R88A-RR0850S
80 W 100 Ω	R88A-RR080100S
220 W 47 Ω	R88A-RR22047S
500 W 20 Ω	R88A-RR50020S

Reactors for GT or GN

Specifications	Model
R88D-GTA5L/-GT01H	3G3AX-DL2002
R88D-GT01L/-GT02H	3G3AX-DL2004
R88D-GT02L/-GT04H	3G3AX-DL2007
R88D-GT04L/-GT08H/-GT10H	3G3AX-DL2015
R88D-GT15H	3G3AX-DL2022
R88D-GT08L/-GT10H/-GT15H	3G3AX-AL2025
R88D-GT20H/-GT30H	3G3AX-AL2055
R88D-GT50H	3G3AX-AL2110
R88D-GT75H	3G3AX-AL2220

Absolute Encoder Backup Battery

Specifications	Model
2,000 mA·h 3.6 V	R88A-BAT01G

Absolute Encoder Battery Cable

Specifications		Model
Absolute Encoder Battery Cable	0.3 m	R88A-CRGD0R3C
Absolute Encoder Battery Cable (One R88A-BAT01G Battery included)	0.3 m	R88A-CRGD0R3C-BS

Parameter Unit

Specifications	Model
Parameter Unit	R88A-PRO2G



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