NEW

OMRON

AC Servomotors / Servo Drives

G5 Series

The Preeminent Servo That Revolutionizes Motion Control

» EtherCAT

» High Speed and High Precision

» International Safety Standards

SYSMAC
always in control

Higher Throughput and Shorter Tact Time, Plus Improved Machine Safety

High Speed and High Precision

Fastest speed response frequency in industry at 2 kHz

Safety

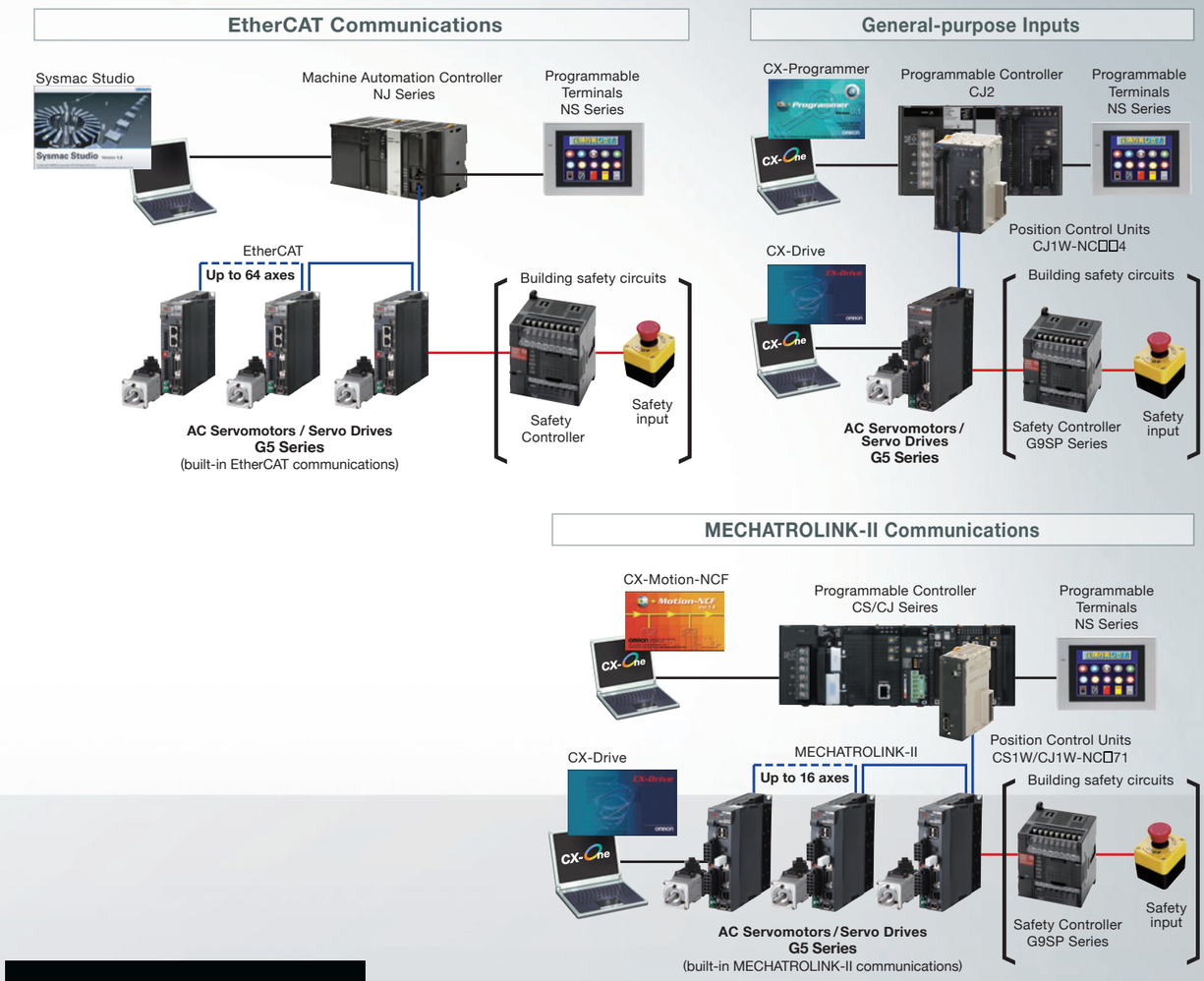
Conforms to the latest international safety standards

Reduced TCO

Advanced autotuning

Achieve the fastest position control in the industry by combining the G5 with an OMRON Controller.

System Configuration Example



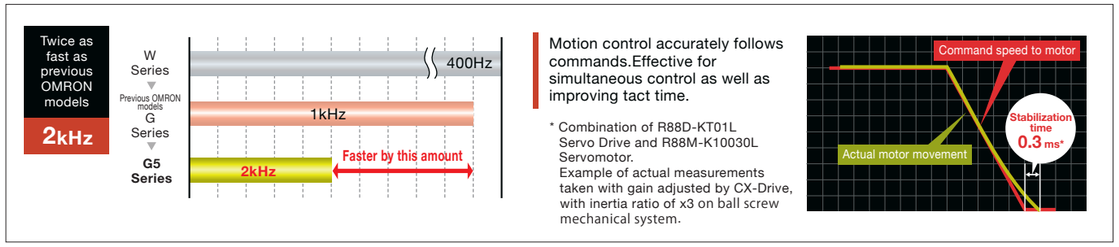
Provide Tact Time Improvement and High Accuracy

Safety Motion Control That Provides Safety and Reliability

Industry Top-class Tracking Performance

Speed Response Frequency of 2 kHz

Speed response is representative of servo system characteristics. In the G5, the industry's fastest response has been achieved at 2 kHz. By improving the speed response by twice compared to previous OMRON models, the stabilization time has been shortened and this contributes to tact time reduction.



Motion control accurately follows commands.Effective for simultaneous control as well as improving tact time.

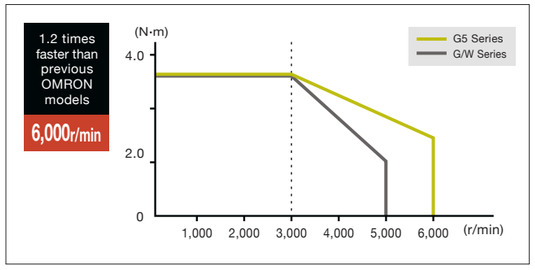
* Combination of R88D-KT01L Servo Drive and R88M-K10030L Servomotor.
Example of actual measurements taken with gain adjusted by CX-Drive, with inertia ratio of x3 on ball screw mechanical system.

Reduced Tact Time with Higher Speed

Maximum rotation speed : 6,000 r/min*

The maximum rotation speed of R88M-series Servomotors has increased to 6,000 r/min, resulting in high-speed positioning that can reduce tact time.

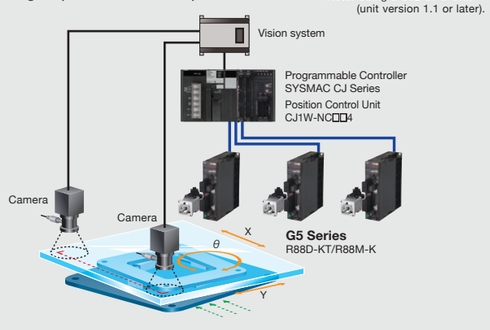
*Applicable to 100 V/200 V models with 750 W or less.



Example of High-speed/High-precision Application

- High-Speed and, High-Precision Position Control Using Camera Compensation
- The pulse output startup time of 0.1 ms enables High-Speed camera compensation.

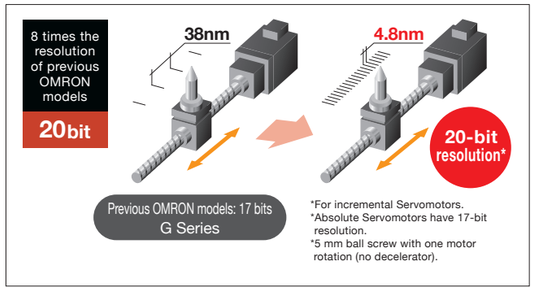
Note: Using a CJ2 CPU Unit (unit version 1.1 or later).



Best Positioning Accuracy

Featuring a 20-bit high-resolution incremental encoder

High-precision positioning can be achieved with the built-in encoder, 8 times the resolution of previous OMRON models at 20 bits.

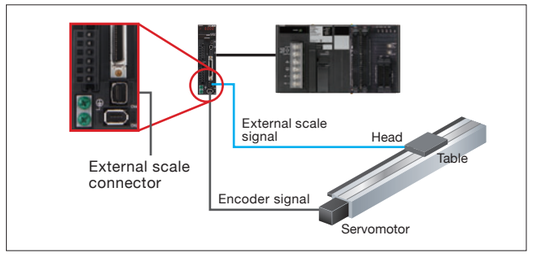


*For incremental Servomotors.
*Absolute Servomotors have 17-bit resolution.
*5 mm ball screw with one motor rotation (no decelerator).

High-precision Positioning

Fully Closed Loop Control Is a Standard Feature

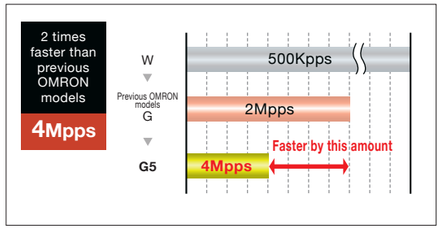
High-precision and high-response positioning can be realized without being affected by temperature changes by determining the position using direct feedback of the control position from the external scale, to enable using fully closed loop control without options.
(The external scale connector terminal is a standard feature.)



High-speed and High-precision Positioning

Pulse input response frequency: 4 Mpps

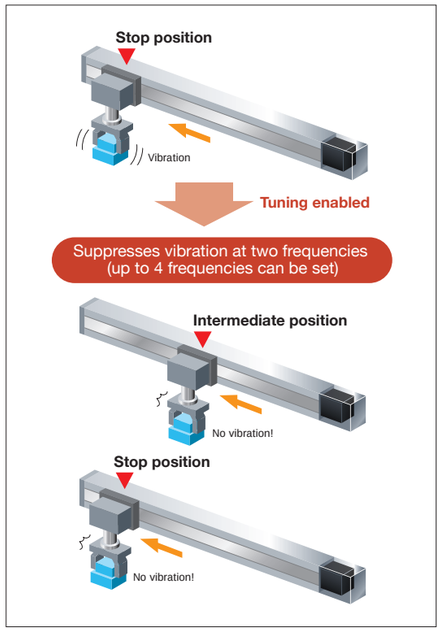
The Servo Drive response to command pulses is 4 Mpps, twice that of previous OMRON models. Response delays are thus reduced enabling high-speed and high-precision positioning.



Ideal for Applications That Require High Accuracy

Improved vibration control function

With the vibration control function, if the tip of the device is vibrating, the vibration frequency can be set to remove the vibration. It can also be used to suppress vibration resulting from starting and stopping the device, allowing precise movement.

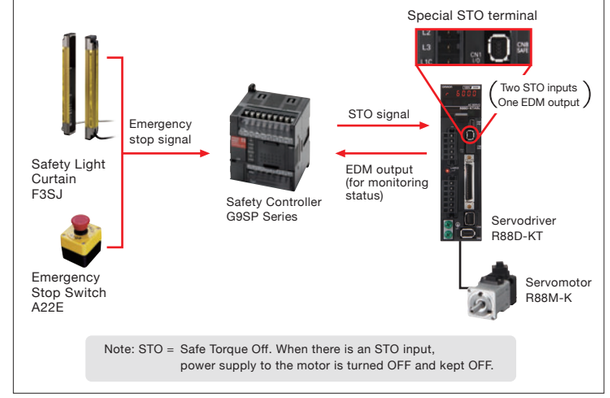


Conforms to the Latest International Standards

Safety and Productivity

The G5 was the first to acquire international standard IEC 61800-5-2 (STO) for motion control in the industry within Japan. It also conforms to the European Directives ISO 13849-1(PLc,d) * and EN 61508 (SIL2). Safety control circuits can be constructed with the Servo Drive, delivering both safety and productivity.

Example of the structure of safety motion control

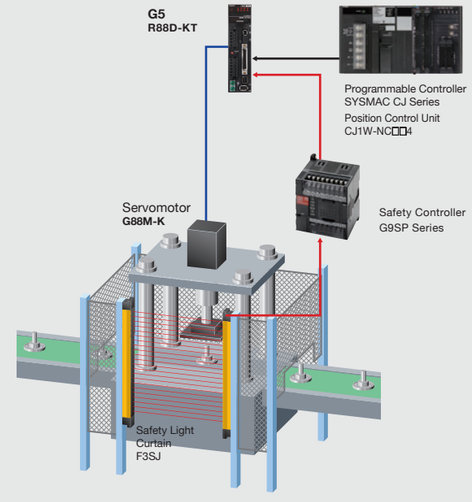


Note: STO = Safe Torque Off. When there is an STO input, power supply to the motor is turned OFF and kept OFF.

* Refer to General Specification of Servo Drive for the compliance of international standards.

Safety Motion Application Example

- Safety interlocks can be controlled by combining a Safety Light Curtain and Safety Motion Control.



Reduced TCO

Easy Adjustment and Reduce works to System Start-up

Complete Support from Setup to Maintenance

Software

How to Select Required Support Software for Your Controller

The required Support Software depends on the Controller to connect. Please check the following table when purchasing the Support Software.

Item	Omron Machine Automation Controller System	Omron PLC System
Controller	NJ-series	CS, CJ, CP, and other series
AC Servomotor/Drives	G5-series • EtherCAT Communications (Unit version 2.1 or later recommended)	G5-series • EtherCAT Communications • General-purpose input type(PulseTrain or Analog inputs) • MECHATROLINK-II Communications
Software	**Automation Software Sysmac Studio** The Sysmac Studio provides an integrated development environment to set up, program, debug, and maintain NJ-series Controllers and other Machine Automation Controllers, as well as EtherCAT slaves. CX-Drive is bundled in CX-One. <Connecting method with the Servo Drive> - Direct connection with the Servo Drive. - Connection via a PLC (possible with the Servo Drive with built-in EtherCAT communications function)	**FA Integrated Tool Package CX-One** The CX-Drive software allows you to set, transfer, and compare Servo Drive parameters, to perform trial operation and adjustments,and to monitor and trace operation. Setting, adjustment, monitoring/tracing with the Servo Drive can be done via an EtherCAT network. <Connecting method with the Servo Drive> - Connection via the NJ

Simple Gain Adjustment

Quickly adjust the gain using a wizard.

The autotuning feature provided with the CX-Drive makes it easy to adjust the Servo Drive gain. You can use a wizard to complete gain adjustment in approximately five minutes or less per axis simply by selecting the machine configuration and entering the target set time.

4 steps for gain adjusted (5 minutes per axis)

Autotuning

1. Machine Configuration

Although previously the machine configuration was set using parameters, it can now be selected from ball screws, turntables, belts, and other devices.

2. Automatic Adjustment

Setting for automatic adjustment and conditions after completing automatic adjustment.

3. Autotuning

Implement auto-tuning until reaching to a target value. Stabilization time, overshooting amount and efective load rate can be monitored.

4. Autotuning Completed

After completing autotuning, the results can be checked using the data tracing.

Setting screen image

Sysmac Studio / CX-Drive

Editing Parameters

- Operation is as easy as with a digital operator.
- Easily set parameters for Inverters and Servo Drives.

Sysmac Studio / CX-Drive

Simple FFT

- Device frequency characteristics can be easily measured to analyze resonant frequencies.
- Use notch filters for resonance frequencies to improve response.

Sysmac Studio / CX-Drive

Automatic damping control setting

Settings for damping control for the axis at the tip of the machine in a short time

Automatic damping control setting function is useful to execute damping control for Servo Drives. Manual settings will not be necessary. JOG operation, measuring vibration and parameter settings can be made on one screen.

2 steps for damping filter settings (5 minutes per axis).

Starting automatic damping control setting

1. Measuring machine vibration

Automatically measures vibration frequency by starting JOG operation from the software or operation executed by the Controller.

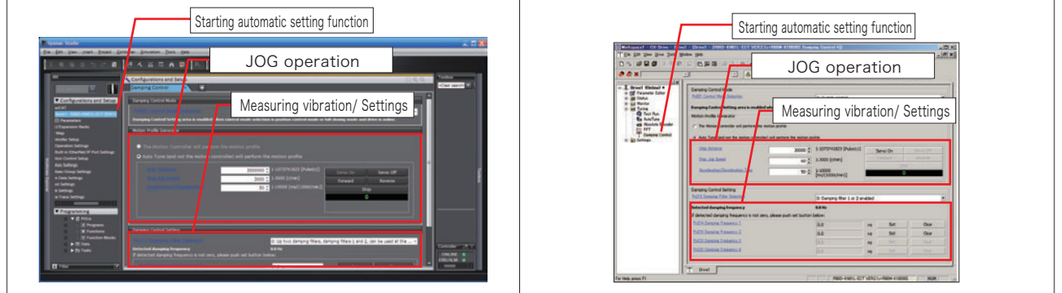
2. Damping filter setting

Apply the damping filter 1 to 4 for the measured vibration frequency. Vibration can be suppressed by setting the filters.

Damping control filter setting completed

Setting screen image

Sysmac Studio / CX-Drive



Machine Automation Controller NJ-series and AC Servomotor/Drives G5-series with built-in EtherCAT Communications

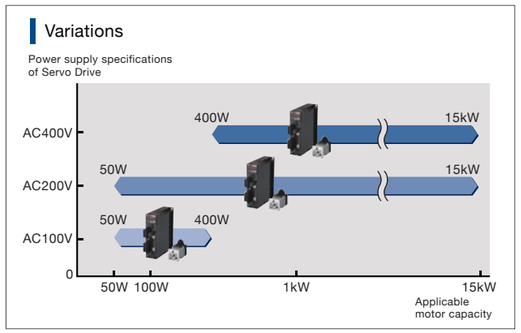
Reduced TCO

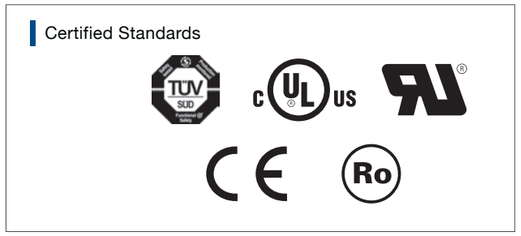
Easy Adjustment and Reduce works to System Start-up

Globalization

Lineup of 400VAC Servomotors

Servomotors are available for 100VAC, 200VAC, and 400VAC. And they conform to international safety standards for easy application anywhere worldwide.



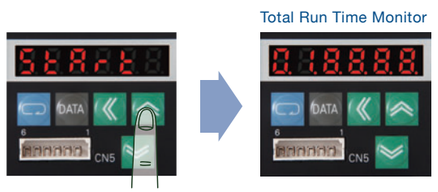


Reduced Work with Increased Monitor Functions

Monitoring for preventive maintenance have been improved.

Example of easier operation with improved monitoring.

Monitoring the Total Run Time When the Main Circuit Is ON



Monitoring the Causes of why the servo motor does not rotate*

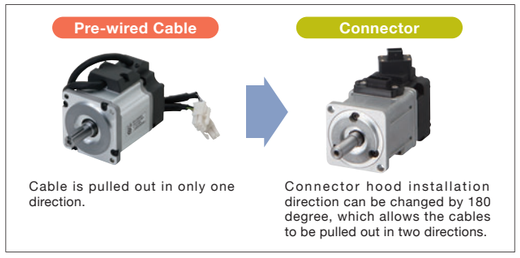
A function has been provided that monitors the causes of why the Servo motor does not move even though a rotation command has been sent.

*Supported by the Servo Drive Analog/Pulse train type only.

Flexible cable pull-out direction

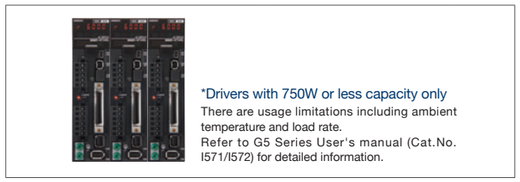
Direct conenctors for power cable, encoder cable, and brake cable connection.

In case that user creates motor cables, cable pull-out direction can be changed by 180 degree. (Refer to G5 Series User's manual（Cat,No. I571/I572） for the information about applicable motor capacity and connection method).
If you use cables provided by Omron, cable pull-out direction is limited to only one direction.



Side by side installation to save space

Possible to install multiple drivers side by side.



Servomotors Conform to IP67
(Excluding Through-shaft Parts)

The power cable and encoder cable also conform to IP67

*Applicable to 3 to 20m cables of 100V/200V models with 750W or less.

The Servomotor provides IP67 protection, enhancing resistance to the environment.

Reduced Stabilization Time by Suppressing Vibration

60% cogging torque reduction
(compared to previous G models)

Motor torque variation is reduced due to a 60% reduction in the cogging torque, resulting in high-precision positioning. This enables smooth operation at low speeds.

The optimum combination can be found from a variety of functions and model variations to handle various applications.

Servo Drive Variations

			G5 Series		
			EtherCAT Compatible Servo Drives	Servo Drives Pulse/analog inputs	MECHATROLINK-II Compatible Servo Drives
			R88D-KN□-ECT 	R88D-KT 	R88D-KN□-ML2 
Power supply	AC100V		Single-phase	Single-phase	Single-phase
	AC200V		Single/Three-phase, Three-phase	Single/Three-phase, Three-phase	Single/Three-phase, Three-phase
	AC400V		Three-phase	Three-phase	Three-phase
Motor capacity	AC100V		50 W, 100 W, 200 W, 400 W	50 W, 100 W, 200 W, 400 W	50 W, 100 W, 200 W, 400 W
	AC200V	Single-phase	—	—	—
		Single/Three-phase	50 W, 100 W, 200 W, 400 W, 750 W, 900 W, 1 kW, 1.5 kW	50 W, 100 W, 200 W, 400 W, 750 W, 900 W, 1 kW, 1.5 kW	50 W, 100 W, 200 W, 400 W, 750 W, 900 W, 1 kW, 1.5 kW
		Three-phase	2 kW, 3 kW, 4 kW, 4.5 kW, 5 kW, 6 kW, 7.5 kW, 11 kW, 15 kW	2 kW, 3 kW, 4 kW, 4.5 kW, 5 kW, 6 kW, 7.5 kW, 11 kW, 15 kW	2 kW, 3 kW, 4 kW, 5 kW
	AC400V	Three-phase	400 W, 600 W, 750 W, 900 W, 1 kW, 1.5 kW, 2 kW, 3 kW, 4 kW, 4.5 kW, 5 kW, 6 kW, 7.5 kW, 11 kW, 15 kW	400 W, 600 W, 750 W, 900 W, 1 kW, 1.5 kW, 2 kW, 3 kW, 4 kW, 4.5 kW, 5 kW, 6 kW, 7.5 kW, 11 kW, 15 kW	400 W, 600 W, 750 W, 900 W, 1 kW, 1.5 kW, 2 kW, 3 kW, 4 kW, 5 kW
Interface	Command type		ECT	Pulse train, Analog	ML2
Control modes	Control modes		Position control, Speed control, Torque control	Position control, Speed control, Torque control	Position control, Speed control, Torque control
	Control mode switching		Mode switching	Mode switching	Mode switching
Tuning functions	Vibration control		Vibration control *1	Vibration control *1	Vibration control *1
	Autotuning		AUTO 32	AUTO 32	AUTO 32
	Realtime autotuning		Adaptive filter *2	Adaptive filter *2	Adaptive filter *2
Safety	Conforms to international safety standards		Safety	Safety	Safety
Servo Drive functions	Fully closed		Fully closed	Fully closed	Fully closed
	Torque limits		Torque limit *1	Torque limit *1	Torque limit *1
	Encoder output		ABS, INC 20	ABS, INC 20	ABS, INC 20
	Internal set speeds		—	8 speeds	—

◎ Refer to Ordering Information for details on combining Drives and Servomotors.

*1. Two limits.

*2. Two adaptive filters and two notch filters.

Functions

ECT: EtherCAT high-speed Servo communications motion network.

Pulse train: The speed and travel distance are input to the Servo as pulse trains.

Analog: The speed and torque are input to the Servo as analog signals.

ML2: MECHATROLINK-II high-speed Servo communications motion network. (See note.)

Position control: Control is applied to move to the target position and then stop at the target position.

Speed control: Control is applied to change the linear or rotational speed. For example, speed control is used for applications such as turning grindstones, controlling welding speeds, and controlling feeding speeds.

Torque control: Control is applied to adjust the rotational force. Torque control is suitable for applications such as parts insertion, pressing, and screw tightening.

Command control mode switching: Switching is possible between any two of the three control modes: position control, speed control, and torque control.

Vibration control function: Vibration is suppressed by automatically setting a filter for the vibration frequency.

Autotuning: This function automatically sets an appropriate gain based on the rigidity setting of the machine load; 32 levels of rigidity settings are possible.

Absolute output: When the Controller power supply is turned ON, the Controller reads the Servo absolute position data to restore the absolute position.

Incremental output: When the controller power supply is turned ON, operation is always started from the origin. A 20-bit resolution is provided on models with incremental outputs.

Adaptive filter: The machine load inertia is calculated in realtime and the result is used to automatically set the optimum gain.

Safety function: Conforms to IEC 61800-5-2 (STO), EN ISO 13849-1: 2008 (PLc,d), ISO13849-1: 2006(PLc,d) and EN 61508 (SIL2).

Fully closed (fully closed loop control): Positioning using direct feedback of the current position from the external scale.

Torque limit: Switching is possible between the first torque limit and the second torque limit to limit the Servomotor output torque.

Servomotor Variations

G5 Series

Servomotors with EtherCAT Compatible, General-purpose inputs and MECHATROLINK-II Compatible Servomotors

R88M-K 

Motor type	Cylinder type		
Rated speed	1000r/min	2000r/min	3000r/min
Servomotor capacity 50W			ABS INC, INC 20
100W			ABS INC, INC 20
200W			ABS INC, INC 20
400W		ABS INC, INC 20	ABS INC, INC 20
600W		ABS INC, INC 20	
750W			ABS INC, INC 20
900W	ABS INC, INC 20		
1kW		ABS INC, INC 20	ABS INC, INC 20
1.5kW		ABS INC, INC 20	ABS INC, INC 20
2kW	ABS INC, INC 20	ABS INC, INC 20	ABS INC, INC 20
3kW	ABS INC, INC 20	ABS INC, INC 20	ABS INC, INC 20
4kW		ABS INC, INC 20	ABS INC, INC 20
4.5kW	ABS INC		
5kW		ABS INC, INC 20	ABS INC, INC 20
6kW	ABS INC		
7.5kW		ABS INC *	
11kW		ABS INC *	
15kW		ABS INC *	

* The rated speed is 1,500 r/min

Functions

absolute/Incremental output: The Servomotor can be switched between an absolute output and an Incremental output. When an absolute output is selected and the Controller power supply is turned ON, the Controller reads the Servo absolute position data to restore the absolute position. A-17bit resolution is provided on model with an absolute output and an incremental output.

Incremental output: When the controller power supply is turned ON, operation is always started from the origin. A 20-bit resolution is provided on models with incremental outputs.

R88M-K/R88D-KN□-ECT

System Configuration

Controllers

Machine Automation Controller
NJ Series

Programmable Controller
CJ2/CJ1

Position Control Unit with
EtherCAT interface
CJ1W-NC□81/NC□82

Automation Software

- Sysmac Studio

EtherCAT Cables

Use a category 5 or higher cable with double, aluminium tape and braided shielding.

Support Software

- CX-One FA Integrated Tool Package Including CX-Programmer

Support Software

- CX-One FA Integrated Tool Package (Including CX-Drive)
- CX-Drive WS02-DRVC1

High-Speed and High-Precision G5 Series EtherCAT Communications with the Controller

- High-accuracy positioning with fully-closed control.
- Servo Drives for 400VAC globally widens applicable systems and environment, including large-scale equipment.
- Safe design and Safe Torque Off (STO) function a(application pending)
- Vibration can be suppressed in acceleration/deceleration even in low-rigidity mechanical systems.

Servo Drive

- G5 Series
  Drives with Built-in EtherCAT Communications
  R88D-KN□□-ECT

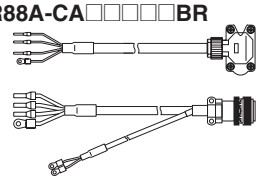
EtherCAT Communications

USB Communications

I/O signals

Power Cables

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



Brake Cables (50 to 750 W max.)

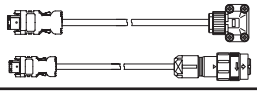
- Non-Flexible Cables
  R88A-CAKA□□□B
- Flexible Cables
  R88A-CAKA□□□BR

Motor power signals

Feedback Signals

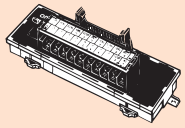
Encoder Cables

- Non-Flexible Cables
  - 750W or less
    R88A-CRK□□□□C
  - 1.0kW or more
    R88A-CRKC□□□N
- Flexible Cables
  - 750W or less
    R88A-CRK□□□□CR
  - 1.0kW or more
    R88A-CRK□□□NR



Connector-Terminal Block Conversion Units and Cable

- Connector-Terminal Block Conversion Unit
  XW2□-20G□



- Cable
  XW2Z-□□□J-B34

AC Servomotors

- G5 Series motor
  R88M-K

3000r/min
2000r/min
1500r/min
1000r/min

INC ABS INC

Peripheral Devices

External scale

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

Absolute Encoder Battery Cable

R88A-CRGD0R3C (-BS)

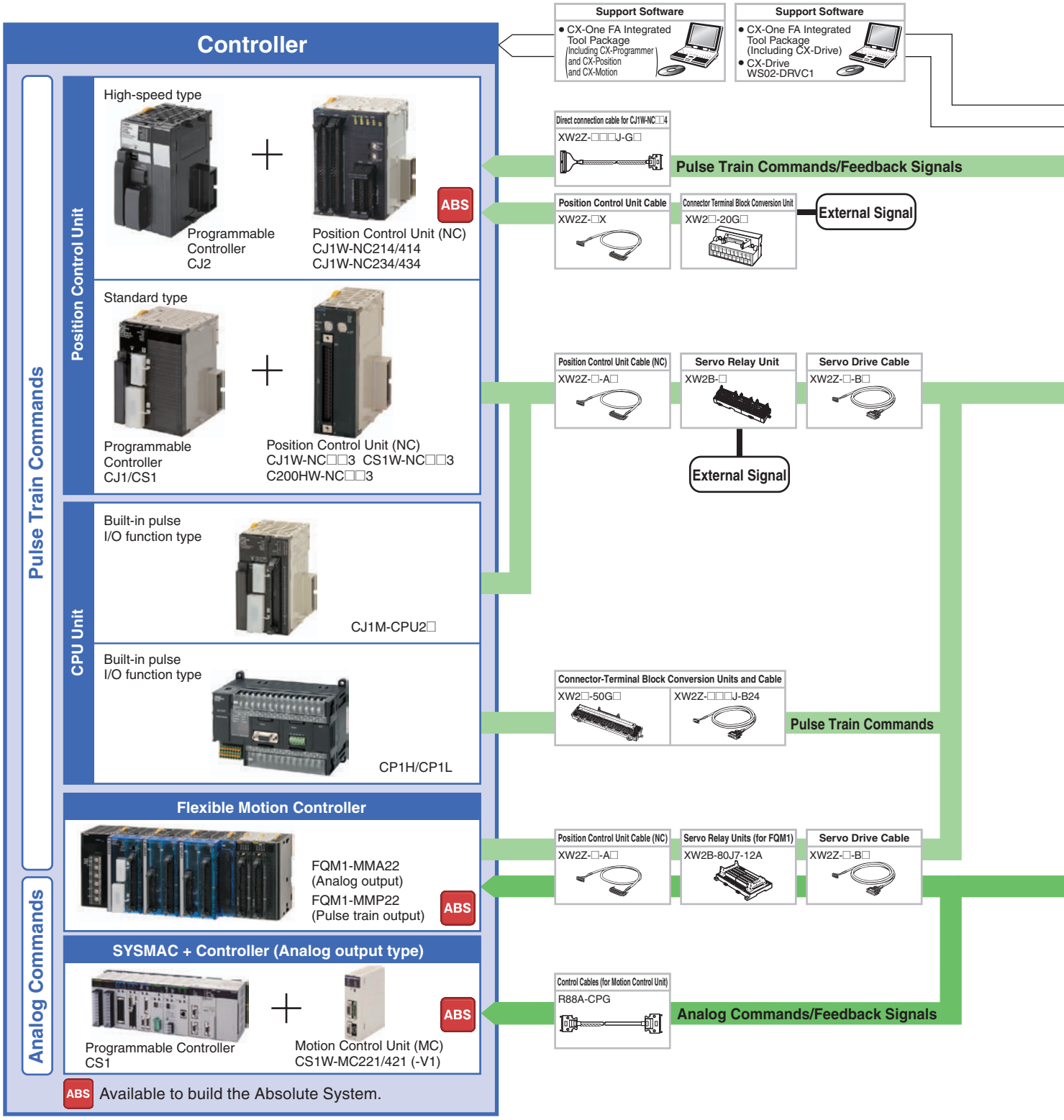
(One Battery is included with model numbers ending in"BS")

Note: Not required if a battery is connected to the control connector (CN1).

Decelerators

R88M-K/R88D-KT

System Configuration



The Preeminent Servo That Revolutionizes Motion Controll

- Industry Top-class Tracking Performance.
  Speed Response Frequency of 2 kHz.
- Best Positioning Accuracy.
  Featuring a 20-bit high-resolution incremental encoder.
- High-precision Positioning.
  Fully Closed Loop Control Is a Standard Feature.
- Conforms to the Latest International Standards.
  Safety and Productivity.
- Globalization. Lineup of 400 VAC Servomotors.

USB communications

Servo Drive

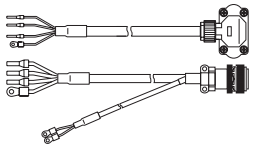
- G5 Series driver
  R88D-KT

100 VAC
200 VAC
400 VAC

Motor power signals

Power Cables

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



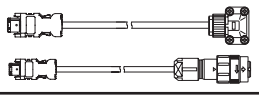
Brake Cables (50 to 750 W max.)

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

Feedback Signals

Encoder Cables

- Non-Flexible Cables
  - 750W or less
    R88A-CRK□□□□C
  - 1.0kW or more
    R88A-CRKC□□□N
- Flexible Cables
  - 750W or less
    R88A-CRK□□□□CR
  - 1.0kW or more
    R88A-CRK□□□NR



AC Servomotors

- G5 Series motor
  R88M-K

3,000 r/min
2,000 r/min
1,500 r/min
1,000 r/min

INC ABS INC

External scale

Peripheral Devices

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

Absolute Encoder Battery Cable

R88A-CRGD0R3C (-BS)
(One Battery is included with Servo Drivers with model numbers ending in "BS.")

* Not required if a battery is connected to the control connector (CN1).

Decelerators

R88M-K/R88D-KN□-ML2

System Configuration

Controllers (MECHATROLINK-II type)

Support Software
- CX-One FA Integrated Tool Package (Including CX-Programmer and CX-Position and CX-Motion)

Support Software
- CX-One FA Integrated Tool Package (Including CX-Drive)
- CX-Drive WS02-DRVC1

Programmable Controller
CJ1

Position Control Unit
CJ1W-NC□71

MECHATROLINK-II

Programmable Controller
CS1

Position Control Unit
CS1W-NC□71

MECHATROLINK-II Cables

(With ring core and USB connector on both ends)
FNY-W6003-□□ (OMRON model number)
(Without ring core USB connector on both ends)
FNY-W6002-□□ (OMRON model number)

MECHATROLINK-II Repeater

		Maximum transmission distance	
		0 to 30 m	30 to 50 m
Number of connected devices	1 to 15	Repeater not required.	Repeater not required.
	16	Repeater not required.	Repeater required.

High-Speed and High-Precision G5 Series MECHATROLINK-II Communications with the Controller

- Data transfer using MECHATROLINK-II (See Note 1) Communications:
  All control data that can be interfaced between the Servo Driver and the Controller is transmitted using data communications. This enables maximizing the Servomotor performance without restricting the transmission performance of the control signals.
- Having a communications module built into the Servo Driver significantly saves space in the control panel.

Note: 1. CX-Drive (version 1.9) support for G5-series Servo Drivers with MECHATROLINK-II Communications can be obtained from November, 2009.

Servo Drive

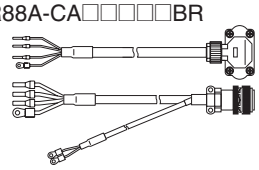
USB communi-cations

- **G5 Series driver R88D-KN□□-ML2**

I/O signals

Power Cables

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



Brake Cables (50 to 750 W max.)

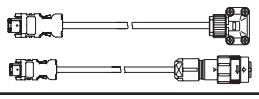
- Non-flexible Cables R88A-CAKA□□□B
- Flexible Cables R88A-CAKA□□□BR

Motor power signals

Feedback Signals

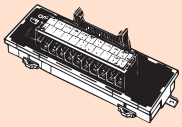
Encoder Cables

- Non-Flexible Cables
  - 750W or less R88A-CRK□□□□C
  - 1.0kW or more R88A-CRKC□□□N
- Flexible Cables
  - 750W or less R88A-CRK□□□□CR
  - 1.0kW or more R88A-CRK□□□NR



Connector-Terminal Block Conversion Units and Cable

- **Connector-Terminal Block Conversion Unit XW2□-20G□**



- **Cable XW2Z-□□□J-B34**

AC Servomotors

- **G5 Series motor R88M-K**

3000r/min
2000r/min
1000r/min

INC ABS INC

External scale

Peripheral Devices

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

Absolute Encoder Battery Cable

R88A-CRGD0R3C (-BS)
(One Battery is included with Servo Drivers with model numbers ending in "BS.")

* Not required if a battery is connected to the control connector (CN1).

Decelerators

MEMO

Ordering Information

Product name AC Servomotor/Drive G5-series

As a Sysmac Device, the G5-series AC Servomotor/Servo Drive with Built-in EtherCAT Communications is designed to provide optimal functionality and enhanced operability when used in conjunction with a Machine Automation Controller such as NJ series and the automation software Sysmac Studio. Sysmac Device is a generic term for OMRON control devices such as an EtherCAT Slave, designed with unified communications specifications and user interface specifications.

When connecting a Servo Drive to the NJ5 series Machine Automation Controller, it is recommended that you use the Servo Drive with Built-in EtherCAT Communications, R88D-KN□□□-ECT, with unit version 2.1 or later.

Interpreting Model Numbers

Servo Drive Model Numbers

R88D-K N 01 H -ECT

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

No	Item	Symbol	Specifications
(1)	G5-series Servo Drive		
(2)	Drive Type	T	Analog input/Pulse train input type
		N	Communication type
(3)	Maximum Applicable Servomotor Capacity	A5	50 W
		01	100 W
		02	200 W
		04	400 W
		06	600 W
		08	750 W
		10	1 W
		15	1.5 kW
		20	2 kW
		30	3 kW
		40	4 kW
		50	5 kW
		75	7.5 kW
		150	15 kW
(4)	Power Supply Voltage	L	100 VAC
		H	200 VAC
		F	400 VAC
(5)	Network type	Blank	General-purpose Inputs
		-ML2	MECHATROLINK-II Communications
		-ECT	EtherCAT Communications

Servomotor Model Numbers

R88M-K □ 750 30 H -BO S2

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

No	Item	Symbol	Specifications
(1)	G5-series Servomotor		
(2)	Motor Type	Blank	Cylinder type
		–	–
(3)	Servomotor Capacity	050	50 W
		100	100 W
		200	200 W
		400	400 W
		600	600 W
		750	750 W
		900	900 W
		1K0	1 kW
		1K5	1.5 kW
		2K0	2 kW
		3K0	3 kW
		4K0	4 kW
		4K5	4.5 kW
		5K0	5 kW
		6K0	6 kW
		7K5	7.5 kW
		11K0	11 kW
		15K0	15 kW
(4)	Rated Rotation Speed	10	1,000 r/min
		15	1,500 r/min
		20	2,000 r/min
		30	3,000 r/min
(5)	Applied Voltage	F	400 VAC (with incremental encoder specifications) **INC**
		H	200 VAC (with incremental encoder specifications) **INC**
		L	100 VAC (with incremental encoder specifications) **INC**
		C	400 VAC (with absolute encoder specifications) **ABS/INC**
		T	200VAC (with absolute encoder specifications) **ABS/INC**
		S	100 VAC (with absolute encoder specifications) **ABS/INC**
(6)	Option	Blank	Straight shaft
		B	With brake
		O	With oil seal
		S2	With key and tap

Note: INC incremental encoder: 20bit
ABS/INC incremental encoder: 17bit, absolute encoder: 17bit

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

Backlash = 3' Max.

R88G-HPG 14A 05 100 S B J

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

No	Item	Symbol	Specifications
(1)	Decelerator for G□-Series Servomotors Backlash = 3' Max.		
(2)	Flange Size Number	11B	□40
		14A	□60
		20A	□90
		32A	□120
		50A	□170
		65A	□230
(3)	Gear Ratio	05	1/5
		09	1/9 (only frame number 11B)
		11	1/11 (except frame number 65A)
		12	1/12 (only frame number 65A)
		20	1/20 (only frame number 65A)
		21	1/21 (except frame number 65A)
		25	1/25 (only frame number 65A)
		33	1/33
		45	1/45
(4)	Applicable Servomotor Capacity	050	50 W
		100	100 W
		200	200 W
		400	400 W
		750	750 W
		900	900 W
		1K0	1 kW
		1K5	1.5 kW
		2K0	2 kW
		3K0	3 kW
		4K0	4 kW
		4K5	4.5 kW
		5K0	5 kW
(5)	Motor Type	Blank	3,000-r/min cylindrical servomotors
		–	–
		S	2,000-r/min cylindrical servomotors
		T	1,000-r/min cylindrical servomotors
(6)	Backlash	B	Backlash = 3' Max
(7)	Option	Blank	Straight shaft
		J	With key and tap

Backlash = 15' Max.

R88G-VRSF 09 B 100 C J

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

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

Table of Servomotor Variations

R88M-K□□□□□□□-□□□□

(3) (4) (5) (6) (7) (8) (9)

(3)	(4)	(5)	Model	(6)						(7)		(8)		(9)	
Type	Applicable Servomotor Capacity	Rotation speed		Applied Voltage						With brake / Without brake		Models with oil seals		Shaft type	
				INC	INC	INC	ABS	ABS	ABS						
				400	200	100	400	200	100	–	B				
				F	H	L	C	T	S	Blank	With brake	Blank	O	Blank	S2
Cylinder	50 W	3,000 r/min	R88M-K05030 *1		√			√		√	√	√	√	√	√
	100 W		R88M-K10030		√	√		√	√	√	√	√	√	√	√
	200 W		R88M-K20030		√	√		√	√	√	√	√	√	√	√
	400 W		R88M-K40030		√	√		√	√	√	√	√	√	√	√
	750 W		R88M-K75030	√	√		√	√		√	√	√	√	√	√
	1 kW		R88M-K1K030	√	√		√	√		√	√	√	√	√	√
	1.5 kW		R88M-K1K530	√	√		√	√		√	√	√	√	√	√
	2 kW		R88M-K2K030	√	√		√	√		√	√	√	√	√	√
	3 kW		R88M-K3K030	√	√		√	√		√	√	√	√	√	√
	4 kW		R88M-K4K030	√	√		√	√		√	√	√	√	√	√
	5 kW		R88M-K5K030	√	√		√	√		√	√	√	√	√	√
	400 W	2,000 r/min	R88M-K40020	√			√			√	√	√	√	√	√
	600 W		R88M-K60020	√			√			√	√	√	√	√	√
	1 kW		R88M-K1K020	√	√		√	√		√	√	√	√	√	√
	1.5 kW		R88M-K1K520	√	√		√	√		√	√	√	√	√	√
	2 kW		R88M-K2K020	√	√		√	√		√	√	√	√	√	√
	3 kW		R88M-K3K020	√	√		√	√		√	√	√	√	√	√
	4 kW		R88M-K4K020	√	√		√	√		√	√	√	√	√	√
	5 kW		R88M-K5K020	√	√		√	√		√	√	√	√	√	√
	7.5 kW		R88M-K7K515 *2				√	√		√	√	√	√	√	√
	11 kW		R88M-K11K015 *2				√	√		√	√	√	√	√	√
	15 kW		R88M-K15K015 *2				√	√		√	√	√	√	√	√
	900 W	1,000 r/min	R88M-K90010	√	√		√	√		√	√	√	√	√	√
	2 kW		R88M-K2K010	√	√		√	√		√	√	√	√	√	√
	3 kW		R88M-K3K010	√	√		√	√		√	√	√	√	√	√
	4.5 kW		R88M-K4K510				√	√		√	√	√	√	√	√
	6 kW		R88M-K6K010				√	√		√	√	√	√	√	√
Blank: Cylinder type	example 030: 30 W 100: 100 W 1K0: 1 kW	10: 1,000 r/min 20: 2,000 r/min 30: 3,000 r/min		F: 400 VAC (with incremental encoder) INC H: 200 VAC (with incremental encoder) INC L: 100 VAC (with incremental encoder) INC C: 400 VAC (with absolute encoder) ABS/INC T: 200 VAC (with absolute encoder) ABS/INC S: 100 VAC (with absolute encoder) ABS/INC						Blank: Without brake B: 24 VDC With brake		Blank: Without oil seals O: With oil seals		Blank: Straight shaft S2: With key and tap	

***1.** R88M-K05030H-□, R88M-K05030T-□, can be used for Power Supply Voltage of 100/200VAC.
***2.** The rated speed is 1,500 r/min.

Ordering Information

AC Servo Drives

EtherCAT Communications

Specifications		Model
Power Model Supply Voltage	Applicable Servomotor Capacity	
Single-phase 100 VAC	50 W	R88D-KNA5L-ECT
	100 W	R88D-KN01L-ECT
	200 W	R88D-KN02L-ECT
	400 W	R88D-KN04L-ECT
Single-phase/three-phase 200 VAC	100 W	R88D-KN01H-ECT
	200 W	R88D-KN02H-ECT
	400 W	R88D-KN04H-ECT
	750 W	R88D-KN08H-ECT
	1 kW	R88D-KN10H-ECT
	1.5 kW	R88D-KN15H-ECT
Three-phase 200 VAC	2 kW	R88D-KN20H-ECT
	3 kW	R88D-KN30H-ECT
	5 kW	R88D-KN50H-ECT
	7.5 kW	R88D-KN75H-ECT
	15 kW	R88D-KN150H-ECT
Three-phase 400 VAC	600 W	R88D-KN06F-ECT
	1 kW	R88D-KN10F-ECT
	1.5 kW	R88D-KN15F-ECT
	2 kW	R88D-KN20F-ECT
	3 kW	R88D-KN30F-ECT
	5 kW	R88D-KN50F-ECT
	7.5 kW	R88D-KN75F-ECT
	15 kW	R88D-KN150F-ECT

Note: When connecting a Servo Drive to the NJ5 series Machine Automation Controller, it is recommended that you use the Servo Drive with Built-in EtherCAT Communications, R88D-KN□□□-ECT, with unit version 2.1 or later.

General-purpose Inputs (Analog input/Pulse train input type)

Specifications		Model
Power Supply Voltage	Applicable Servomotor Capacity	
Single-phase 100 VAC	50 W	R88D-KTA5L
	100 W	R88D-KT01L
	200 W	R88D-KT02L
	400 W	R88D-KT04L
Single-phase/three-phase 200 VAC	100 W	R88D-KT01H
	200 W	R88D-KT02H
	400 W	R88D-KT04H
	750 W	R88D-KT08H
	1 kW	R88D-KT10H
	1.5 kW	R88D-KT15H
Three-phase 200 VAC	2 kW	R88D-KT20H
	3 kW	R88D-KT30H
	5 kW	R88D-KT50H
	7.5 kW	R88D-KT75H
	15 kW	R88D-KT150H
Three-phase 400 VAC	600 W	R88D-KT06F
	1 kW	R88D-KT10F
	1.5 kW	R88D-KT15F
	2 kW	R88D-KT20F
	3 kW	R88D-KT30F
	5 kW	R88D-KT50F
	7.5 kW	R88D-KT75F
	15 kW	R88D-KT150F

MECHATROLINK-II Communications

Specifications		Model
Power Supply Voltage	Applicable Servomotor Capacity	
Single-phase 100 VAC	50 W	R88D-KNA5L-ML2
	100 W	R88D-KN01L-ML2
	200 W	R88D-KN02L-ML2
	400 W	R88D-KN04L-ML2
Single-phase/three-phase 200 VAC	100 W	R88D-KN01H-ML2
	200 W	R88D-KN02H-ML2
	400 W	R88D-KN04H-ML2
	750 W	R88D-KN08H-ML2
	1 kW	R88D-KN10H-ML2
	1.5 kW	R88D-KN15H-ML2
Three-phase 200 VAC	2 kW	R88D-KN20H-ML2
	3 kW	R88D-KN30H-ML2
	5 kW	R88D-KN50H-ML2
Three-phase 400 VAC	600 W	R88D-KN06F-ML2
	1 kW	R88D-KN10F-ML2
	1.5 kW	R88D-KN15F-ML2
	2 kW	R88D-KN20F-ML2
	3 kW	R88D-KN30F-ML2
	5 kW	R88D-KN50F-ML2

Servomotors

<Cylinder Type>
3,000-r/min servomotors

Rotation speed	Encoder	Option
3,000 r/min	INC	Without key
	ABS/INC	With key

Specifications			Model
			With incremental encoder
			Straight shaft with key and tap
	Voltage	Rated output	Without oil seals
Without brake	100 V	50 W	R88M-K05030H-S2
		100 W	R88M-K10030L-S2
		200 W	R88M-K20030L-S2
		400 W	R88M-K40030L-S2
	200 V	50 W	R88M-K05030H-S2
		100 W	R88M-K10030H-S2
		200 W	R88M-K20030H-S2
		400 W	R88M-K40030H-S2
		750 W	R88M-K75030H-S2
		1 kW	R88M-K1K030H-S2
		1.5 kW	R88M-K1K530H-S2
		2 kW	R88M-K2K030H-S2
		3 kW	R88M-K3K030H-S2
		4 kW	R88M-K4K030H-S2
		5 kW	R88M-K5K030H-S2
	400 V	750 W	R88M-K75030F-S2
		1 kW	R88M-K1K030F-S2
		1.5 kW	R88M-K1K530F-S2
		2 kW	R88M-K2K030F-S2
		3 kW	R88M-K3K030F-S2
		4 kW	R88M-K4K030F-S2
		5 kW	R88M-K5K030F-S2
With brake	100 V	50 W	R88M-K05030H-BS2
		100 W	R88M-K10030L-BS2
		200 W	R88M-K20030L-BS2
		400 W	R88M-K40030L-BS2
	200 V	50 W	R88M-K05030H-BS2
		100 W	R88M-K10030H-BS2
		200 W	R88M-K20030H-BS2
		400 W	R88M-K40030H-BS2
		750 W	R88M-K75030H-BS2
		1 kW	R88M-K1K030H-BS2
		1.5 kW	R88M-K1K530H-BS2
		2 kW	R88M-K2K030H-BS2
		3 kW	R88M-K3K030H-BS2
		4 kW	R88M-K4K030H-BS2
		5 kW	R88M-K5K030H-BS2
	400 V	750 W	R88M-K75030F-BS2
		1 kW	R88M-K1K030F-BS2
		1.5 kW	R88M-K1K530F-BS2
		2 kW	R88M-K2K030F-BS2
		3 kW	R88M-K3K030F-BS2
		4 kW	R88M-K4K030F-BS2
		5 kW	R88M-K5K030F-BS2

Note: Models with oil seals are also available.

Rotation speed	Encoder	Option
3,000 r/min	INC	Without key
	ABS/INC	With key

Specifications			Model
			With incremental encoder
			Straight shaft without key
	Voltage	Rated output	Without oil seals
Without brake	100 V	50 W	R88M-K05030H
		100 W	R88M-K10030L
		200 W	R88M-K20030L
		400 W	R88M-K40030L
	200 V	50 W	R88M-K05030H
		100 W	R88M-K10030H
		200 W	R88M-K20030H
		400 W	R88M-K40030H
		750 W	R88M-K75030H
		1 kW	R88M-K1K030H
		1.5 kW	R88M-K1K530H
		2 kW	R88M-K2K030H
		3 kW	R88M-K3K030H
		4 kW	R88M-K4K030H
		5 kW	R88M-K5K030H
	400 V	750 W	R88M-K75030F
		1 kW	R88M-K1K030F
		1.5 kW	R88M-K1K530F
		2 kW	R88M-K2K030F
		3 kW	R88M-K3K030F
		4 kW	R88M-K4K030F
		5 kW	R88M-K5K030F
With brake	100 V	50 W	R88M-K05030H-B
		100 W	R88M-K10030L-B
		200 W	R88M-K20030L-B
		400 W	R88M-K40030L-B
	200 V	50 W	R88M-K05030H-B
		100 W	R88M-K10030H-B
		200 W	R88M-K20030H-B
		400 W	R88M-K40030H-B
		750 W	R88M-K75030H-B
		1 kW	R88M-K1K030H-B
		1.5 kW	R88M-K1K530H-B
		2 kW	R88M-K2K030H-B
		3 kW	R88M-K3K030H-B
		4 kW	R88M-K4K030H-B
		5 kW	R88M-K5K030H-B
	400 V	750 W	R88M-K75030F-B
		1 kW	R88M-K1K030F-B
		1.5 kW	R88M-K1K530F-B
		2 kW	R88M-K2K030F-B
		3 kW	R88M-K3K030F-B
		4 kW	R88M-K4K030F-B
		5 kW	R88M-K5K030F-B

Note: Models with oil seals are also available.

Rotation speed	Encoder	Option
3,000 r/min	INC	Without key
	ABS/INC	With key

Specifications			Model
			With absolute encoder
			Straight shaft withkey and tap
	Voltage	Rated output	Without oil seals
Without brake	100 V	50 W	R88M-K05030T-S2
		100 W	R88M-K10030S-S2
		200 W	R88M-K20030S-S2
		400 W	R88M-K40030S-S2
	200 V	50 W	R88M-K05030T-S2
		100 W	R88M-K10030T-S2
		200 W	R88M-K20030T-S2
		400 W	R88M-K40030T-S2
		750 W	R88M-K75030T-S2
		1 kW	R88M-K1K030T-S2
		1.5 kW	R88M-K1K530T-S2
		2 kW	R88M-K2K030T-S2
		3 kW	R88M-K3K030T-S2
		4 kW	R88M-K4K030T-S2
		5 kW	R88M-K5K030T-S2
	400 V	750 W	R88M-K75030C-S2
		1 kW	R88M-K1K030C-S2
		1.5 kW	R88M-K1K530C-S2
		2 kW	R88M-K2K030C-S2
		3 kW	R88M-K3K030C-S2
		4 kW	R88M-K4K030C-S2
		5 kW	R88M-K5K030C-S2
With brake	100 V	50 W	R88M-K05030T-BS2
		100 W	R88M-K10030S-BS2
		200 W	R88M-K20030S-BS2
		400 W	R88M-K40030S-BS2
	200 V	50 W	R88M-K05030T-BS2
		100 W	R88M-K10030T-BS2
		200 W	R88M-K20030T-BS2
		400 W	R88M-K40030T-BS2
		750 W	R88M-K75030T-BS2
		1 kW	R88M-K1K030T-BS2
		1.5 kW	R88M-K1K530T-BS2
		2 kW	R88M-K2K030T-BS2
		3 kW	R88M-K3K030T-BS2
		4 kW	R88M-K4K030T-BS2
		5 kW	R88M-K5K030T-BS2
	400 V	750 W	R88M-K75030C-BS2
		1 kW	R88M-K1K030C-BS2
		1.5 kW	R88M-K1K530C-BS2
		2 kW	R88M-K2K030C-BS2
		3 kW	R88M-K3K030C-BS2
		4 kW	R88M-K4K030C-BS2
		5 kW	R88M-K5K030C-BS2

Note: Models with oil seals are also available.

Rotation speed	Encoder	Option
3,000 r/min	INC	Without key
	ABS/INC	With key

Specifications			Model
			With absolute encoder
			Straight shaft without key
	Voltage	Rated output	Without oil seals
Without brake	100 V	50 W	R88M-K05030T
		100 W	R88M-K10030S
		200 W	R88M-K20030S
		400 W	R88M-K40030S
	200 V	50 W	R88M-K05030T
		100 W	R88M-K10030T
		200 W	R88M-K20030T
		400 W	R88M-K40030T
		750 W	R88M-K75030T
		1 kW	R88M-K1K030T
		1.5 kW	R88M-K1K530T
		2 kW	R88M-K2K030T
		3 kW	R88M-K3K030T
		4 kW	R88M-K4K030T
		5 kW	R88M-K5K030T
	400 V	750 W	R88M-K75030C
		1 kW	R88M-K1K030C
		1.5 kW	R88M-K1K530C
		2 kW	R88M-K2K030C
		3 kW	R88M-K3K030C
		4 kW	R88M-K4K030C
		5 kW	R88M-K5K030C
With brake	100 V	50 W	R88M-K05030T-B
		100 W	R88M-K10030S-B
		200 W	R88M-K20030S-B
		400 W	R88M-K40030S-B
	200 V	50 W	R88M-K05030T-B
		100 W	R88M-K10030T-B
		200 W	R88M-K20030T-B
		400 W	R88M-K40030T-B
		750 W	R88M-K75030T-B
		1 kW	R88M-K1K030T-B
		1.5 kW	R88M-K1K530T-B
		2 kW	R88M-K2K030T-B
		3 kW	R88M-K3K030T-B
		4 kW	R88M-K4K030T-B
		5 kW	R88M-K5K030T-B
	400 V	750 W	R88M-K75030C-B
		1 kW	R88M-K1K030C-B
		1.5 kW	R88M-K1K530C-B
		2 kW	R88M-K2K030C-B
		3 kW	R88M-K3K030C-B
		4 kW	R88M-K4K030C-B
		5 kW	R88M-K5K030C-B

Note: Models with oil seals are also available.

2,000-r/min servomotors

Rotation speed	Encoder	Option
2,000 r/min	INC	Without key
	ABS/INC	With key

Specifications			Model
			With incremental encoder
			Straight shaft with key and tap
	Voltage	Rated output	Without oil seals
Without brake	200 V	1 kW	R88M-K1K020H-S2
		1.5 kW	R88M-K1K520H-S2
		2 kW	R88M-K2K020H-S2
		3 kW	R88M-K3K020H-S2
		4 kW	R88M-K4K020H-S2
		5 kW	R88M-K5K020H-S2
	400 V	400 W	R88M-K40020F-S2
		600 W	R88M-K60020F-S2
		1 kW	R88M-K1K020F-S2
		1.5 kW	R88M-K1K520F-S2
		2 kW	R88M-K2K020F-S2
		3 kW	R88M-K3K020F-S2
		4 kW	R88M-K4K020F-S2
		5 kW	R88M-K5K020F-S2
With brake	200 V	1 kW	R88M-K1K020H-BS2
		1.5 kW	R88M-K1K520H-BS2
		2 kW	R88M-K2K020H-BS2
		3 kW	R88M-K3K020H-BS2
		4 kW	R88M-K4K020H-BS2
		5 kW	R88M-K5K020H-BS2
	400 V	400 W	R88M-K40020F-BS2
		600 W	R88M-K60020F-BS2
		1 kW	R88M-K1K020F-BS2
		1.5 kW	R88M-K1K520F-BS2
		2 kW	R88M-K2K020F-BS2
		3 kW	R88M-K3K020F-BS2
		4 kW	R88M-K4K020F-BS2
		5 kW	R88M-K5K020F-BS2

Note: Models with oil seals are also available.

Rotation speed	Encoder	Option
2,000 r/min	INC	Without key
	ABS/INC	With key

Specifications			Model
			With incremental encoder
			Straight shaft without key
	Voltage	Rated output	Without oil seals
Without brake	200 V	1 kW	R88M-K1K020H
		1.5 kW	R88M-K1K520H
		2 kW	R88M-K2K020H
		3 kW	R88M-K3K020H
		4 kW	R88M-K4K020H
		5 kW	R88M-K5K020H
	400 V	400 W	R88M-K40020F
		600 W	R88M-K60020F
		1 kW	R88M-K1K020F
		1.5 kW	R88M-K1K520F
		2 kW	R88M-K2K020F
		3 kW	R88M-K3K020F
		4 kW	R88M-K4K020F
		5 kW	R88M-K5K020F
With brake	200 V	1 kW	R88M-K1K020H-B
		1.5 kW	R88M-K1K520H-B
		2 kW	R88M-K2K020H-B
		3 kW	R88M-K3K020H-B
		4 kW	R88M-K4K020H-B
		5 kW	R88M-K5K020H-B
	400 V	400 W	R88M-K40020F-B
		600 W	R88M-K60020F-B
		1 kW	R88M-K1K020F-B
		1.5 kW	R88M-K1K520F-B
		2 kW	R88M-K2K020F-B
		3 kW	R88M-K3K020F-B
		4 kW	R88M-K4K020F-B
		5 kW	R88M-K5K020F-B

Note: Models with oil seals are also available.

Rotation speed	Encoder	Option
2,000 r/min	INC	Without key
	ABS/INC	With key

Specifications			Model
			With absolute encoder
			Straight shaft with key and tap
	Voltage	Rated output	Without oil seals
Without brake	200 V	1 kW	R88M-K1K020T-S2
		1.5 kW	R88M-K1K520T-S2
		2 kW	R88M-K2K020T-S2
		3 kW	R88M-K3K020T-S2
		4 kW	R88M-K4K020T-S2
		5 kW	R88M-K5K020T-S2
		7.5 kW	R88M-K7K515T-S2 ✻
		11 kW	R88M-K11K015T-S2 ✻
		15 kW	R88M-K15K015T-S2 ✻
	400 V	400 W	R88M-K40020C-S2
		600 W	R88M-K60020C-S2
		1 kW	R88M-K1K020C-S2
		1.5 kW	R88M-K1K520C-S2
		2 kW	R88M-K2K020C-S2
		3 kW	R88M-K3K020C-S2
		4 kW	R88M-K4K020C-S2
		5 kW	R88M-K5K020C-S2
		7.5 kW	R88M-K7K515C -S2 ✻
		11 kW	R88M-K11K015C-S2 ✻
		15 kW	R88M-K15K015C-S2 ✻
With brake	200 V	1 kW	R88M-K1K020T-BS2
		1.5 kW	R88M-K1K520T-BS2
		2 kW	R88M-K2K020T-BS2
		3 kW	R88M-K3K020T-BS2
		4 kW	R88M-K4K020T-BS2
		5 kW	R88M-K5K020T-BS2
		7.5 kW	R88M-K7K515T-BS2 ✻
		11 kW	R88M-K11K015T-BS2 ✻
		15 kW	R88M-K15K015T-BS2 ✻
	400 V	400 W	R88M-K40020C-BS2
		600 W	R88M-K60020C-BS2
		1 kW	R88M-K1K020C-BS2
		1.5 kW	R88M-K1K520C-BS2
		2 kW	R88M-K2K020C-BS2
		3 kW	R88M-K3K020C-BS2
		4 kW	R88M-K4K020C-BS2
		5 kW	R88M-K5K020C-BS2
		7.5 kW	R88M-K7K515C-BS2 ✻
		11 kW	R88M-K11K015C-BS2 ✻
		15 kW	R88M-K15K015C-BS2 ✻

Note: Models with oil seals are also available.
✻ The rated speed is 1,500 r/min.

Rotation speed	Encoder	Option
2,000 r/min	INC	Without key
	ABS/INC	With key

Specifications			Model
			With absolute encoder
			Straight shaft without key
	Voltage	Rated output	Without oil seals
Without brake	200 V	1 kW	R88M-K1K020T
		1.5 kW	R88M-K1K520T
		2 kW	R88M-K2K020T
		3 kW	R88M-K3K020T
		4 kW	R88M-K4K020T
		5 kW	R88M-K5K020T
		7.5 kW	R88M-K7K515T ✻
		11 kW	R88M-K11K015T ✻
		15 kW	R88M-K15K015T ✻
	400 V	400 W	R88M-K40020C
		600 W	R88M-K60020C
		1 kW	R88M-K1K020C
		1.5 kW	R88M-K1K520C
		2 kW	R88M-K2K020C
		3 kW	R88M-K3K020C
		4 kW	R88M-K4K020C
		5 kW	R88M-K5K020C
		7.5 kW	R88M-K7K515C ✻
		11 kW	R88M-K11K015C ✻
		15 kW	R88M-K15K015C ✻
With brake	200 V	1 kW	R88M-K1K020T-B
		1.5 kW	R88M-K1K520T-B
		2 kW	R88M-K2K020T-B
		3 kW	R88M-K3K020T-B
		4 kW	R88M-K4K020T-B
		5 kW	R88M-K5K020T-B
		7.5 kW	R88M-K7K515T-B ✻
		11 kW	R88M-K11K015T-B ✻
		15 kW	R88M-K15K015T-B ✻
	400 V	400 W	R88M-K40020C-B
		600 W	R88M-K60020C-B
		1 kW	R88M-K1K020C-B
		1.5 kW	R88M-K1K520C-B
		2 kW	R88M-K2K020C-B
		3 kW	R88M-K3K020C-B
		4 kW	R88M-K4K020C-B
		5 kW	R88M-K5K020C-B
		7.5 kW	R88M-K7K515C-B ✻
		11 kW	R88M-K11K015C-B ✻
		15 kW	R88M-K15K015C-B ✻

Note: Models with oil seals are also available.
✻ The rated speed is 1,500 r/min.

1,000-r/min servomotors

Rotation speed	Encoder	Option
1,000 r/min	**INC**	Without key
	ABS/INC	**With key**

Specifications			Model
			With incremental encoder
			Straight shaft with key and tap
	Voltage	Rated output	Without oil seals
Without brake	200 V	900 W	R88M-K90010H-S2
		2 kW	R88M-K2K010H-S2
		3 kW	R88M-K3K010H-S2
	400 V	900 W	R88M-K90010F-S2
		2 kW	R88M-K2K010F-S2
		3 kW	R88M-K3K010F-S2
With brake	200 V	900 W	R88M-K90010H-BS2
		2 kW	R88M-K2K010H-BS2
		3 kW	R88M-K3K010H-BS2
	400 V	900 W	R88M-K90010F-BS2
		2 kW	R88M-K2K010F-BS2
		3 kW	R88M-K3K010F-BS2

Note: Models with oil seals are also available.

Rotation speed	Encoder	Option
1,000 r/min	**INC**	Without key
	ABS/INC	**With key**

Specifications			Model
			With incremental encoder
			Straight shaft without key
	Voltage	Rated output	Without oil seals
Without brake	200 V	900 W	R88M-K90010H
		2 kW	R88M-K2K010H
		3 kW	R88M-K3K010H
	400 V	900 W	R88M-K90010F
		2 kW	R88M-K2K010F
		3 kW	R88M-K3K010F
With brake	200 V	900 W	R88M-K90010H-B
		2 kW	R88M-K2K010H-B
		3 kW	R88M-K3K010H-B
	400 V	900 W	R88M-K90010F-B
		2 kW	R88M-K2K010F-B
		3 kW	R88M-K3K010F-B

Note: Models with oil seals are also available.

Rotation speed	Encoder	Option
1,000 r/min	INC	Without key
	ABS/INC	**With key**

Specifications			Model
			With absolute encoder
			Straight shaft with key and tap
	Voltage	Rated output	Without oil seals
Without brake	200 V	900 W	R88M-K90010T-S2
		2 kW	R88M-K2K010T-S2
		3 kW	R88M-K3K010T-S2
		4.5 kW	R88M-K4K510T-S2
		6 kW	R88M-K6K010T-S2
	400 V	900 W	R88M-K90010C-S2
		2 kW	R88M-K2K010C-S2
		3 kW	R88M-K3K010C-S2
		4.5 kW	R88M-K4K510C-S2
		6 kW	R88M-K6K010C-S2
With brake	200 V	900 W	R88M-K90010T-BS2
		2 kW	R88M-K2K010T-BS2
		3 kW	R88M-K3K010T-BS2
		4.5 kW	R88M-K4K510T-BS2
		6 kW	R88M-K6K010T-BS2
	400 V	900 W	R88M-K90010C-BS2
		2 kW	R88M-K2K010C-BS2
		3 kW	R88M-K3K010C-BS2
		4.5 kW	R88M-K4K510C-BS2
		6 kW	R88M-K6K010C-BS2

Note: Models with oil seals are also available.

Rotation speed	Encoder	Option
1,000 r/min	INC	Without key
	ABS/INC	With key

Specifications			Model
			With absolute encoder
			Straight shaft without key
	Voltage	Rated output	Without oil seals
Without brake	200 V	900 W	R88M-K90010T
		2 kW	R88M-K2K010T
		3 kW	R88M-K3K010T
		4.5 kW	R88M-K4K510T
		6 kW	R88M-K6K010T
	400 V	900 W	R88M-K90010C
		2 kW	R88M-K2K010C
		3 kW	R88M-K3K010C
		4.5 kW	R88M-K4K510C
		6 kW	R88M-K6K010C
With brake	200 V	900 W	R88M-K90010T-B
		2 kW	R88M-K2K010T-B
		3 kW	R88M-K3K010T-B
		4.5 kW	R88M-K4K510T-B
		6 kW	R88M-K6K010T-B
	400 V	900 W	R88M-K90010C-B
		2 kW	R88M-K2K010C-B
		3 kW	R88M-K3K010C-B
		4.5 kW	R88M-K4K510C-B
		6 kW	R88M-K6K010C-B

Note: Models with oil seals are also available.

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

Backlash = 3' Max
<Cylinder Type>

● 3,000-r/min servomotors

Straight shaft without key

Motor capacity	Gear Ratio	Model (Straight shaft)
50 W	1/5	R88G-HPG11B05100B
	1/9	R88G-HPG11B09050B
	1/21	R88G-HPG14A21100B
	1/33	R88G-HPG14A33050B
	1/45	R88G-HPG14A45050B
100 W	1/5	R88G-HPG11B05100B
	1/11	R88G-HPG14A11100B
	1/21	R88G-HPG14A21100B
	1/33	R88G-HPG20A33100B
	1/45	R88G-HPG20A45100B
200 W	1/5	R88G-HPG14A05200B
	1/11	R88G-HPG14A11200B
	1/21	R88G-HPG20A21200B
	1/33	R88G-HPG20A33200B
	1/45	R88G-HPG20A45200B
400 W	1/5	R88G-HPG14A05400B
	1/11	R88G-HPG20A11400B
	1/21	R88G-HPG20A21400B
	1/33	R88G-HPG32A33400B
	1/45	R88G-HPG32A45400B
750 W (200 V)	1/5	R88G-HPG20A05750B
	1/11	R88G-HPG20A11750B
	1/21	R88G-HPG32A21750B
	1/33	R88G-HPG32A33750B
	1/45	R88G-HPG32A45750B
750W (400 V)	1/5	R88G-HPG32A052K0B
	1/11	R88G-HPG32A112K0B
	1/21	R88G-HPG32A211K5B
	1/33	R88G-HPG32A33600SB
	1/45	R88G-HPG50A451K5B
1kW	1/5	R88G-HPG32A052K0B
	1/11	R88G-HPG32A112K0B
	1/21	R88G-HPG32A211K5B
	1/33	R88G-HPG50A332K0B
	1/45	R88G-HPG50A451K5B
1.5kW	1/5	R88G-HPG32A052K0B
	1/11	R88G-HPG32A112K0B
	1/21	R88G-HPG32A211K5B
	1/33	R88G-HPG50A332K0B
	1/45	R88G-HPG50A451K5B
2kW	1/5	R88G-HPG32A052K0B
	1/11	R88G-HPG32A112K0B
	1/21	R88G-HPG50A212K0B
	1/33	R88G-HPG50A332K0B
3kW	1/5	R88G-HPG32A053K0B
	1/11	R88G-HPG50A113K0B
	1/21	R88G-HPG50A213K0B
4kW	1/5	R88G-HPG32A054K0B
	1/11	R88G-HPG50A115K0B
5kW	1/5	R88G-HPG50A055K0B
	1/11	R88G-HPG50A115K0B

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

● 2,000-r/min servomotors

Straight shaft without key

Motor capacity	Gear Ratio	Model (Straight shaft)
400 W	1/5	R88G-HPG32A052K0B
	1/11	R88G-HPG32A112K0B
	1/21	R88G-HPG32A211K5B
	1/33	R88G-HPG32A33600SB
	1/45	R88G-HPG32A45400SB
600 W	1/5	R88G-HPG32A052K0B
	1/11	R88G-HPG32A112K0B
	1/21	R88G-HPG32A211K5B
	1/33	R88G-HPG32A33600SB
	1/45	R88G-HPG50A451K5B
1 kW	1/5	R88G-HPG32A053K0B
	1/11	R88G-HPG32A112K0SB
	1/21	R88G-HPG32A211K0SB
	1/33	R88G-HPG50A332K0SB
	1/45	R88G-HPG50A451K0SB
1.5 kW	1/5	R88G-HPG32A053K0B
	1/11	R88G-HPG32A112K0SB
	1/21	R88G-HPG50A213K0B
	1/33	R88G-HPG50A332K0SB
2 kW	1/5	R88G-HPG32A053K0B
	1/11	R88G-HPG32A112K0SB
	1/21	R88G-HPG50A213K0B
	1/33	R88G-HPG50A332K0SB
3 kW	1/5	R88G-HPG32A054K0B
	1/11	R88G-HPG50A115K0B
	1/21	R88G-HPG50A213K0SB
	1/25	R88G-HPG65A253K0SB
4 kW	1/5	R88G-HPG50A055K0SB
	1/11	R88G-HPG50A115K0SB
	1/20	R88G-HPG65A205K0SB
	1/25	R88G-HPG65A255K0SB
5 kW	1/5	R88G-HPG50A055K0SB
	1/11	R88G-HPG50A115K0SB
	1/20	R88G-HPG65A205K0SB
	1/25	R88G-HPG65A255K0SB

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

● 1,000-r/min servomotors

Straight shaft without key

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

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

Backlash = 15' Max

<Cylinder Type>

● 3,000-r/min servomotors

Straight shaft with key

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

Accessories and Cables

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

<Standard Cables>

Power cable

Specifications		Without brake	With brake
		Model	Model
[100 V/200 V] 3,000-r/min Servomotors of 50 to 750 W	3 m	R88A-CAKA003S	
	5 m	R88A-CAKA005S	
	10 m	R88A-CAKA010S	
	15m	R88A-CAKA015S	
	20 m	R88A-CAKA020S	
	30 m	R88A-CAKA030S	
	40 m	R88A-CAKA040S	
	50 m	R88A-CAKA050S	
[200 V] 3,000-r/min Servomotors of 1 to 2 kW 2,000-r/min Servomotors of 1 to 2 kW 1,000-r/min Servomotors of 900 W	3 m	R88A-CAGB003S	R88A-CAGB003B
	5 m	R88A-CAGB005S	R88A-CAGB005B
	10 m	R88A-CAGB010S	R88A-CAGB010B
	15 m	R88A-CAGB015S	R88A-CAGB015B
	20 m	R88A-CAGB020S	R88A-CAGB020B
	30 m	R88A-CAGB030S	R88A-CAGB030B
	40 m	R88A-CAGB040S	R88A-CAGB040B
	50 m	R88A-CAGB050S	R88A-CAGB050B
[400 V] 3,000-r/min Servomotors of 750 W to 2 kW 2,000-r/min Servomotors of 400 W to 2 kW 1,000-r/min Servomotors of 900 W	3 m	R88A-CAGB003S	R88A-CAKF003B
	5 m	R88A-CAGB005S	R88A-CAKF005B
	10 m	R88A-CAGB010S	R88A-CAKF010B
	15 m	R88A-CAGB015S	R88A-CAKF015B
	20 m	R88A-CAGB020S	R88A-CAKF020B
	30 m	R88A-CAGB030S	R88A-CAKF030B
	40 m	R88A-CAGB040S	R88A-CAKF040B
	50 m	R88A-CAGB050S	R88A-CAKF050B
[200 V] [400 V] 3,000-r/min Servomotors of 3 to 5 kW 2,000-r/min Servomotors of 3 to 5 kW 1,000-r/min Servomotors of 2 to 4.5 kW	3 m	R88A-CAGD003S	R88A-CAGD003B
	5 m	R88A-CAGD005S	R88A-CAGD005B
	10 m	R88A-CAGD010S	R88A-CAGD010B
	15 m	R88A-CAGD015S	R88A-CAGD015B
	20 m	R88A-CAGD020S	R88A-CAGD020B
	30 m	R88A-CAGD030S	R88A-CAGD030B
	40 m	R88A-CAGD040S	R88A-CAGD040B
	50 m	R88A-CAGD050S	R88A-CAGD050B
[200 V] [400 V] 1,500-r/min Servomotors of 7.5 kW 1,000-r/min Servomotors of 6 kW	3 m	R88A-CAGE003S	
	5 m	R88A-CAGE005S	
	10 m	R88A-CAGE010S	
	15 m	R88A-CAGE015S	
	20 m	R88A-CAGE020S	
	30 m	R88A-CAGE030S	
	40 m	R88A-CAGE040S	
	50 m	R88A-CAGE050S	

Note: 1. Different connectors are used for the motor power and the brake on 100-V and 200-V, 3,000-r/min Servomotors of 50 to 750 W and Servomotors of 6 to 15 kW. When using a Servomotor with a brake, two cables are required: a Power Cable without Brake and a Brake Cable.

2. For non-flexible power cables for Servomotors of 11 or 15 kW, refer to the G5 series USER'S MANUAL and make your own cable. Confirm the Manual No. that is listed in Related Manuals.

Brake Cable

Specifications		Standard Cables
		Model
[100 V][200 V] 3,000-r/min Servomotors of 50 to 750 W	3 m	R88A-CAKA003B
	5 m	R88A-CAKA005B
	10 m	R88A-CAKA010B
	15 m	R88A-CAKA015B
	20 m	R88A-CAKA020B
	30 m	R88A-CAKA030B
	40 m	R88A-CAKA040B
	50 m	R88A-CAKA050B
[200 V][400 V] 1,500-r/min Servomotors of 7.5 to 15 kW 1,000-r/min Servomotors of 6 kW	3 m	R88A-CAGE003B
	5 m	R88A-CAGE005B
	10 m	R88A-CAGE010B
	15 m	R88A-CAGE015B
	20 m	R88A-CAGE020B
	30 m	R88A-CAGE030B
	40 m	R88A-CAGE040B
	50 m	R88A-CAGE050B

Encoder Cable

Specifications		Standard Cables
		Model
[100 V/200 V] 3,000-r/min Servomotors of 50 to 750 W	3 m	R88A-CRKA003C
	5 m	R88A-CRKA005C
	10 m	R88A-CRKA010C
	15 m	R88A-CRKA015C
	20 m	R88A-CRKA020C
	30 m	R88A-CRKA030C
	40 m	R88A-CRKA040C
	50 m	R88A-CRKA050C
[100 V and 200 V] 3,000-r/min Servomotors of 1.0 kW or more 2,000-r/min Servomotors 1,500-r/min Servomotors 1,000-r/min Servomotors [400 V] 3,000-r/min Servomotors 2,000-r/min Servomotors 1,500-r/min Servomotors 1,000-r/min Servomotors	3 m	R88A-CRKC003N
	5 m	R88A-CRKC005N
	10 m	R88A-CRKC010N
	15 m	R88A-CRKC015N
	20 m	R88A-CRKC020N
	30 m	R88A-CRKC030N
	40 m	R88A-CRKC040N
	50 m	R88A-CRKC050N

<Robot Cables>

Power cable

Specifications		Without brake	With brake
		Model	Model
[100 V/200 V] 3,000-r/min Servomotors of 50 to 750 W	3 m	R88A-CAKA003SR	**Note:** There are separate connectors for power and brakes for 3,000-r/min Servomotors of 50 to 750W. When a Servomotor with a brake is used, it is necessary to use both a PowerCable for Servomotors without brakes and Power cable.
	5 m	R88A-CAKA005SR	
	10 m	R88A-CAKA010SR	
	15 m	R88A-CAKA015SR	
	20 m	R88A-CAKA020SR	
	30 m	R88A-CAKA030SR	
	40 m	R88A-CAKA040SR	
	50 m	R88A-CAKA050SR	
[200 V] 3,000-r/min Servomotors of 1 to 2 kW 2,000-r/min Servomotors of 1 to 2 kW 1,000-r/min Servomotors of 900 W	3 m	R88A-CAGB003SR	R88A-CAGB003BR
	5 m	R88A-CAGB005SR	R88A-CAGB005BR
	10 m	R88A-CAGB010SR	R88A-CAGB010BR
	15 m	R88A-CAGB015SR	R88A-CAGB015BR
	20 m	R88A-CAGB020SR	R88A-CAGB020BR
	30 m	R88A-CAGB030SR	R88A-CAGB030BR
	40 m	R88A-CAGB040SR	R88A-CAGB040BR
	50 m	R88A-CAGB050SR	R88A-CAGB050BR
[400 V] 3,000-r/min Servomotors of 750 W to 2 kW 2,000-r/min Servomotors of 400 W to 2 kW 1,000-r/min Servomotors of 900 W	3 m	R88A-CAGB003SR	R88A-CAKF003BR
	5 m	R88A-CAGB005SR	R88A-CAKF005BR
	10 m	R88A-CAGB010SR	R88A-CAKF010BR
	15 m	R88A-CAGB015SR	R88A-CAKF015BR
	20 m	R88A-CAGB020SR	R88A-CAKF020BR
	30 m	R88A-CAGB030SR	R88A-CAKF030BR
	40 m	R88A-CAGB040SR	R88A-CAKF040BR
	50 m	R88A-CAGB050SR	R88A-CAKF050BR
[200 V] [400 V] 3,000-r/min Servomotors of 3 to 5 kW 2,000-r/min Servomotors of 3 to 5 kW 1,000-r/min Servomotors of 4.5 kW	3 m	R88A-CAGD003SR	R88A-CAGD003BR
	5 m	R88A-CAGD005SR	R88A-CAGD005BR
	10 m	R88A-CAGD010SR	R88A-CAGD010BR
	15 m	R88A-CAGD015SR	R88A-CAGD015BR
	20 m	R88A-CAGD020SR	R88A-CAGD020BR
	30 m	R88A-CAGD030SR	R88A-CAGD030BR
	40 m	R88A-CAGD040SR	R88A-CAGD040BR
	50 m	R88A-CAGD050SR	R88A-CAGD050BR

Note: 1. Different connectors are used for the motor power and the brake on 100-V and 200-V, 3,000-r/min Servomotors of 50 to 750 W and Servomotors of 6 to 15 kW. When using a Servomotor with a brake, two cables are required: a Power Cable without Brake and a Brake Cable.

Note: 2. For flexible power cables for Servomotors of 11 to 15 kW, refer to the G5 series USER'S MANUAL and make your own cable. For flexible power cables for Servomotors of 6 to 7.5 kW, refer to the G5 series USER'S MANUAL and make your own power cable.

Brake Cable

Specifications		Robot Cables
		Model
[100 V] [200 V] 3,000-r/min Servomotors of 50 to 750 W	3 m	R88A-CAKA003BR
	5 m	R88A-CAKA005BR
	10 m	R88A-CAKA010BR
	15 m	R88A-CAKA015BR
	20 m	R88A-CAKA020BR
	30 m	R88A-CAKA030BR
	40 m	R88A-CAKA040BR
	50 m	R88A-CAKA050BR

Note: For flexible brake cables for Servomotors of 6 to 15 kW, refer to the G5 series USER'S MANUAL and make your own brake cable. Confirm the Manual No. that is listed in Related Manuals.

Encoder Cable

Specifications		Robot Cables
		Model
[100 V/200 V] 3,000-r/min Servomotors of 50 to 750 W (for both absolute encoders and incremental encoders)	3 m	R88A-CRKA003CR
	5 m	R88A-CRKA005CR
	10 m	R88A-CRKA010CR
	15 m	R88A-CRKA015CR
	20 m	R88A-CRKA020CR
	30 m	R88A-CRKA030CR
	40 m	R88A-CRKA040CR
	50 m	R88A-CRKA050CR
[100 V and 200 V] 3,000-r/min Servomotors of 1.0 kW or more 2,000-r/min Servomotors 1,500-r/min Servomotors 1,000-r/min Servomotors [400 V] 3,000-r/min Servomotors 2,000-r/min Servomotors 1,500-r/min Servomotors 1,000-r/min Servomotors	3 m	R88A-CRKC003NR
	5 m	R88A-CRKC005NR
	10 m	R88A-CRKC010NR
	15 m	R88A-CRKC015NR
	20 m	R88A-CRKC020NR
	30 m	R88A-CRKC030NR
	40 m	R88A-CRKC040NR
	50 m	R88A-CRKC050NR

■ Cable/Connector

Absolute Encoder Battery Cable

Name	Length	model
Absolute Encoder Battery Cable (Battery not included)	0.3 m	**R88A-CRGD0R3C**
Absolute Encoder Battery Cable (One R88A-BAT01G Battery included)	0.3 m	**R88A-CRGD0R3C-BS**

Absolute Encoder Backup Battery

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

Analog Monitor Cable

Name	Length	Model
Analog Monitor Cable	1 m	**R88A-CMK001S**

Servo Drive Connectors (common)

Name	Connects to	Model
Encoder Connector	CN2	**R88A-CNW01R**
External Scale Connector	CN4	**R88A-CNK41L**
Safety Connector	CN8	**R88A-CNK81S**

Servo Drive Connectors (General-purpose Input)

Name	Connects to	Model
Control I/O Connector	CN1	**R88A-CNU11C**

Servo Drive Connectors (MECHATROLINK-II Communications) (EtherCAT Communications)

Name	Connects to	Model
Control I/O Connector	CN1	**R88A-CNW01C**

Servomotor Connector

Name	Applicable Servomotor Capacity	Model
Servomotor Connector for Encoder Cable	[100 V/200 V] 3,000 r/min (50 to 750 W)	**R88A-CNK02R**
	[100 V/200 V] 3,000 r/min (1 to 5 kW) 2,000r/min,1,000r/min [400 V] 3,000 r/min, 2,000 r/min, 1,000 r/min	**R88A-CNK04R**
Power Cable Connector	(750 W max.)	**R88A-CNK11A**
Brake Cable Connector	(750 W max.)	**R88A-CNK11B**

■ Control Cables

Control Cables (for Connector Terminal Block/CN1)

Name	Specifications			Model
Connector Terminal Block Cables	General-purpose Input		Length 1.0 m	**XW2Z-100J-B24**
			Length 2.0 m	**XW2Z-200J-B24**
	MECHATROLINK-II Communications EtherCAT Communications		Length 1.0 m	**XW2Z-100J-B34**
			Length 2.0 m	**XW2Z-200J-B34**
Connector Terminal Block Conversion Unit	General-purpose Input	Conversion Unit for General-purpose Controllers (M3 screws)	Through type	**XW2B-50G4**
		Conversion Unit for General-purpose Controllers (M3.5 screws)	Through type	**XW2B-50G5**
		Conversion Unit for General-purpose Controllers (M3 screws)	Slim type	**XW2D-50G6**
	MECHATROLINK-II Communications EtherCAT Communications	Conversion Unit for General-purpose Controllers (M3 screws)	Through type	**XW2B-20G4**
		Conversion Unit for General-purpose Controllers (M3.5 screws)	Through type	**XW2B-20G5**
		Conversion Unit for General-purpose Controllers (M3 screws)	Slim type	**XW2D-20G6**

● General-purpose Inputs (Analog input/Pulse train input type)

Connection Cables (for CN1)

Specifications		The number of axes	Length	Model
Name	Unit			
Position Control Unit (High-speed type) for Line-driver output	CJ1W-NC234/434	for 1 axis	1 m	**XW2Z-100J-G9**
			5 m	**XW2Z-500J-G9**
			10 m	**XW2Z-10MJ-G9**
		for 2 axis	1 m	**XW2Z-100J-G1**
			5 m	**XW2Z-500J-G1**
			10 m	**XW2Z-10MJ-G1**
Position Control Unit (High-speed type) for Open collector output	CJ1W-NC214/NC414	for 1 axis	1 m	**XW2Z-100J-G13**
			3 m	**XW2Z-300J-G13**
		for 2 axis	1 m	**XW2Z-100J-G5**
			3 m	**XW2Z-300J-G5**
Control Cables for Motion Control Unit	CS1W-MC221 (-V1) CS1W-MC421 (-V1)	for 1 axis	1 m	**R88A-CPG001M1**
			2 m	**R88A-CPG002M1**
			3 m	**R88A-CPG003M1**
			5 m	**R88A-CPG005M1**
		for 2 axis	1 m	**R88A-CPG001M2**
			2 m	**R88A-CPG002M2**
			3 m	**R88A-CPG003M2**
			5 m	**R88A-CPG005M2**
General-purpose Control Cables with Connector on One End	Cables for General-purpose Controllers	–	1 m	**R88A-CPG001S**
			2 m	**R88A-CPG002S**

Device for External Signal Connection / Connecting Cables (for CJ1W-NC□□4)

Name		Specifications		Model
Connector Terminal Block Cables	**Connection Cables**	Normal wiring	Length 0.5 m	**XW2Z-C50X**
			Length 1.0 m	**XW2Z-100X**
			Length 2.0 m	**XW2Z-200X**
			Length 3.0 m	**XW2Z-300X**
			Length 5.0 m	**XW2Z-500X**
			Length 10.0 m	**XW2Z-010X**
	Connector Terminal Block Conversion Unit	20 pin M2.4 screw Terminal Block type	Through type	**XW2B-20G4**
		20 pin M3.5 screw Terminal Block type	Through type	**XW2B-20G5**
		20 pin M3 screw Terminal Block type	Slim type	**XW2D-20G6**

Servo Relay Units (for CN1)

Specifications	The number of axes	Model
Position Control Unit: For CJ1W-NC113/NC133 For CS1W-NC113/NC133 For C200HW-NC113	for 1 axis	**XW2B-20J6-1B**
Position Control Unit: For CJ1W-NC213/NC233/NC413/NC433 For CS1W-NC213/NC233/NC413/NC433 For C200HW-NC213/NC413	for 2 axis	**XW2B-40J6-2B**
For CJ1M-CPU21/CPU22/CPU23	for 1 axis	**XW2B-20J6-8A**
	for 2 axis	**XW2B-40J6-9A**
For FQM1-MMA22 (Analog output) For FQM1-MMP22 (Pulse train output)	for 2 axis	**XW2B-80J7-12A**
For CQM1H-PLB21	for 1 axis	**XW2B-20J6-3B**

Servo Relay Unit cable (for Servo Drive/CN1)

Specifications	Length	Model
Position Control Unit: For CJ1W-NC□□3□ For CS1W/C200HW-NC□□□ (XW2B-20J6-1B, XW2B-40J6-2B) For CQM1H-PLB21 (XW2B-20J6-3B)	1 m	**XW2Z-100J-B25**
	2 m	**XW2Z-200J-B25**
For CJ1M-CPU21/CPU22/CPU23 (XW2B-20J6-8A, XW2B-40J6-9A)	1 m	**XW2Z-100J-B31**
	2 m	**XW2Z-200J-B31**
For FQM1-MMA22 (Analog output) (XW2B-80J7-12A)	1 m	**XW2Z-100J-B27**
	2 m	**XW2Z-200J-B27**
For FQM1-MMP22 (Pulse train output) (XW2B-80J7-12A)	1 m	**XW2Z-100J-B26**
	2 m	**XW2Z-200J-B26**

Note: You cannot use a Servo Relay Unit Cable for line-receiver inputs (+CWLD: CN1 pin 44, -CWLD: CN1 pin 45, +CCWLD: CN1 pin 46, -CCWLD: CN1 pin 47).
Use a General-purpose Control Cable and wire the connector to match the controller.

Servo Relay Unit cable (Position Control Unit)

Specifications		The number of axes	Length	Model
CJ1W line-driver output type For CJ1W-NC133 (XW2B-20J6-1B)		for 1 axis	0.5 m	**XW2Z-050J-A18**
			1 m	**XW2Z-100J-A18**
CJ1W line-driver output type For CJ1W-NC233/NC433 (XW2B-40J6-2B)		for 2 axis	0.5 m	**XW2Z-050J-A19**
			1 m	**XW2Z-100J-A19**
CS1W line-driver output type For CS1W-NC133 (XW2B-20J6-1B)		for 1 axis	0.5 m	**XW2Z-050J-A10**
			1 m	**XW2Z-100J-A10**
CS1W line-driver output type For CS1W-NC233/NC433 (XW2B-40J6-2B)		for 2 axis	0.5 m	**XW2Z-050J-A11**
			1 m	**XW2Z-100J-A11**
CJ1W open collector output type For CJ1W-NC113 (XW2B-20J6-1B)		for 1 axis	0.5 m	**XW2Z-050J-A14**
			1 m	**XW2Z-100J-A14**
CJ1W open collector output type For CJ1W-NC213/NC413 (XW2B-40J6-2B)		for 2 axis	0.5 m	**XW2Z-050J-A15**
			1 m	**XW2Z-100J-A15**
CS1W/C200HW open collector output type For CS1W-NC113 For C200HW-NC113 (XW2B-20J6-1B)		for 1 axis	0.5 m	**XW2Z-050J-A6**
			1 m	**XW2Z-100J-A6**
CS1W/C200HW open collector output type For CS1W-NC213/NC413 For C200HW-NC213/NC413 (XW2B-40J6-2B)		for 2 axis	0.5 m	**XW2Z-050J-A7**
			1 m	**XW2Z-100J-A7**
CJ1M open collector output type For CJ1M-CPU21/CPU22/CPU23 (XW2B-20J6-8A, XW2B-40J6-9A)		for 1 axis	0.5 m	**XW2Z-050J-A33**
			1 m	**XW2Z-100J-A33**
For FQM1-MMA22 (Analog output) (XW2B-80J7-12A)	General-purpose I/O (26 pin)	for 2 axis	0.5 m	**XW2Z-050J-A28**
			1 m	**XW2Z-100J-A28**
			2 m	**XW2Z-200J-A28**
	Special I/O (40 pin)	for 2 axis	0.5 m	**XW2Z-050J-A31**
			1 m	**XW2Z-100J-A31**
			2 m	**XW2Z-200J-A31**
For FQM1-MMP22 (Pulse train output) (XW2B-80J7-12A)	General-purpose I/O (26 pin)	for 2 axis	0.5 m	**XW2Z-050J-A28**
			1 m	**XW2Z-100J-A28**
			2 m	**XW2Z-200J-A28**
	Special I/O (40 pin)	for 2 axis	0.5 m	**XW2Z-050J-A30**
			1 m	**XW2Z-100J-A30**
			2 m	**XW2Z-200J-A30**
For CQM1H-PLB21 (XW2B-20J6-3B)		for 1 axis	0.5 m	**XW2Z-050J-A3**
			1 m	**XW2Z-100J-A3**

■ Communication Cables

● MECHATROLINK-II Communications

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

Name	Length	Model (OMRON model number)	Yaskawa model number
MECHATROLINK-II Cables (without ring core and USB connector on both ends) ✻ Can be connected to R88D-GN and R88D-KN only.	0.5 m	**FNY-W6002-A5**	**JEPMC-W6002-A5-E**
	1.0 m	**FNY-W6002-01**	**JEPMC-W6002-01-E**
	3.0 m	**FNY-W6002-03**	**JEPMC-W6002-03-E**
	5.0 m	**FNY-W6002-05**	**JEPMC-W6002-05-E**
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**

- 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.)

● Recommended EtherCAT Communications Cables

Category 5 or higher (100BASE-TX) straight cable with double shielding (aluminum tape and braided shielding) is recommended.

Cabel with Connectors
Wire Gauge and Number of Pairs: AWG22, 2-pair Cable

Item	Appearance	Recommended manufacturer	Cable length(m)	Model
Cable with Connectors on Both Ends (RJ45/RJ45)		OMRON	0.3	**XS5W-T421-AMD-K**
			0.5	**XS5W-T421-BMD-K**
			1	**XS5W-T421-CMD-K**
			2	**XS5W-T421-DMD-K**
			5	**XS5W-T421-GMD-K**
			10	**XS5W-T421-JMD-K**
Cable with Connectors on Both Ends (M12/RJ45)		OMRON	0.3	**XS5W-T421-AMC-K**
			0.5	**XS5W-T421-BMC-K**
			1	**XS5W-T421-CMC-K**
			2	**XS5W-T421-DMC-K**
			5	**XS5W-T421-GMC-K**
			10	**XS5W-T421-JMC-K**

Note: The cable length 0.3, 0.5, 1, 2, 3, 5, 10 and 15m are available. For details, refer to Cat.No.G019.

Cables / Connectors
Wire Gauge and Number of Pairs: AWG24, 4-pair Cable

Item	Appearance	Recommended manufacturer	Model
Cables	–	Tonichi Kyosan Cable, Ltd.	**NETSTAR-C5E SAB 0.5 x 4P**
	–	Kuramo Electric Co.	**KETH-SB**
	–	SWCC Showa Cable Systems Co.	**FAE-5004**
RJ45 Connectors	–	Panduit Corporation	**MPS588**

Wire Gauge and Number of Pairs: AWG22, 2-pair Cable

Item	Appearance	Recommended manufacturer	Model
Cables	–	Kuramo Electric Co.	**KETH-PSB-OMR ✻**
RJ45 Assembly Connector		OMRON	**XS6G-T421-1 ✻**

✻ We recommend you to use above cable and connector together.
Note: Connect both ends of cable shielded wires to the connector hoods.

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

External Regeneration Resistors

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

Reactors

Specifications			Model
General-purpose Inputs	MECHATROLINK-II Communications	EtherCAT Communications	
R88D-KTA5L/-KT01H (For single-phase input)	R88D-KNA5L-ML2/-KN01H-ML2 (For single-phase input)	R88D-KNA5L-ECT/-KN01H-ECT (For single-phase input)	**3G3AX-DL2002**
R88D-KT01L/-KT02H (For single-phase input)	R88D-KN01L-ML2/-KN02H-ML2 (For single-phase input)	R88D-KN01L-ECT/-KN02H-ECT (For single-phase input)	**3G3AX-DL2004**
R88D-KT02L/-KT04H (For single-phase input)	R88D-KN02L-ML2/-KN04H-ML2 (For single-phase input)	R88D-KN02L-ECT/-KN04H-ECT (For single-phase input)	**3G3AX-DL2007**
R88D-KT04L/-KT08H/-KT10H (For single-phase input)	R88D-KN04L-ML2/-KN08H-ML2/ -KN10H-ML2 (For single-phase input)	R88D-KN04L-ECT/-KN08H-ECT/ -KN10H-ECT (For single-phase input)	**3G3AX-DL2015**
R88D-KT15H (For single-phase input)	R88D-KN15H-ML2 (For single-phase input)	R88D-KN15H-ECT (For single-phase input)	**3G3AX-DL2022**
R88D-KT01H/-KT02H/-KT04H/-KT08H/ -KT10H/-KT15H (For three-phase input)	R88D-KN01H-ML2/-KN02H-ML2/ -KN04H-ML2/-KN08H-ML2/ -KN10H-ML2/-KN15H-ML2 (For three-phase input)	R88D-KN01H-ECT/-KN02H-ECT/ -KN04H-ECT/KN08H-ECT/ -KN10H-ECT/-KN15H-ECT (For three-phase input)	**3G3AX-AL2025**
R88D-KT20H/-KT30H	R88D-KN20H-ML2/-KN30H-ML2	R88D-KN20H-ECT/-KN30H-ECT	**3G3AX-AL2055**
R88D-KT50H	R88D-KN50H-ML2	R88D-KN50H-ECT	**3G3AX-AL2110**
R88D-KT06F/-KT10F/-KT15F	R88D-KN06F-ML2/-KN10F-ML2/ -KN15F-ML2	R88D-KN06F-ECT/-KN10F-ECT/ -KN15F-ECT	**3G3AX-AL4025**
R88D-KT20F/-KT30F	R88D-KN20F-ML2/-KN30F-ML2	R88D-KN20F-ECT/-KN30F-ECT	**3G3AX-AL4055**
R88D-KT50F	R88D-KN50F-ML2	R88D-KN50F-ECT	**3G3AX-AL4110**
R88D-KT75H/-KT150F	–	R88D-KT75H-ECT/-KT150F-ECT	**3G3AX-AL4220**

Mounting Brackets (L Brackets for Rack Mounting)

Specifications			Model
General-purpose Inputs	MECHATROLINK-II Communications	EtherCAT Communications	
R88D-KTA5L/-KT01L/-KT01H/-KT02H	R88D-KNA5L-ML2/-KN01L-ML2/-KN01H-ML2/-KN02H-ML2	R88D-KNA5L-ECT/-KN01L-ECT/ -KN01H-ECT/-KN02H-ECT	**R88A-TK01K**
R88D-KT02L/-KT04H	R88D-KN02L-ML2/-KN04H-ML2	R88D-KN02L-ECT/-KN04H-ECT	**R88A-TK02K**
R88D-KT04L/-KT08H	R88D-KN04L-ML2/-KN08H-ML2	R88D-KN04L-ECT/-KN08H-ECT	**R88A-TK03K**
R88D-KT10H/KT15H/-KT06F/-KT10F/-KT15F	R88D-KN10H-ML2/-KN15H-ML2/-KN06F-ML2/-KN10F-ML2/ -KN15F-ML2	R88D-KN10H-ECT/-KN15H-ECT/ -KN06F-ECT/-KN10F-ECT/ -KN15F-ECT	**R88A-TK04K**

■ Software

How to Select Required Support Software for Your Controller

The required Support Software depends on the Controller to connect. Please check the following table when purchasing the Support Software.

Item	Omron PLC System	Omron Machine Automation Controller System
Controller	CS, CJ, CP, and other series	NJ-series
AC Servomotor/Drivers	G5-series • EtherCAT Communications • General-purpose input type(PulseTrain or Analog inputs) • MECHATROLINK-II Communications	G5-series • EtherCAT Communications (Unit version 2.1 or later recommended)
Software	FA Intergrated Tool Package CX-One	Automation Software Sysmac Studio

■ FA Integrated Tool Package CX-One

Product name	Specifications	Number of licenses	Media	Model	Standards
FA Integrated Tool Package CX-One Ver. 4.□	The CX-One is a comprehensive software package that integrates Support Software for OMRON PLCs and components. CX-One runs on following OS. OS: Windows XP (Service Pack 3 or higher), Vista or 7 **Note:** Except for Windows XP 64-bit version. CX-One Version.4.□ includes CX-Drive Ver.2.□.	1 license *1	DVD *2	**CXONE-AL01D-V4**	–

*1. Multi licenses are available for the CX-One (3, 10, 30, or 50 licenses).
*2. The CX-One is also available on CD (CXONE-AL□□C-V4).

■ Automation Software Sysmac Studio

Please purchase a DVD and required number of licenses the first time you purchase the Sysmac Studio. DVDs and licenses are available individually. Each model of licenses does not include any DVD.

Product name	Specifications	Number of licenses	Media	Model	Standards
Sysmac Studio Standard Edition Ver.1.□□	The Sysmac Studio provides an integrated development environment to set up, program, debug, and maintain NJ-series Controllers and other Machine Automation Controllers, as well as EtherCAT slaves. Sysmac Studio runs on the following OS. Windows XP (Service Pack 3 or higher, 32-bit version)/ Vista (32-bit version) / 7 (32-bit/64-bit version)	– (Media only)	DVD	**SYSMAC-SE200D**	–
	The Sysmac Studio Standard Edition DVD includes Support Software to set up EtherNet/IP Units, DeviceNet slaves, Serial Communications Units, and Support Software for creating screens on HMIs (CX-Designer). For details, refer to the Sysmac Integrated Catalogue (P072).	1 license *	–	**SYSMAC-SE201L**	–

* Multi licenses are available for the Sysmac Studio (3, 10, 30, or 50 licenses).

Combination table

Servo Drive and Servomotor Combinations (3,000 r/min, 2,000 r/min, 1,500r/min, 1,000 r/min)

<Cylinder Type>

● 3,000-r/min servomotors

Power Supply Voltage	Servo Drive Model Numbers			Servomotor Model Numbers		
	General-purpose Inputs	MECHATROLINK-II	EtherCAT	Output	With incremental encoder	With absolute encoder
Single-phase 100 to 115 VAC	R88D-KTA5L	R88D-KNA5L-ML2	R88D-KNA5L-ECT	50 W	R88M-K05030H-□	R88M-K05030T-□
	R88D-KT01L	R88D-KN01L-ML2	R88D-KN01L-ECT	100 W	R88M-K10030L-□	R88M-K10030S-□
	R88D-KT02L	R88D-KN02L-ML2	R88D-KN02L-ECT	200 W	R88M-K20030L-□	R88M-K20030S-□
	R88D-KT04L	R88D-KN04L-ML2	R88D-KN04L-ECT	400 W	R88M-K40030L-□	R88M-K40030S-□
Single-phase/ three-phase 200 to 240 VAC	R88D-KT01H *	R88D-KN01H-ML2 *	R88D-KN01H-ECT *	50 W	R88M-K05030H-□ *	R88M-K05030T-□ *
	R88D-KT01H	R88D-KN01H-ML2	R88D-KN01H-ECT	100 W	R88M-K10030H-□	R88M-K10030T-□
	R88D-KT02H	R88D-KN02H-ML2	R88D-KN02H-ECT	200 W	R88M-K20030H-□	R88M-K20030T-□
	R88D-KT04H	R88D-KN04H-ML2	R88D-KN04H-ECT	400 W	R88M-K40030H-□	R88M-K40030T-□
	R88D-KT08H	R88D-KN08H-ML2	R88D-KN08H-ECT	750 W	R88M-K75030H-□	R88M-K75030T-□
	R88D-KT15H *	R88D-KN15H-ML2 *	R88D-KN15H-ECT *	1 kW	R88M-K1K030H-□ *	R88M-K1K030T-□ *
	R88D-KT15H	R88D-KN15H-ML2	R88D-KN15H-ECT	1.5 kW	R88M-K1K530H-□	R88M-K1K530T-□
Three-phase 200 to 240 VAC	R88D-KT20H	R88D-KN20H-ML2	R88D-KN20H-ECT	2 kW	R88M-K2K030H-□	R88M-K2K030T-□
	R88D-KT30H	R88D-KN30H-ML2	R88D-KN30H-ECT	3 kW	R88M-K3K030H-□	R88M-K3K030T-□
	R88D-KT50H	R88D-KN50H-ML2	R88D-KN50H-ECT *	4 kW	R88M-K4K030H-□	R88M-K4K030T-□
	R88D-KT50H	R88D-KN50H-ML2	R88D-KN50H-ECT	5 kW	R88M-K5K030H-□	R88M-K5K030T-□
Three-phase 400 to 480 VAC	R88D-KT10F	R88D-KN10F-ML2	R88D-KN10F-ECT *	750 W	R88M-K75030F-□	R88M-K75030C-□
	R88D-KT15F *	R88D-KN15F-ML2 *	R88D-KN15F-ECT *	1 kW	R88M-K1K030F-□ *	R88M-K1K030C-□ *
	R88D-KT15F	R88D-KN15F-ML2	R88D-KN15F-ECT	1.5 kW	R88M-K1K530F-□	R88M-K1K530C-□
	R88D-KT20F	R88D-KN20F-ML2	R88D-KN20F-ECT	2 kW	R88M-K2K030F-□	R88M-K2K030C-□
	R88D-KT30F	R88D-KN30F-ML2	R88D-KN30F-ECT	3 kW	R88M-K3K030F-□	R88M-K3K030C-□
	R88D-KT50F	R88D-KN50F-ML2	R88D-KN50F-ECT *	4 kW	R88M-K4K030F-□	R88M-K4K030C-□
	R88D-KT50F	R88D-KN50F-ML2	R88D-KN50F-ECT	5 kW	R88M-K5K030F-□	R88M-K5K030C-□

● 1,500r/min, 2,000-r/min servomotors

Power Supply Voltage	Servo Drive Model Numbers			Servomotor Model Numbers		
	General-purpose Inputs	MECHATROLINK-II	EtherCAT	Output	With incremental encoder	With absolute encoder
Single-phase/ three-phase 200 to 240 VAC	R88D-KT10H	R88D-KN10H-ML2	R88D-KN10H-ECT	1 kW	R88M-K1K020H-□	R88M-K1K020T-□
	R88D-KT15H	R88D-KN15H-ML2	R88D-KN15H-ECT	1.5 kW	R88M-K1K520H-□	R88M-K1K520T-□
Three-phase 200 to 240 VAC	R88D-KT20H	R88D-KN20H-ML2	R88D-KN20H-ECT	2 kW	R88M-K2K020H-□	R88M-K2K020T-□
	R88D-KT30H	R88D-KN30H-ML2	R88D-KN30H-ECT	3 kW	R88M-K3K020H-□	R88M-K3K020T-□
	R88D-KT50H *	R88D-KN50H-ML2 *	R88D-KN50H-ECT *	4 kW	R88M-K4K020H-□ *	R88M-K4K020T-□ *
	R88D-KT50H	R88D-KN50H-ML2	R88D-KN50H-ECT	5 kW	R88M-K5K020H-□	R88M-K5K020T-□
	R88D-KT75H	–	R88D-KN75H-ECT	7.5 kW	–	R88M-K7K515T-□
	R88D-KT150H *	–	R88D-KN150H-ECT *	11 kW	–	R88M-K11K015T-□ *
	R88D-KT150H	–	R88D-KN150H-ECT	15 kW	–	R88M-K15K015T-□
Three-phase 400 to 480 VAC	R88D-KT06F	R88D-KN06F-ML2	R88D-KN06F-ECT*	400 W	R88M-K40020F-□	R88M-K40020C-□
	R88D-KT06F	R88D-KN06F-ML2	R88D-KN06F-ECT	600 W	R88M-K60020F-□	R88M-K60020C-□
	R88D-KT10F	R88D-KN10F-ML2	R88D-KN10F-ECT	1 kW	R88M-K1K020F-□	R88M-K1K020C-□
	R88D-KT15F	R88D-KN15F-ML2	R88D-KN15F-ECT	1.5 kW	R88M-K1K520F-□	R88M-K1K520C-□
	R88D-KT20F	R88D-KN20F-ML2	R88D-KN20F-ECT	2 kW	R88M-K2K020F-□	R88M-K2K020C-□
	R88D-KT30F	R88D-KN30F-ML2	R88D-KN30F-ECT	3 kW	R88M-K3K020F-□	R88M-K3K020C-□
	R88D-KT50F *	R88D-KN50F-ML2 *	R88D-KN50F-ECT *	4 kW	R88M-K4K020F-□ *	R88M-K4K020C-□ *
	R88D-KT50F	R88D-KN50F-ML2	R88D-KN50F-ECT	5 kW	R88M-K5K020F-□	R88M-K5K020C-□
	R88D-KT75F	–	R88D-KN75F-ECT	7.5 kW	–	RR88M-K7K515C-□
	R88D-KT150F *	–	R88D-KN150F-ECT *	11 kW	–	R88M-K11K015C-□ *
	R88D-KT150F	–	R88D-KN150F-ECT	15 kW	–	R88M-K15K015C-□

● 1,000-r/min servomotors

Power Supply Voltage	Servo Drive Model Numbers			Servomotor Model Numbers		
	General-purpose Inputs	MECHATROLINK-II	EtherCAT	Output	With incremental encoder	With absolute encoder
Single-phase/	R88D-KT15H *	R88D-KN15H-ML2 *	R88D-KN15H-ECT *	900 W	R88M-K90010H-□ *	R88M-K90010T-□ *
Three-phase 200 to 240 VAC	R88D-KT30H *	R88D-KN30H-ML2 *	R88D-KN30H-ECT *	2 kW	R88M-K2K010H-□ *	R88M-K2K010T-□ *
	R88D-KT50H *	R88D-KN50H-ML2 *	R88D-KN50H-ECT *	3 kW	R88M-K3K010H-□ *	R88M-K3K010T-□ *
	R88D-KT50H *	–	R88D-KN50H-ECT *	4.5 kW	–	R88M-K4K510T-□ *
	R88D-KT75H *	–	R88D-KN75H-ECT *	6 kW	–	R88M-K6K010T-□ *
Three-phase 400 to 480 VAC	R88D-KT15F *	R88D-KN15F-ML2 *	R88D-KN15F-ECT *	900 W	R88M-K90010F-□ *	R88M-K90010C-□ *
	R88D-KT30F *	R88D-KN30F-ML2 *	R88D-KN30F-ECT *	2 kW	R88M-K2K010F-□ *	R88M-K2K010C-□ *
	R88D-KT50F *	R88D-KN50F-ML2 *	R88D-KN50F-ECT *	3 kW	R88M-K3K010F-□ *	R88M-K3K010C-□ *
	R88D-KT50F *	–	R88D-KN50F-ECT *	4.5 kW	–	R88M-K4K510C-□ *
	R88D-KT75F *	–	R88D-KN75F-ECT *	6 kW	–	R88M-K6K010C-□ *

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

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

<Cylinder Type>

● 3,000-r/min servomotors

Motor model	1/5	1/11 (1/9 for flange size No.11)	1/21	1/33	1/45
R88M-K05030□	R88G-HPG11B05100B□ (Also used with R88M-K10030□)	R88G-HPG11B09050B□ (Gear ratio 1/9)	R88G-HPG14A21100B□ (Also used with R88M-K10030□)	R88G-HPG14A33050B□	R88G-HPG14A45050B□
R88M-K10030□	R88G-HPG11B05100B□	R88G-HPG14A11100B□	R88G-HPG14A21100B□	R88G-HPG20A33100B□	R88G-HPG20A45100B□
R88M-K20030□	R88G-HPG14A05200B□	R88G-HPG14A11200B□	R88G-HPG20A21200B□	R88G-HPG20A33200B□	R88G-HPG20A45200B□
R88M-K40030□	R88G-HPG14A05400B□	R88G-HPG20A11400B□	R88G-HPG20A21400B□	R88G-HPG32A33400B□	R88G-HPG32A45400B□
R88M-K75030H/T (200 V)	R88G-HPG20A05750B□	R88G-HPG20A11750B□	R88G-HPG32A21750B□	R88G-HPG32A33750B□	R88G-HPG32A45750B□
R88M-K75030F/C (400 V)	R88G-HPG32A052K0B□ (Also used with R88M-K2K030□)	R88G-HPG32A112K0B□ (Also used with R88M-K2K030□)	R88G-HPG32A211K5B□ (Also used with R88M-K1K5030□)	R88G-HPG32A33600SB□ (Also used with R88M-K60020□)	R88G-HPG50A451K5B□ (Also used with R88M-K1K530□)
R88M-K1K030□	R88G-HPG32A052K0B□ (Also used with R88M-K2K030□)	R88G-HPG32A112K0B□ (Also used with R88M-K2K030□)	R88G-HPG32A211K5B□ (Also used with R88M-K1K5030□)	R88G-HPG50A332K0B□ (Also used with R88M-K2K030□)	R88G-HPG50A451K5B□ (Also used with R88M-K1K530□)
R88M-K1K530□	R88G-HPG32A052K0B□ (Also used with R88M-K2K030□)	R88G-HPG32A112K0B□ (Also used with R88M-K2K030□)	R88G-HPG32A211K5B□	R88G-HPG50A332K0B□ (Also used with R88M-K2K030□)	R88G-HPG50A451K5B□
R88M-K2K030□	R88G-HPG32A052K0B□	R88G-HPG32A112K0B□	R88G-HPG50A212K0B□	R88G-HPG50A332K0B□	–
R88M-K3K030□	R88G-HPG32A053K0B□	R88G-HPG50A113K0B□	R88G-HPG50A213K0B□	–	–
R88M-K4K030□	R88G-HPG32A054K0B□	R88G-HPG50A115K0B□ (Also used with R88M-K5K030□)	–	–	–
R88M-K5K030□	R88G-HPG50A055K0B□	R88G-HPG50A115K0B□	–	–	–

● 2,000-r/min servomotors

Motor model	1/5	1/11	1/21 (1/20 for flange size No.65)	1/33 (1/25 for flange size No.65)	1/45
R88M-K40020□ (Only 400 V)	R88G-HPG32A052K0B□ (Also used with R88M-K2K030□)	R88G-HPG32A112K0B□ (Also used with R88M-K2K030□)	R88G-HPG32A211K5B□ (Also used with R88M-K1K5030□)	R88G-HPG32A33600SB□ (Also used with R88M-K60020□)	R88G-HPG32A45400SB□
R88M-K60020□ (Only 400 V)	R88G-HPG32A052K0B□ (Also used with R88M-K2K030□)	R88G-HPG32A112K0B□ (Also used with R88M-K2K030□)	R88G-HPG32A211K5B□ (Also used with R88M-K1K5030□)	R88G-HPG32A33600SB□	R88G-HPG50A451K5B□ (R88M-K1K530□)
R88M-K1K020□	R88G-HPG32A053K0B□ (Also used with R88M-K3K030□)	R88G-HPG32A112K0SB□ (Also used with R88M-K2K020□)	R88G-HPG32A211K0SB□	R88G-HPG50A332K0SB□ (Also used with R88M-K2K020□)	R88G-HPG50A451K0SB□
R88M-K1K520□	R88G-HPG32A053K0B□ (Also used with R88M-K3K030□)	R88G-HPG32A112K0SB□ (Also used with R88M-K2K020□)	R88G-HPG50A213K0B□ (Also used with R88M-K3K030□)	R88G-HPG50A332K0SB□ (Also used with R88M-K2K020□)	–
R88M-K2K020□	R88G-HPG32A053K0B□ (Also used with R88M-K3K030□)	R88G-HPG32A112K0SB□	R88G-HPG50A213K0B□ (Also used with R88M-K3K030□)	R88G-HPG50A332K0SB□	–
R88M-K3K020□	R88G-HPG32A054K0B□ (Also used with R88M-K4K030□)	R88G-HPG50A115K0B□ (Also used with R88M-K5K030□)	R88G-HPG50A213K0SB□	R88G-HPG65A253K0SB□	–
R88M-K4K020□	R88G-HPG50A055K0SB□ (Also used with R88M-K5K020□)	R88G-HPG50A115K0SB□ (Also used with R88M-K3K030□)	R88G-HPG65A205K0SB□ (Also used with R88M-K3K030□)	R88G-HPG65A255K0SB□ (Also used with R88M-K5K020□)	–
R88M-K5K020□	R88G-HPG50A055K0SB□	R88G-HPG50A115K0SB□	R88G-HPG65A205K0SB□	R88G-HPG65A255K0SB□	–

● 1,000-r/min servomotors

Motor model	1/5	1/11	1/21 (1/20 for flange size No.65)	1/33 (1/25 for flange size No.65)
R88M-K90010□	R88G-HPG32A05900TB□	R88G-HPG32A11900TB□	R88G-HPG50A21900TB□	R88G-HPG50A33900TB□
R88M-K2K010□	R88G-HPG32A052K0TB□	R88G-HPG50A112K0TB□	R88G-HPG50A212K0TB□ (Also used with R88M-K5K020□)	R88G-HPG65A255K0SB□ (Also used with R88M-K5K020□)
R88M-K3K010□	R88G-HPG50A055K0SB□ (Also used with R88M-K5K020□)	R88G-HPG50A115K0SB□ (Also used with R88M-K5K020□)	R88G-HPG65A205K0SB□ (Also used with R88M-K5K020□)	R88G-HPG65A255K0SB□ (Also used with R88M-K5K020□)

Controller Combinations

● Servo Relay Units and Cables

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

Position Control Unit	Position Control Unit Cable		Servo Relay Unit		Servo Drive Cable
CQM1H-PLB21	XW2Z-□□□J-A3		XW2B-20J6-3B		XW2Z-□□□J-B25
CS1W-NC113	XW2Z-□□□J-A6		XW2B-20J6-1B		
C200HW-NC113					
CS1W-NC213	XW2Z-□□□J-A7		XW2B-40J6-2B		
CS1W-NC413					
C200HW-NC213					
C200HW-NC413					
CS1W-NC133	XW2Z-□□□J-A10		XW2B-20J6-1B		
CS1W-NC233	XW2Z-□□□J-A11		XW2B-40J6-2B		
CS1W-NC433					
CJ1W-NC113	XW2Z-□□□J-A14		XW2B-20J6-1B		
CJ1W-NC213	XW2Z-□□□J-A15		XW2B-40J6-2B		
CJ1W-NC413					
CJ1W-NC133	XW2Z-□□□J-A18		XW2B-20J6-1B		
CJ1W-NC233	XW2Z-□□□J-A19		XW2B-40J6-2B		
CJ1W-NC433					
CJ1M-CPU21	XW2Z-□□□J-A33		For 1 axis	XW2B-20J6-8A	XW2Z-□□□J-B31
CJ1M-CPU22			For 2 axis	XW2B-40J6-9A	
CJ1M-CPU23					
FQM1-MMP22	General-purpose I/O	XW2Z-□□□J-A28	XW2B-80J7-12A		XW2Z-□□□J-B26
	Special I/O	XW2Z-□□□J-A30			
FQM1-MMA22	General-purpose I/O	XW2Z-□□□J-A28			XW2Z-□□□J-B27
	Special I/O	XW2Z-□□□J-A31			

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

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

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

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

● Motion Control Unit Cables

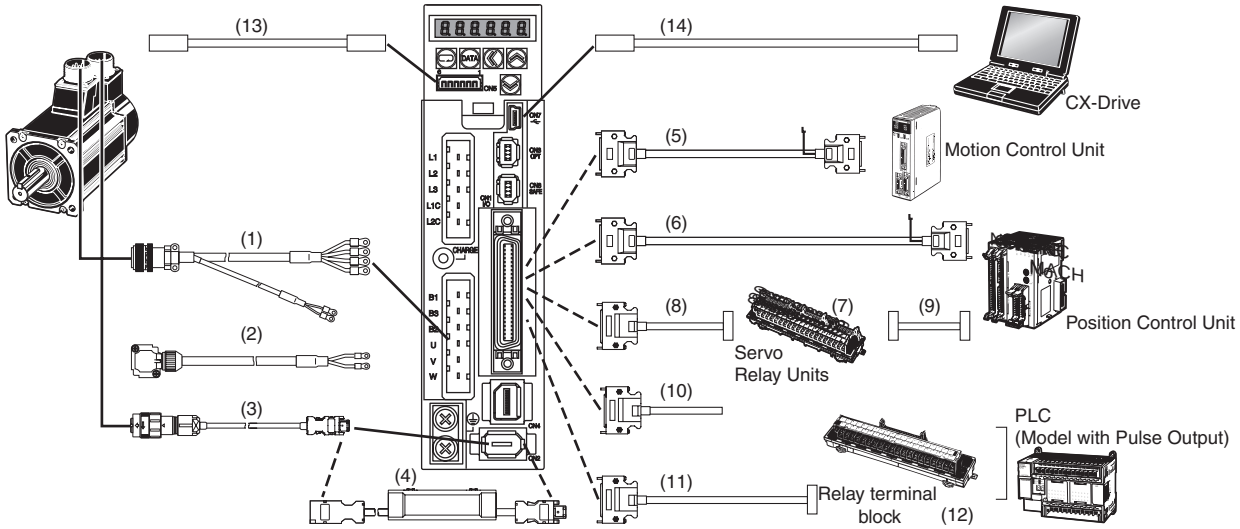
There are special cables for 1-axis and 2-axis Motion Control Unit operation. Select the appropriate cable for the number of axes to be connected.

Motion Control Unit	Cable		Remarks
CS1W-MC221-V1	For 1 axis	R88A-CPG□□□M1	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
CS1W-MC421-V1	For 2 axis	R88A-CPG□□□M2	

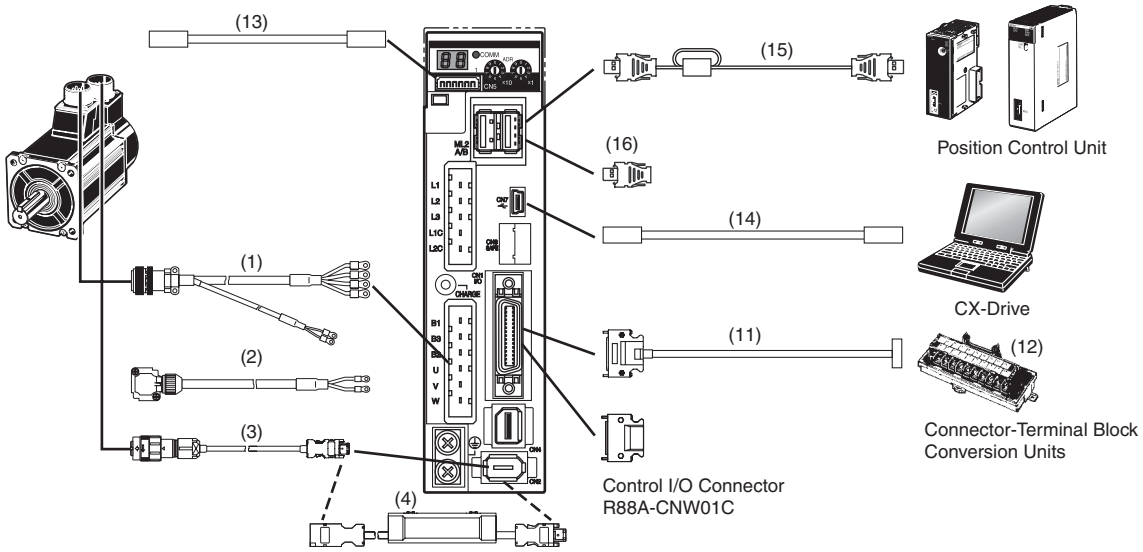
MEMO

Cable Combinations

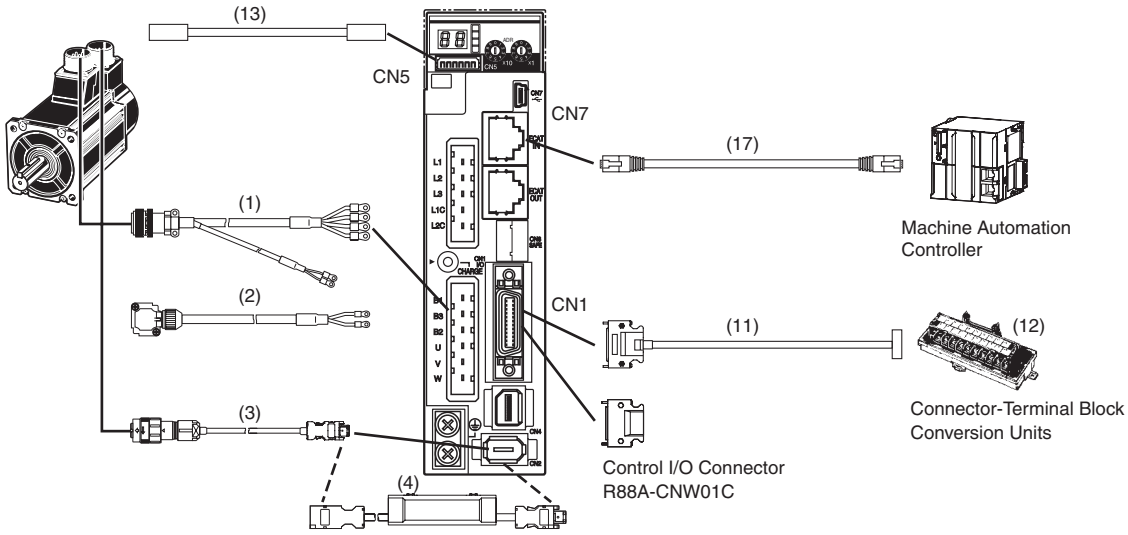
● General-purpose Input



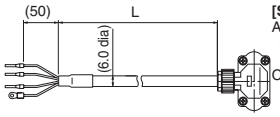
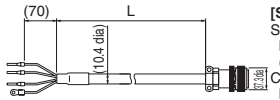
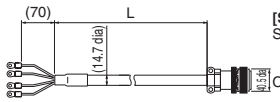
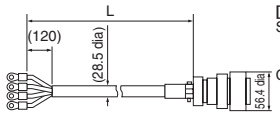
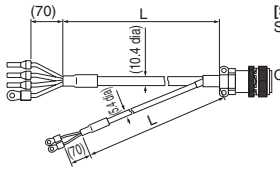
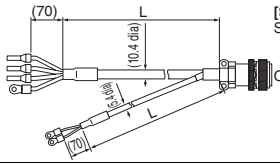
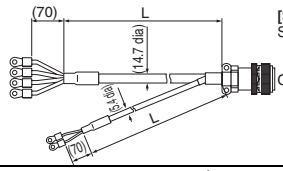
● MECHATROLINK-II Communications



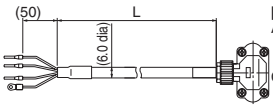
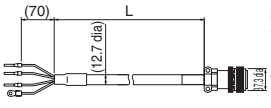
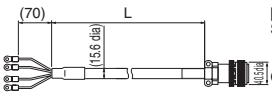
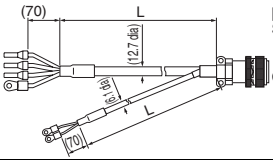
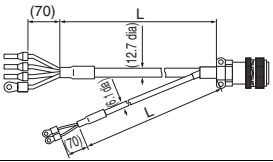
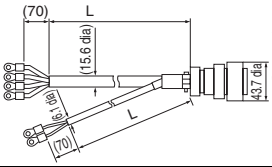
● EtherCAT Communications



Servomotor Power Cables (For CNB)

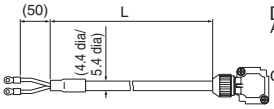
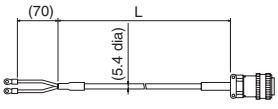
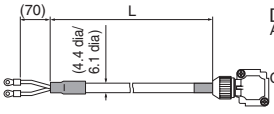
Symbol			Name	Connected to	Model	Description
(1)	Standard Cables	Without Brakes	Standard Servomotor Power Cables for Servomotors without Brakes	[100 V] [200 V] Cylindrical Servomotors, 3,000 r/min, 50 to 750 W	R88A-CAKA□□□S The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 **[Servomotor Connector]** Angle plug: JN8FT04SJ1 (Japan Aviation Electronics Industry, Ltd.) Contact pins: ST-TMH-S-C1B-3500-A534G (Japan Aviation Electronics Industry, Ltd.)
				[200 V] Cylindrical Servomotors, 3,000 r/min, 1 to 2 kW Cylindrical Servomotors, 2,000 r/min, 1 to 2 kW Cylindrical Servomotors, 1,000 r/min, 900 W [400 V] Cylindrical Servomotors, 3,000 r/min, 750 W to 2 kW Cylindrical Servomotors, 2,000 r/min, 400 W to 2 kW Cylindrical Servomotors, 1,000 r/min, 900 W	R88A-CAGB□□□S The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 **[Servomotor Connector]** Straight plug: N/MS3106B20-4S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-12A (Japan Aviation Electronics Industry, Ltd.)
				[200 V] [400 V] Cylindrical Servomotors, 3,000 r/min, 3 to 5 kW Cylindrical Servomotors, 2,000 r/min, 3 to 5 kW Cylindrical Servomotors, 1,000 r/min, 2 to 4.5 kW	R88A-CAGD□□□S The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 **[Servomotor Connector]** Straight plug: N/MS3106B22-22S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-12A (Japan Aviation Electronics Industry, Ltd.)
				[200 V] [400 V] Cylindrical Servomotors, 1,500 r/min, 7.5 kW Cylindrical Servomotors, 1,000 r/min, 6 kW	R88A-CAGE□□□S The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 **[Servomotor Connector]** Straight plug: N/MS3106B32-17S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-20A (Japan Aviation Electronics Industry, Ltd.)
		With Brakes	Standard Servomotor Power Cables for Servomotors with Brakes	**Note:** Different connectors are used for the motor power and the brake on 100-V and 200-V, 3,000-r/min Servomotors of 50 to 750 W and Servomotors of 6 to 15 kW. When using a Servomotor with a brake, two cables are required: a Power Cable without Brake and a Brake Cable.		
				[200 V] Cylindrical Servomotors, 3,000 r/min, 1 to 2 kW Cylindrical Servomotors, 2,000 r/min, 1 to 2 kW Cylindrical Servomotors, 1,000 r/min, 900 W	R88A-CAGB□□□B The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 **[Servomotor Connector]** Straight plug: N/MS3106B20-18S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-12A (Japan Aviation Electronics Industry, Ltd.)
				[400 V] Cylindrical Servomotors, 3,000 r/min, 1 to 2 kW Cylindrical Servomotors, 2,000 r/min, 400 W to 2 kW Cylindrical Servomotors, 1,000 r/min, 900 W	R88A-CAKF□□□B The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 **[Servomotor Connector]** Straight plug: N/MS3106B24-11S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-16A (Japan Aviation Electronics Industry, Ltd.)
				[200 V] [400 V] Cylindrical Servomotors, 3,000 r/min, 3 to 5 kW Cylindrical Servomotors, 2,000 r/min, 3 to 5 kW Cylindrical Servomotors, 1,000 r/min, 2 to 3 kW	R88A-CAGD□□□B The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 **[Servomotor Connector]** Straight plug: N/MS3106B24-11S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-16A (Japan Aviation Electronics Industry, Ltd.)

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

Symbol			Name	Connected to	Model	Description
(1)	Robot Cables	Without Brakes	Robot Servomotor Power Cables for Servomotors without Brakes	[100 V] [200 V] Cylindrical Servomotors, 3,000 r/min, 50 to 750 W	R88A-CAKA□□□SR The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 [Servomotor Connector] Angle plug: JN8FT04SJ1 (Japan Aviation Electronics Industry, Ltd.) Connector pins: ST-TMH-S-C1B-3500-A534G (Japan Aviation Electronics Industry, Ltd.)
				[200 V] Cylindrical Servomotors, 3,000 r/min, 1 to 2 kW Cylindrical Servomotors, 2,000 r/min, 1 to 2 kW Cylindrical Servomotors, 1,000 r/min, 900 W [400 V] Cylindrical Servomotors, 3,000 r/min, 750 W to 2 kW Cylindrical Servomotors, 2,000 r/min, 400 W to 2 kW Cylindrical Servomotors, 1,000 r/min, 900 W	R88A-CAGB□□□SR The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 [Servomotor Connector] Straight plug: N/MS3106B20-4S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-12A (Japan Aviation Electronics Industry, Ltd.)
				[200 V] [400 V] Cylindrical Servomotors, 3,000 r/min, 3 to 5 kW Cylindrical Servomotors, 2,000 r/min, 3 to 5 kW Cylindrical Servomotors, 1,000 r/min, 2 to 4.5 kW	R88A-CAGD□□□SR The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 [Servomotor Connector] Straight plug: N/MS3106B22-22S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-12A (Japan Aviation Electronics Industry, Ltd.)
		With Brakes	Robot Servomotor Power Cables for Servomotors with Brakes	**Note:** Different connectors are used for the motor power and the brake on 100-V and 200-V, 3,000-r/min Servomotors of 50 to 750 W and Servomotors of 6 to 15 kW. When using a Servomotor with a brake, two cables are required: a Power Cable without Brake and a Brake Cable.		
				[200 V] Cylindrical Servomotors, 3,000 r/min, 1 to 2 kW Cylindrical Servomotors, 2,000 r/min, 1 to 2 kW Cylindrical Servomotors, 1,000 r/min, 900 W	R88A-CAGB□□□BR The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 [Servomotor Connector] Straight plug: N/MS3106B20-18S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-12A (Japan Aviation Electronics Industry, Ltd.)
				[400 V] Cylindrical Servomotors, 3,000 r/min, 1 to 2 kW Cylindrical Servomotors, 2,000 r/min, 400 W to 2 kW Cylindrical Servomotors, 1,000 r/min, 900 W	R88A-CAKF□□□BR The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 [Servomotor Connector] Straight plug: N/MS3106B24-11S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-16A (Japan Aviation Electronics Industry, Ltd.)
				[200 V] [400 V] Cylindrical Servomotors, 3,000 r/min, 3 to 5 kW Cylindrical Servomotors, 2,000 r/min, 3 to 5 kW Cylindrical Servomotors, 1,000 r/min, 2 to 3 kW	R88A-CAGD□□□BR The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 [Servomotor Connector] Straight plug: N/MS3106B24-11S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-16A (Japan Aviation Electronics Industry, Ltd.)

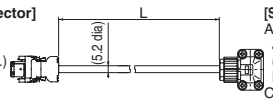
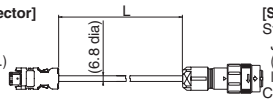
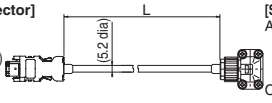
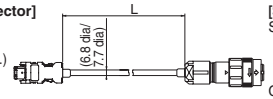
Note: Insert the cable length into the boxes in the model number of cables. (3 m: 003, 5 m: 005, 10 m: 010)

Brake Cables

Symbol		Name	Connected to	Model	Description
(2)	Standard Cables	Brake Cables (Standard Cables)	[100 V] [200 V] Cylindrical Servomotors, 3,000 r/min, 50 to 750 W	R88A-CAKA□□□B The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long. (3 to 20 m: 4.4 dia 30 to 50 m: 5.4 dia)	 [Servomotor Connector] Angle plug: JN4FT02SJ1-R (Japan Aviation Electronics Industry, Ltd.) Connector pins: ST-TMH-S-C1B-3500-(A534G) (Japan Aviation Electronics Industry, Ltd.)
			[200 V] [400 V] Cylindrical Servomotors, 1,500 r/min, 7.5 to 15 kW 1,000 r/min, 6 kW	R88A-CAGE□□□B The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long. (5.4 dia)	 [Servomotor Connector] Angle plug: N/MS3106B14S-2S (Japan Aviation Electronics Industry, Ltd.) Connector pins: N/MS3057-6A (Japan Aviation Electronics Industry, Ltd.)
	Robot Cables	Brake Cables (Robot Cables)	[100 V] [200 V] Cylindrical Servomotors, 3,000 r/min, 50 to 750 W	R88A-CAKA□□□BR The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long. (3 to 20 m: 4.4 dia 30 to 50 m: 6.1 dia)	 [Servomotor Connector] Angle plug: JN4FT02SJ1-R (Japan Aviation Electronics Industry, Ltd.) Connector pins: ST-TMH-S-C1B-3500-(A534G) (Japan Aviation Electronics Industry, Ltd.)

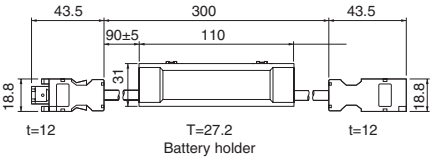
Note: Insert the cable length into the boxes in the model number of cables. (3 m: 003, 5 m: 005, 10 m: 010)

Encoder Cables (for CN2)

Symbol		Name	Connected to	Model	Description
(3)	Standard Cables	Standard Encoder Cables with Connectors	Cylindrical Servomotors, 3,000 r/min, 50 to 750 W (Absolute encoder/ Incremental encoder)	R88A-CRKA□□□C The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long. (3 to 20 m: 5.2 dia 30 to 50 m: 6.8 dia)	[Servo Drive Connector] Connector: 55100-0670 (Molex Japan Co., Ltd.)  [Servomotor Connector] Angle clamp: JN6FR07SM1 (Japan Aviation Electronics Industry, Ltd.) Connector pins: LY10-C1-A1-10000 (Japan Aviation Electronics Industry, Ltd.)
			Cylindrical Servomotors, 3,000 r/min, For 1 kW (200 V) For 750 W (400 V) Cylindrical Servomotors, 2,000 r/min, Cylindrical Servomotors, 1,000 r/min, (Absolute encoder/ Incremental encoder)	R88A-CRKC□□□N The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	[Servo Drive Connector] Connector: 55100-0670 (Molex Japan Co., Ltd.)  [Servomotor Connector] Straight plug: JN2DS10SL2-R (Japan Aviation Electronics Industry, Ltd.) Contact: JN1-22-20S-10000 (Japan Aviation Electronics Industry, Ltd.)
	Robot Cables	Robot Encoder Cables with Connectors	Cylindrical Servomotors, 3,000 r/min, 50 to 750 W (Absolute encoder/ Incremental encoder)	R88A-CRKA□□□CR The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long. (3 to 20 m: 5.2 dia 30 to 50 m: 6.8 dia)	[Servo Drive Connector] Connector: 55100-0670 (Molex Japan Co., Ltd.)  [Servomotor Connector] Angle clamp: JN6FR07SM1 (Japan Aviation Electronics Industry, Ltd.) Connector pins: LY10-C1-A1-10000 (Japan Aviation Electronics Industry, Ltd.)
			Cylindrical Servomotors, 3,000 r/min, For 1 kW (200 V) For 750 W (400 V) Cylindrical Servomotors, 2,000 r/min, Cylindrical Servomotors, 1,000 r/min, (Absolute encoder/ Incremental encoder)	R88A-CRKC□□□NR The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long. (3 to 20 m: 6.8 dia 30 to 50 m: 7.7 dia)	[Servo Drive Connector] Connector: 55100-0670 (Molex Japan Co., Ltd.)  [Servomotor Connector] Straight plug: JN2DS10SL2-R (Japan Aviation Electronics Industry, Ltd.) Cable clamp: JN1-22-22S-10000 (Japan Aviation Electronics Industry, Ltd.)

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

Absolute Encoder Backup Battery and Absolute Encoder Battery Cable

Symbol	Name	Specifications		Model	Description
(4)	Absolute Encoder Battery Cable	Battery not included	0.3 m	R88A-CRGD0R3C	
		One R88A-BAT01G Battery included.	0.3 m	R88A-CRGD0R3C-BS	
	Absolute Encoder Backup Battery	–		R88A-BAT01G	–

Control Cables (for CN1)

Symbol		Name	Connected to		Model
(5)	Control Cables	Control Cables for Motion Control Units	Motion Control Units (for all SYSMAC CS1/C200H)	For 1 axis/ For 2 axis	R88A-CPG□□□M◇ The empty boxes in the model number are for the cable length. The cable can be 1, 2, 3, or 5 m long. The empty diamond in the model number is for the number of axes. One axis: 1, Two axes: 2
(6)		Direct connection cable for Position Control Unit (High-speed type)	Line-driver output type (High-speed type) for CJ1W-NC234/434	For 1 axis	XW2Z-□□□J-G9 The empty boxes in the model number are for the cable length. The cable can be 1, 5, or 10 m long.
			Line-driver output type (High-speed type) for CJ1W-NC234/434	For 2 axis	XW2Z-□□□J-G1 The empty boxes in the model number are for the cable length. The cable can be 1, 5, or 10 m long.
			Open collector output type (High-speed type) for CJ1W-NC214/NC414	For 1 axis	XW2Z-□□□J-G13 The empty boxes in the model number are for the cable length. The cable can be 1, or 3 m long.
			Open collector output type (High-speed type) for CJ1W-NC214/NC414	For 2 axis	XW2Z-□□□J-G5 The empty boxes in the model number are for the cable length. The cable can be 1, or 3 m long.

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

Symbol		Name		Connected to		Model
(7)	Servo Relay Units/Connection Cables	Servo Relay Units		Position Control Unit: For CJ1W-NC113/NC133 For CS1W-NC113/NC133 (For C200HW-NC113)	For 1 axis	XW2B-20J6-1B
				Position Control Unit: For CJ1W-NC213/NC233/NC413/NC433 For CS1W-NC213/NC233/NC413/NC433 (For C200HW-NC213/NC413)	For 2 axis	XW2B-40J6-2B
				For CJ1M-CPU21/CPU22/CPU23	For 1 axis	XW2B-20J6-8A
					For 2 axis	XW2B-40J6-9A
				For FQM1-MMA22 (Analog output) For FQM1-MMP22 (Pulse train output)	For 2 axis	XW2B-80J7-12A
				For CQM1H-PLB21	For 1 axis	XW2B-20J6-3B
(8)		Connection Cables	Servo Relay Unit Cables for Servo Drives	Position Control Unit: For CJ1W-NC□□3, CS1W/C200HW-NC□□□ (XW2B-20J6-1B, XW2B-40J6-2B) For CQM1H-PLB21 (XW2B-20J6-3B)		XW2Z-□□□J-B25 The empty boxes in the model number are for the cable length. The cable can be 1, or 2 m long.
				For CJ1M-CPU21/CPU22/CPU23 (XW2B-20J6-8A, XW2B-40J6-9A)		XW2Z-□□□J-B31 The empty boxes in the model number are for the cable length. The cable can be 1, or 2 m long.
				For FQM1-MMA22 (Analog output) (XW2B-80J7-12A)		XW2Z-□□□J-B27 The empty boxes in the model number are for the cable length. The cable can be 1, or 2 m long.
				For FQM1-MMP22 (Pulse train output) (XW2B-80J7-12A)		XW2Z-□□□J-B26 The empty boxes in the model number are for the cable length. The cable can be 1, or 2 m long.
(9)			Servo Relay Unit Cables for Position Control Units	CJ1W line-driver output type for CJ1W-NC133	For 1 axis	XW2Z-□□□J-A18 The empty boxes in the model number are for the cable length. The cable can be 0.5, or 1 m long.
				CJ1W line-driver output type for CJ1W-NC233/NC433	For 2 axis	XW2Z-□□□J-A19 The empty boxes in the model number are for the cable length. The cable can be 0.5, or 1 m long.
				CS1W line-driver output type for CS1W-NC133	For 1 axis	XW2Z-□□□J-A10 The empty boxes in the model number are for the cable length. The cable can be 0.5, or 1 m long.
				CS1W line-driver output type for CS1W-NC233/NC433	For 2 axis	XW2Z-□□□J-A11 The empty boxes in the model number are for the cable length. The cable can be 0.5, or 1 m long.
				CJ1W open collector output type for CJ1W-NC113	For 1 axis	XW2Z-□□□J-A14 The empty boxes in the model number are for the cable length. The cable can be 0.5, or 1 m long.
				CJ1W open collector output type for CJ1W-NC213/NC413	For 2 axis	XW2Z-□□□J-A15 The empty boxes in the model number are for the cable length. The cable can be 0.5, or 1 m long.
				CS1W/C200HW open collector output type for CS1W-NC113 for C200HW-NC113	For 1 axis	XW2Z-□□□J-A6 The empty boxes in the model number are for the cable length. The cable can be 0.5, or 1 m long.
				CS1W/C200HW open collector output type for CS1W-NC213/NC413 for C200HW-NC213/NC413	For 2 axis	XW2Z-□□□J-A7 The empty boxes in the model number are for the cable length. The cable can be 0.5, or 1 m long.
				CSW/C200HW open collector output type for CJ1M-CPU21/CPU22/CPU23	For 1 axis	XW2Z-□□□J-A33 The empty boxes in the model number are for the cable length. The cable can be 0.5, or 1 m long.

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

Symbol		Name		Connected to			Model
(9)	Servo Relay Units/Connection Cables	Connection Cables	Servo Relay Unit Cables for Position Control Units	For FQM1-MMA22 (Analog output) For FQM1-MMP22 (Pulse train output)	General-purpose I/O (26 pin)	For 2 axis	XW2Z-□□□J-A28 The empty boxes in the model number are for the cable length. The cable can be 0.5, 1, or 2 m long.
				For FQM1-MMA22 (Analog output)	Special I/O (40 pin)	For 2 axis	XW2Z-□□□J-A31 The empty boxes in the model number are for the cable length. The cable can be 0.5, 1, or 2 m long.
				For FQM1-MMP22 (Pulse train output)	Special I/O (40 pin)	For 2 axis	XW2Z-□□□J-A30 The empty boxes in the model number are for the cable length. The cable can be 0.5, 1, or 2 m long.
				For CQM1H-PLB21		For 1 axis	XW2Z-□□□J-A3 The empty boxes in the model number are for the cable length. The cable can be 0.5, or 1 m long.
(10)	General-purpose Control Cables with Connector on One End			Cables for General-purpose Controllers			R88A-CPG□□□S The empty boxes in the model number are for the cable length. The cable can be 0.5, or 1 m long.
(11)	For Connector Terminal Block		Connector Terminal Block Cables	Cable for General-purpose Controllers			XW2Z-□□□J-B24 The empty boxes in the model number are for the cable length. The cable can be 1, or 2 m long.
				Cable for MECHATROLINK-II Communications			XW2Z-□□□J-B34 The empty boxes in the model number are for the cable length. The cable can be 1, or 2 m long.
(12)			Connector-Terminal Block Conversion Units	Cable for General-purpose Controllers		M3 screws	XW2B-50G4
						M3.5 screws	XW2B-50G5
						M3 screws	XW2D-50G6
				Cable for MECHATROLINK-II Communications		M3 screws	XW2B-20G4
						M3.5 screws	XW2B-20G5
						M3 screws	XW2D-20G6

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

Monitor Connector (for CN5)

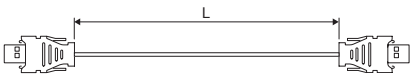
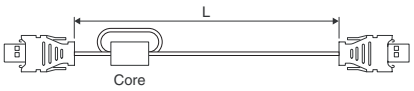
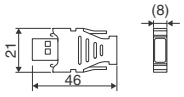
Symbol	Name	Lengths	Model
(13)	Analog Monitor Cable	1 m	R88A-CMK001S

Communications Connector (for CN7)

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

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

MECHATROLINK-II Communication Cable

Symbol	Name	Length (L)	Model (OMRON model number)	Yaskawa model number	Description
(15)	MECHATROLINK-II Communication Cable * Can be connected to R88D-GN and R88D-KN only.	0.5m	FNY-W6002-A5	JEPMC-W6002-A5-E	(without ring core and USB connector on both ends) 
		1m	FNY-W6002-01	JEPMC-W6002-01-E	
		3m	FNY-W6002-03	JEPMC-W6002-03-E	
		5m	FNY-W6002-05	JEPMC-W6002-05-E	
	MECHATROLINK-II Communication Cable	0.5m	FNY-W6003-A5	JEPMC-W6003-A5	(with ring core and USB connector on both ends) 
		1m	FNY-W6003-01	JEPMC-W6003-01	
		3m	FNY-W6003-03	JEPMC-W6003-03	
		5m	FNY-W6003-05	JEPMC-W6003-05	
		10m	FNY-W6003-10	JEPMC-W6003-10	
		20m	FNY-W6003-20	JEPMC-W6003-20	
		30m	FNY-W6003-30	JEPMC-W6003-30	
(16)	MECHATROLINK-II Terminating resistance	–	FNY-W6022	JEPMC-W6022	

EtherCAT Communication Cable

Symbol	Name	Description
(17)	Ethernet Cable	EtherCAT Communication Cables • Use a category 5 or higher cable with double, aluminum tape and braided shielding. Connector (Modular Plug) Specifications • Use a category 5 or higher, shielded connector.

Connectors

Connectors	Name	Model
CN1	Control I/O Connector (General-purpose Input)	R88A-CNU11C
	Control I/O Connector (MECHATROLINK-II Communications) (EtherCAT Communications)	R88A-CNW01C
CN2	Encoder Connector	R88A-CNW01R
CN4	External scale connector	R88A-CNK41L
CN8	Safety connector	R88A-CNK81S

Servomotor Connector

Connectors	Name	Connected to	Model
–	Motor connector for encoder cable	3,000 r/min, 50 to 750 W	R88A-CNK02R
		3,000 r/min, 1 to 5 kW (200 V)/750 W to 5 kW (400 V) 2,000 r/min, 1,000 r/min	R88A-CNK04R
–	Power cable connector	750 W max. (100 V/200 V)	R88A-CNK11A
–	Brake cable connector	750 W max. (100 V/200 V)	R88A-CNK11B

About Manuals

Please read the relevant manuals of G5-Series

English Cat. No.	Japanese Cat. No.	Type	Name
I571	SBCE-357	R88D-KT/R88M-K	G5-SERIES AC SERVOMOTOR AND SERVO DRIVE USER'S MANUAL
I572	SBCE-358	R88D-KN□-ML2/R88M-K	G5-SERIES MECHATROLINK-II Communications AC SERVOMOTOR AND SERVO DRIVE USER'S MANUAL
I576	SBCE-365	R88D-KN□-ECT/R88M-K	G5-SERIES EtherCAT Communications AC SERVOMOTOR AND SERVO DRIVE USER'S MANUAL
I573	SBCE-360	R88D-KN□-ECT-R/R88M-K	G5-SERIES EtherCAT Communications for Position Control AC SERVOMOTOR AND SERVO DRIVE USER'S MANUAL
W487	SBCE-359	CJ1W-NC□81/CJ1W-NC□82	CJ-series Position Control Unit Operation Manual
W446	SBCA-337	CXONE-AL□□C-V□/-AL□□D-V□	CX-Programmer Operation Manual
W453	SBCE-337	CXONE-AL□C/D-V□ WS02-DRVC01	CX-Drive OPERATION MANUAL
W504	SBCA-362	SYSMAC-SE2□□□	Sysmac Studio Version 1 Operation Manual

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Related product catalog

Programmable Controller
SYSMAC CJ Series
Position Control Units (High-Speed type)

CJ1W-NC214/414
CJ1W-NC234/434

Cat. No. R156

AC Servomotors/
Servo Drives

G Series

Cat. No. I814

AC Servomotors/
Servo Drives

SMARTSTEP 2

Cat. No. I813

Note: Do not use this document to operate the Unit.

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