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)

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 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.

USB communi-cations

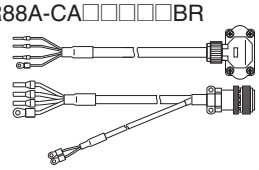
Servo Drive

- **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 or less)

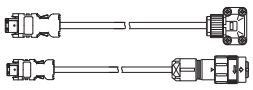
- Non-flexible Cables R88A-CAKA□□□B
- Flexible Cables R88A-CAKA□□□BR

Motor power signals

Feedback Signals

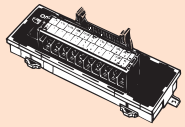
Encoder Cables

- 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

- Backlash: 3 Arcminutes max.
  R88G-HPG
- Backlash: 15 Arcminutes Max.
  R88G-VRXF

MEMO

Ordering Information

Product name AC Servomotors / Linear Motors / Servo Drives **G5-series**

Interpreting Model Numbers B-2

- ■ AC Servo Drive Rotary Motor Type Model Numbers
- ■ AC Servo Drive Linear Motor Type Model Numbers
- ■ AC Servomotor Model Numbers
- ■ Linear Motor Model Numbers
- ■ Understanding Decelerator Model Numbers (Backlash = 3' Max./Backlash = 15' Max.)

Table of AC Servomotor Variations B-5

Ordering Information B-6

- AC Servo Drives B-6
  - EtherCAT Communications
  - Linear Motor with built-in EtherCAT communications
  - General-purpose Inputs
  - MECHATROLINK-II Communications
- AC Servomotors B-7
- Linear Motors B-12
- Decelerators (Backlash = 3' Max./Backlash = 15' Max.) B-14
- Accessories and Cables B-16
  - ■ Connection Cables (Power Cables, Brake Cables, Encoder Cables)
    - (Non-flexible Cables)
    - (Flexible Cables)
  - ■ Cable/Connector
  - ■ Control Cables
    - ●For General-purpose Inputs
  - ■ Communication Cables
    - ●For MECHATROLINK-II Communications
    - ●For EtherCAT Communications
  - ■ Peripheral Devices (External Regeneration Resistors, Reactors, Mounting Brackets)
  - ■ Support Software

Combination table B-25

- ■ AC Servo Drive and Servomotor Combinations
- ■ AC Servomotor and Decelerator Combinations
- ■ Linear Motor and AC Servo Drive Linear Motor Type Combinations
- ■ Controller Combinations
- ■ Cable Combinations

Related Manuals B-37

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

AC Servo Drive Rotary Motor Type 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 kW
		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

AC Servo Drive Linear Motor Type Model Numbers

R88D-K N 01 H -ECT -L

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

No	Item	Symbol	Specifications
(1)	G5-series Servo Drive		
(2)	Drive Type	N	Communication type
(3)	Maximum Applicable Linear Motor Capacity	01	100 W
		02	200 W
		04	400 W
		06	600 W
		08	750 W
		10	1 kW
		15	1.5 kW
		20	2 kW
		30	3 kW
(4)	Power Supply Voltage	L	100 VAC
		H	200 VAC
		F	400 VAC
(5)	Network type	-ECT	EtherCAT Communications
(6)	Motor type	-L	Linear Motor

AC 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

Linear Motor

● Iron-core linear motor

Motor Coil Unit

R88L-EC -FW -03 03 -A NP C

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

No	Item	Symbol	Specifications
(1)	G5-series Linear Motor		
(2)	Part Type	FW	Iron-core type Motor Coil Unit
(3)	Effective Magnet Width	03	30mm
		06	60mm
		11	110mm
(4)	Coil Model	03	3-coil
		06	6-coil
		09	9-coil
		12	12-coil
		15	15-coil
(5)	Version	A	Ver.A
(6)	Connector	NP	Not Provided
(7)	Type	C	Compact type

Magnet Trac

R88L-EC -FM -03 096 -A

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

No	Item	Symbol	Specifications
(1)	G5-series Linear Motor		
(2)	Part Type	FM	Iron-core type Magnet Trac
(3)	Effective Magnet Width	03	30mm
		06	60mm
		11	110mm
(4)	Magnet Trac Unit Length	096	96mm
		144	144mm
		192	192mm
		288	288mm
		384	384mm
(5)	Version	A	Ver.A

● Ironless linear motor

Motor Coil Unit

R88L-EC -GW -03 03 -A NP S

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

No	Item	Symbol	Specifications
(1)	G5-series Linear Motor		
(2)	Part Type	GW	Ironless type Motor Coil Unit
(3)	Effective Magnet Width	03	30mm
		05	50mm
		07	70mm
(4)	Coil Model	03	3-coil
		06	6-coil
		09	9-coil
(5)	Version	A	Ver.A
(6)	Connector	NP	Not Provided
(7)	Type	S	Standard type

Magnet Trac

R88L-EC -GM -03 090 -A

(1) ② ③ ④ ⑤

No	Item	Symbol	Specifications
(1)	G5-series Linear Motor		
(2)	Part Type	GM	Ironless type Magnet Trac
(3)	Effective Magnet Width	03	30mm
		05	50mm
		07	70mm
(4)	Magnet Trac Unit Length	090	90mm
		114	114mm
		120	120mm
		126	126mm
		168	168mm
		171	171mm
		210	210mm
		390	390mm
		456	456mm
		546	546mm
(5)	Version	A	Ver.A

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

Refer to the *Decelerators* in *Ordering Information* for motor capacity and decelerator combinations.

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 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
		11	1/11
		20	1/20
		21	1/21
		25	1/25
		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-VRXF 09 B 100 C J

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

No	Item	Symbol	Specifications
(1)	Decelerator for Servomotor Backlash: 15 Arcminutes 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	100	50 W, 100 W
		200	200 W
		400	400 W
		750	750 W
(5)	Backlash	C	Backlash = 15' Max
(6)	Option	J	With key and tap

Table of AC Servomotor Variations

R88M-K□□□□□□-□□□□

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

(3)	(4)	(5)		(6)						(7)		(8)		(9)	
Type	Applicable Servomotor Capacity	Rotation speed	Model	Applied Voltage						With brake / Without brake		Models with oil seals		Shaft type	
				INC	INC	INC	ABS	ABS	ABS	–	B				
				400	200	100	400	200	100						
				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

Linear Motor with built-in EtherCAT communications

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

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