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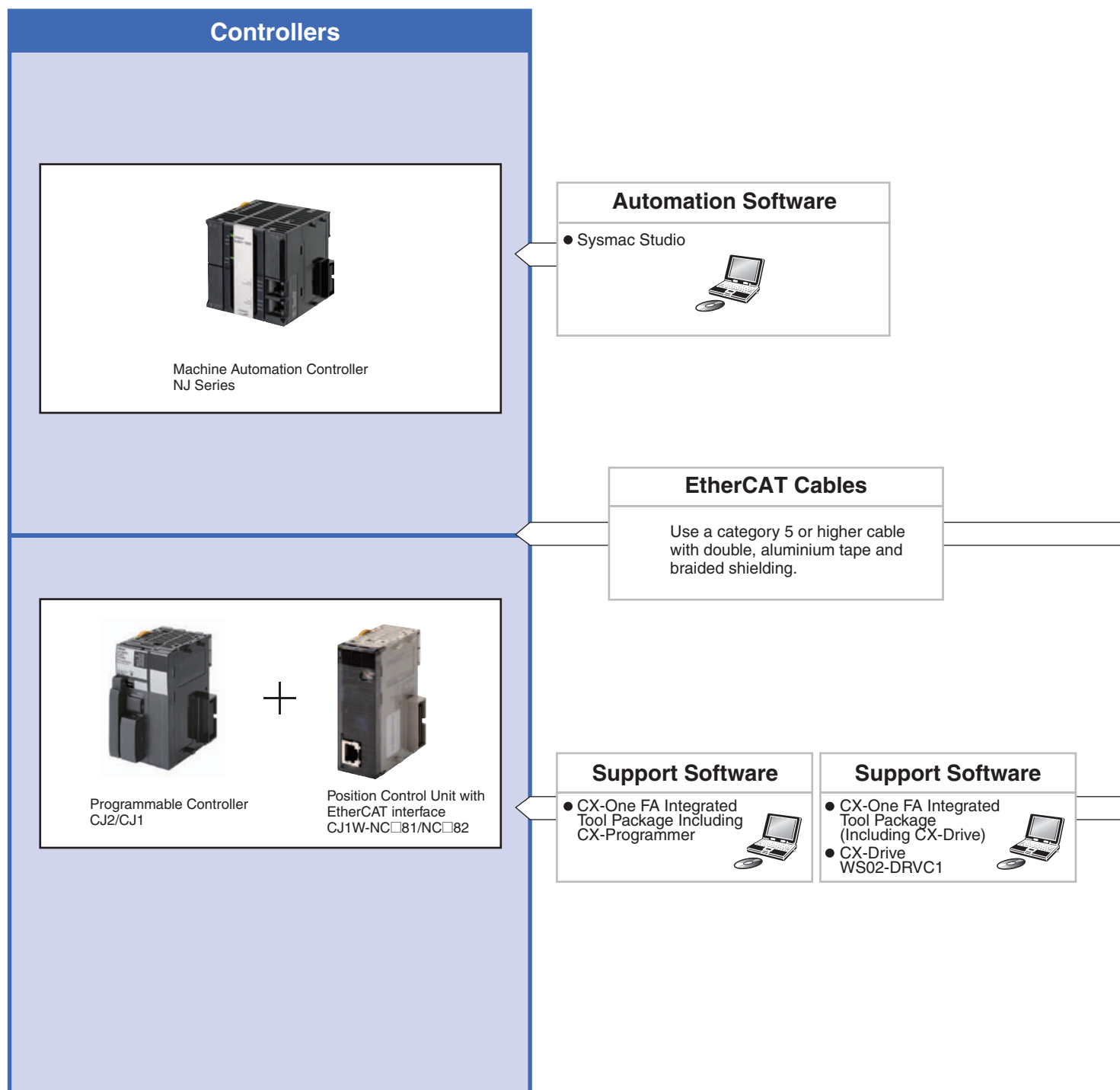
As a Sysmac Device, the G5-series AC Servomotor/Servo Drive with Built-in EtherCAT Communications is designed to provide optimal functionality and enhanced operability when used in conjunction with a Machine Automation Controller such as NJ series and the automation software Sysmac Studio.

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.

R88M-K/R88D-KN□-ECT

System Configuration



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 (application pending)
- Vibration can be suppressed in acceleration/deceleration even in low-rigidity mechanical systems.



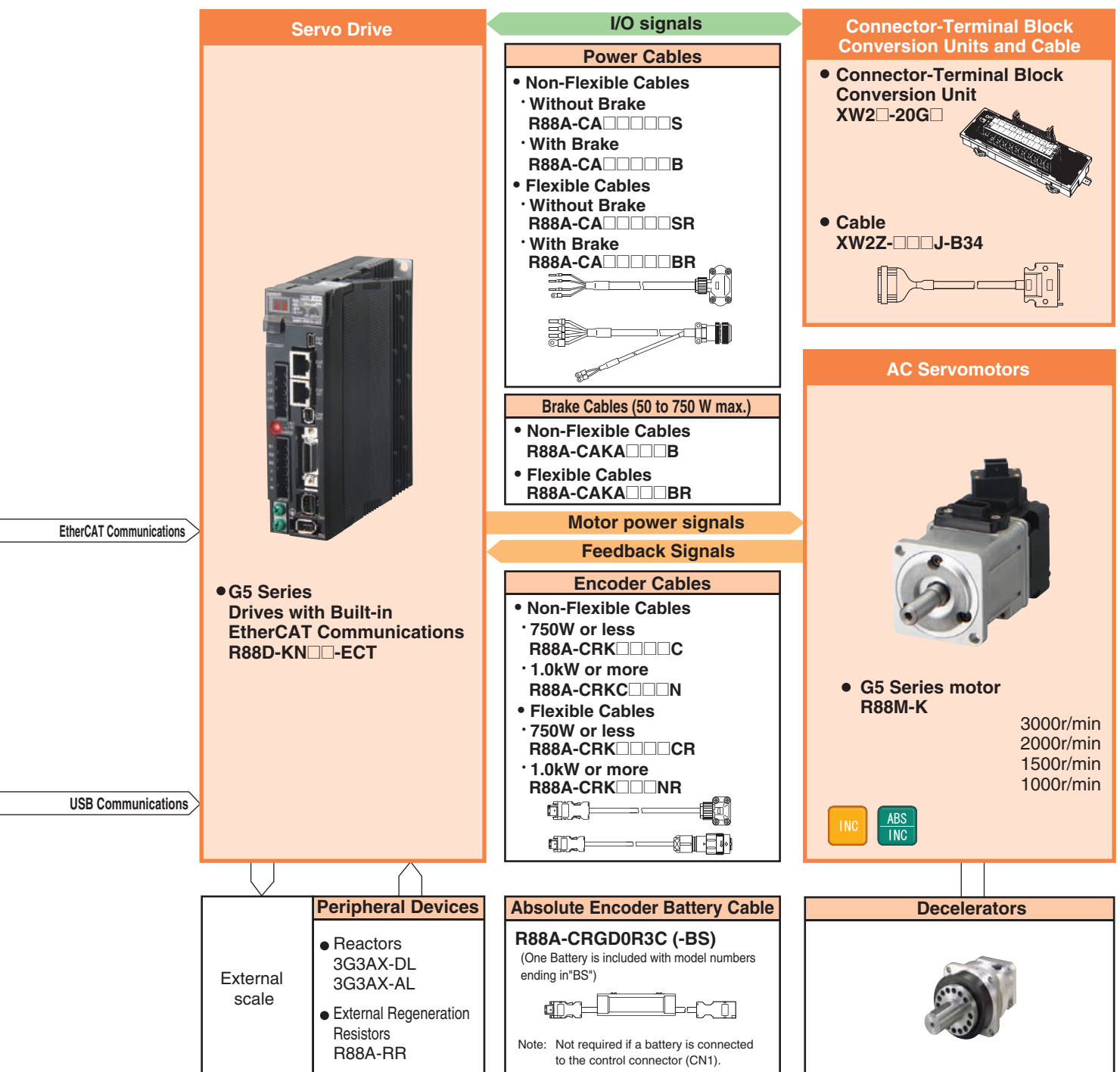
General-purpose Inputs
System Configuration

ML-II Type
System Configuration

General-purpose Inputs
Servo Drive

ML-II Type
Servo Drive

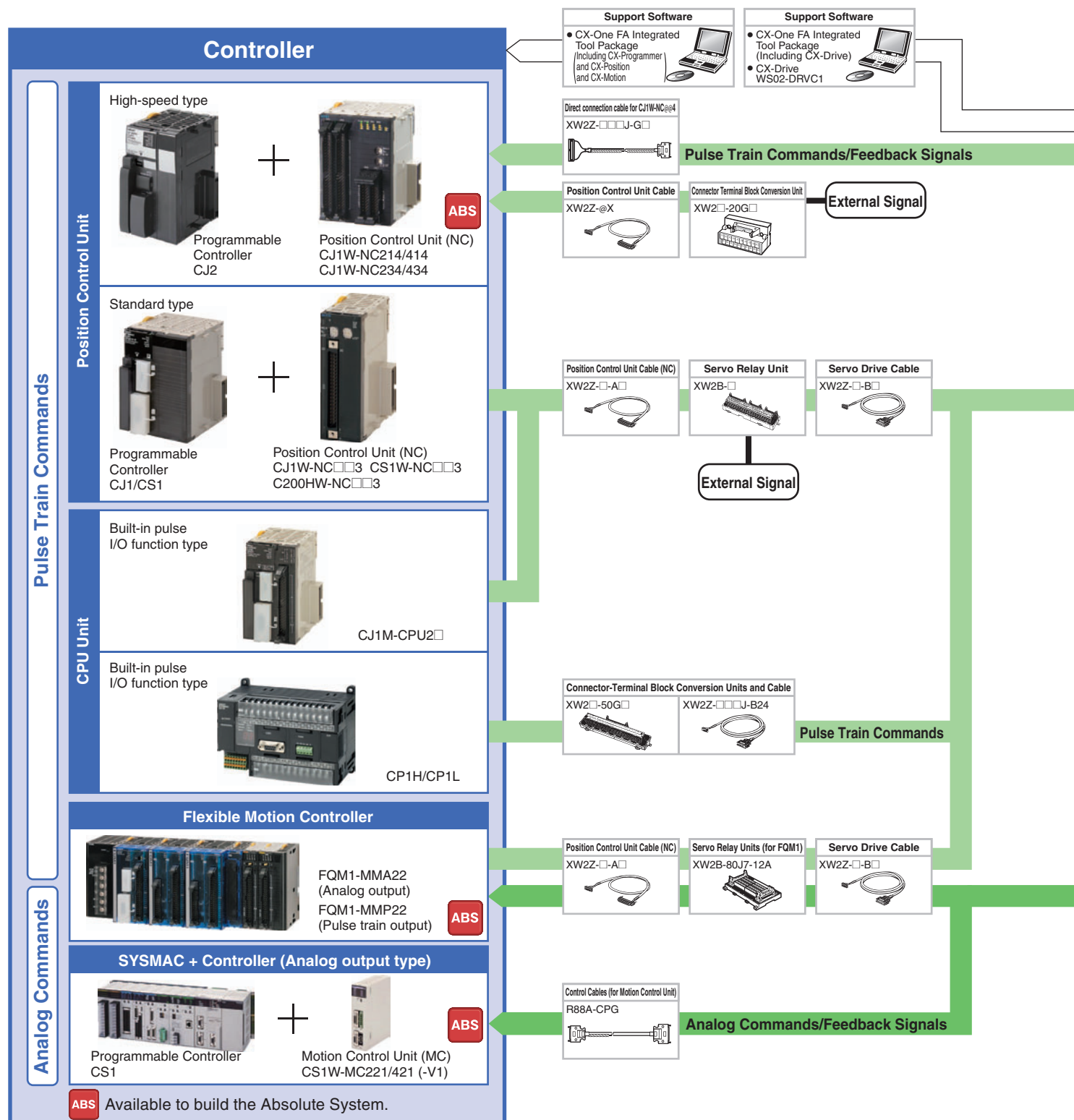
Servomotors



G5-series AC Servomotors/Servo Drives with General-purpose Pulse Train or Analog Inputs

R88M-K/R88D-KT

System Configuration



The Preeminent Servo That Revolutionizes Motion Control



(Ro)

- 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



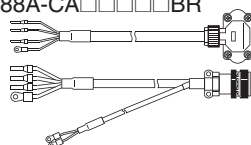
- G5 Series driver
R88D-KT

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



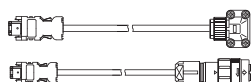
Brake Cables (50 to 750 W max.)

- 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-CRK□□□□□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

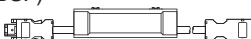
Peripheral Devices

External scale

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

Absolute Encoder Battery Cable

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



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

Decelerators



General-purpose Inputs
System Configuration

ML-II Type
System Configuration

General-purpose Inputs
Servo Drive

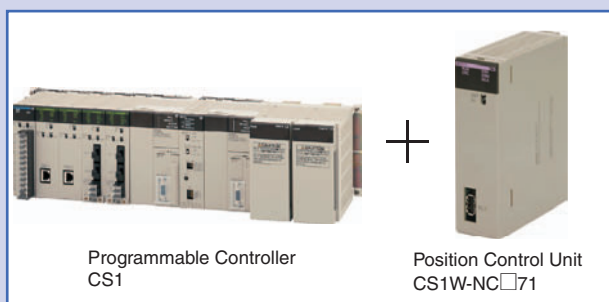
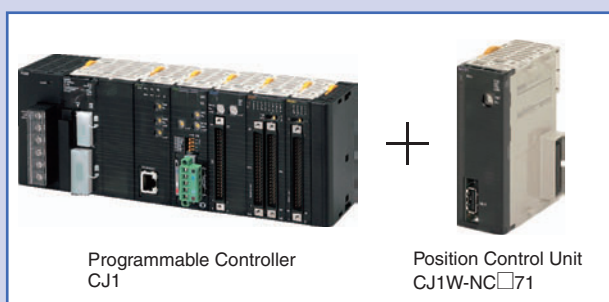
ML-II Type
Servo Drive

Servomotors

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



MECHATROLINK-II

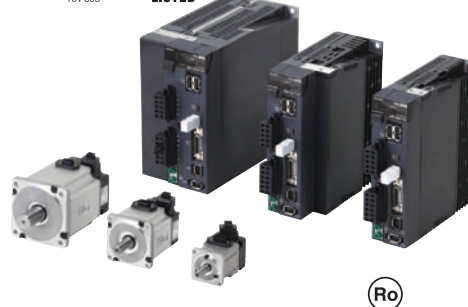
MECHATROLINK-II Cables

(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.

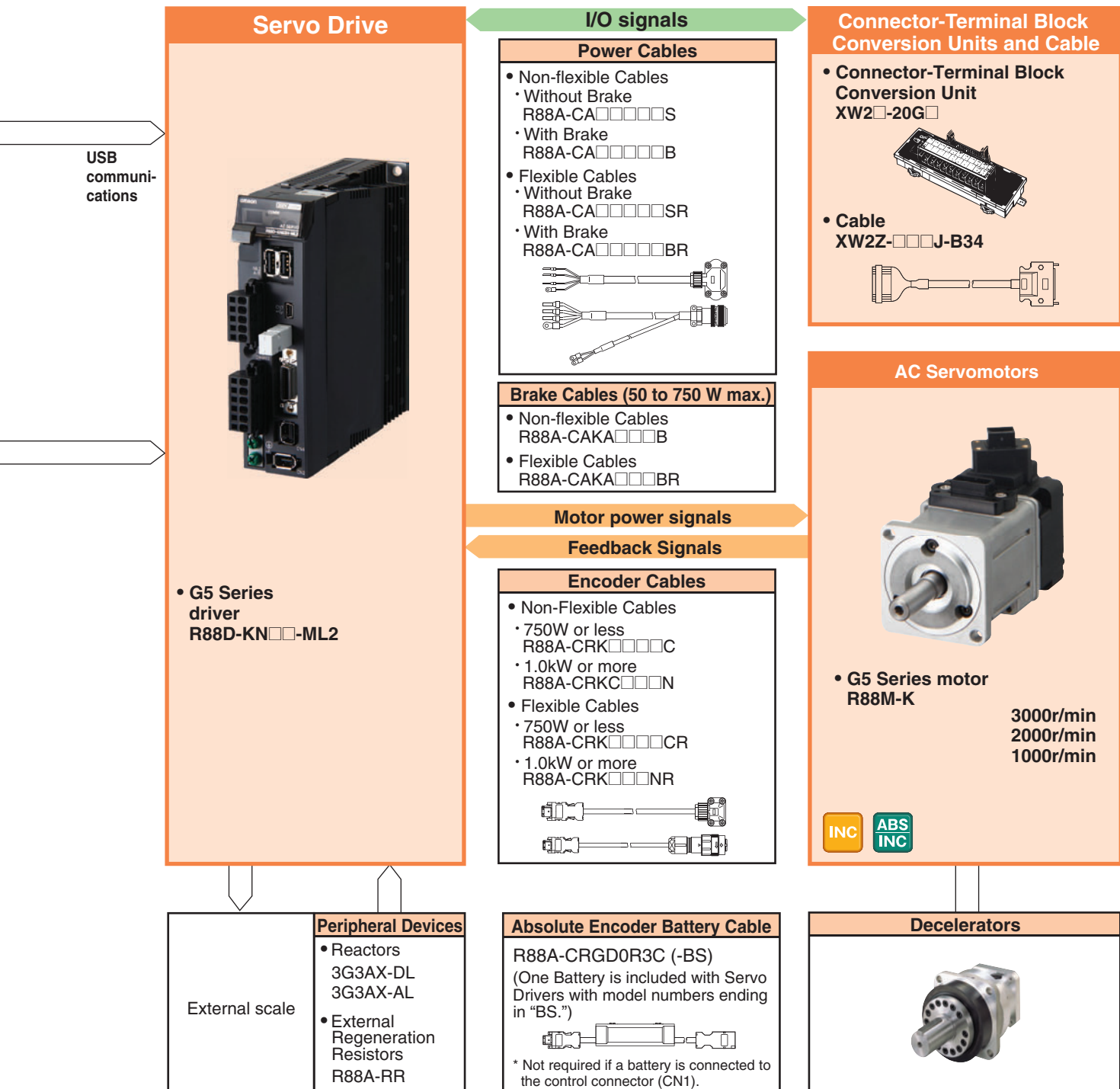


(Ro)

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.



General-purpose Inputs
System Configuration

ML-II Type
System Configuration

General-purpose Inputs
Servo Drive

ML-II Type
Servo Drive

Servomotors

G5-series AC Servo Drives with Built-in EtherCAT Communications

R88D-KN□-ECT

Contents

- Ordering Information
- Specifications
 - General Specifications
 - Characteristics
 - Servo Drives with Single-phase 100 VAC Input Power
 - Servo Drives with Single-phase or Three-phase 200 VAC Input Power
 - Servo Drives with Three-phase 400 VAC Input Power
 - EtherCAT Communication Specifications
- Version Information
- Names and Functions
 - Servo Drive Part Names
 - Functions
- Dimensions



Ordering Information

Refer to the Ordering Information.

Specifications

General Specifications

Item			Specifications
Ambient operating temperature and operating humidity			0 to 55°C, 90%RH max. (with no condensation)
Storage ambient temperature and humidity			-20 to 65°C, 90%RH max. (with no condensation)
Operating and storage atmosphere			No corrosive gases
Vibration resistance			10 to 60 Hz and at an acceleration of 5.88 m/s ² or less (Not to be run continuously at a resonance point)
Insulation resistance			Between power supply terminals/power terminals and FG terminal: 0.5 MΩ min. (at 500 VDC)
Dielectric strength			Between power supply/power line terminals and FG terminal: 1,500 VAC for 1 min at 50/60 Hz
Protective structure			Built into panel
International standard	EC Directives	EMC Directive	EN 55011, EN 61000-6-2, IEC 61800-3
		Low Voltage Directive	EN 61800-5-1
		Machinery Directives	EN954-1 (Cat.3), EN ISO 13849-1: 2008 (Category 3) (PLc,d), ISO 13849-1: 2006 (Category 3) (PLc,d), EN61508 (SIL2), EN62061 (SIL2), EN61800-5-2 (STO), IEC61326-3-1 (SIL2)
	UL standards		UL 508C
	CSA standards		CSA22.2 No. 14

Note: 1. The above items reflect individual evaluation testing. The results may differ under compound conditions.

Note: 2. Never perform dielectric strength or other megameter tests on the Servo Drive. Failure to follow this guideline may result in damaging the internal elements.

Note: 3. Depending on the operating conditions, some Servo Drive parts will require maintenance. For details, refer to the G5 series USER'S MANUAL. Confirm the Manual No. that is listed in Related Manuals.

Characteristics

● Servo Drives with 100 VAC Input Power

for Single-phase input type

Item			R88D-KNA5L-ECT	R88D-KN01L-ECT	R88D-KN02L-ECT	R88D-KN04L-ECT
Continuous output current (rms)			1.2A	1.7A	2.5A	4.6A
Input power supply	Main circuit	Power supply capacity	0.4KVA	0.4KVA	0.5KVA	0.9KVA
		Power supply voltage	Single-phase 100 to 120 VAC (85 to 132 V) 50/60 Hz			
		Rated current	1.7A	2.6A	4.3A	7.6A
		Heat value ^{*1}	11W	16.6W	21W	25W
	Control circuit	Power supply voltage	Single-phase 100 to 120 VAC (85 to 132 V) 50/60 Hz			
		Heat value ^{*1}	4W	4W	4W	4W
Weight			Approx. 0.8kg	Approx. 0.8kg	Approx. 1.0kg	Approx. 1.6kg
Maximum applicable motor capacity			50W	100W	200W	400 W
Applicable Servomotor	3,000 r/min Servomotors	INC	K05030H	K10030L	K20030L	K40030L
		ABS	K05030T	K10030S	K20030S	K40030S
	2,000 r/min Servomotors	ABS	—	—	—	—
	1,000 r/min Servomotors	ABS	—	—	—	—

*1. The heat value is given for rated operation.

● Servo Drives with 200 VAC Input Power

for Single-phase/Three-phase input type

Item			R88D-KN01H-ECT	R88D-KN02H-ECT	R88D-KN04H-ECT	R88D-KN08H-ECT	R88D-KN10H-ECT	R88D-KN15H-ECT
Continuous output current (rms)			1.2A	1.6A	2.6A	4.1A	5.9A	9.4A
Input power supply	Main circuit	Power supply capacity	0.5KVA	0.5KVA *1	0.9KVA	1.3KVA	1.8KVA	2.3KVA
		Power supply voltage	Single-phase or 3-phase 200 to 240 VAC (170 to 264 V) 50/60 Hz					
		Rated current	1.6/0.9A *1	2.4/1.3A *1	4.1/2.4A *1	6.6/3.6A *1	9.1/5.2A *1	14.2/8.1A *1
		Heat value*2	14.3/13.7W*1	23/19W *1	33/24W *1	30/35.5W *1	57/49W *1	104/93W*1
	Control circuit	Power supply voltage	Single-phase 200 to 240 VAC (170 to 264 V) 50/60 Hz					
		Heat value*2	4W	4W	4W	4W	7W	7W
Weight			Approx. 0.8kg	Approx. 0.8kg	Approx. 1.0kg	Approx. 1.6kg	Approx. 1.8kg	Approx. 1.8kg
Maximum applicable motor capacity			100W	200W	400W	750W	1kW	1.5kW
Applicable Servomotor	3,000 r/min Servomotors	INC	K05030H K10030H	K20030H	K40030H	K75030H	—	K1K030H K1K530H
		ABS	K05030T K10030T	K20030T	K40030T	K75030T	—	K1K030T K1K530T
	2,000 r/min Servomotors	INC	—	—	—	—	K1K020H	K1K520H
		ABS	—	—	—	—	K1K020T	K1K520T
	1,000 r/min Servomotors	INC	—	—	—	—	—	K90010H
		ABS	—	—	—	—	—	K90010T

*1. The first value is for single-phase input power and the second value is for 3-phase input power.

*2. The heat value is given for rated operation.

AC Servomotor/Drive G5-series

● Servo Drives with 200 VAC Input Power for Three-phase input type

Item			R88D-KN20H-ECT	R88D-KN30H-ECT	R88D-KN50H-ECT	R88D-KN75H-ECT	R88D-KN150H-ECT
Continuous output current (rms)			13.4A	18.7A	33.0A	44.0A	66.1A
Input power supply	Main circuit	Power supply capacity	3.3KVA	4.5KVA	7.5KVA	11.0KVA	22.0KVA
		Power supply voltage	3-phase 200 to 230 VAC (170 to 253 V) 50/60 Hz			3-phase 200 to 230 VAC (170 to 253V) 50/60Hz 280 to 325 VDC (238 to 357V)	
		Rated current	11.8A	15.1A	21.6A	32.0A	58.0A
		Heat value *1	139W	108W	328W	381W	720W
	Control circuit	Power supply voltage	Single-phase 200 to 230 VAC (170 to 253 V) 50/60 Hz			Single-phase 200 to 230 VAC (170 to 253V) 50/60Hz 280 to 325 VDC (238 to 357V)	
		Heat value *1	10W	13W	13W	15W	17W
Weight			Approx. 2.7kg	Approx. 4.8kg	Approx. 4.8kg	Approx. 13.5kg	Approx. 21.0kg
Maximum applicable motor capacity			2kW	3kW	5kW	7.5kW	15kW
Applicable Servomotor	3,000 r/min Servomotors	INC	K2K030H	K3K030H	K4K030H K5K030H	—	—
		ABS	K2K030T	K3K030T	K4K030T K5K030T	—	—
	2,000 r/min Servomotors	INC	K2K020H	K3K020H	K4K020H K5K020H	—	—
		ABS	K2K020T	K3K020T	K4K020T K5K020T	K7K515T	K11K015T K15K015T
	1,000 r/min Servomotors	INC	—	K2K010H	K3K010H	—	—
		ABS	—	K2K010T	K3K010T K4K510T	K6K010T	—

*1. The heat value is given for rated operation.

● Servo Drives with 400 VAC Input Power for Three-phase input type

Item			R88D-KN06F-ECT	R88D-KN10F-ECT	R88D-KN15F-ECT	R88D-KN20F-ECT	R88D-KN30F-ECT	R88D-KN50F-ECT	R88D-KN75F-ECT	R88D-KN150F-ECT
Continuous output current (rms)			1.5A	2.9A	4.7A	6.7A	9.4A	16.5A	22.0A	33.1A
Input power supply	Main circuit	Power supply capacity	1.2KVA	1.8KVA	2.3KVA	3.8KVA	4.5KVA	6.0KVA	11.0KVA	22.0KVA
		Power supply voltage	3-phase 380 to 480 VAC (323 to 528 V) 50/60 Hz							
		Rated current	2.1A	2.8A	4.7A	5.9A	7.6A	12.1A	16.0A	29.0A
		Heat value*1	32.2W	48W	49W	65W	108W	200W	300W	590W
	Control circuit	Power supply voltage	24 VDC (20.4 to 27.6 V)							
		Heat value*1	7W	7W	7W	10W	13W	13W	15W	22W
Weight			Approx. 1.9kg	Approx. 1.9kg	Approx. 1.9kg	Approx. 2.7kg	Approx. 4.7kg	Approx. 4.7kg	Approx. 13.5kg	Approx. 21.0kg
Maximum applicable motor capacity			600W	1kW	1.5kW	2kW	3kW	5kW	7.5kW	15kW
Applicable Servomotor	3,000 r/min Servomotors	INC	—	K75030F	K1K030F K1K530F	K2K030F	K3K030F	K4K030F K5K030F	—	—
		ABS	—	K75030C	K1K030C K1K530C	K2K030C	K3K030C	K4K030C K5K030C	—	—
	2,000 r/min Servomotors	INC	K40020F K60020F	K1K020F	K1K520F	K2K020F	K3K020F	K4K020F K5K020F	—	—
		ABS	K40020C K60020C	K1K020C	K1K520C	K2K020C	K3K020C	K4K020C K5K020C	K7K515C	K11K015C K15K015C
	1,000 r/min Servomotors	INC	—	—	K90010F	—	K2K010F	K3K010F	—	—
			—	—	K90010C	—	K2K010C	K3K010C K4K510C	K6K010C	—

*1. The heat value is given for rated operation.

EtherCAT Communications Specifications

Item	Specification
Communications standard	IEC 61158 Type 12, IEC 61800-7 CiA 402 Drive Profile
Physical layer	100BASE-TX (IEEE802.3)
Connectors	RJ45 × 2 (shielded) ECAT IN: EtherCAT input ECAT OUT: EtherCAT output
Communications media	Ethernet Category 5 (100BASE-TX) or higher (twisted-pair cable with double, aluminum tape and braided shielding) is recommended.
Communications distance	Distance between nodes: 100 m max.
Process data	Fixed PDO mapping
Mailbox (CoE)	Emergency messages, SDO requests, SDO responses, and SDO information
Distributed clock (DC)	Synchronization in DC mode. DC cycle: 250 μs, 500 μs, 1 ms, 2 ms, 4 ms
LED indicators	L/A IN (Link/Activity IN) × 1 L/A OUT (Link/Activity OUT) × 1 RUN × 1 ERR × 1
CiA402 Drive Profile	• Cyclic synchronous position mode • Cyclic synchronous velocity mode • Cyclic synchronous torque mode • Profile position mode • Homing mode • Touch probe function (Latch function) • Torque limit function

Version Information

Unit Versions

Unit	Model	Unit version		
		Unit version 1.0	Unit version 2.0	Unit version 2.1
AC Servo Drives G5-Series built-in EtherCAT Communications	R88D-KN□-ECT-R	Supported		
	R88D-KN□-ECT		Supported	Supported
Compatible Sysmac Studio version		Version 1.00 or higher *1	Version 1.00 or higher *2	Version 1.00 or higher
Compatible CX-Drive version		Version 2.2 or higher	Version 2.3 or higher	Version 2.4 or higher

*1. The function that was enhanced by the upgrade for Unit version 2.0 can not be used. For detail, refer to "Function Support by Unit Version".

*2. The function that was enhanced by the upgrade for Unit version 2.1 can not be used. For detail, refer to "Function Support by Unit Version".

Function Support by Unit Version

Unit		AC Servo Drives G5-Series built-in EtherCAT Communications		
Model		R88D-KN□-ECT-R	R88D-KN□-ECT	
Unit version		Unit version 1.0	Unit version 2.0	Unit version 2.1
Item				
Sysmac Products Features	Sysmac Error Status	No supported		Supported
	Saving the Node Address Setting	No supported		Supported
	Serial Number Display *1	No supported		Supported
	ESI Specification (Version 1.0)	No supported		Supported
	SII Data Check	No supported		Supported
Fixed PDO mapping		No supported	Supported	
Variable PDO mapping (1600 hex, 1A00 hex)		No supported		Supported
Available operation modes	csp: Cyclic synchronous position mode	Supported		
	csv: Cyclic synchronous velocity mode	No supported	Supported	
	cst: Cyclic synchronous torque mode	No supported	Supported	
	pp: Profile position mode	No supported		Supported
	hm: Homing mode	No supported	Supported	
FIR filter function		No supported	Supported*2 (Available when the communications cycle is 1 ms or above)	
Error detection function	Excessive Speed Deviation Error	No supported	Supported	
	Interruptions Error	No supported	Supported	
Electronic gear function		Supported	No supported (only to 1:1)	Supported

General-purpose Inputs
System Configuration

ML-II Type
System Configuration

General-purpose Inputs
Servo Drive

ML-II Type
Servo Drive

Servomotors

AC Servomotor/Drive G5-series

Unit		AC Servo Drives G5-Series built-in EtherCAT Communications		
Model		R88D-KN□-ECT-R	R88D-KN□-ECT	
Unit version		Unit version 1.0	Unit version 2.0	Unit version 2.1
Item				
Fully-closed Control *3		Supported	Available when the communications cycle is 500 μ s or above in csp and 1 ms or above in hm.	Available when the communications cycle is 1 ms or above at an electronic gear ratio of 1:1 and 2 ms or above at a gear ratio other than 1:1.*4
Torque limit objects		PDO mapping to 60E0/60E1 hex is not possible.	PDO mapping to 60E0/60E1 hex is possible.*5	
Positioning Completion Range		No supported		Supported
Reference Position for CSP (4020 hex)		No supported		Supported
Data Setting Warning Detection Setting (3781)		No supported		Supported
Version indication on the unit label		No supported	Supported	

*1. The function to show the serial number controlled by OMRON in 1018h-04 hex.

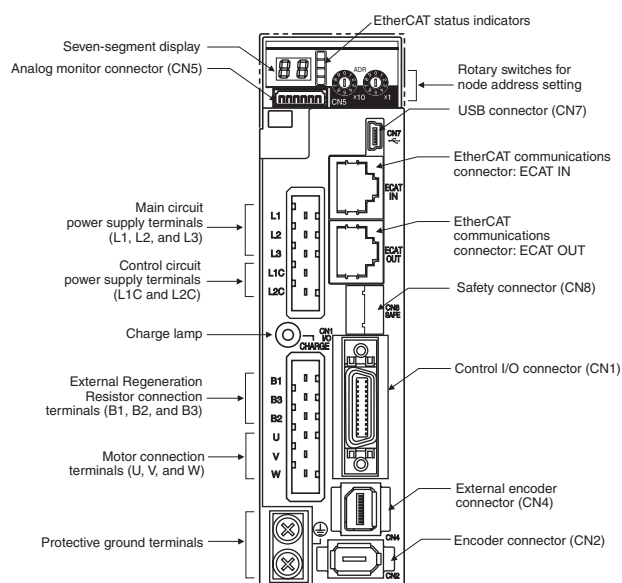
*2. Setting the communications cycle to 500 μ s or less does not enable the FIR filter function, although doing so does not cause any error.

*3. If Fully-closed Control is not available, a Function Setting Error (Error No. 93.4) will occur.

*4. This is applicable only when the total size of the objects mapped to RxPDO is 12 bytes or less. For details, refer to the USER'S MANUAL.

*5. There are objects added (3013 hex/3522 hex) to or renamed (3525 hex/3526 hex) from unit version 1.0.
For details of these objects, refer to Torque Limit Selection (3521 hex) in Extended Objects of each manual.

Components and Functions



Display

A 2-digit 7-segment display shows the node address, error codes, and other Servo Drive status.

Charge Lamp

Lights when the main circuit power supply is turned ON.

EtherCAT Status Indicators

These indicators show the status of EtherCAT communications. For details, refer to the G5 series USER'S MANUAL (Cat.No.I576).

Control I/O Connector (CN1)

Used for command input signals and I/O signals.

Encoder Connector (CN2)

Connector for the encoder installed in the Servomotor.

External Encoder Connector (CN4)

Connector for an encoder signal used during fully-closed control.

EtherCAT Communications Connectors (ECAT IN and ECAT OUT)

These connectors are for EtherCAT communications.

Analog Monitor Connector (CN5)

You can use a special cable to monitor values, such as the motor rotation speed, torque command value, etc.

USB Connector (CN7)

Communications connector for the computer.

Safety Connector (CN8)

Connector for safety devices.

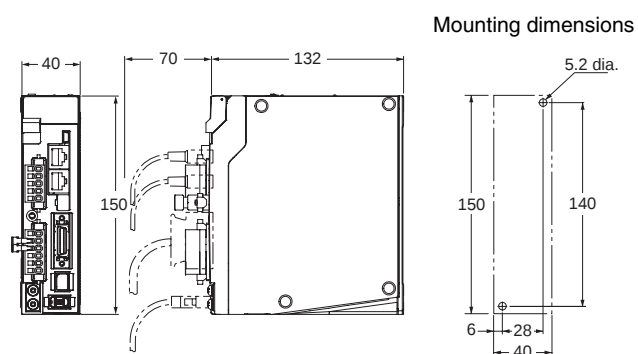
If no safety devices are used, keep the factory-set safety bypass connector installed.

Dimensions

<Wall Mounting>

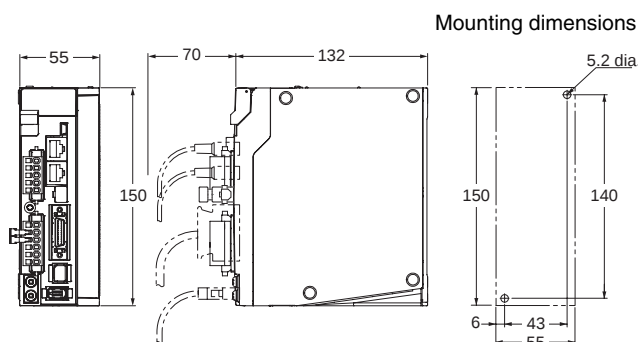
Single-phase 100 VAC R88D-KNA5L-ECT/-KN01L-ECT (50 to 100 W)

Single-phase/Three-phase 200 VAC R88D-KN01H-ECT/-KN02H-ECT (100 to 200W)



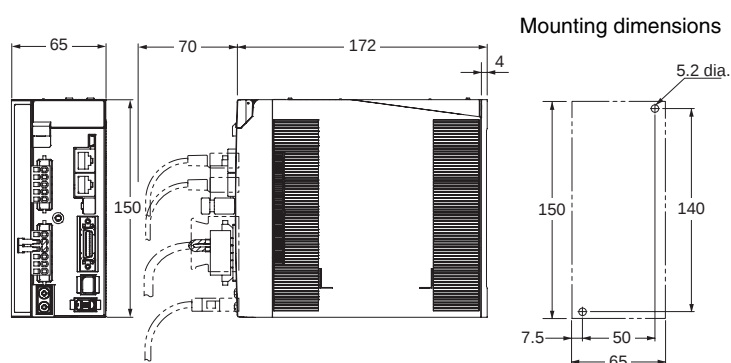
Single-phase 100 VAC R88D-KN02L-ECT (200W)

Single-phase/Three-phase 200 VAC R88D-KN04H-ECT (400W)

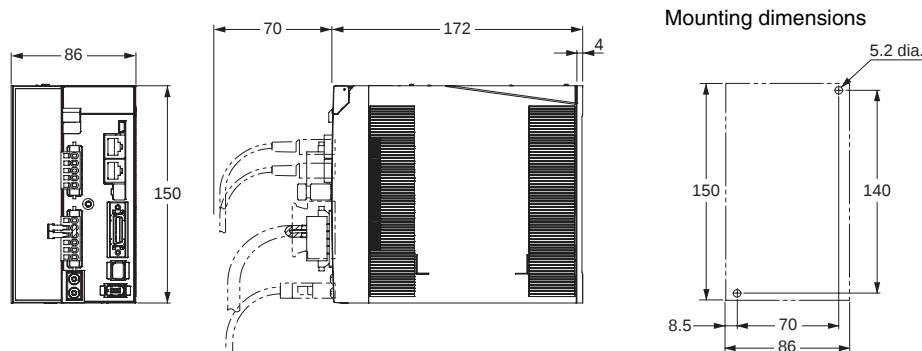


Single-phase 100 VAC R88D-KN04L-ECT (400W)

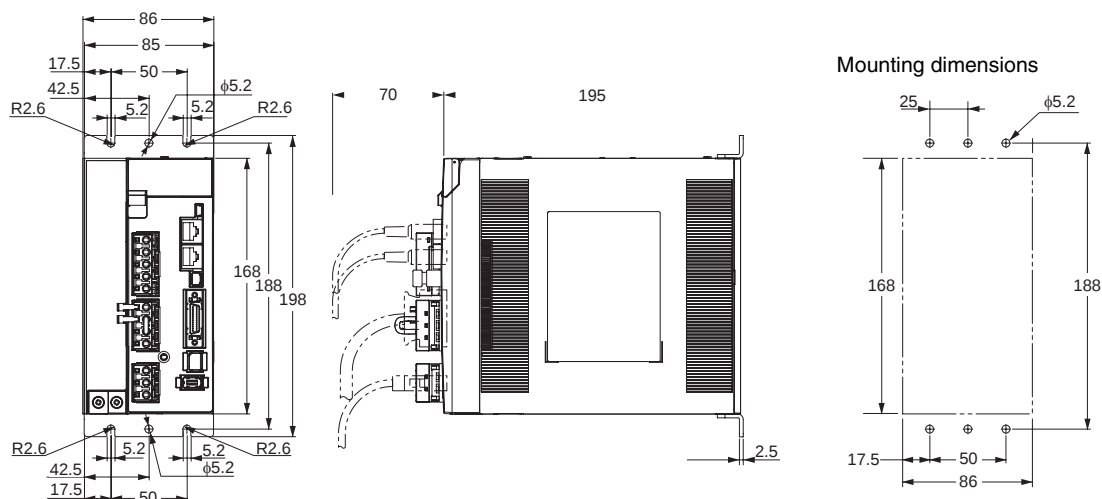
Single-phase/Three-phase 200 VAC R88D-KN08H-ECT (750W)



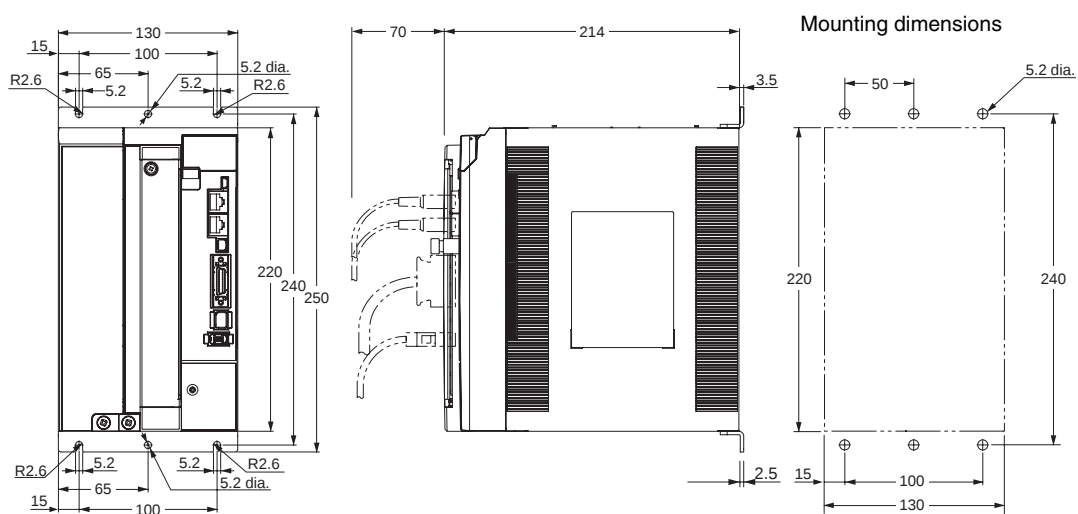
Single-phase/Three-phase 200 VAC R88D-KN10H-ECT/-KN15H-ECT (900W to 1.5kW)



Three-phase 200 VAC R88D-KN20H-ECT (2kW)



Three-phase 200 VAC R88D-KN30H-ECT/-KN50H-ECT (3 to 5kW)



General-purpose Inputs
System Configuration

ML-II Type
System Configuration

General-purpose Inputs
Servo Drive

ML-II Type
Servo Drive

Servomotors

G5-Series AC Servo Drives with General-purpose Pulse Train or Analog Inputs

R88D-KT



Contents

- Ordering Information
- Specifications
 - General Specifications
 - Characteristics
 - Servo Drives with Single-phase 100 VAC Input Power
 - Servo Drives with Single-phase or three-phase 200 VAC Input Power
 - Servo Drives with Three-phase 200 VAC Input Power
 - Servo Drives with 400 VAC Input Power
- Names and Functions
 - Servo Drive Part Names
 - Functions
- Dimensions



Ordering Information

Refer to the Ordering Information.

Specifications

General Specifications

Item			Specifications
Ambient operating temperature and humidity			0 to 55°C, 90% max. (with no condensation)
Storage ambient temperature and humidity			-20 to 65°C, 90% max. (with no condensation)
Operating and storage atmosphere			No corrosive gases
Vibration resistance			10 to 60 Hz and at an acceleration of 5.88 m/s ² or less (Not to be run continuously at the resonance point)
Insulation resistance			Between power supply terminal/power terminal and FG terminal: 0.5 MΩ min. (at 500 VDC Megger)
Dielectric strength			Between power supply/power line terminals and FG terminal: 1,500 VAC for 1 min at 50/60 Hz
Protective structure			Built into panel
International standard	EC directives	EMC directive	EN55011, EN61000-6-2, IEC61800-3
		Low voltage command	EN61800-5-1
		Machinery directives	EN954-1 (Cat.3), EN ISO 13849-1: 2008 (PLC,d), ISO 13849-1: 2006 (PLC,d), EN61508 (SIL2), EN62061 (SIL2), EN61800-5-2 (STO), IEC61326-3-1 (SIL2)
	UL standards		UL508C
	CSA standards		CSA22.2 No.14

Note: 1. The above items reflect individual evaluation testing. The results may differ under compound conditions.

Note: 2. Never perform dielectric strength or other megameter tests on the Servo Drive. Failure to follow this guideline may result in damaging the internal elements.

Note: 3. Depending on the operating conditions, some Servo Drive parts will require maintenance. For details, refer to the G5 series USER'S MANUAL. Confirm the Manual No. that is listed in Related Manuals.

General-purpose Inputs
System Configuration

ML-II Type
System Configuration

General-purpose Inputs
Servo Drive

ML-II Type
Servo Drive

Servomotors

Characteristics

● Servo Drives with 100 VAC Input Power for Single-phase input type

Item			R88D-KTA5L	R88D-KT01L	R88D-KT02L	R88D-KT04L
Continuous output current (rms)			1.2A	1.7A	2.5A	4.6A
Input power supply	Main circuit	Power supply capacity	0.4KVA	0.4KVA	0.5KVA	0.9KVA
		Power supply voltage	Single-phase 100 to 115 VAC (85 to 127 V), 50/60 Hz			
		Rated current	1.7A	2.6A	4.3A	7.6A
		Heat value*1	11W	16.6W	21W	25W
	Control circuit	Power supply voltage	Single-phase 100 to 120 VAC (85 to 132 V), 50/60 Hz			
		Heat value*1	4W	4W	4W	4W
Weight			Approx. 0.8 kg	Approx. 0.8kg	Approx. 1.0kg	Approx. 1.6kg
Maximum applicable motor capacity			50W	100W	200W	400W
Applicable Servomotors	3,000 r/min Servomotors	INC	K05030H	K10030L	K20030L	K40030L
		ABS	K05030T	K10030S	K20030S	K40030S
	2,000 r/min Servomotors	ABS	—	—	—	—
	1,000 r/min Servomotors	ABS	—	—	—	—

*1. The heat value is given for rated operation.

● Servo Drives with 200 VAC Input Power for Single-phase/Three-phase input type

Item			R88D-KT01H	R88D-KT02H	R88D-KT04H	R88D-KT08H	R88D-KT10H	R88D-KT15H
Continuous output current (rms)			1.2A	1.6A	2.6A	4.1A	5.9A	9.4A
Input power supply	Main circuit	Power supply capacity	0.5KVA	0.5KVA	0.9KVA	1.3KVA	1.8KVA	2.3KVA
		Power supply voltage	Single-phase or Three-phase 200 to 240 VAC (170 to 264 V), 50/60 Hz					
		Rated current	1.6/0.9A ^{*1}	2.4/1.3A ^{*1}	4.1/2.4A ^{*1}	6.6/3.6A ^{*1}	9.1/5.2A ^{*1}	14.2/8.1A ^{*1}
		Heat value ^{*2}	14.3/13.7W ^{*1}	23/19W ^{*1}	33/24W ^{*1}	30/35.5W ^{*1}	57/49W ^{*1}	104/93W ^{*1}
	Control circuit	Power supply voltage	Single-phase 200 to 240VAC (170 to 264V), 50/60Hz					
		Heat value ^{*2}	4W	4W	4W	4W	7W	7W
Weight			Approx. 0.8kg	Approx. 0.8kg	Approx. 1.1kg	Approx. 1.6kg	Approx. 1.8kg	Approx. 1.8kg
Maximum applicable motor capacity			100W	200W	400W	750W	1kW	1.5kW
Applicable Servomotors	3,000 r/min Servomotors	INC	K05030H K10030H	K20030H	K40030H	K75030H	—	K1K030H K1K530H
		ABS	K05030T K10030T	K20030T	K40030T	K75030T	—	K1K030T K1K530T
	2,000 r/min Servomotors	INC	—	—	—	—	K1K020H	K1K520H
		ABS	—	—	—	—	K1K020T	K1K520T
	1,000 r/min Servomotors	INC	—	—	—	—	—	K90010H
		ABS	—	—	—	—	—	K90010T

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

*2. The heat value is given for rated operation.

● Servo Drives with 200 VAC Input Power for Three-phase input type

Item			R88D-KT20H	R88D-KT30H	R88D-KT50H	R88D-KT75H	R88D-KT150H
Continuous output current (rms)			13.4A	18.7A	33.0A	44.0A	66.1A
Input power supply	Main circuit	Power supply capacity	3.3KVA	4.5KVA	7.5KVA	11.0KVA	22.0KVA
		Power supply voltage	3-phase 200 to 230 VAC (170 to 253 V), 50/60 Hz			3-phase 200 to 230 VAC (170 to 253V) 50/60Hz 280 to 325 VDC (238 to 357V)	
		Rated current	11.8A	15.1A	21.6A	32.0A	58.0A
		Heat value*1	139W	108W	328W	381W	720W
	Control circuit	Power supply voltage	Single-phase 200 to 230 VAC (170 to 253 V), 50/60 Hz			Single-phase 200 to 230 VAC (170 to 253V) 50/60Hz 280 to 325 VDC (238 to 357V)	
		Heat value*1	10W	13W	13W	15W	17W
Weight			Approx. 2.7kg	Approx. 4.8kg	Approx. 4.8kg	Approx. 13.5kg	Approx. 21.0kg
Maximum applicable motor capacity			2kW	3kW	5kW	7.5kW	15kW
Applicable Servomotors	3,000 r/min Servomotors	INC	K2K030H	K3K030H	K4K030H K5K030H	—	—
		ABS	K2K030T	K3K030T	K4K030T K5K030T	—	—
	2,000 r/min Servomotors	INC	K2K020H	K3K020H	K4K020H K5K020H	—	—
		ABS	K2K020T	K3K020T	K4K020T K5K020T	K7K515T	K11K015T K15K015T
	1,000 r/min Servomotors	INC	—	K2K010H	K3K010H	—	—
		INC	—	K2K010T	K3K010T K4K510T	K6K010T	—

*1. The heat value is given for rated operation.

● Servo Drives with 400 VAC Input Power for Three-phase input type

Item			R88D-KT06F	R88D-KT10F	R88D-KT15F	R88D-KT20F	R88D-KT30F	R88D-KT50F	R88D-KT75F	R88D-KT150F
Continuous output current (rms)			1.5A	2.9A	4.7A	6.7A	9.4A	16.5A	22.0A	33.4A
Input power supply	Main circuit	Power supply capacity	1.2KVA	1.8KVA	2.3KVA	3.8KVA	4.5KVA	6.0KVA	11.0KVA	22.0KVA
		Power supply voltage	3-phase 380 to 480 VAC (323 to 528 V), 50/60 Hz							
		Rated current	2.1A	2.8A	3.9A	5.9A	7.6A	12.1A	16.0A	29.0A
		Heat value*1	32.2W	48W	49W	65W	108W	200W	300W	590W
	Control circuit	Power supply voltage	24 VDC (20.4 to 27.6)							
		Heat value*1	7W	7W	7W	10W	13W	13W	15W	22W
Weight			Approx. 1.9kg	Approx. 1.9kg	Approx. 1.9kg	Approx. 2.7kg	Approx. 4.7kg	Approx. 4.7kg	Approx. 13.5kg	Approx. 21.0kg
Maximum applicable motor capacity			600W	1kW	1.5kW	2kW	3kW	5kW	7.5kW	15kW
Applicable Servomotors	3,000 r/min Servomotors	INC	—	K75030F	K1K030F K1K530F	K2K030F	K3K030F	K4K030F K5K030F	—	—
		ABS	—	K75030C	K1K030C K1K530C	K2K030C	K3K030C	K4K030C K5K030C	—	—
	2,000 r/min Servomotors	INC	K40020F K60020F	K1K020F	K1K520F	K2K020F	K3K020F	K4K020F K5K020F	—	—
		ABS	K40020C K60020C	K1K020C	K1K520C	K2K020C	K3K020C	K4K020C K5K020C	K7K515C	K11K015C K15K015C
	1,000 r/min Servomotors	INC	—	—	K90010F	—	K2K010F	K3K010F	—	—
		ABS	—	—	K90010C	—	K2K010C	K3K010C K4K510C	K6K010C	—

*1. The heat value is given for rated operation.

General-purpose Inputs
System Configuration

ML-II Type
System Configuration

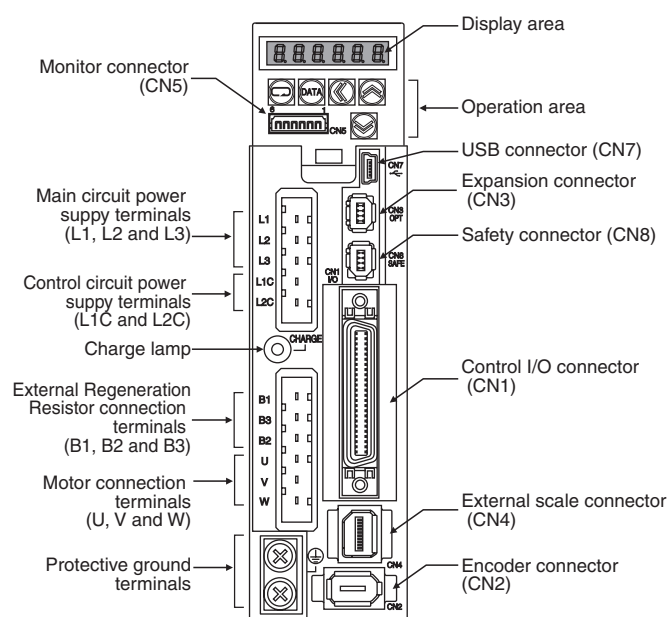
General-purpose Inputs
Servo Drive

ML-II Type
Servo Drive

Servomotors

Components and Functions

Servo Drive Part Names



Display area

A 6-digit 7-segment LED display shows the Servo Drive status, alarm codes, parameters, and other information.

Operation area

Monitors the parameter setting and driver condition.

Charge Lamp

Lits when the main circuit power supply is turned ON.

Control I/O Connector (CN1)

Used for command input signals and I/O signals.

Encoder connector (CN2)

Connector for the encoder installed in the Servomotor.

Expansion Connector (CN3)

A spare connector for expansion. Do not connect anything.

External Scale Connector (CN4)

Connector for an encoder signal used during full closing control.

Monitor Connector (CN5)

Uses a specified cable to monitor the motor rotation speed, torque command value, etc.

USB connector (CN7)

Communications connector for the computer.

Safety Connector (CN8)

Connector for the safety devices.

If no safety device is used, keep the factory-set safety bypass connector installed.

Main Circuit Terminal (CNA)

Main-circuit power terminals (L1, L2, L3)

Control-circuit power terminals (CNA)

Motor connection terminals (CNB)

External Regeneration Resistor connection terminals (B1,B2,B3)

Servomotor connection terminals (U, V, W)

Functions

Basic control

Position control	Internally set speed control
Speed control	Switching control
Torque control	Full closing control *

* Absolute type external encoder can not connected.

Advanced control

Vibration control	Gain switching	Friction torque compensation function
Adaptive filter	Torque limit	Inertia ratio switching function
Notch filter	Sequence I/O signal	Hybrid Vibration Suppression Function
Electronic gear function	Forward and reverse drive prohibition functions	Feed-forward function
Encoder dividing function	Disturbance observer function	Instantaneous speed observer function
Brake interlock	Gain switching 3 function	

Other functions

Safe Torque OFF (STO) Function

Realtime autotuning

Manual tuning

Various parameters

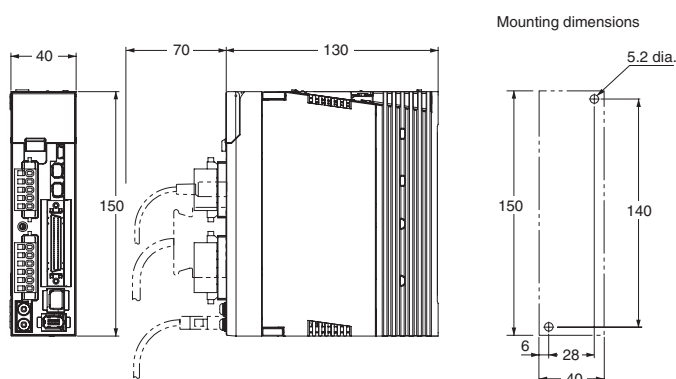
Basic Parameters	Interface Monitor Setting Parameters
Gain Parameters	Extended Parameters
Vibration Suppression Parameters	Special Parameters
Analog Control Parameters	

Dimensions

<Wall Mounting>

Single-phase 100 VAC R88D-KTA5L/-KT01L (50 to 100W)

Single-phase/Three-phase 200 VAC R88D-KT01H/-KT02H (100 to 200W)



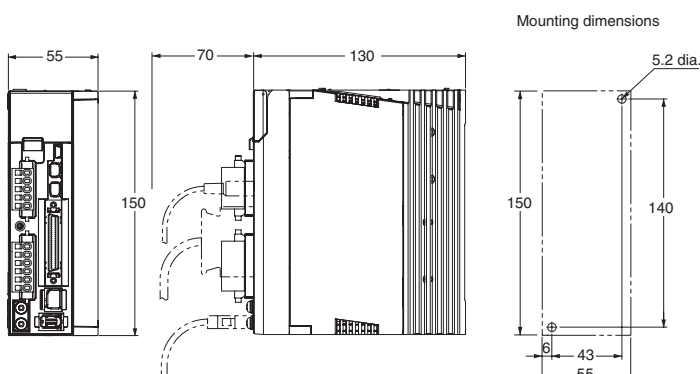
CAD data

General-purpose Inputs
System Configuration

ML-II Type
System Configuration

Single-phase/Three-phase 100 VAC R88D-KT02L (200W)

Single-phase/Three-phase 200 VAC R88D-KT04H (400W)



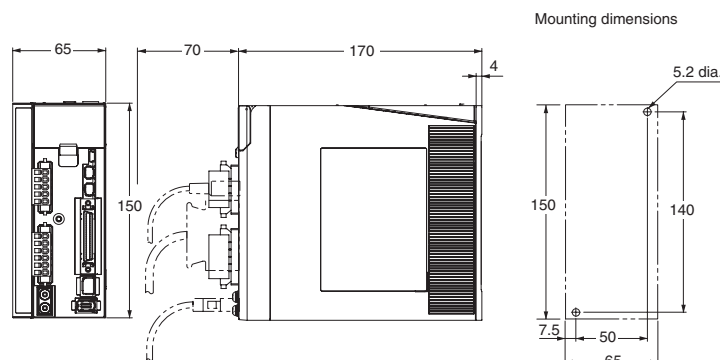
CAD data

General-purpose Inputs
Servo Drive

ML-II Type
Servo Drive

Single-phase 100 VAC R88D-KT04L (400W)

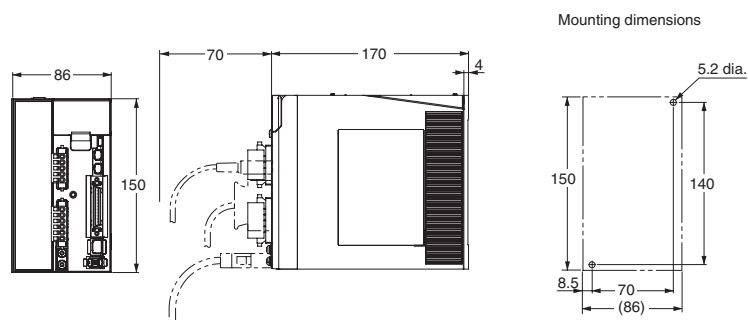
Single-phase/Three-phase 200 VAC R88D-KT08H (750W)



CAD data

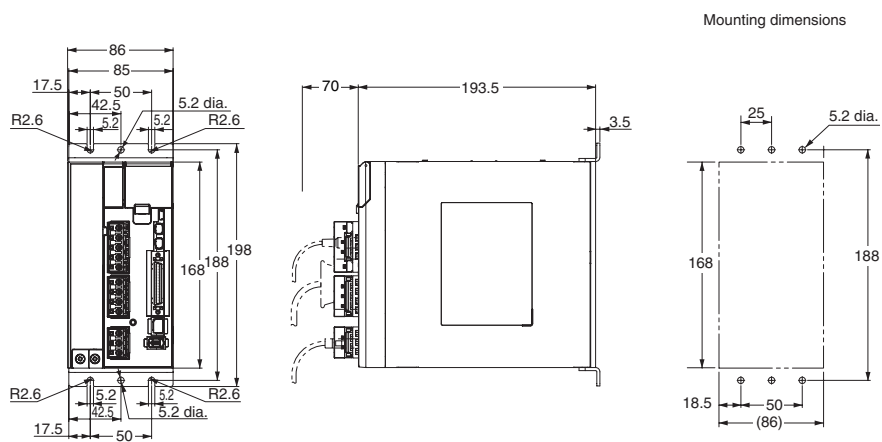
Servomotors

Single-phase/Three-phase 200 VAC R88D-KT10H/-KT15H (900W to 1.5kW)



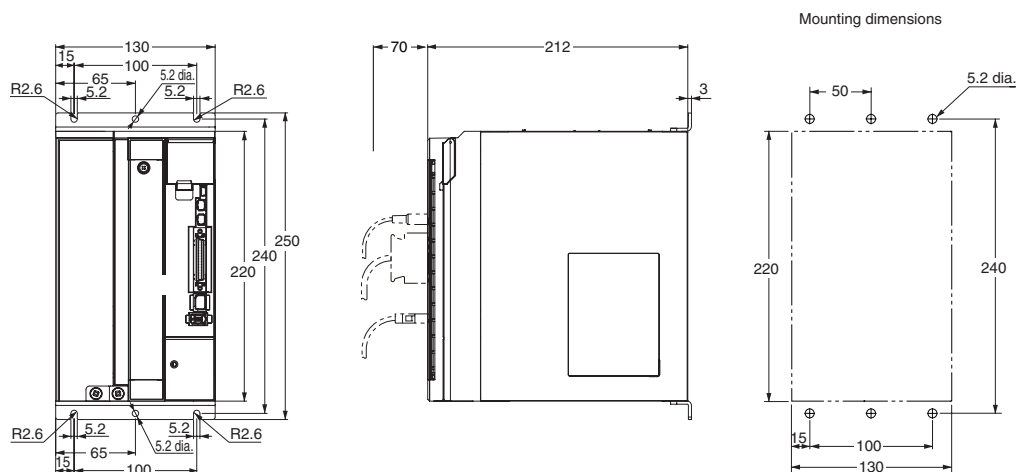
CAD data

Three-phase 200 VAC R88D-KT20H (2kW)



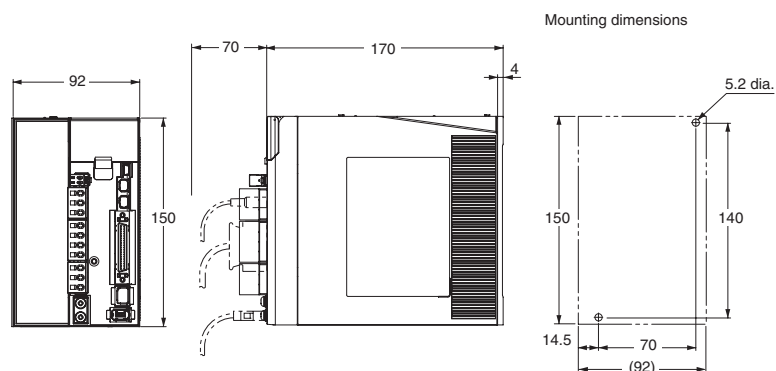
CAD data

Three-phase 200 VAC R88D-KT30H/-KT50H (3 to 5kW)



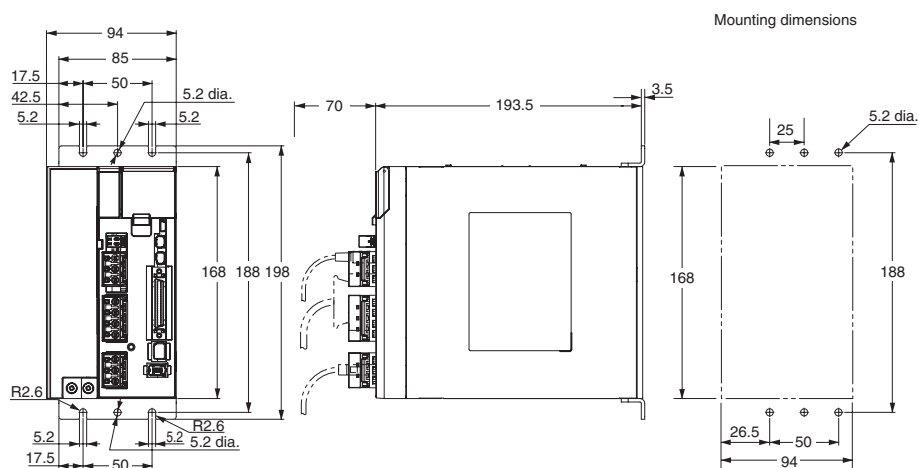
CAD data

Three-phase 400 VAC R88D-KT06F/-KT10F/-KT15F (600W to 1.5kW)



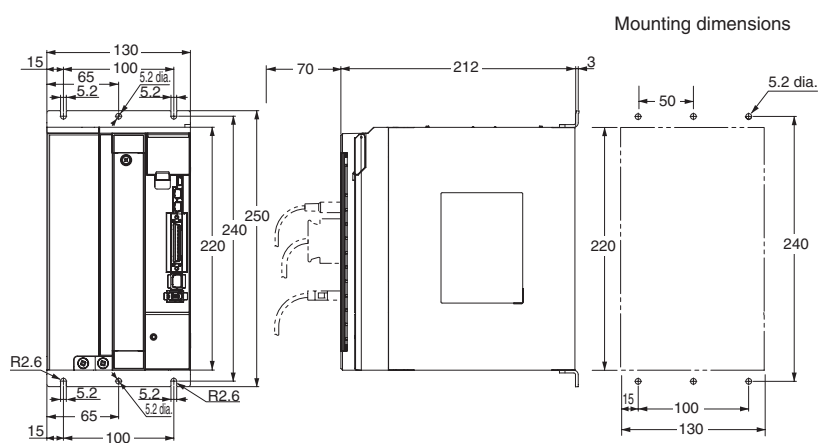
CAD data

Three-phase 400 VAC R88D-KT20F (2kW)



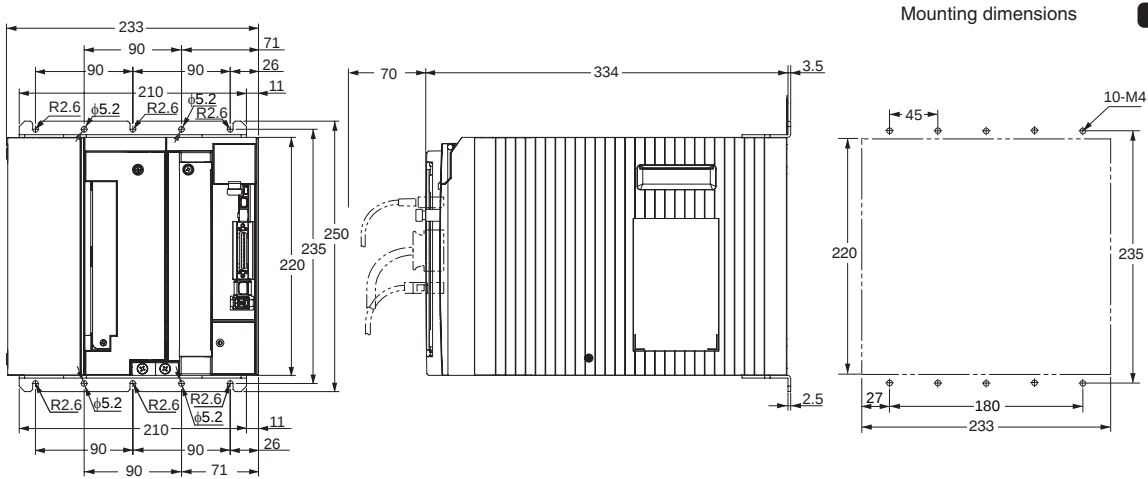
CAD data

Three-phase 400 VAC R88D-KT30F/-KT50F (3 to 5kW)

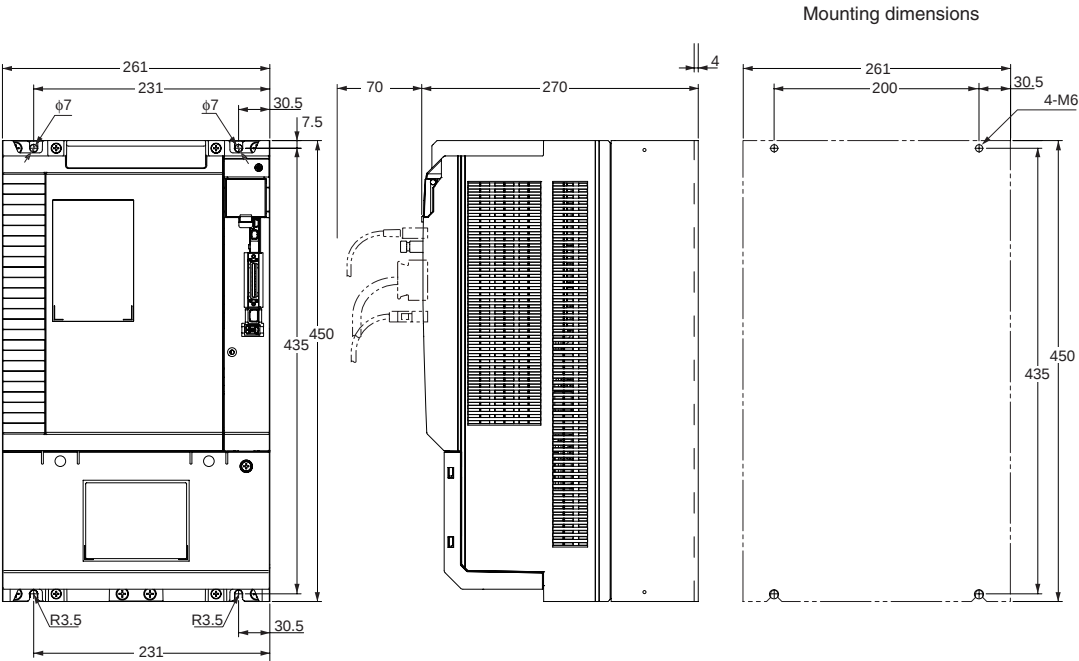


CAD data

Three-phase 400 VAC: R88D-KT75F (7.5kW)



Three-phase 400 VAC R88D-KT150F (150kW)



General-purpose Inputs
System Configuration

ML-II Type
System Configuration

General-purpose Inputs
Servo Drive

ML-II Type
Servo Drive

Servomotors

[illegible]

R88D-KN□-ML2

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- Ordering Information
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 - Characteristics
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 - Servo Drives with Single-phase or three-phase 200 VAC Input Power
 - Servo Drives with Three-phase 200 VAC Input Power
 - Servo Drives with 400 VAC Input Power
- Names and Functions
 - Servo Drive Part Names
 - Functions
- Dimensions



Ordering Information

Refer to the Ordering Information.

Specifications

General Specifications

Item			Specifications
Ambient operating temperature and operating humidity			0 to +55C, 90% RH max. (with no condensation)
Storage ambient temperature and humidity			-20 to +65C, 90% RH max. (with no condensation)
Operating and storage atmosphere			No corrosive gases
Vibration resistance			10 to 60 Hz and at an acceleration of 5.88 m/s ² or less (Not to be run continuously at the resonance point)
Insulation resistance			Between power supply terminal/power terminal and FG terminal: 0.5 MΩ min. (at 500 VDC Megger)
Dielectric strength			Between power supply/power line terminals and FG terminal: 1,500 VAC for 1 min at 50/60 Hz
Protective structure			Built into panel
International standard	EC directives	EMC directive	EN55011, EN61000-6-2, IEC61800-3
		Low voltage directive	EN61800-5-1
		Machinery directives	EN954-1 (Cat.3), EN ISO 13849-1: 2008 (PLC,d), ISO 13849-1: 2006 (PLC,d), EN61508 (SIL2), EN62061 (SIL2), EN61800-5-2 (STO), IEC61326-3-1 (SIL2)
	UL standards		UL508C
	CSA standards		CSA22.2 No.14

Note: 1. The above items reflect individual evaluation testing. The results may differ under compound conditions.

Note: 2. Never perform dielectric strength or other megameter tests on the Servo Drive. Failure to follow this guideline may result in damaging the internal elements.

Note: 3. Depending on the operating conditions, some Servo Drive parts will require maintenance. For details, refer to the G5 series USER'S MANUAL. Confirm the Manual No. that is listed in Related Manuals.

Characteristics

● Servo Driver with 100 VAC Input Power for Single-phase input type

Item			R88D-KNA5L-ML2	R88D-KN01L-ML2	R88D-KN02L-ML2	R88D-KN04L-ML2
Continuous output current (rms)			1.2A	1.7A	2.5A	4.6A
Input power supply	Main circuit	Power supply capacity	0.4KVA	0.4KVA	0.5KVA	0.9KVA
		Power supply voltage	Single-phase 100 to 120 VAC (85 to 132 V), 50/60 Hz			
		Rated current	1.7A	2.6A	4.3A	7.6A
		Heat value*1	11W	16.6W	21W	25W
	Control circuit	Power supply voltage	Single-phase 100 to 120 VAC (85 to 132 V), 50/60 Hz			
		Heat value*1	4W	4W	4W	4W
Weight			Approx. 0.8 kg	Approx. 0.8kg	Approx. 1.0kg	Approx. 1.6kg
Maximum applicable motor capacity			50W	100W	200W	400W
Applicable Servomotors	3,000 r/min Servomotors	INC	K05030H	K10030L	K20030L	K40030L
		ABS	K05030T	K10030S	K20030S	K40030S
	2,000 r/min Servomotors	ABS	—	—	—	—
		1,000 r/min Servomotors	ABS	—	—	—

*1. The heat value is given for rated operation.

● Servo Driver with 200 VAC Input Power for Single-phase/Three-phase input type

Item			R88D-KN01H-ML2	R88D-KN02H-ML2	R88D-KN04H-ML2	R88D-KN08H-ML2	R88D-KN10H-ML2	R88D-KN15H-ML2
Continuous output current (rms)			1.2A	1.6A	2.6A	4.1A	5.9A	9.4A
Input power supply	Main circuit	Power supply capacity	0.5KVA	0.5KVA	0.9KVA	1.3KVA	1.8KVA	2.3KVA
		Power supply voltage	Single-phase or Three-phase 200 to 240 VAC (170 to 264 V), 50/60 Hz					
		Rated current	1.6/0.9A ^{*1}	2.4/1.3A ^{*1}	4.1/2.4A ^{*1}	6.6/3.6A ^{*1}	9.1/5.2A ^{*1}	14.2/8.1A ^{*1}
		Heat value ^{*2}	14.3/13.7W ^{*1}	23/19 W ^{*1}	33/24 W ^{*1}	30/35.5 W ^{*1}	57/49 W ^{*1}	104/93 W ^{*1}
	Control circuit	Power supply voltage	Single-phase 200 to 240 VAC (170 to 264 V), 50/60 Hz					
		Heat value ^{*2}	4W	4W	4W	4W	7W	7W
Weight			Approx. 0.8kg	Approx. 0.8kg	Approx. 1.1kg	Approx. 1.6kg	Approx. 1.8kg	Approx. 1.8kg
Maximum applicable motor capacity			100W	200W	400W	750W	1kW	1.5kW
Applicable Servomotors	3,000 r/min Servomotors	INC	K05030H K10030H	K20030H	K40030H	K75030H	—	K1K030H K1K530H
		ABS	K05030T K10030T	K20030T	K40030T	K75030T	—	K1K030T K1K530T
	2,000 r/min Servomotors	INC	—	—	—	—	K1K020H	K1K520H
		ABS	—	—	—	—	K1K020T	K1K520T
	1,000 r/min Servomotors	INC	—	—	—	—	—	K90010H
		ABS	—	—	—	—	—	K90010T

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

*2. The heat value is given for rated operation.

● Servo Driver with 200 VAC Input Power
for Three-phase input type

Item			R88D-KN20H-ML2	R88D-KN30H-ML2	R88D-KN50H-ML2
Continuous output current (rms)			13.4A	18.7A	33.0A
Input power supply	Main circuit	Power supply capacity	3.3KVA	4.5KVA	7.5KVA
		Power supply voltage	Three-phase 200 to 230 VAC (170 to 253 V), 50/60 Hz		
		Rated current	11.8A	15.1A	21.6A
		Heat value ^{*1}	139W	108W	328W
	Control circuit	Power supply voltage	Single-phase 200 to 230 VAC (170 to 253 V), 50/60 Hz		
		Heat value ^{*1}	10W	13W	13W
Weight			Approx. 2.7kg	Approx. 4.8kg	Approx. 4.8kg
Maximum applicable motor capacity			2kW	3kW	5kW
Applicable Servomotors	3,000 r/min Servomotors	INC	K2K030H	K3K030H	K4K030H K5K030H
		ABS	K2K030T	K3K030T	K4K030T K5K030T
	2,000 r/min Servomotors	INC	K2K020H	K3K020H	K4K020H K5K020H
		ABS	K2K020T	K3K020T	K4K020T K5K020T
	1,000 r/min Servomotors	INC	—	K2K010H	K3K010H
		INC	—	K2K010T	K3K010T

*1. The heat value is given for rated operation.

● Servo Driver with 400 VAC Input Power
for Three-phase input type

Item			R88D-KN06F-ML2	R88D-KN10F-ML2	R88D-KN15F-ML2	R88D-KN20F-ML2	R88D-KN30F-ML2	R88D-KN50F-ML2
Continuous output current (rms)			1.5A	2.9A	4.7A	6.7A	9.4A	16.5A
Input power supply	Main circuit	Power supply capacity	1.2KVA	1.8KVA	2.3KVA	3.8KVA	4.5KVA	6.0KVA
		Power supply voltage	Single-phase 380 to 480 VAC (323 to 528 V), 50/60 Hz					
		Rated current	2.1A	2.8A	3.9A	5.9A	7.6A	12.1A
		Heat value* ¹	32.2W	48W	49W	65W	108W	200W
	Control circuit	Power supply voltage	24 VDC (20.4 to 27.6)					
		Heat value* ¹	7W	7W	7W	10W	13W	13W
Weight			Approx. 1.9kg	Approx. 1.9kg	Approx. 1.9kg	Approx. 2.7kg	Approx. 4.7kg	Approx. 4.7kg
Maximum applicable motor capacity			600W	1kW	1.5kW	2kW	3kW	5kW
Applicable Servomotors	3,000 r/min Servomotors	INC	—	K75030F	K1K030F K1K530F	K2K030F	K3K030F	K4K030F K5K030F
		ABS	—	K75030C	K1K030C K1K530C	K2K030C	K3K030C	K4K030C K5K030C
	2,000 r/min Servomotors	INC	K40020F K60020F	K1K020F	K1K520F	K2K020F	K3K020F	K4K020F K5K020F
		ABS	K40020C K60020C	K1K020C	K1K520C	K2K020C	K3K020C	K4K020C K5K020C
	1,000 r/min Servomotors	INC	—	—	K90010F	—	K2K010F	K3K010F
		ABS	—	—	K90010C	—	K2K010C	K3K010C

*1. The heat value is given for rated operation.

General-purpose Inputs
System Configuration

ML-II Type
System Configuration

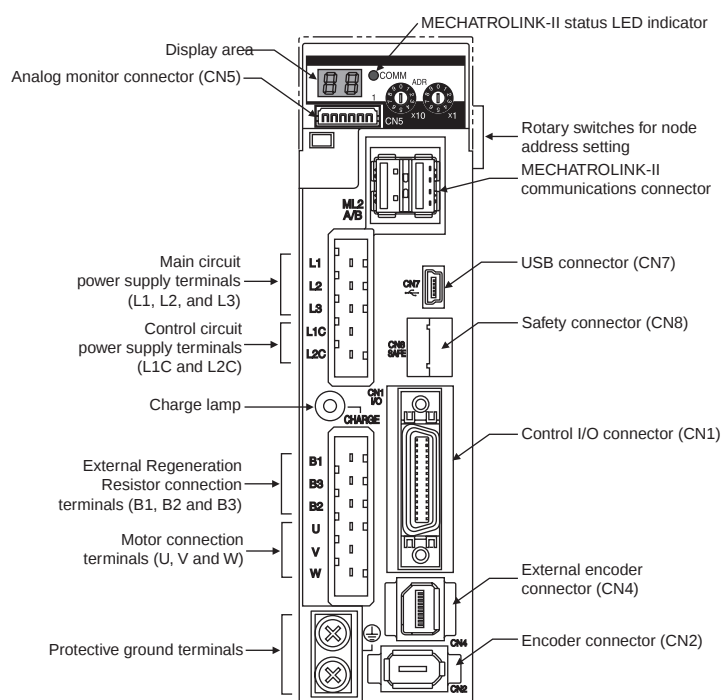
General-purpose Inputs
Servo Drive

ML-II Type
Servo Drive

Servomotors

Components and Functions

Servo Drive Part Names



Display area

A 2-digit 7-segment LED indicator shows the node address, alarm codes, and other driver status.

Charge Lamp

Lits when the main circuit power supply is turned ON.

MECHATROLINK-II Status LED Indicator

Indicates the communications status of the MECHATROLINK-II.

Control I/O Connector (CN1)

Used for command input signals and I/O signals.

Encoder connector (CN2)

Connector for the encoder installed in the Servomotor.

External Encoder Connector (CN4)

Connector for an encoder signal used during full closing control.

Analog Monitor Connector (CN5)

2 analog outputs to monitor values like motor rotation speed, torque command value, etc.

MECHATROLINK-II Communications Connectors (ML2A and ML2B)

Connectors for MECHATROLINK-II communications.

USB Connector (CN7)

Communications Connector for the computer.

Safety Connector (CN8)

Connector for the safety devices.
If no safety device is used, keep the factory-set safety bypass connector installed.

Functions

Basic control

Position control	Internally set speed control
Speed control	Switching control
Torque control	Full closing control

Advanced control

Vibration control	Gain switching	Friction torque compensation function
Adaptive filter	Torque limit	Inertia ratio switching function
Notch filter	Sequence I/O signal	Hybrid Vibration Suppression Function
Electronic gear function	Forward and reverse drive prohibition functions	Feed-forward function
Encoder dividing function	Disturbance observer function	Instantaneous speed observer function
Brake interlock	Gain switching 3 function	

Other functions

Safe Torque OFF (STO) Function

Realtime autotuning

Manual tuning

Various parameters

Basic Parameters	Interface Monitor Setting Parameters
Gain Parameters	Extended Parameters
Vibration Suppression Parameters	Special Parameters
Analog Control Parameters	

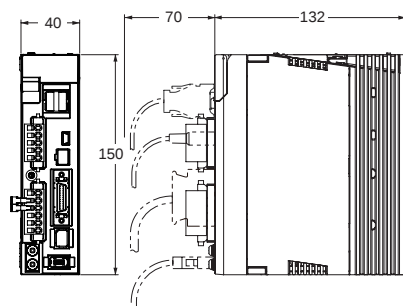
Dimensions

<Wall Mounting>

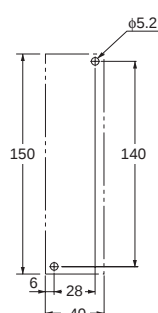
Single-phase 100VAC R88D-KNA5L-ML2/-KN01L-ML2 (50 to 100W)

Single-phase/Three-phase 200VAC R88D-KN01H-ML2/-KN02H-ML2 (100 to 200W)

External dimensions



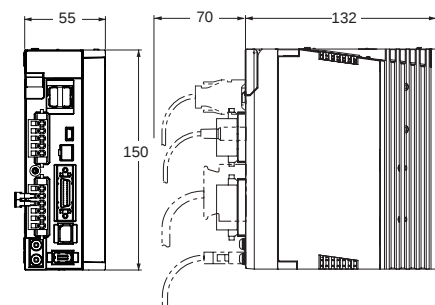
Mounting dimensions



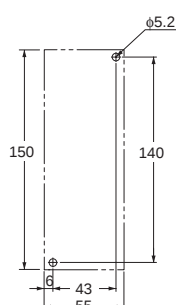
Single-phase/Three-phase 100VAC R88D-KN02L-ML2 (200W)

Single-phase/Three-phase 200VAC R88D-KN04H-ML2 (400W)

External dimensions



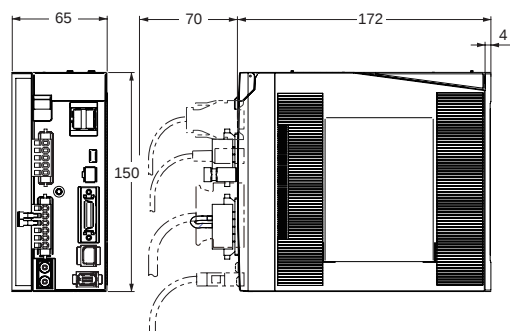
Mounting dimensions



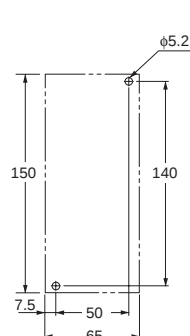
Single-phase/Three-phase 100VAC R88D-KN04L-ML2 (400W)

Single-phase/Three-phase 200VAC R88D-KN08H-ML2 (750W)

External dimensions

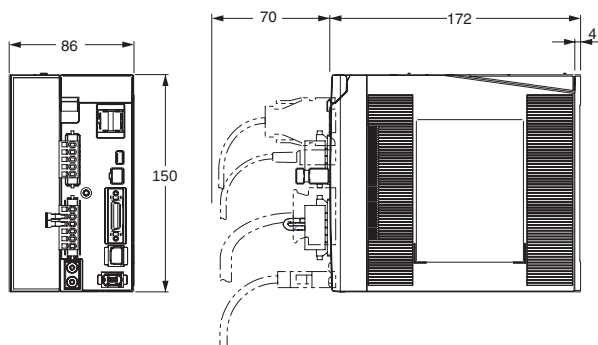


Mounting dimensions

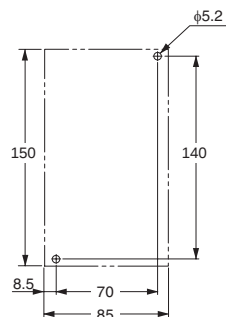


Single-phase/Three-phase 200VAC R88D-KN10H-ML2/-KN15H-ML2 (900 to 1.5kW)

External dimensions

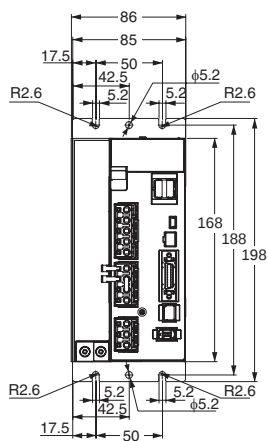


Mounting dimensions

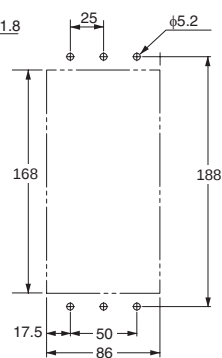


Three-phase 200VAC R88D-KN20H-ML2 (2kW)

External dimensions

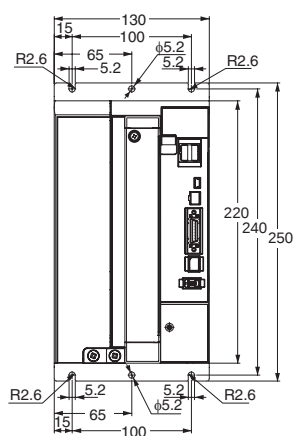


Mounting dimensions

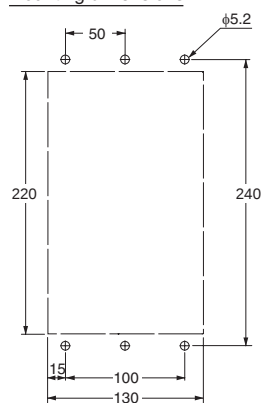


Three-phase 200VAC R88D-KN30H-ML2/-KN50H-ML2 (3 to 5kW)

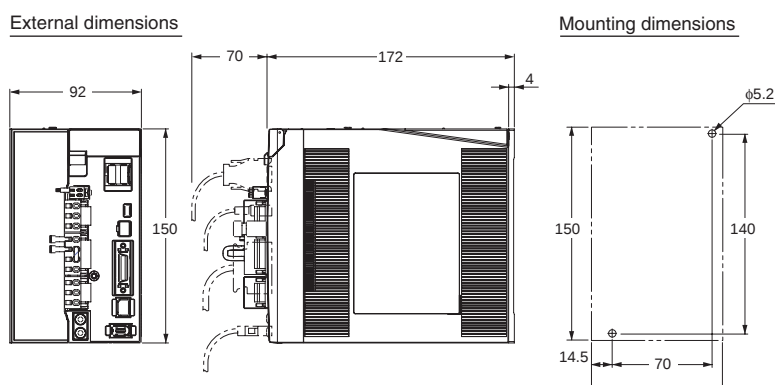
External dimensions



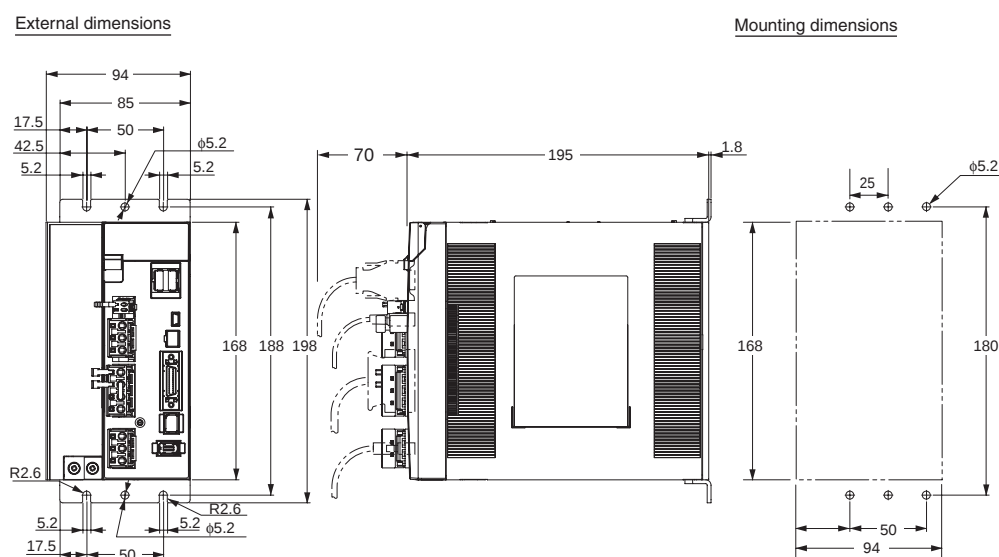
Mounting dimensions



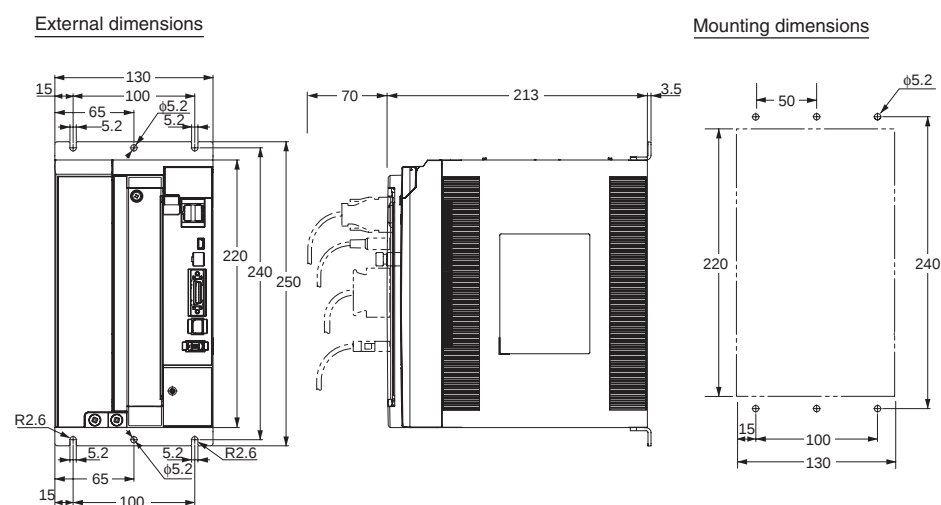
Three-phase 400VAC R88D-KN06F-ML2/-KN10F-ML2 (600 to 1.0kW) Three-phase 400VAC R88D-KN15F-ML2 (1.5kW)



Three-phase 400VAC R88D-KN20F-ML2 (2kW)



Three-phase 400VAC R88D-KN30F-ML2/-KN50F-ML2 (3 to 5kW)



General-purpose Inputs
System Configuration

ML-II Type
System Configuration

General-purpose Inputs
Servo Drive

ML-II Type
Servo Drive

Servomotors

MEMO

This image shows a full page of graph paper. The background is white, and it is covered by a grid of thin, gray dashed lines. These lines intersect at regular intervals to form a series of small, identical squares across the entire surface. There are no margins, text, or other markings on the page.

G5-series AC Servomotors

R88M-K INC ABS/INC

Contents

- Ordering Information
- Specifications
 - General Specifications
 - Characteristics/Torque and Rotation Speed Characteristics
 - <Cylinder type>
 - 3,000 r/min servomotors (100V, 200V, 400V)
 - 2,000 r/min servomotors (200V, 400V)
 - 1,500 r/min servomotors (200V/400V)
 - 1,000 r/min servomotors (200V/400V)
 - Encoder Specifications
- Dimensions



Ordering Information

Refer to the Ordering Information.

Specifications

General Specifications

Item	3,000-r/min motors		1,000-r/min motors 1,500-r/min motors 2,000-r/min motors
	50 to 750W	1 to 5kW	900 W to 15kW
Ambient operating temperature and operating humidity	0 to 40°C 20 to 85% RH (with no condensation)		
Storage ambient temperature and humidity	-20 to +65°C, 20% to 85% RH (with no condensation) Guaranteed maximum temperature: 72 hours at 80°C		
Operating and storage atmosphere	No corrosive gases		
Vibration resistance *1	Acceleration of 49 m/s ² 24.5 m/s ² max. in X, Y, and Z directions when the motor is stopped		
Impact resistance	Acceleration of 98 m/s ² max. 3 times each in X, Y, and Z directions		
Insulation resistance	Between power terminal and FG terminal: 20 MΩ min. (at 500 VDC Megger)		
Dielectric strength	1,500 VAC between power terminal and FG terminal (sensed current 10 mA) for 1 min (voltage 100 V, 200 V) 1,800 VAC between power terminal and FG terminal (sensed current 10 mA) for 1 min (voltage 400 V) 1,000 VAC between brake terminal and FG terminal (sensed current 10 mA) for 1 min		
Insulation class	Class B	Class F	
Protective structure	IP67 (except for through-shaft parts and motor and encoder connector pins)		
International standard	EC directive	Low voltage directive	EN60034-1/-5
	UL standards		UL1004-1
	CSA standards		CSA 22.2 No.100
			UL1004-1, UL1004-6 *2

*1. The amplitude may be amplified by machine resonance. Do not exceed 80% of the specified value for extended periods of time.

*2. UL 1004-6 applies only to 1,500-r/min Servomotors of 7.5 to 15 kW and 1,000-r/min Servomotors of 4.5 to 6 kW.

Note: 1. Do not use the cable when it is laying in oil or water.

Note: 2. Do not expose the cable outlet or connections to stress due to bending or the weight of the cable itself.

General-purpose Inputs
System Configuration

ML-II Type
System Configuration

General-purpose Inputs
Servo Drive

ML-II Type
Servo Drive

Servomotors

Characteristics/Torque and Rotation Speed Characteristics

Characteristics

<Cylinder type>

3,000 r/min Servomotors (100 VAC Input Power)

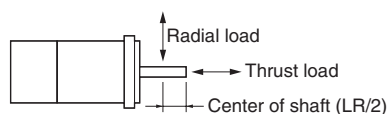
Model (R88M-)			K05030H	K10030L	K20030L	K40030L
Item	Unit		K05030T	K10030S	K20030S	K40030S
Rated output *1	W		50	100	200	400
Rated torque *1	N • m		0.16	0.32	0.64	1.3
Rated rotation speed	r/min		3,000			
Momentary maximum rotation speed	r/min		6,000			
Momentary maximum torque*1	N • m		0.48	0.95	1.91	3.8
Rated current *1	A (rms)		1.1	1.6	2.5	4.6
Momentary maximum current*1	A (rms)		4.7	6.9	10.6	19.5
Rotor inertia	Without brake	kg • m ²	0.025×10 ⁻⁴	0.051×10 ⁻⁴	0.14×10 ⁻⁴	0.26×10 ⁻⁴
	With brake	kg • m ²	0.027×10 ⁻⁴	0.054×10 ⁻⁴	0.16×10 ⁻⁴	0.28×10 ⁻⁴
Applicable load inertia	—		30 times the rotor inertia max. *2			
Torque constant *1	N • m/A		0.11±10%	0.14±10%	0.20±10%	0.21±10%
Power rate *1	Without brake	kW/s	10.1	19.8	28.9	62.4
	With brake	kW/s	9.4	18.7	25.3	37.8
Mechanical time constant	Without brake	ms	1.43	1.03	0.61	0.48
	With brake	ms	1.54	1.09	0.70	0.52
Electrical time constant	ms		0.82	0.91	3.0	3.4
Allowable radial load *3	N		68	68	245	245
Allowable thrust load *3	N		58	58	98	98
Weight	Without brake	kg	Approx. 0.31	Approx. 0.45	Approx. 0.78	Approx. 1.2
	With brake	kg	Approx. 0.51	Approx. 0.65	Approx. 1.2	Approx. 1.6
Radiator plate dimensions (material)			100×80×t10 (Al)		130×120×t12 (Al)	
Applicable drivers (R88D-)			KTA5L/KNA5L-ML2/ KNA5L-ECT	KT01L/KN01L-ML2/ KN01L-ECT	KT02L/KN02L-ML2/ KN02L-ECT	KT04L/KN04L-ML2/ KN04L-ECT
Brake specifications	Brake inertia	kg • m ²	2×10 ⁻⁷	2×10 ⁻⁷	1.8×10 ⁻⁶	1.8×10 ⁻⁶
	Excitation voltage *4	V	24 VDC±10%			
	Power consumption (at 20°C)	W	7	7	9	9
	Current consumption (at 20°C)	A	0.3	0.3	0.36	0.36
	Static friction torque	N • m	0.29 min.	0.29 min.	1.27 min.	1.27 min.
	Attraction time *5	ms	35 max.	35 max.	50 max.	50 max.
	Release time *5	ms	20 max.	20 max.	15 max.	20 max.
	Backlash		±1°			
	Allowable work per braking	J	39.2	39.2	137	137
	Allowable total work	J	4.9×10 ³	4.9×10 ³	44.1×10 ³	44.1×10 ³
	Allowable angular acceleration	rad/s ²	30,000 max. (Speed of 2,800 r/min or more must not be changed in less than 10 ms)			
	Brake limit	—	10 million times min.			
	Rating	—	Continuous			
	Insulation class	—	Type F			

*1. These are the values when the motor is combined with a driver at normal temperature (20°C, 65%). The momentary maximum torque indicates the standard value.

*2. Applicable load inertia.

- The operable load inertia ratio (load inertia/rotor inertia) depends on the mechanical configuration and its rigidity. For a machine with high rigidity, operation is possible even with high load inertia. Select an appropriate motor and confirm that operation is possible.
- If the dynamic brake is activated frequently with high load inertia, the Dynamic Brake Resistor may burn. Do not repeatedly turn the servo ON/OFF while the dynamic brake is enabled.
- The dynamic brake is designed only for emergency stops. Design the system so that the Servomotor remains stopped for at least 3 minutes after applying the dynamic brake. Otherwise the dynamic brake circuits may fail.

*3. The allowable radial and thrust loads are the values determined for a limit of 20,000 hours at normal operating temperatures. The allowable radial loads are applied as shown in the following diagram.



*4. This is a non-excitation brake. (It is released when excitation voltage is applied.)

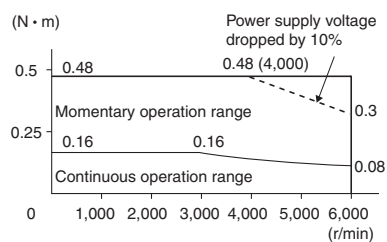
*5. The operation time is the value (reference value) measured with a surge suppressor (CR50500 by Okaya Electric Industries Co., Ltd.).

Torque and Rotation Speed Characteristics

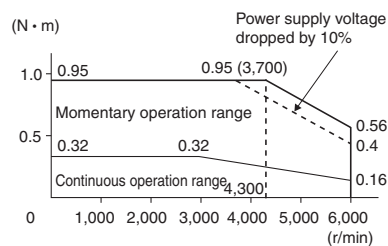
3,000 r/min Servomotors (100 VAC Input Power)

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

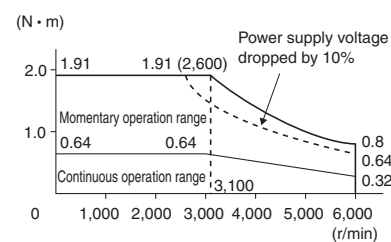
- R88M-K05030H/T (50W)



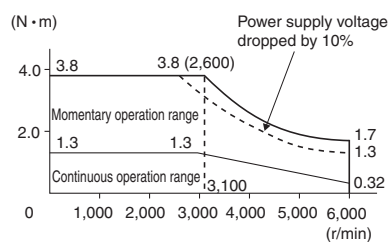
- R88M-K10030L/S (100W)



- R88M-K20030L/S (200W)



- R88M-K40030L/S (400W)



Note 1: The continuous operation range is the range in which continuous operation is possible. Continuous operation at the maximum speed is also possible. However, doing so will reduce the output torque.

Note 2: If the motor power cable exceeds 20 m, the voltage drop will increase and the momentary operation range will become narrower.

AC Servomotor/Drive G5-series

Characteristics

3,000 r/min Servomotors (200 VAC Input Power)

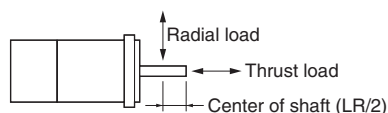
Model (R88M-)			K05030H	K10030H	K20030H	K40030H	K75030H	K1K030H	K1K530H	K2K030H	K3K030H	K4K030H	K5K030H	
Item	Unit		K05030T	K10030T	K20030T	K40030T	K75030T	K1K030T	K1K530T	K2K030T	K3K030T	K4K030T	K5K030T	
Rated output *1	W		50	100	200	400	750	1000	1500	2000	3000	4000	5000	
Rated torque *1	N • m		0.16	0.32	0.64	1.3	2.4	3.18	4.77	6.37	9.55	12.7	15.9	
Rated rotation speed	r/min		3,000											
Momentary maximum rotation speed]	r/min		6,000					5,000				4,500		
Momentary maximum torque *1	N • m		0.48	0.95	1.91	3.8	7.1	9.55	14.3	19.1	28.6	38.2	47.7	
Rated current *1	A (rms)		1.1	1.1	1.5	2.4	4.1	6.6	8.2	11.3	18.1	19.6	24.0	
Momentary maximum current *1	A (rms)		4.7	4.7	6.5	10.2		28	35	48	77	83	102	
Rotor inertia	Without brake	kg • m ²	0.025×10 ⁻⁴	0.051×10 ⁻⁴	0.14×10 ⁻⁴	0.26×10 ⁻⁴	0.87×10 ⁻⁴	2.03×10 ⁻⁴	2.84×10 ⁻⁴	3.68×10 ⁻⁴	6.50×10 ⁻⁴	12.9×10 ⁻⁴	17.4×10 ⁻⁴	
	With brake	kg • m ²	0.027×10 ⁻⁴	0.054×10 ⁻⁴	0.16×10 ⁻⁴	0.28×10 ⁻⁴	0.97×10 ⁻⁴	2.35×10 ⁻⁴	3.17×10 ⁻⁴	4.01×10 ⁻⁴	7.85×10 ⁻⁴	14.2×10 ⁻⁴	18.6×10 ⁻⁴	
Applicable load inertia		—	30 times the rotor inertia max. *2				20 times the rotor inertia max. *2	15 times the rotor inertia max. *2		15 times the rotor inertia max. *2				
Torque constant *1		N • m/A	0.11±10%	0.21±10%	0.32±10%	0.40±10%	0.45±10%	0.37	0.45	0.44	0.41	0.49	0.49	
Power rate *1	Without brake	kW/s	10.1	19.8	28.9	62.3	65.4	49.8	80.1	110	140	126	146	
	With brake	kW/s	9.4	18.7	25.3	57.8	58.7	43.0	71.8	101	116	114	136	
Mechanical time constant	Without brake	ms	1.43	1.07	0.58	0.43	0.37	0.61	0.49	0.44	0.41	0.51	0.50	
	With brake	ms	1.54	1.13	0.66	0.46	0.42	0.71	0.55	0.48	0.49	0.56	0.54	
Electrical time constant		ms	0.82	0.90	3.2	3.4	5.3	5.8	6.3	6.7	11	12	13	
Allowable radial load *3		N	68	68	245	245	392	490	490	490	490	784	784	
Allowable thrust load *3		N	58	58	98	98	147	196	196	196	196	343	343	
Weight	Without brake	kg	Approx. 0.31	Approx. 0.46	Approx. 0.79	Approx. 1.2	Approx. 2.3	Approx. 3.5	Approx. 4.4	Approx. 5.3	Approx. 8.3	Approx. 11.0	Approx. 14.0	
	With brake	kg	Approx. 0.51	Approx. 0.66	Approx. 1.2	Approx. 1.6	Approx. 3.1	Approx. 4.5	Approx. 5.4	Approx. 6.3	Approx. 9.4	Approx. 12.6	Approx. 16.0	
Radiator plate dimensions (material)			100×80×t10 (Al)		130×120×t12 (Al)		170×160×t12 (Al)	320×300×t20 (Al)		380×350×t30 (Al)				
Applicable drives (R88D-)			KT01H/KN01H-ML2/KN01H-ECT	KT01H/KN01H-ML2/KN01H-ECT	KT02H/KN02H-ML2/KN02H-ECT	KT04H/KN04H-ML2/KN04H-ECT	KT08H/KN08H-ML2/KN08H-ECT	KT15H/KN15H-ML2/KN15H-ECT	KT15H/KN15H-ML2/KN15H-ECT	KT20H/KN20H-ML2/KN20H-ECT	KT30H/KN30H-ML2/KN30H-ECT	KT50H/KN50H-ML2/KN50H-ECT	KT50H/KN50H-ML2/KN50H-ECT	
Brake specifications	Brake inertia	kg • m ²	2×10 ⁻⁷	2×10 ⁻⁷	1.8×10 ⁻⁶	1.8×10 ⁻⁶	0.33×10 ⁻⁴	0.33×10 ⁻⁴	0.33×10 ⁻⁴	0.33×10 ⁻⁴	0.33×10 ⁻⁴	1.35×10 ⁻⁴	1.35×10 ⁻⁴	
	Excitation voltage *4	V	24 VDC±10%											
	Power consumption (at 20°C)	W	7	7	9	9	17	19	19	19	19	22	22	
	Current consumption (at 20°C)	A	0.3	0.3	0.36	0.36	0.70±10%	0.81±10%	0.81±10±	0.81±10%	0.81±10%	0.90±10%	0.90±10%	
	Static friction torque	N • m	0.29 min.	0.29 min.	1.27 min.	1.27 min.	2.5 min.	7.8 min.	7.8 min.	7.8 min.	11.8 min.	16.1 min.	16.1 min.	
	Attraction time *5	ms	35 max.	35 max.	50 max.	50 max.	50 max.	50 max.	50 max.	50 max.	80 max.	110 max.	110 max.	
	Release time *5	ms	20 max.	20 max.	15 max.	15 max.	15 max. *6	15 max. *6	15 max. *6	15 max. *6	15 max. *6	50 max. *7	50 max. *7	
	Backlash		±1°											
	Allowable work per braking	J	39.2	39.2	137	137	392	392	392	392	392	1470	1470	
	Allowable total work	J	4.9×10 ³	4.9×10 ³	44.1×10 ³	44.1×10 ³	4.9×10 ⁵	4.9×10 ⁵	4.9×10 ⁵	4.9×10 ⁶	4.9×10 ⁶	2.2×10 ⁶	2.2×10 ⁶	
	Allowable angular acceleration	rad/s ²	30,000 max. (Speed of 2,800 r/min or more must not be changed in less than 10 ms)					10,000						
	Brake limit	—	10 million times min.											
	Rating	—	Continuous											
Insulation class	—	Type F												

*1. These are the values when the motor is combined with a driver at normal temperature (20°C, 65%). The momentary maximum torque indicates the standard value.

*2. Applicable load inertia.

- The operable load inertia ratio (load inertia/rotor inertia) depends on the mechanical configuration and its rigidity. For a machine with high rigidity, operation is possible even with high load inertia. Select an appropriate motor and confirm that operation is possible.
- If the dynamic brake is activated frequently with high load inertia, the Dynamic Brake Resistor may burn. Do not repeatedly turn the servo ON/OFF while the dynamic brake is enabled.
- The dynamic brake is designed only for emergency stops. Design the system so that the Servomotor remains stopped for at least 3 minutes after applying the dynamic brake. Otherwise the dynamic brake circuits may fail.

*3. The allowable radial and thrust loads are the values determined for a limit of 20,000 hours at normal operating temperatures. The allowable radial loads are applied as shown in the following diagram.



*4. This is a non-excitation brake. (It is released when excitation voltage is applied.)

*5. The operation time is the value (reference value) measured with a surge suppressor (CR50500 by Okaya Electric Industries Co., Ltd.).

*6. Direct current switching with a varistor (Z15D151 by Ishizuka Electronics Co.).

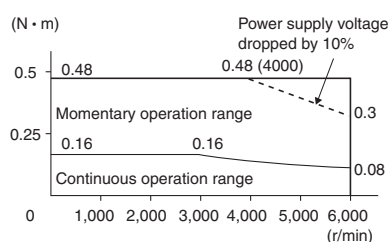
*7. Direct current switching with a varistor (TNR9G820K by Nippon Chemi-Con Corporation).

Torque and Rotation Speed Characteristics

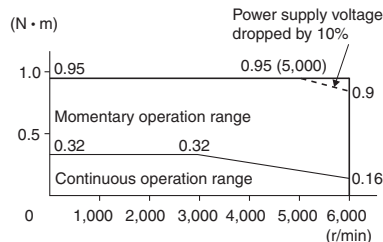
3,000 r/min Servomotors (200 VAC Input Power)

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

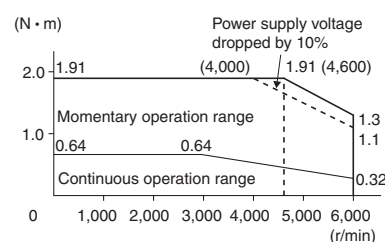
• R88M-K05030H/T (50W)



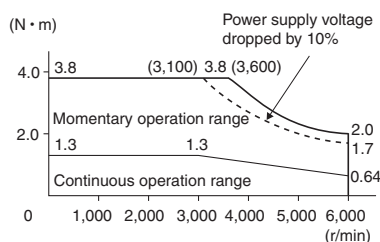
• R88M-K10030H/T (100W)



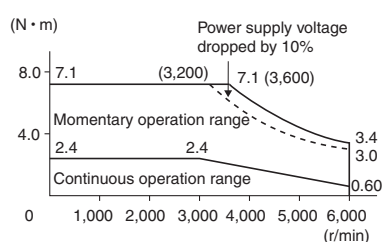
• R88M-K20030H/T (200W)



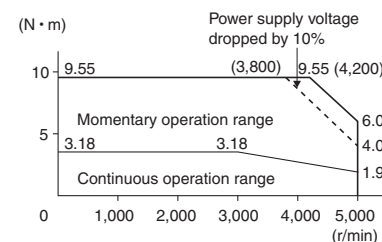
• R88M-K40030H/T (400W)



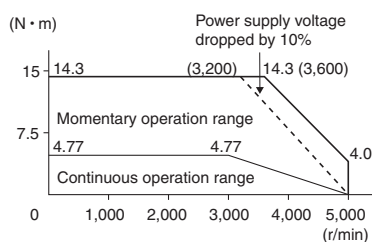
• R88M-K75030H/T (750W)



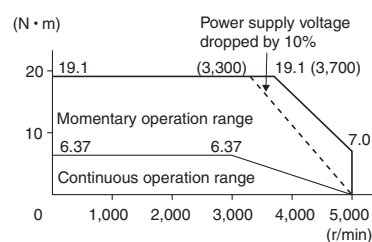
• R88M-K1K030H/T (1kW)



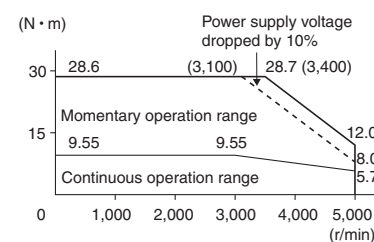
• R88M-K1K530H/T (1.5kW)



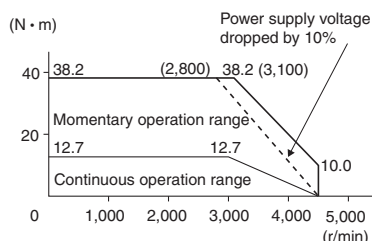
• R88M-K2K030H/T (2kW)



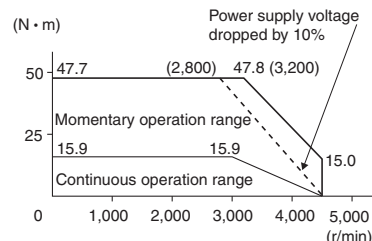
• R88M-K3K030H/T (3kW)



• R88M-K4K030H/T (4kW)



• R88M-K5K030H/T (5kW)



Note 1: The continuous operation range is the range in which continuous operation is possible. Continuous operation at the maximum speed is also possible. However, doing so will reduce the output torque.

Note 2: If the motor power cable exceeds 20 m, the voltage drop will increase and the momentary operation range will become narrower.

AC Servomotor/Drive G5-series

Characteristics

3,000 r/min Servomotors (400 VAC Input Power)

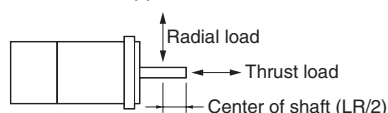
Model (R88M-)			K75030F	K1K030F	K1K530F	K2K030F	K3K030F	K4K030F	K5K030F
Item	Unit		K75030C	K1K030C	K1K530C	K2K030C	K3K030C	K4K030C	K5K030C
Rated output ^{*1}	W		750	1,000	1,500	2,000	3,000	4,000	5,000
Rated torque ^{*1}	N • m		2.39	3.18	4.77	6.37	9.55	12.7	15.9
Rated rotation speed	r/min		3,000						
Momentary maximum rotation speed	r/min		5,000					4,500	
Momentary maximum torque ^{*1}	N • m		7.16	9.55	14.3	19.1	28.6	38.2	47.7
Rated current ^{*1}	A (rms)		2.4	3.3	4.2	5.7	9.2	9.9	12.0
Momentary maximum current ^{*1}	A (rms)		10	14	18	24	39	42	51
Rotor inertia	Without brake	kg • m ²	1.61×10 ⁻⁴	2.03×10 ⁻⁴	2.84×10 ⁻⁴	3.68×10 ⁻⁴	6.50×10 ⁻⁴	12.9×10 ⁻⁴	17.4×10 ⁻⁴
	With brake	kg • m ²	1.93×10 ⁻⁴	2.35×10 ⁻⁴	3.17×10 ⁻⁴	4.01×10 ⁻⁴	7.85×10 ⁻⁴	14.2×10 ⁻⁴	18.6×10 ⁻⁴
Applicable load inertia		—	20 times the rotor inertia max. ^{*2}	15 times the rotor inertia max. ^{*2}					
Torque constant ^{*1}	N • m/A		0.78	0.75	0.89	0.87	0.81	0.98	0.98
Power rate ^{*1}	Without brake	kW/s	35.5	49.8	80.1	110	140	126	146
	With brake	kW/s	29.6	43	71.8	101	116	114	136
Mechanical time constant	Without brake	ms	0.67	0.60	0.49	0.45	0.40	0.51	0.50
	With brake	ms	0.8	0.70	0.55	0.49	0.49	0.56	0.54
Electrical time constant	ms		5.9	5.8	6.5	6.6	12	13	13
Allowable radial load ^{*3}	N		490	490	490	490	490	784	784
Allowable thrust load ^{*3}	N		196	196	196	196	196	343	343
Weight	Without brake	kg	Approx. 3.1	Approx. 3.5	Approx. 4.4	Approx. 5.3	Approx. 8.3	Approx. 11.0	Approx. 14.0
	With brake	kg	Approx. 4.1	Approx. 4.5	Approx. 5.4	Approx. 6.3	Approx. 9.4	Approx. 12.6	Approx. 16.0
Radiator plate dimensions (material)			320×300×t20 (Al)				380×350×t30 (Al)		
Applicable drives (R88D-)			KT10F/ KN10F-ML2/ KN10F-ECT	KT15F/ KN15F-ML2/ KN15F-ECT	KT15F/ KN15F-ML2/ KN15F-ECT	KT20F/ KN20F-ML2/ KN20F-ECT	KT30F/ KN30F-ML2/ KN30F-ECT	KT50F/ KN50F-ML2/ KN50F-ECT	KT50F/ KN50F-ML2/ KN50F-ECT
Brake specifications	Brake inertia	kg • m ²	0.33×10 ⁻⁴	0.33×10 ⁻⁴	0.33×10 ⁻⁴	0.33×10 ⁻⁴	0.33×10 ⁻⁴	0.33×10 ⁻⁴	1.35×10 ⁻⁴
	Excitation voltage ^{*4}	V	24 VDC±10%						
	Power consumption (at 20°C)	W	17	19	19	19	19	22	22
	Current consumption (at 20°C)	A	0.70±10%	0.81±10%	0.81±10%	0.81±10%	0.81±10%	0.90±10%	0.90±10%
	Static friction torque	N • m	2.5 min.	7.8 min.	7.8 min.	7.8 min.	11.8 min.	16.1 min.	16.1 min.
	Attraction time ^{*5}	ms	50 max.	50 max.	50 max.	50 max.	80 max.	110 max.	110 max.
	Release time ^{*5}	ms	15 max. ^{*6}	15 max. ^{*6}	15 max. ^{*6}	15 max. ^{*6}	15 max. ^{*6}	50 max. ^{*7}	50 max. ^{*7}
	Backlash		±1°						
	Allowable work per braking	J	392	392	392	392	392	1470	1470
	Allowable total work	J	4.9×10 ⁵	4.9×10 ⁵	4.9×10 ⁵	4.9×10 ⁵	4.9×10 ⁵	2.2×10 ⁶	2.2×10 ⁶
	Allowable angular acceleration	rad/s ²	10,000						
	Brake limit	—	10 million times min.						
	Rating	—	Continuous						
	Insulation class	—	Type F						

*1. These are the values when the motor is combined with a driver at normal temperature (20°C, 65%). The momentary maximum torque indicates the standard value.

*2. Applicable load inertia.

- The operable load inertia ratio (load inertia/rotor inertia) depends on the mechanical configuration and its rigidity. For a machine with high rigidity, operation is possible even with high load inertia. Select an appropriate motor and confirm that operation is possible.
- If the dynamic brake is activated frequently with high load inertia, the Dynamic Brake Resistor may burn. Do not repeatedly turn the servo ON/OFF while the dynamic brake is enabled.
- The dynamic brake is designed only for emergency stops. Design the system so that the Servomotor remains stopped for at least 3 minutes after applying the dynamic brake. Otherwise the dynamic brake circuits may fail.

*3. The allowable radial and thrust loads are the values determined for a limit of 20,000 hours at normal operating temperatures. The allowable radial loads are applied as shown in the following diagram.



*4. This is a non-excitation brake. (It is released when excitation voltage is applied.)

*5. The operation time is the value (reference value) measured with a surge suppressor (CR50500 by Okaya Electric Industries Co., Ltd.).

*6. Direct current switching with a varistor (Z15D151 by Ishizuka Electronics Co.).

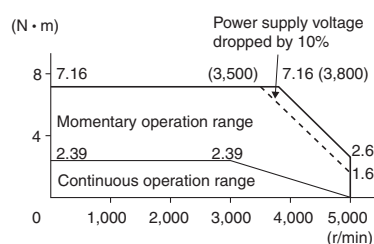
*7. Direct current switching with a varistor (TNR9G820K by Nippon Chemi-Con Corporation).

Torque and Rotation Speed Characteristics

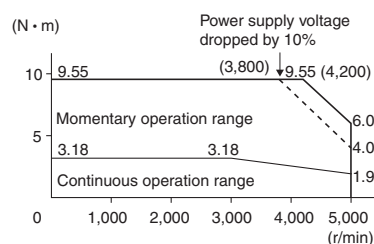
3,000 r/min Servomotors (400 VAC Input Power)

The following graphs show the characteristics with a 3 m standard cable and a 400 VAC input.

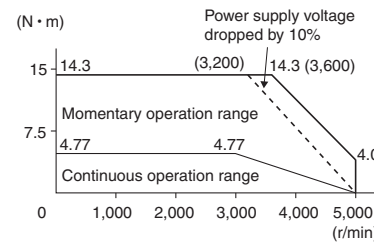
• R88M-K75030F/C (750W)



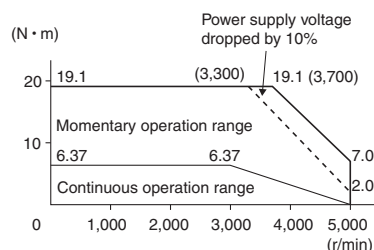
• R88M-K1K030F/C (1kW)



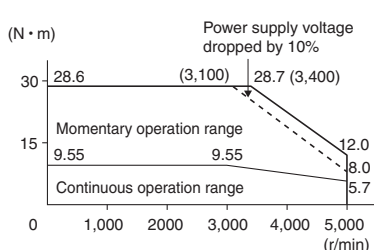
• R88M-K1K530F/C (1.5kW)



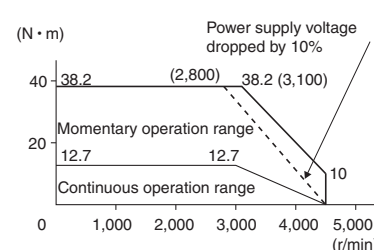
• R88M-K2K030F/C (2kW)



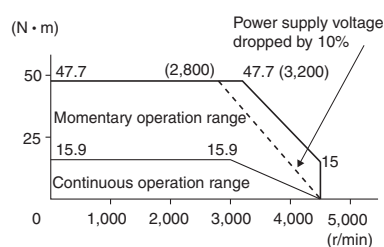
• R88M-K3K030F/C (3kW)



• R88M-K4K030F/C (4kW)



• R88M-K5K030F/C (5kW)



Note 1: The continuous operation range is the range in which continuous operation is possible. Continuous operation at the maximum speed is also possible. However, doing so will reduce the output torque.

Note 2: If the motor power cable exceeds 20 m, the voltage drop will increase and the momentary operation range will become narrower.

AC Servomotor/Drive G5-series

Characteristics

1,500 r/min, 2,000 r/min Servomotors (200 VAC Input Power)

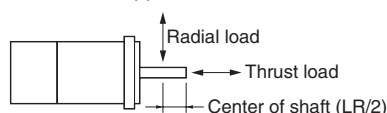
Model (R88M-)		K1K020H	K1K520H	K2K020H	K3K020H	K4K020H	K5K020H	—	—	—
Item	Unit	K1K020T	K1K520T	K2K020T	K3K020T	K4K020T	K5K020T	K7K515T	K11K015T	K15K015T
Rated output ^{*1}	W	1,000	1,500	2,000	3,000	4,000	5,000	7,500	11,000	15,000
Rated torque ^{*1}	N • m	4.77	7.16	9.55	14.3	19.1	23.9	47.8	70.0	95.0
Rated rotation speed	r/min	2,000						1,500		
Momentary maximum rotation speed	r/min	3,000						3,000	2,000	
Momentary maximum torque ^{*1}	N • m	14.3	21.5	28.6	43.0	57.3	71.6	119.0	175.0	224.0
Rated current ^{*1}	A (rms)	5.7	9.4	11.5	17.4	21.0	25.9	44.0	54.2	66.1
Momentary maximum current ^{*1}	A (rms)	24	40	49	74	89	110	165	203	236
Rotor inertia	Without brake	kg • m ²	4.60×10 ⁻⁴	6.70×10 ⁻⁴	8.72×10 ⁻⁴	12.9×10 ⁻⁴	37.6×10 ⁻⁴	48.0×10 ⁻⁴	101×10 ⁻⁴	212×10 ⁻⁴
	With brake	kg • m ²	5.90×10 ⁻⁴	7.99×10 ⁻⁴	10.0×10 ⁻⁴	14.2×10 ⁻⁴	38.6×10 ⁻⁴	48.8×10 ⁻⁴	107×10 ⁻⁴	220×10 ⁻⁴
Applicable load inertia	—	10 times the rotor inertia max. ^{*2}								
Torque constant ^{*1}	N • m/A	0.63	0.58	0.64	0.59	0.70	0.70	0.77	0.92	1.05
Power rate ^{*1}	Without brake	kW/s	49.5	76.5	105	159	97.1	119	226	302
	With brake	kW/s	38.6	64.2	91.2	144	94.5	117	213	293
Mechanical time constant	Without brake	ms	0.80	0.66	0.66	0.57	0.65	0.63	0.58	0.71
	With brake	ms	1.02	0.80	0.76	0.63	0.66	0.64	0.61	0.74
Electrical time constant	ms	9.4	10	10	12	20	19	21	31	32
Allowable radial load ^{*3}	N	490	490	490	784	784	784	1,176	2,254	2,254
Allowable thrust load ^{*3}	N	196	196	196	343	343	343	490	686	686
Weight	Without brake	kg	Approx. 5.2	Approx. 6.7	Approx. 8.0	Approx. 11.0	Approx. 15.5	Approx. 18.6	Approx. 36.4	Approx. 52.7
	With brake	kg	Approx. 6.7	Approx. 8.2	Approx. 9.5	Approx. 12.6	Approx. 18.7	Approx. 21.8	Approx. 40.4	Approx. 58.9
Radiator plate dimensions (material)		275×260×t15 (Al)			380×350×t30 (Al)	470×440×t30 (Al)		550×520×t30 (Al)	670×630×t35 (Al)	
Applicable drives (R88D-)		KT10H/ KN10H- ML2/ KN10H- ECT	KT15H/ KN15H- ML2/ KN15H- ECT	KT20H/ KN20H- ML2/ KN20H- ECT	KT30H/ KN30H- ML2/ KN30H- ECT	KT50H/ KN50H- ML2/ KN50H- ECT	KT50H/ KN50H- ML2/ KN50H- ECT	KT75H/ KN75H- ECT	KT150H/ KN150H- ECT	KT150H/ KN150H- ECT
Brake specifications	Brake inertia	kg • m ²	1.35×10 ⁻⁴	1.35×10 ⁻⁴	1.35×10 ⁻⁴	1.35×10 ⁻⁴	4.7×10 ⁻⁴	4.7×10 ⁻⁴	4.7×10 ⁻⁴	7.1×10 ⁻⁴
	Excitation voltage ^{*4}	V	24 VDC±10%							
	Power consumption (at 20°C)	W	14	19	19	22	31	31	34	26
	Current consumption (at 20°C)	A	0.59±10%	0.79±10%	0.79±10%	0.90±10%	1.3±10%	1.3±10%	1.4±10%	1.08±10%
	Static friction torque	N • m	4.9 min.	13.7 min.	13.7 min.	16.2 min.	24.5 min.	24.5 min.	58.8 min.	100 min.
	Attraction time ^{*5}	ms	80 max.	100 max.	100 max.	110 max.	80 max.	80 max.	150 max.	300 max.
	Release time ^{*5}	ms	70 max. ^{*6}	50 max. ^{*6}	50 max. ^{*6}	50 max. ^{*6}	25 max. ^{*7}	25 max. ^{*7}	50 max.	140 max.
	Backlash		±1°							
	Allowable work per braking	J	588	1,176	1,176	1,470	1,372	1,372	1,372	2,000
	Allowable total work	J	7.8×10 ⁵	1.5×10 ⁶	1.5×10 ⁶	2.2×10 ⁶	2.9×10 ⁶	2.9×10 ⁶	2.9×10 ⁶	4.0×10 ⁶
	Allowable angular acceleration	rad/s ²	10,000						5,000	3,000
	Brake limit	—	10 million times min.							
	Rating	—	Continuous							
	Insulation class	—	Type F							

*1. These are the values when the motor is combined with a driver at normal temperature (20°C, 65%). The momentary maximum torque indicates the standard value.

*2. Applicable load inertia.

- The operable load inertia ratio (load inertia/rotor inertia) depends on the mechanical configuration and its rigidity. For a machine with high rigidity, operation is possible even with high load inertia. Select an appropriate motor and confirm that operation is possible.
- If the dynamic brake is activated frequently with high load inertia, the Dynamic Brake Resistor may burn. Do not repeatedly turn the servo ON/OFF while the dynamic brake is enabled.
- The dynamic brake is designed only for emergency stops. Design the system so that the Servomotor remains stopped for at least 3 minutes after applying the dynamic brake. Otherwise the dynamic brake circuits may fail.

*3. The allowable radial and thrust loads are the values determined for a limit of 20,000 hours at normal operating temperatures. The allowable radial loads are applied as shown in the following diagram.



*4. This is a non-excitation brake. (It is released when excitation voltage is applied.)

*5. The operation time is the value (reference value) measured with a surge suppressor (CR50500 by Okaya Electric Industries Co., Ltd.).

*6. Direct current switching with a varistor (Z15D151 by Ishizuka Electronics Co.).

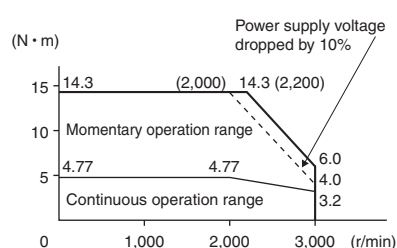
*7. Direct current switching with a varistor (TNR9G820K by Nippon Chemi-Con Corporation).

Torque and Rotation Speed Characteristics

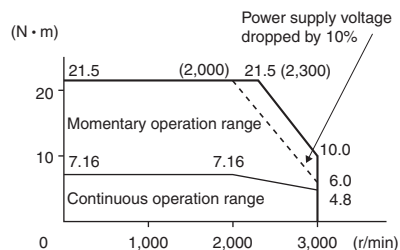
1,500 r/min, 2,000 r/min Servomotors (200 VAC Input Power)

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

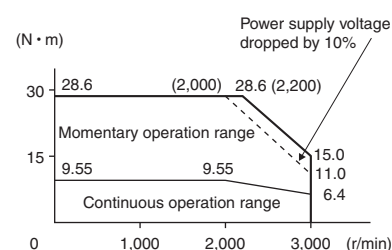
• R88M-K1K020H/T (1kW)



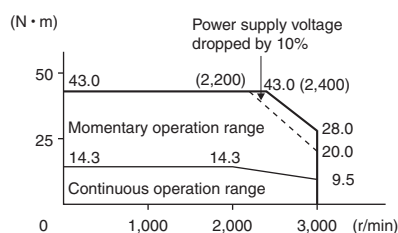
• R88M-K1K520H/T (1.5kW)



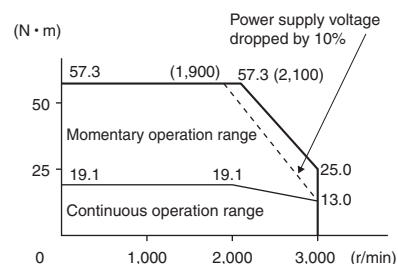
• R88M-K2K020H/T (2kW)



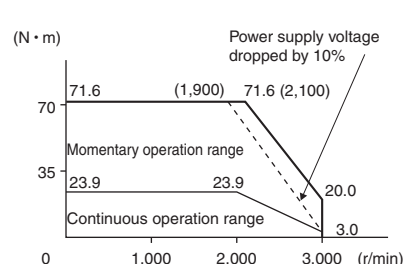
• R88M-K3K020H/T (3kW)



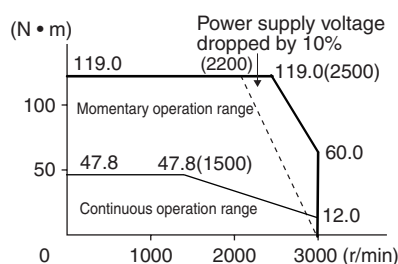
• R88M-K4K020H/T (4kW)



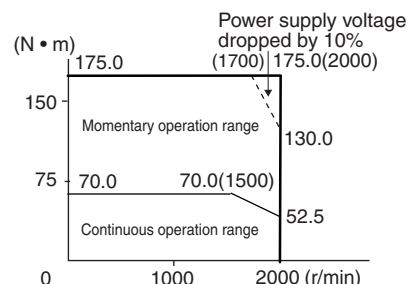
• R88M-K5K020H/T (5kW)



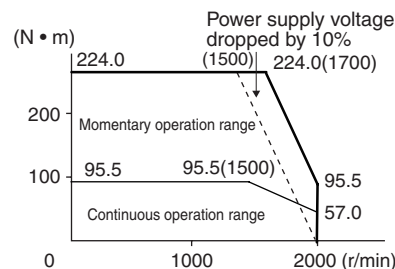
• R88M-K7K515T (7.5kW)



• R88M-K11K015T (11kW)



• R88M-K15K015T (15kW)



Note 1: The continuous operation range is the range in which continuous operation is possible. Continuous operation at the maximum speed is also possible. However, doing so will reduce the output torque.

Note 2: If the motor power cable exceeds 20 m, the voltage drop will increase and the momentary operation range will become narrower.

AC Servomotor/Drive G5-series

Characteristics

1,500 r/min, 2,000 r/min Servomotors (400 VAC Input Power)

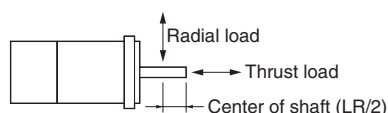
Model (R88M-)			K40020F	K60020F	K1K020F	K1K520F	K2K020F	K3K020F	K4K020F	K5K020F	—	—	—	
Item		Unit	K40020C	K60020C	K1K020C	K1K520C	K2K020C	K3K020C	K4K020C	K5K020C	K7K515C	K11K015C	K15K015C	
Rated output ^{*1}		W	400	600	1,000	1,500	2,000	3,000	4,000	5,000	7,500	11,000	15,000	
Rated torque ^{*1}		N • m	1.91	2.86	4.77	7.16	9.55	14.3	19.1	23.9	47.8	70.0	95.9	
Rated rotation speed		r/min	2,000								1,500			
Momentary maximum rotation speed		r/min	3,000									2,000		
Momentary maximum torque ^{*1}		N • m	5.73	8.59	14.3	21.5	28.7	43.0	57.3	71.6	119.0	175.0	224.0	
Rated current ^{*1}		A (rms)	1.2	1.5	2.8	4.7	5.9	8.7	10.6	13.0	22.0	27.1	33.1	
Momentary maximum current ^{*1}		A (rms)	4.9	6.5	12	20	25	37	45	55	83	101	118	
Rotor inertia	Without brake	kg • m ²	1.61×10 ⁻⁴	2.03×10 ⁻⁴	4.60×10 ⁻⁴	6.70×10 ⁻⁴	8.72×10 ⁻⁴	12.9×10 ⁻⁴	37.6×10 ⁻⁴	48.0×10 ⁻⁴	101×10 ⁻⁴	212×10 ⁻⁴	302×10 ⁻⁴	
	With brake	kg • m ²	1.90×10 ⁻⁴	2.35×10 ⁻⁴	5.90×10 ⁻⁴	7.99×10 ⁻⁴	10.0×10 ⁻⁴	14.2×10 ⁻⁴	38.6×10 ⁻⁴	48.8×10 ⁻⁴	107×10 ⁻⁴	220×10 ⁻⁴	311×10 ⁻⁴	
Applicable load inertia		—	10 times the rotor inertia max. ^{*2}											
Torque constant ^{*1}		N • m/A	1.27	1.38	1.27	1.16	1.27	1.18	1.40	1.46	1.54	1.84	2.10	
Power rate ^{*1}	Without brake	kW/s	22.7	40.3	49.5	76.5	105	159	97.1	119	226	231	302	
	With brake	kW/s	19.2	34.8	38.6	64.2	91.2	144	94.5	117	213	223	293	
Mechanical time constant	Without brake	ms	0.70	0.62	0.79	0.66	0.68	0.56	0.60	0.60	0.58	0.80	0.71	
	With brake	ms	0.83	0.72	1.01	0.79	0.78	0.61	0.61	0.61	0.61	0.83	0.74	
Electrical time constant		ms	5.7	5.9	10	10	10	12	21	19	21	31	32	
Allowable radial load ^{*3}		N	490	490	490	490	490	784	784	784	1,176	2,254	2,254	
Allowable thrust load ^{*3}		N	196	196	196	196	196	343	343	343	490	686	686	
Weight	Without brake	kg	Approx. 3.1	Approx. 3.5	Approx. 5.2	Approx. 6.7	Approx. 8.0	Approx. 11.0	Approx. 15.5	Approx. 18.6	Approx. 36.4	Approx. 52.7	Approx. 70.2	
	With brake	kg	Approx. 4.1	Approx. 4.5	Approx. 6.7	Approx. 8.2	Approx. 9.5	Approx. 12.6	Approx. 18.7	Approx. 21.8	Approx. 40.4	Approx. 58.9	Approx. 76.3	
Radiator plate dimensions (material)			320×300×t20 (Al)			275×260×t15 (Al)			380×350×t30 (Al)	470×440×t30 (Al)		550×520×t30 (Al)	670×630×t35 (Al)	
Applicable drives (R88D-)			KT06F/ KN06F- ML2/ KN06F- ECT	KT06F/ KN06F- ML2/ KN06F- ECT	KT10F/ KN10F- ML2/ KN10F- ECT	KT15F/ KN15F- ML2/ KN15F- ECT	KT20F/ KN20F- ML2/ KN20F- ECT	KT30F/ KN30F- ML2/ KN30F- ECT	KT50F/ KN50F- ML2/ KN50F- ECT	KT50F/ KN50F- ML2/ KN50F- ECT	KT75F/ KN75F- ECT	KT150F/ KN150F- ECT	KT150F/ KN150F- ECT	
Brake specifications	Brake inertia		kg • m ²	1.35×10 ⁻⁴	1.35×10 ⁻⁴	1.35×10 ⁻⁴	1.35×10 ⁻⁴	1.35×10 ⁻⁴	1.35×10 ⁻⁴	4.7×10 ⁻⁴	4.7×10 ⁻⁴	4.7×10 ⁻⁴	7.1×10 ⁻⁴	7.1×10 ⁻⁴
	Excitation voltage ^{*4}		V	24 VDC±10%										
	Power consumption (at 20°C)		W	17	17	14	19	19	22	31	31	34	26	26
	Current consumption (at 20°C)		A	0.70±10%	0.70±10%	0.59±10%	0.79±10%	0.79±10%	0.90±10%	1.3±10%	1.3±10%	1.4±10%	1.08±10%	1.08±10%
	Static friction torque		N • m	2.5 min.	2.5 min.	4.9 min.	13.7 min.	13.7 min.	16.2 min.	24.5 min.	24.5 min.	58.8 min.	100 min.	100 min.
	Attraction time ^{*5}		ms	50 max.	50 max.	80 max.	100 max.	100 max.	110 max.	80 max.	80 max.	150 max.	300 max.	300 max.
	Release time ^{*5}		ms	15 max. ^{*7}	15 max. ^{*7}	70 max. ^{*6}	50 max. ^{*6}	50 max. ^{*6}	50 max. ^{*6}	25 max. ^{*7}	25 max. ^{*7}	50 max.	140 max.	140 max.
	Backlash			±1°										
	Allowable work per braking		J	392	392	588	1,176	1,176	1,470	1,372	1,372	1,372	2,000	2,000
	Allowable total work		J	4.9×10 ⁵	4.9×10 ⁵	7.8×10 ⁵	1.5×10 ⁶	1.5×10 ⁶	2.2×10 ⁶	2.9×10 ⁶	2.9×10 ⁶	2.9×10 ⁶	4.0×10 ⁶	4.0×10 ⁶
	Allowable angular acceleration		rad/s ²	10,000								5,000	3,000	
	Brake limit		—	10 million times min.										
	Rating		—	Continuous										
	Insulation class		—	Type F										

*1. These are the values when the motor is combined with a driver at normal temperature (20°C, 65%). The momentary maximum torque indicates the standard value.

*2. Applicable load inertia.

- The operable load inertia ratio (load inertia/rotor inertia) depends on the mechanical configuration and its rigidity. For a machine with high rigidity, operation is possible even with high load inertia. Select an appropriate motor and confirm that operation is possible.
- If the dynamic brake is activated frequently with high load inertia, the Dynamic Brake Resistor may burn. Do not repeatedly turn the servo ON/OFF while the dynamic brake is enabled.
- The dynamic brake is designed only for emergency stops. Design the system so that the Servomotor remains stopped for at least 3 minutes after applying the dynamic brake. Otherwise the dynamic brake circuits may fail.

*3. The allowable radial and thrust loads are the values determined for a limit of 20,000 hours at normal operating temperatures. The allowable radial loads are applied as shown in the following diagram.



*4. This is a non-excitation brake. (It is released when excitation voltage is applied.)

*5. The operation time is the value (reference value) measured with a surge suppressor (CR50500 by Okaya Electric Industries Co., Ltd.).

*6. Direct current switching with a varistor (Z15D151 by Ishizuka Electronics Co.).

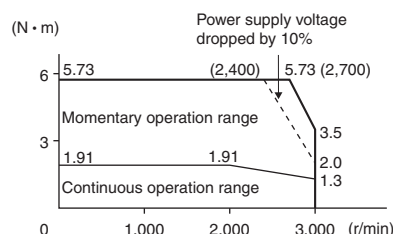
*7. Direct current switching with a varistor (TNR9G820K by Nippon Chemi-Con Corporation).

Torque and Rotation Speed Characteristics

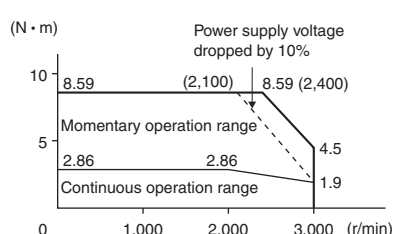
1,500 r/min, 2,000 r/min Servomotors (400 VAC Input Power)

The following graphs show the characteristics with a 3 m standard cable and a 400 VAC input.

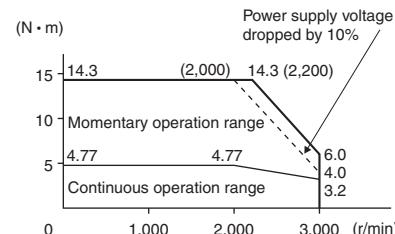
• R88M-K40020F/C (400W)



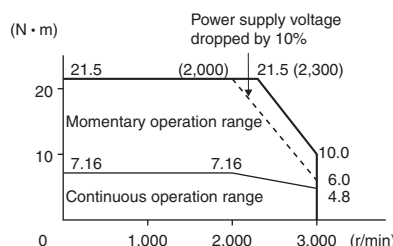
• R88M-K60020F/C (600W)



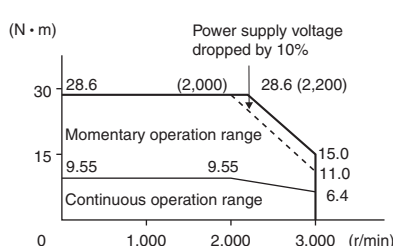
• R88M-K1K020F/C (1kW)



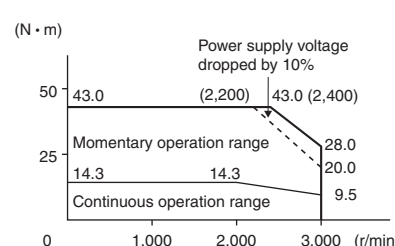
• R88M-K1K520F/C (1.5kW)



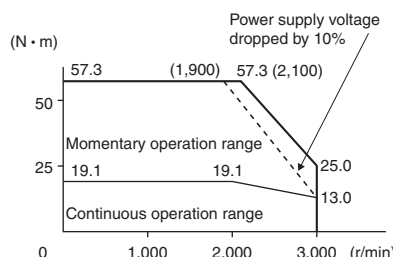
• R88M-K2K020F/C (2kW)



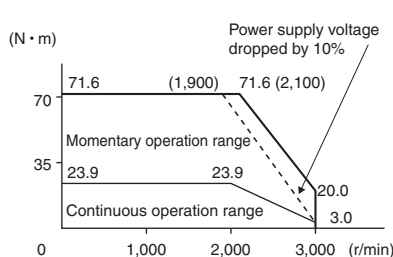
• R88M-K3K020F/C (3kW)



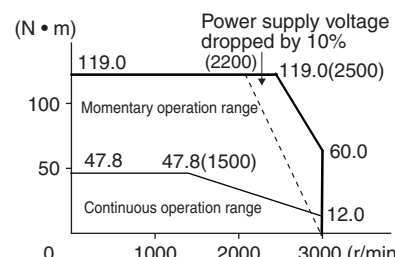
• R88M-K4K020F/C (4kW)



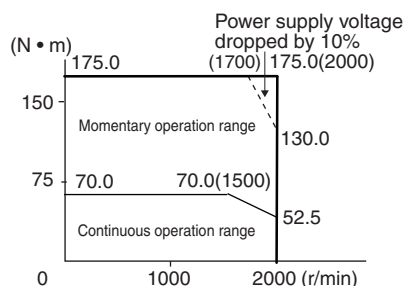
• R88M-K5K020F/C (5kW)



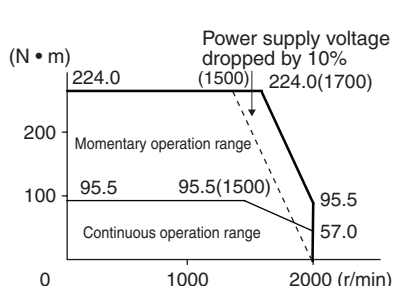
• R88M-K7K515C (7.5kW)



• R88M-K11K015C (11kW)



• R88M-K15K015C (15kW)



Note 1: The continuous operation range is the range in which continuous operation is possible. Continuous operation at the maximum speed is also possible. However, doing so will reduce the output torque.

Note 2: If the motor power cable exceeds 20 m, the voltage drop will increase and the momentary operation range will become narrower.

AC Servomotor/Drive G5-series

Characteristics

1,000 r/min Servomotors (200/400 VAC Input Power)

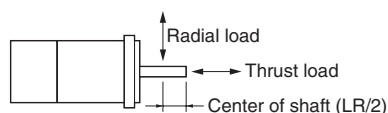
			200 VAC					400 VAC					
Model (R88M-)			K90010H	K2K010H	K3K010H	—	—	K90010F	K2K010F	K3K010F	—	—	
Item	Unit		K90010T	K2K010T	K3K010T	K4K510T	K6K010T	K90010C	K2K010C	K3K010C	K4K510C	K6K010C	
Rated output ^{*1}	W		900	2,000	3,000	4,500	6,000	900	2,000	3,000	4,500	6,000	
Rated torque ^{*1}	N • m		8.59	19.1	28.7	43.0	57.0	8.59	19.1	28.7	43.0	57.3	
Rated rotation speed	r/min		1,000										
Momentary maximum rotation speed	r/min		2,000										
Momentary maximum torque ^{*1}	N • m		19.3	47.7	71.7	107.0	143.0	19.3	47.7	71.7	107.0	143.0	
Momentary maximum current ^{*1}	A (rms)		7.6	17.0	22.6	29.7	38.8	3.8	8.5	11.3	14.8	19.4	
Momentary maximum current ^{*1}	A (rms)		24	60	80	110	149	12	30	40	55	74	
Rotor inertia	Without brake	kW/s	6.70×10 ⁻⁴	30.3×10 ⁻⁴	48.4×10 ⁻⁴	79.1×10 ⁻⁴	101×10 ⁻⁴	6.70×10 ⁻⁴	30.3×10 ⁻⁴	48.4×10 ⁻⁴	79.1×10 ⁻⁴	101×10 ⁻⁴	
	With brake	kW/s	7.99×10 ⁻⁴	31.4×10 ⁻⁴	49.2×10 ⁻⁴	84.4×10 ⁻⁴	107×10 ⁻⁴	7.99×10 ⁻⁴	31.4×10 ⁻⁴	49.2×10 ⁻⁴	84.4×10 ⁻⁴	107×10 ⁻⁴	
Applicable load inertia	—		10 times the rotor inertia max. ^{*2}										
Torque constant ^{*1}	N • m/A		0.86	0.88	0.96	1.02	1.04	1.72	1.76	1.92	2.05	2.08	
Power rate ^{*1}	Without brake	kW/s	110	120	170	233	325	110	120	170	233	325	
	With brake	kW/s	92.4	116	167	219	307	92.4	116	167	219	307	
Mechanical time constant	Without brake	ms	0.66	0.75	0.63	0.55	0.54	0.66	0.76	0.61	0.55	0.54	
	With brake	ms	0.78	0.78	0.64	0.63	0.57	0.79	0.78	0.62	0.63	0.57	
Electrical time constant	ms		11	18	21	20	23	11	18	22	20	23	
Allowable radial load ^{*3}	N		686	1176	1470	1470	1764	686	1176	1470	1470	1764	
Allowable thrust load ^{*3}	N		196	490	490	490	588	196	490	490	490	588	
Weight	Without brake	kg	Approx. 6.7	Approx. 14.0	Approx. 20.0	Approx. 29.4	Approx. 36.4	Approx. 6.7	Approx. 14.0	Approx. 20.0	Approx. 29.4	Approx. 36.4	
	With brake	kg	Approx. 8.2	Approx. 17.5	Approx. 23.5	Approx. 33.3	Approx. 40.4	Approx. 8.2	Approx. 17.5	Approx. 23.5	Approx. 33.3	Approx. 40.4	
Radiator plate dimensions (material)			270×260×t15 (Al)			470×440×t30 (Al)	550×520×t30 (Al)	270×260×t15 (Al)	470×440×t30 (Al)			550×520×t30 (Al)	
Applicable drives (R88D-)			KT15H/ KN15H- ML2/ KN15H- ECT	KT30H/ KN30H- ML2/ KN30HF- ECT	KT50H/ KN50H- ML2/ KN50H- ECT	KT50H/ KN50H- ECT	KT75H/ KN75H- ECT	KT15F/ KN15F- ML2/ KN15F- ECT	KT30F/ KN30F- ML2/ KN30F- ECT	KT50F/ KN50F- ML2/ KN50F- ECT	KT50F/ KN50F- ECT	KT75F/ KN75F- ECT	
Brake specifications	Brake inertia	kg • m ²	1.35×10 ⁻⁴	4.7×10 ⁻⁴	4.7×10 ⁻⁴	4.7×10 ⁻⁴	4.7×10 ⁻⁴	1.35×10 ⁻⁴	4.7×10 ⁻⁴	4.7×10 ⁻⁴	4.7×10 ⁻⁴	4.7×10 ⁻⁴	
	Excitation voltage ^{*4}	V	24 VDC±10%										
	Power consumption (at 20°C)	W	19	31	34	34	34	19	31	34	34	34	
	Current consumption (at 20°C)	A	0.79±10%	1.3±10%	1.4±10%	1.4±10%	1.4±10%	0.79±10%	1.3±10%	1.4±10%	1.4±10%	1.4±10%	
	Static friction torque	N • m	13.7 min.	24.5 min.	58.8 min.	58.8 min.	58.8 min.	13.7 min.	24.5 min.	58.8 min.	58.8 min.	58.8 min.	
	Attraction time ^{*5}	ms	100 max.	80 max.	150 max.	150 max.	150 max.	100 max.	80 max.	150 max.	150 max.	150 max.	
	Release time ^{*5}	ms	50 max. ^{*6}	25 max. ^{*7}	50 max. ^{*7}	50 max.	50 max.	50 max. ^{*6}	25 max. ^{*7}	50 max. ^{*7}	50 max.	50 max.	
	Backlash		±1°										
	Allowable work per braking	J	1,176	1,372	1,372	1,372	1,372	1,176	1,372	1,372	1,372	1,372	
	Allowable total work	J	1.5×10 ⁶	2.9×10 ⁶	2.9×10 ⁶	2.9×10 ⁶	2.9×10 ⁶	1.5×10 ⁶	2.9×10 ⁶	2.9×10 ⁶	2.9×10 ⁶	2.9×10 ⁶	
	Allowable angular acceleration	rad/s ²	10,000				5,000		10,000			5,000	
	Brake limit	—	10 million times min.										
	Rating	—	Continuous										
	Insulation class	—	Type F										

*1. These are the values when the motor is combined with a driver at normal temperature (20°C, 65%). The momentary maximum torque indicates the standard value.

*2. Applicable load inertia.

- The operable load inertia ratio (load inertia/rotor inertia) depends on the mechanical configuration and its rigidity. For a machine with high rigidity, operation is possible even with high load inertia. Select an appropriate motor and confirm that operation is possible.
- If the dynamic brake is activated frequently with high load inertia, the Dynamic Brake Resistor may burn. Do not repeatedly turn the servo ON/OFF while the dynamic brake is enabled.
- The dynamic brake is designed only for emergency stops. Design the system so that the Servomotor remains stopped for at least 3 minutes after applying the dynamic brake. Otherwise the dynamic brake circuits may fail.

*3. The allowable radial and thrust loads are the values determined for a limit of 20,000 hours at normal operating temperatures. The allowable radial loads are applied as shown in the following diagram.



*4. This is a non-excitation brake. (It is released when excitation voltage is applied.)

*5. The operation time is the value (reference value) measured with a surge suppressor (CR50500 by Okaya Electric Industries Co., Ltd.).

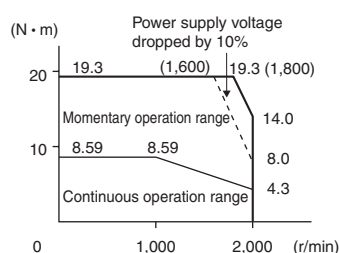
*6. Direct current switching with a varistor (Z15D151 by Ishizuka Electronics Co.).

*7. Direct current switching with a varistor (TNR9G820K by Nippon Chemi-Con Corporation).

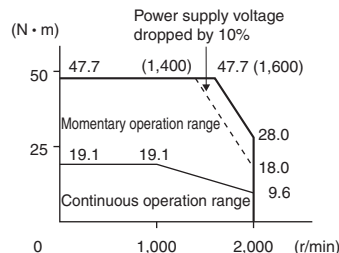
Torque and Rotation Speed Characteristics 1,000 r/min Servomotors (200/400 VAC Input Power)

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

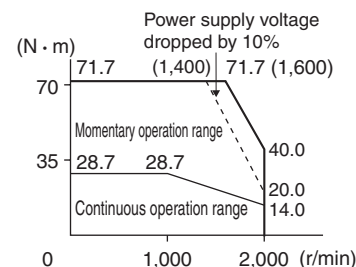
• R88M-K90010H/T/F/C (900W)



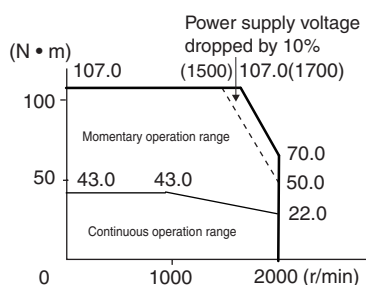
• R88M-K2K010H/T/F/C (2kW)



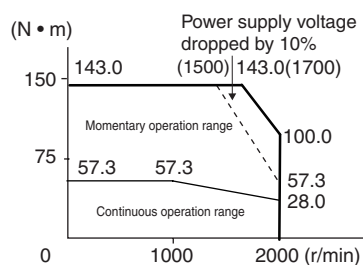
• R88M-K3K010H/T/F/C (3kW)



• R88M-K4K510T/C (4.5kW)



• R88M-K6K010T/C (6kW)



Note 1: The continuous operation range is the range in which continuous operation is possible. Continuous operation at the maximum speed is also possible. However, doing so will reduce the output torque.

Note 2: If the motor power cable exceeds 20 m, the voltage drop will increase and the momentary operation range will become narrower.

Encoder Specifications

Incremental Encoders

Item	Specifications
Encoder system	Optical encoder 20 bits
No. of output pulses	Phases A and B: 262,144 pulses/rotation Phase Z: 1 pulse/rotation
Power supply voltage	5 VDC±5%
Power supply current	180 mA (max.)
Output signals	+S, -S
Output interface	RS-485 compliance

Absolute Encoders

Item	Specifications
Encoder system	Optical encoder 17 bits
No. of output pulses	Phases A and B: 32,768 pulses/rotation Phase Z: 1 pulse/rotation
Maximum rotations	-32,768 to +32,767 rotations
Power supply voltage	5 VDC±5%
Power supply current	110 mA (max.)
Applicable battery voltage	3.6 VDC
Current consumption of battery	265 μA for a maximum of 5 s right after power interruption 100 μA for operation during power interruption 3.6 μA when power is supplied to Servo Drive
Output signals	+S, -S
Output interface	RS-485 compliance

Note: Multi-rotation Data Backup

- The multi-rotation data will be lost if the battery cable connector is disconnected at the motor when connecting the battery cable for the absolute encoder and battery.
- The multi-rotation data will be lost if CN2 is disconnected when connecting the battery to CN1 without the use of a battery cable for the absolute encoder.

Dimensions

<Cylinder type>

3,000 r/min Servomotors (100/200 VAC)

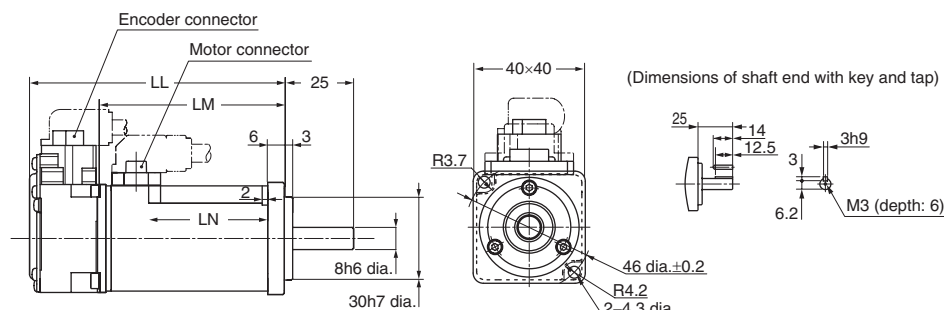
50W/100W

• Without brake

- R88M-K05030H (-S2)/-K10030□ (-S2) **INC**
- R88M-K05030T (-S2)/-K10030□ (-S2) **ABS**

Model	Dimensions (mm)		
	LL	LM	LN
R88M-K05030□	72	48	23
R88M-K10030□	92	68	43

CAD data

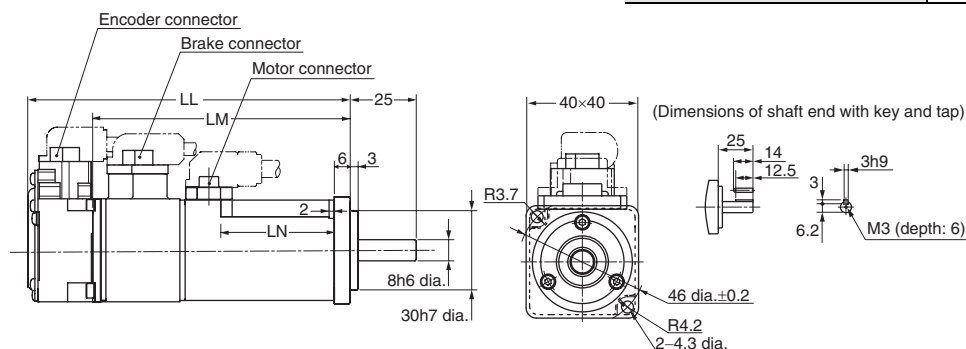


• With brake

- R88M-K05030H-B (S2)/-K10030□-B (S2) **INC**
- R88M-K05030T-B (S2)/-K10030□-B (S2) **ABS**

Model	Dimensions (mm)		
	LL	LM	LN
R88M-K05030□-B□	102	78	23
R88M-K10030□-B□	122	98	43

CAD data



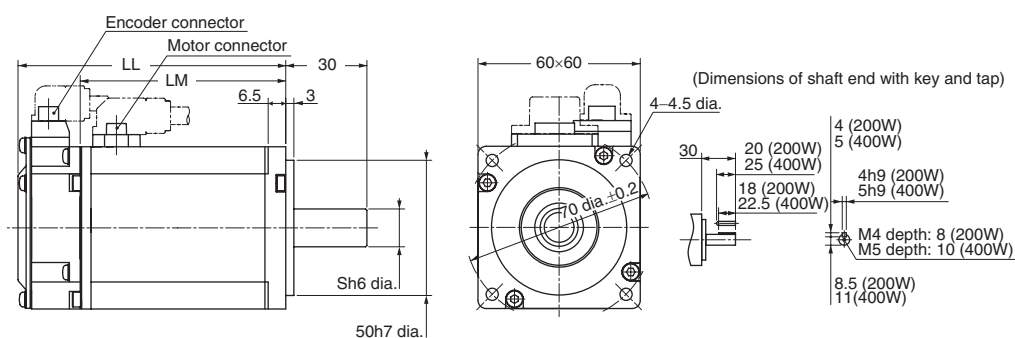
200W/400W

• Without brake

- R88M-K20030□ (-S2)/-K40030□ (-S2) **INC**
- R88M-K20030□ (-S2)/-K40030□ (-S2) **ABS**

Model	Dimensions (mm)		
	LL	LM	LN
R88M-K20030□	79.5	56.5	11
R88M-K40030□	99	76	14

CAD data



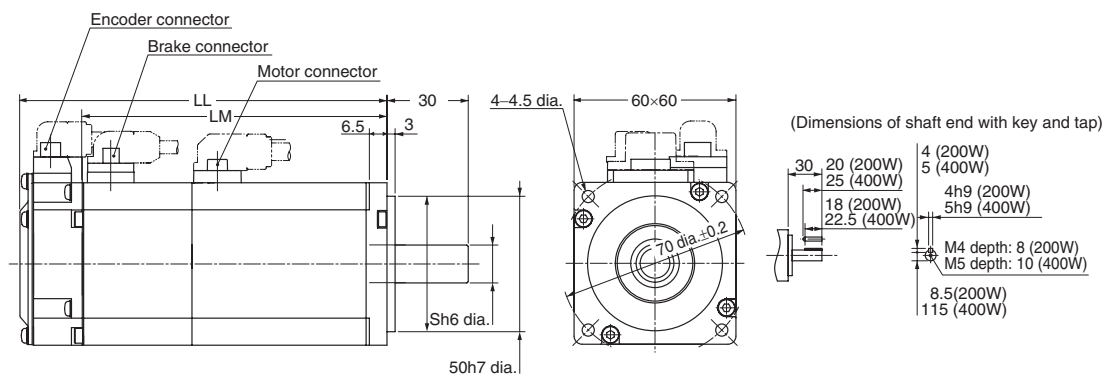
Note: The standard models have a straight shaft. A model with a key and tap is indicated by adding "S2" to the end of the model number. Models with an oil seal are indicated with O at the end of the model number. The motor dimensions do not change.

• With brake

- R88M-K20030□-B (S2)/-K40030□-B (S2) **INC**
- R88M-K20030□-B (S2)/-K40030□-B (S2) **ABS**

Model	Dimensions (mm)		
	LL	LM	S
R88M-K20030□-B□	116	93	11
R88M-K40030□-B□	135.5	112.5	14

CAD data

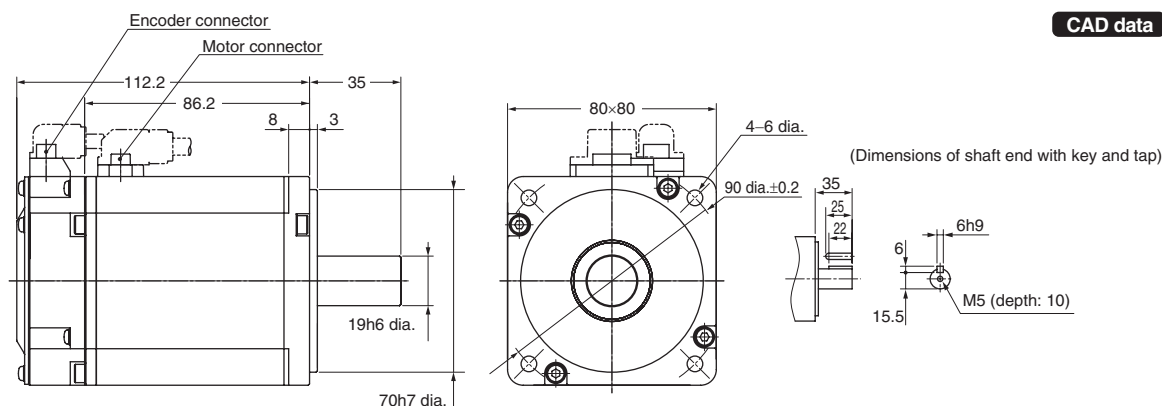


750W

• Without brake

- R88M-K75030H (-S2) **INC**
- R88M-K75030T (-S2) **ABS**

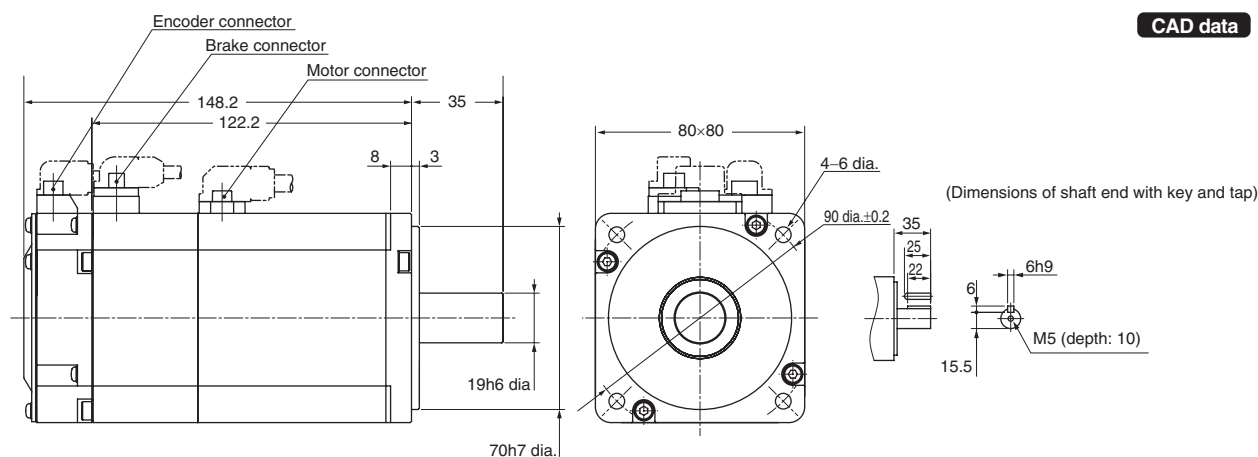
CAD data



• With brake

- R88M-K75030H-B (S2) **INC**
- R88M-K75030T-B (S2) **ABS**

CAD data



Note: The standard models have a straight shaft. A model with a key and tap is indicated by adding "S2" to the end of the model number. Models with an oil seal are indicated with O at the end of the model number. The motor dimensions do not change.

AC Servomotor/Drive G5-series

1kW/1.5kW/2kW

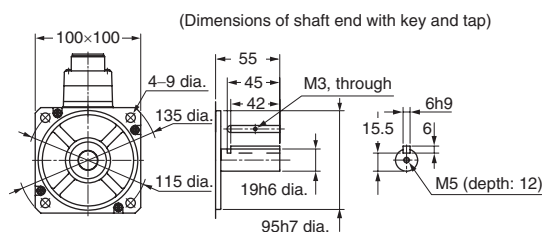
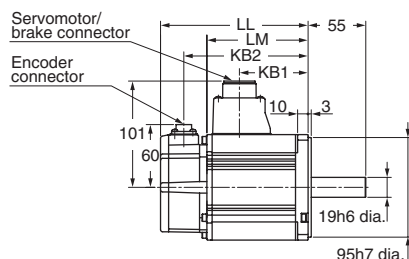
• Without brake

- R88M-K1K030H (-S2)/-K1K530H (-S2)/-K2K030H (-S2) **INC**
- R88M-K1K030T (-S2)/-K1K530T (-S2)/-K2K030T (-S2) **ABS**

• With brake

- R88M-K1K030H-B (S2)/-K1K530H-B (S2)/-K2K030H-B (S2) **INC**
- R88M-K1K030T-B (S2)/-K1K530T-B (S2)/-K2K030T-B (S2) **ABS**

Model	Dimensions (mm)			
	LL	LM	KB1	KB2
R88M-K1K030 □	141	97	66	119
R88M-K1K530 □	159.5	115.5	84.5	137.5
R88M-K2K030 □	178.5	134.5	103.5	156.5
R88M-K1K030 □-B□	168	124	66	146
R88M-K1K530 □-B□	186.5	142.5	84.5	164.5
R88M-K2K030 □-B□	205.5	161.5	103.5	183.5



CAD data

3kW

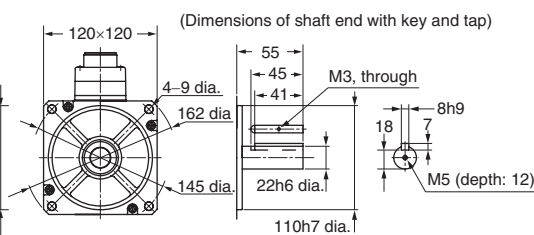
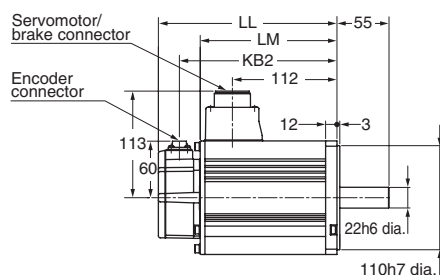
• Without brake

- R88M-K3K030H (-S2) **INC**
- R88M-K3K030T (-S2) **ABS**

• With brake

- R88M-K3K030H-B (S2) **INC**
- R88M-K3K030T-B (S2) **ABS**

Model	Dimensions (mm)		
	LL	LM	KB2
R88M-K3K030 □	190	146	168
R88M-K3K030 □-B□	215	171	193



CAD data

4kW/5kW

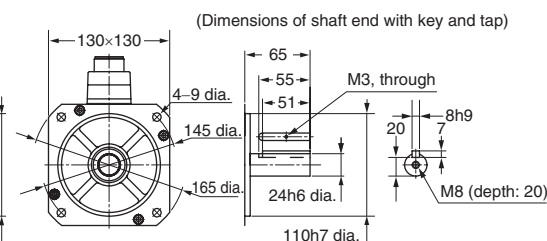
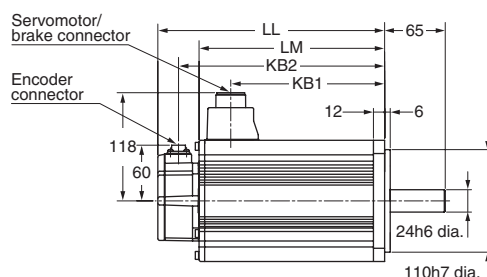
• Without brake

- R88M-K4K030H (-S2)/-K5K030H (-S2) **INC**
- R88M-K4K030T (-S2)/-K5K030T (-S2) **ABS**

• With brake

- R88M-K4K030H-B (S2)/-K5K030H-B (S2) **INC**
- R88M-K4K030T-B (S2)/-K5K030T-B (S2) **ABS**

Model	Dimensions (mm)			
	LL	LM	KB1	KB2
R88M-K4K030 □	208	164	127	186
R88M-K5K030 □	243	199	162	221
R88M-K4K030 □-B□	233	189	127	211
R88M-K5K030 □-B□	268	224	162	246



CAD data

Note: The standard models have a straight shaft. A model with a key and tap is indicated by adding "S2" to the end of the model number. Models with an oil seal are indicated with O at the end of the model number. The motor dimensions do not change.

3,000 r/min Servomotors (400 VAC)

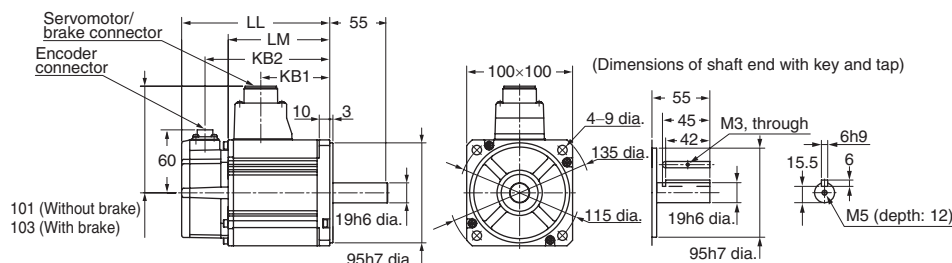
750W/1kW/1.5kW/2kW

• Without brake

- R88M-K75030F (-S2)/-K1K030F (-S2)/-K1K530F (-S2)/-K2K030F (-S2) **INC**
- R88M-K75030C (-S2)/-K1K030C (-S2)/-K1K530C (-S2)/-K2K030C (-S2) **ABS**

• With brake

- R88M-K75030F-B (S2)/-K1K030F-B (S2)/-K1K530F-B (S2)/-K2K030F-B (S2) **INC**
- R88M-K75030C-B (S2)/-K1K030C-B (S2)/-K1K530C-B (S2)/-K2K030C-B (S2) **ABS**



CAD data

Model	Dimensions (mm)			
	LL	LM	KB1	KB2
R88M-K75030□	131.5	87.5	56.5	109.5
R88M-K1K030□	141	97	66	119
R88M-K1K530□	159.5	115.5	84.5	137.5
R88M-K2K030□	178.5	134.5	103.5	156.5
R88M-K75030□-B□	158.5	114.5	53.5	136.5
R88M-K1K030□-B□	168	124	63	146
R88M-K1K530□-B□	186.5	142.5	81.5	164.5
R88M-K2K030□-B□	205.5	161.5	100.5	183.5

3kW

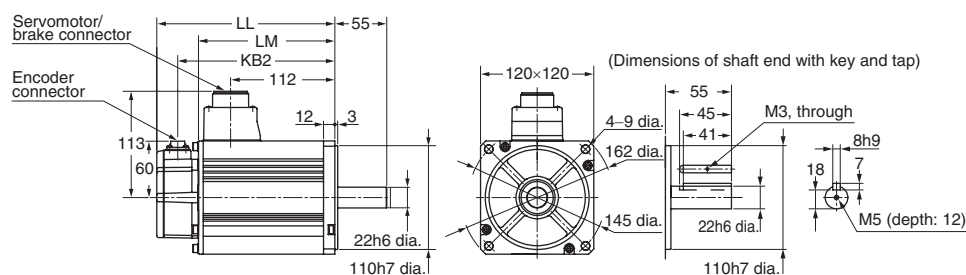
• Without brake

- R88M-K3K030F (-S2) **INC**
- R88M-K3K030C (-S2) **ABS**

• With brake

- R88M-K3K030F-B (S2) **INC**
- R88M-K3K030C-B (S2) **ABS**

Model	Dimensions (mm)		
	LL	LM	KB2
R88M-K3K030□	190	146	168
R88M-K3K030□-B□	215	171	193



CAD data

Note: The standard models have a straight shaft. A model with a key and tap is indicated by adding "S2" to the end of the model number. Models with an oil seal are indicated with O at the end of the model number. The motor dimensions do not change.

General-purpose Inputs
System Configuration

ML-II Type
System Configuration

General-purpose Inputs
Servo Drive

ML-II Type
Servo Drive

Servomotors

AC Servomotor/Drive G5-series

4kW/5kW

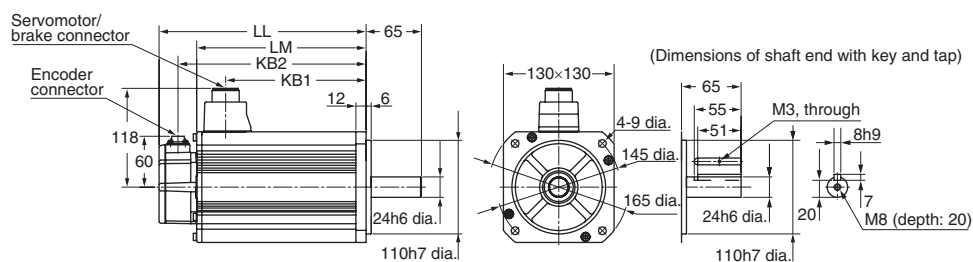
• Without brake

- R88M-K4K030F (-S2)/-K5K030F (-S2) **INC**
- R88M-K4K030C (-S2)/-K5K030C (-S2) **ABS**

• With brake

- R88M-K4K030F-B (S2)/-K5K030F-B (S2) **INC**
- R88M-K4K030C-B (S2)/-K5K030C-B (S2) **ABS**

Model	Dimensions (mm)			
	LL	LM	KB1	KB2
R88M-K4K030□	208	164	127	186
R88M-K5K030□	243	199	162	221
R88M-K4K030□-B□	233	189	127	211
R88M-K5K030□-B□	268	224	162	246



CAD data

Note: The standard models have a straight shaft. A model with a key and tap is indicated by adding "S2" to the end of the model number. Models with an oil seal are indicated with O at the end of the model number. The motor dimensions do not change.

1,500r/min, 2,000 r/min Servomotors (200 VAC)

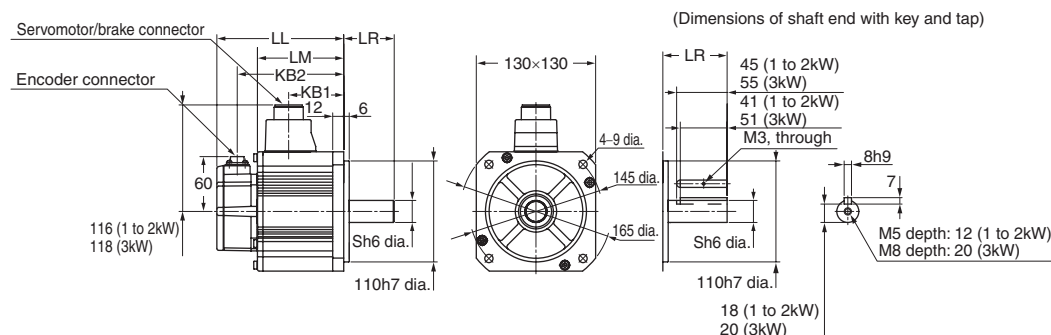
1kW/1.5kW/2kW/3kW

• Without brake

- R88M-K1K020H (-S2)/-K1K520H (-S2)/-K2K020H (-S2)/-K3K020H (-S2) **INC**
- R88M-K1K020T (-S2)/-K1K520T (-S2)/-K2K020T (-S2)/-K3K020T (-S2) **ABS**

• With brake

- R88M-K1K020H-B (S2)/-K1K520H-B (S2)/-K2K020H-B (S2)/-K3K020H-B (S2) **INC**
- R88M-K1K020T-B (S2)/-K1K520T-B (S2)/-K2K020T-B (S2)/-K3K020T-B (S2) **ABS**



CAD data

Model	Dimensions (mm)					
	LL	LR	LM	S	KB1	KB2
R88M-K1K020□	138	55	94	22	60	116
R88M-K1K520□	155.5	55	111.5	22	77.5	133.5
R88M-K2K020□	173	55	129	22	95	151
R88M-K3K020□	208	65	164	24	127	186
R88M-K1K020□-B□	163	55	119	22	60	141
R88M-K1K520□-B□	180.5	55	136.5	22	77.5	158.5
R88M-K2K020□-B□	198	55	154	22	95	176
R88M-K3K020□-B□	233	65	189	24	127	211

4kW/5kW

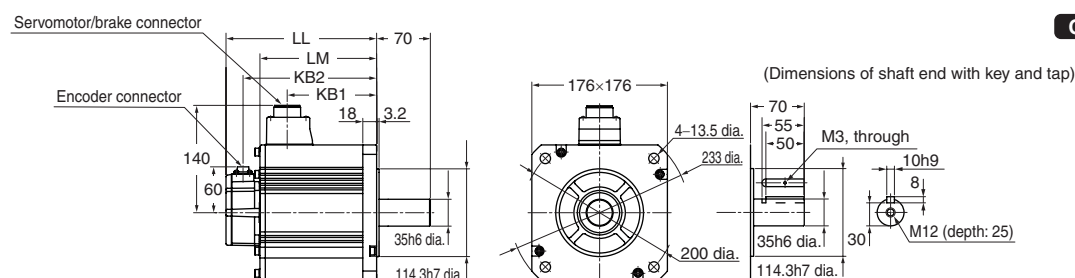
• Without brake

- R88M-K4K020H (-S2)/-K5K020H (-S2) **INC**
- R88M-K4K020T (-S2)/-K5K020T (-S2) **ABS**

• With brake

- R88M-K4K020H-B (S2)/-K5K020H-B (S2) **INC**
- R88M-K4K020T-B (S2)/-K5K020T-B (S2) **ABS**

Model	Dimensions (mm)			
	LL	LM	KB1	KB2
R88M-K4K020□	177	133	96	155
R88M-K5K020□	196	152	115	174
R88M-K4K020□-B□	202	158	96	180
R88M-K5K020□-B□	221	177	115	199



CAD data

Note: The standard models have a straight shaft. A model with a key and tap is indicated by adding "S2" to the end of the model number. Models with an oil seal are indicated with O at the end of the model number. The motor dimensions do not change.

General-purpose Inputs
System Configuration

ML-II Type
System Configuration

General-purpose Inputs
Servo Drive

ML-II Type
Servo Drive

Servomotors

AC Servomotor/Drive G5-series

7.5kW

• Without brake

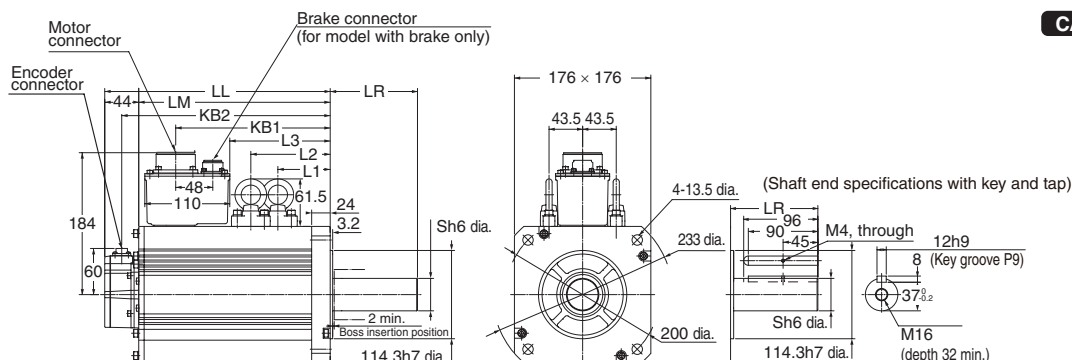
- R88M-K7K515T (-S2) **ABS**

• With brake

- R88M-K7K515T-B (S2) **ABS**

Model	Dimensions (mm)								
	LL	LR	LM	S	KB1	KB2	L1	L2	L3
R88M-K7K515T□	312	113	268	42	219	290	117.5	117.5	149
R88M-K7K515T-B□	337	113	293	42	253	315	117.5	152.5	183

CAD data



11kW/15kW

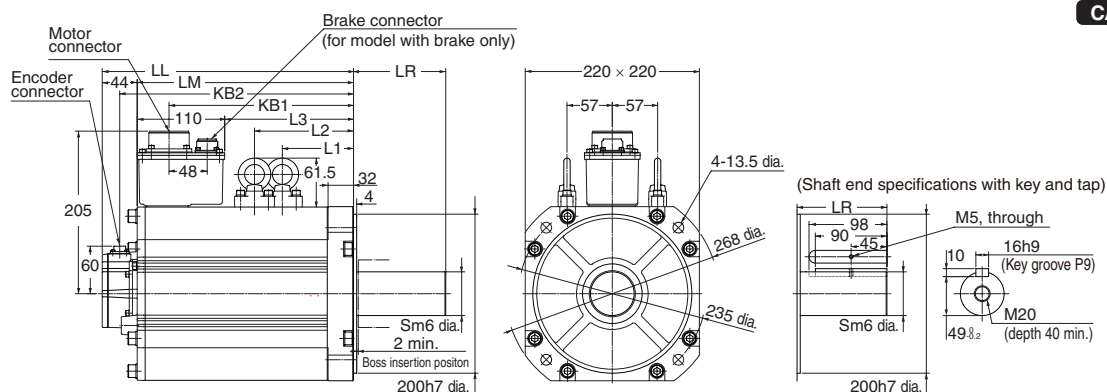
• Without brake

- R88M-K11K015T (-S2)/K15K015T (-S2) **ABS**

• With brake

- R88M-K11K015T-B (S2)/R88M-K15K015T-B (S2) **ABS**

CAD data



Model	Dimensions (mm)								
	LL	LR	LM	S	KB1	KB2	L1	L2	L3
R88M-K11K015T□	316	116	272	55	232	294	124.5	124.5	162
R88M-K15K015T□	384	116	340	55	300	362	158.5	158.5	230
R88M-K11K015T-B□	364	116	320	55	266	342	124.5	159.5	196
R88M-K15K015T-B□	432	116	388	55	334	410	158.5	193.5	264

Note: The standard models have a straight shaft. A model with a key and tap is indicated by adding "S2" to the end of the model number. Models with an oil seal are indicated with O at the end of the model number. The motor dimensions do not change.

1,500 r/min, 2,000 r/min Servomotors (400 VAC)

400W/600W

• Without brake

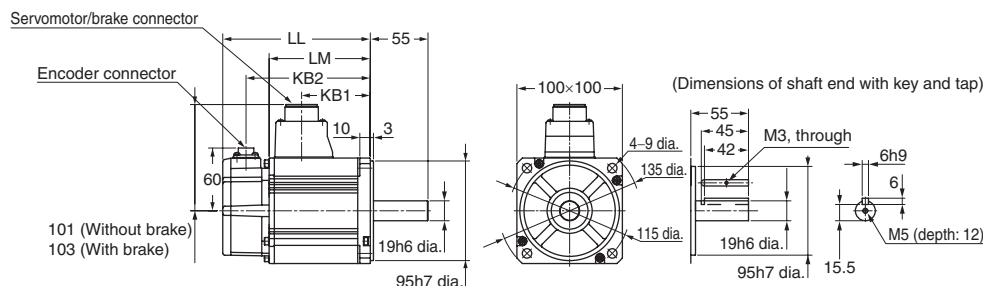
- R88M-K40020F (-S2)/-K60020F (-S2) **INC**
- R88M-K40020C (-S2)/-K60020C (-S2) **ABS**

• With brake

- R88M-K40020F-B (S2)/-K60020F-B (S2) **INC**
- R88M-K40020C-B (S2)/-K60020C-B (S2) **ABS**

Model	Dimensions (mm)			
	LL	LM	KB1	KB2
R88M-K40020□	131.5	87.5	56.5	109.5
R88M-K60020□	141	97	66	119
R88M-K40020□-B□	158.5	114.5	53.5	136.5
R88M-K60020□-B□	168	124	63	146

CAD data



1kW/1.5kW/2kW/3kW

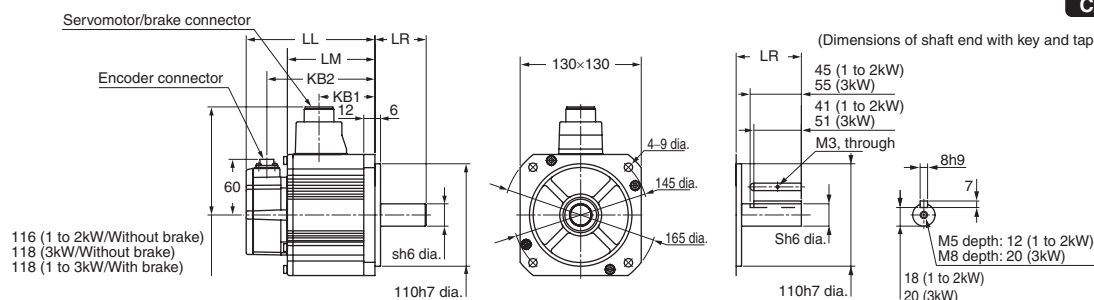
• Without brake

- R88M-K1K020F (-S2)/-K1K520F (-S2)/-K2K020F (-S2)/-K3K020F (-S2) **INC**
- R88M-K1K020C (-S2)/-K1K520C (-S2)/-K2K020C (-S2)/-K3K020C (-S2) **ABS**

• With brake

- R88M-K1K020F-B (S2)/-K1K520F-B (S2)/-K2K020F-B (S2)/-K3K020F-B (S2) **INC**
- R88M-K1K020C-B (S2)/-K1K520C-B (S2)/-K2K020C-B (S2)/-K3K020C-B (S2) **ABS**

CAD data



Model	Dimensions (mm)					
	LL	LR	LM	S	KB1	KB2
R88M-K1K020□	138	55	94	22	60	116
R88M-K1K520□	155.5	55	111.5	22	77.5	133.5
R88M-K2K020□	173	55	129	22	95	151
R88M-K3K020□	208	65	164	24	127	186
R88M-K1K020□-B□	163	55	119	22	57	141
R88M-K1K520□-B□	180.5	55	136.5	22	74.5	158.5
R88M-K2K020□-B□	198	55	154	22	92	176
R88M-K3K020□-B□	233	65	189	24	127	211

Note: The standard models have a straight shaft. A model with a key and tap is indicated by adding "S2" to the end of the model number. Models with an oil seal are indicated with O at the end of the model number. The motor dimensions do not change.

AC Servomotor/Drive G5-series

4kW/5kW

• Without brake

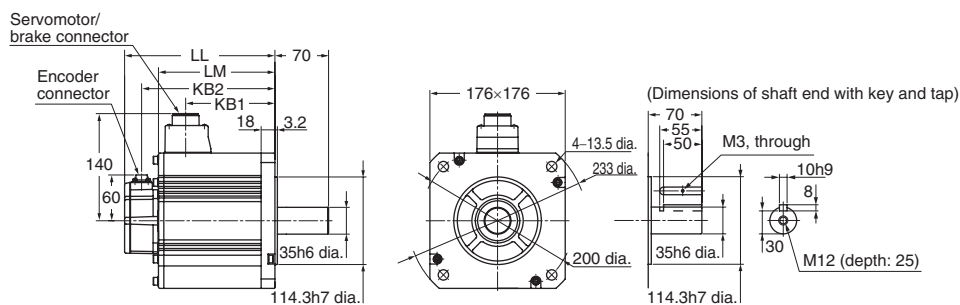
- R88M-K4K020F (-S2)/-K5K020F (-S2) **INC**
- R88M-K4K020C (-S2)/-K5K020C (-S2) **ABS**

• With brake

- R88M-K4K020F-B (S2)/-K5K020F-B (S2) **INC**
- R88M-K4K020C-B (S2)/-K5K020C-B (S2) **ABS**

Model	Dimensions (mm)			
	LL	LM	KB1	KB2
R88M-K4K020□	177	133	96	155
R88M-K5K020□	196	152	115	174
R88M-K4K020□-B□	202	158	96	180
R88M-K5K020□-B□	221	177	115	199

CAD data



7.5kW

• Without brake

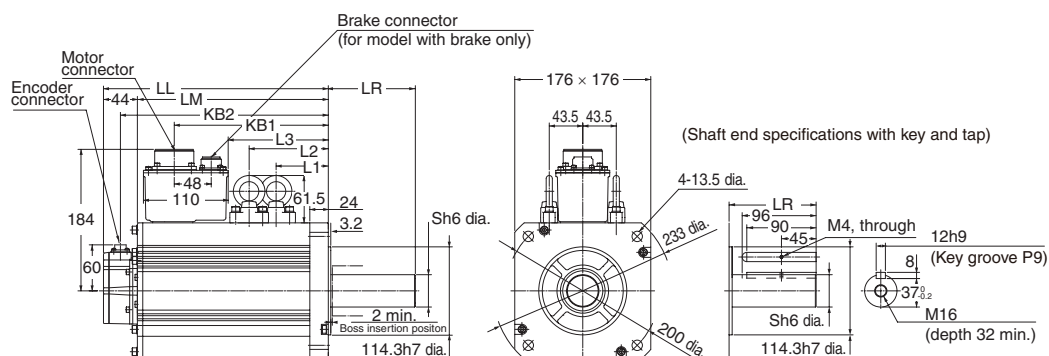
- R88M-K7K515C (-S2) **ABS**

• With brake

- R88M-K7K515C-B (S2) **ABS**

Model	Dimensions (mm)								
	LL	LR	LM	S	KB1	KB2	L1	L2	L3
R88M-K7K515C□	312	133	268	42	219	290	117.5	117.5	149
R88M-K7K515C-B□	337	113	293	42	253	315	117.5	152.5	183

CAD data



Note: The standard models have a straight shaft. A model with a key and tap is indicated by adding "S2" to the end of the model number. Models with an oil seal are indicated with O at the end of the model number. The motor dimensions do not change.

11kW/15kW

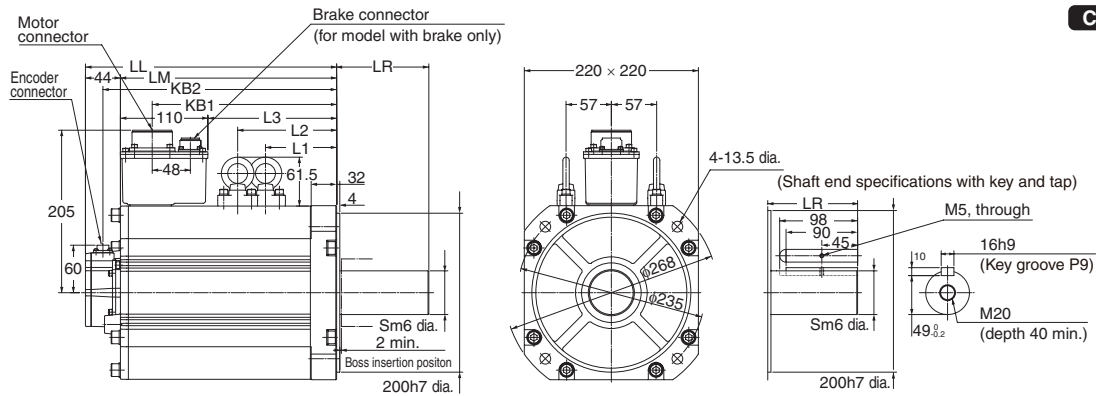
• Without brake

- R88M-K11K015C (-S2)/-K15K015C (-S2) **ABS**

• With brake

- R88M-K11K015C-B (S2)/R88M-K15K015C-B (S2) **ABS**

CAD data



Model	Dimensions (mm)								
	LL	LR	LM	S	KB1	KB2	L1	L2	L3
R88M-K11K015C□	316	116	272	55	232	294	124.5	124.5	162
R88M-K15K015C□	384	116	340	55	300	362	158.5	158.5	230
R88M-K11K015C-B□	364	116	320	55	266	342	124.5	159.5	196
R88M-K15K015C-B□	432	116	388	55	334	410	158.5	193.5	264

Note: The standard models have a straight shaft. A model with a key and tap is indicated by adding "S2" to the end of the model number. Models with an oil seal are indicated with O at the end of the model number. The motor dimensions do not change.

General-purpose Inputs
System Configuration

ML-II Type
System Configuration

General-purpose Inputs
Servo Drive

ML-II Type
Servo Drive

Servomotors

AC Servomotor/Drive G5-series

1,000 r/min Servomotors (200 VAC)

900W

• Without brake

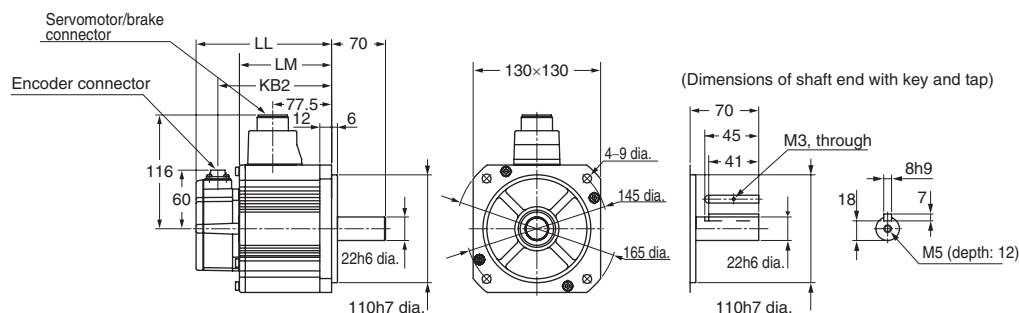
- R88M-K90010H (-S2) **INC**
- R88M-K90010T (-S2) **ABS**

• With brake

- R88M-K90010H-B (S2) **INC**
- R88M-K90010T-B (S2) **ABS**

Model	Dimensions (mm)		
	LL	LM	KB2
R88M-K90010□	155.5	111.5	133.5
R88M-K90010□-B□	180.5	136.5	158.5

CAD data



2kW/3kW

• Without brake

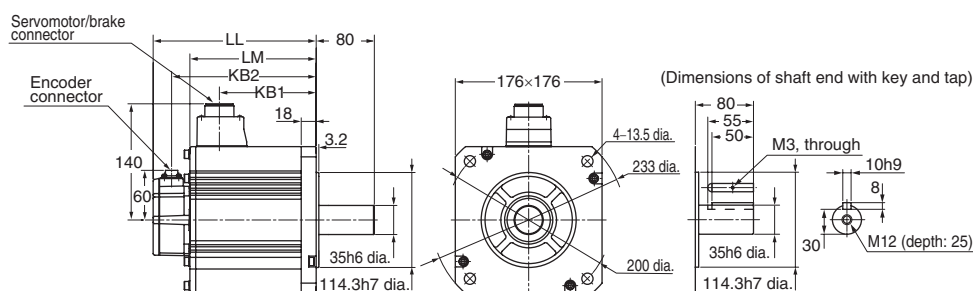
- R88M-K2K010H (-S2)/-K3K010H (-S2) **INC**
- R88M-K2K010T (-S2)/-K3K010T (-S2) **ABS**

• With brake

- R88M-K2K010H-B (S2)/-K3K010H-B (S2) **INC**
- R88M-K2K010T-B (S2)/-K3K010T-B (S2) **ABS**

Model	Dimensions (mm)			
	LL	LM	KB1	KB2
R88M-K2K010□	163.5	119.5	82.5	141.5
R88M-K3K010□	209.5	165.5	128.5	187.5
R88M-K2K010□-B□	188.5	144.5	82.5	166.5
R88M-K3K010□-B□	234.5	190.5	128.5	212.5

CAD data



4.5kW

• Without brake

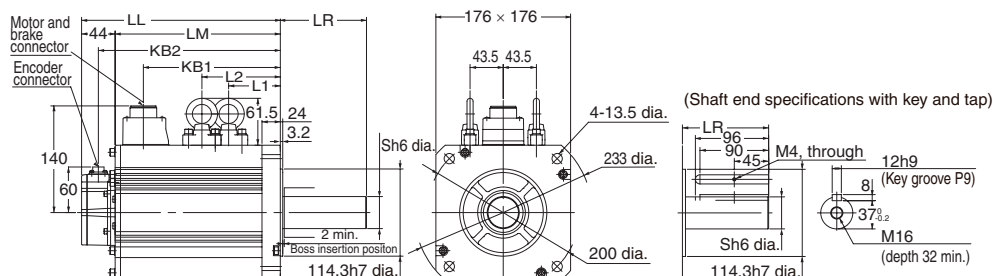
- R88M-K4K510T (-S2) **ABS**

• With brake

- R88M-K4K510T-B (S2) **ABS**

Model	Dimensions (mm)							
	LL	LR	LM	S	KB1	KB2	L1	L2
R88M-K4K510T□	266	113	222	42	185	244	98	98
R88M-K4K510T-B□	291	113	247	42	185	269	98	133

CAD data



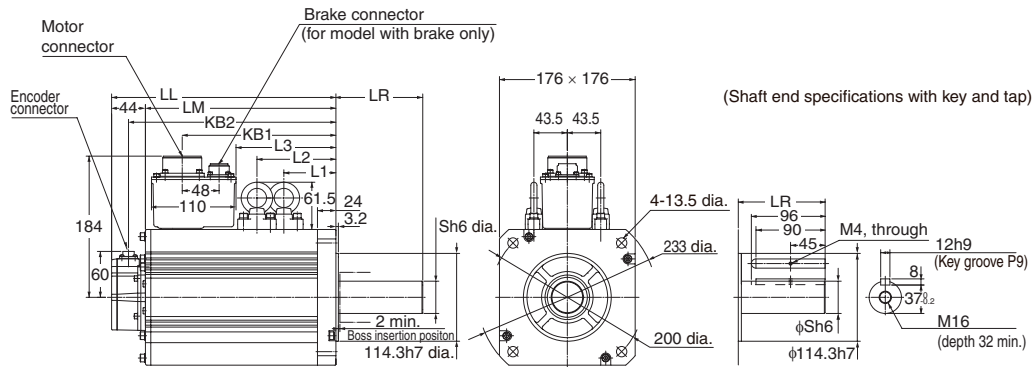
Note: The standard models have a straight shaft. A model with a key and tap is indicated by adding "S2" to the end of the model number. Models with an oil seal are indicated with O at the end of the model number. The motor dimensions do not change.

6kW

- Without brake
 - R88M-K6K010T (-S2) **ABS**
- With brake
 - R88M-K6K010T-B (S2) **ABS**

Model	Dimensions (mm)								
	LL	LR	LM	S	KB1	KB2	L1	L2	L3
R88M-K6K010T□	312	113	268	42	219	290	117.5	117.5	149
R88M-K6K010T-B□	337	113	293	42	253	315	117.5	152.5	183

CAD data



Note: The standard models have a straight shaft. A model with a key and tap is indicated by adding “S2” to the end of the model number. Models with an oil seal are indicated with O at the end of the model number. The motor dimensions do not change.

AC Servomotor/Drive G5-series

1,000 r/min Servomotors (400 VAC)

900W

• Without brake

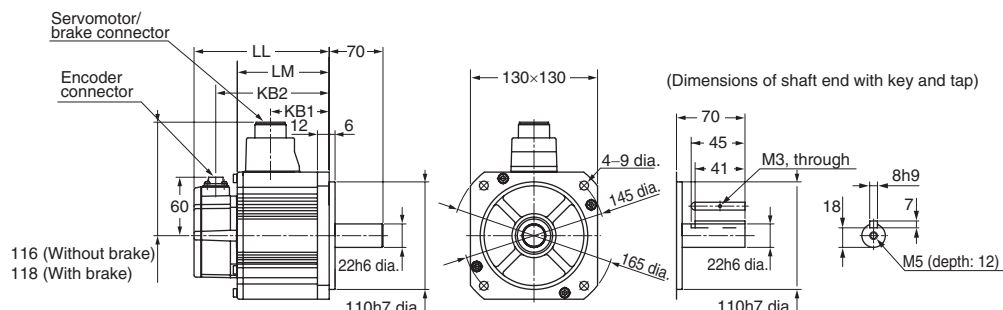
- R88M-K90010F (-S2) **INC**
- R88M-K90010C (-S2) **ABS**

• With brake

- R88M-K90010F-B (S2) **INC**
- R88M-K90010C-B (S2) **ABS**

Model	Dimensions (mm)			
	LL	LM	KB1	KB2
R88M-K90010□	155.5	111.5	77.5	133.5
R88M-K90010□-B□	180.5	136.5	74.5	158.5

CAD data



2kW/3kW

• Without brake

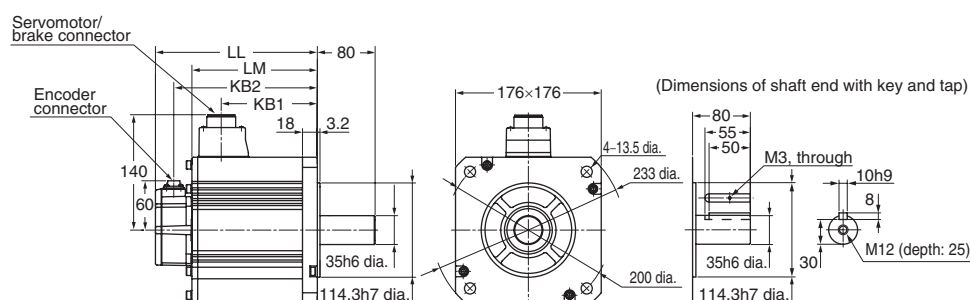
- R88M-K2K010F (-S2)/-K3K010F (-S2) **INC**
- R88M-K2K010C (-S2)/-K3K010C (-S2) **ABS**

• With brake

- R88M-K2K010F-B (S2)/-K3K010F-B (S2) **INC**
- R88M-K2K010C-B (S2)/-K3K010C-B (S2) **ABS**

Model	Dimensions (mm)			
	LL	LM	KB1	KB2
R88M-K2K010□	163.5	119.5	82.5	141.5
R88M-K3K010□	209.5	165.5	128.5	187.5
R88M-K2K010□-B□	188.5	144.5	82.5	166.5
R88M-K3K010□-B□	234.5	190.5	128.5	212.5

CAD data



4.5kW

• Without brake

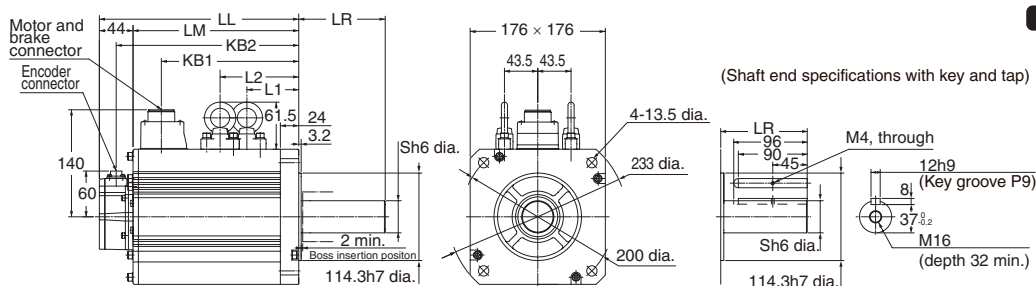
- R88M-K4K510C (-S2) **ABS**

• With brake

- R88M-K4K510C-B (S2) **ABS**

Model	Dimensions (mm)							
	LL	LR	LM	S	KB1	KB2	L1	L2
R88M-K4K510T□	266	113	222	42	185	244	98	98
R88M-K4K510T-B□	291	113	247	42	185	269	98	133

CAD data



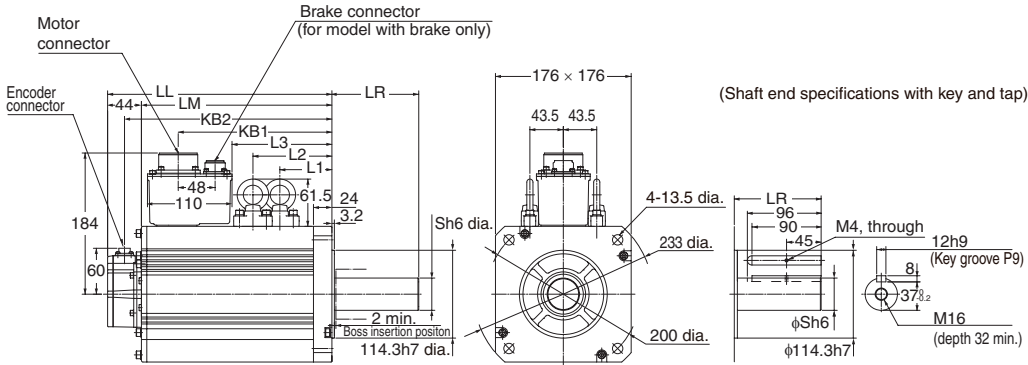
Note: The standard models have a straight shaft. A model with a key and tap is indicated by adding "S2" to the end of the model number. Models with an oil seal are indicated with O at the end of the model number. The motor dimensions do not change.

6kW

- Without brake
 - R88M-K6K010C (-S2) **ABS**
- With brake
 - R88M-K6K010C-B (S2) **ABS**

Model	Dimensions (mm)								
	LL	LR	LM	S	KB1	KB2	L1	L2	L3
R88M-K6K010C□	312	113	268	42	219	290	117.5	117.5	149
R88M-K6K010C-B□	337	113	293	42	253	315	117.5	152.5	183

CAD data



Note: The standard models have a straight shaft. A model with a key and tap is indicated by adding “S2” to the end of the model number. Models with an oil seal are indicated with O at the end of the model number. The motor dimensions do not change.

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OMRON Corporation Industrial Automation Company
Tokyo, JAPAN

Contact: www.ia.omron.com

Regional Headquarters

OMRON EUROPE B.V.

Wegalaan 67-69-2132 JD Hoofddorp
The Netherlands
Tel: (31)2356-81-300/Fax: (31)2356-81-388

OMRON ELECTRONICS LLC

One Commerce Drive Schaumburg,
IL 60173-5302 U.S.A.
Tel: (1) 847-843-7900/Fax: (1) 847-843-7787

OMRON ASIA PACIFIC PTE. LTD.

No. 438A Alexandra Road # 05-05/08 (Lobby 2),
Alexandra Technopark,
Singapore 119967
Tel: (65) 6835-3011/Fax: (65) 6835-2711

OMRON (CHINA) CO., LTD.

Room 2211, Bank of China Tower,
200 Yin Cheng Zhong Road,
PuDong New Area, Shanghai, 200120, China
Tel: (86) 21-5037-2222/Fax: (86) 21-5037-2200

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