

Industrial Automation Guide 2016



Industrial Products & Systems

industrial.omron.eu

Targeted Technologies

Creating maximum output with minimum input

By identifying the many ways of innovation in specific industries we developed the 'targeted technologies' concept. It's a way of thinking about technology in a prioritized format. Prioritized according to our customers' most pressing needs. The result? A set of solutions that make immediate impact on the core of our customers' businesses. A set of solutions that hit the target every time. Take a look at the examples on our website.

industrial.omron.eu/technologies



PROplus Line

If you have a complex application or one where you need to address special needs, then the PROplus Line is the answer. That's because PROplus products are designed to be customisable.

The possibility to modify a PROplus product means that your application is unique. However, this does not mean that the PROplus Line is not a ready-made solution. On the contrary, it is a challenge.

For example, the PROplus 4000 series is designed to be modified to meet your needs. It can be modified to meet your needs in terms of I/O, communication, and more. This makes the PROplus 4000 series a challenge.

EE-NH temperature controller

The new EE-NH series is the most powerful and precise temperature controller. It features a 16-bit ADC and a 16-bit DAC. It also has a 16-bit timer and a 16-bit counter. It is designed to be modified to meet your needs.

The 361° Approach



OMRON

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Technologies

Creating maximum output with minimum input

Whatever type of automated machinery you are specialized in, you know that there are many ways to innovate. You are already aware that there are many possible areas for improvement. But where do you start? Where do you focus your efforts? Where can you make the biggest difference with the least amount of effort?

At Omron, we asked ourselves these questions too. And by identifying the answers in specific industries we developed the 'targeted technologies' concept. It's a way of thinking about technology in a prioritized format. Prioritized according to our customers' most pressing needs. The result? A set of solutions that make immediate impact on the core of our customers' businesses. A set of solutions that hit the target every time. Take a look at the examples below.

Technologies

Sysmac: the all-in-one platform

We know that machine builders prefer different product solutions for different challenges. But this can cause hierarchy headaches and communications issues. That's why we developed Sysmac: a single unified platform that is open, scalable, flexible, and totally focused on maximising the speed and flexibility of machines. A platform that integrates robotic, motion and sequential logic control into a single multitasking system.

[Learn more](#)



361°: the perfect match

When it comes to sensors and components, we know that our customers all have different needs. That's why our product development in this area is driven by the 361° Approach. It produces product families that offer a total all-round choice. From quality products suited to standard environments to specialist devices that can handle extremes. A full circle of choice, all with an extra degree of quality and proven reliability.

[Learn more](#)



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realizing

The 361° portfolio

PROplus
PROplus products are designed for specialty applications or customer demands.

[Learn more](#)



LITE

LITE sensors are the most effective without any compromise in quality.

[Learn more](#)



PRO

PRO sensors offer the best performance in your sensors and components. The Omron PRO Line is your perfect choice.

[Learn more](#)



Product groups

Sysmac controller

The Sysmac controller is the most powerful and precise temperature controller. It features a 16-bit ADC and a 16-bit DAC. It also has a 16-bit timer and a 16-bit counter. It is designed to be modified to meet your needs.

Sensors

Omron sensors are the most effective without any compromise in quality.

Relays

Omron relays are the most effective without any compromise in quality.

Robotics

Omron robotics are the most effective without any compromise in quality.

361°

Omron 361° products are the most effective without any compromise in quality.

Related product news



With new G2B sensors, you only pay for what you need. Omron's new G2B sensors are the most effective without any compromise in quality.

[Learn more](#)

Related product news



ES16 - Omron's new photo sensors combine simplicity with performance. Drawing on our experience of manufacturing over a million photoelectric sensors a year, we have developed a new generation of photoelectric products that combine simple selection, installation with reliability, versatility, rugged construction and value for money.

[Learn more](#)

Related product news



Omron's new G2B sensors are the most effective without any compromise in quality.

[Learn more](#)



Omron's new G2B sensors are the most effective without any compromise in quality.

[Learn more](#)

Welcome to our world

Our best-in-class devices for your automation system

Welcome to Omron's world of advanced industrial automation. The INDUSTRIAL AUTOMATION GUIDE is your essential tool to select best-in-class devices for your automation system. It highlights our core competences in sensing, control, visualisation, motion and panel components.

Of course, Omron offers a much larger range of products than you can find on the attached DVD. For more information on services and company competence visit our website.

Here you will find:

- Latest product news
- Technical product specifications
- 2D / 3D CAD Library
- Customer references
- Technology concepts
- Supporting product documentation
- Knowledge Base - "myOmron"
- Events Calendar
- Contact information

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“To the machine the work of the machine,
to man the thrill of further creation.”

Kazuma Tateisi, founder of Omron

Omron at a glance

200.000 products ranging
input, logic and output

Sensing, Control Systems, Visualization, Drives, Robots, Safety,
Quality Control & Inspection, Control and Switching Components

7%

Investment in Research & Development

Innovation track
record of 80 years

Top 150 global patent assignee

1.200 employees dedicated to R&D

11.000 + issued and pending patents

37.000

Employees worldwide

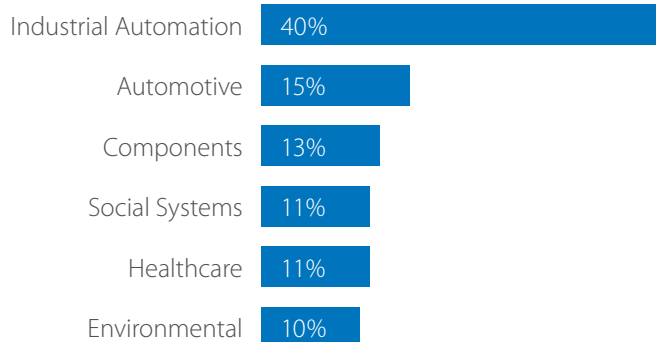
210

Locations worldwide

22

Countries in EMEA

Working for the
benefit of society



Close to your needs

Technical training & seminars, technical support, Automation Technology Centers, online community (MyOmron), online catalogues and technical documentation, customer service & sales support, inter-operability labs (Tsunagi), safety services, repairs.

Your needs, our focus

Solutions perfectly matching your needs

We asked ourselves: 'What do you need in sensors and components?' Well, first you need reliability. Then a variety and choice of performance levels. You may also want advanced functionality, with special features defined by you – or you may want standardized solutions, with highly competitive prices.

Whatever it is, it can all add up to a wish list that is difficult to fulfil. Until now. That's because our new 361° Approach not only provides a complete all-round offer without gaps, it also puts you at the very centre of the product selection process. It's an approach that leads to a Perfect Match – one with the extra degree of confidence that comes from choosing Omron.

361° in one view



Quality



Line-up



Application



Customization



Global availability



Specs

	Quality	Line-up	Application	Customization	Global availability	Specs
PRO^{plus}	Premium	Tailored	Special	Yes	Yes	Application oriented
PRO	Premium	Complete	Advanced	Yes	Yes	Above Standard
LITE	Premium	Standard	Basic	No	No	Basic
	'Quality' refers to the standard of manufacturing and the materials used – this translates into reliability	'Line-up' refers to the number of model types	'Application' indicates the complexity of the automation	'Customization' is the possibility to modify the product		'Specs' refers to the choice of performance levels

The extra degree of advantage

Three distinct lines of sensors and components

Three distinct lines

361° Approach offers three distinct lines within each sensor or component product category. LITE products are cost-effective without any compromise in quality. PRO products represent the “install & forget” option, offering longer lifetime, higher protection, and more features. While PROplus products are designed for specific applications or customer demands.

Optimized reliability

All three lines are backed by the Omron commitment to quality, so even when you need a price-competitive advantage, you can be confident that they will never let you down.

Solutions that perfectly match your needs

The 361° Approach ensures that you can quickly and easily identify the perfect match solution to your needs – nothing more, nothing less.

Optimized costs

Your sensor and component costs are also minimized – because it eliminates over-specification.

Why an extra 1°?

The extra degree is what you get when you do business with Omron, and that means different things to different customers – all depending on their needs. For example, if you need specification advice, the extra degree is ‘service’. But ultimately, to everyone it means “an extra degree of confidence in the perfect match”.



Sysmac: A fully integrated platform

Integration and Functionality

Sysmac is an integrated automation platform dedicated to providing complete control and management of your automation plant. At the core of this platform, the Machine Controller series offers synchronous control of all machine devices and advanced functionality such as motion, robotics and database connectivity. This multidisciplinary concept allows you to simplify solution architecture, reduce programming and optimize productivity.



Machine Automation Controller

FACTORY
AUTOMATION

MACHINE
CONTROL



Motion



Filling line

- Motion Control: Integrated within the IDE, and operating in real-time
- Standard PLCopen Function Blocks plus Omron generated motion FB's
- Direct Synchronous control for Position, Speed and Torque



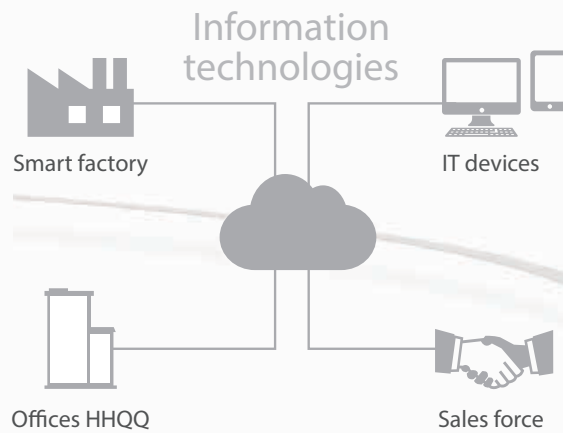
Safety



Assembly

- All safety related data is synchronized with the whole network
- Safety functions such as muting, guard locking, EDM and valve monitoring are simple to manage

- ✓ **One Integrated Development Environment software** for Configuration, Programming, Simulation and Monitoring



Information



- Sysmac communicates in real-time with Databases such as SQL
- Secure Data: In the event of a server going down or losing communications, data is automatically stored in internal memory
- Sysmac operates with Databases at high speed [1000 table element/ 100 ms] ensuring realistic Big Data Processing to improve productivity and aid predictive maintenance etc.

✓ Integrated Automation Control:

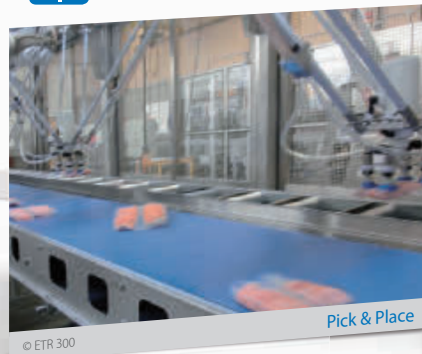
The Sysmac platform is scalable and provides the performance and functionality for a wide range of solutions from simple machines through to manufacturing cells

Vision



- Higher resolution images available without increasing the vision processing time
- Shape search technology: Provides more stable and accurate object detection for Pick & Place projects

Robotics



- Up to 8 Delta robots with one controller
- Time-based Robotic Function Blocks make programming easier

Sensing



- Full control of the process parameter setting and predictive maintenance functions
- High precision detection and positioning data synchronized on the network

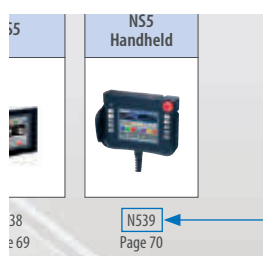
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Sensing				
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Safety				
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Software				

Motion & Drives

Find information fast!

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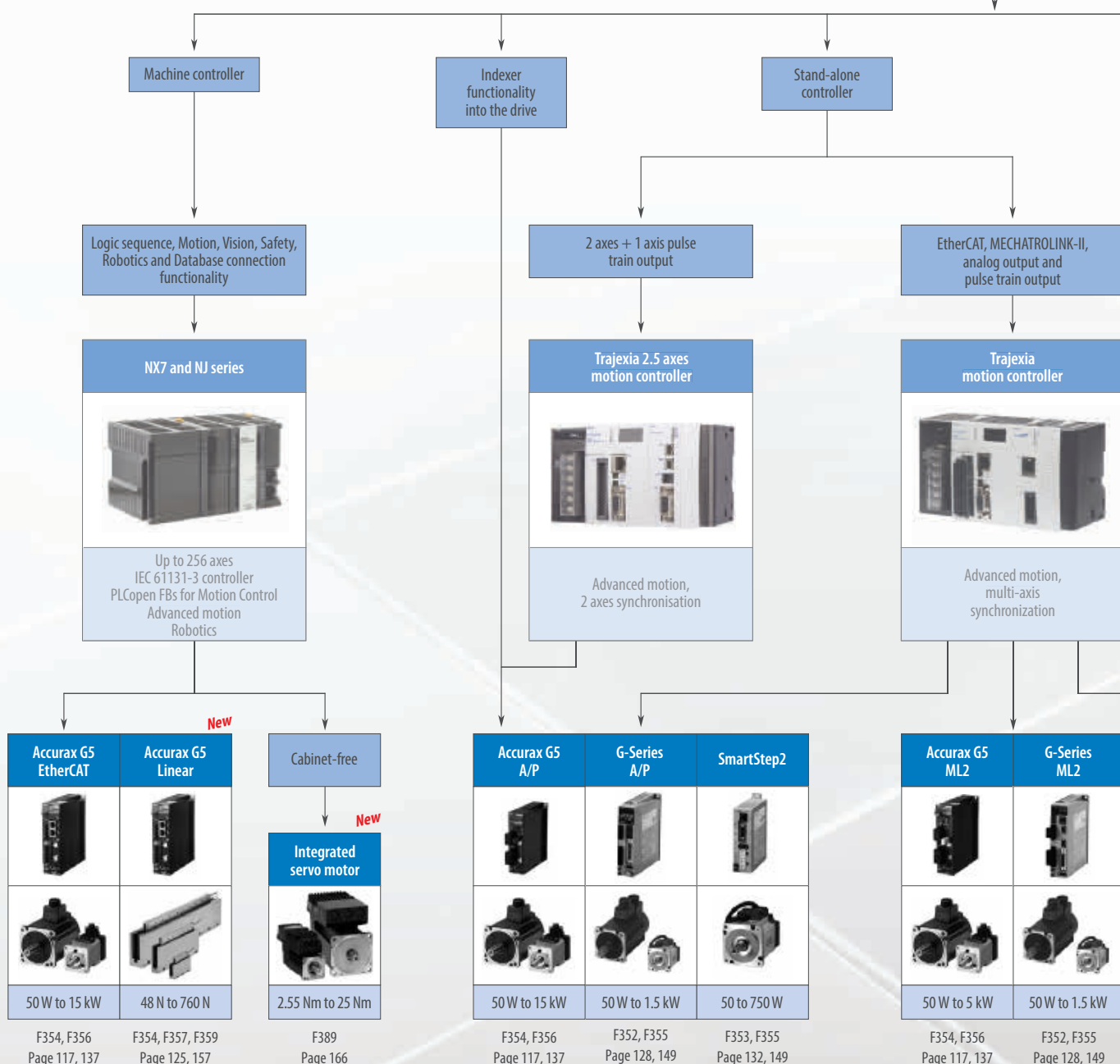
EXTREME MECHATRONICS MEETS X-STREAM AUTOMATION

At the heart of every great machine

Great machines are born from a perfect match between control and mechanics. Accurax G5 gives you the extra edge to build more accurate, faster, smaller and safer machines. You will benefit from an almost 25% reduction in motor weight, and gain 50% cabinet space. You will achieve sub micron precision and ms settling time. Some might call it perfection, we just call it tireless innovation to help you build great machines.

- EtherCAT, ML-II and analog/pulse models
- High response frequency of 2 kHz
- Safety built-in conforming ISO13849-1 PL-d
- High accuracy provided by 20 bit encoder

Which motion architecture do you need?





Based in
OMRON PLC

Drive control method?

EtherCAT

MECHATROLINK-II

Pulse train output

NC EtherCAT



Single to multi-axis
PTP applications
with linear and circular
interpolation

Trajexia-PLC



Advanced motion,
e-cam,
multi-axis
synchronization

NC MECHATROLINK-II



Single to multi-axis
PTP applications

NCs



Up to 4-axis
PTP applications

Accurax G5
EtherCAT



50 W to 15 kW

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Accurax G5
Linear



48 N to 760 N

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New

Accurax G5
ML2



50 W to 5 kW

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G-Series
ML2



50 W to 1.5 kW

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Accurax G5
A/P



50 W to 15 kW

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G-Series
A/P



50 W to 1.5 kW

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SmartStep2










50 to 750 W





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Selection table


Servo drives				
				
	Accurax G5		G-Series	SmartStep 2
	Rotary servo drive	Linear servo drive	Compact size and ML2 motion bus	Pulse train input with ultra-compact size
Ratings 230 V single-phase	100 W to 1.5 kW	200 W to 1.5 kW	100 W to 1.5 kW	100 W to 750 W
Ratings 400 V three-phase	600 W to 15 kW	600 W to 5 kW	N/A	N/A
Applicable servomotor	Accurax G5 and G-Series rotary motors	Accurax linear motors	G-Series	G-Series
Position control	EtherCAT, MECHATROLINK-II or Pulse train input	EtherCAT	MECHATROLINK-II or Pulse train input	Pulse train input
Speed control	EtherCAT, MECHATROLINK-II or Analog input ± 10 V	EtherCAT	MECHATROLINK-II or Analog input ± 10 V	N/A
Torque control	EtherCAT, MECHATROLINK-II or Analog input ± 10 V	EtherCAT	MECHATROLINK-II or Analog input ± 10 V	Torque limits only
Drive programming	Embedded indexer functionality (Only for G5 Analog/Pulse model)	N/A	N/A	N/A
Safety approvals	PLd (EN ISO 13849-1) SIL2 (IEC 61508)	PLd (EN ISO 13849-1) SIL2 (IEC 61508)	N/A	N/A
Safety function	STO	STO	N/A	N/A
Full closed loop	Built-in	N/A	N/A	N/A
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Accurax G5 servo motors				
				
	Standard models			
	3,000 r/min motor	2,000 r/min motor	1,500 r/min motor	1,000 r/min motor
Rated speed	3,000 rpm	2,000 rpm	1,500 rpm	1,000 rpm
Maximum speed	4,500 to 6,000 rpm	3,000 rpm	2,000 to 3,000 rpm	2,000 rpm
Rated torque	0.16 Nm to 15.9 Nm	1.91 Nm to 23.9 Nm	47.8 Nm to 95.5 Nm	8.59 Nm to 28.7 Nm
Sizes	50 W to 5 kW	400 W to 5 kW	7.5 kW to 15 kW	900 W to 6 kW
Applicable servo drive	Accurax G5 servo drive	Accurax G5 servo drive	Accurax G5 servo drive	Accurax G5 servo drive
Encoder resolution	20-bit incremental/ 17-bit absolute	20-bit incremental/ 17-bit absolute	17-bit absolute	20-bit incremental/ 17-bit absolute
IP rating	IP67	IP67	IP67	IP67
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Accurax G5 servo motors			
			
	High inertia models		
	3,000 r/min motor	2,000 r/min motor	1,500 r/min motor
Rated speed	3,000 rpm	2,000 rpm	1,500 rpm
Maximum speed	5,000 rpm	3,000 rpm	2,000 to 3,000 rpm
Rated torque	0.64 Nm to 2.4 Nm	4.77 Nm to 23.9 Nm	47.8 Nm
Sizes	200 W to 750 W	1 kW to 5 kW	7.5 kW
Applicable servo drive	Accurax G5 servo drive	Accurax G5 servo drive	Accurax G5 servo drive
Encoder resolution	20-bit incremental/ 17-bit absolute	20-bit incremental/ 17-bit absolute	17-bit absolute
IP rating	IP65	IP67	IP67
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	G-Series servo motors – Cylindrical type –			G-Series servo motors – Flat type –
				
	3,000 r/min motor	2,000 r/min motor	1,000 r/min motor	3,000 r/min motor
Rated speed	3,000 rpm	2,000 rpm	1,000 rpm	3,000 rpm
Maximum speed	4,500 to 5,000 rpm	3,000 rpm	2,000 rpm	5,000 rpm
Rated torque	0.16 Nm to 4.77 Nm	4.8 Nm to 7.15 Nm	8.62 Nm	0.32 Nm to 1.3 Nm
Sizes	50 to 1,500 W	1 to 1.5 kW	900 W	100 to 400 W
Applicable servo drive	SmartStep 2, G-Series and Accurax G5 servo drives	SmartStep 2, G-Series and Accurax G5 servo drives	SmartStep 2, G-Series and Accurax G5 servo drives	SmartStep 2, G-Series and Accurax G5 servo drives
Encoder resolution	10,000 pulses/revolution or 17-bit absolute/incremental	10,000 pulses/revolution or 17-bit absolute/incremental	10,000 pulses/revolution or 17-bit absolute/incremental	10,000 pulses/revolution or 17-bit absolute/incremental
IP rating	IP65	IP65	IP65	IP65
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	Accurax linear motors	
		
Type	Iron-core linear motor	Ironless linear motor
Continuous force range	48 N to 760 N	29 N to 423 N
Peak force range	105 N to 2000 N	100 N to 2100 N
Maximum speed	1 to 10 m/s	1.2 to 16 m/s
Magnetic attraction force	300 N to 4440 N	Zero
Applicable servo drive	Accurax G5 linear drive	
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	Integrated servo motors
	
Rated torque	2.55 Nm to 25 Nm
Rated speed	3,000 rpm
Maximum speed	4,000 rpm
Encoder resolution	15-bit incremental/18-bit absolute
IP rating	IP65
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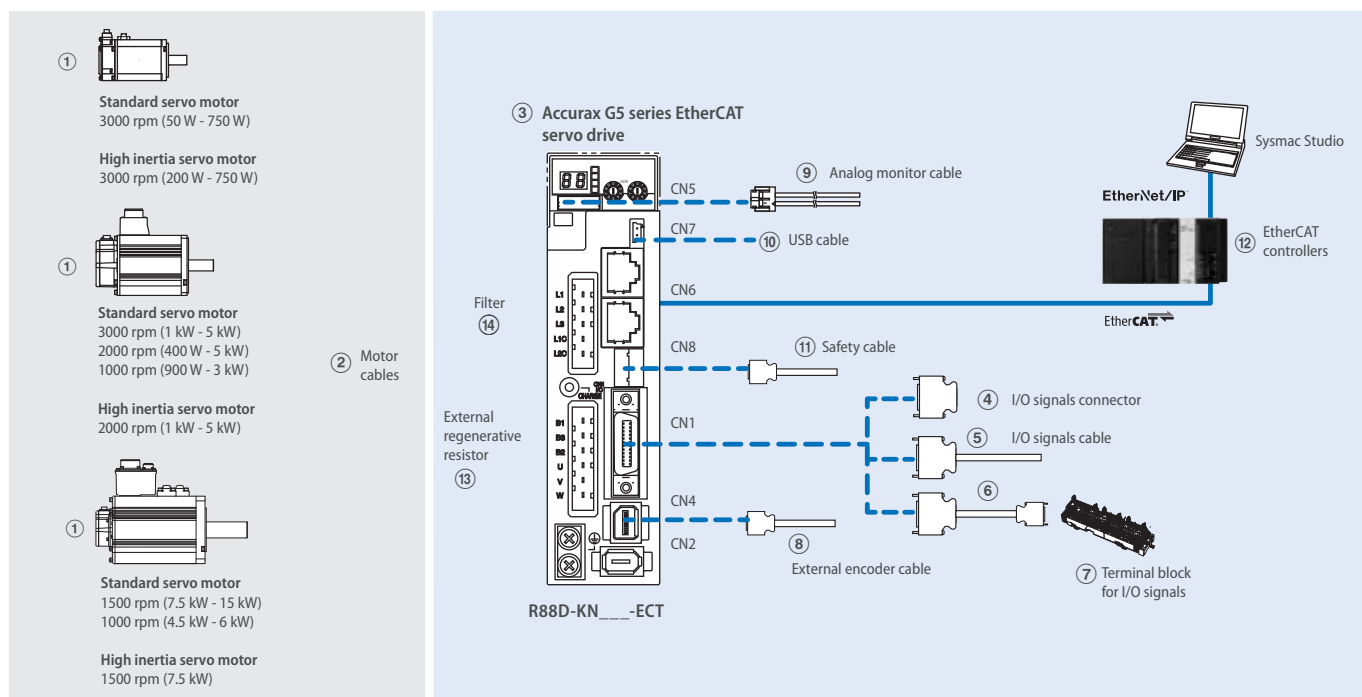


Accurate motion control in a compact size servo drive family. EtherCAT and safety built-in

- EtherCAT, ML-II and analog/pulse servo drive models
- Safety conforming ISO13849-1 PL-d
- High-response frequency of 2 kHz
- High resolution provided by 20 bits encoder
- Drive Programming: embedded indexer functionality in the analog/pulse models
- External encoder input for full closed loop
- Real time auto-tuning
- Advanced tuning algorithms (anti-vibration function, torque feedforward, disturbance observer)

Ordering information

Accurax G5 series EtherCAT reference configuration



Note: The symbols ①②③④⑤... show the recommended sequence to select the components in Accurax G5 servo system

Servo motors, power and encoder cables

Note: ①② Refer to the Accurax G5 servo motor chapter for servomotor, motor cables or connectors selection

Servo drives

Symbol	Specifications		① Compatible G5 series rotary servo motors		Servo drive models
			Standard models	High Inertia models	Order code
③	1 phase 230 VAC	100 W	R88M-K05030(H/T)-__	—	R88D-KN01H-ECT
			R88M-K10030(H/T)-__	—	
		200 W	R88M-K20030(H/T)-__	R88M-KH20030(H/T)-__	R88D-KN02H-ECT
		400 W	R88M-K40030(H/T)-__	R88M-KH40030(H/T)-__	R88D-KN04H-ECT
		750 W	R88M-K75030(H/T)-__	R88M-KH75030(H/T)-__	R88D-KN08H-ECT
		1.0 kW	R88M-K1K020(H/T)-__	—	R88D-KN10H-ECT
		1.5 kW	R88M-K1K030(H/T)-__	—	R88D-KN15H-ECT
			R88M-K1K530(H/T)-__	—	
			R88M-K1K520(H/T)-__	—	
			R88M-K90010(H/T)-__	—	
	3 phase 400 VAC	600 W	R88M-K40020(F/C)-__	—	R88D-KN06F-ECT
			R88M-K60020(F/C)-__	—	
		1.0 kW	R88M-K75030(F/C)-__	—	R88D-KN10F-ECT
			R88M-K1K020(F/C)-__	R88M-KH1K020(F/C)-__	
		1.5 kW	R88M-K1K030(F/C)-__	—	R88D-KN15F-ECT
			R88M-K1K530(F/C)-__	—	
			R88M-K1K520(F/C)-__	R88M-KH1K520(F/C)-__	
			R88M-K90010(F/C)-__	—	

Symbol	Specifications		① Compatible G5 series rotary servo motors		Servo drive models
			Standard models	High Inertia models	Order code
③	3 phase 400 VAC	2.0 kW	R88M-K2K030(F/C)-_	—	R88D-KN20F-ECT
			R88M-K2K020(F/C)-_	R88M-KH2K020(F/C)-_	
	3.0 kW		R88M-K3K030(F/C)-_	—	R88D-KN30F-ECT
			R88M-K3K020(F/C)-_	R88M-KH3K020(F/C)-_	
			R88M-K2K010(F/C)-_	—	
	5.0 kW		R88M-K4K030(F/C)-_	—	R88D-KN50F-ECT
			R88M-K5K030(F/C)-_	—	
			R88M-K4K020(F/C)-_	R88M-KH4K020(F/C)-_	
			R88M-K5K020(F/C)-_	R88M-KH5K020(F/C)-_	
			R88M-K4K510C-__	—	
			R88M-K3K010(F/C)-_	—	
	7.5 kW		R88M-K6K010C-__	—	R88D-KN75F-ECT
			R88M-K7K515C-__	R88M-KH7K515C-__	
	15 kW		R88M-K11K015C-__	—	R88D-KN150F-ECT
			R88M-K15K015C-__	—	

Signals cables for I/O general purpose (CN1)

Symbol	Description	Connect to	Length	Order code
④	I/O connector kit (26 pins)	For I/O general purpose	—	R88A-CNW01C
⑤	I/O signals cable	For I/O general purpose	1 m	R88A-CPKB001S-E
			2 m	R88A-CPKB002S-E
⑥	Terminal block cable	For I/O general purpose	1 m	XW2Z-100J-B34
			2 m	XW2Z-200J-B34
⑦	Terminal block (M3 screw and for pin terminals)		—	XW2B-20G4
	Terminal block (M3.5 screw and for fork/round terminals)		—	XW2B-20G5
	Terminal block (M3 screw and for fork/round terminals)		—	XW2D-20G6

External encoder cable (CN4)

Symbol	Name	Length	Order code
⑧	External encoder cable	5 m	R88A-CRKM005SR-E
		10 m	R88A-CRKM010SR-E
		20 m	R88A-CRKM020SR-E

Analog monitor (CN5)

Symbol	Name	Length	Order code
⑨	Analog monitor cable	1 m	R88A-CMK001S

USB personal computer cable (CN7)

Symbol	Name	Length	Order code
⑩	USB mini-connector cable	2 m	AX-CUSBM002-E

Cable for safety (CN8)

Symbol	Name	Length	Order code
⑪	Safety cable	3 m	R88A-CSK003S-E

EtherCAT controllers

Symbol	Name		Order code
⑫	Machine controller	CPU unit	NX701_
			NJ501_
			NJ301_
			NJ101_
	Trajexia stand-alone	Motion control unit	TJ2-MC64 (64 axes)
			TJ2-ECT64 (64 axes)
		EtherCAT master unit	TJ2-ECT16 (16 axes)
			TJ2-ECT04 (4 axes)
	Position controller unit for CJ1 PLC series		CJ1W-NCF8_ (16 axes)
			CJ1W-NC88_ (8 axes)
			CJ1W-NC48_ (4 axes)
			CJ1W-NC281 (2 axes)

External regenerative resistor

Symbol	Specifications	Order code
⑬	50 Ω, 80 W	R88A-RR08050S
	100 Ω, 80 W	R88A-RR080100S
	47 Ω, 220 W	R88A-RR22047S
	20 Ω, 500 W	R88A-RR50020S

Filters

Symbol	Applicable servodrive	Rated current	Leakage current	Rated voltage	Order code
⑭	R88D-KN01H-ECT, R88D-KN02H-ECT	2.4 A	3.5 mA	250 VAC single-phase	R88A-FIK102-RE
	R88D-KN04H-ECT	4.1 A	3.5 mA		R88A-FIK104-RE
	R88D-KN08H-ECT	6.6 A	3.5 mA		R88A-FIK107-RE
	R88D-KN10H-ECT, R88D-KN15H-ECT	14.2 A	3.5 mA		R88A-FIK114-RE
	R88D-KN06F-ECT, R88D-KN10F-ECT, R88D-KN15F-ECT	4 A	0.3 mA/32 mA ^{*1}	400 VAC three-phase	R88A-FIK304-RE
	R88D-KN20F-ECT	6 A	0.3 mA/32 mA ^{*1}		R88A-FIK306-RE
	R88D-KN30F-ECT, R88D-KN50F-ECT	12.1 A	0.3 mA/32 mA ^{*1}		R88A-FIK312-RE
	R88D-KN75F-ECT	22 A	0.3 mA/40 mA ^{*1}		R88A-FIK330-RE
	R88D-KN150F-ECT	44 A	2 mA/130 mA ^{*1}		R88A-FIK350-RE

^{*1} Momentary peak leakage current for the filter at switch-on/off.

Connectors

Specifications	Order code
External encoder connector (for CN4)	R88A-CN41L
Safety I/O signal connector (for CN8)	R88A-CN81S

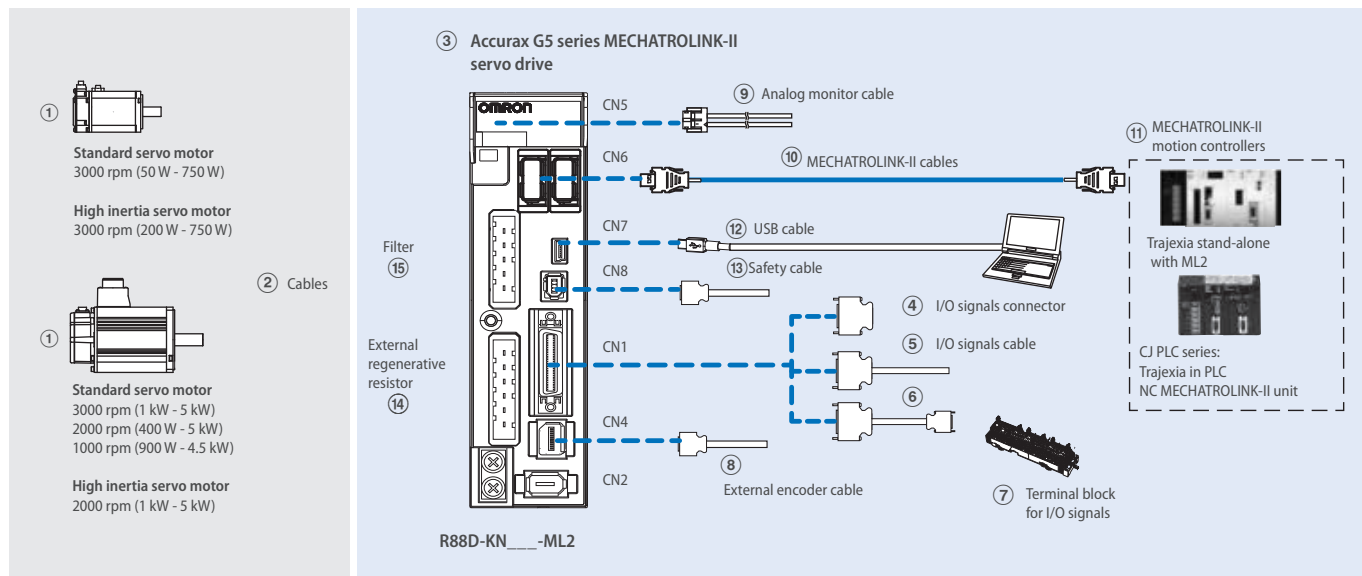
Computer software

Specifications	Order code
Sysmac Studio version 1.0 or higher	SYSMAC-SE2___*1
CX-Drive version 2.10 or higher	CX-DRIVE 2.10
CX-One software package including CX-Drive 2.10 or higher	CX-ONE

*1 Refer to the Sysmac Studio datasheet (Cat. No. SysCat_I181E) for detailed information or contact your OMRON representative

Note: If CX-One is installed on the same computer as Sysmac Studio, it must be CX-One v4.2 or higher.

Accurax G5 series MECHATROLINK-II reference configuration



Note: The symbols ①②③④⑤... show the recommended sequence to select the components in Accurax G5 servo system

Servo motors, power and encoder cables

Note: ①② Refer to the Accurax G5 servo motor section for servomotor, motor cables or connectors selection

Servo drives

Symbol	Specifications		① Compatible G5 series rotary servo motors		Servo drive models
			Standard models	High inertia models	Order code
③	1 phase 230 VAC	100 W	R88M-K05030(H/T)-__	-	R88D-KN01H-ML2
			R88M-K10030(H/T)-__	-	
		200 W	R88M-K20030(H/T)-__	R88M-KH20030(H/T)-__	R88D-KN02H-ML2
		400 W	R88M-K40030(H/T)-__	R88M-KH40030(H/T)-__	R88D-KN04H-ML2
		750 W	R88M-K75030(H/T)-__	R88M-KH75030(H/T)-__	R88D-KN08H-ML2
		1.0 kW	R88M-K1K020(H/T)-__	-	R88D-KN10H-ML2
		1.5 kW	R88M-K1K030(H/T)-__	-	R88D-KN15H-ML2
			R88M-K1K530(H/T)-__	-	
			R88M-K1K520(H/T)-__	-	
			R88M-K90010(H/T)-__	-	
	3 phase 400 VAC	600 W	R88M-K40020(F/C)-__	-	R88D-KN06F-ML2
			R88M-K60020(F/C)-__	-	
		1.0 kW	R88M-K75030(F/C)-__	-	R88D-KN10F-ML2
			R88M-K1K020(F/C)-__	R88M-KH1K020(F/C)-__	
		1.5 kW	R88M-K1K030(F/C)-__	-	R88D-KN15F-ML2
			R88M-K1K530(F/C)-__	-	
			R88M-K1K520(F/C)-__	R88M-KH1K520(F/C)-__	
			R88M-K90010(F/C)-__	-	
		2.0 kW	R88M-K2K020(F/C)-__	-	R88D-KN20F-ML2
		3.0 kW	R88M-K2K020(F/C)-__	R88M-KH2K020(F/C)-__	R88D-KN30F-ML2
			R88M-K3K030(F/C)-__	-	
			R88M-K3K020(F/C)-__	R88M-KH3K020(F/C)-__	
			R88M-K2K010(F/C)-__	-	
		5.0 kW	R88M-K4K030(F/C)-__	-	R88D-KN50F-ML2
			R88M-K5K030(F/C)-__	-	
			R88M-K4K020(F/C)-__	R88M-KH4K020(F/C)-__	
			R88M-K5K020(F/C)-__	R88M-KH5K020(F/C)-__	
			R88M-K4K510C-__	-	
			R88M-K3K010(F/C)-__	-	

Control cables (CN1)

Symbol	Description	Connect to	Length	Order code
④	I/O connector kit (26 pins)	For I/O general purpose	–	R88A-CNW01C
⑤	I/O signals cable		1 m	R88A-CPKB001S-E
			2 m	R88A-CPKB002S-E
⑥	Terminal block cable	For I/O general purpose	1 m	XW2Z-100J-B34
			2 m	XW2Z-200J-B34
⑦	Terminal block (M3 screw and for pin terminals)		–	XW2B-20G4
	Terminal block (M3.5 screw and for fork/round terminals)		–	XW2B-20G5
	Terminal block (M3 screw and for fork/round terminals)		–	XW2D-20G6

External encoder cable (CN4)

Symbol	Name	Length	Order code
⑧	External encoder cable	5 m	R88A-CRKM005SR-E
		10 m	R88A-CRKM010SR-E
		20 m	R88A-CRKM020SR-E

Analog monitor (CN5)

Symbol	Name	Length	Order code
⑨	Analog monitor cable	1 m	R88A-CMK001S

MECHATROLINK-II cables (CN6)

Symbol	Specifications	Length	Order code
⑩	MECHATROLINK-II Terminator resistor	–	JEPMC-W6022-E
	MECHATROLINK-II cables	0.5 m	JEPMC-W6003-A5-E
		1 m	JEPMC-W6003-01-E
		3 m	JEPMC-W6003-03-E
		5 m	JEPMC-W6003-05-E
		10 m	JEPMC-W6003-10-E
		20 m	JEPMC-W6003-20-E
		30 m	JEPMC-W6003-30-E

MECHATROLINK-II motion controllers

Symbol	Name	Order code
⑪	Trajexia stand-alone	Motion control unit
		TJ2-MC64 (64 axes)
		TJ1-MC16 (16 axes)
		TJ1-MC04 (4 axes)
	ML2 master unit	TJ1-ML16 (16 axes)
		TJ1-ML04 (4 axes)
	Trajexia-PLC motion controller	CJ1W-MCH72 (30 axes)
		CJ1W-MC472 (4 axes)
	Position controller unit for CJ1 PLC	CJ1W-NCF71 (16 axes)
		CJ1W-NC471 (4 axes)
		CJ1W-NC271 (2 axes)
	Position controller unit for CS1 PLC	CS1W-NCF71 (16 axes)
		CS1W-NC471 (4 axes)
		CS1W-NC271 (2 axes)

USB personal computer cable (CN7)

Symbol	Name	Length	Order code
⑫	USB mini-connector cable	2 m	AX-CUSBM002-E

Cable for safety functions (CN8)

Symbol	Description	Order code
⑬	Safety connector with 3 m cable (with loose wires at one end)	R88A-CSK003S-E

External regenerative resistor

Symbol	Specifications	Order code
⑭	50 Ω, 80 W	R88A-RR08050S
	100 Ω, 80 W	R88A-RR080100S
	47 Ω, 220 W	R88A-RR22047S
	20 Ω, 500 W	R88A-RR50020S

Filters

Symbol	Applicable servodrive	Rated current	Leakage current	Rated voltage	Order code
⑮	R88D-KN01H-ML2, R88D-KN02H-ML2	2.4 A	3.5 mA	250 VAC single-phase	R88A-FIK102-RE
	R88D-KN04H-ML2	4.1 A	3.5 mA		R88A-FIK104-RE
	R88D-KN08H-ML2	6.6 A	3.5 mA		R88A-FIK107-RE
	R88D-KN10H-ML2, R88D-KN15H-ML2	14.2 A	3.5 mA	400 VAC three-phase	R88A-FIK114-RE
	R88D-KN06F-ML2, R88D-KN10F-ML2, R88D-KN15F-ML2	4 A	0.3 mA/32 mA ^{*1}		R88A-FIK304-RE
	R88D-KN20F-ML2	6 A	0.3 mA/32 mA ^{*1}		R88A-FIK306-RE
	R88D-KN30F-ML2, R88D-KN50F-ML2	12.1 A	0.3 mA/32 mA ^{*1}		R88A-FIK312-RE

^{*1} Momentary peak leakage current for the filter at switch-on/off.

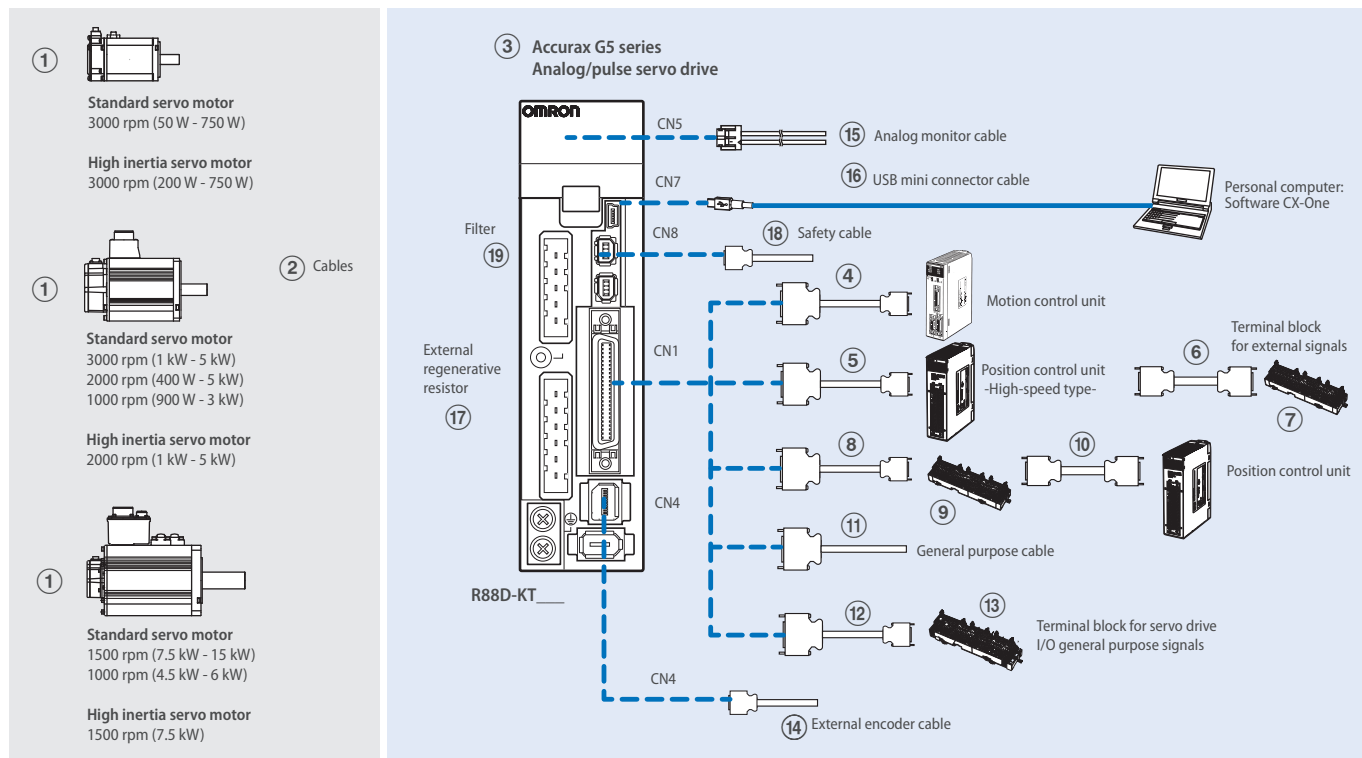
Connectors

Specifications	Order code
External encoder connector (for CN4)	R88A-CNK41L
Safety I/O signal connector (for CN8)	R88A-CNK81S

Computer software

Specifications	Order code
CX-Drive version 1.91 or higher	CX-DRIVE 1.91
CX-One software package including CX-Drive 1.91 or higher	CX-ONE

Accurax G5 series analog/pulse reference configuration



Note: The symbols ①②③④⑤... show the recommended sequence to select the components in Accurax G5 servo system

Servo motors, power and encoder cables

Note: ①② Refer to the Accurax G5 servo motor section for servomotor, motor cables or connectors selection

Servo drives

Symbol	Specifications		① Compatible Accurax G5 series rotary servo motors		Servo drive models ^{*1}
			Standard models	High inertia models	Order code
③	1 phase 230 VAC	100 W	R88M-K05030(H/T)-_	-	R88D-KT01H
			R88M-K10030(H/T)-_	-	
		200 W	R88M-K20030(H/T)-_	R88M-KH20030(H/T)-_	R88D-KT02H
			R88M-K40030(H/T)-_	R88M-KH40030(H/T)-_	R88D-KT04H
		400 W	R88M-K75030(H/T)-_	R88M-KH75030(H/T)-_	R88D-KT08H
			R88M-K10020(H/T)-_	-	R88D-KT10H
		1.0 kW	R88M-K10030(H/T)-_	-	R88D-KT15H
			R88M-K1K530(H/T)-_	-	
		1.5 kW	R88M-K1K520(H/T)-_	-	
			R88M-K90010(H/T)-_	-	
	3 phase 400 VAC	600 W	R88M-K40020(F/C)-_	-	R88D-KT06F
			R88M-K60020(F/C)-_	-	
		1.0 kW	R88M-K75030(F/C)-_	-	R88D-KT10F
			R88M-K10020(F/C)-_	R88M-KH10020(F/C)-_	
		1.5 kW	R88M-K10030(F/C)-_	-	R88D-KT15F
			R88M-K1K530(F/C)-_	-	
		2.0 kW	R88M-K1K520(F/C)-_	R88M-KH1K520(F/C)-_	
			R88M-K90010(F/C)-_	-	
		2.0 kW	R88M-K20030(F/C)-_	-	R88D-KT20F
			R88M-K2K020(F/C)-_	R88M-KH2K020(F/C)-_	
		3.0 kW	R88M-K30030(F/C)-_	-	R88D-KT30F
			R88M-K3K020(F/C)-_	R88M-KH3K020(F/C)-_	
		5.0 kW	R88M-K2K010(F/C)-_	-	
			R88M-K40030(F/C)-_	-	R88D-KT50F
		7.5 kW	R88M-K50030(F/C)-_	-	
			R88M-K4K020(F/C)-_	R88M-KH4K020(F/C)-_	
		15 kW	R88M-K5K020(F/C)-_	R88M-KH5K020(F/C)-_	
			R88M-K4K510C-_	-	
		7.5 kW	R88M-K3K010(F/C)-_	-	
			R88M-K6K010C-_	-	R88D-KT75F
		15 kW	R88M-K7K515C-_	R88M-KH7K515C-_	
			R88M-K11K015C-_	-	R88D-KT150F
			R88M-K15K015C-_	-	

^{*1} Drive Programming – embedded indexer functionality – is available in the Accurax G5 analog/pulse models with firmware 1.10 or higher.

Control cables (CN1)

Symbol	Description	Connect to	Length	Order code
④	Control cable (1 axis)	Motion control units CS1W-MC221 CS1W-MC421	1 m	R88A-CPG001M1
			2 m	R88A-CPG002M1
			3 m	R88A-CPG003M1
			5 m	R88A-CPG005M1
	Control cable (2 axes)	Motion control units CS1W-MC221 CS1W-MC421	1 m	R88A-CPG001M2
			2 m	R88A-CPG002M2
			3 m	R88A-CPG003M2
			5 m	R88A-CPG005M2
⑤	Control cable (line-driver output for 1 axis)	Position control units (high-speed type) CJ1W-NC234 CJ1W-NC434	1 m	XW2Z-100J-G9
			5 m	XW2Z-500J-G9
			10 m	XW2Z-10MJ-G9
	Control cable (open-collector output for 1 axis)	Position control units (high-speed type) CJ1W-NC214 CJ1W-NC414	1 m	XW2Z-100J-G13
			3 m	XW2Z-300J-G13
	Control cable (line-driver output for 2 axes)	Position control units (high-speed type) CJ1W-NC234 CJ1W-NC434	1 m	XW2Z-100J-G1
			5 m	XW2Z-500J-G1
	Control cable (open-collector output for 2 axes)	Position control units (high-speed type) CJ1W-NC214 CJ1W-NC414	1 m	XW2Z-100J-G5
			3 m	XW2Z-300J-G5
⑥	Terminal block cable for external signals (for input common, forward/reverse run prohibited inputs, emergency stop input, origin proximity input and interrupt input)	Position control units (high-speed type) CJ1W-NC234 CJ1W-NC434 CJ1W-NC214 CJ1W-NC414	0.5 m	XW2Z-C50X
			1 m	XW2Z-100X
			2 m	XW2Z-200X
			3 m	XW2Z-300X
			5 m	XW2Z-500X
			10 m	XW2Z-010X
			–	XW2B-20G4
⑦	Terminal block for external signals (M3 screw, pin terminals)		–	XW2B-20G5
	Terminal block for ext. signals (M3.5 screw, fork/round terminals)		–	XW2D-20G6
	Terminal block for ext. signals (M3 screw, fork/round terminals)		–	
⑧	Cable from servo relay unit to servo drive	CS1W-NC1□3, CJ1W-NC1□3, C200HW-NC113, CS1W-NC2□3/4□3, CJ1W-NC2□3/4□3, C200HW-NC213/413, CQM1H-PLB21 or CQM1-CPU43	1 m	XW2Z-100J-B25
			2 m	XW2Z-200J-B25
		CJ1M-CPU21/22/23	1 m	XW2Z-100J-B31
			2 m	XW2Z-200J-B31
⑨	Servo relay unit	Position control units CS1W-NC1□3, CJ1W-NC1□3 or C200HW-NC113	–	XW2B-20J6-1B (1 axis)
		Position control units CS1W-NC2□3/4□3, CJ1W-NC2□3/4□3 or C200HW-NC213/413	–	XW2B-40J6-2B (2 axes)
		CQM1H-PLB21 or CQM1-CPU43	–	XW2B-20J6-3B (1 axis)
		CJ1M-CPU21/22/23	–	XW2B-20J6-8A (1 axis) XW2B-40J6-9A (2 axes)
⑩	Position control unit connecting cable	CQM1H-PLB21	0.5 m	XW2Z-050J-A3
			1 m	XW2Z-100J-A3
		CS1W-NC113 or C200HW-NC113	0.5 m	XW2Z-050J-A6
			1 m	XW2Z-100J-A6
		CS1W-NC213/413 or C200HW-NC213/413	0.5 m	XW2Z-050J-A7
			1 m	XW2Z-100J-A7
		CS1W-NC133	0.5 m	XW2Z-050J-A10
			1 m	XW2Z-100J-A10
		CS1W-NC233/433	0.5 m	XW2Z-050J-A11
			1 m	XW2Z-100J-A11
		CJ1W-NC113	0.5 m	XW2Z-050J-A14
			1 m	XW2Z-100J-A14
		CJ1W-NC213/413	0.5 m	XW2Z-050J-A15
			1 m	XW2Z-100J-A15
		CJ1W-NC133	0.5 m	XW2Z-050J-A18
			1 m	XW2Z-100J-A18
		CJ1W-NC233/433	0.5 m	XW2Z-050J-A19
			1 m	XW2Z-100J-A19
		CJ1M-CPU21/22/23	0.5 m	XW2Z-050J-A33
			1 m	XW2Z-100J-A33
⑪	General purpose cable	For general purpose controllers	1 m	R88A-CPG001S
			2 m	R88A-CPG002S
⑫	Terminal block cable	For general purpose controllers	1 m	XW2Z-100J-B24
			2 m	XW2Z-200J-B24
⑬	Terminal block (M3 screw and for pin terminals) Terminal block (M3.5 screw and for fork/round terminals) Terminal block (M3 screw and for fork/round terminals)		–	XW2B-50G4
			–	XW2B-50G5
			–	XW2D-50G6
			–	

External encoder cable (CN4)

Symbol	Name	Length	Order code
⑭	External encoder cable	5 m	R88A-CRKM005SR-E
		10 m	R88A-CRKM010SR-E
		20m	R88A-CRKM020SR-E

Analog monitor (CN5)

Symbol	Name	Length	Order code
⑮	Analog monitor cable	1 m	R88A-CMK001S

USB personal computer cable (CN7)

Symbol	Name	Length	Order code
⑯	USB mini-connector cable	2 m	AX-CUSBM002-E

Filters

Symbol	Applicable servodrive	Rated current	Leakage current	Rated voltage	Order code
⑰	R88D-KT01H, R88D-KT02H	2.4 A	3.5 mA	250 VAC single-phase	R88A-FIK102-RE
	R88D-KT04H	4.1 A	3.5 mA		R88A-FIK104-RE
	R88D-KT08H	6.6 A	3.5 mA		R88A-FIK107-RE
	R88D-KT10H, R88D-KT15H	14.2 A	3.5 mA		R88A-FIK114-RE
	R88D-KT06F, R88D-KT10F, R88D-KT15F	4 A	0.3 mA/32 mA ^{*1}	400 VAC three-phase	R88A-FIK304-RE
	R88D-KT20F	6 A	0.3 mA/32 mA ^{*1}		R88A-FIK306-RE
	R88D-KT30F, R88D-KT50F	12.1 A	0.3 mA/32 mA ^{*1}		R88A-FIK312-RE
	R88D-KT75F	22 A	0.3 mA/40 mA ^{*1}		R88A-FIK330-RE
	R88D-KT150F	44 A	2 mA/130 mA ^{*1}		R88A-FIK350-RE

^{*1} Momentary peak leakage current for the filter at switch-on/off.

Connectors

Specifications	Model
I/O connector kit – 50 pins – (for CN1)	R88A-CNU11C
External encoder connector (for CN4)	R88A-CNK41L
Safety I/O signal connector (for CN8)	R88A-CNK81S

Computer software

Specifications	Order code
CX-Drive version 2.10 or higher	CX-DRIVE 2.10
CX-One software package including CX-Drive 2.10 or higher	CX-ONE

External regenerative resistor

Symbol	Specifications	Order code
⑰	50 Ω, 80 W	R88A-RR08050S
	100 Ω, 80 W	R88A-RR080100S
	47 Ω, 220 W	R88A-RR22047S
	20 Ω, 500 W	R88A-RR50020S

Cable for safety functions (CN8)

Symbol	Description	Order code
⑱	Safety connector with 3 m cable (with loose wires at one end)	R88A-CSK003S-E

Specifications

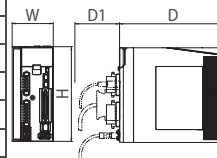
Single-phase, 230 V

Servo drive type	R88D-K_	01H_	02H_	04H_	08H_	10H_	15H_
Applicable servo motor	R88M-K_	05030(H/T)-_	20030(H/T)-_	40030(H/T)-_	75030(H/T)-_	1K020(H/T)-_	1K030(H/T)-_
		10030(H/T)-_	—	—	—	—	1K530(H/T)-_
		—	—	—	—	—	1K520(H/T)-_
		—	—	—	—	—	90010(H/T)-_
Max. applicable motor capacity	W	100	200	400	750	1,000	1,500
Continuous output current	Arms	1.2	1.6	2.6	4.1	5.9	9.4
Input power	Main circuit	Single-phase/3-phase, 200 to 240 VAC + 10% to -15% (50/60 Hz)					
Supply	Control circuit	Single-phase, 200 to 240 VAC + 10% to -15% (50/60 Hz)					
Control method		IGBT-driven PWM method, sinusoidal drive					
Feedback		Serial encoder (incremental/absolute value)					
Conditions	Usage/storage temperature	0 to 55°C/-20 to 65°C					
	Usage/storage humidity	90% RH or less (non-condensing)					
	Altitude	1,000 m or less above sea level					
	Vibration/shock resistance (max.)	5.88 m/s ² 10–60 Hz (Continuous operation at resonance point is not allowed)/19.6 m/s ²					
Configuration		Base mounted					
Approx. weight	kg	0.8		1.1	1.6	1.8	

Three-phase, 400 V

Servo drive type	R88D-K_	06F_	10F_	15F_	20F_	30F_	50F_	75F_	150F_
Applicable servo motor	R88M-K_	40020(F/C)-_	75030(F/C)-_	1K030(F/C)-_	2K030(F/C)-_	3K030(F/C)-_	4K030(F/C)-_	6K010C-_	11K015C-_
		60020(F/C)-_	1K020(F/C)-_	1K530(F/C)-_	2K020(F/C)-_	3K020(F/C)-_	5K030(F/C)-_	7K515C-_	15K015C-_
		—	—	1K520(F/C)-_	—	2K010(F/C)-_	4K020(F/C)-_	—	—
		—	—	90010(F/C)-_	—	—	5K020(F/C)-_	—	—
		—	—	—	—	—	4K510C-_	—	—
		—	—	—	—	—	3K010(F/C)-_	—	—
Max. applicable motor capacity	W	0.6	1.0	1.5	2.0	3.0	5.0	7.5	15.0
Continuous output current	Arms	2.9		4.7	6.7	9.4	16.5	22.0	33.4
Input power	Main circuit	3-phase, 380 to 480 VAC + 10% to -15% (50/60Hz)							
Supply	Control circuit	24 VDC±15%							
Control method		IGBT-driven PWM method, sinusoidal drive							
Feedback		Serial encoder (incremental/absolute value)							Absolute encoder
Conditions	Usage/storage temperature	0 to 55°C/-20 to 65°C							
	Usage/storage humidity	90% RH or less (non-condensing)							
	Altitude	1,000 m or less above sea level							
	Vibration/shock resistance	5.88 m/s ² 10–60 Hz (Continuous operation at resonance point is not allowed)/19.6 m/s ²							
Configuration		Base mounted							
Approx. weight	kg	1.9			2.7	4.7		13.5	21.0

Dimensions

Drive model	Specification		EtherCAT model				ML2 model				Analog/pulse model				
			H	W	D	D1	H	W	D	D1	H	W	D	D1	
R88D-KT01/02H, R88D-KN01/02H-__	230 V	100–200 W	150	40	132	70	150	40	132	70	150	40	130	70	
R88D-KT04H, R88D-KN04H-__		400 W	150	55	132	70	150	55	132	70	150	55	130	70	
R88D-KT08H, R88D-KN08H-__		750 W	150	65	172	70	150	65	172	70	150	65	170	70	
R88D-KT10/15H, R88D-KN10/15H-__		1–1.5 kW	150	86	172	70	150	86	172	70	150	85	170	70	
R88D-KT06/10/15F, R88D-KN06/10/15F-__	400 V	600 W–1.5 kW	150	92	172	70	150	92	172	70	150	91	170	70	
R88D-KT20F, R88D-KN20F-__		2 kW	198	94	195	70	198	94	195	70	198	94	193.5	70	
R88D-KT30/50F, R88D-KN30/50F-__		3–5 kW	250	130	214	70	250	130	214	70	250	130	212	70	
R88D-KT75F, R88D-KN75H-ECT		7.5 kW	250	233	334	70	–	–	–	–	250	233	334	70	
R88D-KT150F, R88D-KN150H-ECT		15 kW	450	261	271	70	–	–	–	–	450	261	270	70	

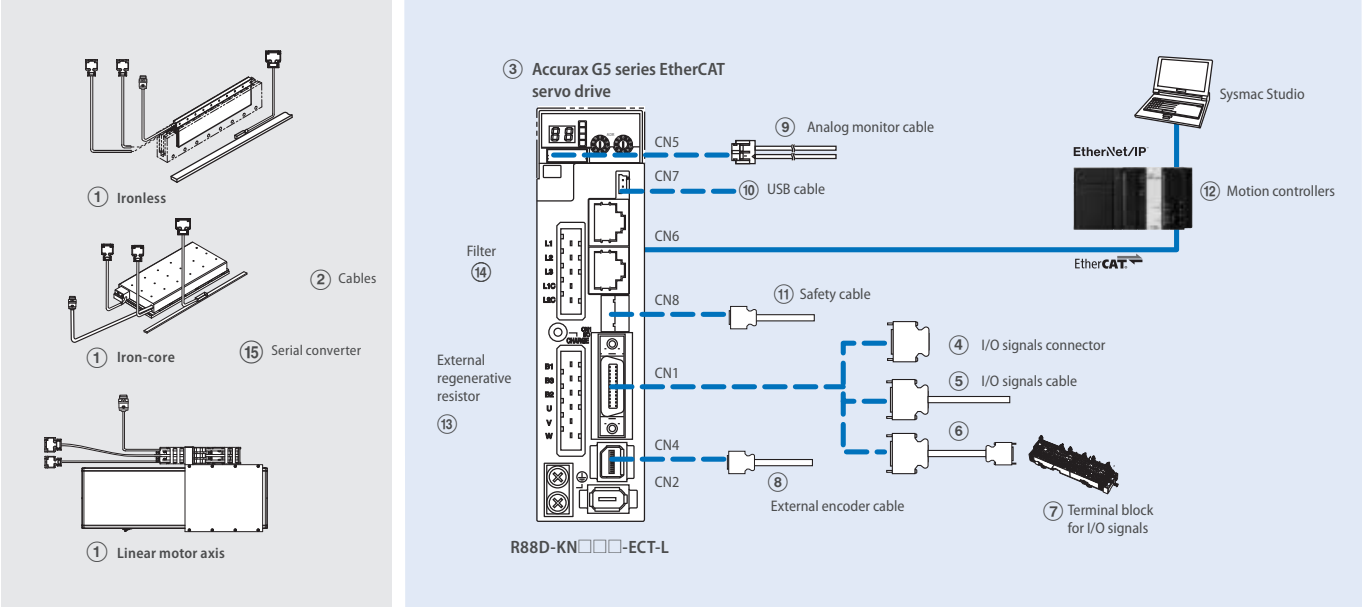


Accurate motion control in a compact size servo drive family. EtherCAT and safety built-in

- Ironless and iron-core motor types
 - Safety conforming ISO13849-1 PL-d
 - High-response frequency of 2 kHz
 - A/B line-driver and SinCos encoder type options
 - Real time auto-tuning
 - Advanced tuning algorithms (Anti-vibration function, torque feedforward, disturbance observer)
- Ratings
- Iron-core motors – 48 to 760 N (2,000 N peak force)
 - Ironless motors – 29 to 423 N (2,100 N peak force)

Ordering information

Accurax G5 series EtherCAT reference configuration



Note: The symbols ①②③④⑤ ... show the recommended sequence to select the components in Accurax G5 servo system

Servo motors, power and encoder cables

Note: ①②③ Refer to the Accurax linear motor chapter for linear motor, cables or connectors selection

Servo drives

Symbol	Specifications	① Compatible Accurax G5 Linear motors			Servo drive models
		Iron-core motors	Ironless motors	Linear motor axis	Order code
③	1 phase 230 VAC	R88L-EC-FW-0303-□	R88L-EC-GW-0303-□ R88L-EC-GW-0503-□	R88L-EA-AF-0303-□	R88D-KN02H-ECT-L
		R88L-EC-FW-0306-□	R88L-EC-GW-0506-□ R88L-EC-GW-0703-□	R88L-EA-AF-0306-□	R88D-KN04H-ECT-L
		R88L-EC-FW-0606-□	R88L-EC-GW-0306-□ R88L-EC-GW-0509-□ R88L-EC-GW-0706-□	R88L-EA-AF-0606-□	R88D-KN08H-ECT-L
		R88L-EC-FW-0609-□	R88L-EC-GW-0309-□ R88L-EC-FW-0709-□	R88L-EA-AF-0609-□	R88D-KN10H-ECT-L
		R88L-EC-FW-0612-□	-	R88L-EA-AF-0612-□	R88D-KN15H-ECT-L
		R88L-EC-FW-1112-□		R88L-EA-AF-1112-□	
		R88L-EC-FW-1115-□		R88L-EA-AF-1115-□	

Symbol	Specifications	① Compatible Accurax G5 Linear motors			Servo drive models
		Iron-core motors	Ironless motors	Linear motor axis	Order code
③	3 phase 400 VAC	R88L-EC-FW-0303-□	–	–	R88D-KN06F-ECT-L
		R88L-EC-FW-0306-□	–	R88L-EA-AF-0303-□ R88L-EA-AF-0306-□	R88D-KN10F-ECT-L
		R88L-EC-FW-0606-□	–	R88L-EA-AF-0606-□	R88D-KN15F-ECT-L
		R88L-EC-FW-0609-□	–	R88L-EA-AF-0609-□	R88D-KN20F-ECT-L
		R88L-EC-FW-0612-□	–	R88L-EA-AF-0612-□	R88D-KN30F-ECT-L
		R88L-EC-FW-1112-□ R88L-EC-FW-1115-□	–	R88L-EA-AF-1112-□ R88L-EA-AF-1115-□	

Signals cables for I/O general purpose (CN1)

Symbol	Description	Connect to	Length	Order code
④	I/O connector kit (26 pins)	For I/O general purpose	–	R88A-CNW01C
⑤	I/O signals cable	For I/O general purpose	1 m	R88A-CPKB001S-E
			2 m	R88A-CPKB002S-E
⑥	Terminal block cable	For I/O general purpose	1 m	XW2Z-100J-B34
			2 m	XW2Z-200J-B34
⑦	Terminal block (M3 screw and for pin terminals)		–	XW2B-20G4
	Terminal block (M3.5 screw and for fork/round terminals)		–	XW2B-20G5
	Terminal block (M3 screw and for fork/round terminals)		–	XW2D-20G6

External encoder cable (CN4)

Symbol	Name	Length	Order code
⑧	External encoder cable	5 m	R88A-CRKM005SR-E
		10 m	R88A-CRKM010SR-E
		20 m	R88A-CRKM020SR-E

Analog monitor (CN5)

Symbol	Name	Length	Order code
⑨	Analog monitor cable	1 m	R88A-CMK001S

USB personal computer cable (CN7)

Symbol	Name	Length	Order code
⑩	USB mini-connector cable	2 m	AX-CUSBM002-E

Cable for safety (CN8)

Symbol	Name	Length	Order code
⑪	Safety cable	3 m	R88A-CSK003S-E

Motion controllers

Symbol	Name		Order code
⑫	Machine controller	CPU unit	NX701-□
			NJ501-□
			NJ301-□
			NJ101-□
	Trajexia stand-alone motion controller	Motion control unit	TJ2-MC64 (64 axes)
		EtherCAT master unit	TJ2-ECT64 (64 axes)
			TJ2-ECT16 (16 axes)
			TJ2-ECT04 (4 axes)
	Position Controller Unit for CJ1 PLC series		CJ1W-NCF81 (16 axes)
			CJ1W-NC88□ (8 axes)
			CJ1W-NC48□ (4 axes)
			CJ1W-NC281(2 axes)

External regenerative resistor

Symbol	Specifications	Order code
⑬	50 Ω, 80 W	R88A-RR08050S
	100 Ω, 80 W	R88A-RR080100S
	47 Ω, 220 W	R88A-RR22047S
	20 Ω, 500 W	R88A-RR50020S

Filters

Symbol	Applicable servodrive	Manufacturer	Rated current	Leakage current	Rated voltage	Order code
⑭	R88D-KN02H-ECT-L	Rasmi Electronics Ltd	2.4 A	3.5 mA	250 VAC single-phase	R88A-FIK102-RE
	R88D-KN04H-ECT-L		4.1 A	3.5 mA		R88A-FIK104-RE
	R88D-KN08H-ECT-L		6.6 A	3.5 mA		R88A-FIK107-RE
	R88D-KN10H-ECT-L, R88D-KN15H-ECT-L		14.2 A	3.5 mA	400 VAC three-phase	R88A-FIK114-RE
	R88D-KN06F-ECT-L, R88D-KN10F-ECT-L, R88D-KN15F-ECT-L		4 A	0.3 mA / 32 mA*1		R88A-FIK304-RE
	R88D-KN20F-ECT-L		6 A	0.3 mA / 32 mA*1		R88A-FIK306-RE
	R88D-KN30F-ECT-L		12.1 A	0.3 mA / 32 mA*1		R88A-FIK312-RE

*1 Momentary peak leakage current for the filter at switch-on/off.

Connectors

Specifications	Order code
External encoder connector (for CN4)	R88A-CNK41L
Safety I/O signal connector (for CN8)	R88A-CNK81S

Computer software

Specifications	Order code
Sysmac Studio version 1.0 or higher	SYSMAC-SE2□□□□*1
CX-Drive version 2.60 or higher	CX-DRIVE 2.60

*1 Refer to the Sysmac Studio datasheet (Cat. No. SysCat_1181E) for detailed information or contact your OMRON representative

Note: If CX-One is installed on the same computer as Sysmac Studio, it must be CX-One v4.2 or higher

Specifications

Single-phase, 230 V

Linear servo drive type		R88D-KN	02H-ECT-L	04H-ECT-L	08H-ECT-L	10H-ECT-L	15H-ECT-L
Applicable linear servo motor		R88L-EC-	FW-0303	FW-0306	FW-0606	FW-0609	FW-0612
			GW-0303	GW-0506	GW-0306	GW-0309	FW-1112
			–	GW-0703	GW-0509	GW-0709	–
			–	–	GW-0706	–	–
Basic specifications	Power	W	200	400	750	1,000	1,500
	Continuous output current	Arms	1.6	2.6	4.1	5.9	9.4
	Max. output current	Arms	4.8	7.8	12.3	16.9	28.2
	Input power	Main circuit	Single-phase/3-phase, 200 to 240 VAC + 10% to –15% (50/60 Hz)				
	Supply	Control circuit	Single-phase, 200 to 240 VAC + 10% to –15% (50/60 Hz)				
	Control method		IGBT-driven PWM method, sinusoidal drive				
	Feedback		Serial encoder (incremental/absolute value)				
	Conditions	Usage/storage temperature	0 to 55°C/–20 to 65°C				
		Usage/storage humidity	90% RH or less (non-condensing)				
		Altitude	1,000 m or less above sea level				
		Vibration/shock resistance (max.)	5.88 m/s ² 10 to 60 Hz (Continuous operation at resonance point is not allowed)/19.6 m/s ²				
	Configuration		Base mounted				
	Approx. weight	kg	0.8	1.1	1.6	1.8	

Three-phase, 400 V

Linear servo drive type		R88D-KN	06F-ECT-L	10F-ECT-L	15F-ECT-L	20F-ECT-L	30F-ECT-L
Applicable linear servo motor		R88L-EC-	FW-0303	FW-0303	FW-0606	FW-0609	FW-0612
			–	FW-0306	–	–	FW-1112
			–	–	–	–	FW-1115
			–	–	–	–	–
Basic specifications	Power	kW	0.6	1	1.5	2	3
	Continuous output current	Arms	1.5	2.9	4.7	6.7	9.4
	Max. output current	Arms	6.4	8.7	14.1	19.7	28.2
	Input power	Main circuit	3-phase, 380 to 480 VAC + 10% to –15% (50/60Hz)				
	Supply	Control circuit	24 VDC±15%				
	Control method		IGBT-driven PWM method, sinusoidal drive				
	Feedback		Serial encoder				
	Conditions	Usage/storage temperature	0 to 55°C/–20 to 65°C				
		Usage/storage humidity	90% RH or less (non-condensing)				
		Altitude	1,000 m or less above sea level				
		Vibration/shock resistance	5.88 m/s ² 10 to 60 Hz (Continuous operation at resonance point is not allowed)/19.6 m/s ²				
	Configuration		Base mounted				
	Approx. weight	kg	1.9			2.7	4.7

Dimensions

Drive model	Specification		EtherCAT model				
			H	W	D	D1	
R88D-KN02H-ECT-L	230 V	200 W	150	40	132	70	
R88D-KN04H-ECT-L		400 W	150	55	132	70	
R88D-KN08H-ECT-L		750 W	150	65	172	70	
R88D-KN10H-ECT-L, R88D-KN15H-ECT-L		1 to 1.5 kW	150	86	172	70	
R88D-KN06F-ECT-L, R88D-KN10F-ECT-L, R88D-KN15F-ECT-L	400 V	600 W to 1.5 kW	150	92	172	70	
R88D-KN20F-ECT-L		2 kW	198	94	195	70	
R88D-KN30F-ECT-L		3 kW	250	130	214	70	



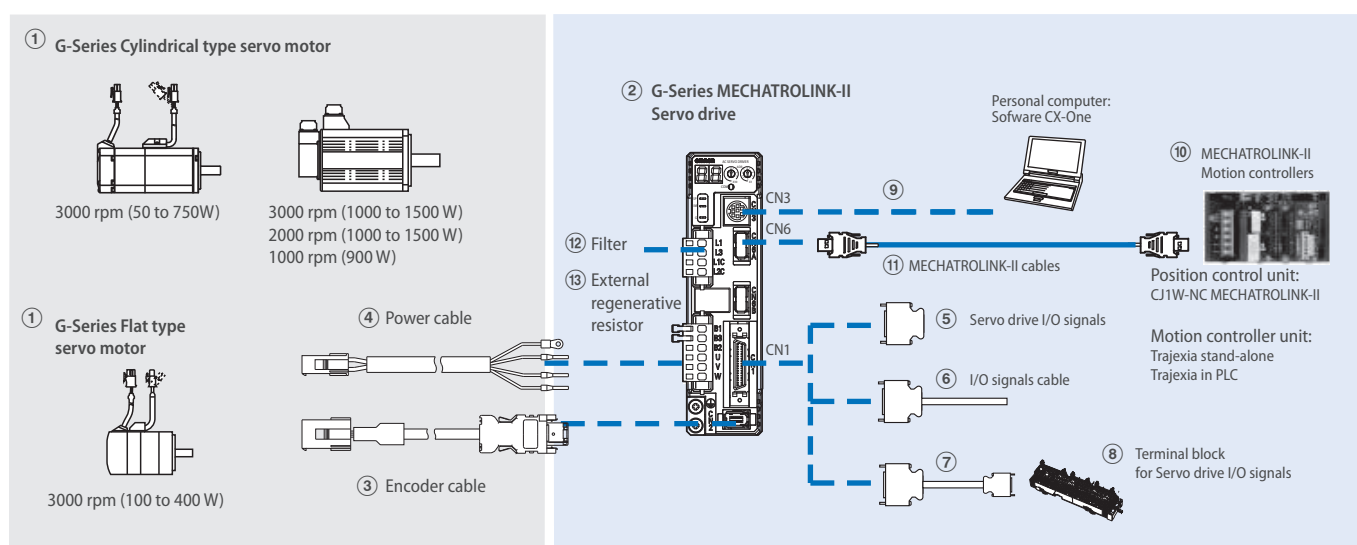
Compact in size, big in features. Save space, save wiring, save time

The G-series servo drive with built-in MECHATROLINK-II significantly reduces wiring and set-up time, while saving up to 30% of cabinet space. So you not only save on space, wiring and installation time, but also significantly reduce the chance of connection errors.

- High response frequency of 1 kHz
- Auto-tuning for easy and quick start-up
- Vibration suppression and adaptive resonance suppression filter
- Positioning, speed and torque control modes
- Fast and accurate positioning
- Separated supply for main power and control power
- Incremental and absolute encoder available

Ordering information

G-Series MECHATROLINK-II model reference configuration



Note: The symbols ①②③④⑤ ... show the recommended sequence to select the components in a G-Series servo system

Servo motors, power & encoder cables

Note: ①③④ Refer to the G-Series servo motor section for servomotor, motor cables or connectors selection

Servo drives

Symbol	Specifications		① Compatible rotary servo motors		Servo drive model
			Cylindrical type	Flat type	Order code
②	1 phase 200 VAC	100 W	R88M-G05030_	R88M-GP10030_	R88D-GN01H-ML2
		200 W	R88M-G10030_		
		400 W	R88M-G20030_	R88M-GP20030_	R88D-GN02H-ML2
		750 W	R88M-G40030_	R88M-GP40030_	R88D-GN04H-ML2
		1.0 kW	R88M-G75030_	–	R88D-GN08H-ML2
		1.5 kW	R88M-G1K020T_	–	R88D-GN10H-ML2
			R88M-G90010T_	–	R88D-GN15H-ML2
			R88M-G1K030T_	–	
			R88M-G1K520T_	–	
			R88M-G1K530T_	–	

Control cables (for CN1)

Symbol	Name	Connect to	Length	Order code
⑤	I/O connector kit	Servo drive I/O signals	-	R88A-CNU01C
⑥	General purpose cable		1 m	R88A-CPGB001S-E
			2 m	R88A-CPGB002S-E
⑦	Terminal block cable		1 m	XW2Z-100J-B33
			2 m	XW2Z-200J-B33
⑧	Terminal block		-	XW2B-20G4
				XW2B-20G5
				XW2D-20G6

Computer cable (for CN3)

Symbol	Name	Length	Order code
⑨	Computer cable RS232	2 m	R88A-CCG002P2

MECHATROLINK-II Motion controllers

Symbol	Name	Axes	Order code
⑩	Trajexia stand-alone motion controller	4	TJ1-MC04
		16	TJ1-MC16
		64	TJ2-MC64
	Trajexia-PLC motion controller,	4	CJ1W-MC472
		30	CJ1W-MCH72
	Position controller unit for CJ1 PLC	2	CJ1W-NC271
		4	CJ1W-NC471
		16	CJ1W-NCF71
	Position controller unit for CS1 PLC	2	CS1W-NC271
		4	CS1W-NC471
		16	CS1W-NCF71

MECHATROLINK-II cables (for CN6)

Symbol	Specifications	Length	Order code
⑪	MECHATROLINK-II Terminator resistor	-	JEPMC-W6022-E
	MECHATROLINK-II cables	0.5 m	JEPMC-W6003-A5-E
		1 m	JEPMC-W6003-01-E
		3 m	JEPMC-W6003-03-E
		5 m	JEPMC-W6003-05-E
		10 m	JEPMC-W6003-10-E
		20 m	JEPMC-W6003-20-E
		30 m	JEPMC-W6003-30-E

Filters

Symbol	Applicable servodrive	Rated current	Leakage current	Rated voltage	Order code
⑫	R88D-GN01H_ R88D-GN02H_	2.4 A	3.5 mA	250 VAC single-phase	R88A-FIK102-RE
	R88D-GN04H_	4.1 A	3.5 mA		R88A-FIK104-RE
	R88D-GN08H_	6.6 A	3.5 mA		R88A-FIK107-RE
	R88D-GN10H_ R88D-GN15H_	14.2 A	3.5 mA		R88A-FIK114-RE

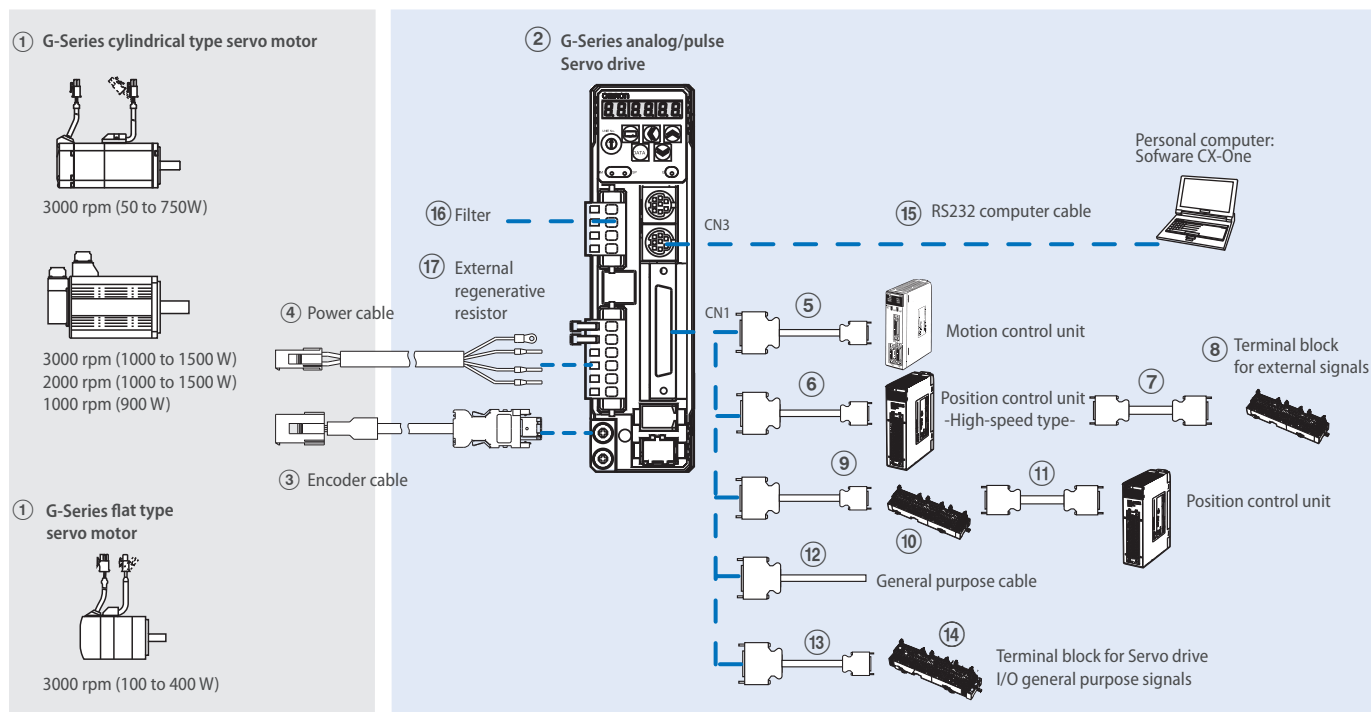
External regenerative resistor

Symbol	Specifications	Order code
⑬	50 Ω, 80 W	R88A-RR08050S
	100 Ω, 80 W	R88A-RR080100S
	47 Ω, 220 W	R88A-RR22047S
	20 Ω, 500 W	R88A-RR50020S

Computer software

Specifications	Order code
Configuration and monitoring software tool for servo drives and inverters. (CX-Drive version 1.70 or higher)	CX-Drive
Complete Omron software package including CX-Drive. (CX-One version 3.10 or higher)	CX-One

G-Series analog/pulse model reference configuration



Note: The symbols ①②③④⑤... show the recommended sequence to select the components in a G-Series servo system

Servo motors, power & encoder cables

Note: ①③④ Refer to the G-Series servo motor section for servomotor, motor cables or connectors selection

Servo drives

Symbol	Specifications		① Compatible rotary servo motors		Servo drive model
			Cylindrical type	Flat type	
②	1 phase 200 VAC	100 W	R88M-G05030_	R88M-GP10030_	R88D-GT01H
			R88M-G10030_		
		200 W	R88M-G20030_	R88M-GP20030_	R88D-GT02H
		400 W	R88M-G40030_	R88M-GP40030_	R88D-GT04H
		750 W	R88M-G75030_	-	R88D-GT08H
		1.0 kW	R88M-G1K020T_	-	R88D-GT10H
		1.5 kW	R88M-G90010T_	-	R88D-GT15H
			R88M-G1K030T_	-	
			R88M-G1K520T_	-	
			R88M-G1K530T_	-	

Control cables (for CN1)

Symbol	Description	Connect to	Length	Order code
⑤	Control cable (1 axis)	Motion control units CS1W-MC221 CS1W-MC421	1 m	R88A-CPG001M1
			2 m	R88A-CPG002M1
			3 m	R88A-CPG003M1
			5 m	R88A-CPG005M1
	Control cable (2 axis)	Motion control units CS1W-MC221 CS1W-MC421	1 m	R88A-CPG001M2
			2 m	R88A-CPG002M2
			3 m	R88A-CPG003M2
			5 m	R88A-CPG005M2
⑥	Control cable (line-driver output for 1 axis)	Position control units (high-speed type) CJ1W-NC234 CJ1W-NC434	1 m	XW2Z-100J-G9
			5 m	XW2Z-500J-G9
			10 m	XW2Z-10MJ-G9
	Control cable (open-collector output for 1 axis)	Position control units (high-speed type) CJ1W-NC214 CJ1W-NC414	1 m	XW2Z-100J-G13
			3 m	XW2Z-300J-G13
	Control cable (line-driver output for 2 axis)	Position control units (high-speed type) CJ1W-NC234 CJ1W-NC434	1 m	XW2Z-100J-G1
			5 m	XW2Z-500J-G1
	Control cable (open-collector output for 2 axis)	Position control units (high-speed type) CJ1W-NC214 CJ1W-NC414	1 m	XW2Z-100J-G5
			3 m	XW2Z-300J-G5
⑦	Terminal block cable for external signals (for input common, forward/reverse run prohibited inputs, emergency stop input, or igin proximity input and interrupt input)	Position control units (high-speed type) CJ1W-NC234 CJ1W-NC434 CJ1W-NC214 CJ1W-NC414	0.5 m	XW2Z-C50X
			1 m	XW2Z-100X
			2 m	XW2Z-200X
			3 m	XW2Z-300X
			5 m	XW2Z-500X
			10 m	XW2Z-010X
⑧	Terminal block for external signals (M3 screw, pin terminals)		–	XW2B-20G4
	Terminal block for ext. signals (M3.5 screw, fork/round terminals)		–	XW2B-20G5
	Terminal block for ext. signals (M3 screw, fork/round terminals)		–	XW2D-20G6
⑨	Cable from servo relay unit to servo drive	CS1W-NC1□3, CJ1W-NC1□3, C200HW-NC113, CS1W-NC2□3/4□3, CJ1W-NC2□3/4□3, C200HW-NC213/413, CQM1H-PLB21 or CQM1- CPU43	1 m	XW2Z-100J-B25
			2 m	XW2Z-200J-B25
		CJ1M-CPU21/22/23	1 m	XW2Z-100J-B31
			2 m	XW2Z-200J-B31
⑩	Servo relay unit	Position control units CS1W-NC1□3, CJ1W-NC1□3 or C200HW-NC113	–	XW2B-20J6-1B (1 axis)
		Position control units CS1W-NC2□3/4□3, CJ1W-NC2□3/4□3 or C200HW-NC213/413	–	XW2B-40J6-2B (2 axes)
		CQM1H-PLB21 or CQM1-CPU43	–	XW2B-20J6-3B (1 axis)
		CJ1M-CPU21/22/23	–	XW2B-20J6-8A (1 axis)
			–	XW2B-40J6-9A (2 axes)
⑪	Position control unit connecting cable	CQM1H-PLB21 or CQM1-CPU43	0.5 m	XW2Z-050J-A3
			1 m	XW2Z-100J-A3
		CS1W-NC113 or C200HW-NC113	0.5 m	XW2Z-050J-A6
			1 m	XW2Z-100J-A6
		CS1W-NC213/413 or C200HW-NC213/413	0.5 m	XW2Z-050J-A7
			1 m	XW2Z-100J-A7
		CS1W-NC133	0.5 m	XW2Z-050J-A10
			1 m	XW2Z-100J-A10
		CS1W-NC233/433	0.5 m	XW2Z-050J-A11
			1 m	XW2Z-100J-A11
		CJ1W-NC113	0.5 m	XW2Z-050J-A14
			1 m	XW2Z-100J-A14
		CJ1W-NC213/413	0.5 m	XW2Z-050J-A15
			1 m	XW2Z-100J-A15
		CJ1W-NC133	0.5 m	XW2Z-050J-A18
			1 m	XW2Z-100J-A18
⑫	General purpose cable	For general purpose controllers	0.5 m	XW2Z-050J-A19
			1 m	XW2Z-100J-A19
			0.5 m	XW2Z-050J-A33
			1 m	XW2Z-100J-A33
⑬	Terminal block cable	For general purpose controllers	1 m	XW2Z-100J-B24
			2 m	XW2Z-200J-B24
⑭	Terminal block (M3 screw and for pin terminals)		–	XW2B-50G4
	Terminal block (M3.5 screw and for fork/round terminals)		–	XW2B-50G5
	Terminal block (M3 screw and for fork/round terminals)		–	XW2D-50G6

Computer cable (for CN3)

Symbol	Name	Length	Order code
⑮	Computer cable RS232	2 m	R88A-CCG002P2

Filters

Symbol	Applicable servodrive	Rated current	Leakage current	Rated voltage	Order code
⑯	R88D-GT1H_ R88D-GT02H_	2.4 A	3.5 mA	250 VAC single-phase	R88A-FIK102-RE
	R88D-GT04H_	4.1 A	3.5 mA		R88A-FIK104-RE
	R88D-GT08H_	6.6 A	3.5 mA		R88A-FIK107-RE
	R88D-GT10H_ R88D-GT15H_	14.2 A	3.5 mA		R88A-FIK114-RE

External regenerative resistor

Symbol	Specifications	Order code
⑰	50 Ω, 80 W	R88A-RR08050S
	100 Ω, 80 W	R88A-RR080100S
	47 Ω, 220 W	R88A-RR22047S
	20 Ω, 500 W	R88A-RR50020S

Connectors

Specifications	Order code
I/O connector kit, 50 pins (for CN1)	R88A-CNU11C

Computer software

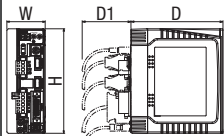
Specifications	Order code
Configuration and monitoring software tool for servo drives and inverters. (CX-Drive version 1.70 or higher)	CX-Drive
Complete Omron software package including CX-Drive. (CX-One version 3.10 or higher)	CX-One

Specifications

General specifications

Servo drive type		R88D-G_	01H_	02H_	04H_	08H_	10H_	15H_		
Applicable servomotor		R88M-G_	05030_/10030_	20030_	40030_	75030_	G1K020T_	90010T_/1K030T_/1K5_0T_		
		R88M-GP_	10030_	20030_	40030_	—	—	—		
Basic specifications	Max. applicable motor capacity		W	100	200	400	750	1,000	1,500	
	Continuous output current		Arms	1.16	1.6	2.7	4.0	5.9	9.8	
	Max. output current		Arms	3.5	5.3	7.1	14.1	21.2	28.3	
	Input power	Main circuit	For single-phase, 200 to 240 VAC + 10% to −15% (50/60 Hz)				For single-phase/three-phase, 200 to 240 VAC + 10% to −15% (50/60 Hz)			
	Supply	Control circuit	For single-phase, 200 to 240 VAC + 10% to −15% (50/60 Hz)							
	Control method		IGBT-driven PWM method							
	Feedback		Serial encoder (incremental/absolute)							
	Conditions	Usage/storage temperature		0 to 55°C/−20 to 65°C						
		Usage/storage humidity		90% RH or less (non-condensing)						
		Altitude		1,000m or less above sea level						
Vibration/shock resistance		5.88 m/s ² /19.6 m/s ²								
Configuration		Base mounted								
Approx. weight		Kg	0.8			1.1	1.5	1.7		

Dimensions

Drive model	Specification		ML2 models				Analog/pulse models				
			H	W	D	D1	H	W	D	D1	
R88D-GN01/02H-ML2, R88D-GT01/02H	200 V	100 to 200 W	150 mm	40 mm	132 mm	70 mm	150 mm	40 mm	130 mm	70 mm	
R88D-GN04H-ML2, R88D-GT04H		400 W	150 mm	55 mm	132 mm	70 mm	150 mm	55 mm	130 mm	70 mm	
R88D-GN08H-ML2, R88D-GT08H		750 W	150 mm	65 mm	172 mm	70 mm	150 mm	65 mm	170 mm	70 mm	
R88D-GN10/15H-ML2, R88D-GT10/15H		1 kW to 1.5 kW	150 mm	85 mm	172 mm	70 mm	150 mm	85 mm	170 mm	70 mm	



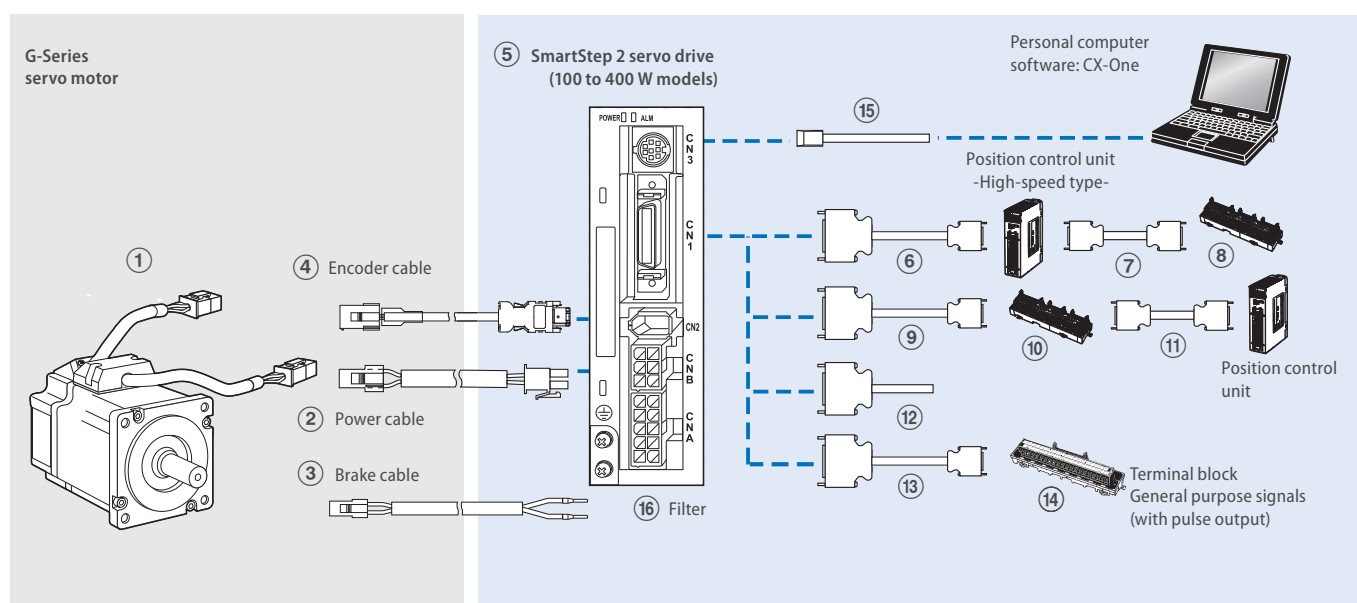
Another step forward in drive simplicity

The new SmartStep offers an ideal solution for point-to-point motion applications where simplicity is essential. SmartStep 2 keeps things simple whilst combining high performance and advanced features in a cost effective solution.

- On-line Auto-tuning and Easy set up
- Ultra-compact size. The footprint is only 48% compared to the previous SmartStep
- Two torque limits
- Electronic gear, four internal speed settings and wide range of pulse settings
- Adaptive resonance suppression filter
- Position control via pulse input 500 kpps
- Configuration and commissioning using CX Drive-software

Ordering information

SmartStep2 servo drive configuration (100-400 W)



Note: The symbols ①②③④⑤ ... show the recommended sequence to select the components in a SmartStep 2 servo system

Servo motor

Note: ①②③④ refer to G-Series motor section for detailed motor specifications and selection.

Servo drives

Symbol	Specifications		① Compatible servo motors		SmartStep 2 drive model
			Cylindrical type	Flat type	Order code
⑤	200 VAC	100 W	R88M-G05030H-__	-	R7D-BP01H
		200 W	R88M-G10030H-__	R88M-GP10030H-__	R7D-BP02HH
		400 W	R88M-G20030H-__	R88M-GP20030H-__	R7D-BP04H
			R88M-G40030H-__	R88M-GP40030H-__	

Power supply cables (for CNA)

Symbol	Specifications	Appearance	Order code
⑤	Power supply input cable for single-phase power (connectors attached)		R7A-CLB002S2

Control cables (for CN1)

Symbol	Description	Connect to	Length	Order code
⑥	Control cable (line-driver output for 1 axis)	Position control unit (high-speed type) CJ1W-NC234 CJ1W-NC434	1 m	XW2Z-100J-G12
			5 m	XW2Z-500J-G12
			10 m	XW2Z-10MJ-G12
	Control cable (open-collector output for 1 axis)	Position control unit (high-speed type) CJ1W-NC214 CJ1W-NC414	1 m	XW2Z-100J-G16
			3 m	XW2Z-300J-G16
	Control cable (line-driver output for 2 axis)	Position control unit (high-speed type) CJ1W-NC234 CJ1W-NC434	1 m	XW2Z-100J-G4
			5 m	XW2Z-500J-G4
			10 m	XW2Z-10MJ-G4
	Control cable (open-collector output for 2 axis)	Position control unit (high-speed type) CJ1W-NC214 CJ1W-NC414	1 m	XW2Z-100J-G8
			3 m	XW2Z-300J-G8

Symbol	Description	Connect to	Length	Order code
⑦	Terminal block cable for external signals (for input common, forward/reverse run prohibited inputs, emergency stop input, origin proximity input and interrupt input)	Position control units (high-speed type) CJ1W-NC234 CJ1W-NC434 CJ1W-NC214 CJ1W-NC414	0.5 m	XW2Z-CS0X
			1 m	XW2Z-100X
			2 m	XW2Z-200X
			3 m	XW2Z-300X
			5 m	XW2Z-500X
			10 m	XW2Z-010X
⑧	Terminal block for external signals (with M3 screw and for pin terminals)		-	XW2B-20G4
	Terminal block ext. signals (with M3.5 screw and for fork/round terminals)		-	XW2B-20G5
	Terminal block ext. signals (with M3 screw and fork/round pin terminals)		-	XW2D-20G6
⑨	Cable from servo relay unit to servo drive	CS1W-NC1_3, CJ1W-NC1_3, C200HW-NC113, CS1W-NC2_3/4_3, CJ1W-NC2_3/4_3, C200HW-NC213/413, CQM1H-PLB21 or CQM1-CPU43-V1	1 m	XW2Z-100J-B29
			2 m	XW2Z-200J-B29
		CJ1M-CPU21/22/23	1 m	XW2Z-100J-B32
			2 m	XW2Z-200J-B32
⑩	Servo relay unit	CS1W-NC1_3, CJ1W-NC1_3 or C200HW-NC113 position control unit	-	XW2B-20J6-1B (1 axis)
		CS1W-NC2_3/4_3, CJ1W-NC2_3/4_3 or C200HW-NC213/413 position control unit	-	XW2B-40J6-2B (2 axes)
		CQM1H-PLB21 or CQM1-CPU43-V1	-	XW2B-20J6-3B (1 axis)
		CJ1M-CPU21/22/23	-	XW2B-20J6-8A (1 axis)
			-	XW2B-40J6-9A (2 axes)
⑪	Position control unit connecting cable	CJ1W-NC133	0.5 m	XW2Z-050J-A18
			1 m	XW2Z-100J-A18
		CJ1W-NC233/433	0.5 m	XW2Z-050J-A19
			1 m	XW2Z-100J-A19
		CS1W-NC133	0.5 m	XW2Z-050J-A10
			1 m	XW2Z-100J-A10
		CS1W-NC233/433	0.5 m	XW2Z-050J-A11
			1 m	XW2Z-100J-A11
		CJ1W-NC113	0.5 m	XW2Z-050J-A14
			1 m	XW2Z-100J-A14
		CJ1W-NC213/413	0.5 m	XW2Z-050J-A15
			1 m	XW2Z-100J-A15
		CS1W-NC113 C200HW-NC113	0.5 m	XW2Z-050J-A6
			1 m	XW2Z-100J-A6
		CS1W-NC213/413 C200HW-NC213/413	0.5 m	XW2Z-050J-A7
			1 m	XW2Z-100J-A7
		CJ1M-CPU21/22/23	0.5 m	XW2Z-050J-A33
			1 m	XW2Z-100J-A33
⑫	General purpose cable	For general purpose controllers	0.5 m	XW2Z-050J-A3
			1 m	XW2Z-100J-A3
⑬	Terminal block cable	For general purpose controllers	1 m	R7A-CPB001S
			2 m	R7A-CPB002S
⑭	Terminal block (with M3 screw and for pin terminals) Terminal block (with M3.5 screw and for fork/round terminals) Terminal block (with M3 screw and fork/round pin terminals)		1 m	XW2Z-100J-B28
			2 m	XW2Z-200J-B28
			-	XW2B-34G4
			-	XW2B-34G5
⑮	Personal Computer Monitor Cable		-	XW2B-34G6
			-	XW2D-34G6

Cable for CN3

Symbol	Name	Length	Order code
⑮	Personal Computer Monitor Cable	2 m	R88A-CCG002P2

Filters

Symbol	Applicable servo drive	Rated current	Rated voltage	Order code
⑯	R7D-BP01H/ 02HH/ 04H	4 A	1 pH, 230 V	R7A-FIB104-RE

Connectors

Specifications	Order code
Main Circuit Connector (CNA)	R7A-CNB01P
Servomotor Connector (CNB)	R7A-CNB01A
Control I/O Connector (CN1)	R88A-CNW01C
Encoder Input Connector (CN2)	R88A-CNW01R
Servomotor Connector for Encoder Cable	R88A-CNG02R
Servomotor Connector for Servomotor Power Cable	R88A-CNG01A
Brake Cable Connector	R88A-CNG01B

External regeneration resistor

Specification	Order code
80 W, 50 Ω	R88A-RR08050S
80 W, 100 Ω	R88A-RR080100S
220 W, 47 Ω	R88A-RR22047S

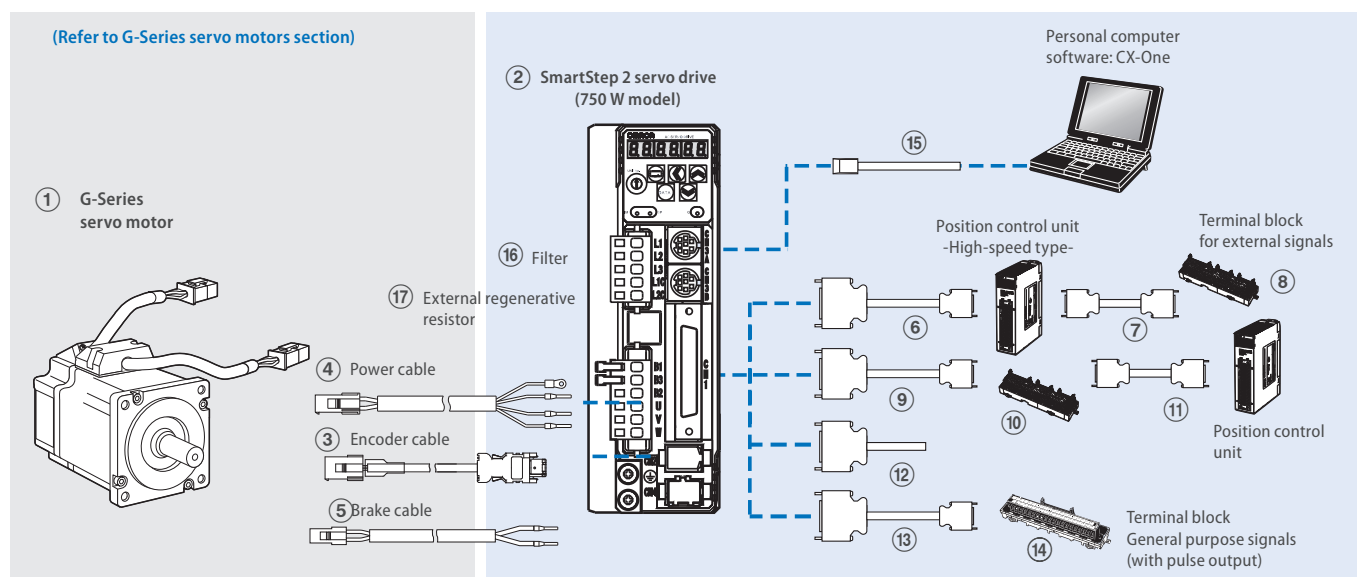
External regeneration resistor cable

Specifications	Order code
External Regenerative Resistor Connection Cable, 2 meters	R7A-CLB002RG

Parameter unit & computer software

Specifications	Order code
Parameter copy unit (with cable)	R88A-PR02G
Configuration and monitoring software tool for servo drives and inverters. (CX-Drive version 1.8 or higher)	CX-Drive

SmartStep2 servo drive configuration (750 W)



Note: The symbols ①②③④⑤ ... show the recommended sequence to select the components in a SmartStep 2 servo system.

Servo motor

Note: ①③④⑤ refer to G-Series motor section for detailed motor specifications and selection.

Servo drives

Symbol	Specifications		① Compatible rotary servo motors	Servo drive model
			Cylindrical type	Order code
②	1 phase 200 VAC	750 W	R88M-G75030H-__	R88D-GP08H

Control cables (for CN1)

Symbol	Description	Connect to	Length	Order code
⑥	Control cable (line-driver output for 1 axis)	Position control units (high-speed type) CJ1W-NC234 CJ1W-NC434	1 m	XW2Z-100J-G9
			5 m	XW2Z-500J-G9
			10 m	XW2Z-10MJ-G9
	Control cable (open-collector output for 1 axis)	Position control units (high-speed type) CJ1W-NC214 CJ1W-NC414	1 m	XW2Z-100J-G13
			3 m	XW2Z-300J-G13
	Control cable (line-driver output for 2 axis)	Position control units (high-speed type) CJ1W-NC234 CJ1W-NC434	1 m	XW2Z-100J-G1
			5 m	XW2Z-500J-G1
			10 m	XW2Z-10MJ-G1
⑦	Control cable (open-collector output for 2 axis)	Position control units (high-speed type) CJ1W-NC214 CJ1W-NC414	1 m	XW2Z-100J-G5
			3 m	XW2Z-300J-G5
⑧	Terminal block cable for external signals (for input common, forward/reverse run prohibited inputs, emergency stop input, or origin proximity input and interrupt input)	Position control units (high-speed type) CJ1W-NC234 CJ1W-NC434 CJ1W-NC214 CJ1W-NC414	0.5 m	XW2Z-C50X
			1 m	XW2Z-100X
			2 m	XW2Z-200X
			3 m	XW2Z-300X
			5 m	XW2Z-500X
			10 m	XW2Z-010X
⑨	Terminal block for external signals (M3 screw, pin terminals)		-	XW2B-20G4
			-	XW2B-20G5
			-	XW2D-20G6
			-	
⑩	Terminal block ext. signals (M3.5 screw, fork/round terminals)		-	XW2B-20G5
			-	XW2B-20G6
			-	
			-	
⑪	Terminal block ext. signals (M3 screw, fork/round terminals)		-	XW2D-20G6
			-	
			-	
			-	
			-	
			-	
			-	
			-	
⑫	Cable from servo relay unit to servo drive	CS1W-NC1_3, CJ1W-NC1_3, C200HW-NC113/213/413, CS1W-NC2_3/4_3, CJ1W-NC2_3/4_3 or CQM1H-PLB21 CJ1M-CPU21/22/23	1 m	XW2Z-100J-B25
			2 m	XW2Z-200J-B25
			1 m	XW2Z-100J-B31
			2 m	XW2Z-200J-B31
			-	XW2B-20J6-1B (1 axis)
			-	XW2B-40J6-2B (2 axes)
			-	XW2B-20J6-3B (1 axis)
			-	XW2B-20J6-8A (1 axis)
⑬	Servo relay unit	CS1W-NC1_3, CJ1W-NC1_3 or C200HW-NC113 position control unit CS1W-NC2_3/4_3, CJ1W-NC2_3/4_3 or C200HW-NC213/413 position control unit CQM1H-PLB21 CJ1M-CPU21/22/23	-	XW2B-40J6-9A (2 axes)
			-	

Symbol	Description	Connect to	Length	Order code
⑪	Position control unit connecting cable	CQM1H-PLB21	0.5 m	XW2Z-050J-A3
			1 m	XW2Z-100J-A3
		CS1W-NC113 or C200HW-NC113	0.5 m	XW2Z-050J-A6
			1 m	XW2Z-100J-A6
		CS1W-NC213/413 or C200HW-NC213/413	0.5 m	XW2Z-050J-A7
			1 m	XW2Z-100J-A7
		CS1W-NC133	0.5 m	XW2Z-050J-A10
			1 m	XW2Z-100J-A10
		CS1W-NC233/433	0.5 m	XW2Z-050J-A11
			1 m	XW2Z-100J-A11
		CJ1W-NC113	0.5 m	XW2Z-050J-A14
			1 m	XW2Z-100J-A14
		CJ1W-NC213/413	0.5 m	XW2Z-050J-A15
			1 m	XW2Z-100J-A15
		CJ1W-NC133	0.5 m	XW2Z-050J-A18
			1 m	XW2Z-100J-A18
		CJ1W-NC233/433	0.5 m	XW2Z-050J-A19
			1 m	XW2Z-100J-A19
		CJ1M-CPU21/22/23	0.5 m	XW2Z-050J-A33
			1 m	XW2Z-100J-A33
⑫	General purpose cable	For general purpose controllers	1 m	R88A-CPG001S
			2 m	R88A-CPG002S
⑬	Terminal block cable	For general purpose controllers	1 m	XW2Z-100J-B24
			2 m	XW2Z-200J-B24
⑭	Terminal block (M3 screw and for pin terminals)		–	XW2B-50G4
	Terminal block (M3.5 screw and for fork/round terminals)		–	XW2B-50G5
	Terminal block (M3 screw and for fork/round terminals)		–	XW2D-50G6

Computer cable (for CN3)

Symbol	Name	Length	Order code
⑮	Computer cable RS232	2 m	R88A-CCG002P2

Filter

Symbol	Rated current	Leakage current	Rated voltage	Applicable servodrive	Order code
⑯	6.6 A	3.5 mA	250 VAC single-phase	R88D-GP08H	R88A-FIK107-RE

External regenerative resistor

Symbol	Specifications	Order code
⑰	50 Ω, 80 W	R88A-RR08050S
	100 Ω, 80 W	R88A-RR080100S
	47 Ω, 220 W	R88A-RR22047S
	20 Ω, 500 W	R88A-RR50020S

Connectors

Specifications	Order code
I/O connector kit -50 pins- (for CN1)	R88A-CNU11C
Power cable connector (motor side)	R88A-CNG01A
Encoder connector (Servo drive side CN2)	R88A-CNW01R
Incremental encoder cable connector (motor side)	R88A-CNG02R

Computer software

Specifications	Order code
Configuration and monitoring software tool for servo drives and inverters (CX-Drive version 1.91 or higher).	CX-Drive

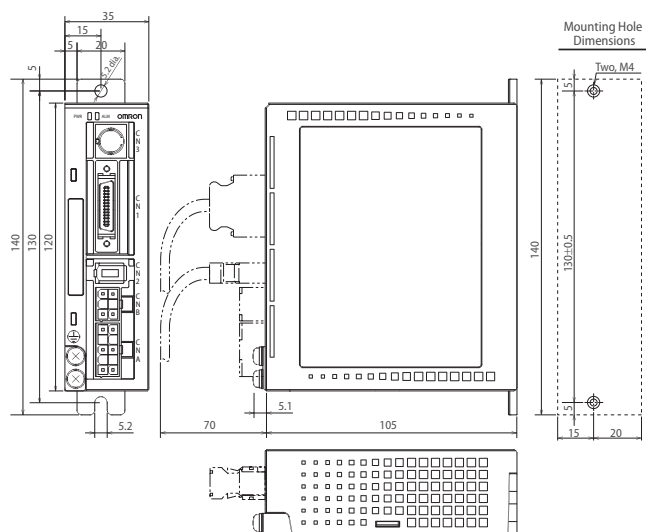
Specifications

Performance specifications

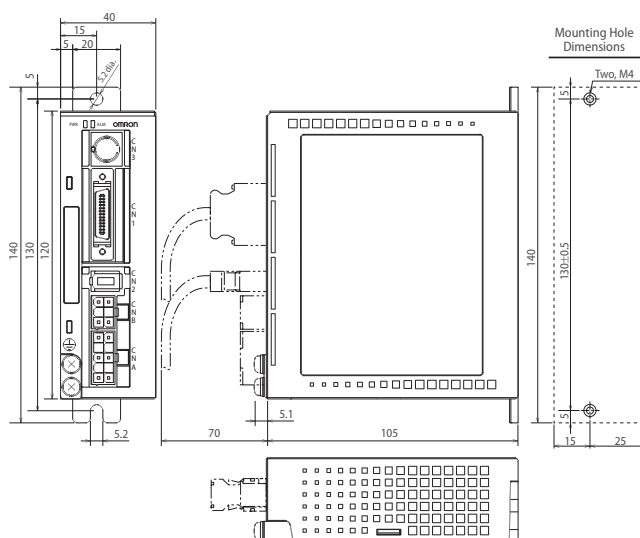
Item	200 VAC input type			
	100 W	200 W	400 W	750 W
	R7D-BP01H	R7D-BP02HH	R7D-BP04H	R88D-GP08H
Continuous output current (rms)	1.0 A	1.6 A	2.5 A	4 A
Momentary maximum output current (rms)	3.3 A	4.9 A	7.8 A	14.1 A
Main-circuit power supply	Single-phase 200 to 240 VAC (170 to 264 V), 50/60 Hz			Single-phase/three-phase 200 to 240 VAC (170 to 264 V), 50/60 Hz
Control circuit input power	–			Single-phase 200 to 240 VAC (170 to 264 V)
Control method	All-digital method			
Feedback	10,000 pulses/revolution incremental encoder			
Inverter method	PWM method based on IGBT			
PWM frequency	12 kHz		6 kHz	
Weight	0.35 kg	0.42 kg	0.42 kg	1.5 kg
Compatible motor voltage	200 V			
Command pulse response	Line drive: 500 kpps			
Compatible motor capacity	50 W 100 W	200 W	400 W	750 W
Applicable servo motor (R88M-)	G05030H G10030H GP10030H	G020030H GP20030H	G40030H GP40030H	G75030H

Dimensions

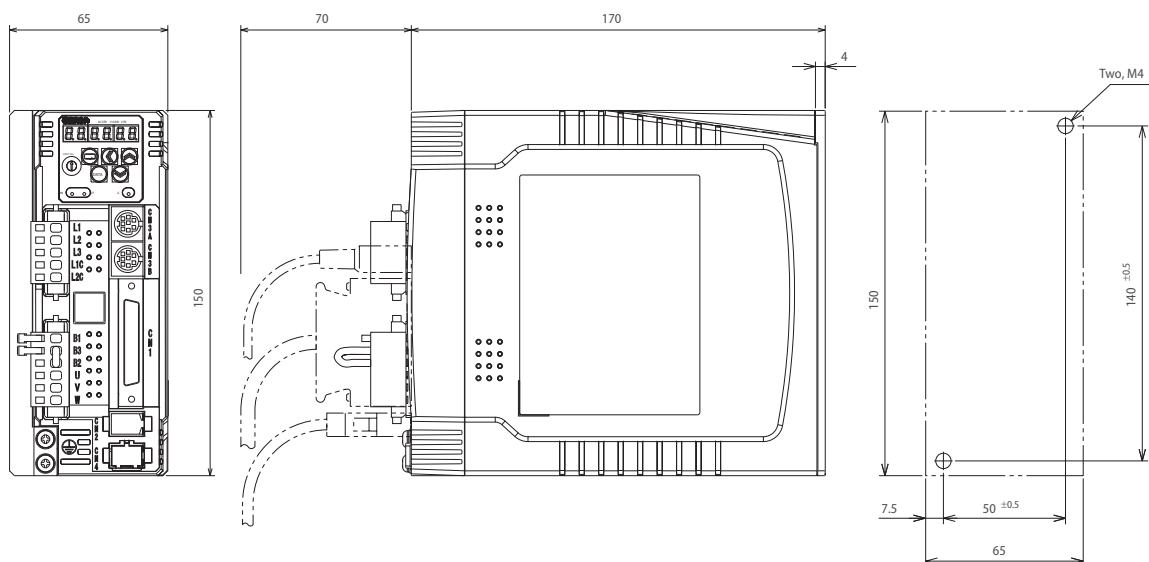
R7D-BP01H (230 V, 100 W)



R7D-BP02HH/04H (230 V, 200-400 W)



R88D-GP08H (230 V, 750 W)



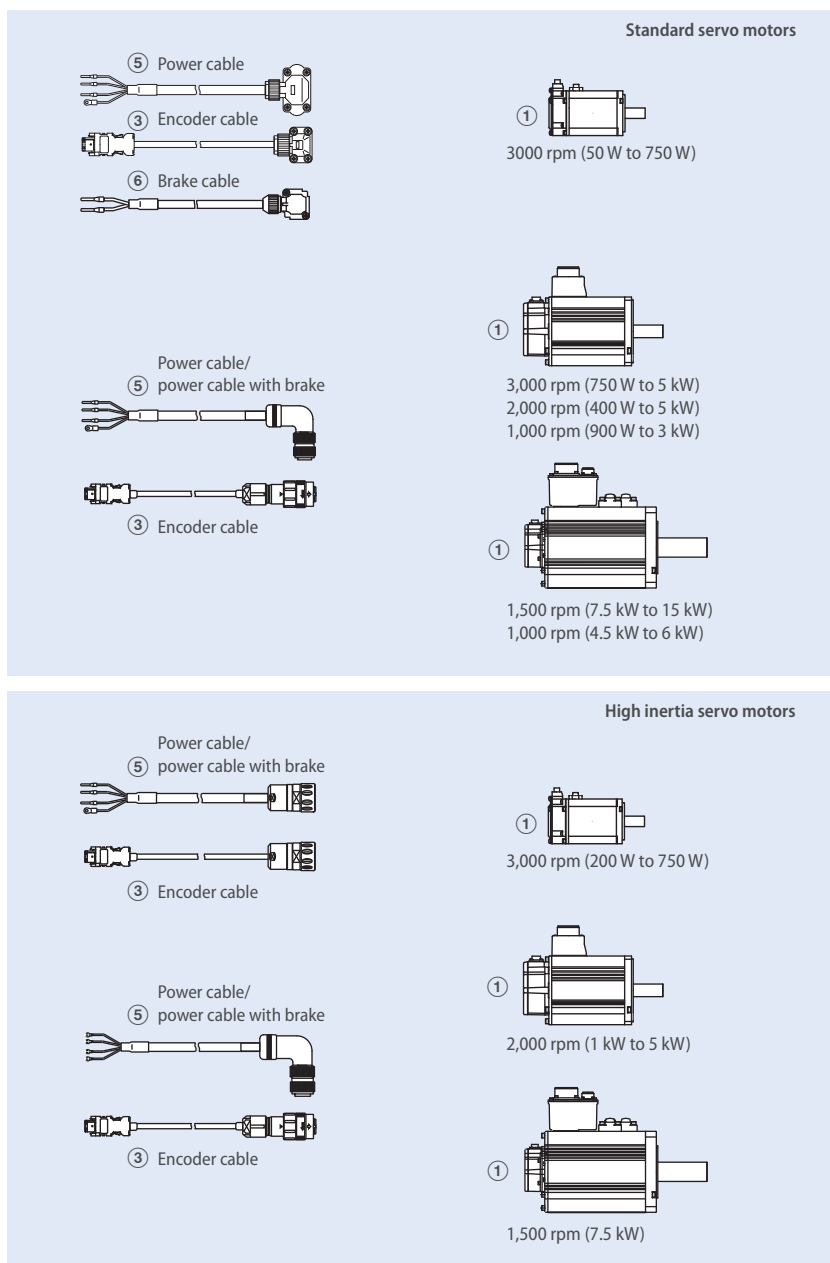
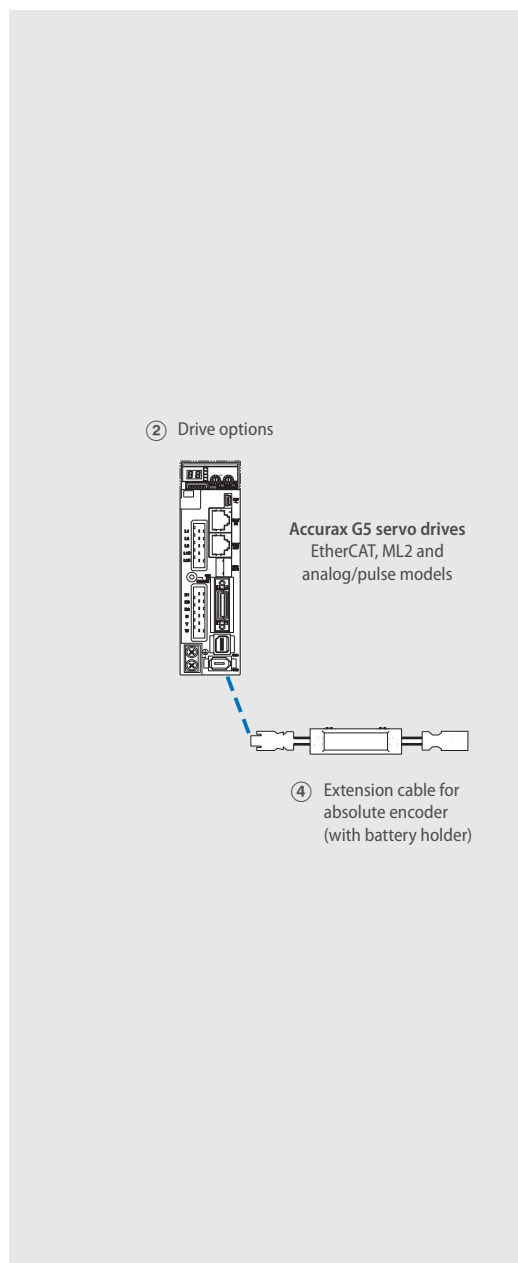


Servo motor family for accurate motion control

Accurax G5 servo motors include IP67 protection and connectors on the motor body. Use of 10 pole motors and 20 bit encoder results in 40% reduction in motor cogging. The servomotors are 25% lighter and 15% smaller due to patented new stator design PACK & CLAMP technology, 40% iron loss reduction and 15% smaller encoder.

- Standard and high inertia servo motor models
- Peak torque 300% of rated torque during 3 seconds or more depending on model
- High accuracy provided by a 20 bit resolution encoder, ABS encoder as an option
- IP67 protection in all models
- Ultra-light and compact size motor
- Low speed ripple and low torque ripple due to low torque cogging
- Various shaft, brake and seal options

Ordering information



Note: The symbols ①②③ ... show the recommended sequence to select the servo motor and cables

Servo motor



① Select motor from R88M-K or R88M-KH families using motor tables in next pages.

Servo drive


② Refer to Accurax G5 servo drive section for detailed drive specifications and selection of drive accessories.

Standard servo motors


Servo motors 3,000 r/min (50 to 5,000 W)

Symbol	Specifications					② Compatible servo drives		Order code
	Voltage	Encoder and design		Rated torque	Capacity	G5 EtherCAT/ML2	G5 analog/pulse	
①  230 V (50 to 750 W)  230 V (1,000 to 1,500 W) 400 V (750 to 5,000 W)	230 V	Incremental encoder (20 bit) Straight shaft with key and tap	Without brake	0.16 Nm	50 W	R88D-KN01H-__	R88D-KT01H	R88M-K05030H-S2
				0.32 Nm	100 W	R88D-KN01H-__	R88D-KT01H	R88M-K10030H-S2
				0.64 Nm	200 W	R88D-KN02H-__	R88D-KT02H	R88M-K20030H-S2
				1.3 Nm	400 W	R88D-KN04H-__	R88D-KT04H	R88M-K40030H-S2
				2.4 Nm	750 W	R88D-KN08H-__	R88D-KT08H	R88M-K75030H-S2
				3.18 Nm	1,000 W	R88D-KN15H-__	R88D-KT15H	R88M-K1K030H-S2
				4.77 Nm	1,500 W	R88D-KN15H-__	R88D-KT15H	R88M-K1K530H-S2
			With brake	0.16 Nm	50 W	R88D-KN01H-__	R88D-KT01H	R88M-K05030H-B52
				0.32 Nm	100 W	R88D-KN01H-__	R88D-KT01H	R88M-K10030H-B52
				0.64 Nm	200 W	R88D-KN02H-__	R88D-KT02H	R88M-K20030H-B52
				1.3 Nm	400 W	R88D-KN04H-__	R88D-KT04H	R88M-K40030H-B52
				2.4 Nm	750 W	R88D-KN08H-__	R88D-KT08H	R88M-K75030H-B52
				3.18 Nm	1,000 W	R88D-KN15H-__	R88D-KT15H	R88M-K1K030H-B52
				4.77 Nm	1,500 W	R88D-KN15H-__	R88D-KT15H	R88M-K1K530H-B52
		Absolute encoder (17 bit) Straight shaft with key and tap	Without brake	0.16 Nm	50 W	R88D-KN01H-__	R88D-KT01H	R88M-K05030T-S2
				0.32 Nm	100 W	R88D-KN01H-__	R88D-KT01H	R88M-K10030T-S2
				0.64 Nm	200 W	R88D-KN02H-__	R88D-KT02H	R88M-K20030T-S2
				1.3 Nm	400 W	R88D-KN04H-__	R88D-KT04H	R88M-K40030T-S2
				2.4 Nm	750 W	R88D-KN08H-__	R88D-KT08H	R88M-K75030T-S2
				3.18 Nm	1,000 W	R88D-KN15H-__	R88D-KT15H	R88M-K1K030T-S2
				4.77 Nm	1,500 W	R88D-KN15H-__	R88D-KT15H	R88M-K1K530T-S2
			With brake	0.16 Nm	50 W	R88D-KN01H-__	R88D-KT01H	R88M-K05030T-B52
				0.32 Nm	100 W	R88D-KN01H-__	R88D-KT01H	R88M-K10030T-B52
				0.64 Nm	200 W	R88D-KN02H-__	R88D-KT02H	R88M-K20030T-B52
				1.3 Nm	400 W	R88D-KN04H-__	R88D-KT04H	R88M-K40030T-B52
				2.4 Nm	750 W	R88D-KN08H-__	R88D-KT08H	R88M-K75030T-B52
				3.18 Nm	1,000 W	R88D-KN15H-__	R88D-KT15H	R88M-K1K030T-B52
				4.77 Nm	1,500 W	R88D-KN15H-__	R88D-KT15H	R88M-K1K530T-B52
	400 V	Incremental encoder (20 bit) Straight shaft with key and tap	Without brake	2.39 Nm	750 W	R88D-KN10F-__	R88D-KT10F	R88M-K75030F-S2
				3.18 Nm	1,000 W	R88D-KN15F-__	R88D-KT15F	R88M-K1K030F-S2
				4.77 Nm	1,500 W	R88D-KN15F-__	R88D-KT15F	R88M-K1K530F-S2
				6.37 Nm	2,000 W	R88D-KN20F-__	R88D-KT20F	R88M-K2K030F-S2
				9.55 Nm	3,000 W	R88D-KN30F-__	R88D-KT30F	R88M-K3K030F-S2
				12.7 Nm	4,000 W	R88D-KN50F-__	R88D-KT50F	R88M-K4K030F-S2
				15.9 Nm	5,000 W	R88D-KN50F-__	R88D-KT50F	R88M-K5K030F-S2
			With brake	2.39 Nm	750 W	R88D-KN10F-__	R88D-KT10F	R88M-K75030F-B52
				3.18 Nm	1,000 W	R88D-KN15F-__	R88D-KT15F	R88M-K1K030F-B52
				4.77 Nm	1,500 W	R88D-KN15F-__	R88D-KT15F	R88M-K1K530F-B52
				6.37 Nm	2,000 W	R88D-KN20F-__	R88D-KT20F	R88M-K2K030F-B52
				9.55 Nm	3,000 W	R88D-KN30F-__	R88D-KT30F	R88M-K3K030F-B52
				12.7 Nm	4,000 W	R88D-KN50F-__	R88D-KT50F	R88M-K4K030F-B52
				15.9 Nm	5,000 W	R88D-KN50F-__	R88D-KT50F	R88M-K5K030F-B52
		Absolute encoder (17 bit) Straight shaft with key and tap	Without brake	2.39 Nm	750 W	R88D-KN10F-__	R88D-KT10F	R88M-K75030C-S2
				3.18 Nm	1,000 W	R88D-KN15F-__	R88D-KT15F	R88M-K1K030C-S2
				4.77 Nm	1,500 W	R88D-KN15F-__	R88D-KT15F	R88M-K1K530C-S2
				6.37 Nm	2,000 W	R88D-KN20F-__	R88D-KT20F	R88M-K2K030C-S2
				9.55 Nm	3,000 W	R88D-KN30F-__	R88D-KT30F	R88M-K3K030C-S2
				12.7 Nm	4,000 W	R88D-KN50F-__	R88D-KT50F	R88M-K4K030C-S2
				15.9 Nm	5,000 W	R88D-KN50F-__	R88D-KT50F	R88M-K5K030C-S2
			With brake	2.39 Nm	750 W	R88D-KN10F-__	R88D-KT10F	R88M-K75030C-B52
				3.18 Nm	1,000 W	R88D-KN15F-__	R88D-KT15F	R88M-K1K030C-B52
				4.77 Nm	1,500 W	R88D-KN15F-__	R88D-KT15F	R88M-K1K530C-B52
				6.37 Nm	2,000 W	R88D-KN20F-__	R88D-KT20F	R88M-K2K030C-B52
				9.55 Nm	3,000 W	R88D-KN30F-__	R88D-KT30F	R88M-K3K030C-B52
				12.7 Nm	4,000 W	R88D-KN50F-__	R88D-KT50F	R88M-K4K030C-B52
				15.9 Nm	5,000 W	R88D-KN50F-__	R88D-KT50F	R88M-K5K030C-B52



Servo motors 2,000 r/min (1 to 5 kW)

Symbol	Specifications					② Compatible servo drives		Order code
	Voltage	Encoder and design		Rated torque	Capacity	G5 EtherCAT/ML2	G5 analog/pulse	
<div>①</div> <div></div>	230 V	Incremental encoder (20 bit) Straight shaft with key and tap	Without brake	4.77 Nm	1,000 W	R88D-KN10H-__	R88D-KT10H	R88M-K1K020H-S2
				7.16 Nm	1,500 W	R88D-KN15H-__	R88D-KT15H	R88M-K1K520H-S2
			With brake	4.77 Nm	1,000 W	R88D-KN10H-__	R88D-KT10H	R88M-K1K020H-BS2
				7.16 Nm	1,500 W	R88D-KN15H-__	R88D-KT15H	R88M-K1K520H-BS2
		Absolute encoder (17 bit) Straight shaft with key and tap	Without brake	4.77 Nm	1,000 W	R88D-KN10H-__	R88D-KT10H	R88M-K1K020T-S2
				7.16 Nm	1,500 W	R88D-KN15H-__	R88D-KT15H	R88M-K1K520T-S2
			With brake	4.77 Nm	1,000 W	R88D-KN10H-__	R88D-KT10H	R88M-K1K020T-BS2
				7.16 Nm	1,500 W	R88D-KN15H-__	R88D-KT15H	R88M-K1K520T-BS2
	400 V	Incremental encoder (20 bit) Straight shaft with key and tap	Without brake	1.91 Nm	400 W	R88D-KN06F-__	R88D-KT06F	R88M-K40020F-S2
				2.86 Nm	600 W	R88D-KN06F-__	R88D-KT06F	R88M-K60020F-S2
				4.77 Nm	1,000 W	R88D-KN10F-__	R88D-KT10F	R88M-K1K020F-S2
				7.16 Nm	1,500 W	R88D-KN15F-__	R88D-KT15F	R88M-K1K520F-S2
				9.55 Nm	2,000 W	R88D-KN20F-__	R88D-KT20F	R88M-K2K020F-S2
				14.3 Nm	3,000 W	R88D-KN30F-__	R88D-KT30F	R88M-K3K020F-S2
				19.1 Nm	4,000 W	R88D-KN50F-__	R88D-KT50F	R88M-K4K020F-S2
				23.9 Nm	5,000 W	R88D-KN50F-__	R88D-KT50F	R88M-K5K020F-S2
			With brake	1.91 Nm	400 W	R88D-KN06F-__	R88D-KT06F	R88M-K40020F-BS2
				2.86 Nm	600 W	R88D-KN06F-__	R88D-KT06F	R88M-K60020F-BS2
				4.77 Nm	1,000 W	R88D-KN10F-__	R88D-KT10F	R88M-K1K020F-BS2
				7.16 Nm	1,500 W	R88D-KN15F-__	R88D-KT15F	R88M-K1K520F-BS2
				9.55 Nm	2,000 W	R88D-KN20F-__	R88D-KT20F	R88M-K2K020F-BS2
				14.3 Nm	3,000 W	R88D-KN30F-__	R88D-KT30F	R88M-K3K020F-BS2
				19.1 Nm	4,000 W	R88D-KN50F-__	R88D-KT50F	R88M-K4K020F-BS2
				23.9 Nm	5,000 W	R88D-KN50F-__	R88D-KT50F	R88M-K5K020F-BS2
		Absolute encoder (17 bit) Straight shaft with key and tap	Without brake	1.91 Nm	400 W	R88D-KN06F-__	R88D-KT06F	R88M-K40020C-S2
				2.86 Nm	600 W	R88D-KN06F-__	R88D-KT06F	R88M-K60020C-S2
				4.77 Nm	1,000 W	R88D-KN10F-__	R88D-KT10F	R88M-K1K020C-S2
				7.16 Nm	1,500 W	R88D-KN15F-__	R88D-KT15F	R88M-K1K520C-S2
				9.55 Nm	2,000 W	R88D-KN20F-__	R88D-KT20F	R88M-K2K020C-S2
				14.3 Nm	3,000 W	R88D-KN30F-__	R88D-KT30F	R88M-K3K020C-S2
				19.1 Nm	4,000 W	R88D-KN50F-__	R88D-KT50F	R88M-K4K020C-S2
				23.9 Nm	5,000 W	R88D-KN50F-__	R88D-KT50F	R88M-K5K020C-S2
			With brake	1.91 Nm	400 W	R88D-KN06F-__	R88D-KT06F	R88M-K40020C-BS2
				2.86 Nm	600 W	R88D-KN06F-__	R88D-KT06F	R88M-K60020C-BS2
				4.77 Nm	1,000 W	R88D-KN10F-__	R88D-KT10F	R88M-K1K020C-BS2
				7.16 Nm	1,500 W	R88D-KN15F-__	R88D-KT15F	R88M-K1K520C-BS2
				9.55 Nm	2,000 W	R88D-KN20F-__	R88D-KT20F	R88M-K2K020C-BS2
				14.3 Nm	3,000 W	R88D-KN30F-__	R88D-KT30F	R88M-K3K020C-BS2
				19.1 Nm	4,000 W	R88D-KN50F-__	R88D-KT50F	R88M-K4K020C-BS2
				23.9 Nm	5,000 W	R88D-KN50F-__	R88D-KT50F	R88M-K5K020C-BS2

Servo motors 1,500 r/min (7.5 to 15 KW)


Symbol	Specifications				② Compatible servo drives		Order code	
	Voltage	Encoder and design		Rated torque	Capacity	G5 EtherCAT		G5 analog/pulse
① 	400 V	Absolute encoder (17 bit) straight shaft with key and tap	Without brake	47.8 Nm	7,500 W	R88D-KN75F-ECT	R88D-KT75F	R88M-K7K515C-S2
				70.0 Nm	11,000 W	R88D-KN150F-ECT	R88D-KT150F	R88M-K11K015C-S2
				95.5 Nm	15,000 W	R88D-KN150F-ECT	R88D-KT150F	R88M-K15K015C-S2
			With brake	47.8 Nm	7,500 W	R88D-KN75F-ECT	R88D-KT75F	R88M-K7K515C-BS2
				70.0 Nm	11,000 W	R88D-KN150F-ECT	R88D-KT150F	R88M-K11K015C-BS2
				95.5 Nm	15,000 W	R88D-KN150F-ECT	R88D-KT150F	R88M-K15K015C-BS2

Servo motors 1,000 r/min (900 to 6,000 W)


Symbol	Specifications					② Compatible servo drives			Order code
	Voltage	Encoder and design		Rated torque	Capacity	G5 EtherCAT	G5 analog/pulse	G5 ML2	
①  900 W to 3 kW  4.5 kW to 6 kW	230 V	Incremental encoder (20 bit) straight shaft with key and tap	No brake	8.59 Nm	900 W	R88D-KN15H-ECT	R88D-KT15H	R88D-KN15H-ML2	R88M-K90010H-S2
			With brake	8.59 Nm	900 W	R88D-KN15H-ECT	R88D-KT15H	R88D-KN15H-ML2	R88M-K90010H-B52
		Absolute encoder (17 bit) straight shaft with key and tap	No brake	8.59 Nm	900 W	R88D-KN15H-ECT	R88D-KT15H	R88D-KN15H-ML2	R88M-K90010T-S2
			With brake	8.59 Nm	900 W	R88D-KN15H-ECT	R88D-KT15H	R88D-KN15H-ML2	R88M-K90010T-B52
	400 V	Incremental encoder (20 bit) straight shaft with key and tap	No brake	8.59 Nm	900 W	R88D-KN15F-ECT	R88D-KT15F	R88D-KN15F-ML2	R88M-K90010F-S2
				19.1 Nm	2,000 W	R88D-KN30F-ECT	R88D-KT30F	R88D-KN30F-ML2	R88M-K2K010F-S2
				28.7 Nm	3,000 W	R88D-KN50F-ECT	R88D-KT50F	R88D-KN50F-ML2	R88M-K3K010F-S2
				8.59 Nm	900 W	R88D-KN15F-ECT	R88D-KT15F	R88D-KN15F-ML2	R88M-K90010F-B52
			With brake	19.1 Nm	2,000 W	R88D-KN30F-ECT	R88D-KT30F	R88D-KN30F-ML2	R88M-K2K010F-B52
				28.7 Nm	3,000 W	R88D-KN50F-ECT	R88D-KT50F	R88D-KN50F-ML2	R88M-K3K010F-B52
				8.59 Nm	900 W	R88D-KN15F-ECT	R88D-KT15F	R88D-KN15F-ML2	R88M-K90010C-S2
				19.1 Nm	2,000 W	R88D-KN30F-ECT	R88D-KT30F	R88D-KN30F-ML2	R88M-K2K010C-S2
		Absolute encoder (17 bit) straight shaft with key and tap	No brake	28.7 Nm	3,000 W	R88D-KN50F-ECT	R88D-KT50F	R88D-KN50F-ML2	R88M-K3K010C-S2
				43.0 Nm	4,500 W	R88D-KN50F-ECT	R88D-KT50F	R88D-KN50F-ML2	R88M-K4K510C-S2
				57.3 Nm	6,000 W	R88D-KN75F-ECT	R88D-KT75F	—	R88M-K6K010C-S2
				8.59 Nm	900 W	R88D-KN15F-ECT	R88D-KT15F	R88D-KN15F-ML2	R88M-K90010C-B52
			With brake	19.1 Nm	2,000 W	R88D-KN30F-ECT	R88D-KT30F	R88D-KN30F-ML2	R88M-K2K010C-B52
				28.7 Nm	3,000 W	R88D-KN50F-ECT	R88D-KT50F	R88D-KN50F-ML2	R88M-K3K010C-B52
				43.0 Nm	4,500 W	R88D-KN50F-ECT	R88D-KT50F	R88D-KN50F-ML2	R88M-K4K510C-B52
				57.3 Nm	6,000 W	R88D-KN75F-ECT	R88D-KT75F	—	R88M-K6K010C-B52

High inertia servo motors


Servo motors 3,000 r/min (200 to 750 W)

Symbol	Specifications					② Compatible servo drives		Order code
	Voltage	Encoder and design		Rated torque	Capacity	G5 EtherCAT/ML2	G5 analog/pulse	
① 	230 V	Incremental encoder (20 bit)	Without brake	0.64 Nm	200 W	R88D-KN02H-__	R88D-KT02H	R88M-KH20030H-S2-D
				1.3 Nm	400 W	R88D-KN04H-__	R88D-KT04H	R88M-KH40030H-S2-D
			Straight shaft with key and tap	2.4 Nm	750 W	R88D-KN08H-__	R88D-KT08H	R88M-KH75030H-S2-D
				0.64 Nm	200 W	R88D-KN02H-__	R88D-KT02H	R88M-KH20030H-B52-D
		Absolute encoder (17 bit)	Without brake	1.3 Nm	400 W	R88D-KN04H-__	R88D-KT04H	R88M-KH40030H-B52-D
				2.4 Nm	750 W	R88D-KN08H-__	R88D-KT08H	R88M-KH75030H-B52-D
			Straight shaft with key and tap	0.64 Nm	200 W	R88D-KN02H-__	R88D-KT02H	R88M-KH20030T-S2-D
				1.3 Nm	400 W	R88D-KN04H-__	R88D-KT04H	R88M-KH40030T-S2-D
		Absolute encoder (17 bit)	Without brake	2.4 Nm	750 W	R88D-KN08H-__	R88D-KT08H	R88M-KH75030T-S2-D
				0.64 Nm	200 W	R88D-KN02H-__	R88D-KT02H	R88M-KH20030T-B52-D
			Straight shaft with key and tap	1.3 Nm	400 W	R88D-KN04H-__	R88D-KT04H	R88M-KH40030T-B52-D
				2.4 Nm	750 W	R88D-KN08H-__	R88D-KT08H	R88M-KH75030T-B52-D



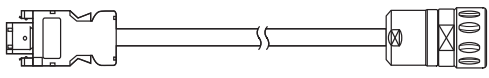

Servo motors 2,000 r/min (1 to 5 kW)

Symbol	Specifications					② Compatible servo drives		Servo motor model
	Voltage	Encoder and design		Rated torque	Capacity	G5 EtherCAT/ML2	G5 analog/pulse	Order code
<div>①</div> <div></div>	400 V	Incremental encoder (20 bit)	Without brake	4.77 Nm	1,000 W	R88D-_KN10F-__	R88D-KT10F	R88M-KH1K020F-S1
				7.16 Nm	1,500 W	R88D-_KN15F-__	R88D-KT15F	R88M-KH1K520F-S1
				9.55 Nm	2,000 W	R88D-_KN20F-__	R88D-KT20F	R88M-KH2K020F-S1
				14.3 Nm	3,000 W	R88D-_KN30F-__	R88D-KT30F	R88M-KH3K020F-S1
				19.1 Nm	4,000 W	R88D-_KN50F-__	R88D-KT50F	R88M-KH4K020F-S1
				23.9 Nm	5,000 W	R88D-_KN50F-__	R88D-KT50F	R88M-KH5K020F-S1
			With brake	4.77 Nm	1,000 W	R88D-_KN10F-__	R88D-KT10F	R88M-KH1K020F-B51
				7.16 Nm	1,500 W	R88D-_KN15F-__	R88D-KT15F	R88M-KH1K520F-B51
				9.55 Nm	2,000 W	R88D-_KN20F-__	R88D-KT20F	R88M-KH2K020F-B51
				14.3 Nm	3,000 W	R88D-_KN30F-__	R88D-KT30F	R88M-KH3K020F-B51
				19.1 Nm	4,000 W	R88D-_KN50F-__	R88D-KT50F	R88M-KH4K020F-B51
				23.9 Nm	5,000 W	R88D-_KN50F-__	R88D-KT50F	R88M-KH5K020F-B51
		Absolute encoder (17 bit)	Without brake	4.77 Nm	1,000 W	R88D-_KN10F-__	R88D-KT10F	R88M-KH1K020C-S1
				7.16 Nm	1,500 W	R88D-_KN15F-__	R88D-KT15F	R88M-KH1K520C-S1
				9.55 Nm	2,000 W	R88D-_KN20F-__	R88D-KT20F	R88M-KH2K020C-S1
				14.3 Nm	3,000 W	R88D-_KN30F-__	R88D-KT30F	R88M-KH3K020C-S1
				19.1 Nm	4,000 W	R88D-_KN50F-__	R88D-KT50F	R88M-KH4K020C-S1
				23.9 Nm	5,000 W	R88D-_KN50F-__	R88D-KT50F	R88M-KH5K020C-S1
			With brake	4.77 Nm	1,000 W	R88D-_KN10F-__	R88D-KT10F	R88M-KH1K020C-B51
				7.16 Nm	1,500 W	R88D-_KN15F-__	R88D-KT15F	R88M-KH1K520C-B51
				9.55 Nm	2,000 W	R88D-_KN20F-__	R88D-KT20F	R88M-KH2K020C-B51
				14.3 Nm	3,000 W	R88D-_KN30F-__	R88D-KT30F	R88M-KH3K020C-B51
				19.1 Nm	4,000 W	R88D-_KN50F-__	R88D-KT50F	R88M-KH4K020C-B51
				23.9 Nm	5,000 W	R88D-_KN50F-__	R88D-KT50F	R88M-KH5K020C-B51

Servo motors 1,500 r/min (7.5 kW)

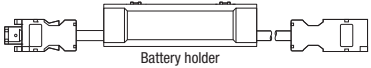
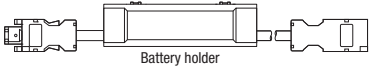

Symbol	Specifications					② Compatible servo drives		Servo motor model
	Voltage	Encoder and design		Rated torque	Capacity	G5 EtherCAT	G5 analog/pulse	Order code
① 	400 V	Absolute encoder (17 bit) Shaft end with key	Without brake	47.8 Nm	7,500 W	R88D-KN75F-ECT	R88D-KT75F	R88M-KH7K515C-S1
			With brake	47.8 Nm	7,500 W	R88D-KN75F-ECT	R88D-KT75F	R88M-KH7K515C-BS1

Encoder cables for absolute and incremental encoders

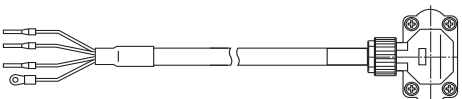
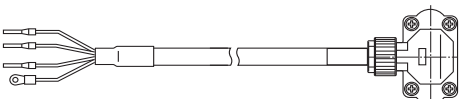
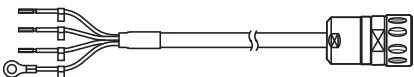
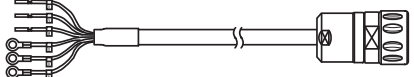
Symbol	Appearance	Specifications	Order code
③ 		Encoder cable for servomotors R88M-K(050/100/200/400/750)30(H/T)_	1.5 m R88A-CRKA001-5CR-E
			3 m R88A-CRKA003CR-E
			5 m R88A-CRKA005CR-E
			10 m R88A-CRKA010CR-E
			15 m R88A-CRKA015CR-E
			20 m R88A-CRKA020CR-E
		Encoder cable for servomotors R88M-KH(200/400/750)30(H/T)_	3 m R88A-CRWA003C-DE
			5 m R88A-CRWA005C-DE
			10 m R88A-CRWA010C-DE
			15 m R88A-CRWA015C-DE
		Encoder cable for servomotors R88M-K(1K0/1K5)30(H/T)_ R88M-K(750/1K0/1K5/2K0/3K0/4K0/5K0)30(F/C)_ R88M-K(400/600/1K0/1K5/2K0/3K0/4K0/5K0)20_ R88M-K(7K5/11K0/15K0)15_ R88M-K(900/2K0/3K0/4K5/6K0)10_ R88M-KH(1K0/1K5/2K0/3K0/4K0/5K0)20(F/C)_ R88M-KH7K515C_	1.5 m R88A-CRKC001-5NR-E
			3 m R88A-CRKC003NR-E
			5 m R88A-CRKC005NR-E
			10 m R88A-CRKC010NR-E
			15 m R88A-CRKC015NR-E
			20 m R88A-CRKC020NR-E

Note: For servomotors fitted with an absolute encoder you have to add the extension battery cable R88A-CRGD0R3C_ (see below) or connect a backup battery in the CN1 I/O connector.

Absolute encoder battery cable (encoder extension cable only)


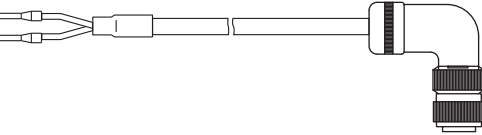
Symbol	Appearance	Specifications	Order code
④ 		Absolute encoder battery cable	Battery not included 0.3 m R88A-CRGD0R3C-E
			Battery included 0.3 m R88A-CRGD0R3C-BS-E
		Absolute encoder backup battery	2,000 mA.h 3.6V R88A-BAT01G

Power cables

Symbol	Appearance	Specifications	Order code
⑤ 		For 200 V servomotors R88M-K(050/100/200/400/750)30(H/T)-__S2 Note: for servomotors with brake R88M-K(050/100/200/400/750)30(H/T)-BS2, the separate brake cable R88A-CAKA __ __ BR-E is needed	Power cable only (without brake)
			1.5 m R88A-CAKA001-5SR-E
			3 m R88A-CAKA003SR-E
			5 m R88A-CAKA005SR-E
			10 m R88A-CAKA010SR-E
			15 m R88A-CAKA015SR-E
		For 200 V servomotors R88M-KH(200/400/750)30(H/T)-__S2	without brake
			3 m R88A-CAWA003S-DE
			5 m R88A-CAWA005S-DE
			10 m R88A-CAWA010S-DE
			15 m R88A-CAWA015S-DE
			20 m R88A-CAWA020S-DE
		For 200 V servomotors R88M-KH(200/400/750)30(H/T)-__S2	with brake
			3 m R88A-CAWA003B-DE
			5 m R88A-CAWA005B-DE
			10 m R88A-CAWA010B-DE
			15 m R88A-CAWA015B-DE
			20 m R88A-CAWA020B-DE

Symbol	Appearance	Specifications			Order code
⑤		For 200 V servomotors R88M-K(1K0/1K5)30(H/T)-__S2 R88M-K(1K0/1K5)20(H/T)-__S2 R88M-K90010(H/T)-__S2	without brake	1.5 m	R88A-CAGB001-5SR-E
	3 m			R88A-CAGB003SR-E	
	5 m			R88A-CAGB005SR-E	
	10 m			R88A-CAGB010SR-E	
	15 m			R88A-CAGB015SR-E	
	20 m			R88A-CAGB020SR-E	
			with brake	1.5 m	R88A-CAGB001-5BR-E
	3 m			R88A-CAGB003BR-E	
	5 m			R88A-CAGB005BR-E	
	10 m			R88A-CAGB010BR-E	
	15 m			R88A-CAGB015BR-E	
	20 m			R88A-CAGB020BR-E	
		For 400 V servomotors R88M-K(750/1K0/1K5/2K)30(F/C)-__S2 R88M-K(400/600/1K0/1K5/2K0)20(F/C)-__S2 R88M-K90010(F/C)-__S2 R88M-KH(1K0/1K5)20(F/C)-_S1	without brake	1.5 m	R88A-CAGB001-5SR-E
	3 m			R88A-CAGB003SR-E	
	5 m			R88A-CAGB005SR-E	
	10 m			R88A-CAGB010SR-E	
	15 m			R88A-CAGB015SR-E	
	20 m			R88A-CAGB020SR-E	
			with brake	1.5 m	R88A-CAKF001-5BR-E
	3 m			R88A-CAKF003BR-E	
	5 m			R88A-CAKF005BR-E	
	10 m			R88A-CAKF010BR-E	
	15 m			R88A-CAKF015BR-E	
	20 m			R88A-CAKF020BR-E	
	For 400 V servomotors R88M-KH2K020(F/C)-_S1	without brake	1.5 m	R88A-CAKC001-5SR-E	
3 m			R88A-CAKC003SR-E		
5 m			R88A-CAKC005SR-E		
10 m			R88A-CAKC010SR-E		
15 m			R88A-CAKC015SR-E		
20 m			R88A-CAKC020SR-E		
		with brake	1.5 m	R88A-CAKF001-5BR-E	
3 m			R88A-CAKF003BR-E		
5 m			R88A-CAKF005BR-E		
10 m			R88A-CAKF010BR-E		
15 m			R88A-CAKF015BR-E		
20 m			R88A-CAKF020BR-E		
	For 400 V servomotors R88M-K(3K0/4K0/5K0)30(F/C)-__S2 R88M-K(3K0/4K0/5K0)20(F/C)-__S2 R88M-K(2K0/3K0)10(F/C)-__S2 R88M-K4K510C-__S2 R88M-KH(3K0/4K0/5K0)20(F/C)-_S1	without brake	1.5 m	R88A-CAGD001-5SR-E	
3 m			R88A-CAGD003SR-E		
5 m			R88A-CAGD005SR-E		
10 m			R88A-CAGD010SR-E		
15 m			R88A-CAGD015SR-E		
20 m			R88A-CAGD020SR-E		
		with brake	1.5 m	R88A-CAGD001-5BR-E	
3 m			R88A-CAGD003BR-E		
5 m			R88A-CAGD005BR-E		
10 m			R88A-CAGD010BR-E		
15 m			R88A-CAGD015BR-E		
20 m			R88A-CAGD020BR-E		
	For 400 V servomotors R88M-K6K010C-__S2 R88M-K7K515C-__S2 R88M-KH7K515C-_S1 Note: for servomotors with brake R88M-K(6K010/7K515)C-BS2 and R88M-KH7K515C-BS1 the separate brake cable R88A-CAGE __ __ BR-E is needed	Power cable only (without brake)	1.5 m	R88A-CAKE001-5SR-E	
3 m			R88A-CAKE003SR-E		
5 m			R88A-CAKE005SR-E		
10 m			R88A-CAKE010SR-E		
15 m			R88A-CAKE015SR-E		
20 m			R88A-CAKE020SR-E		
	For 400 V servomotors R88M-K(11K0/15K0)15C-__S2 Note: Note: for servomotors with brake R88M-K(11K0/15K0)15C-BS2, the sep- arate brake cable R88A-CAGE __ __ BR- E is needed	Power cable only (without brake)	1.5 m	R88A-CAKG001-5SR-E	
3 m			R88A-CAKG003SR-E		
5 m			R88A-CAKG005SR-E		
10 m			R88A-CAKG010SR-E		
15 m			R88A-CAKG015SR-E		
20 m			R88A-CAKG020SR-E		

Brake cables (for 200 V 50 to 750 W servo motors and 400 V 6 to 15 kW servo motors)

Symbol	Appearance	Specifications	Order code
⑥		Brake cable only. For 200 V servo motors with brake R88M-K(050/100/200/400/750)30(H/T)-BS2	1.5 m R88A-CAKA001-SBR-E
			3 m R88A-CAKA003BR-E
			5 m R88A-CAKA005BR-E
			10 m R88A-CAKA010BR-E
			15 m R88A-CAKA015BR-E
		Brake cable only. For 400 V servo motors with brake R88M-K6K010C-BS2 R88M-K(7K5/11K0/15K0)15C-BS2 R88M-KH7K515C-BS1	1.5 m R88A-CAGE001-SBR-E
			3 m R88A-CAGE003BR-E
			5 m R88A-CAGE005BR-E
			10 m R88A-CAGE0010BR-E
			15 m R88A-CAGE015BR-E
			20 m R88A-CAGE020BR-E

Connectors for encoder, power and brake cables

Specifications	Applicable servo motor	Order code
Connectors for making encoder cables	Drive side (CN2)	All models R88A-CNW01R
	Motor side	R88M-K(050/100/200/400/750)30(H/T)_ R88A-CNK02R
	Motor side	R88M-KH(200/400/750)_ SPOC-17H-FRON169
	Motor side	R88M-K(1K0/1K5)30(H/T)_ R88M-K(750/1K0/1K5/2K0/3K0/4K0/5K0)30(F/C)_ R88M-K(400/600/1K0/1K5/2K0/3K0/4K0/5K0)20_ R88M-K(900/2K0/3K0)10_ R88M-K(4K5/6K0)10C-_ R88M-K(7K5/11K0/15K0)15C-_ R88M-KH(1K0/1K5/2K0/3K0/4K0/5K0/7K5)_ R88A-CNK04R
Connectors for making power cables	Motor side	R88M-K(050/100/200/400/750)30(H/T)_ R88A-CNK11A
	Motor side	R88M-KH(200/400/750)30(H/T)_ SPOC-06K-FSDN169
	Motor side	R88M-K(1K0/1K5)30(H/T)-S2 R88M-K(1K0/1K5)20(H/T)-S2 R88M-K90010(H/T)-S2 R88M-K(750/1K0/1K5/2K0)30(F/C)-S2 R88M-K(400/600/1K0/1K5/2K0)20(F/C)-S2 R88M-K90010(F/C)-S2 R88M-KH(1K0/1K5)20(F/C)-S1 MS3108E20-4S
	Motor side	R88M-K(1K0/1K5)30(H/T)-BS2 R88M-K(1K0/1K5)20(H/T)-BS2 R88M-K90010(H/T)-BS2 MS3108E20-18S
	Motor side	R88M-K(750/1K0/1K5/2K0/3K0/4K0/5K0)30(F/C)-BS2 R88M-K(400/600/1K0/1K5/2K0/3K0/4K0/5K0)20(F/C)-BS2 R88M-K(900/2K0/3K0)10(F/C)-BS2 R88M-K4K510C-BS2 R88M-KH(1K0/1K5/2K0/3K0/4K0/5K0)20(F/C)-BS1 MS3108E24-11S
	Motor side	R88M-K(3K0/4K0/5K0)30(F/C)-S2 R88M-K(3K0/4K0/5K0)20(F/C)-S2 R88M-K(2K0/3K0)10(F/C)-S2 R88M-K4K510C-S2 R88M-KH(2K0/3K0/4K0/5K0)20(F/C)-S1 MS3108E22-22S
	Motor side	R88M-K6K010C-_ R88M-K(7K5/11K0/15K0)15C-_ R88M-KH7K515C-_S1 MS3108E32-17S
	Motor side	R88M-K(050/100/200/400/750)30(H/T)-BS2 R88A-CNK11B
Connector for brake cable	Motor side	R88M-K6K010C-BS2 R88M-K(7K5/11K0/15K0)15C-BS2 R88M-KH7K515C-BS1 MS3108E14S-2S

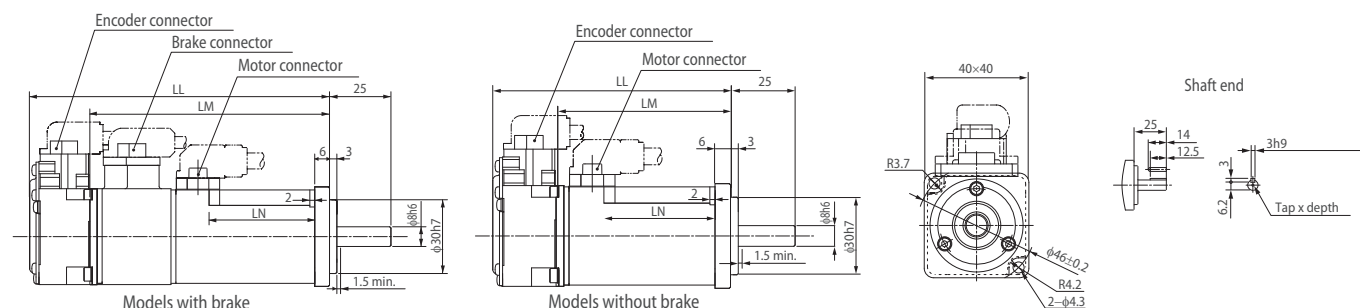
Note: 1. All cables listed are flexible and shielded (except the R88A-CAKA____-BR-E which is only a flexible cable).
2. All connectors and cables listed have IP67 class (except R88A-CNW01R connector and R88A-CRGD0R3C cable).

Dimensions

Standard servo motors

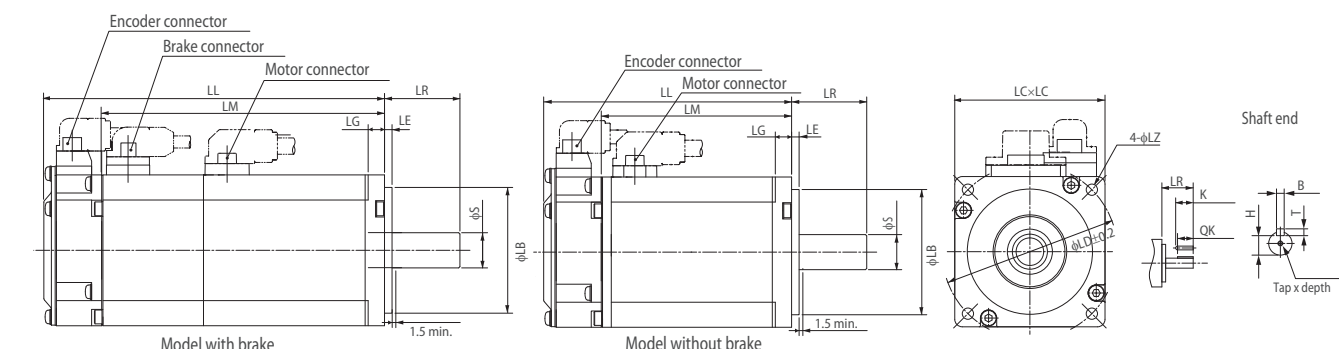
Type 3,000 r/min motors (230 V, 50 to 100 W)

Dimensions (mm)	Without brake		With brake		LN	Shaft end dimensions	Approx. mass (kg)	
Model	LL	LM	LL	LM		Tap x Depth	Without brake	With brake
R88M-K05030(H/T)-_S2	72	48	102	78	23	M3 x 6L	0.32	0.53
R88M-K10030(H/T)-_S2	92	68	122	98	43		0.47	0.68



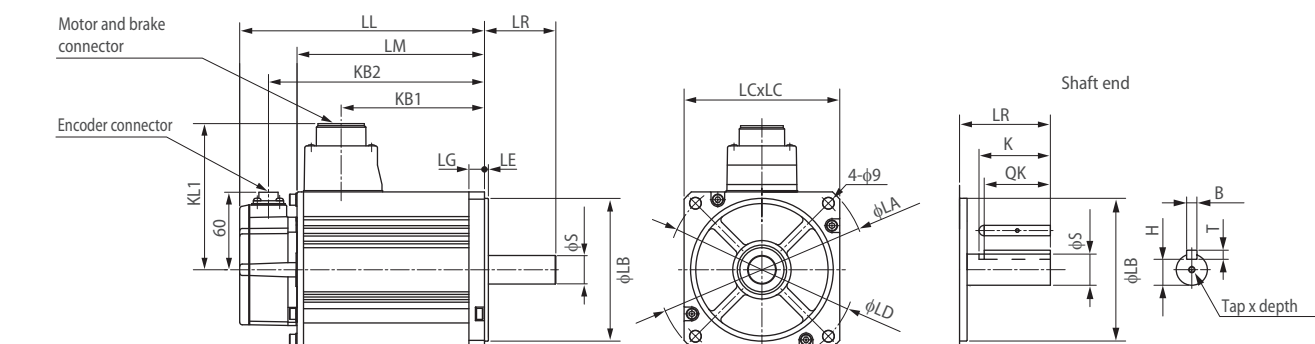
Type 3,000 r/min motors (230 V, 200 to 750 W)

Dimensions (mm)	Without brake		With brake		LR	Flange surface						Shaft end dimensions						Approx. mass (kg)		
Model	LL	LM	LL	LM		LB	LC	LD	LE	LG	LZ	S	K	QK	H	B	T	Tap × Depth	Without brake	With brake
R88M-K20030(H/T)-_S2	79.5	56.5	116	93	30	50 ^{h7}	60	70	3	6.5	4.5	11 ^{h6}	20	18	8.5	4 ^{h9}	4	M4 × 8L	0.82	1.3
R88M-K40030(H/T)-_S2	99	76	135.5	112.5								14 ^{h6}	25	22.5	11	5 ^{h9}	5	M5 × 10L	1.2	1.7
R88M-K75030(H/T)-_S2	112.2	86.2	148.2	122.2	35	70 ^{h7}	80	90		8	6	19 ^{h6}		22	15.5	6 ^{h9}	6		2.3	3.1



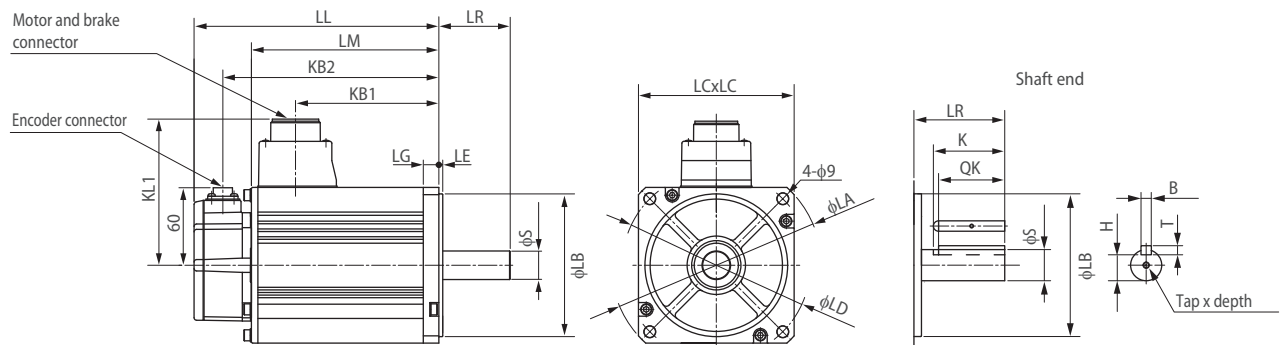
Type 3,000 r/min motors (230 V, 1 to 1.5 kW/ 400V, 750 W to 5 kW)

Dimensions (mm)		Without brake					With brake					LR	Flange surface						Shaft end dimensions						Approx. mass (kg)		
Voltage	Model	LL	LM	KB1	KB2	KL1	LL	LM	KB1	KB2	KL1		LA	LB	LC	LD	LE	LG	S	Tap × Depth	K	QK	H	B	T	Without brake	With brake
230	1K030(H/T)-_S2	141	97	66	119	101	168	124	66	146	101	55	135	95 ^{h7}	100	115	3	10	19 ^{h6}	M5 × 12L	45	42	15.5	6 ^{h9}	6	3.5	4.5
	1K530(H/T)-_S2	159.5	115.5	84.5	137.5		186.5	142.5	84.5	164.5																4.4	5.4
400	75030(F/C)-_S2	131.5	87.5	56.5	109.5	113	158.5	114.5	53.5	136.5	103	65	165	110 ^{h7}	120	145	6	24 ^{h6}	M8 × 20L	55	51	20	8 ^{h9}	7	3.1	4.1	
	1K030(F/C)-_S2	141	97	66	119		168	124	63	146															3.5	4.5	
	1K530(F/C)-_S2	159.5	115.5	84.5	137.5		186.5	142.5	81.5	164.5															4.4	5.4	
	2K030(F/C)-_S2	178.5	134.5	103.5	156.5		205.5	161.5	100.5	183.5															5.3	6.3	
	3K030(F/C)-_S2	190	146	112	168		215	171	112	193															8.3	9.4	
	4K030(F/C)-_S2	208	164	127	186		233	189	127	211															11	12.6	
	5K030(F/C)-_S2	243	199	162	221	268	224	162	246	14	16																



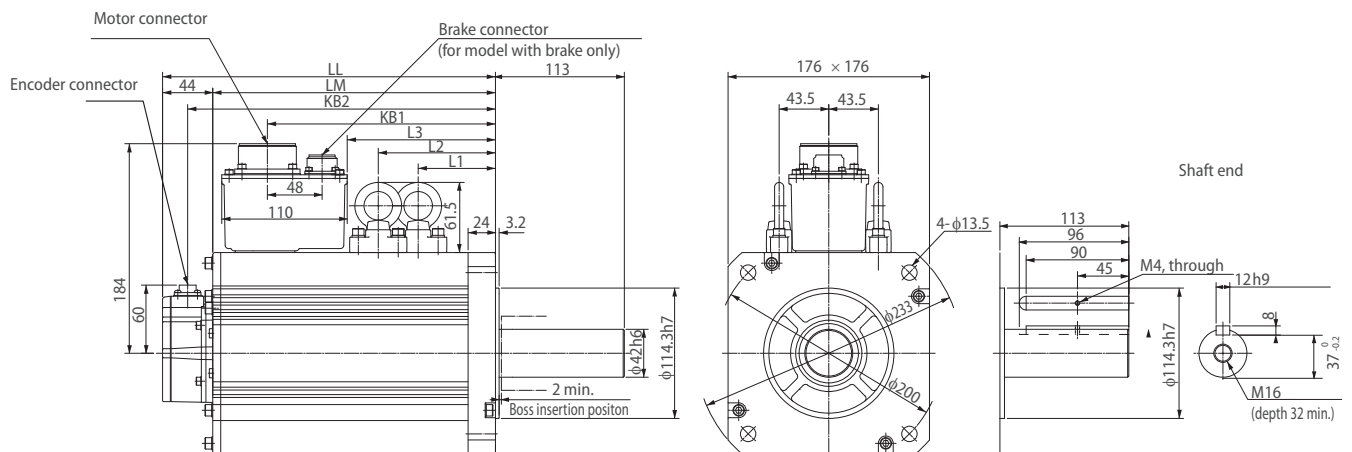
Type 2,000 r/min motors (230 V, 1 to 1.5 kW/400 V, 400 W to 5 kW)

Dimensions (mm)		Without brake					With brake					LR	Flange surface							Shaft end dimensions							Approx. mass (kg)	
Voltage	Model	LL	LM	KB1	KB2	KL1	LL	LM	KB1	KB2	KL1		LA	LB	LC	LD	LE	LG	LZ	S	Tap × Depth	K	QK	H	B	T	Without brake	With brake
230	1K020(H/T)-_S2	138	94	60	116	116	163	119	60	141	116	55	165	110 ^{h7}	130	145	6	12	9	22 ^{h6}	M5 × 12L	45	41	18	8 ^{h9}	7	5.2	6.7
	1K520(H/T)-_S2	155.5	111.5	77.5	133.5		180.5	136.5	77.5	158.5																		6.7
400	40020(F/C)-_S2	131.5	87.5	56.5	109.5	101	158.5	114.5	53.5	136.5	103		135	95 ^{h7}	100	115	3	10		19 ^{h6}			42	15.5	6 ^{h9}	6	3.1	4.1
	60020(F/C)-_S2	141	97	66	119		168	124	63	146																	3.5	4.5
	1K020(F/C)-_S2	138	94	60	116	116	163	119	57	141	118		165	110 ^{h7}	130	145	6	12		22 ^{h6}			41	18	8 ^{h9}	7	5.2	6.7
	1K520(F/C)-_S2	155.5	111.5	77.5	133.5		180.5	136.5	74.5	158.5																	6.7	8.2
	2K020(F/C)-_S2	173	129	95	151		198	154	92	176		65															8	9.5
	3K020(F/C)-_S2	208	164	127	186	118	233	189	127	211										24 ^{h6}	M8 × 20L	55	51	20		11	12.6	
	4K020(F/C)-_S2	177	133	96	155	140	202	158	96	180	140	70	233	114.3 ^{h7}	176	200	3.2	18	13.5	35 ^{h6}	M12 × 25L		50	30	10 ^{h9}	8	15.5	18.7
	5K020(F/C)-_S2	196	152	115	174		221	177	115	199																		18.6



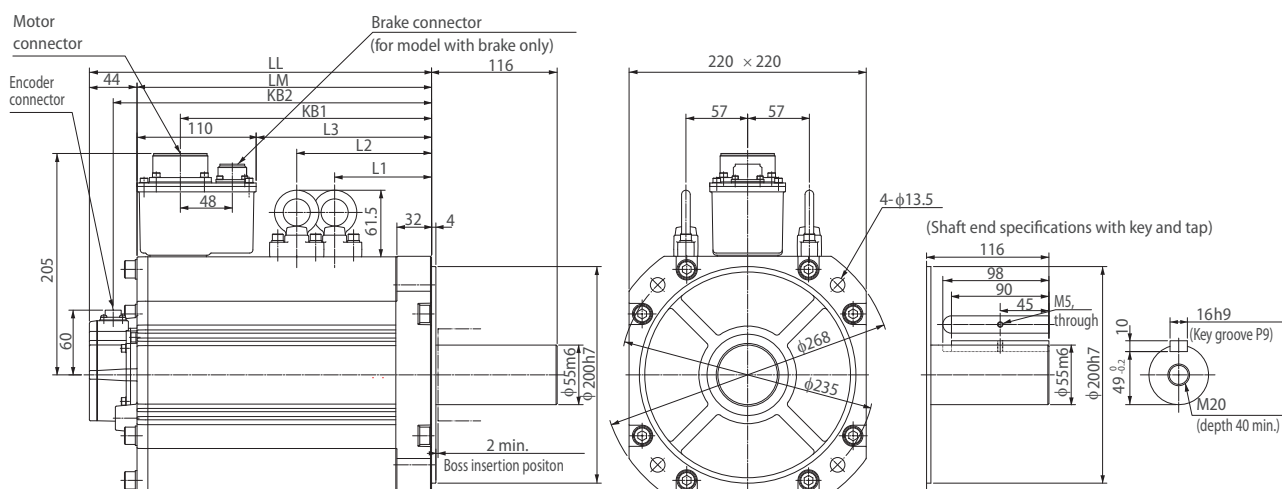
Type 1,500 r/min motors (400 V, 7.5 kW)

Dimensions (mm)		Without brake							With brake							Approx. mass (kg)	
Voltage	Model	LL	LM	KB1	KB2	L1	L2	L3	LL	LM	KB1	KB2	L1	L2	L3	Without brake	With brake
400	7K515C-_S2	312	268	219	290	117.5	117.5	149	337	293	253	315	117.5	152.5	183	36.4	40.4



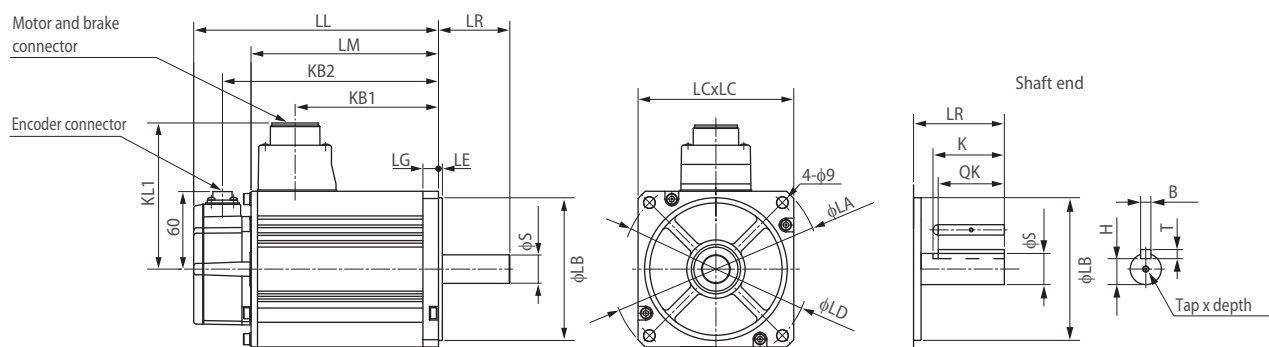
Type 1,500 r/min motors (400 V, 11 to 15 kW)

Dimensions (mm)		Without brake							With brake							Approx. mass (kg)	
Voltage	Model	LL	LM	KB1	KB2	L1	L2	L3	LL	LM	KB1	KB2	L1	L2	L3	Without brake	With brake
R88M-K_																	
400	11K015C-_S2	316	272	232	294	124.5	124.5	162	364	320	266	342	124.5	159.5	196	52.7	58.9
	15K015C-_S2	384	340	300	362	158.5	158.5	230	432	388	334	410	158.5	193.5	264	70.2	76.3



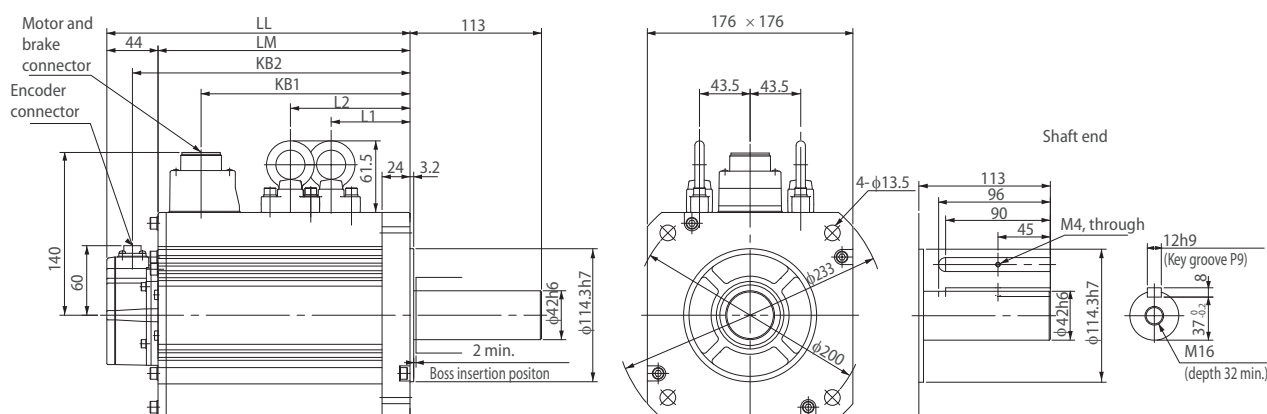
Type 1,000 r/min motors (230 V, 900 W/400 V, 900 W to 3 kW)

Dimensions (mm)		Without brake					With brake					LR	Flange surface								Shaft end dimensions							Approx. mass (kg)																					
Voltage	Model	LL	LM	KB1	KB2	KL1	LL	LM	KB1	KB2	KL1		LA	LB	LC	LD	LE	LG	LZ	S	Tap × Depth	K	QK	H	B	T	Without brake	With brake																					
230	90010(H/T)-_S2	155.5	111.5	77.5	133.5	116	180.5	136.5	77.5	158.5	116	70	165	110 ^{h7}	130	145	6	12	9	22 ^{h6}	M5 × 12L	45	41	18	8 ^{h9}	7	6.7	8.2																					
400	90010(F/C)-_S2																																																
	2K010(F/C)-_S2								163.5	119.5	82.5										141.5								140	188.5	144.5	82.5	166.5	140	80	233	114.3 ^{h7}	176	200	3.2	18	13.5	35 ^{h6}	M12 × 25L	55	50	30	10 ^{h9}	8
	3K010(F/C)-_S2	209.5	165.5	128.5	187.5		234.5	190.5	128.5	212.5															20	23.5																							



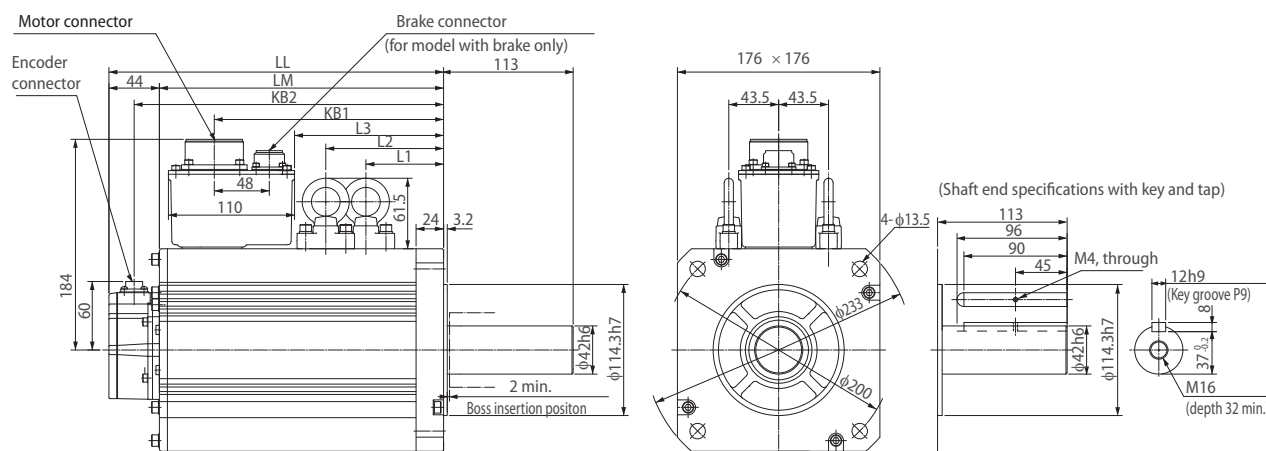
Type 1,000 r/min motors (400 V, 4.5 kW)

Dimensions (mm)		Without brake						With brake						Approx. mass (kg)	
Voltage	Model	LL	LM	KB1	KB2	L1	L2	LL	LM	KB1	KB2	L1	L2	Without brake	With brake
R88M-K_															
400	4K510C-_S2	266	222	185	244	98	98	291	247	185	269	98	133	29.4	33.3



Type 1,000 r/min motors (400 V, 6 kW)

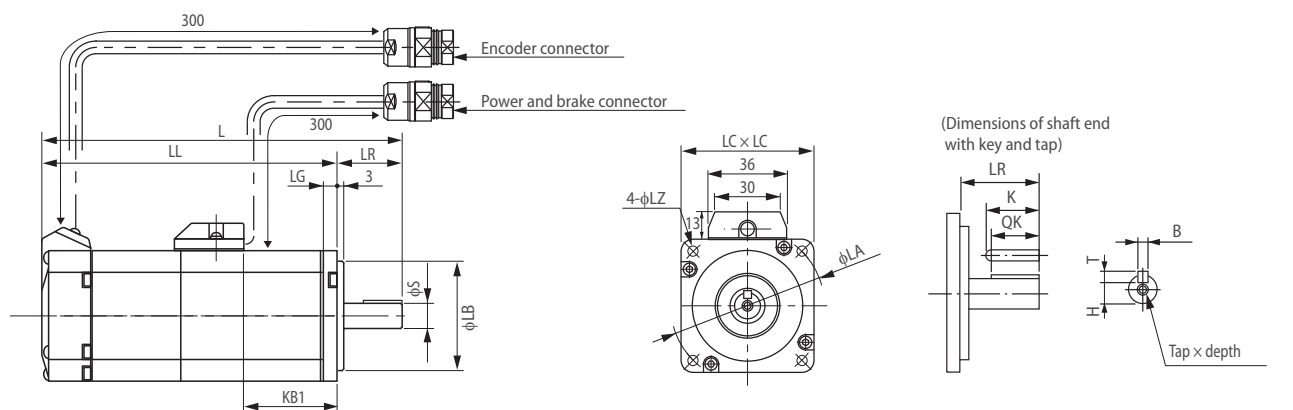
Dimensions (mm)		Without brake							With brake							Approx. mass (kg)	
Voltage	Model	LL	LM	KB1	KB2	L1	L2	L3	LL	LM	KB1	KB2	L1	L2	L3	Whithout brake	With brake
400	6K010C- S2	312	268	219	290	117.5	117.5	149	337	293	253	315	117.5	152.5	183	36.4	40.4



High inertia servo motors

Type 3,000 r/min motors (230 V, 200 to 750 W)

Dimensions (mm)		Without brake		With brake		KB1	LR	Flange surface					Shaft end dimensions							Approx. mass (kg)	
Voltage	Model	L	LL	L	LL			LA	LB	LC	LG	LZ	S	Tap × Depth	K	QK	H	B	T	Without brake	With brake
230	R88M-KH□																				
	20030(H/T)–S2-D	129	99	165.5	135.5	42	30	70	50 ^{h7}	60	6.5	4.5	11 ^{h6}	M4 × 8L	20	18	8.5	4 ^{h9}	4	0.96	1.4
	40030(H/T)–S2-D	148.5	118.5	185	155	61.5							14 ^{h6}	M5 × 10L	25	22.5	11	5 ^{h9}	5	1.4	1.8
	75030(H/T)–S2-D	162.2	127.2	199.2	164.2	67.2	35	90	70 ^{h7}	80	8	6	19 ^{h6}	M5 × 10L	25	22	15.5	6 ^{h9}	6	2.5	3.3



Encoder connector wiring



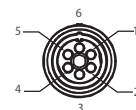
Cable length 300±30
Connector optional
Made by Hypertac
SRUC-17G-MRWN040 (MALE)

Encoder connector	
Pin No.	Signal
1	BAT – (0 V)
2	BAT +
3	S +
4	S –
5 to 7	Free
8	ESV (power supply)
9	EOV (power supply)
10 to 17	Free
Connector case	FG (Ground)

* Note: Pins 1 and 2 used on motors with ABS encoder.

Mating connector:
Plug type: SPOC-17H-FRON169 (FEMALE)

Power and brake connector wiring



Cable length 300±30
Connector optional
Made by Hypertac
SPUC-061-MSCN236 (MALE)

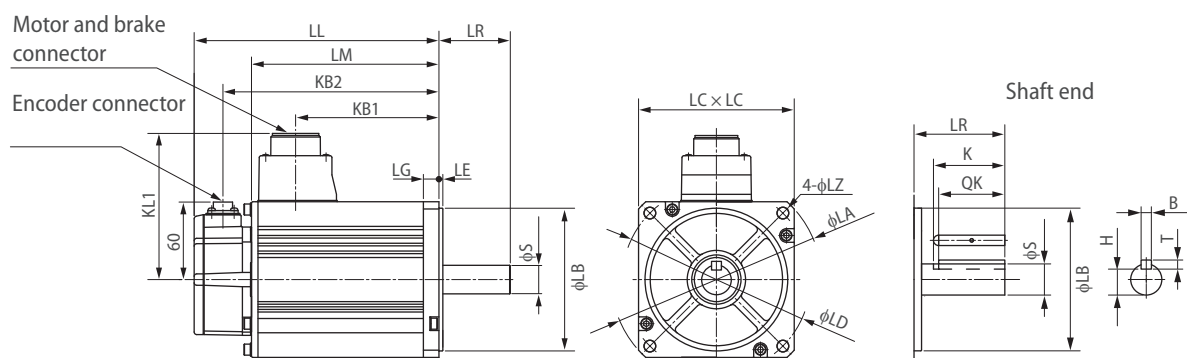
Power and brake connector	
Pin No.	Output
1	Phase U
2	Phase V
3	Phase W
4	*Brake terminal
5	*Brake terminal
6	FG (ground)

* Note: Pins 4 and 5 used only for motors with brake

Mating connector:
Plug type: SPOC-06K-FSDN169 (FEMALE)

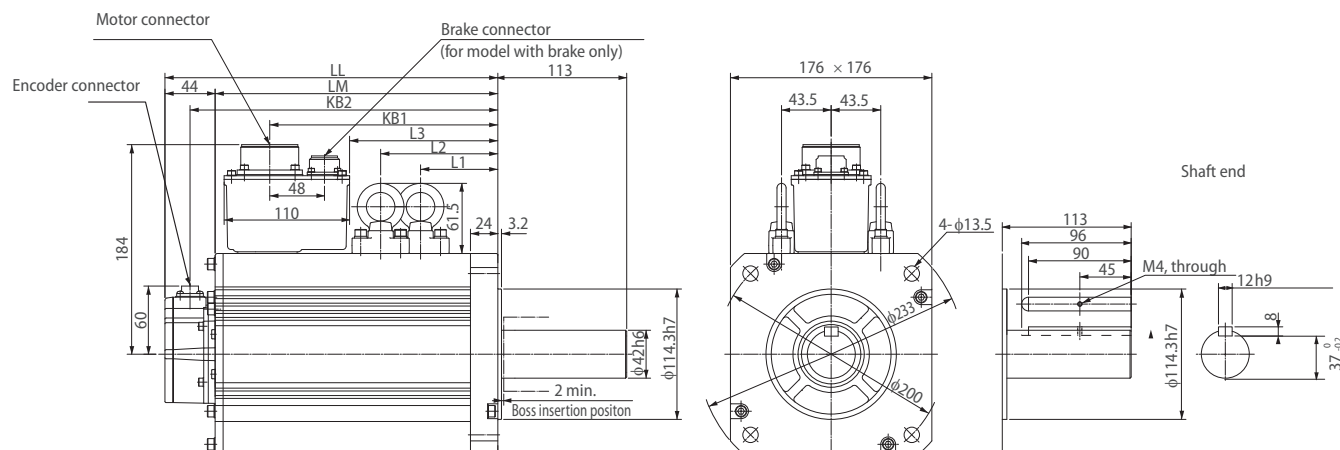
Type 2,000 r/min motors (400 V, 1 kW to 5 kW)

Dimensions (mm)		Without brake					With brake					LR	Flange surface							Shaft End Dimensions						Approx. mass (kg)	
Voltage	Model	LL	LM	KB1	KB2	KL1	LL	LM	KB1	KB2	KL1		LA	LB	LC	LD	LE	LG	LZ	S	K	QK	H	B	T	Without brake	With brake
400	R88M-KH□																										
	1K020(F/C)-_S1	173	129	95	151	116	201	157	92	179	118	70	165	110 ^{h7}	130	145	6	12	9	22 ^{h6}	45	41	18	8 ^{h9}	7	6.7	8.1
	1K520(F/C)-_S1	190.5	146.5	112.5	168.5		218.5	174.5	109.5	196.5		8.6	10.1														
	2K020(F/C)-_S1	177	133	96	155	140	206	162	96	184	140	80	233	114.3 ^{h7}	176	200	3.2	18	13.5	35 ^{h6}	55	50	30	10 ^{h9}	8	12.2	15.5
	3K020(F/C)-_S1	196	152	115	174		225	181	115	203		16.0	19.2														
	4K020(F/C)-_S1	209.5	165.5	128.5	187.5		238.5	194.5	128.5	216.5		18.6	21.8														
5K020(F/C)-_S1	238.5	194.5	157.5	216.5	267.5		223.5	157.5	245.5	23.0		26.2															



Type 1,500 r/min motors (400 V, 7.5 kW)

Dimensions (mm)		Without brake							With brake							Approx. mass (kg)	
Voltage	Model	LL	LM	KB1	KB2	L1	L2	L3	LL	LM	KB1	KB2	L1	L2	L3	Without brake	With brake
400	R88M-KH_																
	7K515C-_S1	357	313	264	335	146.5	146.5	194	382	338	298	360	146.5	181.5	228	42.3	46.2



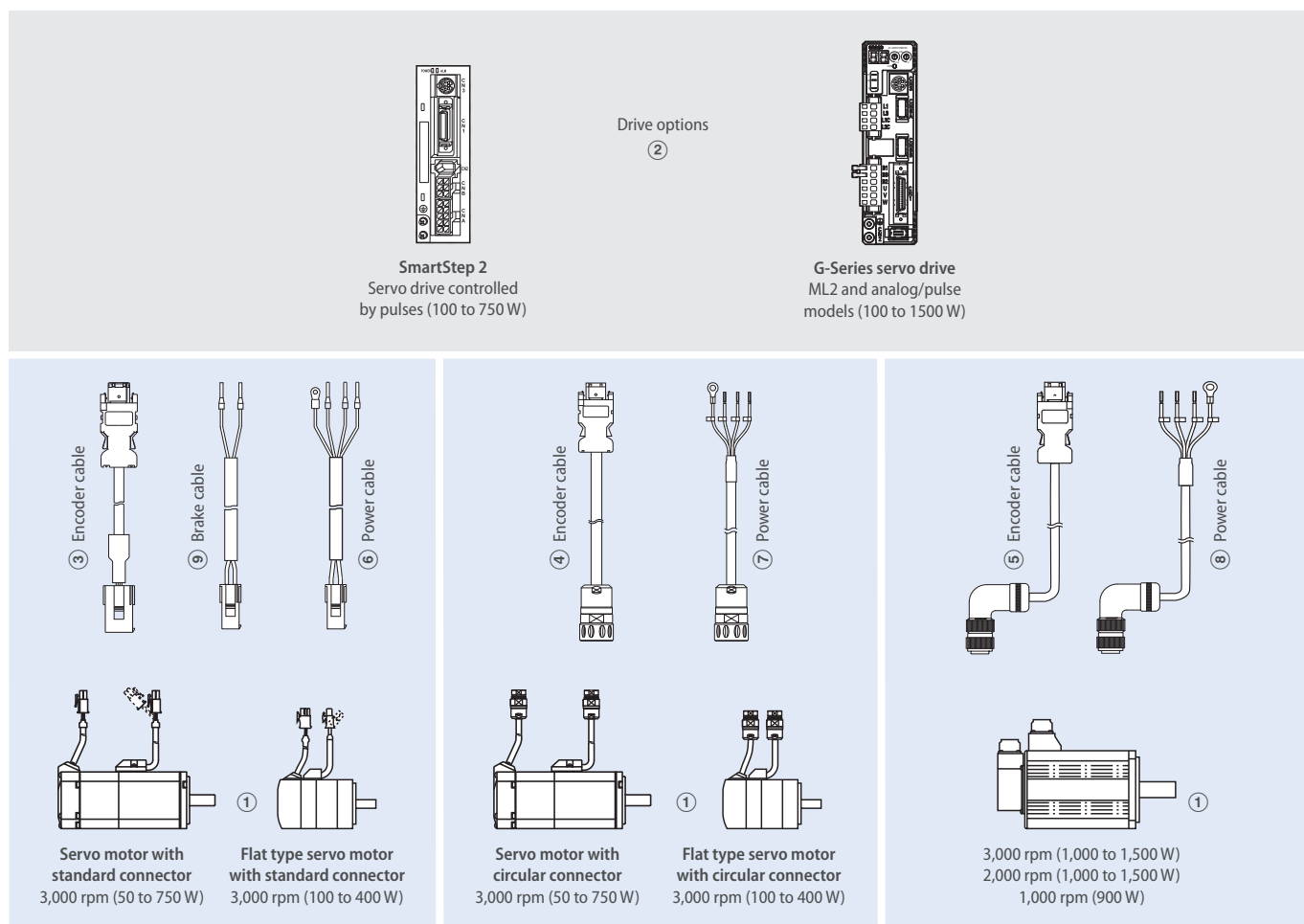


Compact in size, big in features

A wide range of compact servo motors to meet all application needs. When used with a SmartStep 2 drive, the G-Series servo motors offer the simplicity and cost-effectiveness of a stepper with the added advantages of a servo system.

- Peak torque 300% of continuous torque during 3 seconds or more depending on model
- Servo motors supported by SmartStep2, G-Series and Accurax G5 servo drives
- Cylindrical and Flat servo motors types are available
- Encoder accuracy of 10,000 step/rev as standard and 17-bit INC/ABS encoder as optional
- IP65 as standard and shaft oil seal available
- Motors with brake as option

Ordering information



Note: The symbols ①②③④⑤⑥ ... show the recommended sequence to select the servo motor and cables



Servo drive

② Refer to G-Series and SmartStep2 servo drive section for detailed drive specifications and selection of drive accessories.


Servo motor

① Select motor from cylindrical and flat types using motor tables in next pages.

Cylindrical servo motors 3,000/2,000/1,000 r/min (230 V, 50 to 1.5 kW)



Symbol	Specifications					② Compatible servo drives		Servo motor with standard connector	Servo motor with circular connector
	Encoder and design	Speed	Design	Rated torque	Capacity	SmartStep 2	G-Series	Order code	
①	 Incremental encoder (10,000 pulses) Straight shaft with key and tap (50 to 750 W)	3,000 min ⁻¹	Without brake	0.16 Nm	50 W	R7D-BP01H	R88D-G_01H_	R88M-G05030H-S2	R88M-G05030H-S2-D
				0.32 Nm	100 W	R7D-BP01H	R88D-G_01H_	R88M-G10030H-S2	R88M-G10030H-S2-D
				0.64 Nm	200 W	R7D-BP02HH	R88D-G_02H_	R88M-G20030H-S2	R88M-G20030H-S2-D
				1.3 Nm	400 W	R7D-BP04H	R88D-G_04H_	R88M-G40030H-S2	R88M-G40030H-S2-D
				2.4 Nm	750 W	R88D-GP08H	R88D-G_08H_	R88M-G75030H-S2	R88M-G75030H-S2-D
			With brake	0.16 Nm	50 W	R7D-BP01H	R88D-G_01H_	R88M-G05030H-BS2	R88M-G05030H-BS2-D
				0.32 Nm	100 W	R7D-BP01H	R88D-G_01H_	R88M-G10030H-BS2	R88M-G10030H-BS2-D
				0.64 Nm	200 W	R7D-BP02HH	R88D-G_02H_	R88M-G20030H-BS2	R88M-G20030H-BS2-D
				1.3 Nm	400 W	R7D-BP04H	R88D-G_04H_	R88M-G40030H-BS2	R88M-G40030H-BS2-D
				2.4 Nm	750 W	R88D-GP08H	R88D-G_08H_	R88M-G75030H-BS2	R88M-G75030H-BS2-D
①	 Absolute/incremental encoder (17 bits) Straight shaft with key and tap (900 to 1,500 W)	3,000 min ⁻¹	Without brake	0.16 Nm	50 W	–	R88D-G_01H_	R88M-G05030T-S2	R88M-G05030T-S2-D
				0.32 Nm	100 W	–	R88D-G_01H_	R88M-G10030T-S2	R88M-G10030T-S2-D
				0.64 Nm	200 W	–	R88D-G_02H_	R88M-G20030T-S2	R88M-G20030T-S2-D
				1.3 Nm	400 W	–	R88D-G_04H_	R88M-G40030T-S2	R88M-G40030T-S2-D
				2.4 Nm	750 W	–	R88D-G_08H_	R88M-G75030T-S2	R88M-G75030T-S2-D
				3.18 Nm	1 kW	–	R88D-G_15H_	R88M-G1K030T-S2	–
				4.77 Nm	1.5 kW	–	R88D-G_15H_	R88M-G1K530T-S2	–
			With brake	0.16 Nm	50 W	–	R88D-G_01H_	R88M-G05030T-BS2	R88M-G05030T-BS2-D
				0.32 Nm	100 W	–	R88D-G_01H_	R88M-G10030T-BS2	R88M-G10030T-BS2-D
				0.64 Nm	200 W	–	R88D-G_02H_	R88M-G20030T-BS2	R88M-G20030T-BS2-D
				1.3 Nm	400 W	–	R88D-G_04H_	R88M-G40030T-BS2	R88M-G40030T-BS2-D
				2.4 Nm	750 W	–	R88D-G_08H_	R88M-G75030T-BS2	R88M-G75030T-BS2-D
				3.18 Nm	1 kW	–	R88D-G_15H_	R88M-G1K030T-BS2	–
				4.77 Nm	1.5 kW	–	R88D-G_15H_	R88M-G1K530T-BS2	–
		2,000 min ⁻¹	Without brake	4.8 Nm	1 kW	–	R88D-G_10H_	R88M-G1K020T-S2	–
				7.15 Nm	1.5 kW	–	R88D-G_15H_	R88M-G1K520T-S2	–
			With brake	4.8 N m	1 kW	–	R88D-G_10H_	R88M-G1K020T-BS2	–
				7.15 Nm	1.5 kW	–	R88D-G_15H_	R88M-G1K520T-BS2	–
		1,000 min ⁻¹	Without brake	8.62 Nm	900 W	–	R88D-G_15H_	R88M-G90010T-S2	–
			With brake	8.62 Nm	900 W	–	R88D-G_15H_	R88M-G90010T-BS2	–

Flat type servo motors 3,000 r/min (230 V, 100 to 400 W)

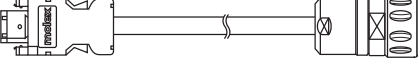
Symbol	Specifications				② Compatible servo drives		Servo motor with standard connector	Servo motor with circular connector
	Encoder and design		Rated torque	Capacity	SmartStep 2	G-Series	Order code	
①	 Incremental encoder (10,000 pulses) Straight shaft with key and tap	Without brake	0.32 Nm	100 W	R7D-BP01H	R88D-G_01H_	R88M-GP10030H-S2	R88M-GP10030H-S2-D
			0.64 Nm	200 W	R7D-BP02HH	R88D-G_02H_	R88M-GP20030H-S2	R88M-GP20030H-S2-D
			1.3 Nm	400 W	R7D-BP04H	R88D-G_04H_	R88M-GP40030H-S2	R88M-GP40030H-S2-D
		With brake	0.32 Nm	100 W	R7D-BP01H	R88D-G_01H_	R88M-GP10030H-BS2	R88M-GP10030H-BS2-D
			0.64 Nm	200 W	R7D-BP02HH	R88D-G_02H_	R88M-GP20030H-BS2	R88M-GP20030H-BS2-D
			1.3 Nm	400 W	R7D-BP04H	R88D-G_04H_	R88M-GP40030H-BS2	R88M-GP40030H-BS2-D
	Absolute/incremental encoder (17 bits) Straight shaft with key and tap	Without brake	0.32 Nm	100 W	–	R88D-G_01H_	R88M-GP10030T-S2	R88M-GP10030T-S2-D
			0.64 Nm	200 W	–	R88D-G_02H_	R88M-GP20030T-S2	R88M-GP20030T-S2-D
			1.3 Nm	400 W	–	R88D-G_04H_	R88M-GP40030T-S2	R88M-GP40030T-S2-D
		With brake	0.32 Nm	100 W	–	R88D-G_01H_	R88M-GP10030T-BS2	R88M-GP10030T-BS2-D
			0.64 Nm	200 W	–	R88D-G_02H_	R88M-GP20030T-BS2	R88M-GP20030T-BS2-D
			1.3 Nm	400 W	–	R88D-G_04H_	R88M-GP40030T-BS2	R88M-GP40030T-BS2-D

Encoder cables

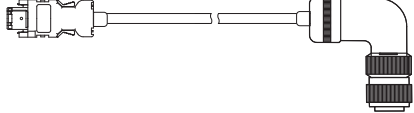
For 50 to 750 W servo motors with standard connectors

Symbol	Appearance	Specifications		Length	Order code
③		Encoder cable (50 to 750 W) R88M-G(50/100/200/400/750)30 R88M-GP(100/200/400)30	Absolute encoder T ₋	1.5 m	R88A-CRGA001-5CR-E
	3 m			R88A-CRGA003CR-E	
	5 m			R88A-CRGA005CR-E	
	10 m			R88A-CRGA010CR-E	
	15 m			R88A-CRGA015CR-E	
	20 m			R88A-CRGA020CR-E	
			Incremental encoder H ₋	1.5 m	R88A-CRGB001-5CR-E
	3 m			R88A-CRGB003CR-E	
	5 m			R88A-CRGB005CR-E	
	10 m			R88A-CRGB010CR-E	
	15 m			R88A-CRGB015CR-E	
	20 m			R88A-CRGB020CR-E	

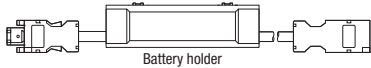
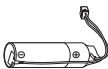
For 50 to 750 W servo motors with circular connector

Symbol	Appearance	Specifications	Length	Order code
④		Encoder cable (50 to 750 W) R88M-G(50/100/200/400/750)30_ _ _ _ _D R88M-GP(100/200/400)30_ _ _ _ _D	3 m	R88A-CRWA003C-DE
			5 m	R88A-CRWA005C-DE
			10 m	R88A-CRWA010C-DE
			15 m	R88A-CRWA015C-DE
			20 m	R88A-CRWA020C-DE

For 900 to 1,500 W servo motors

Symbol	Appearance	Specifications	Length	Order code
⑤		Encoder cable (900-1500 W) R88M-G(1K0/1K5)30T- _ _ R88M-G(1K0/1K5)20T- _ _ R88M-G90010T- _ _	1.5 m	R88A-CRGC001-5NR-E
			3 m	R88A-CRGC003NR-E
			5 m	R88A-CRGC005NR-E
			10 m	R88A-CRGC010NR-E
			15 m	R88A-CRGC015NR-E
			20 m	R88A-CRGC020NR-E

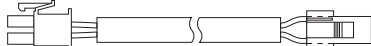

Battery cable for G-series servo drive models with absolute encoder

Symbol	Appearance	Specifications		Order code
④		Absolute encoder battery cable	Battery not included	0.3 m R88A-CRGDOR3C-E
			Battery included	0.3 m R88A-CRGDOR3C-BS-E
		Absolute encoder backup battery 2,000 mA.h 3.6 V	—	R88A-BAT01G



Note: The absolute encoder battery cable is only an extension and must be used with an absolute encoder cable.

Power cables

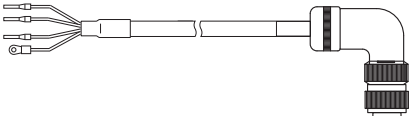
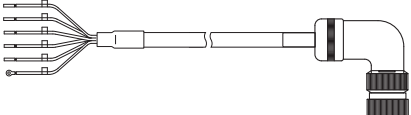
For 50 to 750 W servo motors with standard connectors

Symbol	Appearance	Specifications	Applicable servo drive	Length	Order code
⑥		For servomotors from 50 to 400 W R88M-G(050/100/200/400)30_ _ _ R88M-GP(100/200/400)30_ _ _	SmartStep 2	1.5 m	R7A-CAB001-5SR-E
				3 m	R7A-CAB003SR-E
				5 m	R7A-CAB005SR-E
				10 m	R7A-CAB010SR-E
				15 m	R7A-CAB015SR-E
		For servomotors with brake, a separate cable (R88A-CAGA_BR-E) is needed	SmartStep 2 (only 750 W) and G-Series	20 m	R7A-CAB020SR-E
				1.5 m	R88A-CAGA001-5SR-E
				3 m	R88A-CAGA003SR-E
				5 m	R88A-CAGA005SR-E
				10 m	R88A-CAGA010SR-E
				15 m	R88A-CAGA015SR-E
				20 m	R88A-CAGA020SR-E

For 50 to 750 W servo motors with circular connectors

Symbol	Appearance	Specifications		Applicable servo drive	Length	Order code
⑦		For servomotors from 50 to 400 W R88M-G(050/100/200/400)30_ R88M-GP(100/200/400)30_	Without brake -S2-D	SmartStep 2	1.5 m	R7A-CAB001-5SR-DE
	3 m				R7A-CAB003SR-DE	
	5 m				R7A-CAB005SR-DE	
	10 m				R7A-CAB010SR-DE	
	15 m				R7A-CAB015SR-DE	
	20 m		R7A-CAB020SR-DE			
	With brake -BS2-D		1.5 m		R7A-CAB001-5BR-DE	
			3 m		R7A-CAB003BR-DE	
			5 m		R7A-CAB005BR-DE	
			10 m		R7A-CAB010BR-DE	
		15 m	R7A-CAB015BR-DE			
	20 m	R7A-CAB020BR-DE				
		For servomotors from 50 to 750 W R88M-G(050/100/200/400/750)30_ R88M-GP(100/200/400)30_	Without brake -S2-D	SmartStep 2 (only 750 W) and G-Series	3 m	R88A-CAWA003S-DE
	5 m				R88A-CAWA005S-DE	
	10 m				R88A-CAWA010S-DE	
	15 m				R88A-CAWA015S-DE	
	With brake -BS2-D		20 m		R88A-CAWA020S-DE	
			3 m		R88A-CAWA003B-DE	
5 m			R88A-CAWA005B-DE			
10 m			R88A-CAWA010B-DE			
15 m	R88A-CAWA015B-DE					
	20 m	R88A-CAWA020B-DE				

For 900 to 1,500 W servo motors

Symbol	Appearance	Specifications		Applicable servo drive	Length	Order code
⑧		For servomotors from 900 to 1.5 kW R88M-G(1K0/1K5)30T_ R88M-G(1K0/1K5)20T_ R88M-G90010T_	Without brake -S2	G-Series	1.5 m	R88A-CAGB001-5SR-E
	3 m				R88A-CAGB003SR-E	
	5 m				R88A-CAGB005SR-E	
	10 m				R88A-CAGB010SR-E	
	15 m				R88A-CAGB015SR-E	
	20 m				R88A-CAGB020SR-E	
			With brake -BS2		1.5 m	R88A-CAGB001-5BR-E
					3 m	R88A-CAGB003BR-E
					5 m	R88A-CAGB005BR-E
					10 m	R88A-CAGB010BR-E
					15 m	R88A-CAGB015BR-E
					20 m	R88A-CAGB020BR-E

Brake cable with standard connector

Symbol	Appearance	Specifications	Order code
⑥		Brake cable only. For servomotors from 50 to 750W with brake R88M-G(050/100/200/400/750)30_-BS2, R88M-GP(100/200/400)30_-BS2	1.5 m R88A-CAGA001-5BR-E
			3 m R88A-CAGA003BR-E
			5 m R88A-CAGA005BR-E
			10 m R88A-CAGA010BR-E
			15 m R88A-CAGA015BR-E
			20 m R88A-CAGA020BR-E

Connectors for power, encoder and brake cables

Specifications			Applicable servomotor	Order code
Connectors for power cable	Drive side (CNB)	-	R88M-G(050/100/200/400)30H_ R88M-GP(100/200/400)30H_	R7A-CNB01A
	Motor side	Standard connector	R88M-G(050/100/200/400/750)30_ R88M-GP(100/200/400)30_ R88M-G(1K0/1K5)30_-S2 R88M-G(1K0/1K5)20_-S2 R88M-G90010_-S2	R88A-CNG01A MS3108E20-4S
			R88M-G(1K0/1K5)30_-BS2 R88M-G(1K0/1K5)20_-BS2 R88M-G90010_-BS2	MS3108E20-18S
			R88M-G(50/100/200/400/750)30_-____-D R88M-GP(100/200/300)____-D	SPOC-06K-FSDN169
		Circular connector (Hypertac)		
Connectors for encoder cable	Drive side (CN2)	-	All models	R88A-CNW01R
	Motor side	Standard connector	R88M-G(050/100/200/400/750)30T_ R88M-GP(100/200/400)30T_ R88M-G(050/100/200/400/750)30H_ R88M-GP(100/200/400)30H_ R88M-G(1K0/1K5)30T_ R88M-G(1K0/1K5)20T_ R88M-G90010T_	R88A-CNG01R R88A-CNG02R MS3108E20-29S
			R88M-G(50/100/200/400/750)30_-____-D R88M-GP(100/200/300)____-D	SPOC-17H-FRON169
		Circular connector (Hypertac)		
		Standard connector	R88M-G(050/100/200/400/750)30_-BS2 R88M-GP(100/200/400)30_-BS2	R88A-CNG01B

Connectors included with the motor

Specifications		Applicable servomotor	Order code
Power and brake connector (MALE)	Circular connector (Hypertac)	R88M-G(50/100/200/400/750)30_-____-D R88M-GP(100/200/300)____-D	SRUC-06J-MSCN236
Encoder connector (MALE)		R88M-G(50/100/200/400/750)30_-____-D R88M-GP(100/200/300)____-D	SRUC-17G-MRWN087

Note: 1. All cables listed are flexible and shielded (except the R88A-CAGA ____ BR-E which is only a flexible cable).

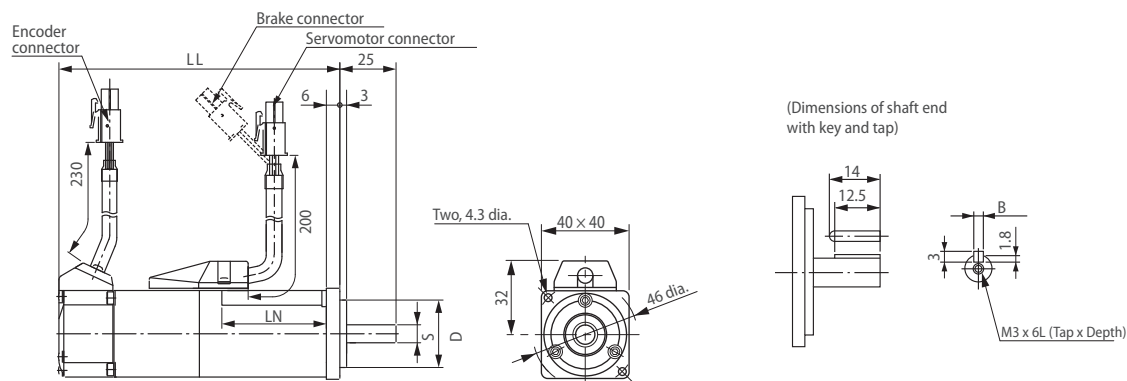
2. The R88A-CRGC ____ NR-E, R88A-CAGB ____ SR-E, R88A-CAGB ____ BR-E, R88A-CRWA ____ C-DE, R88A-CAWA ____ S-DE and R88A-CAWA ____ B-DE cables have IP67 class (including connector).

Dimensions

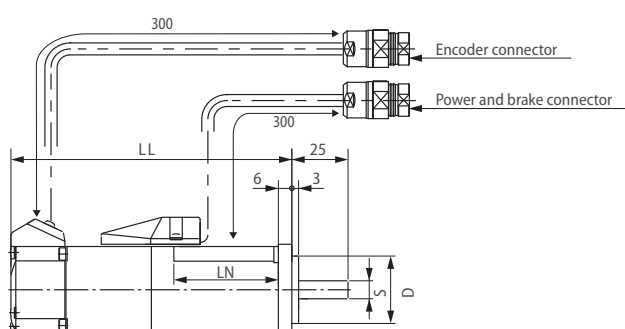
Cylindrical type 3,000 r/min (230 V, 50 to 100 W)

Dimensions (mm)	Without brake	With brake	LN	Flange surface	Shaft end		Aprox. mass (kg)	
Model	LL	LL		D	S	B	Without brake	With brake
R88M-G05030_-S2_-	72	102	26.5	30 ^{h7}	8 ^{h6}	3 ^{h9}	0.3	0.5
R88M-G10030_-S2_-	92	122	46.5				0.5	0.7

Servo motor with standard connector



Servo motor with circular connector



Encoder connector wiring



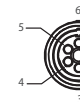
Cable length 300±30
Connector optional
Made by Hypertac
SRUC-17G-MRWN087 (MALE)

Encoder connector	
Pin No.	Signal
1	BAT - (0 V)
2	BAT +
3	S +
4	S -
5 to 7	Free
8	ESV (power supply)
9	E0V (power supply)
10 to 17	Free
Connector case	FG (Ground)

*Note: Pins 1 and 2 used only for motors with ABS encoder.

Mating connector:
Plug type: SPOC-17H-FRON169 (FEMALE)

Power and brake connector wiring



Cable length 300±30
Connector optional
Made by Hypertac
SRUC-06J-MSCN236 (MALE)

Power and brake connector	
Pin No.	Output
1	Phase U
2	Phase V
3	Phase W
4	*Brake terminal
5	*Brake terminal
6	FG (ground)

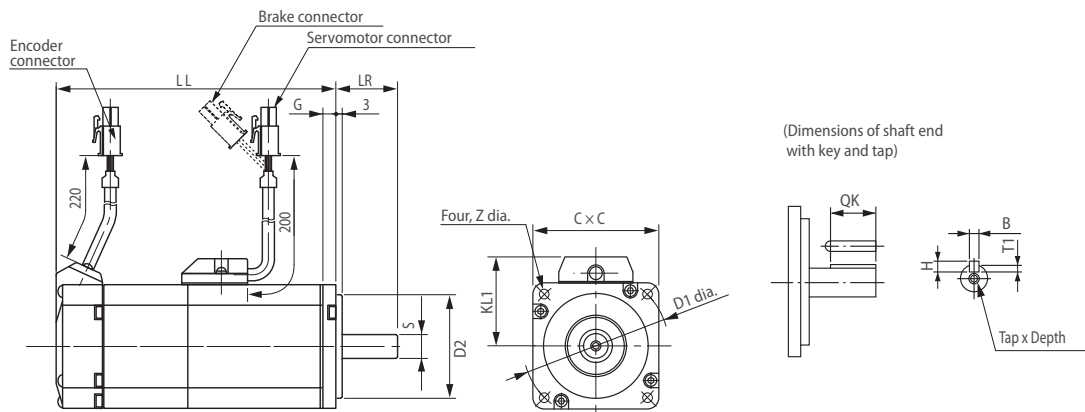
*Note: Pins 4 and 5 used only for motors with brake.

Mating connector:
Plug type: SPOC-06K-FSDN169 (FEMALE)

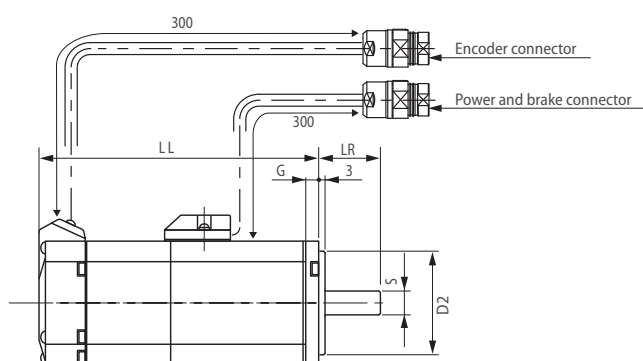
Cylindrical type 3,000 r/min (230 V, 200 to 750 W)

Dimensions (mm)	Without brake	With brake	LR	KL1	Flange surface					Shaft end						Aprox. mass (kg)	
Model	LL	LL			D1	D2	C	G	Z	S	QK	B	H	T1	Tap x depth	Without brake	With brake
R88M-G20030_-S2_-	79.5	116	30	43	70	50 ^{h7}	60	6.5	4.5	11 ^{h6}	18	4 ^{h9}	4	2.5	M4 x 8L	0.8	1.3
R88M-G40030_-S2_-	99	135.5								14 ^{h6}	22.5	5 ^{h9}	5	3	M5 x 10L	1.2	1.7
R88M-G75030_-S2_-	112.2	149.2	35	53	90	70 ^{h7}	80	8	6	19 ^{h6}	22	6 ^{h9}	6	3.5		2.3	3.1

Servo motor with standard connector



Servo motor with circular connector



Encoder connector wiring



Cable length 300±30
Connector optional
Made by Hypertac
SRUC-17G-MRW087 (MALE)

Pin No.	Signal
1	BAT - (0 V)
2	BAT +
3	S +
4	S -
5 to 7	Free
8	ESV (power supply)
9	E0V (power supply)
10 to 17	Free
Connector case	FG (Ground)

*Note: Pins 1 and 2 used only for motors with ABS encoder.

Mating connector:

Plug type: SPOC-17H-FRON169 (FEMALE)

Power and brake connector wiring



Cable length 300±30
Connector optional
Made by Hypertac
SRUC-06J-MSCN236 (MALE)

Pin No.	Output
1	Phase U
2	Phase V
3	Phase W
4	*Brake terminal
5	*Brake terminal
6	FG (ground)

*Note: Pins 4 and 5 used only for motors with brake.

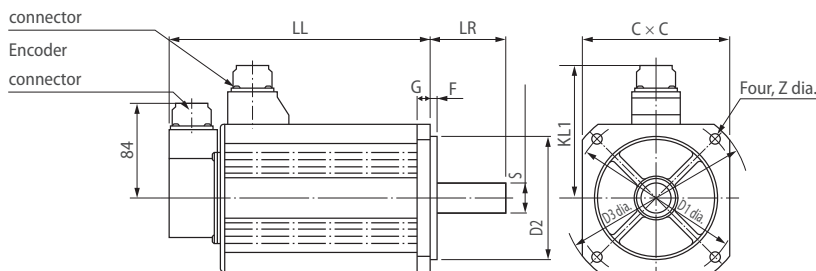
Mating connector:

Plug type: SPOC-06K-FSDN169 (FEMALE)

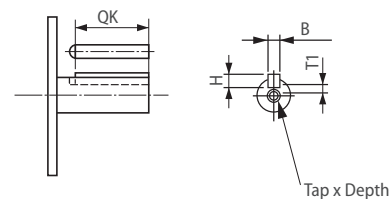
Cylindrical type 3,000, 2,000 and 1,000 r/min (230 V, 900 W to 1.5 kW)

Dimensions (mm)	Without brake	With brake	LR	KL1	Flange surface							Shaft end						Approx. mass (kg)		
Model	LL	LL			D1	D2	D3	C	G	F	Z	S	QK	B	H	T1	Tap × depth	Without brake	With brake	
R88M-G1K030T-_S2	175	200	55	98	100	80 ^{h7}	120	90	7	3	6.6	19 ^{h6}	42	6 ^{h9}	6	3.5	M5 × 12L	4.5	5.1	
R88M-G1K530T-_S2	180	205		103	115	95 ^{h7}	135	100	10		9								5.1	6.5
R88M-G1K020T-_S2	150	175		118	145	110 ^{h7}	165	130	12	6		22 ^{h6}	41	8 ^{h9}	7	4			6.8	8.7
R88M-G1K520T-_S2	175	200																		
R88M-G90010T-_S2	175	200	70																10	

Servomotor/brake connector



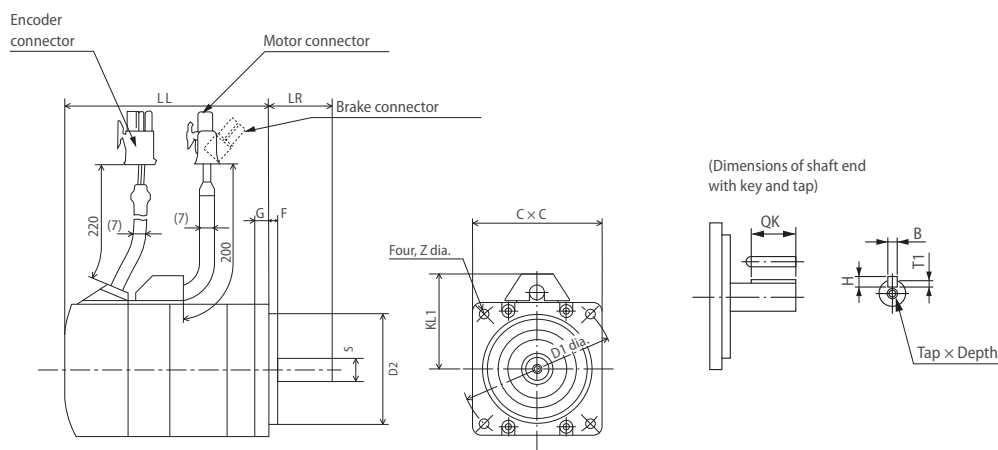
(Dimensions of shaft end with key and tap)



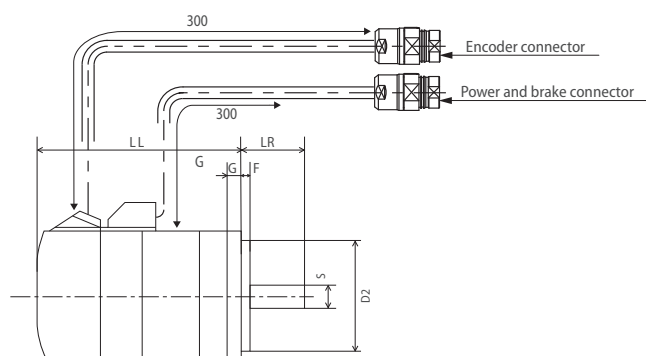
Flat type 3,000 r/min (230 V, 100 W to 400 W)

Dimensions (mm)	Without brake	With brake	LR	KL1	Flange surface						Shaft end						Aprox. mass (kg)	
Model	LL	LL			D1	D2	C	F	G	Z	S	QK	B	H	T1	Tap × depth	Without brake	With brake
R88M-GP10030H-__S2-__	60.5	84.5	25	43	70	50 ^{h7}	60	3	7	4.5	8 ^{h6}	12.5	3 ^{h9}	3	1.8	M3 × 6L	0.7	0.9
R88M-GP10030T-__S2-__	87.5	111.5																
R88M-GP20030H-__S2-__	67.5	100	30	53	90	70 ^{h7}	80	5	8	5.5	11 ^{h6}	18	4 ^{h9}	4	2.5	M4 × 8L	1.3	2
R88M-GP20030T-__S2-__	94.5	127																
R88M-GP40030H-__S2-__	82.5	115									14 ^{h6}	22.5	5 ^{h9}	5	3.0	M5 × 10L	1.8	2.5
R88M-GP40030T-__S2-__	109.5	142																

Servo motor with standard connector



Servo motor with circular connector



Encoder connector wiring



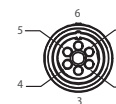
Cable length 300±30
Connector optional
Made by Hypertac
SRUC-17G-MRWN087 (MALE)

Encoder connector	
Pin No.	Signal
1	BAT - (0 V)
2	BAT +
3	S +
4	S -
5 to 7	Free
8	ESV (power supply)
9	E0V (power supply)
10 to 17	Free
Connector case	FG (Ground)

*Note: Pins 1 and 2 used only for motors with ABS encoder.

Mating connector:
Plug type: SPOC-17H-FRON169 (FEMALE)

Power and brake connector wiring

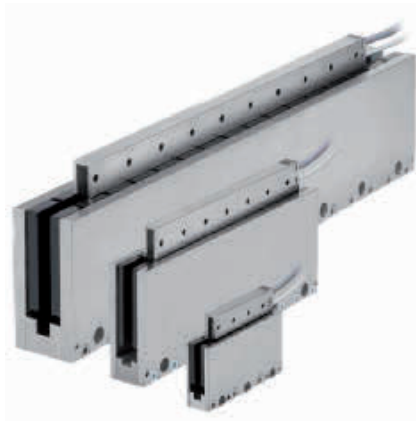


Cable length 300±30
Connector optional
Made by Hypertac
SRUC-06J-MSCN236 (MALE)

Power and brake connector	
Pin No.	Output
1	Phase U
2	Phase V
3	Phase W
4	*Brake terminal
5	*Brake terminal
6	FG (ground)

*Note: Pins 4 and 5 used only for motors with brake.

Mating connector:
Plug type: SPOC-06K-FSDN169 (FEMALE)



New linear motors with optimised efficiency

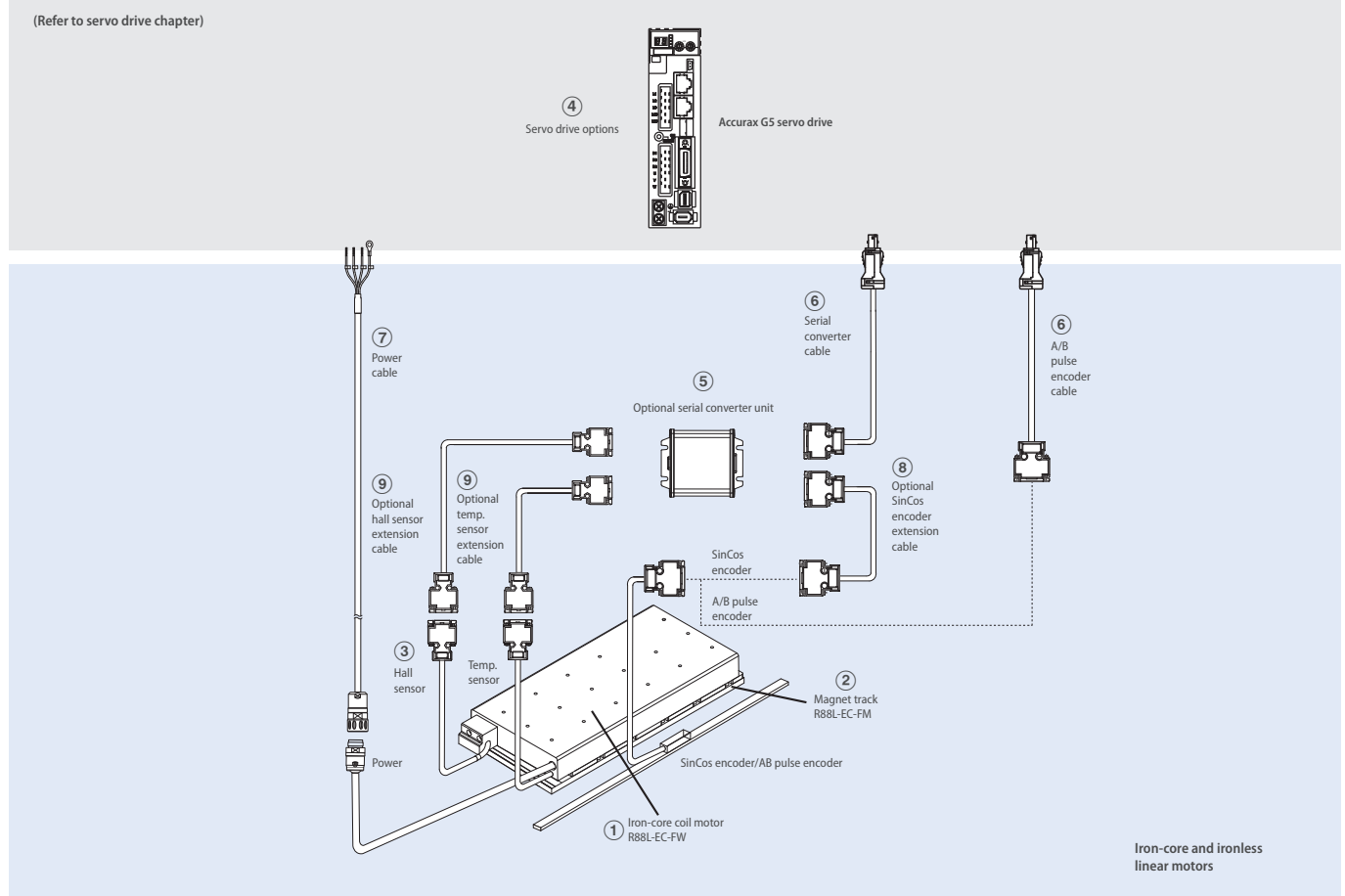
Iron-core motors for high speed and high duty cycle operations and Ironless motors for cogging-free and high dynamic applications. Both motor and families deliver unparalleled accuracy and performance benefits.

- Ironless and iron-core types available
- High dynamic and precise positioning
- Compact and flat design iron-core motors
- Excellent force-to-weight ratio ironless motors
- Weight-optimised magnet track
- Optional digital hall-sensor and connectors
- Temperature sensors included

Ratings

- Iron-core motors – 48 to 760 N (2,000 N peak force)
- Ironless motors – 29 to 423 N (2,100 N peak force)


Ordering information




Note: The symbols ①②③ ... show the recommended sequence to select the linear motor, cables and serial converter for a linear motor system.

Linear motors

R88L-EC-FW-□ Iron-core type (230 VAC single phase/three phase, 400 VAC three phase)

Symbol	Rated force	Peak force	Compatible linear servo drives		① Iron-core motor coil	② Magnet track	③ Hall sensor	
			④ Accurax G5 EtherCAT model					
			230 V	400 V	Order code			
<div>①② ③④</div> 	48 N	105 N	R88D-KN02H-ECT-L	R88D-KN06FECT-L	Coil without connectors	R88L-EC-FW-0303-ANPC	R88L-EC-FM-03096-A	R88L-EC-FH-NNNN-A
	96 N	210 N	R88D-KN04H-ECT-L	R88D-KN10FECT-L		R88L-EC-FW-0306-ANPC	R88L-EC-FM-03144-A	
	160 N	400 N	R88D-KN08H-ECT-L	R88D-KN15FECT-L		R88L-EC-FW-0606-ANPC	R88L-EC-FM-06192-A	
	240 N	600 N	R88D-KN10H-ECT-L	R88D-KN20FECT-L		R88L-EC-FW-0609-ANPC	R88L-EC-FM-06288-A	
	320 N	800 N	R88D-KN15H-ECT-L	R88D-KN30FECT-L		R88L-EC-FW-0612-ANPC		
	608 N	1600 N	R88D-KN15H-ECT-L	R88D-KN30FECT-L		R88L-EC-FW-1112-ANPC	R88L-EC-FM-11192-A	
	760 N	2000 N	R88D-KN15H-ECT-L	R88D-KN30FECT-L		R88L-EC-FW-1115-ANPC	R88L-EC-FM-11288-A	
	48 N	105 N	R88D-KN02H-ECT-L	R88D-KN06FECT-L	Coil with connectors	R88L-EC-FW-0303-APLC	R88L-EC-FM-03096-A	
	96 N	210 N	R88D-KN04H-ECT-L	R88D-KN10FECT-L		R88L-EC-FW-0306-APLC	R88L-EC-FM-03144-A	
	160 N	400 N	R88D-KN08H-ECT-L	R88D-KN15FECT-L		R88L-EC-FW-0606-APLC	R88L-EC-FM-06192-A	
	240 N	600 N	R88D-KN10H-ECT-L	R88D-KN20FECT-L		R88L-EC-FW-0609-APLC	R88L-EC-FM-06288-A	
	320 N	800 N	R88D-KN15H-ECT-L	R88D-KN30FECT-L		R88L-EC-FW-0612-APLC		
	608 N	1600 N	R88D-KN15H-ECT-L	R88D-KN30FECT-L		R88L-EC-FW-1112-APLC	R88L-EC-FM-11192-A	
	760 N	2000 N	R88D-KN15H-ECT-L	R88D-KN30FECT-L		R88L-EC-FW-1115-APLC	R88L-EC-FM-11288-A	

R88L-EC-GW-□ Ironless type (230 VAC single phase/three phase)

Symbol	Rated force	Peak force	Compatible linear Servo drives		① Ironless motor coil	② Magnet track	③ Hall Sensor
			④ Accurax G5 EtherCAT model				
			230 V				
<div>①②</div> <div>③④</div> <div></div>	29 N	100 N	R88D-KN02H-ECT-L	Coil without connectors	R88L-EC-GW-0303-ANPS	R88L-EC-GM-03090-A	R88L-EC-GH-03NN-A
	58 N	200 N	R88D-KN08H-ECT-L		R88L-EC-GW-0306-ANPS	R88L-EC-GM-03120-A	R88L-EC-GH-05NN-A
	87 N	300 N	R88D-KN10H-ECT-L		R88L-EC-GW-0309-ANPS	R88L-EC-GM-03390-A	
	70 N	240 N	R88D-KN02H-ECT-L		R88L-EC-GW-0503-ANPS	R88L-EC-GM-05126-A	
	140 N	480 N	R88D-KN04H-ECT-L		R88L-EC-GW-0506-ANPS	R88L-EC-GM-05546-A	
	210 N	720 N	R88D-KN08H-ECT-L		R88L-EC-GW-0509-ANPS	R88L-EC-GM-05168-A R88L-EC-GM-05210-A	
	141 N	700 N	R88D-KN04H-ECT-L		R88L-EC-GW-0703-ANPS	R88L-EC-GM-07114-A	R88L-EC-GH-07NN-A
	282 N	1400 N	R88D-KN08H-ECT-L		R88L-EC-GW-0706-ANPS	R88L-EC-GM-07171-A	
	423 N	2100 N	R88D-KN10H-ECT-L		R88L-EC-GW-0709-ANPS	R88L-EC-GM-07456-A	
	29 N	100 N	R88D-KN02H-ECT-L	Coil with connectors	R88L-EC-GW-0303-APLS	R88L-EC-GM-03090-A	R88L-EC-GH-03NN-A
	58 N	200 N	R88D-KN08H-ECT-L		R88L-EC-GW-0306-APLS	R88L-EC-GM-03120-A	R88L-EC-GH-05NN-A
	87 N	300 N	R88D-KN10H-ECT-L		R88L-EC-GW-0309-APLS	R88L-EC-GM-03390-A	
	70 N	240 N	R88D-KN02H-ECT-L		R88L-EC-GW-0503-APLS	R88L-EC-GM-05126-A	
	140 N	480 N	R88D-KN04H-ECT-L		R88L-EC-GW-0506-APLS	R88L-EC-GM-05546-A	
	210 N	720 N	R88D-KN08H-ECT-L		R88L-EC-GW-0509-APLS	R88L-EC-GM-05168-A R88L-EC-GM-05210-A	
	141 N	700 N	R88D-KN04H-ECT-L		R88L-EC-GW-0703-APLS	R88L-EC-GM-07114-A	R88L-EC-GH-07NN-A
	282 N	1400 N	R88D-KN08H-ECT-L		R88L-EC-GW-0706-APLS	R88L-EC-GM-07171-A	
	423 N	2100 N	R88D-KN10H-ECT-L		R88L-EC-GW-0709-APLS	R88L-EC-GM-07456-A	

Servo drive

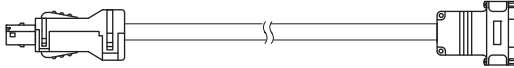
④ Refer to Accurax G5 servo drive chapter for detailed drive specifications and selection of drive accessories.

Serial converter unit

Symbol	Specifications	Order code
⑤	Serial converter unit from 1 Vpp to G5 serial data transmission (with KTY sensor detection of iron-core motor coil)	R88A-SC01K-E
	Serial converter unit from 1 Vpp to G5 serial data transmission (with NTC sensor detection of ironless motor coil)	R88A-SC02K-E

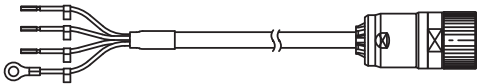
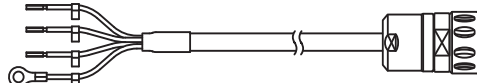
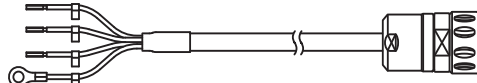
Note: If no temperature sensor is needed, then it does not matter which converter you use.

Serial converter cable to servo drive

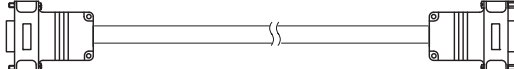
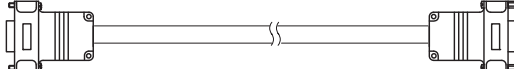
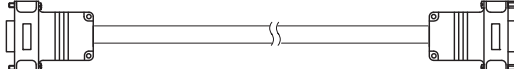
Symbol	Appearance	Specifications	Length	Order code
⑥		Accurax G5-Linear drive to serial converter cable. (Connectors R88A-CN41L and DB-15)	1.5 m 3 m 5 m 10 m 15 m 20 m	R88A-CRKN001-5CR-E R88A-CRKN003CR-E R88A-CRKN005CR-E R88A-CRKN010CR-E R88A-CRKN015CR-E R88A-CRKN020CR-E

Note: This cable can be used also for A/B pulse encoder Numerik Jena standard pinout.

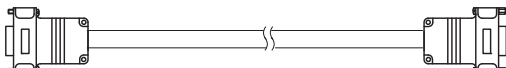
Power cable

Symbol	Appearance	Specifications	Length	Order code
⑦		For iron-core linear motors R88L-EC-FW-0303-□ R88L-EC-FW-0306-□	1.5 m 3 m 5 m 10 m 15 m 20 m	R88A-CAWK001-5S-DE R88A-CAWK003S-DE R88A-CAWK005S-DE R88A-CAWK010S-DE R88A-CAWK015S-DE R88A-CAWK020S-DE
		For iron-core linear motors R88L-EC-FW-0606-□ R88L-EC-FW-0609-□ R88L-EC-FW-0612-□ R88L-EC-FW-1112-□ R88L-EC-FW-1115-□	1.5 m 3 m 5 m 10 m 15 m 20 m	R88A-CAWL001-5S-DE R88A-CAWL003S-DE R88A-CAWL005S-DE R88A-CAWL010S-DE R88A-CAWL015S-DE R88A-CAWL020S-DE
		For ironless linear motors R88L-EC-GW-□	1.5 m 3 m 5 m 10 m 15 m 20 m	R88A-CAWB001-5S-DE R88A-CAWB003S-DE R88A-CAWB005S-DE R88A-CAWB010S-DE R88A-CAWB015S-DE R88A-CAWB020S-DE

Linear encoder cable to serial converter

Symbol	Appearance	Specifications	Length	Order code
⑧		Extension cable for Numerik Jena linear encoder to R88A-SC0□K-E serial converter (Connector DB-15) (This extension cable is optional)	1.5 m 3 m 5 m 10 m 15 m	R88A-CFKA001-5CR-E R88A-CFKA003CR-E R88A-CFKA005CR-E R88A-CFKA010CR-E R88A-CFKA015CR-E
		Extension cable for Renishaw linear encoder to R88A-SC0□K-E serial converter (Connector DB-15) (This extension cable is optional)	1.5 m 3 m 5 m 10 m 15 m	R88A-CFKC001-5CR-E R88A-CFKC003CR-E R88A-CFKC005CR-E R88A-CFKC010CR-E R88A-CFKC015CR-E
		Extension cable for Heidenhain linear encoder to R88A-SC0□K-E serial converter (Connector DB-15) (This extension cable is optional)	1.5 m 3 m 5 m 10 m 15 m	R88A-CFKD001-5CR-E R88A-CFKD003CR-E R88A-CFKD005CR-E R88A-CFKD010CR-E R88A-CFKD015CR-E

Hall and temperature sensors cable to serial converter

Symbol	Appearance	Specifications	Length	Order code
⑨		Extension cable from hall and temperature sensors to R88A-SC0□K-E serial converter (Connector DB-9) (This extension cable is optional)	1.5 m 3 m 5 m 10 m 15 m	R88A-CFKB001-5CR-E R88A-CFKB003CR-E R88A-CFKB005CR-E R88A-CFKB010CR-E R88A-CFKB015CR-E

Connectors

Specifications	Order code
Accurax G5 servo drive encoder connector (for CN4)	R88A-CN41L
Hypertac power cable connector IP67 for iron-core linear motors	LPRA-06B-FRBN170
Hypertac power cable connector IP67 for ironless linear motors	SPOC06KFSND169

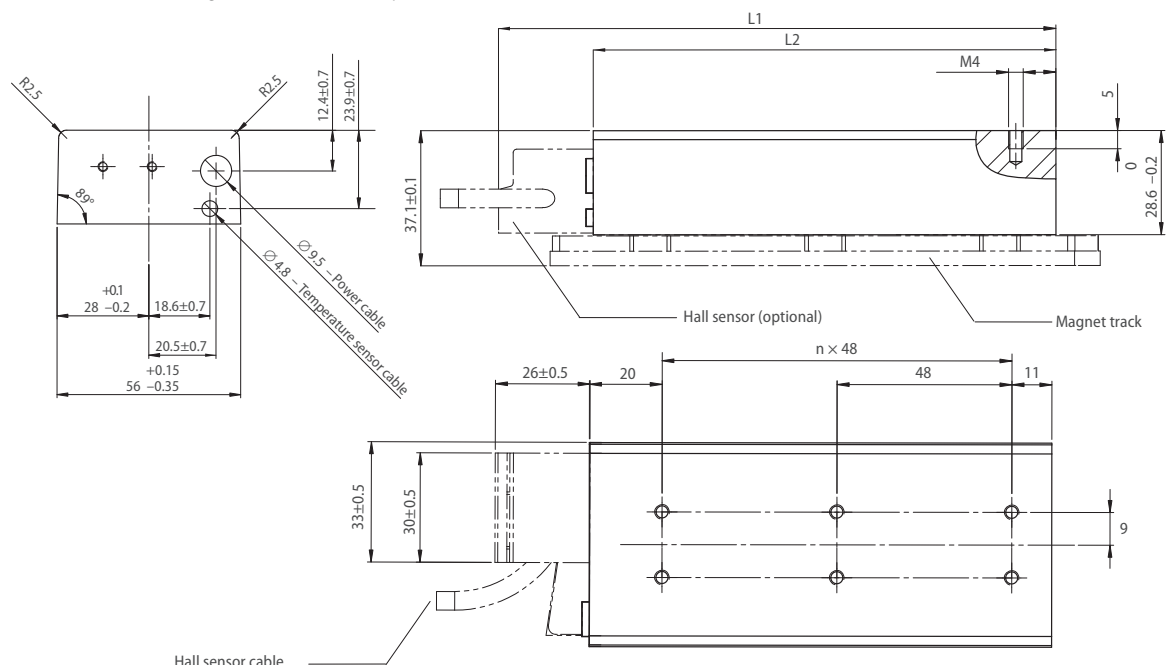
Dimensions

Iron-core R88L-EC-FW-03□

Motor coil

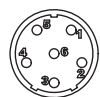
Model	L1 (mm)	L2 (mm)	n
R88L-EC-FW-0303-□	105±0.5	79 + 0.15/-0.35	1
R88L-EC-FW-0306-□	153±0.5	127 + 0.15/-0.35	2

Motor coil dimensions with magnet track and hall sensor (optional)



Wiring specifications for motor with connectors

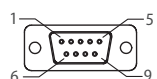
Units: mm



Cable length 500±30
Connector optional
Made by Hypertac
LRR06AMRPN182 (MALE)
Pin article code: 021.279.1020

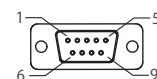
Power connector		
Pin No.	Wire	Function
1	Black-1	Phase U
2	Black-2	Phase V
3	Green/Yellow	Ground
4	Black-3	Phase W
5	Not used	-
6	Not used	-

Mating connector:
Plug type: LPRA06FRBN170



Cable length 500±30
Connector optional
D-Sub 9-pin (MALE)

Temperature sensor connector		
Pin No.	Wire	Function
1	Not used	-
2	Not used	-
3	Not used	-
4	Not used	-
5	Not used	-
6	White	PTC
7	Brown	PTC
8	Green	KTY
9	Yellow	KTY
Case	Shield	-

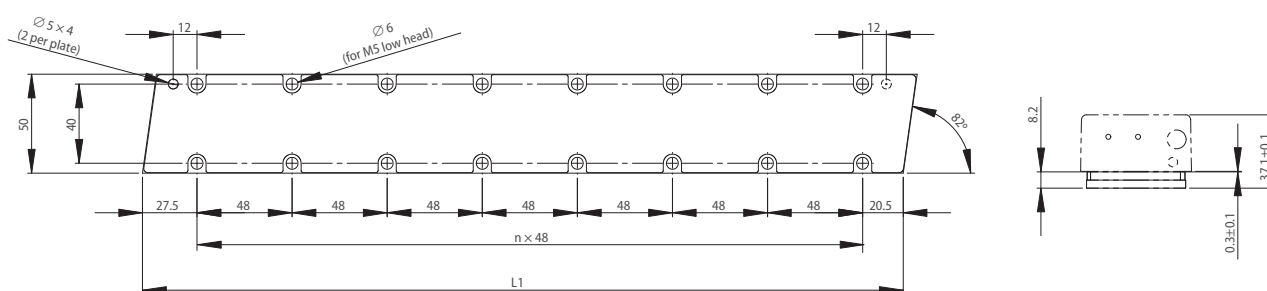


Cable length 500±30
D-Sub 9-pin (MALE)

Hall sensor connector (optional)		
Pin No.	Wire	Function
1	Brown	5V
2	Red	Hall U
3	Grey	Hall V
4	Yellow	Hall W
5	White	GND
6	Not used	Not used
7	Not used	Not used
8	Not used	Not used
9	Not used	Not used
Case	Shield	-

Magnet track

Model	L1 (mm)	n	Approx. weight (kg/m)
R88L-EC-FM-03096-A	96	1	2.1
R88L-EC-FM-03144-A	144	2	
R88L-EC-FM-03384-A	384	7	

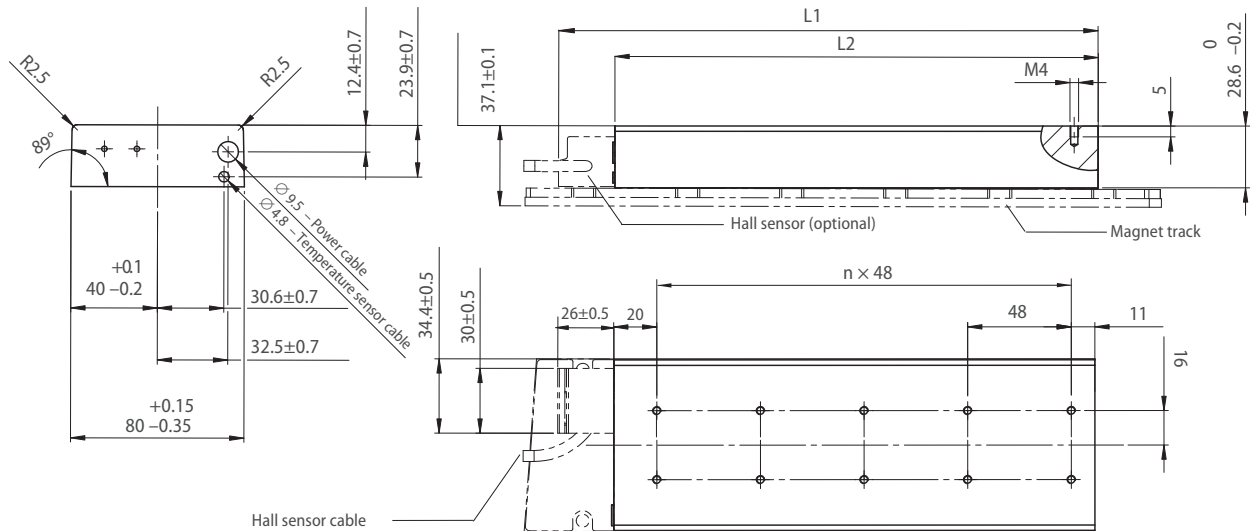


Iron-core R88L-EC-FW-06□

Motor coil

Model	L1 (mm)	L2 (mm)	n
R88L-EC-FW-0606-□	153±0.5	127 + 0.15/-0.35	2
R88L-EC-FW-0609-□	201±0.5	175 + 0.15/-0.35	3
R88L-EC-FW-0612-□	249±0.5	223 + 0.15/-0.35	4

Motor coil dimensions with magnet track and hall sensor (optional)



Wiring specifications for motor with connectors

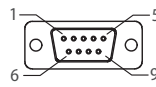
Units: mm



Cable length 500±30
Connector optional
Made by Hypertac
LRRA06AMRPN182 (MALE)
Pin article code: 021.279.1020

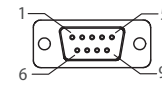
Power connector		
Pin No.	Wire	Function
1	Black-1	Phase U
2	Black-2	Phase V
3	Green/Yellow	Ground
4	Black-3	Phase W
5	Not used	—
6	Not used	—

Mating connector:
Plug type: LPRA06BFRBN170



Cable length 500±30
Connector optional
D-Sub 9-pin (MALE)

Temperature sensor connector		
Pin No.	Wire	Function
1	Not used	—
2	Not used	—
3	Not used	—
4	Not used	—
5	Not used	—
6	White	PTC
7	Brown	PTC
8	Green	KTY
9	Yellow	KTY
Case	Shield	—

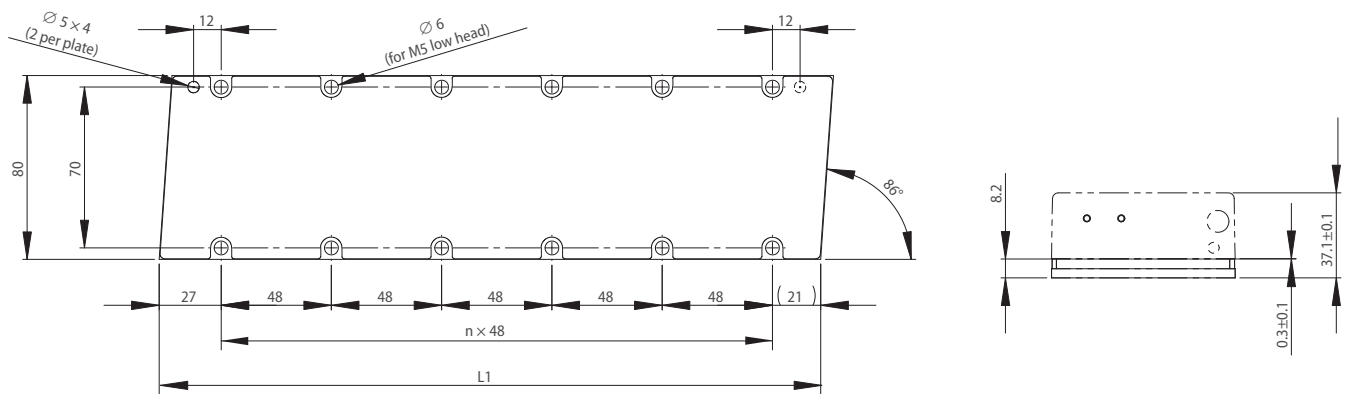


Cable length 500±30
D-Sub 9-pin (MALE)

Hall sensor connector (optional)		
Pin No.	Wire	Function
1	Brown	5V
2	Red	Hall U
3	Grey	Hall V
4	Yellow	Hall W
5	White	GND
6	Not used	Not used
7	Not used	Not used
8	Not used	Not used
9	Not used	Not used
Case	Shield	—

Magnet track

Model	L1 (mm)	n	Approx. weight (kg/m)
R88L-EC-FM-06192-A	192	3	3.8
R88L-EC-FM-06288-A	288	5	

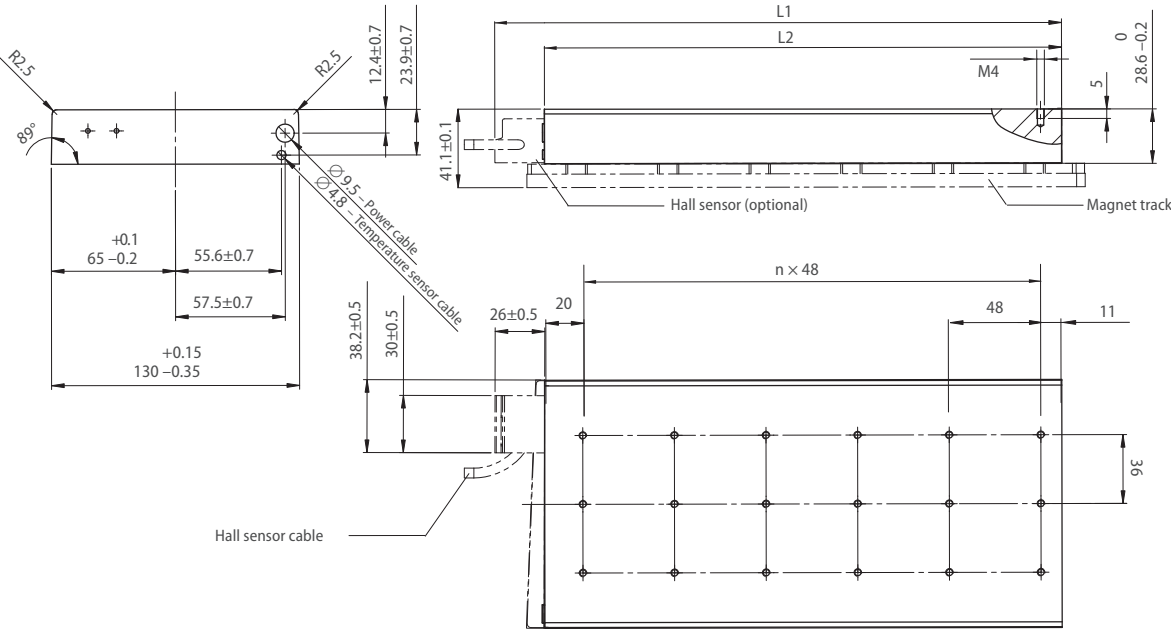


Iron-core R88L-EC-FW-11□

Motor coil

Model	L1 (mm)	L2 (mm)	n
R88L-EC-FW-1112-□	249±0.5	223 + 0.15/-0.35	4
R88L-EC-FW-1115-□	297±0.5	271 + 0.15/-0.35	5

Motor coil dimensions with magnet track and hall sensor (optional)



Wiring specifications for motor with connectors

Units: mm

Cable length 500±30
Connector optional
Made by Hypertac
LRRAG6MRPN182 (MALE)
Pin article code: 021.279.1020

Power connector		
Pin No.	Wire	Function
1	Black-1	Phase U
2	Black-2	Phase V
3	Green/Yellow	Ground
4	Black-3	Phase W
5	Not used	-
6	Not used	-

Mating connector:
Plug type: LPRA06BFRBN170

Cable length 500±30
Connector optional
D-Sub 9-pin (MALE)

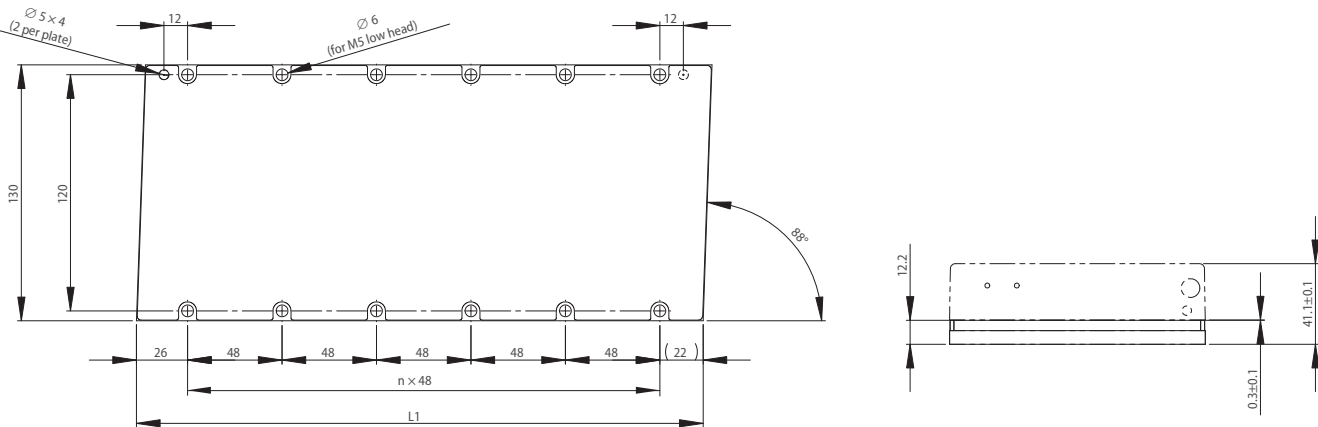
Temperature sensor connector		
Pin No.	Wire	Function
1	Not used	-
2	Not used	-
3	Not used	-
4	Not used	-
5	Not used	-
6	White	PTC
7	Brown	PTC
8	Green	KTY
9	Yellow	KTY
Case	Shield	-

Cable length 500±30
D-Sub 9-pin (MALE)

Hall sensor connector (optional)		
Pin No.	Wire	Function
1	Brown	5V
2	Red	Hall U
3	Grey	Hall V
4	Yellow	Hall W
5	White	GND
6	Not used	Not used
7	Not used	Not used
8	Not used	Not used
9	Not used	Not used
Case	Shield	-

Magnet track

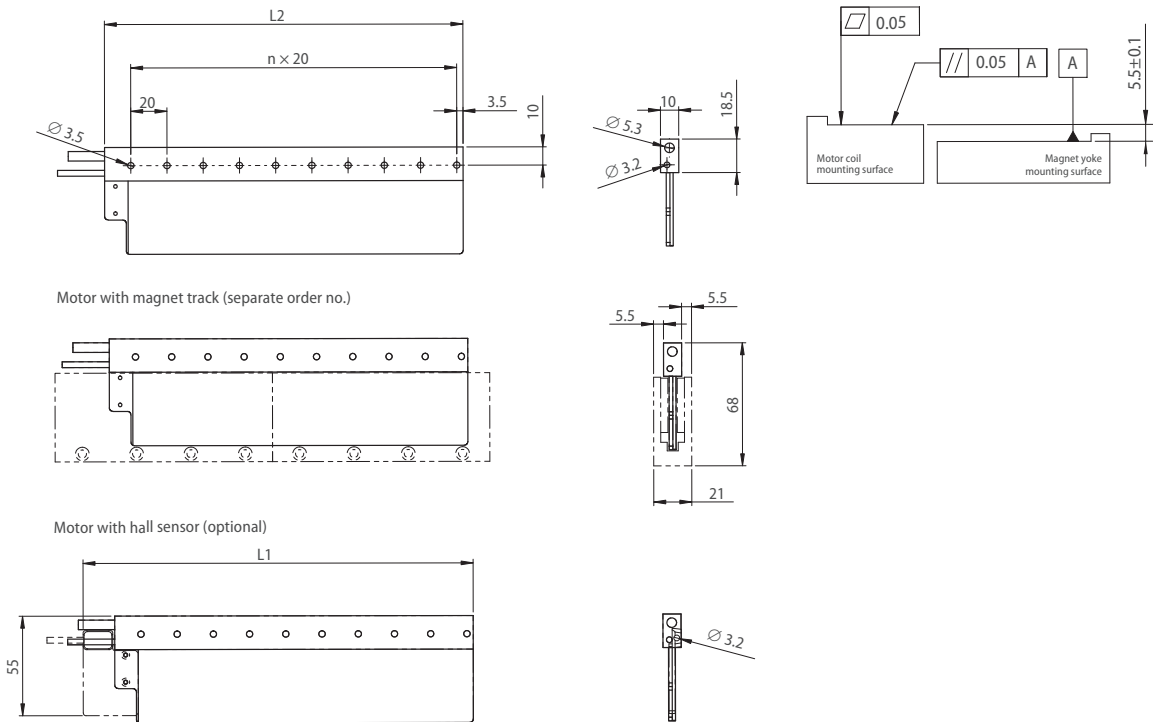
Model	L1 (mm)	n	Approx. weight (kg/m)
R88L-EC-FM-11192-A	192	3	10.5
R88L-EC-FM-11288-A	288	5	



Ironless R88L-EC-GW-03□

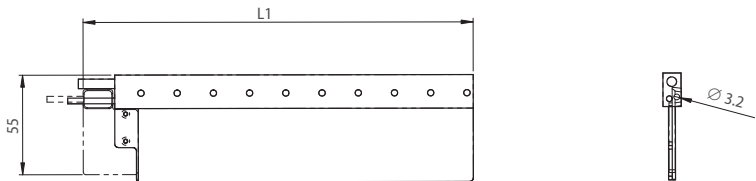
Motor coil

Model	L1 (mm)	L2 (mm)	n
R88L-EC-GW-0303-□	95.4	78	3
R88L-EC-GW-0306-□	155.4	138	6
R88L-EC-GW-0309-□	215.4	198	9

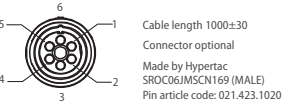


Motor with magnet track (separate order no.)

Motor with hall sensor (optional)

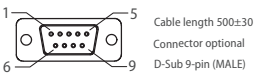


Wiring specifications for motor with connectors



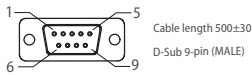
Power connector		
Pin No.	Wire	Function
1	Black	Phase U
2	Red	Phase V
3	White	Phase W
4	Not used	—
5	Not used	—
6	Green	Ground

Mating connector:
Plug type: SPOC06KFSDN169



Temperature sensor connector		
Pin No.	Wire	Function
1	Not used	—
2	Not used	—
3	Not used	—
4	Not used	—
5	Not used	—
6	White	PTC
7	Brown	PTC
8	Green	NTC
9	Yellow	NTC
Case	Shield	—

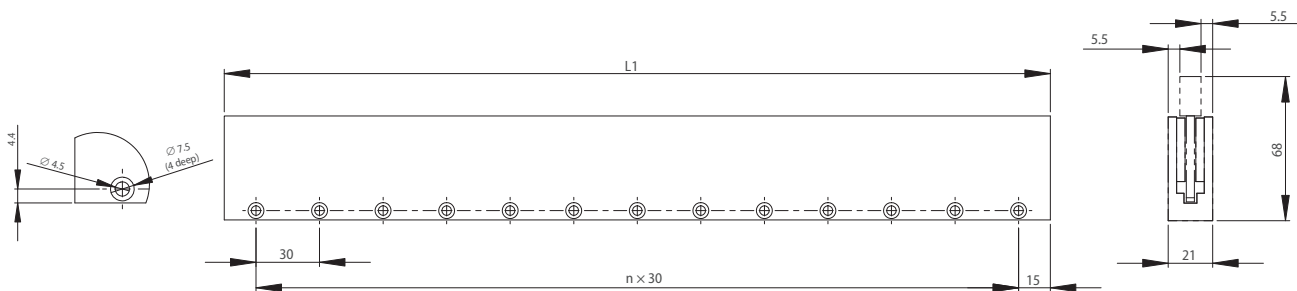
Units: mm



Hall sensor connector (optional)		
Pin No.	Wire	Function
1	Brown	5V
2	Red	Hall U
3	Grey	Hall V
4	Yellow	Hall W
5	White	GND
6	Not used	Not used
7	Not used	Not used
8	Not used	Not used
9	Not used	Not used
Case	Shield	—

Magnet track

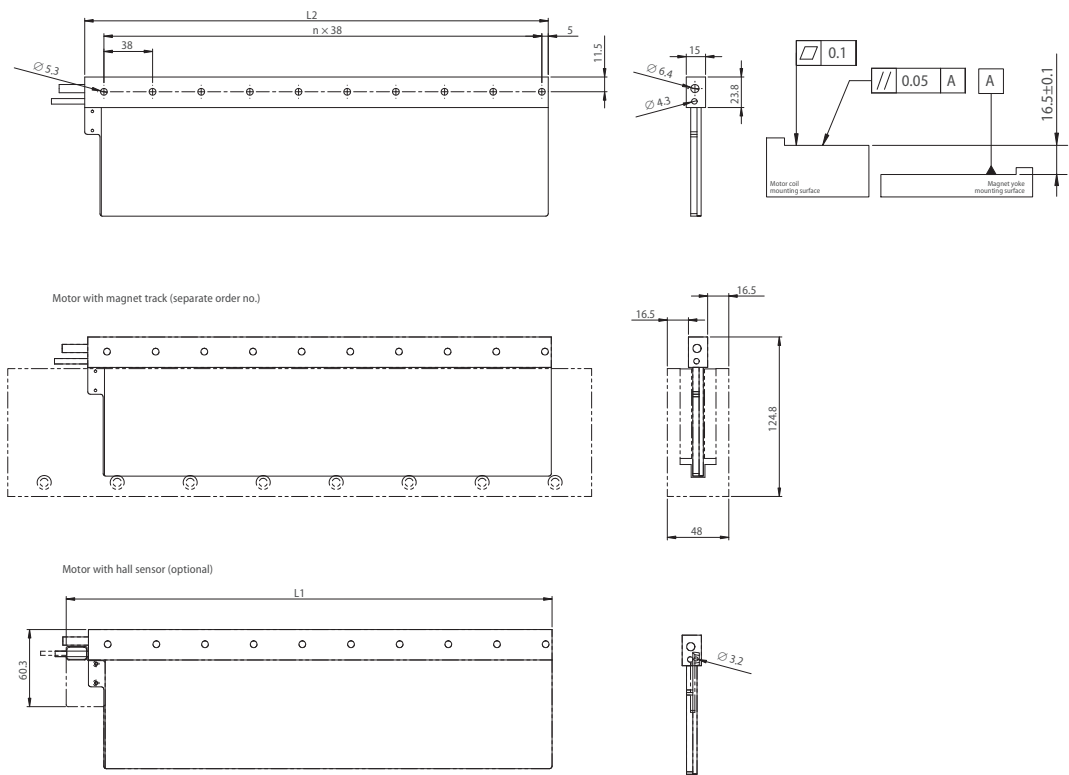
Model	L1 (mm)	n	Approx. weight (kg/m)
R88L-EC-GM-03090-A	90	2	4.8
R88L-EC-GM-03120-A	120	3	
R88L-EC-GM-03390-A	390	12	



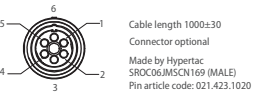
Ironless R88L-EC-GW-07□

Motor coil

Model	L1 (mm)	L2 (mm)	n
R88L-EC-GW-0703-□	151.4	134	3
R88L-EC-GW-0706-□	265.4	248	6
R88L-EC-GW-0709-□	379.4	362	9

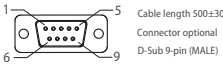


Wiring specifications for motor with connectors



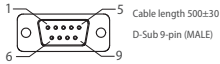
Power connector		
Pin No.	Wire	Function
1	Black	Phase U
2	Red	Phase V
3	White	Phase W
4	Not used	–
5	Not used	–
6	Green	Ground

Mating connector:
Plug type: SPOC06KFSDN169



Temperature sensor connector		
Pin No.	Wire	Function
1	Not used	–
2	Not used	–
3	Not used	–
4	Not used	–
5	Not used	–
6	White	PTC
7	Brown	PTC
8	Green	NTC
9	Yellow	NTC
Case	Shield	–

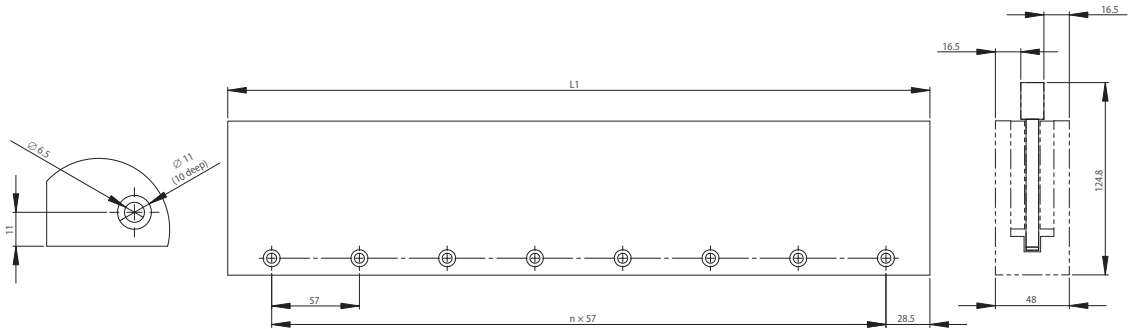
Units: mm



Hall sensor connector (optional)		
Pin No.	Wire	Function
1	Brown	5V
2	Red	Hall U
3	Grey	Hall V
4	Yellow	Hall W
5	White	GND
6	Not used	Not used
7	Not used	Not used
8	Not used	Not used
9	Not used	Not used
Case	Shield	–

Magnet track

Model	L1 (mm)	n	Approx. weight (kg/m)
R88L-EC-GM-07114-A	114	1	25.5
R88L-EC-GM-07171-A	171	2	
R88L-EC-GM-07456-A	456	7	

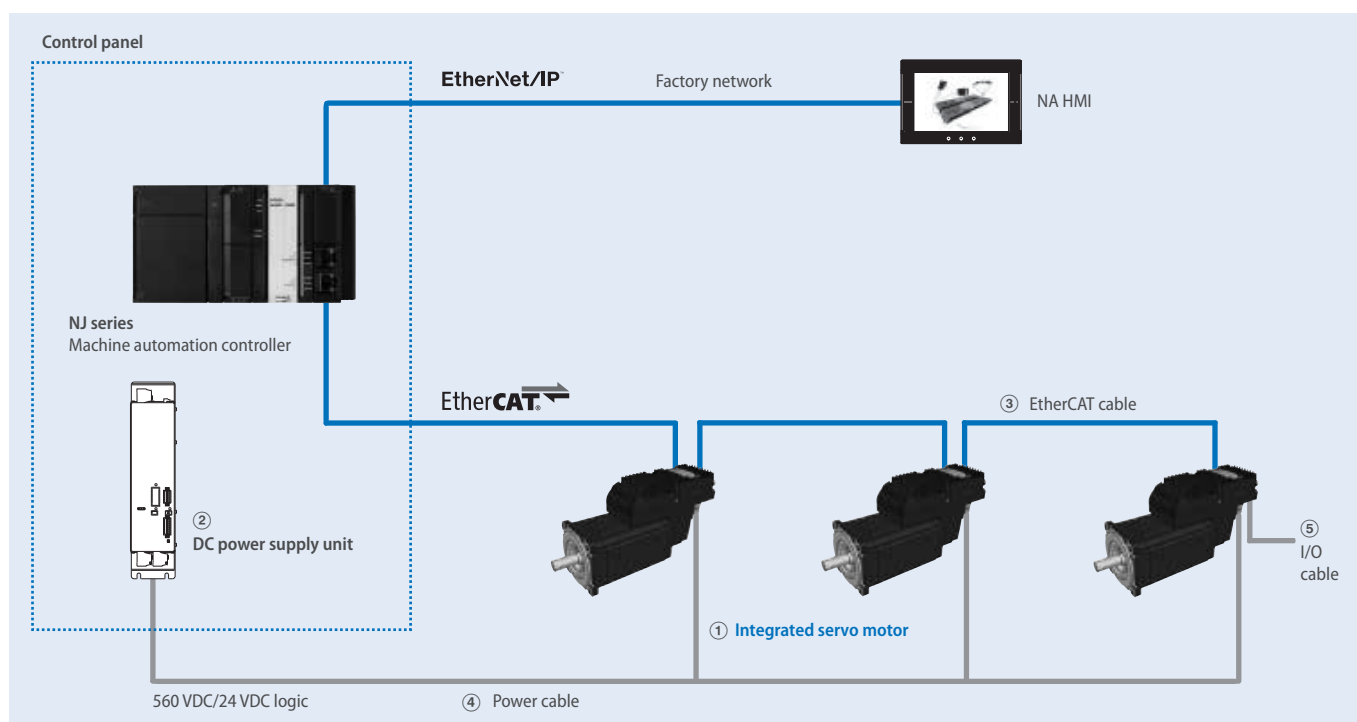




Motor and drive integrated for space optimization

- Wide range of motors from 2.55 Nm to 25 Nm
 - 3000 rpm rated speed
 - Peak torque 300% of rated torque
 - IP65 protection
 - Space-saving. Panel reduction
 - Simplified wiring compared to conventional servos
 - EtherCAT connectivity. Integration in Sysmac Automation Platform
 - Energy saving by sharing DC Bus
 - Incremental and multturn absolute encoder options
 - Embedded I/O's for dedicated or general purpose
- Ratings:
- From 880 W to 7.85 kW (rated torque from 2.55 Nm to 25 Nm)
 - Power supply: Input 400 VAC (up to 40 A output)

Ordering information



Integrated servo motor





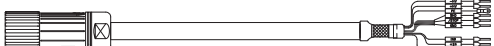
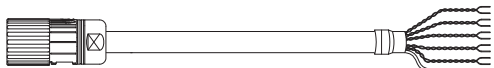
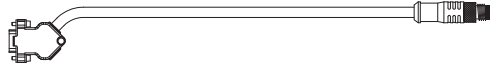
Symbol	Specifications					Order code	
	Voltage	Encoder and design			Rated torque		Capacity
①	560 VDC	Incremental encoder	Without brake	Straight shaft with key	2.55 Nm	880 W	R88E-AECT0230D-S2
					3.2 Nm	1000 W	R88E-AECT0330D-S2
					4.3 Nm	1350 W	R88E-AECT0430D-S2
					5.0 Nm	1570 W	R88E-AECT0530D-S2
					11.7 Nm	3670 W	R88E-AECT1130D-S2
					25 Nm	7850 W	R88E-AECT2530D-S2
			With brake		2.55 Nm	880 W	R88E-AECT0230D-BS2
					3.2 Nm	1000 W	R88E-AECT0330D-BS2
					4.3 Nm	1350 W	R88E-AECT0430D-BS2
					5.0 Nm	1570 W	R88E-AECT0530D-BS2
					11.7 Nm	3670 W	R88E-AECT1130D-BS2
					25 Nm	7850 W	R88E-AECT2530D-BS2

Symbol	Specifications						Order code
	Voltage	Encoder and design			Rated torque	Capacity	
①	560 VDC	Multiturn absolute encoder	Without brake	Straight shaft with key	2.55 Nm	880 W	R88E-AECT0230E-S2
					3.2 Nm	1000 W	R88E-AECT0330E-S2
					4.3 Nm	1350 W	R88E-AECT0430E-S2
					5.0 Nm	1570 W	R88E-AECT0530E-S2
					11.7 Nm	3670 W	R88E-AECT1130E-S2
					25 Nm	7850 W	R88E-AECT2530E-S2
			With brake		2.55 Nm	880 W	R88E-AECT0230E-BS2
					3.2 Nm	1000 W	R88E-AECT0330E-BS2
					4.3 Nm	1350 W	R88E-AECT0430E-BS2
					5.0 Nm	1570 W	R88E-AECT0530E-BS2
					11.7 Nm	3670 W	R88E-AECT1130E-BS2
					25 Nm	7850 W	R88E-AECT2530E-BS2

DC power supply unit

Symbol	Specifications					Order code
	Voltage input	Dimensions (W × D × H)	Output current	Output power	Regeneration circuit	
②	400 V 3-phase	82.4 mm × 270.6 mm × 352.5 mm	20 A	11.3 kW	Integrated	R88S-EAD20R
			40 A	22.5 kW		R88S-EAD40R

Cables

Symbol	Appearance	Specifications			Order code
③		EtherCAT cables	EtherCAT RJ45 to M12 cable (M12 straight)	0.3 m	XS5W-T421-AMC-K
				0.5 m	XS5W-T421-BMC-K
				1 m	XS5W-T421-CMC-K
				2 m	XS5W-T421-DMC-K
				3 m	XS5W-T421-EMC-K
				5 m	XS5W-T421-GMC-K
				10 m	XS5W-T421-JMC-K
	15 m	XS5W-T421-KMC-K			
		EtherCAT RJ45 to M12 cable (M12 L right angle)	0.3 m	XS5W-T422-AMC-K	
			0.5 m	XS5W-T422-BMC-K	
			1 m	XS5W-T422-CMC-K	
			2 m	XS5W-T422-DMC-K	
			3 m	XS5W-T422-EMC-K	
			5 m	XS5W-T422-GMC-K	
			10 m	XS5W-T422-JMC-K	
	15 m	XS5W-T422-KMC-K			
	EtherCAT M12 to M12 cable (M12 straight)	0.5 m	XS5W-T421-BM2-K		
		1 m	XS5W-T421-CM2-K		
		2 m	XS5W-T421-DM2-K		
		3 m	XS5W-T421-EM2-K		
		5 m	XS5W-T421-GM2-K		
		10 m	XS5W-T421-JM2-K		
		15 m	XS5W-T421-KM2-K		
	EtherCAT M12 to M12 cable (M12 L right angle)	0.5 m	XS5W-T422-BM2-K		
		1 m	XS5W-T422-CM2-K		
		2 m	XS5W-T422-DM2-K		
		3 m	XS5W-T422-EM2-K		
		5 m	XS5W-T422-GM2-K		
		10 m	XS5W-T422-JM2-K		
		15 m	XS5W-T422-KM2-K		
④		Power cables for Integrated servo motor with straight connector		1.5 m	R88A-CDEA001-5-E
				3 m	R88A-CDEA003-E
				5 m	R88A-CDEA005-E
				10 m	R88A-CDEA010-E
				15 m	R88A-CDEA015-E
				20 m	R88A-CDEA020-E
⑤		I/O cables with straight connector		1 m	R88A-CPEA001S-E
				2 m	R88A-CPEA002S-E
				5 m	R88A-CPEA005S-E
—		Serial port cables	For Integrated servo motor with straight connector	2 m	R88A-CCEA002P2-E
			For DC power supply unit with straight connector	2 m	R88A-CCSE002P2-E

Accessories

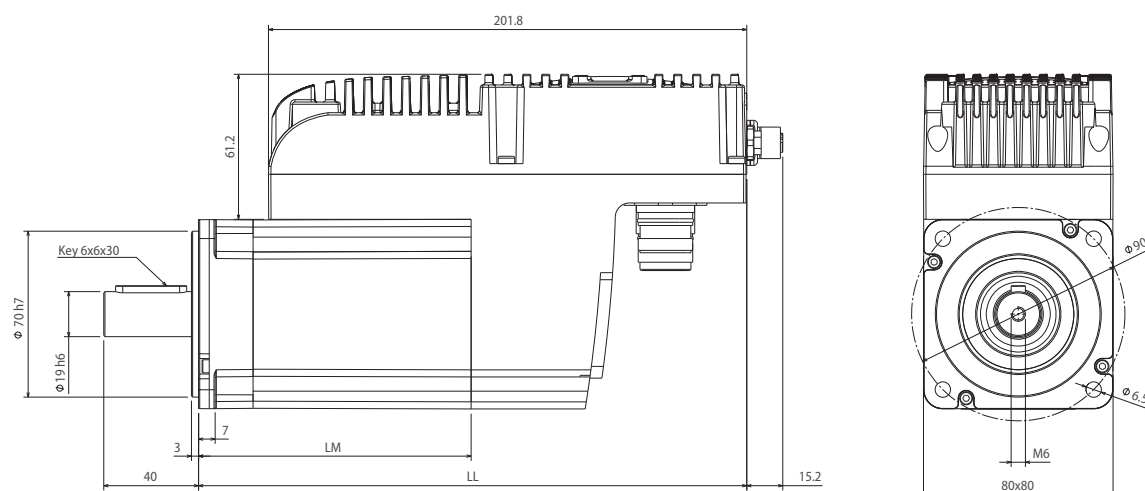
Specifications			Order code
Connectors for making power cables		M23 straight connector	R88A-CNEA01P-E
		M23 right angle 90° connector	R88A-CNEA02P-E
Connectors for making I/O cables		M23 straight connector	R88A-CNEA01C-E
		M23 right angle 90° connector	R88A-CNEA02C-E
Blind plugs	For EtherCAT connectors	IP65 blind plug for M12 socket	R88A-PCVEA01-E
	For Power and I/O connectors	IP67 blind plug for M23 socket	R88A-PCVEA02-E

Dimensions

Integrated servo motor

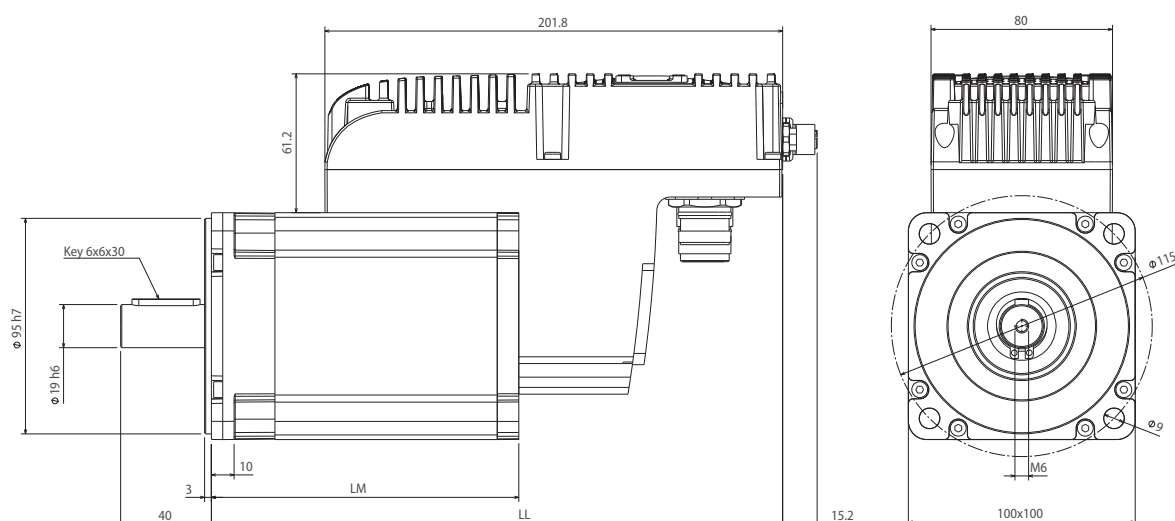
R88E-AECT0230_/0330_ (880 W to 1 kW)

Dimensions (mm)		Without brake		With brake		Flange	Approx. mass (kg)	
Voltage	Model	LM	LL	LM	LL		Without brake	With brake
560 VDC	R88E-AECT0230_	115	231.3	157	273.3	80	4.1	4.8
	R88E-AECT0330_	140	256.3	182	298.3		5.1	5.8



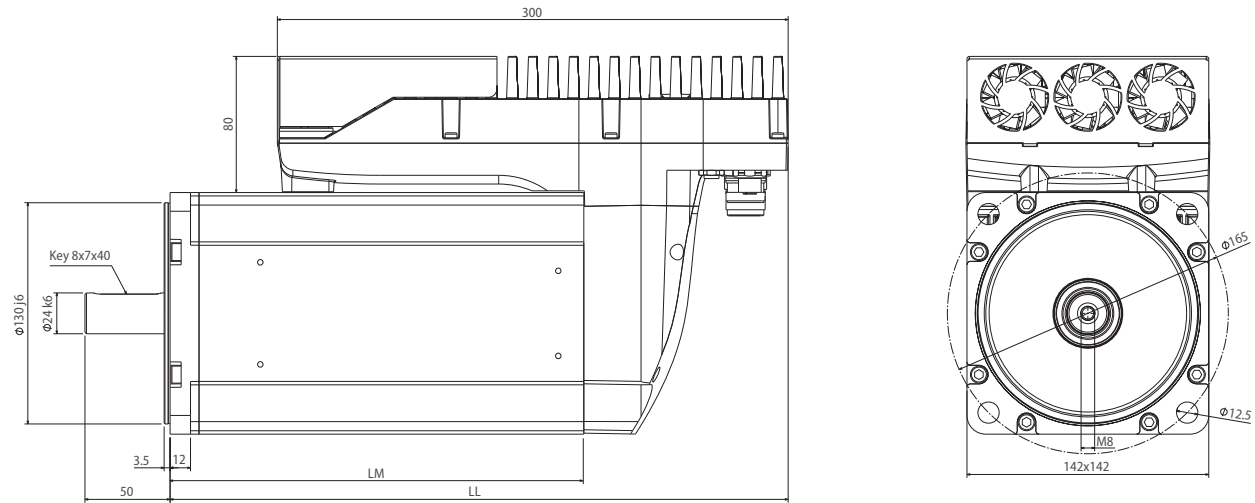
R88E-AECT0430_/0530_ (1.35 kW to 1.57 kW)

Dimensions (mm)		Without brake		With brake		Flange	Approx. mass (kg)	
Voltage	Model	LM	LL	LM	LL		Without brake	With brake
560 VDC	R88E-AECT0430_	135.5	251.8	186	302.3	100	6.7	7.9
	R88E-AECT0530_	165.5	281.8	216	332.3		8.0	9.2



R88E-AECT1130_ (3.67 kW)

Dimensions (mm)		Without brake		With brake		Flange	Approx. mass (kg)	
Voltage	Model	LM	LL	LM	LL		Without brake	With brake
560 VDC	R88E-AECT1130_	238	363	268	388	142	17	18.5



R88E-AECT2530_ (7.85 kW)

Dimensions (mm)		Without brake		With brake		Flange	Approx. mass (kg)	
Voltage	Model	LM	LL	LM	LL		Without brake	With brake
560 VDC	R88E-AECT2530_	303.5	423.5	333.5	453.5	190	38	43

