

FUJI SERVO SYSTEM
ALPHA5
SIMPLE & SMART



ALPHA5

Line of products of ALPHA5 Series

Servo Amplifier

Model		Command interface					Control mode				Power supply	Capacity	Type	Applicable motor series
		Pulse/analog	Di/Do	Modbus-RTU	SX bus	E-SX bus	Positioning	Position	Speed	Torque				
 General-purpose interface	VV type	●	●	●			●	●	●	●	Single-phase or 3-phase 200 to 240 VAC	0.05 to 0.75kW	RYT***□5-VV2	GYS GYC GYG GYB GYH
											3-phase 200 to 240 VAC	0.85 to 5.0kW		
											Single-phase 100 to 120 VAC	0.05 to 0.375kW	RYT***□5-VV6	GYS
 Ultra high-speed serial bus (E-SX bus)	VE type					●		●	●	●	Single-phase or 3-phase 200 to 240 VAC	0.05 to 0.75kW	RYT***□5-VE2 RYT***□5-LE2	GYS GYC GYG GYB GYH
	LE type					●	●	●			3-phase 200 to 240 VAC	0.85 to 5.0kW		
 High speed serial bus (SX bus)	VS type				●			●	●	●	Single-phase or 3-phase 200 to 240 VAC	0.05 to 0.75kW	RYT***□5-VS2 RYT***□5-LS2	GYS GYC GYG GYB GYH
											3-phase 200 to 240 VAC	0.85 to 5.0kW		
	LS type				●		●	●			Single-phase 100 to 120 VAC	0.05 to 0.375kW	RYT***□5-VS6 RYT***□5-LS6	GYS

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Next generation servo system for ever-evolving machines

Servomotor

Model	Rated speed (max. speed)	Power supply	Rated output capacity	Servomotor type		Protective construction	Encoder	Type
				Without brake	With brake			
 GYS motor Ultra-low inertia	3000r/min (0.75kW or less: 6000r/min 1.0kW or more: 5000r/min)	200V series	11 types 0.05 to 5.0kW	●	●	IP67 *1	18-bit ABS	GY***D5-HB2(-B) *2
							20-bit INC	GY***D5-RB2(-B) *2
		100V series	4 types 0.05 to 0.375kW	●	●	IP67 *1	18-bit ABS	GY***D5-HB6(-B) *2
							20-bit INC	GY***D5-RB6(-B) *2
 GYC motor Low inertia	3000r/min (0.75kW or less: 6000r/min 1.0kW or more: 5000r/min)	200V series	7 types 0.1 to 2.0kW	●	●	IP67 *1	18-bit ABS	GYC***D5-HB2(-B) *2
							20-bit INC	GYC***D5-RB2(-B) *2
 GYG motor Medium inertia	2000r/min (3000r/min)	200V series	5 types 0.5 to 2.0kW	●	●	IP67 *1	18-bit ABS	GYG***C5-HB2(-B) *2
							20-bit INC	GYG***C5-RB2(-B) *2
 GYG motor Medium inertia	1500r/min (3000r/min)	200V series	3 types 0.5, 0.85, 1.3kW	●	●	IP67 *1	18-bit ABS	GYG***B5-HB2(-B) *2
							20-bit INC	GYG***B5-RB2(-B) *2
NEW  GYB motor Medium inertia	3000r/min (6000r/min*3)	200V series	3 types 0.2, 0.4, 0.75kW	●	●	IP67 *1	18-bit ABS	GYG***D5-HB2(-B) *2
							20-bit INC	GYG***D5-RB2(-B) *2
NEW  GYH motor Medium inertia	2000r/min (2500r/min)	200V series	7 types 1.0 to 7.0kW	●	●	IP67 *1	17-bit INC	GYH***C6-TC(-B) *2

*1: Except for shaft-through part (Also except connectors for GYS and GYC motors of 0.75kW or less and all GYB motors).

*2: Models with a brake has "-B" at the end.

*3: The maximum rotation speed is 5000r/min when using the motor with Fuji's gear head.

Features

Explanation of
Model Codes

Specifications of
Servo Amplifier

Connection Diagram
(Reference)

Specifications of
Servomotor

Option/Peripheral
Equipment

External
Dimensions

Model List

Service Network

Product Warranty

Max. speed control cycle: 0.25 ms (with 4 units connected)

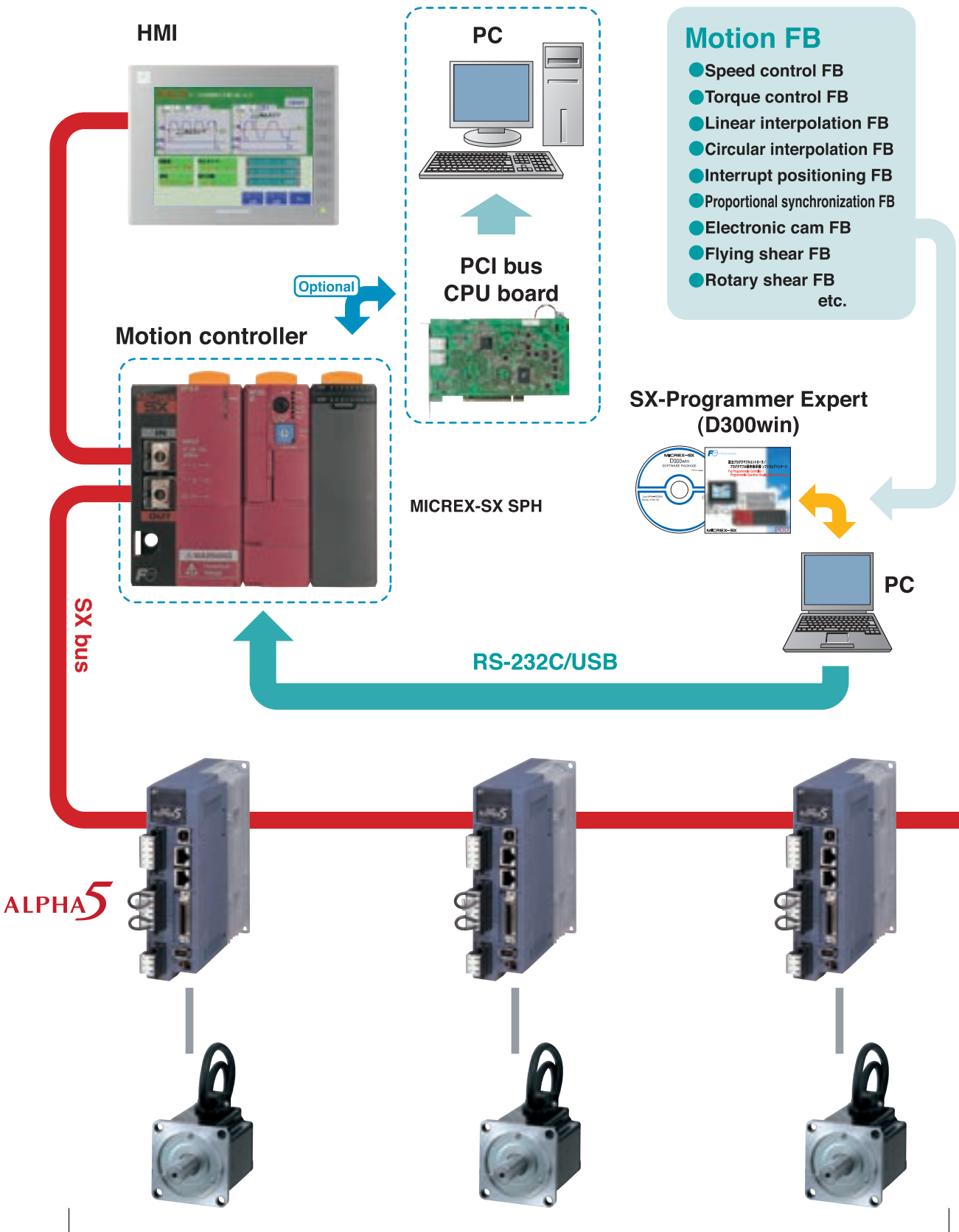


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Compatibility with SX bus: VS type and LS type

Sophisticated motion control system that has synchronization and interpolation controls can be configured easily.

Transmission speed: 25 Mbps, max. number of connectable units: 32 units, max. speed control cycle: 1 ms (with 4 units connected)



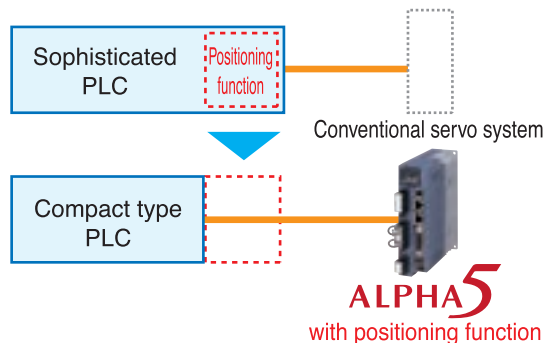
Total extension 25m (maximum), 32 connection units (maximum)

Compatibility with general-purpose communication: VV type

Simple! PTP positioning

Positioning function is embedded as standard in general purpose interface unit "ALPHA5 VV".

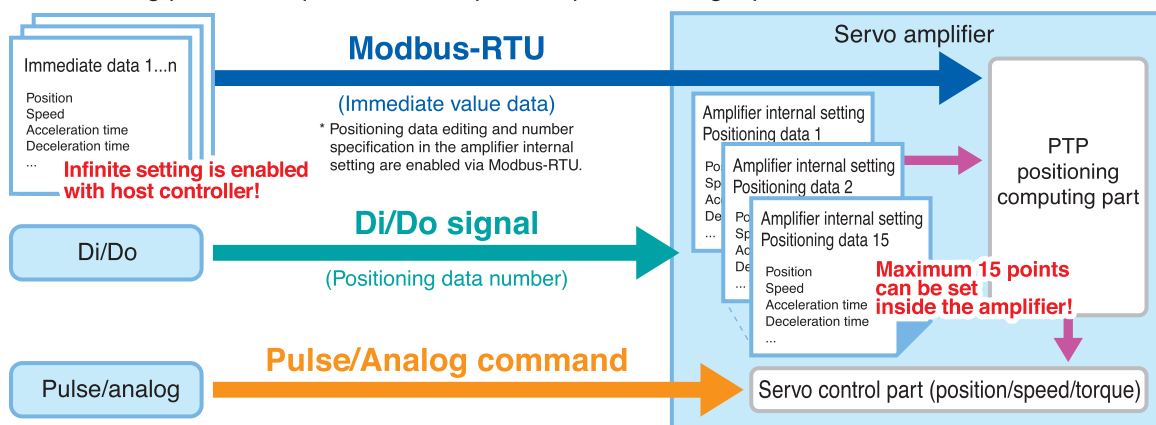
As the ALPHA5 VV type is the standard model, external positioning unit or dedicated items for positioning are not required.



3 in 1 !

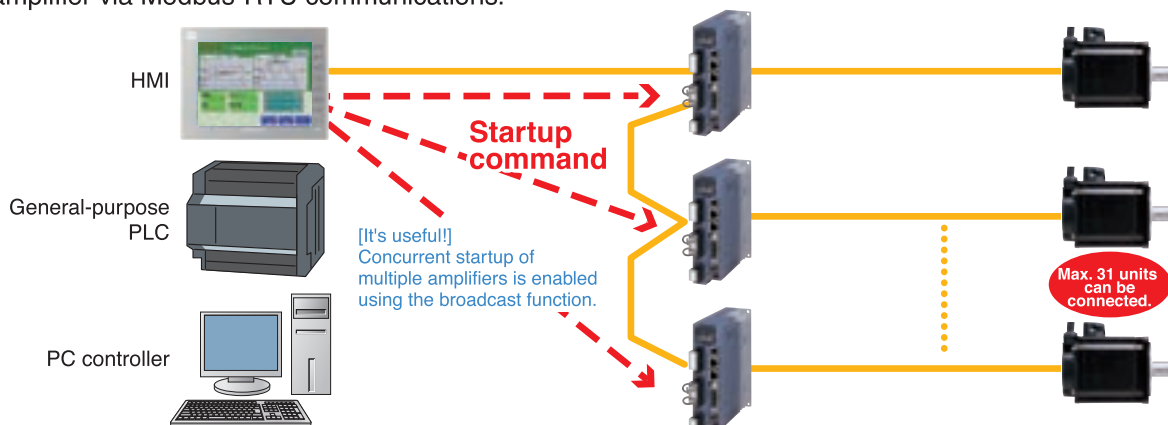
Following operations are enabled by one unit:

- Positioning via Modbus-RTU communications (immediate value data)
- Positioning via Di/Do signal (positioning data 15 points*)
- Controlling positions, speeds and torques via pulse/analog input



Simple connection! Modbus-RTU communications

Operations such as PTP positioning operation, parameter edit, and various monitoring are enabled. All you need to do is connect HMI (POD), general-purpose PLC, or PC controller directly to servo amplifier via Modbus-RTU communications.



Other makers' products compatible with Modbus-RTU

Any HMI (POD), general-purpose PLC, or PC controller compatible with Modbus-RTU can be connected to servo amplifier easily regardless of maker.

Fast and accurate positioning is realized.

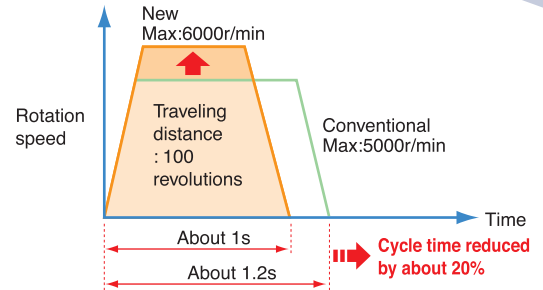
New high speed servo control engine
Frequency response 1500Hz

Increased motor rotation speed
Max. rotation speed 6000r/min

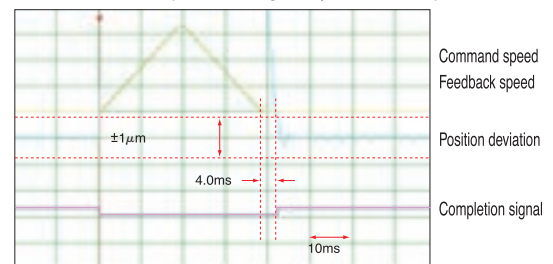
Fine resolution encoder
18-bit absolute 262,144 pulses
20-bit incremental 1,048,576 pulses

High performance frequency response (1500Hz), high rotation speed (6000r/min) and high resolution encoder reduce the cycle time and make faster and more accurate positioning and settling possible.

■ Cycle time reduction 1.2s → 1s



■ Time necessary to settling to 1μm accuracy 4ms

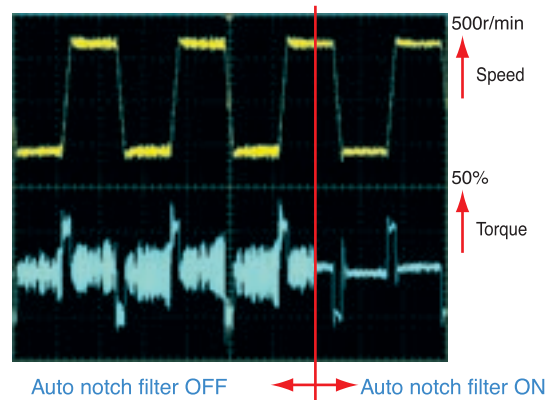
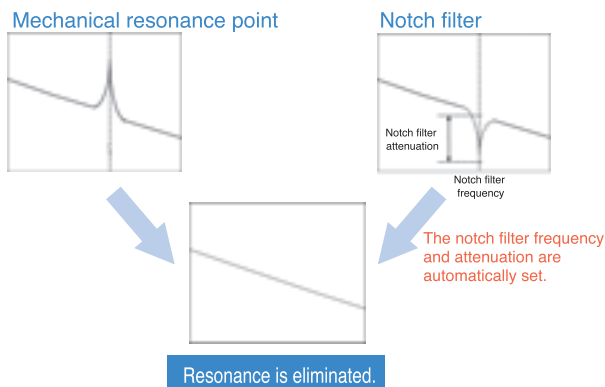


1/10000 rotation accuracy with a 10mm ball screw = 1μm

New control functions

New notch filter (auto notch filter)

The notch filter is set automatically upon detection of mechanical resonance. Because detection and calculation are always conducted while the auto notch filter remains turned on, resonance frequencies changing by time are effectively filtered.



Homing by hit-to-stop

Wire saving can be achieved with elimination of the limit switch and over travel signal. Moreover, several homing functions allows homing program creation to be simplified only by combining the servo parameters. Creating complicated program of homing in the host controller is no more necessary.

Motor stop method setting is enabled

- Alarm occurrence
 - Main power supply is OFF.
 - Servo ON signal is OFF.
- Selection among rapid deceleration stop, DB stop, and coast-to-stop is enabled under the above conditions. Since limiting output torque at desired value is possible even if rapid deceleration stops is selected, impact shock to the machine can be reduced.

* However, it is enabled when the control power supply is input.

Reduced space

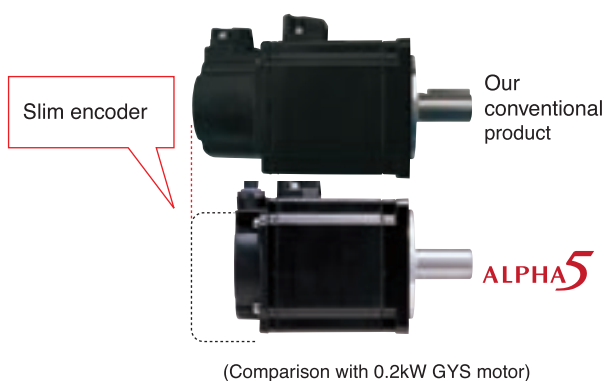
Size reduction of servomotor and servo amplifier

- Servo amplifier

The installation area is reduced by 25 to 30% when compared with our conventional model.

- Servomotor

The overall length is reduced by about 15% when compared with our conventional model.



Long life design

The designed service lives of various parts of the servo amplifier are extended.

Electrolytic capacitor: 10 years

Cooling fan: 10 years

* Operating conditions

- Ambient temperature: Average 30°C/year
- Load factor: Within 80%
- Operation ratio: Within 20 hours/day

Compliance with various standards

Compliance with CE marking and UL/cUL and TÜV

Global Compatibility. The standard model complies with CE marking, UL/cUL and TÜV.



* As for UL/cUL, some of the models are in the process to be certified.

Compliance with RoHS directive

The standard model complies with EU's specific hazardous material limitation (RoHS) directive. The servo system is environmentally friendly because use of six hazardous materials is limited.

<Six hazardous materials>

Lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyl (PBB), polybrominated diphenylether (PBDE)

Close installation

The servo amplifier can be installed side by side without a clearance. The installation space in the control panel of the machine is reduced.

* 80% ED rating in case of close installation

There is no limitation if 5mm or a larger clearance is placed.



Close installation can be made even if the ABS backup battery is installed.

The battery can be replaced without difficulty while the servo amplifier is left installed.



The designed life time of the battery is about 35000 hours. (Retention time with power turned off)



Environmental resistance

IP67 (servomotor)

The standard servomotor model is compatible with IP67* and it can be used in the environment susceptible to water or dust splashes.

* Except for shaft-through part and connectors

Compatibility

Compatibility with FALDIC- α , - β motors

Because compatibility with FALDIC- α , - β Series servomotors is assured, the new amplifier meets requirements for replacement of existing products flexibly. (Compatibility with individual products is planned.)

Improved usability: PC Loader

USB connection

The amplifier can be connected to a PC using a commercially available USB cable (B-type).

Simple setup

- Easy tuning and profile operation

Machine and servo adjustments are possible even without completing the controller program, substantially reducing machine setup time.

- Sequence test mode

The controller program can be run even if machine setup is not complete, improving program debugging efficiency.

Complete package of maintenance functions

- Incidental alarm functions

When an alarm occurs, data such as the speed and torque at the time of the alarm is displayed together with the alarm content, facilitating accurate analysis of alarm causes.

- Life warning function

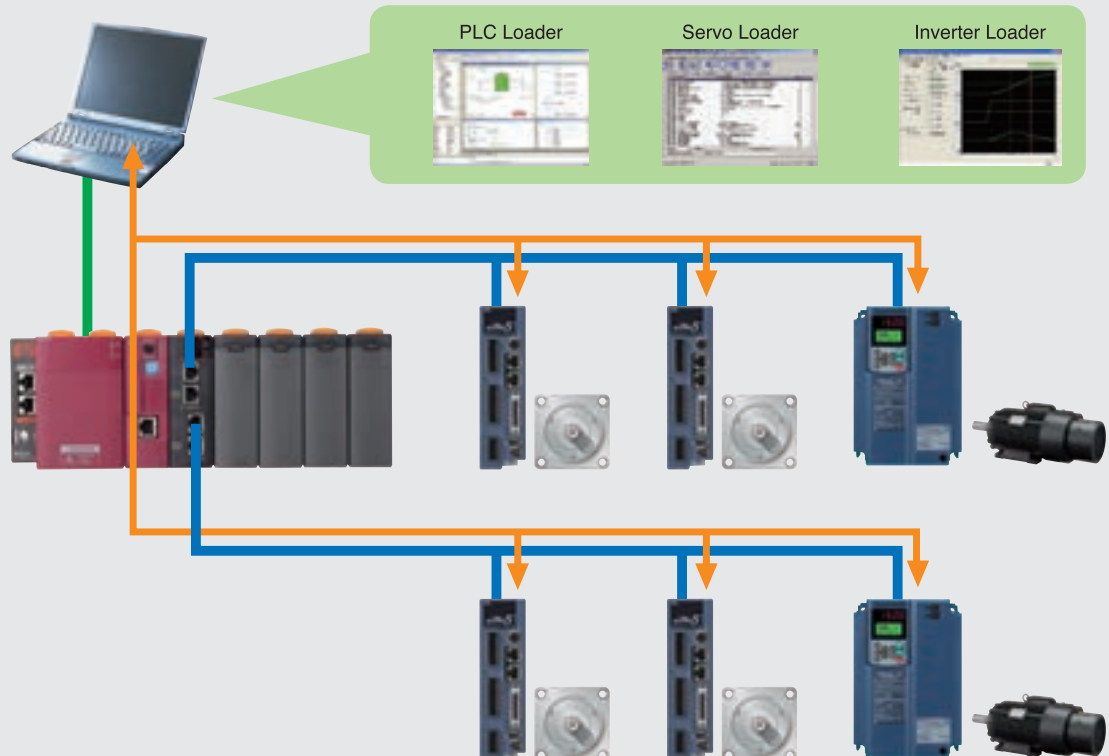
Provides the user with warnings on the life of servo amplifier consumable parts.

- Battery life warning
- Main circuit capacitor life warning
- Cooling fan life warning

Transparent communication

With the transparent communication function, a servo amplifier parameter editing monitor can be acquired via the motion controller (E-SX bus or SX bus).

Engineering is possible from a single location.



Explanation of Model Codes

Servo amplifier

R Y T 500 D 5 - V S 2

Code	[Basic type]
RYT	ALPHA5 series

Code	[Applicable motor output]
500	$50 \times 10^0 = 0.05\text{kW}$
101	$10 \times 10^1 = 0.1\text{kW}$
201	$20 \times 10^1 = 0.2\text{kW}$
401	$40 \times 10^1 = 0.4\text{kW}$, 0.375kW
501	$50 \times 10^1 = 0.5\text{kW}$
751	$75 \times 10^1 = 0.75\text{kW}$
851	$85 \times 10^1 = 0.85\text{kW}$
102	$10 \times 10^2 = 1.0\text{kW}$
132	$13 \times 10^2 = 1.3\text{kW}$
152	$15 \times 10^2 = 1.5\text{kW}$
202	$20 \times 10^2 = 2.0\text{kW}$
302	$30 \times 10^2 = 3.0\text{kW}$
402	$40 \times 10^2 = 4.0\text{kW}$
502	$50 \times 10^2 = 5.0\text{kW}$

Code	[Series]
D	3000r/min series
C	2000r/min series
B	1500r/min series

Code	[Order of development]
5	5

Code	[Input voltage]
2	3-phase 200 VAC
6	Single-phase 100 VAC

Code	[Upper interface]
S	SX bus
V	General-purpose interface (pulse, analog voltage)

Code	[Major functions]
V	Position, speed and torque control
L	Built-in positioning function

Servomotor

G Y S 500 D 5 - H B 2 - B

Code	[Basic type]
GYS	Ultra-low inertia
GYC	Low inertia
GYG	Medium inertia
GYB	Medium inertia
GYH	Medium inertia

Code	[Rated output]
500	$50 \times 10^0 = 0.05\text{kW}$
101	$10 \times 10^1 = 0.1\text{kW}$
201	$20 \times 10^1 = 0.2\text{kW}$
401	$40 \times 10^1 = 0.4\text{kW}$, 0.375kW
501	$50 \times 10^1 = 0.5\text{kW}$
751	$75 \times 10^1 = 0.75\text{kW}$
851	$85 \times 10^1 = 0.85\text{kW}$
102	$10 \times 10^2 = 1.0\text{kW}$
132	$13 \times 10^2 = 1.3\text{kW}$
152	$15 \times 10^2 = 1.5\text{kW}$
202	$20 \times 10^2 = 2.0\text{kW}$
302	$30 \times 10^2 = 3.0\text{kW}$
402	$40 \times 10^2 = 4.0\text{kW}$
502	$50 \times 10^2 = 5.0\text{kW}$
702	$70 \times 10^2 = 7.0\text{kW}$

Code	[Rated speed]
D	3000r/min series
C	2000r/min series
B	1500r/min series

Code	[Order of development]
5	5
6	6

Code	[Brake]
Blank	Not provided
B	Provided

Code	[Input voltage]
2	3-phase 200 VAC
6	Single-phase 100 VAC

Code	[Oil seal/shaft]
A	Without an oil seal, straight shaft with a key
B	Without an oil seal, straight shaft without a key
C	Without an oil seal, straight shaft with a key, tapped
E	With an oil seal, straight shaft with a key
F	With an oil seal, straight shaft without a key
G	With an oil seal, straight shaft with a key, tapped

Code	[Encoder]
H	18-bit ABS
R	20-bit INC
T	17-bit INC

Specifications of Servo Amplifier

Common specifications

Applicable motor rated speed			3000r/min				3000r/min										2000r/min					1500r/min				
Applicable motor output [kW]			0.05	0.1	0.2	0.375	0.05	0.1	0.2	0.4	0.75	1.0	1.5	2.0	3.0	4.0	5.0	0.5	0.75	1.0	1.5	2.0	0.5	0.85	1.3	
Amplifier type	D5-△△○		500	101	201	401	500	101	201	401	751	102	152	202	302	402	502									
	C5-△△2																	501	751	102	152	202				
	B5-△△2																						501	851	132	
Mass [kg]			Frame 1		Frame 2		Frame 3		Frame 1		Frame 2		Frame 3		Frame 4		Frame 5		Frame 6		Frame 3		Frame 4		Frame 5	
			0.9		1.1		1.3		0.9		1.1		1.3		1.5		2.6		3.8		1.3		1.5		2.9	
			Open / self-cooling		Open / forced air cooling				Open / self-cooling				Open / forced air cooling						Open / forced air cooling				Open / forced air cooling			
Power supply	Main power supply	Phase	Single-phase				Single-phase, 3-phase				3-phase				Single-phase, 3-phase				3-phase				Single-phase, 3-phase			
		Voltage frequency	AC100 to 120V 50/60Hz																AC200 to 240V 50/60Hz							
		Allowable voltage fluctuation	AC85 to 132V				3-phase: AC170 to 262V, Single-phase: AC190 to 262V																			
	Control power supply	Phase	Single-phase																							
		Voltage frequency	AC100 to 120V 50/60Hz				AC200 to 240V 50/60Hz																			
Allowable voltage fluctuation		AC85 to 132V				AC170 to 262V																				
Control system			IGBT PWM sinusoidal PWM drive																							
Max voltage for regenerative resistance [W]			Built-in resistor																							
Dynamic brake			Built-in *2																							
Feedback			18-bit serial encoder (absolute/incremental), 20-bit serial encoder (incremental)																							
Overload capability			300% / 3 sec.																							
Speed fluctuation ratio	Load fluctuation		Within ±1 r/min (load fluctuation 0 to 100%)																							
	Power supply fluctuation		Within ±1 r/min (power supply fluctuation -10 to +10%)																							
	Temperature fluctuation		Within ±0.2% (25 ±10°C at rated operation speed and analog input operation)																							
Capability and function	VV type	Speed control function	Closed loop control with speed adjuster, acceleration/deceleration time setting, manual feed rate/max. rotation speed, speed command zero clamp, etc.																							
		Number of position data sets	15-point (position, speed, acceleration/deceleration time setting, timer, M code and various statuses)																							
		Position control function	Closed loop control with position adjuster, electronic gear, output pulse setting, feed forward, homing, interrupt positioning, auto startup, etc.																							
		Torque control function	Closed loop control with current adjuster (proportional open loop control of current and torque), torque limit, speed limit at torque control, etc.																							
		Accessory functions	Easy tuning, profile operation, sequence test mode, auto tuning, auto notch filter, vibration suppressing online learning, etc.																							
	VS type	Speed control function	Closed loop control with speed adjuster, acceleration/deceleration time setting, manual feed rate/max. rotation speed, etc.																							
		Position control function	Closed loop control with position adjuster, electronic gear, output pulse setting, feed forward, homing, interrupt positioning, etc.																							
		Torque control function	Closed loop control with current adjuster (proportional open loop control of current and torque), torque limit, speed limit at torque control, etc.																							
		Accessory functions	Easy tuning, profile operation, sequence test mode, auto tuning, auto notch filter, vibration suppressing online learning, etc.																							
	LS type	Position control function	Automatic startup, manual operation, pulse train, homing																							
		Number of position data sets	99-point (position, speed, timer, M code and various statuses)																							
		Max positioning value	±2,000,000,000																							
Positioning method		Absolute / incremental																								
Protective function (Alarm indication)			Easy tuning, profile operation, sequence test mode, auto tuning, auto notch filter, vibration suppressing online learning, etc.																							
			Overcurrent(oc1, oc2), Overspeed(oS), Control power undervoltage(Lvc), Overvoltage(Hv), Encoder trouble(Et1, Et2), Circuit trouble(ct), Memory Error(dE), Fuse Broken(Fb), Motor Combination Error(cE), Braking transistor overheat(rH), Encoder Communication error(Ec), CONT(Control signal) Error(ctE), Overload(oL1, oL2), Main power undervoltage(LvP), Braking resistor overheat(rH1, rH2, rH3), Deviation overflow(oF), Amplifier overheat(AH), Encoder overheat(EH), Absolute data Lost(dL1, dL2, dL3), Multi-turn data over flow(AF), Initial Error(iE), Command pulse Frequency Error(HF)																							
			6-digit alphanumeric display with 7-segment LED																							
			4 operation switches																							
			Analog monitor connector (CN6), status indication LED																							
Working conditions	Installation place		Indoors (free from direct sunshine), altitude ≤ 1000m, free from corrosive and flammable gases, oil mist and dust																							
			In case of compliance with CE marking																							
	Temperature/humidity		Models compliant with EU directive: pollution degree 2, over voltage category III																							
			-10 to 55°C/10 to 90%RH (without condensation)																							
			4.9m/s²/19.6m/s²																							
Standards			UL/cUL (UL 508c), CE marking (low voltage directive EN61800-5-1) (acquisition being applied for model of 2.0kW or more), RoHS directive																							

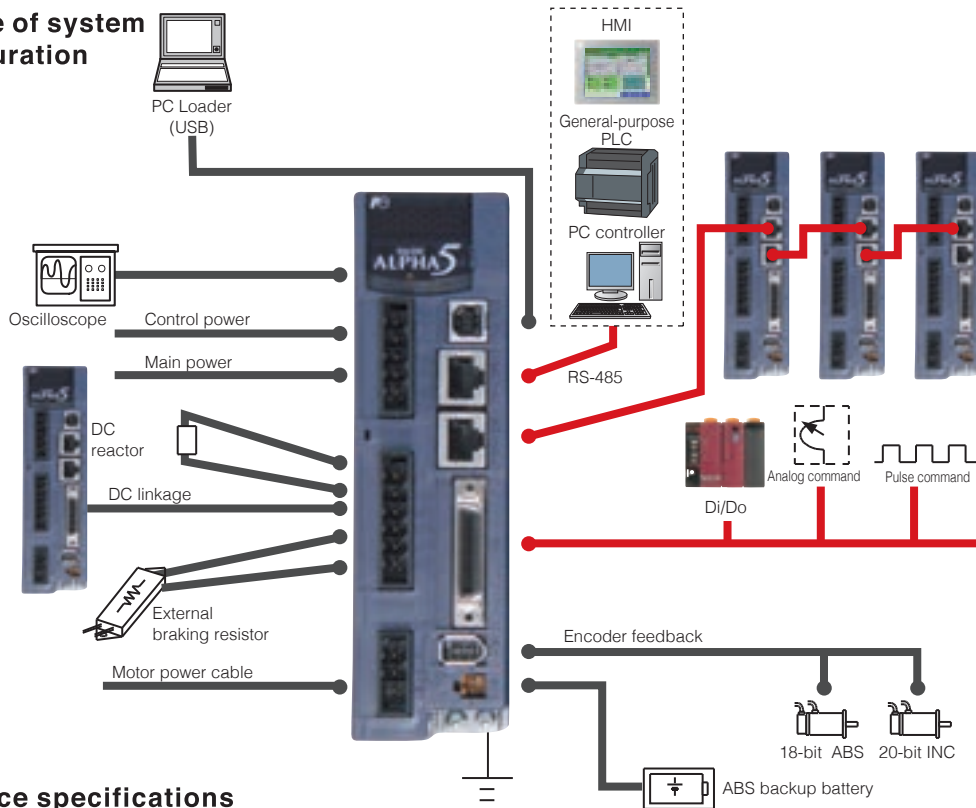
*1: The figure is data determined when the amplifier is connected with an external resistor dedicated for each model.

*2: We will accept custom orders for models without dynamic brake.

Specifications of Servo Amplifier

VV Type

Outline of system configuration



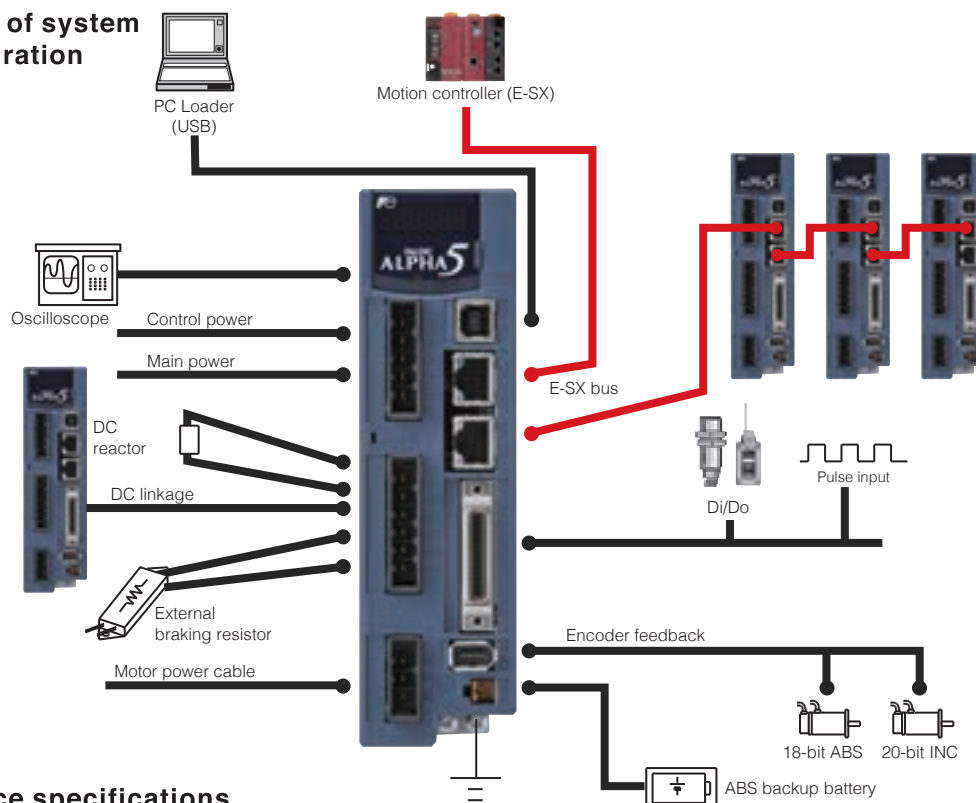
Interface specifications

Item		Specifications
Command interface	Positioning function	RS-485 (Modbus-RTU), Di/Do
	Position control	Pulse input
	Speed control	Analog voltage input
	Torque control	Analog voltage input
Communication interface		Two RS-485 ports (for parameter editing and monitor)
		Our original protocol Modbus-RTU
		9600/19200/38400 bps, connection of max. 31 axes
Terminal name	Symbol	Specifications
Pulse input	CA,*CA CB,*CB	Pulse input under position control Differential input: max. input frequency $\leq 1.0\text{MHz}$ Open collector input: max. input frequency $\leq 200\text{kHz}$ (in case of signals at 90-degree phase difference, the above relationship is true for the four-fold frequency.) Pulse format Command pulse/Command direction Forward/Reverse pulse Two signals at 90-degree phase difference } Select one of these formats with a parameter setting.
	PPI	Pull-up power input at open collector input ($24\text{VDC} \pm 10\%$)
Pulse output	FFA,*FFA FFB,*FFB	Differential output: max. output frequency $\leq 1\text{MHz}$ Two signals at 90-degree phase difference Pulse output count setting n pulses/rev): $16 \leq n \leq 262144$
	FFZ,*FFZ	Differential output: 1 pulse/rev
	FZ	Open collector output: 1 pulse/rev
	M5	Reference potential (0V)
Analog monitor voltage output	MON1 MON2	0V to $\pm 10\text{VDC}$ Resolution: 14bits / $\pm$ full scale The output data depends on internal parameter.
	M5	Reference potential (0V)
Common for sequence I/O	COMIN	Common for sequence input signal
	COMOUT	Common for sequence output signal
Sequence input signal	CONT1 to CONT8	ON upon short circuit across contacts, OFF upon open circuit $12\text{VDC}-10\%$ to $24\text{VDC}+10\%$ Current consumption 20mA (per contact; used at 24VDC circuit voltage) Function of each signal depends on parameter setting Compatible with both sink and source input methods
Sequence output signal	OUT1 to OUT5	Short circuit upon ON, open circuit upon OFF $30\text{VDC} / 50\text{mA}$ (max.) Function of each signal depends on parameter setting Compatible with both sink and source output methods
Analog voltage input	VREF	Speed command input for speed control Input range: from -10 to 0 to +10V, input impedance $20\text{k}\Omega$ Resolution: 15 bits / $\pm$ full scale
	TREF	Torque command input for torque control Input range: from -10 to 0 to +10V, input impedance $20\text{k}\Omega$ Resolution: 14 bits / $\pm$ full scale
	P10	Power supply output for analog command (+10 VDC), output capacity 30 mA
	M5	Reference potential (0V)

Specifications of Servo Amplifier

VE type, LE type

Outline of system configuration



Interface specifications

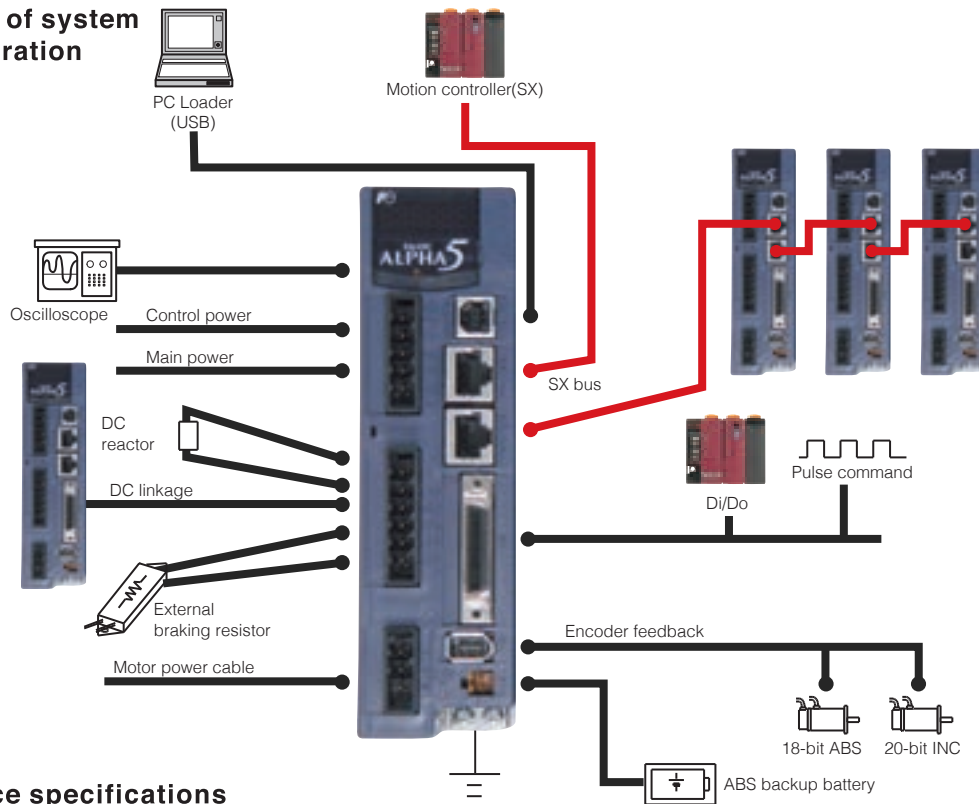
Item		Specifications
Command interface	Position control	E-SX bus: IQ area
	Speed control	E-SX bus: IQ area
	Torque control	E-SX bus: IQ area
Communication interface		E-SX bus (for command interface, parameter editing, monitor)
		Original Fuji protocol
		100 Mbps, connection of up to 238 axes

Terminal name	Symbol	Specifications
Pulse input	CA,*CA CB,*CB	Pulse input when using high-speed counter function (VE type), pulse input when using position control (LE type) Differential input: max. input frequency $\leq 1.0\text{MHz}$ Open collector input: max. input frequency $\leq 200\text{kHz}$ (With signals of 90-degree phase difference, the above relationship is true for a four-fold frequency.) Pulse format: Command pulse/command code Forward/reverse pulse Two signals at 90-degree phase difference } Select one of these formats with a parameter setting.
	PPI	Pull-up power input when open collector input (24 VDC $\pm 10\%$)
Pulse output	FFA,*FFA FFB,*FFB	Differential output: max. output frequency $\leq 1\text{MHz}$ Two signals at 90-degree phase difference Pulse output count setting n pulses/rev: $16 \leq n \leq 262144$
	FFZ,*FFZ	Differential output: 1 pulse/rev
	FZ	Open collector output: 1 pulse/rev
	M5	Reference potential (0 V)
Analog monitor voltage output	MON1	0 V to $\pm 10\text{VDC}$
	MON2	Resolution: 14 bits / $\pm$ full scale Output data depends on internal parameters.
	M5	M5 is reference potential (0 V)
Common for sequence I/O	COMIN	Common for sequence input signal
	COMOUT	Common for sequence output signal
Sequence input signal	CONT1 to CONT5	ON upon short circuit across contacts, OFF when open circuit 12 VDC - 10% to 24 VDC + 10% Current consumption: 20mA (per contact; used at 24 VDC circuit voltage) Function of each signal depends on parameter setting Compatible with both sink and source input methods
Sequence output signal	OUT1 to OUT2	Short circuit when ON, open circuit when OFF 30 VDC / 50mA (max.) Function of each signal depends on parameter setting Compatible with both sink and source output methods

Specifications of Servo Amplifier

VS Type, LS Type

■ Outline of system configuration



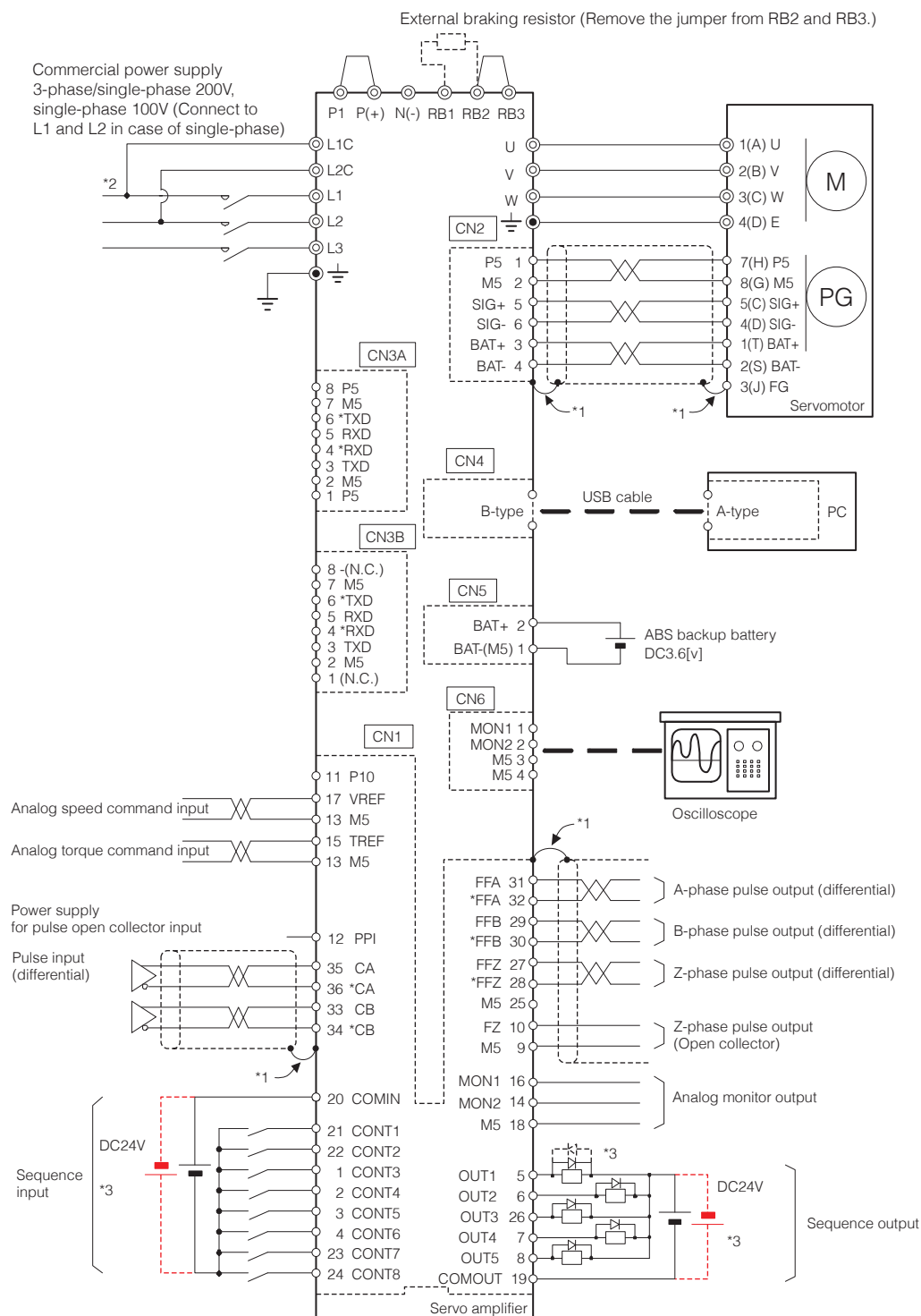
■ Interface specifications

Item		Specifications
Command interface	Position control	SX bus: IQ area
	Speed control	SX bus: IQ area
	Torque control	SX bus: IQ area
Communication interface		SX bus (for command interface, parameter editing and monitor)
		Our original protocol
		25Mbps, connection of max. 32 axes

Terminal name	Symbol	Specifications
Pulse input	CA,*CA CB,*CB	Pulse input during operation with high speed counter function (VS Type), Pulse train command input for position control (LS Type) Differential input: max. input frequency ≤ 1.0MHz Open collector input: max. input frequency ≤ 200kHz (In case of signals at 90-degree phase difference, the above relationship is true for the four-fold frequency.) Pulse format Command pulse/Command direction Forward/Reverse pulse Two signals at 90-degree phase difference } Select one of these formats with a parameter setting.
	PPI	Pull-up power input at open collector input (24VDC ± 10%)
Pulse output	FFA,*FFA FFB,*FFB	Differential output: max. output frequency ≤ 1MHz Two signals at 90-degree phase difference Pulse output count setting (n pulses/rev): 16 ≤ n ≤ 262144
	FFZ,*FFZ	Differential output 1 pulse/rev
	FZ	Open collector output 1 pulse/rev
	M5	Reference potential (0V)
Analog monitor voltage output	MON1 MON2	0V to ± 10VDC Resolution: 14 bits / ±full scale The output data depends on the internal parameter.
	M5	Reference potential (0V)
Common for sequence I/O	COMIN	Common for sequence input signal
	COMOUT	Common for sequence output signal
Sequence input signal	CONT1 to CONT5	ON upon short circuit across contacts, OFF upon open circuit 12VDC-10% to 24VDC +10% Current consumption 20mA (per contact; use at circuit voltage 24 VDC) Function of each signal depends on parameter setting Compatible with both sink and source input methods
Sequence output signal	OUT1 to OUT2	Short circuit upon ON, open circuit upon OFF 30VDC / 50mA (max.) Function of each signal depends on parameter setting Compatible with both sink and source output methods

Connection Diagram (Reference)

VV type



*1: Connect the shield to the connector shell of CN1 and CN2. The connector shell is at the ground potential (FG).

*2: Supply the control power (L1c and L2c) without fail. (The servo amplifier does not function with merely the main power supply.)

*3: To use in the source I/O, connect as shown with the broken line. Connect the surge absorber diode of the output load with the reverse polarity.

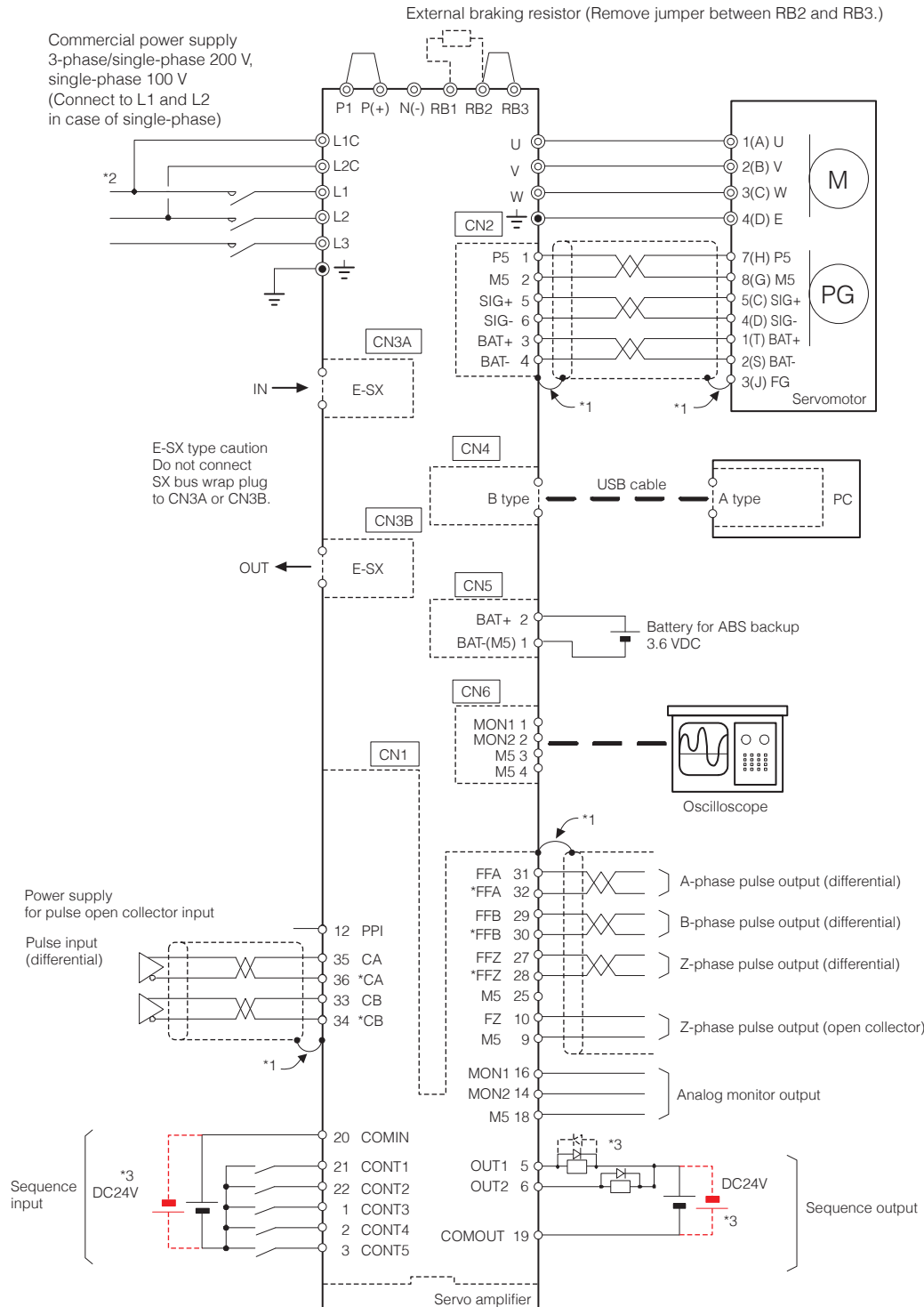


Caution

The diagram shown above is given as a reference for model selection.
When actually using the selected servo system, make wiring connections according to the connection diagram and instructions described in the user's manual.

Connection Diagram (Reference)

VE type, LE type

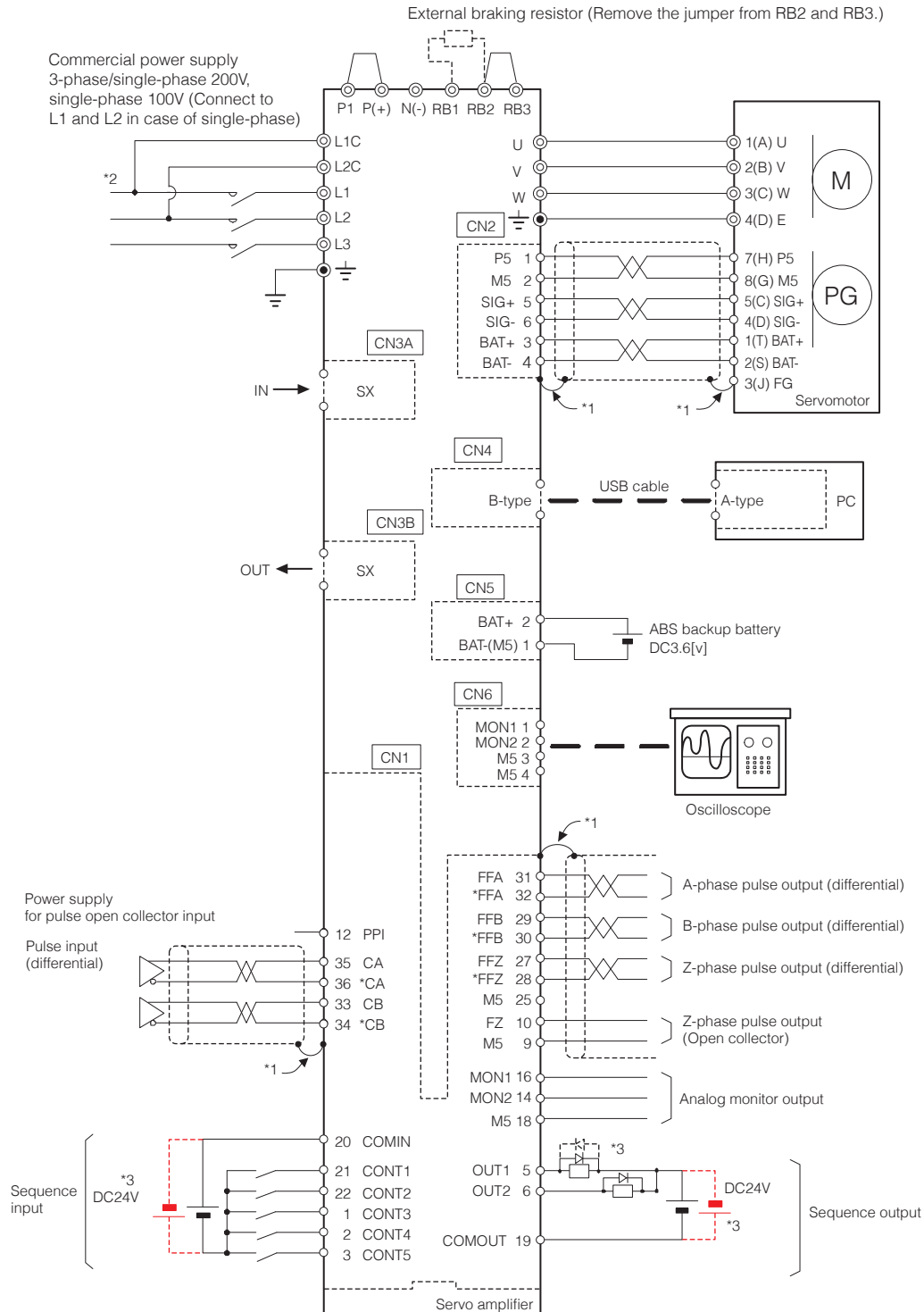


Caution

The diagram shown above is given as a reference for model selection.
When actually using the selected servo system, make wiring connections according
to the connection diagram and instructions described in the user's manual.

Connection Diagram (Reference)

VS type, LS type



*1: Connect the shield to the connector shell of CN1 and CN2. The connector shell is at the ground potential (FG).

*2: Supply the control power (L1c and L2c) without fail. (The servo amplifier does not function with merely the main power supply.)

*3: To use in the source I/O, connect as shown with the broken line. Connect the surge absorber diode of the output load with the reverse polarity.



Caution

The diagram shown above is given as a reference for model selection.
When actually using the selected servo system, make wiring connections according to the connection diagram and instructions described in the user's manual.

Specifications of Servomotor

GYS Motor

100V series

Standard specifications

Motor type (-B) indicates the brake-incorporated type.	GYS500D5 - □□ 6 (-B)	GYS101D5 - □□ 6 (-B)	GYS201D5 - □□ 6 (-B)	GYS401D5 - □□ 6 (-B)
Rated output [kW]	0.05	0.1	0.2	0.375
Rated torque [N · m]	0.159	0.318	0.637	1.19
Rated speed [r/min]	3000			
Max. speed [r/min]	6000* ¹			
Max. torque [N · m]	0.478	0.955	1.91	3.58
Inertia [kg · m ²] () indicates brake-incorporated type.	0.0192×10 ⁻⁴ (0.0223×10 ⁻⁴)	0.0371×10 ⁻⁴ (0.0402×10 ⁻⁴)	0.135×10 ⁻⁴ (0.159×10 ⁻⁴)	0.246×10 ⁻⁴ (0.270×10 ⁻⁴)
Rated current [A]	0.85	1.5	2.7	4.8
Max. current [A]	2.55	4.5	8.1	14.4
Winding insulation class	Class B			
Degree of enclosure protection	Totally enclosed, self-cooled (IP 67, excluding the shaft sealing and connectors)			
Terminals (motor)	Cable 0.3m (with connector)			
Terminals (encoder)	Cable 0.3m (with connector)			
Overheat protection	Not provided (The servo amplifier detects temperature.)			
Mounting method	By securing motor flange IMB5 (L51), IMV1 (L52), IMV3 (L53)			
Encoder	18-bit serial encoder (absolute/incremental), 20-bit serial encoder (incremental)			
Vibration level* ²	V5 or below			
Installation place, altitude and environment	For indoor use (free from direct sunlight), 1000m or below, locations without corrosive and flammable gases, oil mist and dust			
Ambient temperature, humidity	-10 to +40°C, within 90% RH max.(without condensation)			
Vibration resistance [m/s ²]	49			
Mass [kg] () indicates brake-incorporated type.	0.45 (0.6)	0.55 (0.7)	1.2 (1.7)	1.8 (2.3)
Compliance with standards	UL/cUL (UL1004), CE marking (EN60034-1, EN60034-5), RoHS directive			

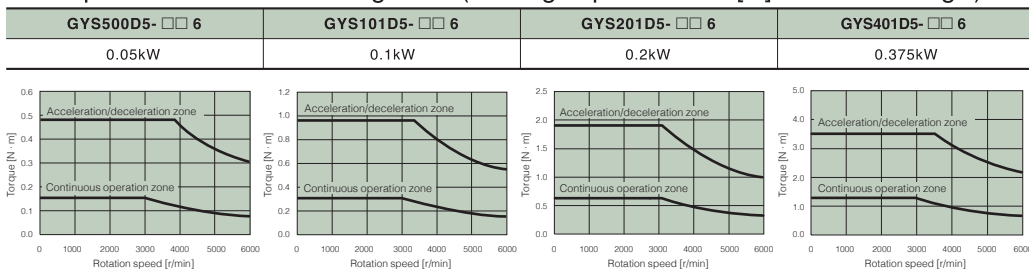
*1 The maximum rotation speed is 5000r/min when using the motor in combination with Fuji's gear head.

*2 The vibration value is the property of flange type IMV1(L52).

Brake specification (motor equipped with a brake)

Motor type	GYS500D5 - □□ 6-B	GYS101D5 - □□ 6-B	GYS201D5 - □□ 6-B	GYS401D5 - □□ 6-B
Static friction torque [N · m]	0.34			1.27
Rated DC voltage [V]	DC24±10%			
Attraction time [ms]	35			40
Release time [ms]	10			20
Power consumption [W]	6.1 (at 20°C)			7.3 (at 20°C)

Torque characteristics diagrams (at single-phase 100 [V] source voltage)



These characteristics indicate typical values of each servomotor combined with the corresponding RYT type servo amplifier.

The rated torque indicates the value obtained when the servo amplifier is installed to the following aluminum heat sink.

- Model GYS500D, 101D: 200 × 200 × 6 [mm]
- Model GYS201D, 401D: 250 × 250 × 6 [mm]

Specifications of Servomotor

GYS Motor

200V series

■ Standard specifications

Motor type (-B indicates the brake-incorporated type.)	GYS500D5 - □ □ 2 (-B)	GYS101D5 - □ □ 2 (-B)	GYS201D5 - □ □ 2 (-B)	GYS401D5 - □ □ 2 (-B)	GYS751D5 - □ □ 2 (-B)
Rated output [kW]	0.05	0.1	0.2	0.4	0.75
Rated torque [N · m]	0.159	0.318	0.637	1.27	2.39
Rated speed [r/min]	3000				
Max. speed [r/min]	6000*1				
Max. torque [N · m]	0.478	0.955	1.91	3.82	7.17
Inertia [kg · m ²] () indicates brake-incorporated type.	0.0192×10 ⁻⁴ (0.0223×10 ⁻⁴)	0.0371×10 ⁻⁴ (0.0402×10 ⁻⁴)	0.135×10 ⁻⁴ (0.159×10 ⁻⁴)	0.246×10 ⁻⁴ (0.270×10 ⁻⁴)	0.853×10 ⁻⁴ (0.949×10 ⁻⁴)
Rated current [A]	0.85	0.85	1.5	2.7	4.8
Max. current [A]	2.55	2.55	4.5	8.1	14.4
Winding insulation class	Class B				
Degree of enclosure protection	Totally enclosed, self-cooled (IP 67, excluding the shaft sealing and connectors)				
Terminals (motor)	Cable 0.3m (with connector)				
Terminals (encoder)	Cable 0.3m (with connector)				
Overheat protection	Not provided (The servo amplifier detects temperature.)				
Mounting method	By securing motor flange IMB5 (L51), IMV1 (L52), IMV3 (L53)				
Encoder	18-bit serial encoder (absolute/incremental), 20-bit serial encoder (incremental)				
Vibration level*2	V5 or below				
Installation place, altitude and environment	For indoor use (free from direct sunlight), 1000m or below, locations without corrosive and flammable gases, oil mist and dust				
Ambient temperature, humidity	-10 to +40°C, within 90% RH max. (without condensation)				
Vibration resistance [m/s ²]	49				
Mass [kg] () indicates brake-incorporated type.	0.45 (0.62)	0.55 (0.72)	1.2 (1.7)	1.8 (2.3)	3.4 (4.2)
Compliance with standards	UL/cUL (UL1004), CE marking (EN60034-1, EN60034-5), RoHS directive				

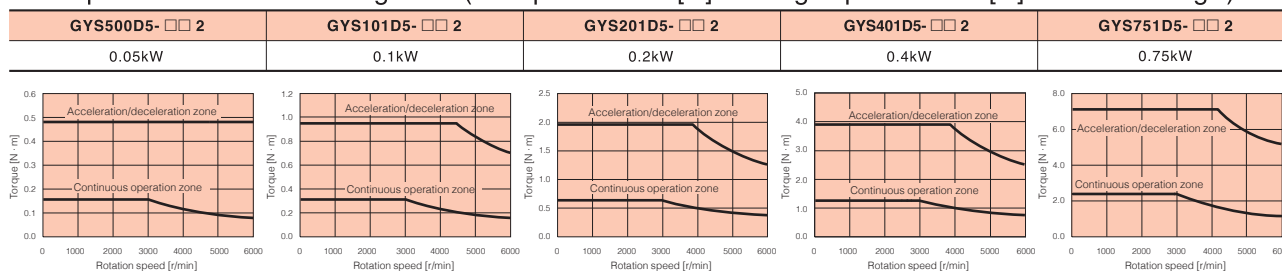
*1 The maximum rotation speed is 5000r/min when using the motor in combination with Fuji's gear head.

*2 The vibration value is the property of flange type IMV1(L52).

■ Brake specification (motor equipped with a brake)

Motor type	GYS500D5 - □ □ 2-B	GYS101D5 - □ □ 2-B	GYS201D5 - □ □ 2-B	GYS401D5 - □ □ 2-B	GYS751D5 - □ □ 2-B
Static friction torque [N · m]	0.34		1.27		2.45
Rated DC voltage [V]	DC24±10%				
Attraction time [ms]	35		40		60
Release time [ms]	10		20		25
Power consumption [W]	6.1 (at 20°C)		7.3 (at 20°C)		8.5 (at 20°C)

■ Torque characteristics diagrams (at 3-phase 200 [V] or single-phase 230 [V] source voltage)



These characteristics indicate typical values of each servomotor combined with the corresponding RYT type servo amplifier.

The rated torque indicates the value obtained when the servo amplifier is installed to the following aluminum heat sink.

- Model GYS500D, 101D: 200 × 200 × 6 [mm]
- Model GYS201D, 401D: 250 × 250 × 6 [mm]
- Model GYS751D: 300 × 300 × 6 [mm]

Specifications of Servomotor

GYS Motor

200V series

■ Standard specifications

Motor type (-B) indicates the brake-incorporated type.	GYS102D5 - □□ 2 (-B)	GYS152D5 - □□ 2 (-B)	GYS202D5 - □□ 2 (-B)	GYS302D5 - □□ 2 (-B)	GYS402D5 - □□ 2 (-B)	GYS502D5 - □□ 2 (-B)
Rated output [kW]	1.0	1.5	2.0	3.0	4.0	5.0
Rated torque [N · m]	3.18	4.78	6.37	9.55	12.7	15.9
Rated speed [r/min]	3000					
Max. speed [r/min]	5000					
Max. torque [N · m]	9.55	14.3	19.1	28.7	38.2	47.8
Inertia [kg · m ²] () indicates brake-incorporated type.	1.73×10 ⁻⁴ (2.03×10 ⁻⁴)	2.37×10 ⁻⁴ (2.67×10 ⁻⁴)	3.01×10 ⁻⁴ (3.31×10 ⁻⁴)	8.32×10 ⁻⁴ (10.42×10 ⁻⁴)	10.8×10 ⁻⁴ (12.9×10 ⁻⁴)	12.8×10 ⁻⁴ (14.9×10 ⁻⁴)
Rated current [A]	7.1	9.6	12.6	18.0	24.0	30.0
Max. current [A]	21.3	28.8	37.8	54.0	72.0	90.0
Winding insulation class	Class F					
Degree of enclosure protection	Totally enclosed, self-cooled (IP 67, excluding the shaft sealing)*1					
Terminals (motor)	Cannon connector					
Terminals (encoder)	Cannon connector					
Overheat protection	Not provided (The servo amplifier detects temperature.)					
Mounting method	By securing motor flange IMB5 (L51), IMV1 (L52), IMV3 (L53)					
Encoder	18-bit serial encoder (absolute/incremental), 20-bit serial encoder (incremental)					
Vibration level*2	Up to rated rotation speed: V10 or below Over rated rotation speed and up to 5000r/min: V15 or below					
Installation place, altitude and environment	For indoor use (free from direct sunlight), 1000m or below, locations without corrosive and flammable gases, oil mist and dust					
Ambient temperature, humidity	-10 to +40°C, within 90% RH max.(without condensation)					
Vibration resistance [m/s ²]	24.5					
Mass [kg] () indicates brake-incorporated type.	4.4 (5.9)	5.2 (6.8)	6.3 (7.9)	11.0 (13.0)	13.5 (15.5)	16.0 (18.0)
Compliance with standards	UL/cUL (UL1004), CE marking (EN60034-1, EN60034-5), RoHS directive					

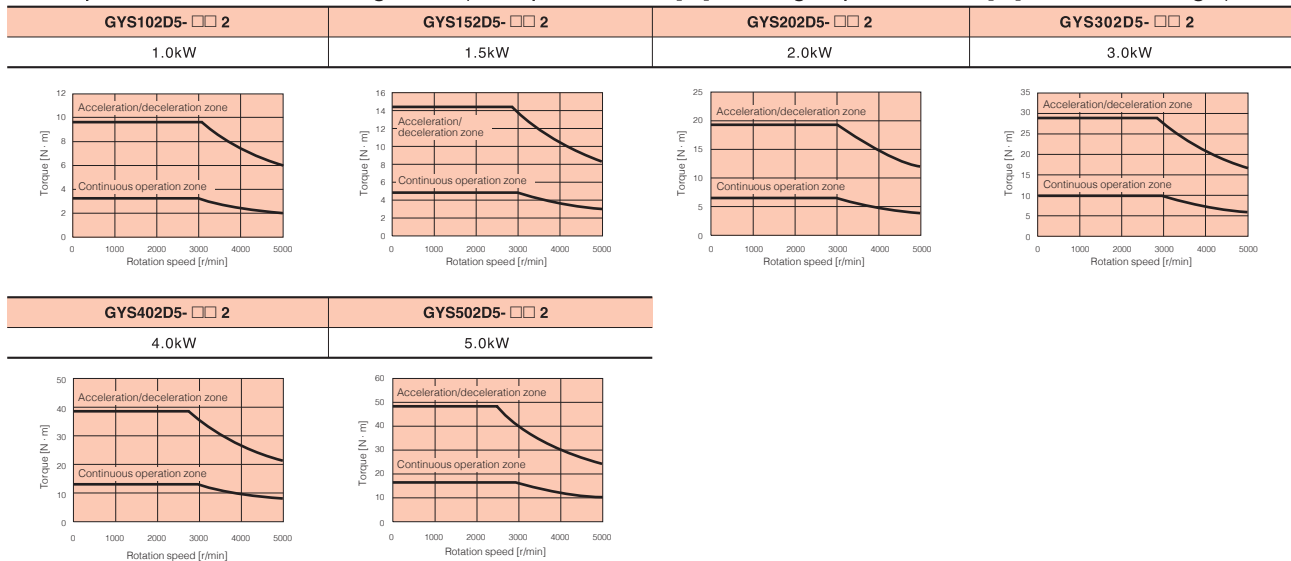
*1 If the motor is used in the environment rated to IP67 protection degree, use the wiring connector suitable for the protection degree.

*2 The vibration value is the property of flange type IMV1(L52).

■ Brake specification (motor equipped with a brake)

Motor type	GYS102D5 - □□ 2-B	GYS152D5 - □□ 2-B	GYS202D5 - □□ 2-B	GYS302D5 - □□ 2-B	GYS402D5 - □□ 2-B	GYS502D5 - □□ 2-B
Static friction torque [N · m]	6.86			17		
Rated DC voltage [V]	DC24±10%					
Attraction time [ms]	100			120		
Release time [ms]	40			30		
Power consumption [W]	17.7 (at 20°C)			12 (at 20°C)		

■ Torque characteristics diagrams (at 3-phase 200 [V] or single-phase 230 [V] source voltage)



These characteristics indicate typical values of each servomotor combined with the corresponding RYT type servo amplifier.

The rated torque indicates the value obtained when the servo amplifier is installed to the following aluminum heat sink.

- Model GYS102D, 152D, 202D: 350 × 350 × 8 [mm]
- Model GYS302D, 402D, 502D: 400 × 400 × 12 [mm]

Specifications of Servomotor

GYC Motor

Standard specifications

Motor type (-B) indicates the brake-incorporated type.	GYC101D5 - □□ 2 (-B)	GYC201D5 - □□ 2 (-B)	GYC401D5 - □□ 2 (-B)	GYC751D5 - □□ 2 (-B)	GYC102D5 - □□ 2 (-B)	GYC152D5 - □□ 2 (-B)	GYC202D5 - □□ 2 (-B)
Rated output [kW]	0.1	0.2	0.4	0.75	1.0	1.5	2.0
Rated torque [N · m]	0.318	0.637	1.27	2.39	3.18	4.78	6.37
Rated speed [r/min]	3000						
Max. speed [r/min]	6000*1				5000		
Max. torque [N · m]	0.955	1.91	3.82	7.17	9.55	14.3	19.1
Inertia [kg · m ²] () indicates brake-incorporated type.	0.0577×10 ⁻⁴ (0.0727×10 ⁻⁴)	0.213×10 ⁻⁴ (0.288×10 ⁻⁴)	0.408×10 ⁻⁴ (0.483×10 ⁻⁴)	1.21×10 ⁻⁴ (1.66×10 ⁻⁴)	3.19×10 ⁻⁴ (5.29×10 ⁻⁴)	4.44×10 ⁻⁴ (6.54×10 ⁻⁴)	5.69×10 ⁻⁴ (7.79×10 ⁻⁴)
Rated current [A]	1.0	1.5	2.6	4.8	6.7	9.6	12.6
Max. current [A]	3.0	4.5	7.8	14.4	20.1	28.8	37.8
Winding insulation class	Class B				Class F		
Degree of enclosure protection	Totally enclosed, self-cooled (IP 67, excluding the shaft sealing and connectors)				Totally enclosed, self-cooled (IP 67, excluding the shaft sealing)*2		
Terminals (motor)	Cable 0.3m (excluding connector)				Cannon connector		
Terminals (encoder)	Cable 0.3m (with connector)				Cannon connector		
Overheat protection	Not provided (The servo amplifier detects temperature.)						
Mounting method	By securing motor flange IMB5 (L51), IMV1 (L52), IMV3 (L53)						
Encoder	18-bit serial encoder (absolute/incremental), 20-bit serial encoder (incremental)						
Vibration level*3	V5 or below				Up to rated rotation speed: V10 or below Over rated rotation speed and up to 5000r/min: V15 or below		
Installation place, altitude and environment	For indoor use (free from direct sunlight), 1000m or below, locations without corrosive and flammable gases, oil mist and dust						
Ambient temperature, humidity	-10 to +40°C, within 90% RH max.(without condensation)						
Vibration resistance [m/s ²]	49				24.5		
Mass [kg] () indicates brake-incorporated type.	0.75 (1.0)	1.3 (1.9)	1.9 (2.6)	3.5 (4.3)	5.7 (8.0)	7.0 (9.8)	8.2 (11.0)
Compliance with standards	UL/cUL (UL1004), CE marking (EN60034-1, EN60034-5), RoHS directive						

*1 The maximum rotation speed is 5000r/min when using the motor in combination with Fuji's gear head.

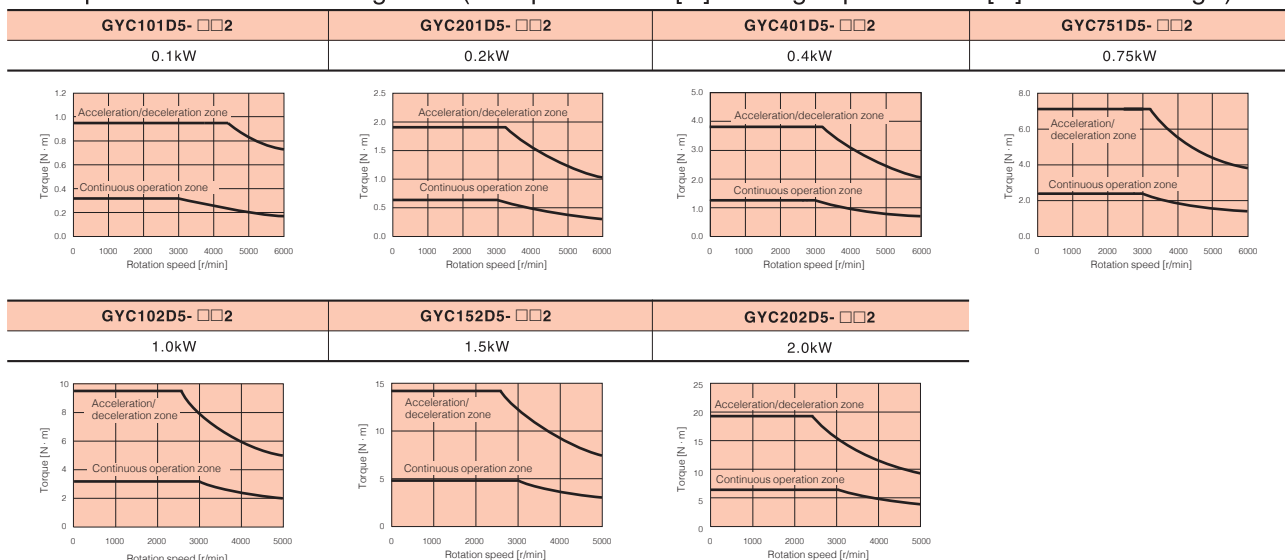
*2 If the motor is used in the environment rated to IP67 protection degree, use the wiring connector suitable for the protection degree.

*3 The vibration value is the property of flange type IMV1(L52).

Brake specification (motor equipped with a brake)

Motor type	GYC101D5 - □□ 2-B	GYC201D5 - □□ 2-B	GYC401D5 - □□ 2-B	GYC751D5 - □□ 2-B	GYC102D5 - □□ 2-B	GYC152D5 - □□ 2-B	GYC202D5 - □□ 2-B
Static friction torque [N · m]	0.318	1.27	2.39	17			
Rated DC voltage [V]	DC24±10%						
Attraction time [ms]	60	80	50	120			
Release time [ms]		40	80	30			
Power consumption [W]	6.5 (at 20°C)	9.0 (at 20°C)	8.5 (at 20°C)	12 (at 20°C)			

Torque characteristics diagrams (at 3-phase 200 [V] or single-phase 230 [V] source voltage)



These characteristics indicate typical values of each servomotor combined with the corresponding RYT type servo amplifier.

The rated torque indicates the value obtained when the servo amplifier is installed to the following aluminum heat sink.

- Model GYC101D, 201D, 401D: 250 × 250 × 6 [mm]
- Model GYC751D: 300 × 300 × 6 [mm]
- Model GYC102D: 300 × 300 × 12 [mm]
- Model GYC152D, 202D: 400 × 400 × 12 [mm]

Specifications of Servomotor

GYG Motor [2000r/min]

Standard specifications

Motor type (-B indicates the brake-incorporated type.)	GYG501C5 - □□ 2 (-B)	GYG751C5 - □□ 2 (-B)	GYG102C5 - □□ 2 (-B)	GYG152C5 - □□ 2 (-B)	GYG202C5 - □□ 2 (-B)
Rated output [kW]	0.5	0.75	1.0	1.5	2.0
Rated torque [N · m]	2.39	3.58	4.77	7.16	9.55
Rated speed [r/min]	2000				
Max. speed [r/min]	3000				
Max. torque [N · m]	7.2	10.7	14.3	21.5	28.6
Inertia [kg · m ²] () indicates brake-incorporated type.	7.96×10 ⁻⁴ (10.0×10 ⁻⁴)	11.55×10 ⁻⁴ (13.6×10 ⁻⁴)	15.14×10 ⁻⁴ (17.2×10 ⁻⁴)	22.33×10 ⁻⁴ (24.4×10 ⁻⁴)	29.51×10 ⁻⁴ (31.6×10 ⁻⁴)
Rated current [A]	3.5	5.2	6.4	10	12.3
Max. current [A]	10.5	15.6	19.2	30.0	36.9
Winding insulation class	Class F				
Degree of enclosure protection	Totally enclosed, self-cooled (IP 67, excluding the shaft sealing)*1				
Terminals (motor)	Cannon connector				
Terminals (encoder)	Cannon connector				
Overheat protection	Not provided (The servo amplifier detects temperature.)				
Mounting method	By securing motor flange IMB5 (L51), IMV1 (L52), IMV3 (L53)				
Encoder	18-bit serial encoder (absolute/incremental), 20-bit serial encoder (incremental)				
Vibration level*2	V10 or below				
Installation place, altitude and environment	For indoor use (free from direct sunlight), 1000m or below, locations without corrosive and flammable gases, oil mist and dust				
Ambient temperature, humidity	-10 to +40°C, within 90% RH max. (without condensation)				
Vibration resistance [m/s ²]	24.5				
Mass [kg] () indicates brake-incorporated type.	5.3 (7.5)	6.4 (8.6)	7.5 (9.7)	9.8 (12.0)	12.0 (14.2)
Compliance with standards	UL/cUL (UL1004), CE marking (EN60034-1, EN60034-5), RoHS directive				

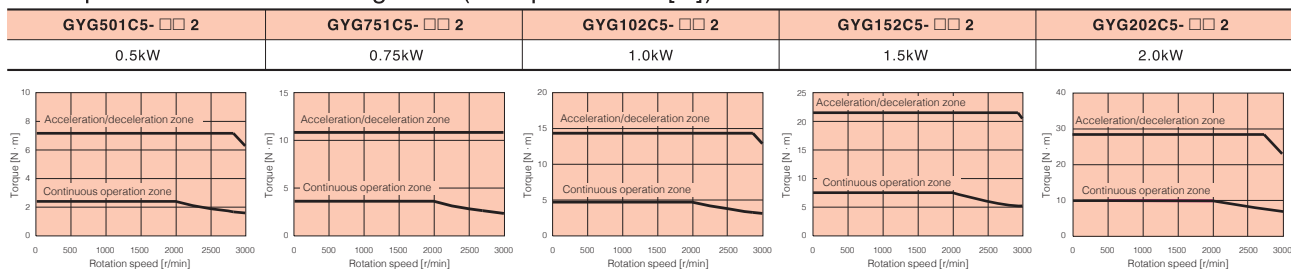
*1 If the motor is used in the environment rated to IP67 protection degree, use the wiring connector suitable for the protection degree.

*2 The vibration value is the property of flange type IMV1(L52).

Brake specification (motor equipped with a brake)

Motor type	GYG501C5 - □□ 2-B	GYG751C5 - □□ 2-B	GYG102C5 - □□ 2-B	GYG152C5 - □□ 2-B	GYG202C5 - □□ 2-B
Static friction torque [N · m]	17				
Rated DC voltage [V]	DC24±10%				
Attraction time [ms]	120				
Release time [ms]	30				
Power consumption [W]	12 (at 20°C)				

Torque characteristics diagrams (at 3-phase 200[V])



These characteristics indicate typical values of each servomotor combined with the corresponding RYT type servo amplifier.

The rated torque indicates the value obtained when the servo amplifier is installed to the following aluminum heat sink.

- Model GYG501C, 751C, 102C: 300 × 300 × 12 [mm]
- Model GYG152C, 202C: 400 × 400 × 12 [mm]

Specifications of Servomotor

GYG Motor [1500r/min]

Standard specifications

Motor type (-B) indicates the brake-incorporated type.	GYG501B5 - □□ 2 (-B)	GYG851B5 - □□ 2 (-B)	GYG132B5 - □□ 2 (-B)
Rated output [kW]	0.5	0.85	1.3
Rated torque [N · m]	3.18	5.41	8.28
Rated speed [r/min]	1500		
Max. speed [r/min]	3000		
Max. torque [N · m]	9.5	16.2	24.8
Inertia [kg · m ²] () indicates brake-incorporated type.	11.55×10 ⁻⁴ (13.6×10 ⁻⁴)	15.15×10 ⁻⁴ (17.3×10 ⁻⁴)	22.33×10 ⁻⁴ (24.5×10 ⁻⁴)
Rated current [A]	4.7	7.3	11.5
Max. current [A]	14.1	21.9	34.5
Winding insulation class	Class F		
Degree of enclosure protection	Totally enclosed, self-cooled (IP 67, excluding the shaft sealing)*1		
Terminals (motor)	Cannon connector		
Terminals (encoder)	Cannon connector		
Overheat protection	Not provided (The servo amplifier detects temperature.)		
Mounting method	By securing motor flange IMB5 (L51), IMV1 (L52), IMV3 (L53)		
Encoder	18-bit serial encoder (absolute/incremental), 20-bit serial encoder (incremental)		
Vibration level*2	V10 or below		
Installation place, altitude and environment	For indoor use (free from direct sunlight), 1000m or below, locations without corrosive and flammable gases, oil mist and dust		
Ambient temperature, humidity	-10 to +40°C, within 90% RH max.(without condensation)		
Vibration resistance [m/s ²]	24.5		
Mass [kg] () indicates brake-incorporated type.	6.4 (8.6)	7.5 (9.7)	9.8 (12.0)
Compliance with standards	UL/cUL (UL1004), CE marking (EN60034-1, EN60034-5), RoHS directive		

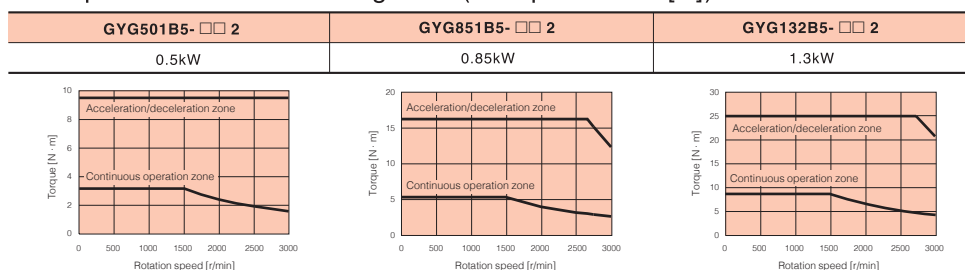
*1 If the motor is used in the environment rated to IP67 protection degree, use the wiring connector suitable for the protection degree.

*2 The vibration value is the property of flange type IMV1(L52).

Brake specification (motor equipped with a brake)

Motor type	GYG501B5 - □□ 2-B	GYG851B5 - □□ 2-B	GYG132B5 - □□ 2-B
Static friction torque [N · m]	17		
Rated DC voltage [V]	DC24±10%		
Attraction time [ms]	120		
Release time [ms]	30		
Power consumption [W]	12 (at 20°C)		

Torque characteristics diagrams (at 3-phase 200[V])



These characteristics indicate typical values of each servomotor combined with the corresponding RYT type servo amplifier.

The rated torque indicates the value obtained when the servo amplifier is installed to the following aluminum heat sink.

- Model GYG501B, 851B: 300 × 300 × 12 [mm]
- Model GYG132B: 400 × 400 × 12 [mm]

Specifications of Servomotor

GYB Motor

Standard specifications

Motor type (-B) indicates the brake-incorporated type.	GYB201D5 - □□ 2 (-B)	GYB401D5 - □□ 2 (-B)	GYB751D5 - □□ 2 (-B)
Rated output [kW]	0.2	0.4	0.75
Rated torque [N · m]	0.637	1.27	2.39
Rated speed [r/min]	3000		
Max. speed [r/min]	6000* ¹		
Max. torque [N · m]	1.91	3.82	7.17
Inertia [kg · m ²] () indicates brake-incorporated type.	0.24×10 ⁻⁴ (0.29×10 ⁻⁴)	0.42×10 ⁻⁴ (0.46×10 ⁻⁴)	1.43×10 ⁻⁴ (1.61×10 ⁻⁴)
Rated current [A]	1.5	2.7	5.2
Max. current [A]	4.5	8.1	15.6
Winding insulation class	Class B		
Degree of enclosure protection	Totally enclosed, self-cooled (IP 67, excluding the shaft-through)* ²		
Terminals (motor)	0.3m cable		
Terminals (encoder)	0.3m cable		
Overheat protection	Not provided (The servo amplifier detects temperature.)		
Mounting method	By securing motor flange IMB5 (L51), IMV1 (L52), IMV3 (L53)		
Encoder	18-bit serial encoder (absolute/incremental), 20-bit serial encoder (incremental)		
Vibration level* ³	V5 or below		
Installation place, altitude and environment	For indoor use (free from direct sunlight), 1000m or below, locations without corrosive and flammable gases, oil mist and dust		
Ambient temperature, humidity	-10 to +40°C, within 90% RH (without condensation)		
Vibration resistance [m/s ²]	49		
Mass [kg] () indicates brake-incorporated type.	1.0 (1.5)	1.5 (2.1)	3.0 (3.9)
Compliance with standards	UL/cUL (UL508c) (Some models are in the process of being certified), CE marking (low power directive EN61800-5-1), RoHS directive.		

*1 The max. speed of 5000r/min can be reached by using it with Fuji's gear head

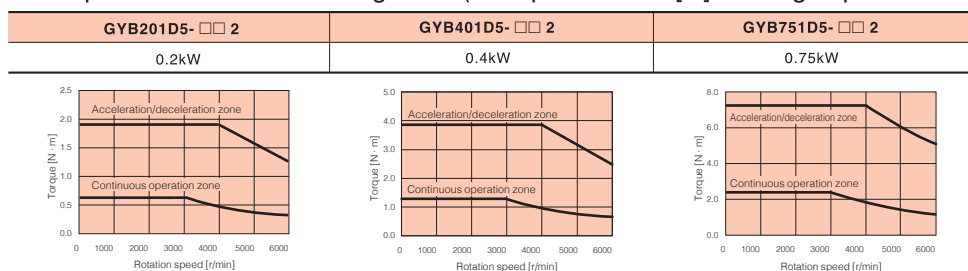
*2 Protection degree IP67 is initial value

*3 The vibration value is the property of flange type IMV1(L52).

Brake specification (motor equipped with a brake)

Motor type	GYB201D5 - □□ 2-B	GYB401D5 - □□ 2-B	GYB751D5 - □□ 2-B
Static friction torque [N · m]	1.27		2.45
Rated DC voltage [V]	DC24±10%		
Attraction time [ms]	40		60
Release time [ms]	20		25
Power consumption [W]	7.2 (at 20°C)		8.5 (at 20°C)

Torque characteristics diagrams (at 3-phase 200 [V] or single-phase 230 [V] source voltage)



These characteristics indicate typical values of each servomotor combined with the corresponding servo amplifier RYH series.

The rated torque indicates the value obtained when the servo amplifier is installed to the following aluminum heat sink.

- Model GYB201D, 401D: 250 × 250 × 6 [mm]
- Model GYB751D: 300 × 300 × 6 [mm]

Specifications of Servomotor

GYH Motor [2000r/min]

Standard specifications

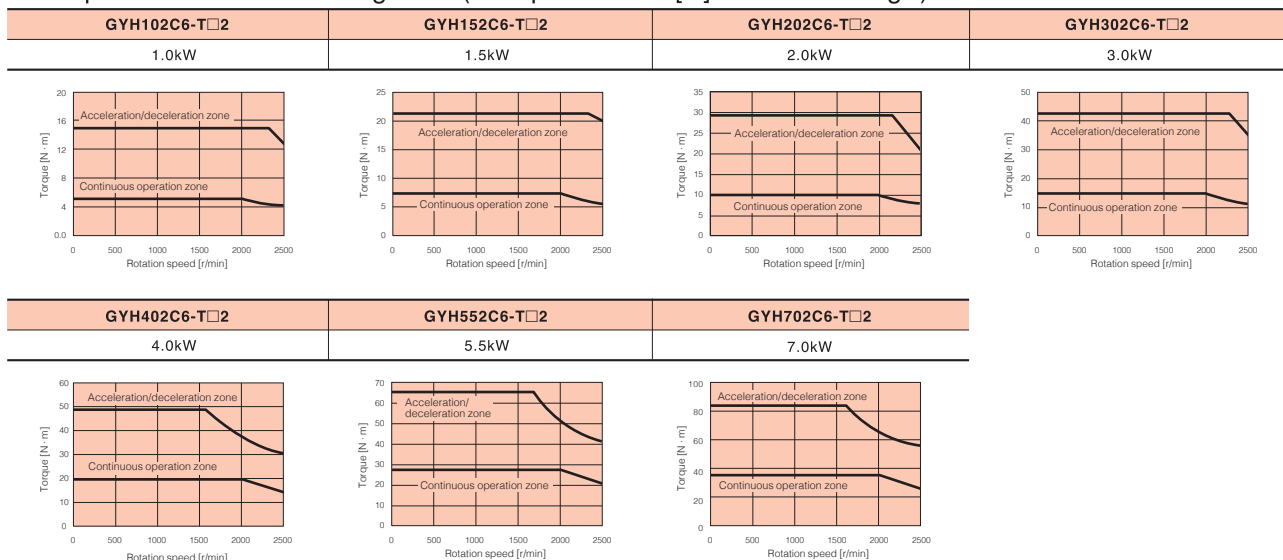
Motor type (-B) indicates the brake-incorporated type.	GYH-102 C6-T□2 (-B)	GYH-152 C6-T□2 (-B)	GYH202 C6-T□2 (-B)	GYH302 C6-T□2 (-B)	GYH402 C6-T□2 (-B)	GYH552 C6-T□2 (-B)	GYH702 C6-T□2 (-B)
Amplifier type	RYT751D5-□□2	RYT102D5-□□2	RYT152D5-□□2	RYT202D5-□□2	RYT302D5-□□2	RYT402D5-□□2	RYT502D5-□□2
Rated output [kW]	1.0	1.5	2.0	3.0	4.0	5.5	7.0
Rated torque [N · m]	4.77	7.16	9.55	14.32	19.10	26.226	33.42
Rated speed [r/min]	2000						
Max. speed [r/min]	2500						
Max. torque [N · m]	14.3	21.4	28.6	42.9	47.7	65.6	83.5
Inertia [kg · m ²] () indicates brake-incorporated type.	6.26 × 10 ⁻⁴ (6.96 × 10 ⁻⁴)	8.88 × 10 ⁻⁴ (9.58 × 10 ⁻⁴)	12.14 × 10 ⁻⁴ (12.84 × 10 ⁻⁴)	17.92 × 10 ⁻⁴ (18.62 × 10 ⁻⁴)	39.99 × 10 ⁻⁴ (40.80 × 10 ⁻⁴)	51.44 × 10 ⁻⁴ (52.31 × 10 ⁻⁴)	63.52 × 10 ⁻⁴ (67.36 × 10 ⁻⁴)
Rated current [A]	5.1	7.3	9	13.7	16	22.5	29
Max. current [A]	15.3	21.9	27	41.1	40.8	57.4	74.0
Winding insulation class	Class F						
Degree of enclosure protection	Totally enclosed, self-cooled (IP 67, excluding the shaft-through)*1						
Terminals (motor)	Cannon connector						
Terminals (encoder)	Cannon connector						
Overheat protection	Not provided (The servo amplifier detects temperature.)						
Mounting method	By securing motor flange IMB5 (L51), IMV1 (L52), IMV3 (L53)						
Encoder	17-bit serial encoder (incremental)						
Vibration level	V15 or below						
Installation place, altitude and environment	For indoor use (free from direct sunlight), 1000m or below, locations without corrosive and flammable gases, oil mist and dust						
Ambient temperature, humidity	0 to +40°C (there should be no freezing), within 90% RH (without condensation)						
Vibration resistance [m/s ²]	19.6						
Mass [kg] () indicates brake-incorporated type.	6.5 (8.1)	8.1 (9.7)	10.2 (11.8)	13.9 (15.5)	19.5 (23.0)	26.2 (30.0)	30.0 (34.8)

*1 If the motor is used in the environment rated to IP67 protection degree, use the wiring connector suitable for the protection degree.

Brake specification (motor equipped with a brake)

Motor type	GYH-102 C6-T□2 (-B)	GYH-152 C6-T□2 (-B)	GYH202 C6-T□2 (-B)	GYH302 C6-T□2 (-B)	GYH402 C6-T□2 (-B)	GYH552 C6-T□2 (-B)	GYH702 C6-T□2 (-B)
Static friction torque [N · m]	20				30		50
Rated DC voltage [V]	DC24±10%				DC24±5%		
Attraction time [ms]	100				110		150
Release time [ms]	27				5		40
Power consumption [W]	19.5 (at 20°C)				23 (at 20°C)		27 (at 20°C)

Torque characteristics diagrams (at 3-phase 200 [V] source voltage)



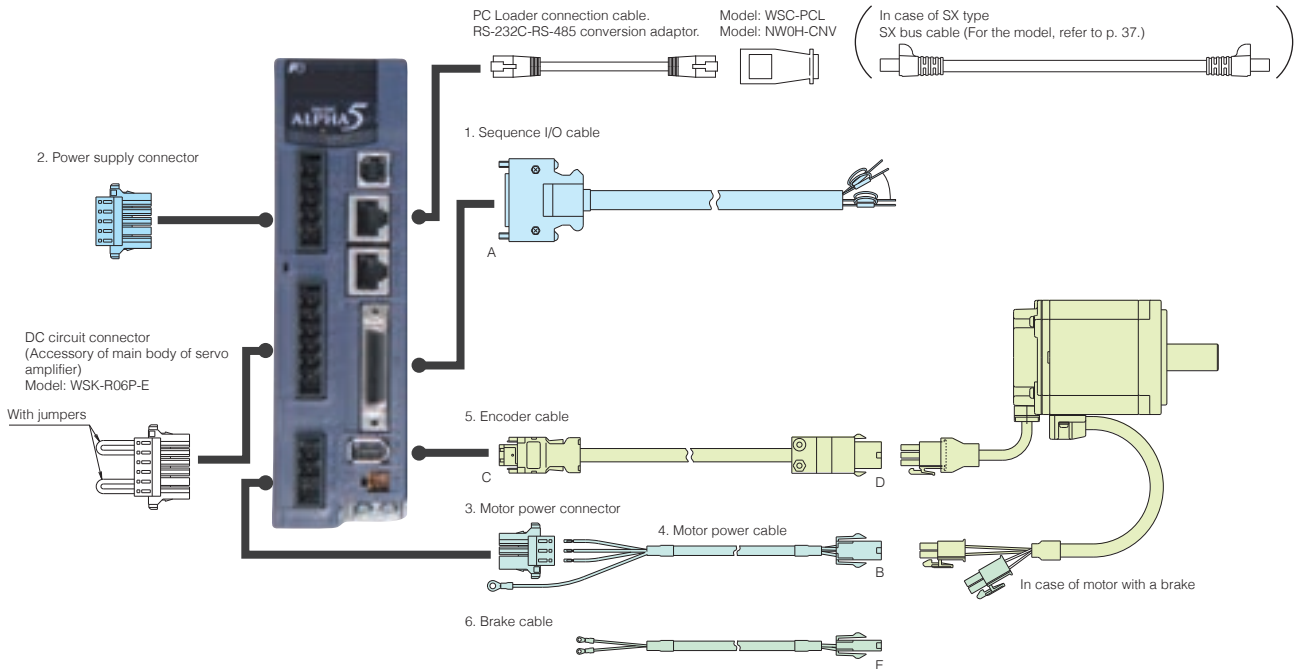
These characteristics indicate typical values of each servomotor combined with the corresponding servo amplifier RYT series .

The rated torque indicates the value obtained when the servo amplifier is installed to the following aluminum heat sink.

- Model GYH102,152,302: 400 × 400 × 12 [mm]
- Model GYH402,552,702: 600 × 600 × 25 [mm]

Option/Peripheral Equipment

<Example : 750W or less / 3000r/min>



Option

Basic option

Motor series	Rated speed	Brake	Rated output	1. Sequence I/O cable (between host and amplifier)	2. Power supply connector	3. Motor power connector (on amplifier side)	4. Motor power cable (between amplifier and motor)	5. Encoder cable (between amplifier and motor)	6. Brake cable
GYS motor	3000r/min	Without a brake	0.05kW to 0.75kW	WSC-D36P03	WSK-S05P-E	WSK-M03P-E (Excluding 2kW)	WSC-M04P02-E	WSC-P06P02-E	—
		With a brake					WSC-M04P05-E	WSC-P06P05-E	WSC-M02P02-E
		Without a brake	1.0kW to 2.0kW				WSC-M04P10-E	WSC-P06P10-E	WSC-M02P05-E
		With a brake	3.0kW to 5.0kW				WSC-M04P20-E	WSC-P06P20-E	WSC-M02P10-E
		Without a brake	—				*1	WSC-P06P05-C	—
GYC motor	3000r/min	Without a brake	0.05kW to 0.75kW		WSK-S05P-E	WSK-M03P-E (Excluding 2kW)	WSC-M04P02-E	WSC-P06P02-E	—
		With a brake					WSC-M04P05-E	WSC-P06P05-E	WSC-M02P02-E
		Without a brake	1.0kW to 2.0kW				WSC-M04P10-E	WSC-P06P10-E	WSC-M02P05-E
		With a brake	3.0kW to 5.0kW				WSC-M04P20-E	WSC-P06P20-E	WSC-M02P10-E
		Without a brake	—				*3	WSC-P06P20-C	—
GYG motor	2000r/min	Without a brake	0.5kW to 1.0kW	WSK-S05P-E	WSK-M03P-E	WSC-M04P02-E	WSC-P06P05-C WSC-P06P10-C WSC-P06P20-C	—	
		With a brake				WSC-M04P05-E		*No cable is required.	
		Without a brake	1.5kW to 2.0kW			WSC-M04P10-E		—	
		With a brake	3.0kW to 5.0kW			WSC-M04P20-E		—	
	1500r/min	Without a brake	0.5kW to 0.85kW	WSK-S05P-E	WSK-M03P-E	*1		—	
		With a brake				*2		*No cable is required.	
		Without a brake	1.3kW			*1		—	
		With a brake	3.0kW to 5.0kW			*2		*No cable is required.	
GYB motor	3000r/min	Without a brake	0.2kW, 0.4kW	WSK-S05P-E	WSK-M03P-E	WSC-M04P02-E	WSC-P06P02-E WSC-P06P05-E WSC-P06P10-E WSC-P06P20-E	—	
		With a brake				WSC-M04P05-E		WSC-M02P02-E	
		Without a brake	0.75kW			WSC-M04P10-E		WSC-M02P05-E	
		With a brake				WSC-M04P20-E		WSC-M02P10-E WSC-M02P20-E	
GYH motor	2000r/min	Without a brake	1.0kW to 2.0kW	WSC-D36P03	WSK-S05P-E	WSK-M03P-E	Prepared by Customer	WSC-P06P05-W WSC-P06P10-W WSC-P06P20-W	Prepared by Customer
		With a brake							
		Without a brake	3.0kW to 7.0kW		Prepared by Customer	—			
		With a brake	(Motor output)						

*1 The customer is requested to fabricate the cable using the connector for motor power (motor without brake): WSK-M04P-CA.

*2 The customer is requested to fabricate the cable using the connector for motor power (motor with brake): WSK-M06P-CA.

*3 The customer is requested to fabricate the cable using the connector for motor power (motor without brake): WSK-M04P-CB.

*4 The customer is requested to fabricate the cable using the connector for motor power (motor with brake): WSK-M06P-CB.

Option/Peripheral Equipment

Option

■ Connector kit * Use this connector if the customer fabricates the cable himself.

Motor series	Rated speed	Brake	Rated output	A Sequence I/O connector	B Motor power connector (on motor side)	Encoder connector		E Brake connector
						C Amplifier side	D Motor side	
GYS motor (0.05~5.0kW) GYB motor (0.2~0.75kW)	3000r/min	Without a brake	0.05kW to 0.75kW	WSK-D36P	WSK-M04P-E	WSK-P06P-M	WSK-P09P-D	—
		With a brake	1.0kW to 1.5kW		WSK-M04P-CA		WSK-P06P-C	WSK-M02P-E
		Without a brake	2.0kW		WSK-M06P-CA			—
		With a brake	3.0kW to 5.0kW		WSK-M04P-CA			—
		Without a brake			WSK-M06P-CA			—
		With a brake			WSK-M04P-CB			—
GYC motor	3000r/min	Without a brake	0.05kW to 0.75kW		WSK-M04P-E		WSK-P09P-D	WSK-M02P-E
		With a brake	1.0kW to 1.5kW		WSK-M04P-CB		WSK-P06P-C	—
		Without a brake	2.0kW		WSK-M06P-CB			—
		With a brake			WSK-M04P-CB			—
		Without a brake			WSK-M06P-CB			—
		With a brake			WSK-M04P-CA			—
GYG motor	2000r/min	Without a brake	0.5kW to 1.0kW		WSK-M06P-CA		WSK-P06P-C	—
		With a brake	1.5kW to 2.0kW		WSK-M04P-CA			
		Without a brake			WSK-M06P-CA			
		With a brake			WSK-M04P-CA			
	1500r/min	Without a brake	0.5kW to 0.85kW		WSK-M06P-CA			
		With a brake	1.3kW		WSK-M04P-CA			
		Without a brake			WSK-M06P-CA			
		With a brake			WSK-M04P-CA			
		Without a brake			WSK-M06P-CA			
		With a brake			WSK-M04P-CA			

■ Recommended connectors for GYH motor

Motor series	Rated speed	Rated output	Brake	Selectable connector Install on motor (for reference)	Motor power connector		F. Brake connector		Encoder connector (on motor side)	
					Connector	Cable clamp	Connector	Cable clamp	Connector	Cable clamp
GYH motor	2000r/min	1.0kW to 3.0kW	W/o	MS3102A20-4P	MS3108B20-4S	MS3057-12A	—	—	MS3108B20-18S	MS3057-12A
			W/	MS3102A20-15P	MS3108B20-15S *1	—	—	—		
			W/o	MS3102A32-17P	—	—	—	—		
		4.0kW to 7.0kW	W/	Power MS3102A32-17P Brake power supply MS3102A10SL-3P	MS3108B32-17S	MS3057-20A	MS3106B10SL-3S	MS3057-4A		

*1 The GYH type is a standard specification motor equipped with a key.

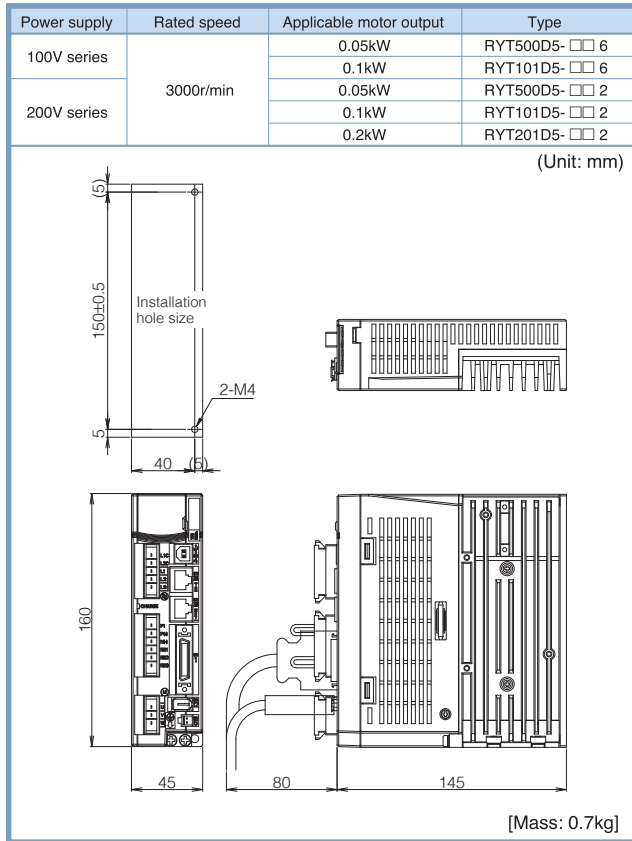
Peripheral equipment

Rated speed	Input power supply	Servo amplifier type	Output of applied motor [kW]	Power supply capacity [kVA]	Input current [A]	Power filter	AC reactor	DC reactor	Molded case circuit breaker	Ground fault interrupter	Electromagnetic contactor
3000r/min	Single-phase 100V	RYT500D5-□□6	0.05	0.1	1.5	RNFTC06-20	ACR2-0.4A	DCR2-0.4	EA32AC/3	EG32AC/3	SC-03
		RYT101D5-□□6	0.1	0.2	2.6	RNFTC10-20	ACR2-0.75A	DCR2-0.75	EA32AC/5	EG32AC/5	
		RYT201D5-□□6	0.2	0.4	4.8	RNFTC20-20	ACR2-1.5A	DCR2-1.5	EA32AC/10	EG32AC/10	
		RYT401D5-□□6	0.375	0.8	8.7	RNFTC20-20	ACR2-2.2A	DCR2-2.2	EA32AC/15	EG32AC/15	SC-0
		RYT500D5-□□2	0.05	0.1	0.7	RNFTC06-20	ACR2-0.4A	DCR2-0.2	EA32AC/3	EG32AC/3	SC-03
		RYT101D5-□□2	0.1	0.2	1.3		ACR2-0.75A	DCR2-0.4	EA32AC/5	EG32AC/5	
		RYT201D5-□□2	0.2	0.4	2.4		ACR2-1.5A	DCR2-0.75	EA32AC/10	EG32AC/10	
	Single-phase 200V	RYT401D5-□□2	0.4	0.8	4.7	RNFTC10-20	ACR2-1.5A	DCR2-1.5	EA32AC/10	EG32AC/10	SC-0
		RYT751D5-□□2	0.75	1.5	8.6	RNFTC20-20	ACR2-2.2A	DCR2-2.2	EA32AC/15	EG32AC/15	
		RYT500D5-□□2	0.05	0.1	0.4	RNFTC06-20	ACR2-0.4A	DCR2-0.2	EA33AC/3	EG33AC/3	SC-03
		RYT101D5-□□2	0.1	0.2	0.7		ACR2-0.75A	DCR2-0.75	EA33AC/5	EG33AC/5	
		RYT201D5-□□2	0.2	0.4	1.4		ACR2-1.5A	DCR2-1.5	EA33AC/10	EG33AC/10	
		RYT401D5-□□2	0.4	0.8	2.7	RNFTC10-20	ACR2-2.2A	DCR2-2.2	EA33AC/15	EG33AC/15	SC-4-1
	3-phase 200V	RYT751D5-□□2	0.75	1.5	5.0		ACR2-3.7A	DCR2-3.7	EA33AC/30	EG33AC/30	
		RYT102D5-□□2	1.0	2.0	6.6		ACR2-5.5A	DCR2-5.5	EA53AC/40	EG53AC/40	SC-N1
		RYT152D5-□□2	1.5	2.9	9.8	RNFTC20-20	ACR2-7.5A	DCR2-7.5	EA53AC/50	EG53AC/50	SC-N2
		RYT202D5-□□2	2.0	3.9	13.0		ACR2-11A	DCR2-11	EA53AC/50	EG53AC/50	
		RYT302D5-□□2	3.0	5.9	19.5		ACR2-1.5A	DCR2-1.5	EA32AC/10	EG32AC/10	SC-03
	2000r/min	RYT402D5-□□2	4.0	7.8	26.0	RNFTC50-20	ACR2-2.2A	DCR2-2.2	EA32AC/15	EG32AC/15	
		RYT502D5-□□2	5.0	9.8	32.5		ACR2-3.7A	DCR2-3.7	EA33AC/30	EG33AC/30	
		RYT751C5-□□2	0.5	1.0	3.3	RNFTC06-20	ACR2-0.75A	DCR2-0.75	EA33AC/10	EG33AC/10	SC-03
	3-phase 200V	RYT102C5-□□2	0.75	1.5	5.0	RNFTC10-20	ACR2-1.5A	DCR2-1.5	EA33AC/15	EG33AC/15	
		RYT152C5-□□2	1.0	2.0	6.6	RNFTC20-20	ACR2-2.2A	DCR2-2.2	EA33AC/20	EG33AC/20	SC-4-1
		RYT202C5-□□2	1.5	2.9	9.8		ACR2-3.7A	DCR2-3.7	EA33AC/30	EG33AC/30	
	1500r/min	RYT501B5-□□2	0.5	1.0	3.3	RNFTC06-20	ACR2-0.75A	DCR2-0.75	EA33AC/10	EG33AC/10	SC-03
		RYT851B5-□□2	0.85	1.7	5.6	RNFTC10-20	ACR2-1.5A	DCR2-1.5	EA33AC/15	EG33AC/15	
		RYT132B5-□□2	1.3	2.6	8.5	RNFTC20-20	ACR2-2.2A	DCR2-2.2	EA33AC/15	EG33AC/15	

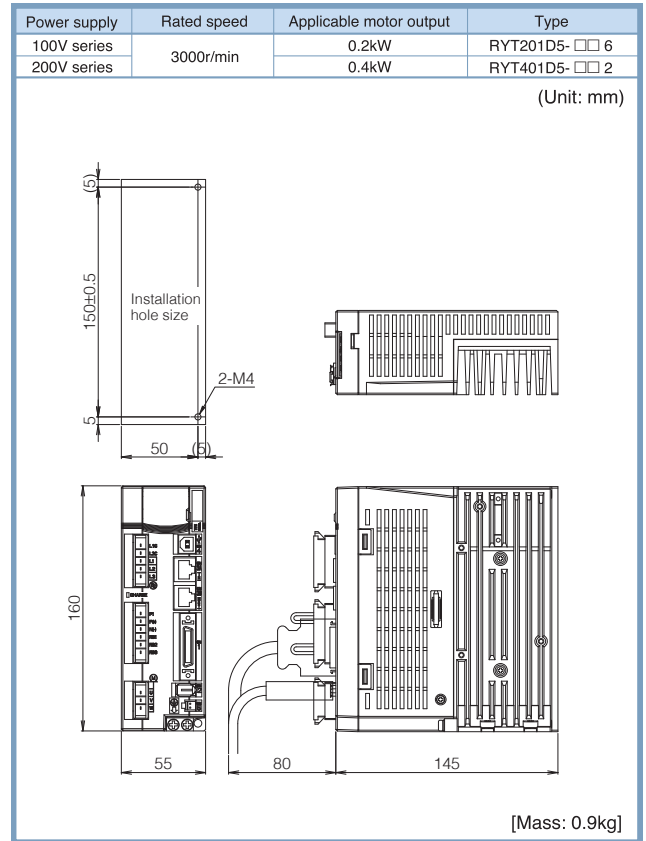
External Dimensions

Servo amplifier

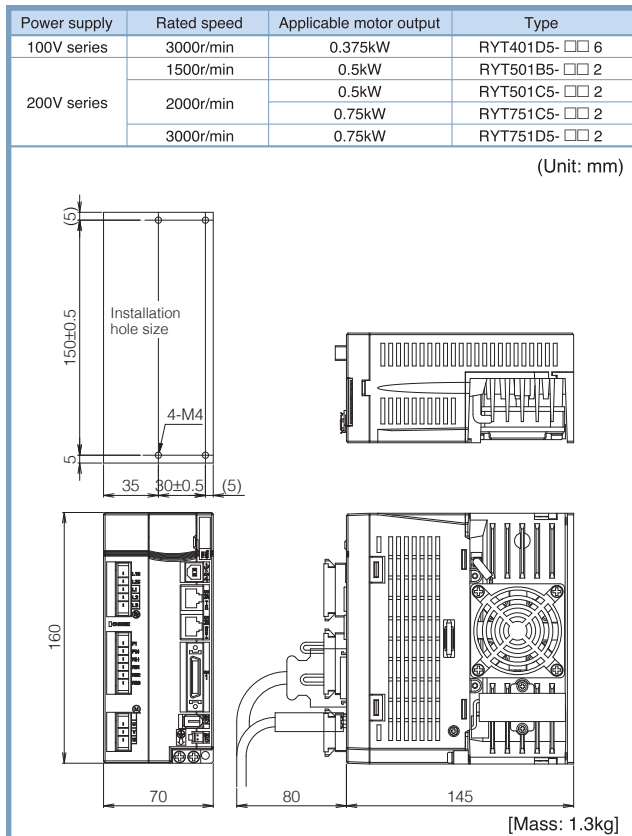
■Frame 1



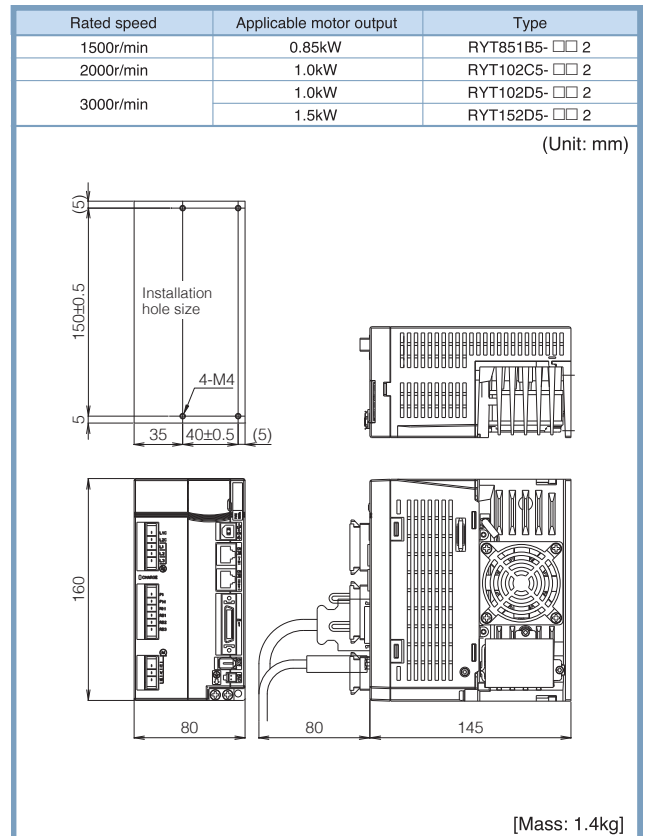
■Frame 2



■Frame 3



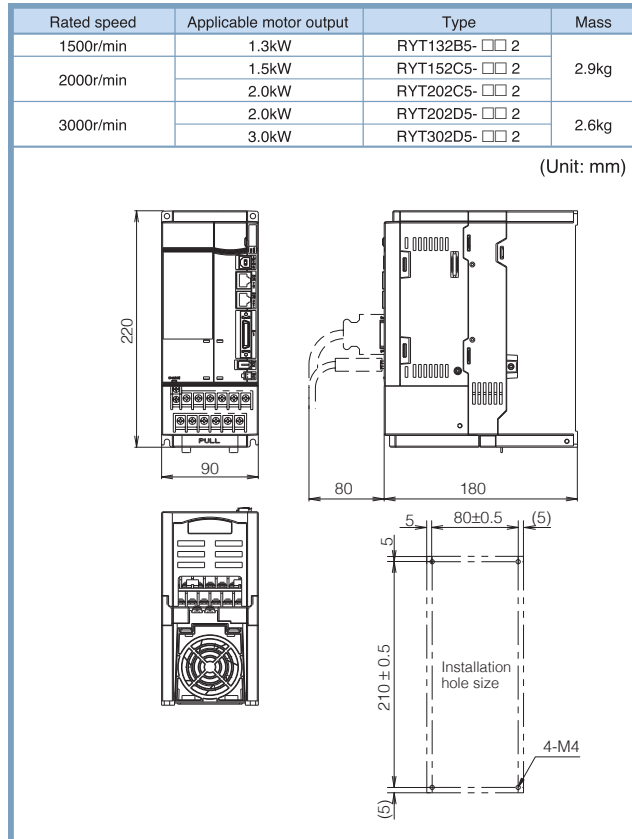
■Frame 4



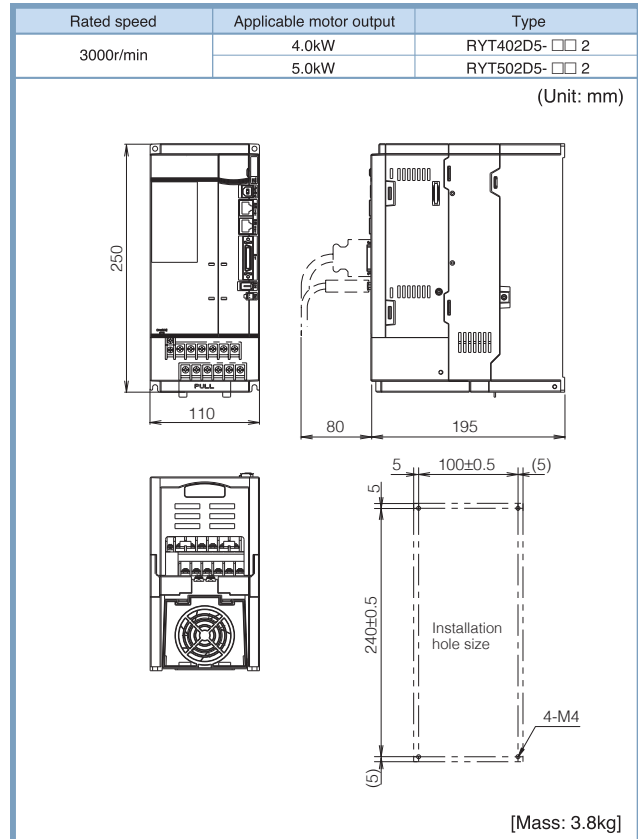
External Dimensions

Servo amplifier

■Frame 5



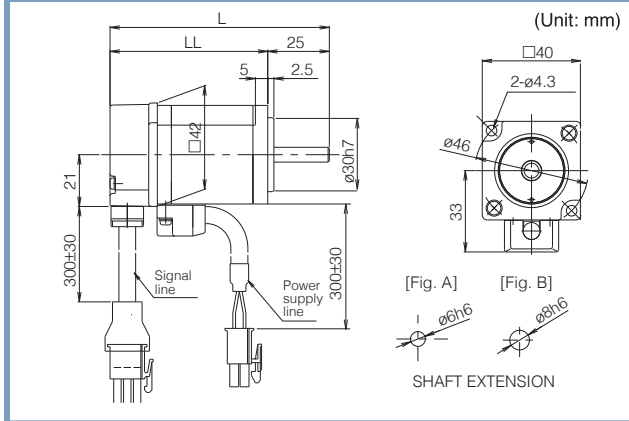
■Frame 6



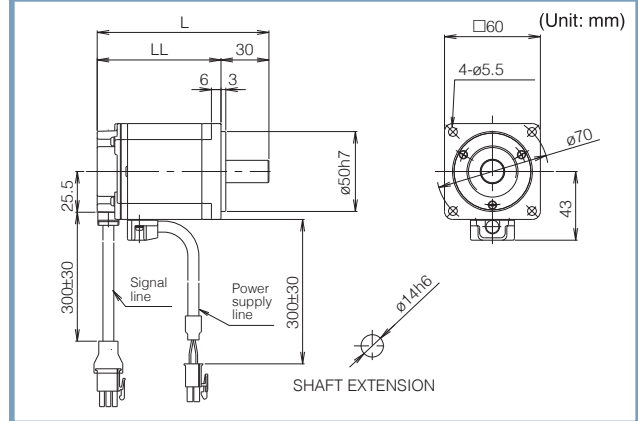
External Dimensions

GY S Motor

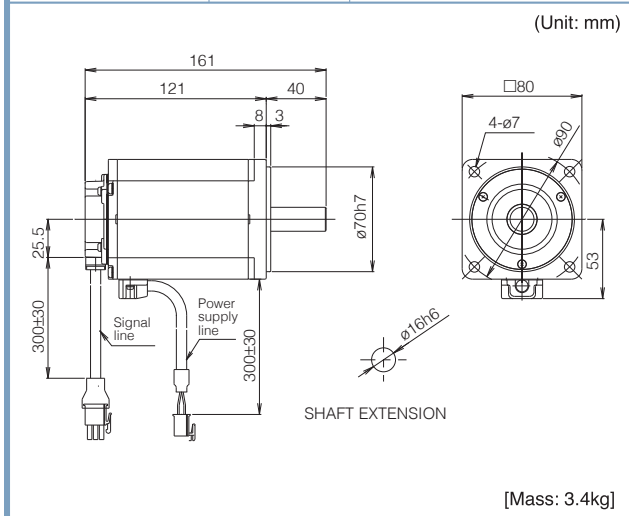
Power supply	Rated speed	Rated output	Type	Shaft shape	Over length	Dimensions(flange)	Mass [kg]
100V series	3000r/min	0.05kW	GY S500D5-□ B6	Fig. A	89	64	0.45
		0.1kW	GY S101D5-□ B6	Fig. B	107	82	0.55
200V series		0.05kW	GY S500D5-□ B2	Fig. A	89	64	0.45
		0.1kW	GY S101D5-□ B2	Fig. B	107	82	0.55



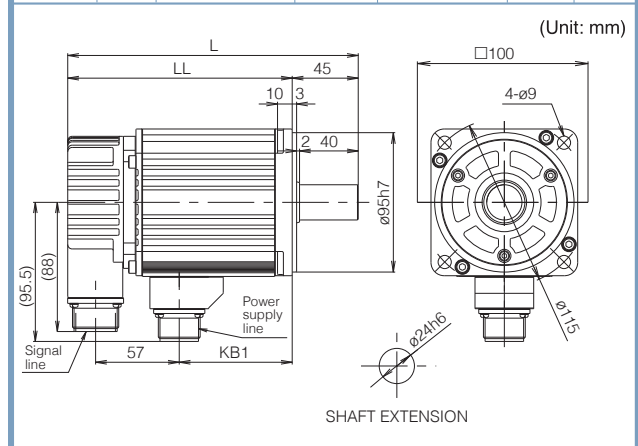
Power supply	Rated speed	Rated output	Type	Over length	Dimensions(flange)	Mass [kg]
100V series	3000r/min	0.2kW	GY S201D5-□ B6	107.5	77.5	1.2
		0.375kW	GY S401D5-□ B6	135.5	105.5	1.8
200V series		0.2kW	GY S201D5-□ B2	107.5	77.5	1.2
		0.4kW	GY S401D5-□ B2	135.5	105.5	1.8



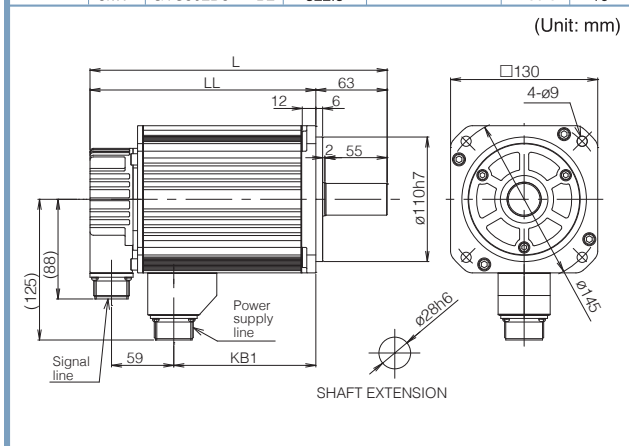
Rated speed	Rated output	Type
3000r/min	0.75kW	GY S751D5-□ B2



Rated speed	Rated output	Type	Over length	Dimensions(flange)	Terminal	Mass [kg]
3000r/min	1kW	GY S102D5-□ B2	198	153	77	4.4
	1.5kW	GY S152D5-□ B2	220.5	175.5	99.5	5.2
	2kW	GY S202D5-□ B2	243	198	122	6.3



Rated speed	Rated output	Type	Over length	Dimensions(flange)	Terminal	Mass [kg]
3000r/min	3kW	GY S302D5-□ B2	262.5	199.5	125.5	11
	4kW	GY S402D5-□ B2	292.5	229.5	155.5	13.5
	5kW	GY S502D5-□ B2	322.5	259.5	185.5	16

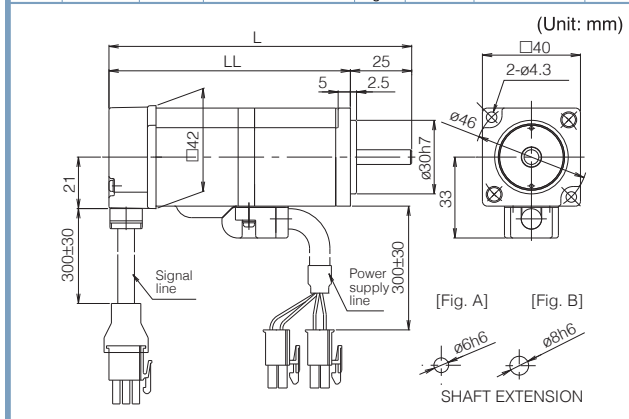


* See page 38 for the shaft extension specifications of the motor with a key.

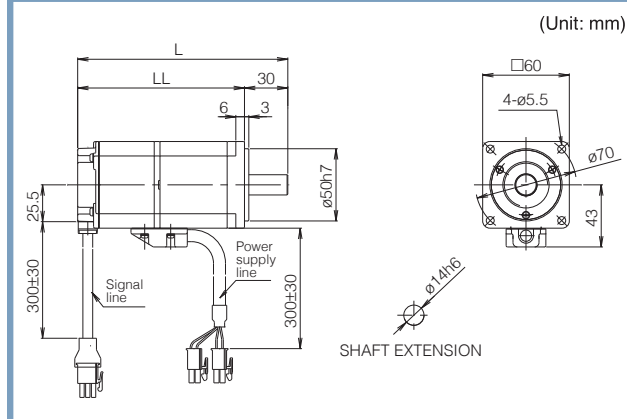
External Dimensions

GYS Motor (With a brake)

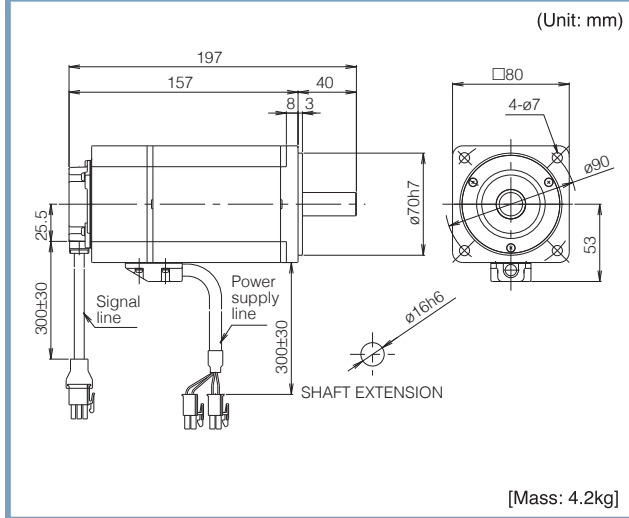
Power supply	Rated speed	Rated output	Type	Shaft shape	Over length	Dimensions(flange)	Mass [kg]
100V series	3000r/min	0.05kW	GYS500D5-□ B6-B	Fig. A	123.5	98.5	0.62
		0.1kW	GYS101D5-□ B6-B	Fig. B	141.5	116.5	0.72
200V series		0.05kW	GYS500D5-□ B2-B	Fig. A	123.5	98.5	0.62
		0.1kW	GYS101D5-□ B2-B	Fig. B	141.5	116.5	0.72



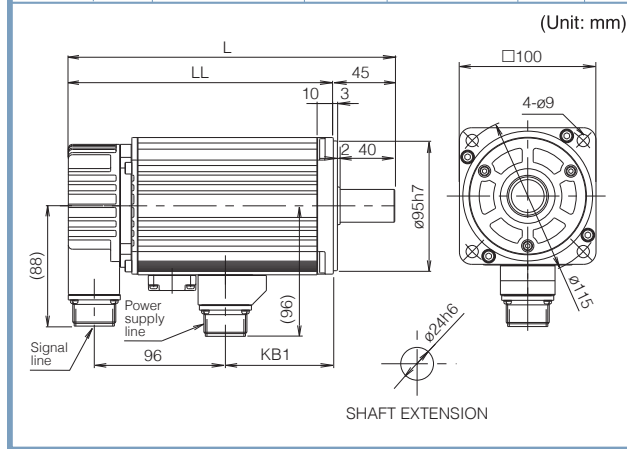
Power supply	Rated speed	Rated output	Type	Over length	Dimensions(flange)	Mass [kg]
100V series	3000r/min	0.2kW	GYS201D5-□ B6-B	145.5	115.5	1.7
		0.375kW	GYS401D5-□ B6-B	173.5	143.5	2.3
200V series		0.2kW	GYS201D5-□ B2-B	145.5	115.5	1.7
		0.4kW	GYS401D5-□ B2-B	173.5	143.5	2.3



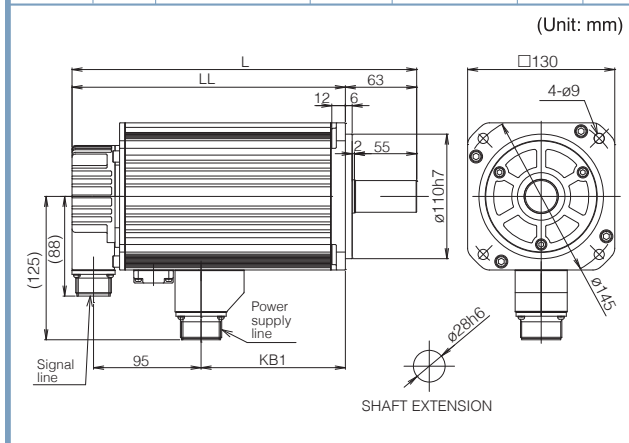
Rated speed	Rated output	Type
3000r/min	0.75kW	GYS751D5-□ B2-B



Rated speed	Rated output	Type	Over length	Dimensions(flange)	Terminal	Mass [kg]
3000r/min	1kW	GYS102D5-□ B2-B	239	194	79	5.9
	1.5kW	GYS152D5-□ B2-B	261.5	216.5	101.5	6.8
	2kW	GYS202D5-□ B2-B	284	239	124	7.9



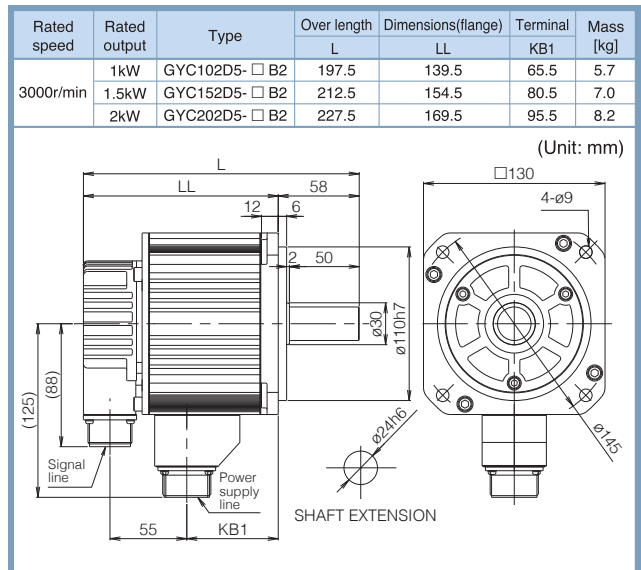
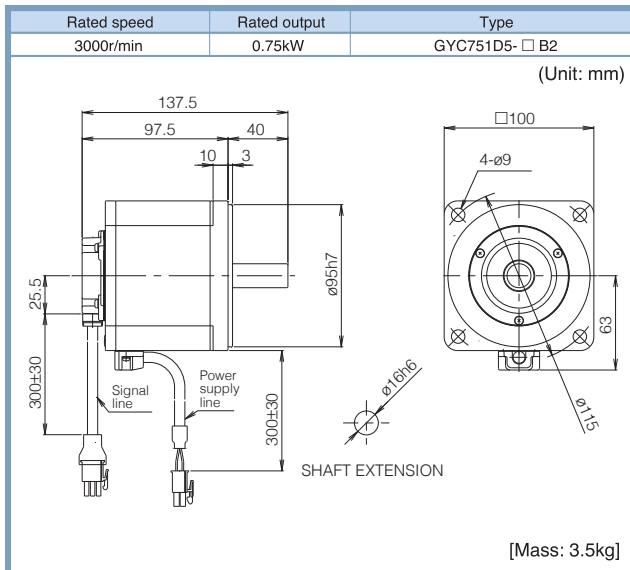
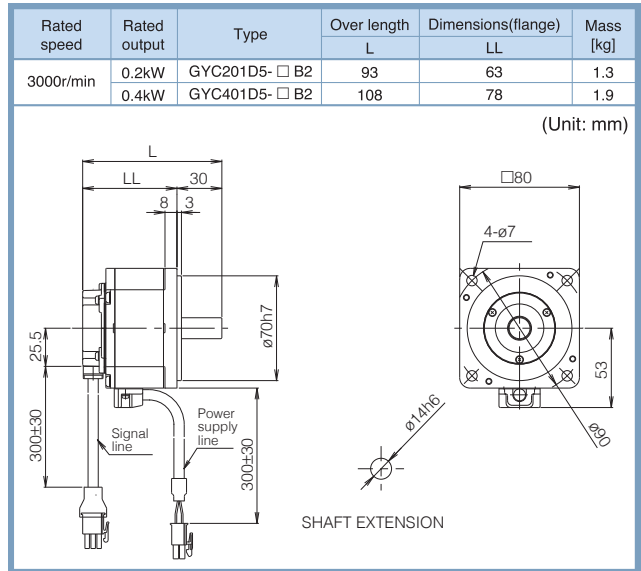
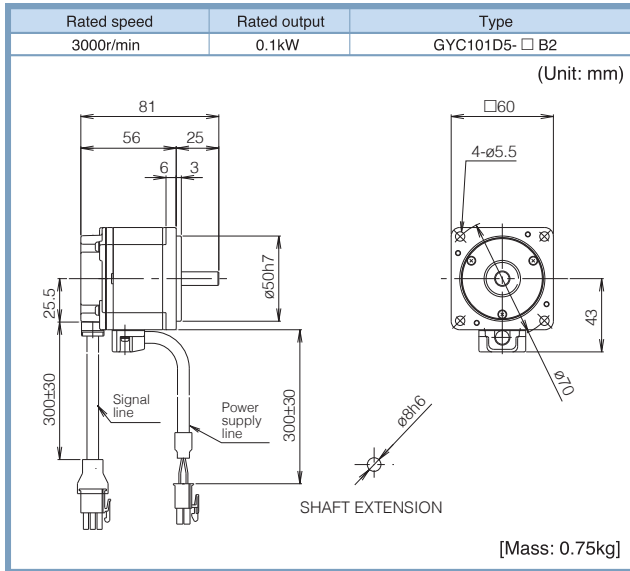
Rated speed	Rated output	Type	Over length	Dimensions(flange)	Terminal	Mass [kg]
3000r/min	3kW	GYS302D5-□ B2-B	304.5	241.5	127.5	13
	4kW	GYS402D5-□ B2-B	334.5	271.5	157.5	15.5
	5kW	GYS502D5-□ B2-B	364.5	301.5	187.5	18



* See page 38 for the shaft extension specifications of the motor with a key.

External Dimensions

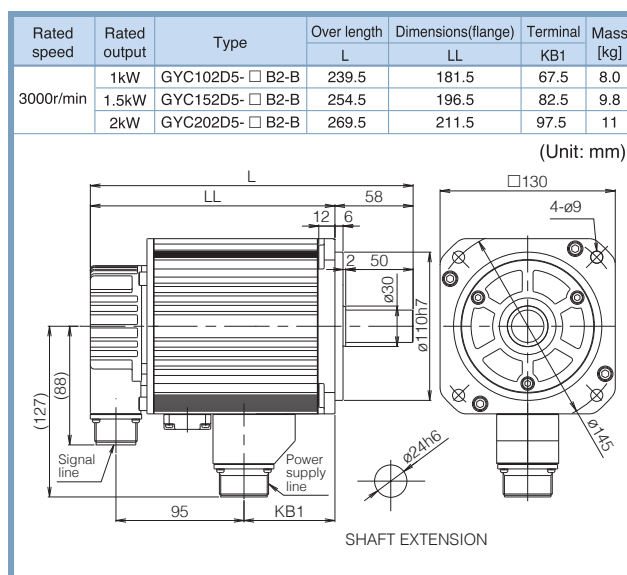
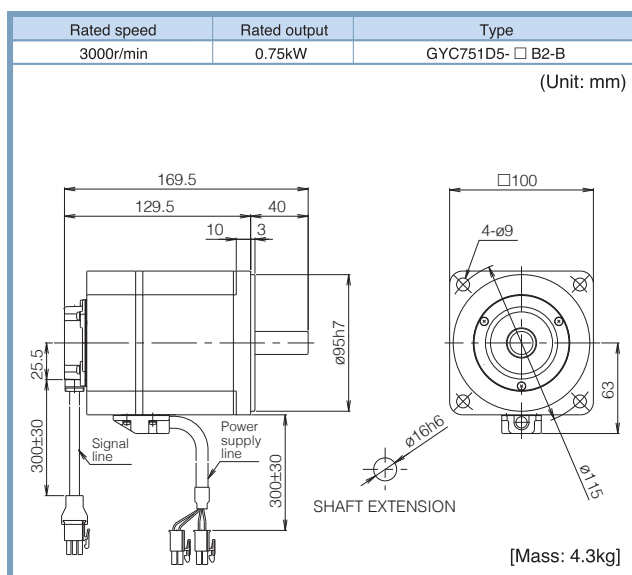
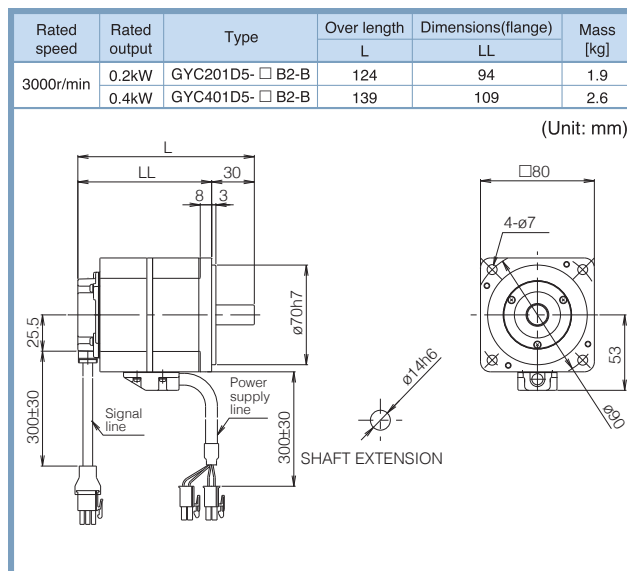
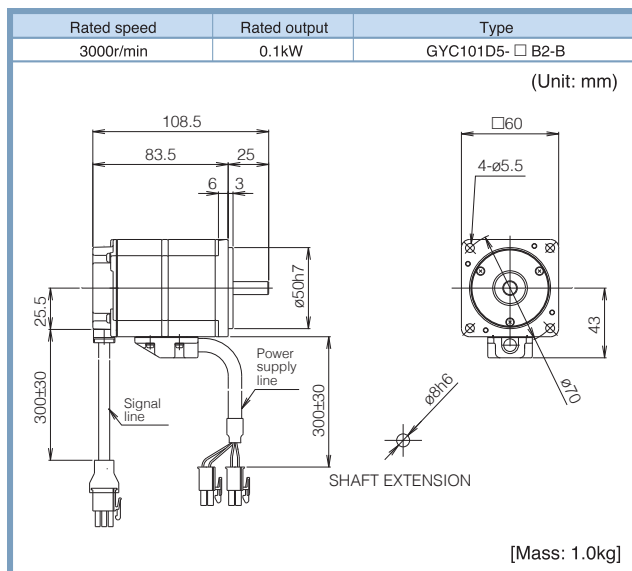
GYC Motor



* See page 38 for the shaft extension specifications of the motor with a key.

External Dimensions

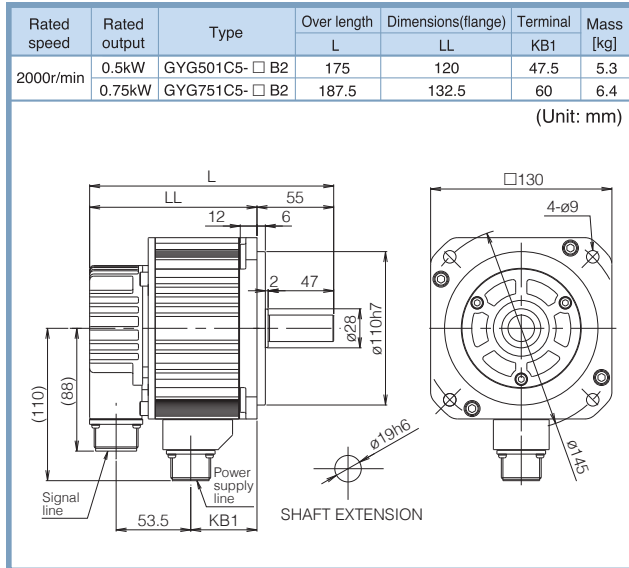
GYC Motor (With a brake)



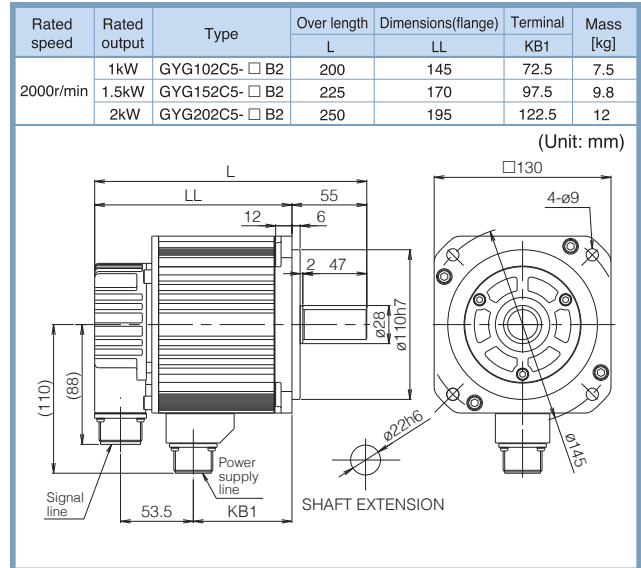
* See page 38 for the shaft extension specifications of the motor with a key.

External Dimensions

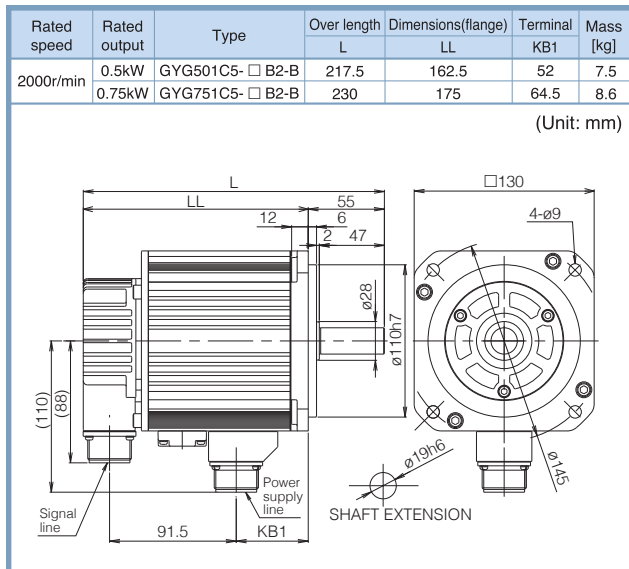
GYG Motor [2000r/min]



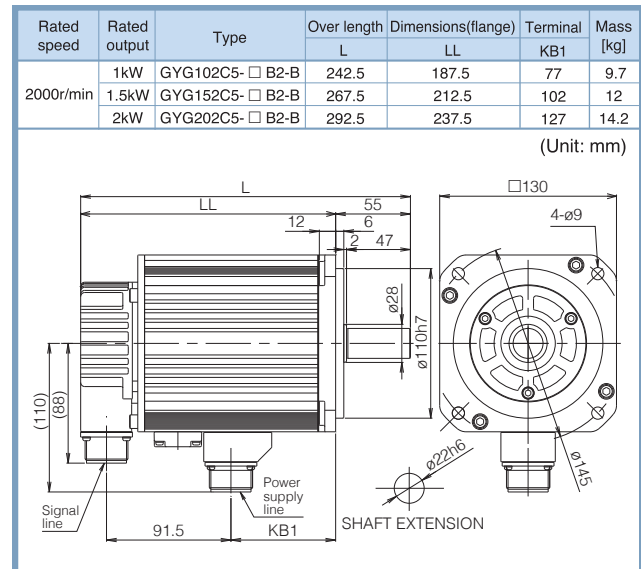
* See page 38 for the shaft extension specifications of the motor with a key.



GYG Motor [2000r/min] (With a brake)



* See page 38 for the shaft extension specifications of the motor with a key.

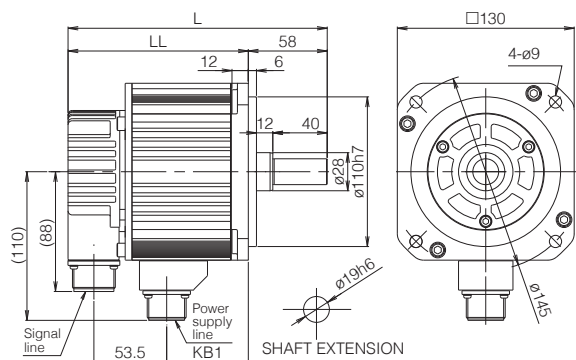


External Dimensions

GYG Motor [1500r/min]

Rated speed	Rated output	Type	Over length	Dimensions(flange)	Terminal	Mass
			L	LL	KB1	[kg]
1500r/min	0.5kW	GYG501B5- □ B2	190.5	132.5	60	6.4
	0.85kW	GYG851B5- □ B2	203	145	72.5	7.5

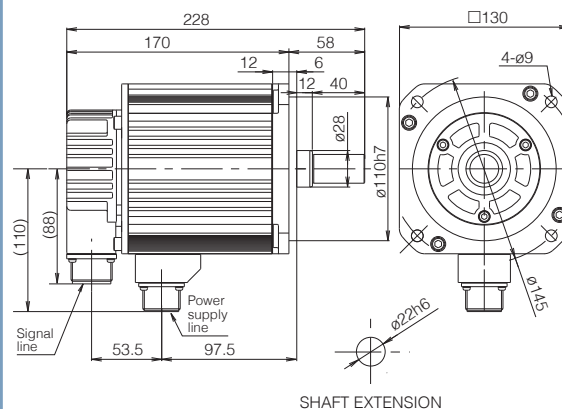
(Unit: mm)



* See page 38 for the shaft extension specifications of the motor with a key.

Rated speed	Rated output	Type
1500r/min	1.3kW	GYG132B5-□B2

(Unit: mm)

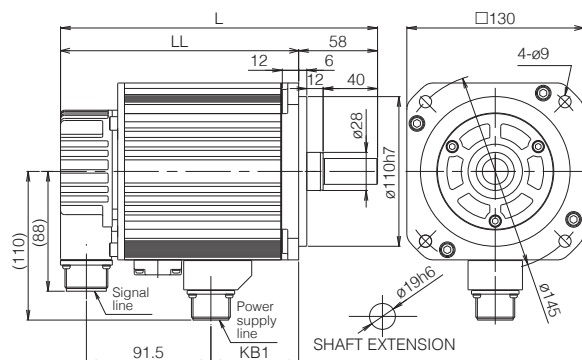


[Mass: 9.8kg]

GYG Motor [1500r/min] (With a brake)

Rated speed	Rated output	Type	Over length	Dimensions(flange)	Terminal	Mass
			L	LL	KB1	[kg]
1500r/min	0.5kW	GYG501B5- □ B2-B	233	175	64.5	8.6
	0.85kW	GYG851B5- □ B2-B	245.5	187.5	77	9.7

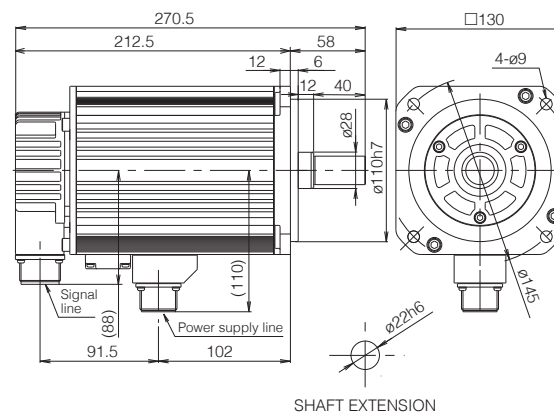
(Unit: mm)



* See page 38 for the shaft extension specifications of the motor with a key.

Rated speed	Rated output	Type
1500r/min	1.3kW	GYG132B5-□B2-B

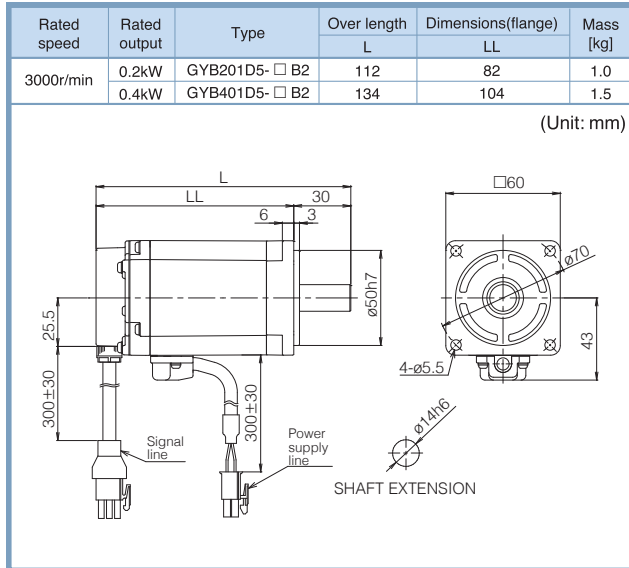
(Unit: mm)



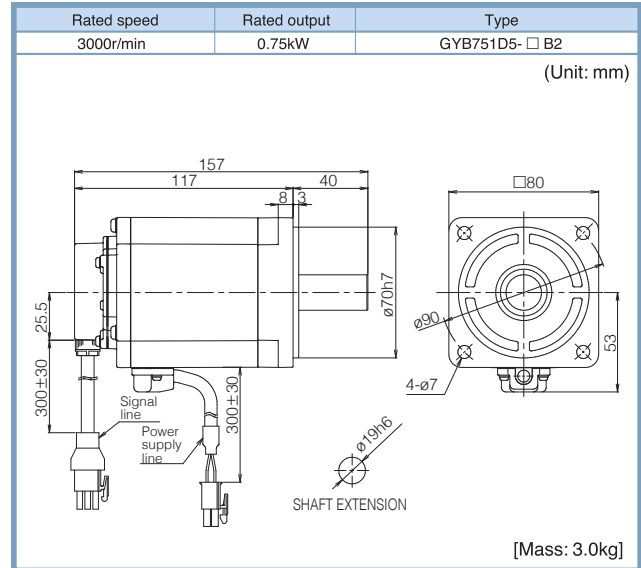
[Mass: 12kg]

External Dimensions

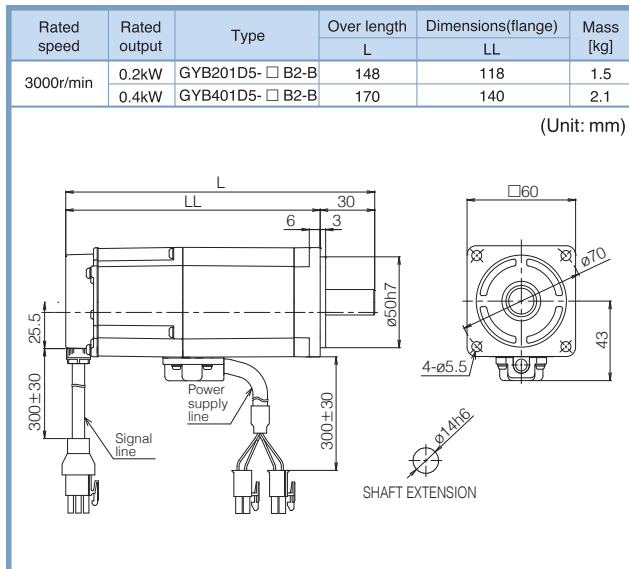
GYB Motor



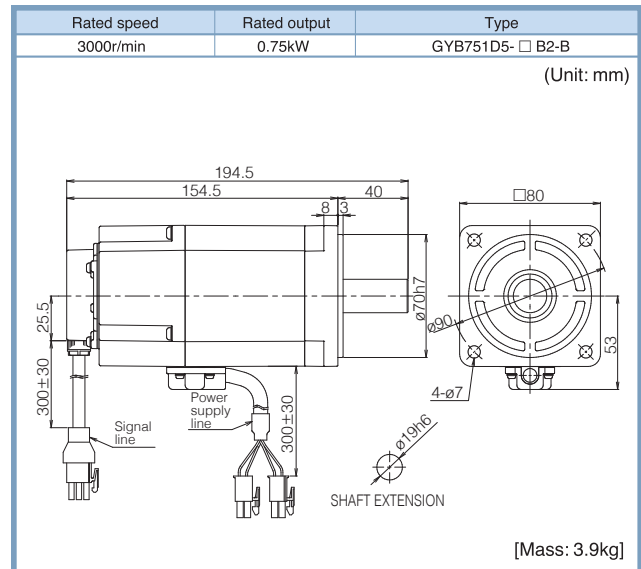
* See page 38 for the shaft extension specifications of the motor with a key.



GYB Motor (With a brake)



* See page 38 for the shaft extension specifications of the motor with a key.

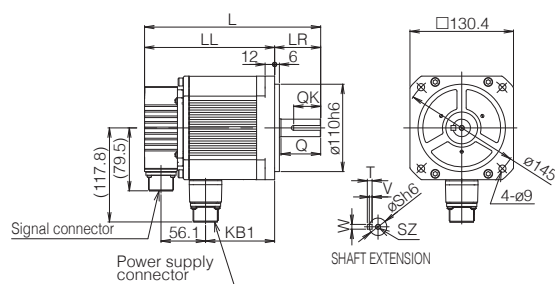


External Dimensions

GYH Motor

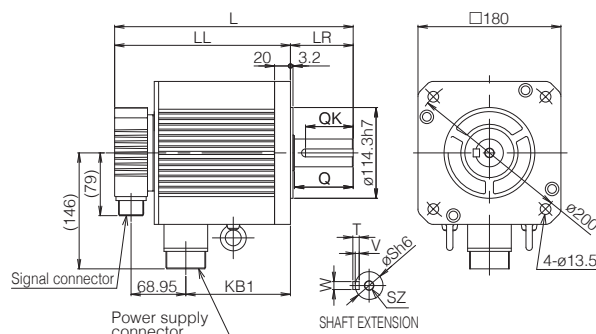
Rated speed	Rated output	Type	Over length	Dimensions(flange)	Mass [kg]
			L	LL	
2000r/min	1.0kW	GYH102C6-T□2	22.8	163.8	6.5
	1.5kW	GYH152C6-T□2	241.8	183.8	8.1
	2.0kW	GYH202C6-T□2	271.8	213.8	10.2
	3.0kW	GYH302C6-T□2	321.8	263.8	13.9

(Unit: mm)



Rated speed	Rated output	Type	Over length	Dimensions(flange)	Mass [kg]
			L	LL	
2000r/min	4.0kW	GYH402C6-T□2	332.4	253.4	19.5
	5.5kW	GYH552C6-T□2	361.4	282.4	26.2
	7.0kW	GYH702C6-T□2	409.4	296.4	30.3

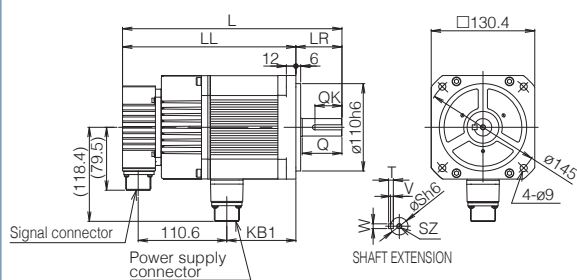
(Unit: mm)



GYH Motor (With a brake)

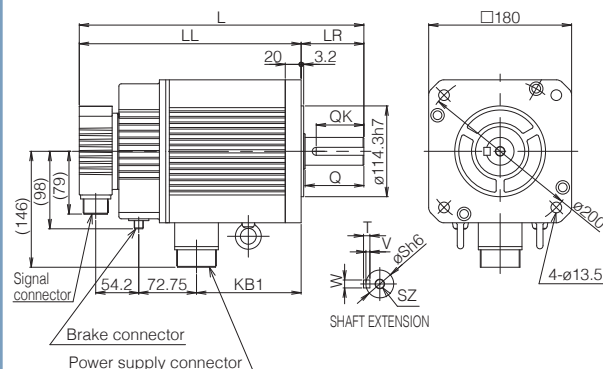
Rated speed	Rated output	Type	Over length	Dimensions(flange)	Mass [kg]
			L	LL	
2000r/min	1.0kW	GYH102C6-T□2-B	276.3	218.3	8.1
	1.5kW	GYH152C6-T□2-B	296.3	238.3	9.7
	2.0kW	GYH202C6-T□2-B	326.3	268.3	11.8
	3.0kW	GYH302C6-T□2-B	376.3	318.3	15.5

(Unit: mm)



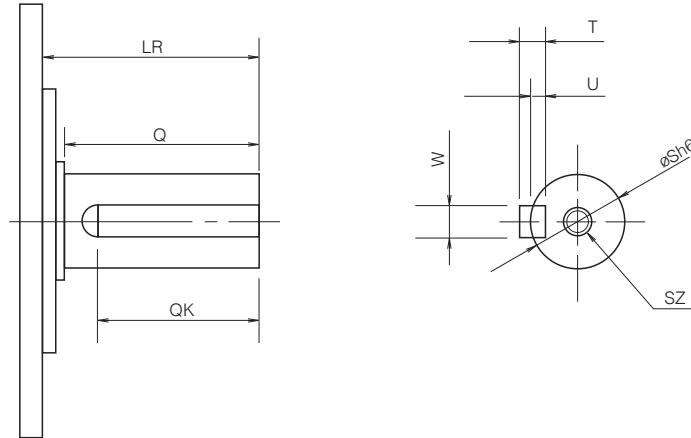
Rated speed	Rated output	Type	Over length	Dimensions(flange)	Mass [kg]
			L	LL	
2000r/min	4.0kW	GYH402C6-T□2-B	390.4	311.4	23.0
	5.5kW	GYH552C6-T□2-B	419.4	340.4	30.0
	7.0kW	GYH702C6-T□2-B	467.4	354.4	34.8

(Unit: mm)



External Dimensions

Shaft Extension Specifications (with a key, tapped)



Motor type	LR	Q	QK	S	T	U	W	SZ	
GYS Motor									
GYS500D5-□A□-□ *1	25	-	14	6	2	1.2	2	-	
GYS101D5-□A□-□ *1				8	3	1.8	3	-	
GYS201D5-□C□-□	30		20	14	5	3	5	M5 depth:8	
GYS401D5-□C□-□									
GYS751D5-□C2-□	40	40	30	16	7	4	8	M8 depth:16	
GYS102D5-□C2-□	45		32	24					
GYS152D5-□C2-□									
GYS202D5-□C2-□									
GYS302D5-□C2-□	63	55	45	28					
GYS402D5-□C2-□									
GYS502D5-□C2-□									
GYC Motor									
GYC101D5-□A2-□ *1	25	-	14	8	3	1.8	3	-	
GYC201D5-□C2-□	30		16	14	5	3	5	M5 depth:8	
GYC401D5-□C2-□									
GYC751D5-□C2-□	40		22	16	7	4	8	M8 depth:16	
GYC102D5-□C2-□	58	40	24						
GYC152D5-□C2-□									
GYC202D5-□C2-□									
GYG Motor 2000r/min									
GYG501C5-□C2-□	55	47	35	19	6	3.5	6	M6 depth:12	
GYG751C5-□C2-□									
GYG102C5-□C2-□				22	7	4	8	M8 depth:16	
GYG152C5-□C2-□									
GYG202C5-□C2-□									
GYG Motor 1500r/min									
GYG501B5-□C2-□	58	40	30	19	6	3.5	6	M6 depth:12	
GYG851B5-□C2-□									
GYG132B5-□C2-□				22	7	4	8	M8 depth:16	
GYB Motor									
GYB201D5-□C2-□	30	-	14	14	5	3	5	M5 depth:8	
GYB401D5-□C2-□									
GYB751D5-□C2-□	40	-	22	19	6	3.5	6	M6 depth:10	

*1 The shaft extension of the GYS and GYC motors of 0.1kW or less is not tapped.

Model List

Servo amplifier

Specifications						Type	
Model	Control mode	Command interface	Input power supply	Applicable motor	Applicable motor output	Type	
VV type	Position, speed and torque control (With built-in linear positioning function)	General-purpose interface (pulse or analog voltage) (Di/Do) (Modbus-RTU)	Single-phase or 3-phase 200 to 240V	GYS, GYC, GYB motor 3000r/min	0.05kW	RYT500D5-VV2	
					0.1kW	RYT101D5-VV2	
					0.2kW	RYT201D5-VV2	
					0.4kW	RYT401D5-VV2	
					0.75kW	RYT751D5-VV2	
					1.0kW	RYT102D5-VV2	
					1.5kW	RYT152D5-VV2	
					2.0kW	RYT202D5-VV2	
					3.0kW	RYT302D5-VV2	
					4.0kW	RYT402D5-VV2	
			5.0kW	RYT502D5-VV2			
			3-phase 200 to 240V	GYS motor 3000r/min	0.05kW	RYT500D5-VV6	
					0.1kW	RYT101D5-VV6	
					0.2kW	RYT201D5-VV6	
					0.375kW	RYT401D5-VV6	
			Single-phase or 3-phase 200 to 240V	GYG motor 2000r/min	0.5kW	RYT501C5-VV2	
					0.75kW	RYT751C5-VV2	
					1.0kW	RYT102C5-VV2	
					1.5kW	RYT152C5-VV2	
			3-phase 200 to 240V	GYG motor 2000r/min	2.0kW	RYT202C5-VV2	
					0.5kW	RYT501B5-VV2	
			Single-phase or 3-phase 200 to 240V 3-phase 200 to 240V	GYG motor 1500r/min	0.85kW	RYT851B5-VV2	
					1.3kW	RYT132B5-VV2	
					GYH motor 2000r/min	1.0kW	RYT751D5-□□2
						1.5kW	RYT102D5-□□2
						2.0kW	RYT152D5-□□2
						3.0kW	RYT202D5-□□2
						4.0kW	RYT302D5-□□2
						5.5kW	RYT402D5-□□2
						7.0kW	RYT502D5-□□2
VS type	Position, speed and torque control	High speed serial bus (SX bus)			Single-phase or 3-phase 200 to 240V	GYS, GYC, GYB motor 3000r/min	0.05kW
			0.1kW	RYT101D5-VS2			
			0.2kW	RYT201D5-VS2			
			0.4kW	RYT401D5-VS2			
			0.75kW	RYT751D5-VS2			
			1.0kW	RYT102D5-VS2			
			1.5kW	RYT152D5-VS2			
			2.0kW	RYT202D5-VS2			
			3.0kW	RYT302D5-VS2			
			4.0kW	RYT402D5-VS2			
			5.0kW	RYT502D5-VS2			
			3-phase 200 to 240V	GYS motor 3000r/min	0.05kW	RYT500D5-VS6	
					0.1kW	RYT101D5-VS6	
					0.2kW	RYT201D5-VS6	
					0.375kW	RYT401D5-VS6	
			Single-phase or 3-phase 200 to 240V	GYG motor 2000r/min	0.5kW	RYT501C5-VS2	
					0.75kW	RYT751C5-VS2	
					1.0kW	RYT102C5-VS2	
					1.5kW	RYT152C5-VS2	
			3-phase 200 to 240V	GYG motor 2000r/min	2.0kW	RYT202C5-VS2	
					0.5kW	RYT501B5-VS2	
			Single-phase or 3-phase 200 to 240V 3-phase 200 to 240V	GYG motor 1500r/min	0.85kW	RYT851B5-VS2	
					1.3kW	RYT132B5-VS2	
					GYH motor 2000r/min	1.0kW	RYT751D5-□□2
						1.5kW	RYT102D5-□□2
						2.0kW	RYT152D5-□□2
						3.0kW	RYT202D5-□□2
						4.0kW	RYT302D5-□□2
						5.5kW	RYT402D5-□□2
						7.0kW	RYT502D5-□□2

Model List

Servo amplifier

Specifications						Type
Model	Control mode	Command interface	Input power supply	Applicable motor	Applicable motor output	Type
LS type	Position control (With built-in linear positioning function)	High speed serial bus (SX bus)	Single-phase or 3-phase 200 to 240V	GYS, GYC, GYB motor 3000r/min	0.05kW	RYT500D5-LS2
					0.1kW	RYT101D5-LS2
					0.2kW	RYT201D5-LS2
					0.4kW	RYT401D5-LS2
					0.75kW	RYT751D5-LS2
			3-phase 200 to 240V		1.0kW	RYT102D5-LS2
					1.5kW	RYT152D5-LS2
					2.0kW	RYT202D5-LS2
					3.0kW	RYT302D5-LS2
					4.0kW	RYT402D5-LS2
					5.0kW	RYT502D5-LS2
				Single-phase 100V	GYS motor 3000r/min	0.05kW
				0.1kW		RYT101D5-LS6
				0.2kW		RYT201D5-LS6
				0.375kW		RYT401D5-LS6
			Single-phase or 3-phase 200 to 240V	GYG motor 2000r/min	0.5kW	RYT501C5-LS2
					0.75kW	RYT751C5-LS2
			3-phase 200 to 240V		1.0kW	RYT102C5-LS2
					1.5kW	RYT152C5-LS2
					2.0kW	RYT202C5-LS2
				Single-phase or 3-phase 200 to 240V	GYG motor 1500r/min	0.5kW
			3-phase 200 to 240V	0.85kW		RYT851B5-LS2
				GYH motor 2000r/min	1.3kW	RYT132B5-LS2
					1.0kW	RYT751D5-□□2
					1.5kW	RYT102D5-□□2
					2.0kW	RYT152D5-□□2
					3.0kW	RYT202D5-□□2
	4.0kW	RYT302D5-□□2				
	5.5kW	RYT402D5-□□2				
	7.0kW	RYT502D5-□□2				

Model List

Servomotor

Specifications							Type
Model	Voltage	Rated speed	Oil seal/shaft	Encoder	Brake	Rated output	Type
GYS motor (ultra low inertia)	200V	3000r/min	Without an oil seal and a key (*1)	18-bit ABS	Without a brake	0.05kW	GYS500D5-HB2
						0.1kW	GYS101D5-HB2
						0.2kW	GYS201D5-HB2
						0.4kW	GYS401D5-HB2
						0.75kW	GYS751D5-HB2
						1.0kW	GYS102D5-HB2
						1.5kW	GYS152D5-HB2
						2.0kW	GYS202D5-HB2
						3.0kW	GYS302D5-HB2
						4.0kW	GYS402D5-HB2
						5.0kW	GYS502D5-HB2
					With a brake	0.05kW	GYS500D5-HB2-B
						0.1kW	GYS101D5-HB2-B
						0.2kW	GYS201D5-HB2-B
						0.4kW	GYS401D5-HB2-B
						0.75kW	GYS751D5-HB2-B
						1.0kW	GYS102D5-HB2-B
						1.5kW	GYS152D5-HB2-B
						2.0kW	GYS202D5-HB2-B
						3.0kW	GYS302D5-HB2-B
						4.0kW	GYS402D5-HB2-B
						5.0kW	GYS502D5-HB2-B
				20-bit INC	Without a brake	0.05kW	GYS500D5-RB2
						0.1kW	GYS101D5-RB2
						0.2kW	GYS201D5-RB2
						0.4kW	GYS401D5-RB2
						0.75kW	GYS751D5-RB2
						1.0kW	GYS102D5-RB2
						1.5kW	GYS152D5-RB2
						2.0kW	GYS202D5-RB2
						3.0kW	GYS302D5-RB2
						4.0kW	GYS402D5-RB2
						5.0kW	GYS502D5-RB2
					With a brake	0.05kW	GYS500D5-RB2-B
						0.1kW	GYS101D5-RB2-B
						0.2kW	GYS201D5-RB2-B
						0.4kW	GYS401D5-RB2-B
						0.75kW	GYS751D5-RB2-B
						1.0kW	GYS102D5-RB2-B
						1.5kW	GYS152D5-RB2-B
						2.0kW	GYS202D5-RB2-B
						3.0kW	GYS302D5-RB2-B
						4.0kW	GYS402D5-RB2-B
						5.0kW	GYS502D5-RB2-B
	100V	3000r/min	Without an oil seal and a key (*1)	18-bit ABS	Without a brake	0.05kW	GYS500D5-HB6
						0.1kW	GYS101D5-HB6
						0.2kW	GYS201D5-HB6
						0.375kW	GYS401D5-HB6
					With a brake	0.05kW	GYS500D5-HB6-B
						0.1kW	GYS101D5-HB6-B
					20-bit INC	0.2kW	GYS201D5-HB6-B
						0.375kW	GYS401D5-HB6-B
					Without a brake	0.05kW	GYS500D5-RB6
						0.1kW	GYS101D5-RB6
						0.2kW	GYS201D5-RB6
						0.375kW	GYS401D5-RB6
					With a brake	0.05kW	GYS500D5-RB6-B
						0.1kW	GYS101D5-RB6-B
						0.2kW	GYS201D5-RB6-B
						0.375kW	GYS401D5-RB6-B

*1: The motor with a shaft extension with a key and tapped is available as a semi-standard item. (See page 38 for shaft extension specifications.)
The other specifications are handled as a made-to-order item.

Model List

Servomotor

Specifications							Type
Model	Voltage	Rated speed	Oil seal/shaft	Encoder	Brake	Rated output	Type
GYC motor (low inertia)	200V	3000r/min	Without an oil seal and a key (*1)	18-bit ABS	Without a brake	0.1kW	GYC101D5-HB2
						0.2kW	GYC201D5-HB2
						0.4kW	GYC401D5-HB2
						0.75kW	GYC751D5-HB2
						1.0kW	GYC102D5-HB2
						1.5kW	GYC152D5-HB2
						2.0kW	GYC202D5-HB2
					With a brake	0.1kW	GYC101D5-HB2-B
						0.2kW	GYC201D5-HB2-B
						0.4kW	GYC401D5-HB2-B
						0.75kW	GYC751D5-HB2-B
						1.0kW	GYC102D5-HB2-B
						1.5kW	GYC152D5-HB2-B
						2.0kW	GYC202D5-HB2-B
				20-bit INC	Without a brake	0.1kW	GYC101D5-RB2
						0.2kW	GYC201D5-RB2
						0.4kW	GYC401D5-RB2
						0.75kW	GYC751D5-RB2
						1.0kW	GYC102D5-RB2
						1.5kW	GYC152D5-RB2
						2.0kW	GYC202D5-RB2
					With a brake	0.1kW	GYC101D5-RB2-B
						0.2kW	GYC201D5-RB2-B
						0.4kW	GYC401D5-RB2-B
						0.75kW	GYC751D5-RB2-B
						1.0kW	GYC102D5-RB2-B
						1.5kW	GYC152D5-RB2-B
						2.0kW	GYC202D5-RB2-B
GYG motor (medium inertia)	200V	2000r/min	Without an oil seal and a key (*1)	18-bit ABS	Without a brake	0.5kW	GYG501C5-HB2
						0.75kW	GYG751C5-HB2
						1.0kW	GYG102C5-HB2
						1.5kW	GYG152C5-HB2
						2.0kW	GYG202C5-HB2
					With a brake	0.5kW	GYG501C5-HB2-B
						0.75kW	GYG751C5-HB2-B
						1.0kW	GYG102C5-HB2-B
						1.5kW	GYG152C5-HB2-B
						2.0kW	GYG202C5-HB2-B
				20-bit INC	Without a brake	0.5kW	GYG501C5-RB2
						0.75kW	GYG751C5-RB2
						1.0kW	GYG102C5-RB2
						1.5kW	GYG152C5-RB2
						2.0kW	GYG202C5-RB2
					With a brake	0.5kW	GYG501C5-RB2-B
						0.75kW	GYG751C5-RB2-B
						1.0kW	GYG102C5-RB2-B
						1.5kW	GYG152C5-RB2-B
						2.0kW	GYG202C5-RB2-B
GYG motor (medium inertia)	200V	1500r/min	Without an oil seal and a key (*1)	18-bit ABS	Without a brake	0.5kW	GYG501B5-HB2
						0.85kW	GYG851B5-HB2
						1.3kW	GYG132B5-HB2
					With a brake	0.5kW	GYG501B5-HB2-B
						0.85kW	GYG851B5-HB2-B
						1.3kW	GYG132B5-HB2-B
				20-bit INC	Without a brake	0.5kW	GYG501B5-RB2
						0.85kW	GYG851B5-RB2
						1.3kW	GYG132B5-RB2
					With a brake	0.5kW	GYG501B5-RB2-B
						0.85kW	GYG851B5-RB2-B
						1.3kW	GYG132B5-RB2-B
GYB motor (medium inertia)	200V	3000r/min	Without an oil seal and a key (*1)	18-bit ABS	Without a brake	0.2kW	GYB201D5-HB2
						0.4kW	GYB401D5-HB2
						0.75kW	GYB751D5-HB2
					With a brake	0.2kW	GYB201D5-HB2-B
						0.4kW	GYB401D5-HB2-B
						0.75kW	GYB751D5-HB2-B
				20-bit INC	Without a brake	0.2kW	GYB201D5-RB2
						0.4kW	GYB401D5-RB2
						0.75kW	GYB751D5-RB2
					With a brake	0.2kW	GYB201D5-RB2-B
						0.4kW	GYB401D5-RB2-B
						0.75kW	GYB751D5-RB2-B

*1: The motor with a shaft extension with a key and tapped is available as a semi-standard item. (See page 38 for shaft extension specifications.)
The other specifications are handled as a made-to-order item.

Model List

Servomotor

Specifications							Type
Model	Voltage	Rated speed	Oil seal/shaft	Encoder	Brake	Rated output	Type
GYH motor (middle inertia)	200V	2000r/min	without oil seal / with key, tapped	17bit INC	Without a brake	1.0kW	GYH102C6-T□□2
						1.5kW	GYH152C6-T□□2
						2.0kW	GYH202C6-T□□2
						3.0kW	GYH302C6-T□□2
						4.0kW	GYH402C6-T□□2
						5.5kW	GYH552C6-T□□2
						7.0kW	GYH702C6-T□□2
					With a brake	1.0kW	GYH102C6-T□□2-B
						1.5kW	GYH152C6-T□□2-B
						2.0kW	GYH202C6-T□□2-B
						3.0kW	GYH302C6-T□□2-B
						4.0kW	GYH402C6-T□□2-B
						5.5kW	GYH552C6-T□□2-B
						7.0kW	GYH702C6-T□□2-B

Compatibility table

Amplifier	Motor
RYT751D5-□□□2	GYH102C6-T□□2
RYT102D5-□□□2	GYH152C6-T□□2
RYT152D5-□□□2	GYH202C6-T□□2
RYT202D5-□□□2	GYH302C6-T□□2
RYT302D5-□□□2	GYH402C6-T□□2
RYT402D5-□□□2	GYH552C6-T□□2
RYT502D5-□□□2	GYH702C6-T□□2

Model List

Option

■ Connector and cable

Name			Specifications		Type
For main circuit of amplifier	Power supply connector (for amplifier control power and main power supply)		0.05 to 1.5kW (to 1.0kW with GYG)	1 set	WSK-S05P-E
	DC circuit connector (wiring of external regenerative resistor, DC reactor, DC link circuit) *1		0.05 to 1.5kW (to 1.0kW with GYG)	1 set	WSK-R06P-E
	Motor power connector (wiring of main motor power)		0.05 to 1.5kW (to 1.0kW with GYG)	1 set	WSK-M03P-E
For sequence I/O (between host and amplifier)	Sequence I/O cable		All capacities	3m (bare wires on one side)	WSC-D36P03
	Sequence I/O connector kit *4		Amplifier side : All capacities	1 set	WSK-D36P
For encoder (between amplifier and motor)	Encoder cable		3000r/min for 0.05 to 0.75kW	2m (connector at both ends)	WSC-P06P02-E
				5m (connector at both ends)	WSC-P06P05-E
				10m (connector at both ends)	WSC-P06P10-E
				20m (connector at both ends)	WSC-P06P20-E
			3000r/min for 1.0 to 5.0kW	5m (connector at both ends)	WSC-P06P05-C
			2000r/min for 0.5 to 2.0kW	10m (connector at both ends)	WSC-P06P10-C
	1500r/min for 0.5 to 1.3kW	20m (connector at both ends)	WSC-P06P20-C		
	Encoder connector kit *4		Amplifier side : All capacities	1 set	WSK-P06P-M
			Motor side : 0.05 to 0.75kW	1 set	WSK-P09P-D
Motor side : 0.5 to 5.0kW			1 set	WSK-P06P-C	
For motor power (between amplifier and motor)	Motor power cable	For main motor power *2	GYS, GYC, GYB : 0.05 to 0.75kW	2m (bare wires on one side)	WSC-M04P02-E
				5m (bare wires on one side)	WSC-M04P05-E
				10m (bare wires on one side)	WSC-M04P10-E
				20m (bare wires on one side)	WSC-M04P20-E
		For brake power *3	GYS, GYC, GYB : 0.05 to 0.75kW	2m (bare wires on one side)	WSC-M02P02-E
				5m (bare wires on one side)	WSC-M02P05-E
				10m (bare wires on one side)	WSC-M02P10-E
				20m (bare wires on one side)	WSC-M02P20-E
	Motor power connector kit	For main motor power *4	Motor side : GYS, GYC, GYB 0.05 to 0.75kW	1 set	WSK-M04P-E
		For brake power *4	Motor side : GYS, GYC, GYB 0.05 to 0.75kW	1 set	WSK-M02P-E
		For main motor power *4	Motor side : GYS 1.0 to 2.0kW GYG 0.5 to 2.0kW	1 set	WSK-M04P-CA
			Motor side : GYS 3.0 to 5.0kW GYC 1.0 to 2.0kW	1 set	WSK-M04P-CB
		For main motor power + brake power *4	Motor side : GYS 1.0 to 2.0kW GYG 0.5 to 2.0kW	1 set	WSK-M06P-CA
			Motor side : GYS 3.0 to 5.0kW GYC 1.0 to 2.0kW	1 set	WSK-M06P-CB
For SX bus	SX bus cable		For VS and LS type servo amplifiers	0.3m (connector at both ends)	NP1C-P3
				0.6m (connector at both ends)	NP1C-P6
				0.8m (connector at both ends)	NP1C-P8
				2m (connector at both ends)	NP1C-02
				5m (connector at both ends)	NP1C-05
				10m (connector at both ends)	NP1C-10
				15m (connector at both ends)	NP1C-15
				25m (connector at both ends)	NP1C-25

*1: One connector is included in the accessory of the main body of the servo amplifier.

*2: Use this cable with motor power connector (on amplifier side) WSK-M03P-E.

*3: Use this cable as a brake cable of the motor equipped with a brake.

*4: Use this connector when the customer fabricates a cable at arbitrary length.

■ Common options

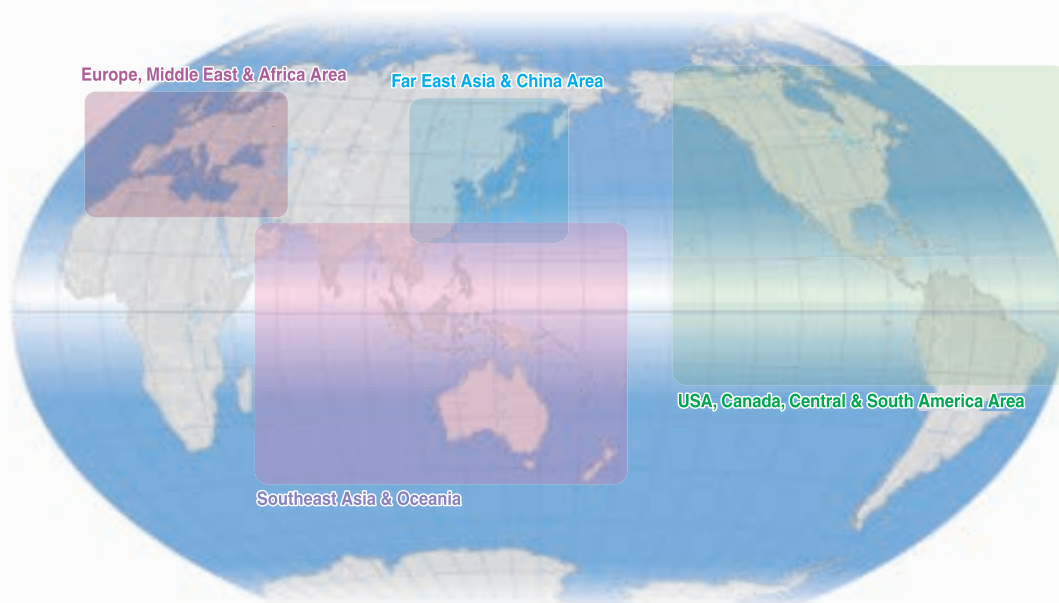
Specifications					Type
ABS backup battery	Set of battery and case (*With case)			1 set	WSB-SC
	Battery (*Discrete replacement battery)			1 piece	WSB-S
External regenerative resistor	200V	3000r/min for 0.05 to 0.4kW			WSR-401
		3000r/min for 0.75 to 1.5kW, 2000r/min for 0.5 to 1.0kW, 1500r/min for 0.5 to 0.85kW			WSR-152
		3000r/min for 2.0 to 3.0kW, 2000r/min 1.5 to 2.0kW, 1500r/min 1.3kW			DB11-2
		3000r/min for 4.0 to 5.0kW			DB22-2
	100V	3000r/min for 0.05 to 0.375kW			WSR-751
For PC loader connection	RS-232C - RS-485 conversion adaptor		For connection of RS-485 port of VV type servo amplifier *1	—	NWOH-CNV
	Cable			2m (connector at both ends)	WSC-PCL
Servo operator *2	—				WSP-51

*1: Prepare a marketed USB cable (A-B type) for the USB port.

*2: Use a commercially-available USB cable (USB-A : USB-B, or USB-A : mini-B) when connecting the servo operator to PC. Use a commercially-available LAN cable when connecting the servo operation to the servo amplifier.

This servo operator can only be used with VV type amplifier.

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http://www.fujielectric.co.jp/products/provide_data/drive/network/world/world-top.html

■ To all our customers who purchase Fuji Electric products included in this catalog:

Please take the following items into consideration when placing your order.

When requesting an estimate and placing your orders for the products included in these materials, please be aware that any items such as specifications which are not specifically mentioned in the contract, catalog, specifications or other materials will be as mentioned below.

In addition, the products included in these materials are limited in the use they are put to and the place where they can be used, etc., and may require periodic inspection. Please confirm these points with your sales representative or directly with this company.

Furthermore, regarding purchased products and delivered products, we request that you take adequate consideration of the necessity of rapid receiving inspections and of product management and maintenance even before receiving your products.

1. Free of Charge Warranty Period and Warranty Range

1-1 Free of charge warranty period

- (1) The product warranty period is "1 year from the date of purchase" (both inside and outside Japan) or 18 months (inside Japan) 24 months (outside Japan) from the manufacturing time printed on the name plate, whichever comes first.
- (2) However, in cases where the use environment, conditions of use, use frequency and times used, etc., have an effect on product life, this warranty period may not apply.
- (3) Furthermore, the warranty period for parts restored by Fuji Electric's Service Department is "6 months from the date that repairs are completed."

1-2 Warranty range

- (1) In the event that breakdown occurs during the product's warranty period which is the responsibility of Fuji Electric, Fuji Electric will replace or repair the part of the product that has broken down free of charge at the place where the product was purchased or where it was delivered. However, if the following cases are applicable, the terms of this warranty may not apply.
 - 1) The breakdown was caused by inappropriate conditions, environment, handling or use methods, etc. which are not specified in the catalog, operation manual, specifications or other relevant documents.
 - 2) The breakdown was caused by the product other than the purchased or delivered Fuji's product.
 - 3) The breakdown was caused by the product other than Fuji's product, such as the customer's equipment or software design, etc.
 - 4) Concerning the Fuji's programmable products, the breakdown was caused by a program other than a program supplied by this company, or the results from using such a program.
 - 5) The breakdown was caused by modifications or repairs affected by a party other than Fuji Electric.
 - 6) The breakdown was caused by improper maintenance or replacement using consumables, etc. specified in the operation manual or catalog, etc.
 - 7) The breakdown was caused by a chemical or technical problem that was not foreseen when making practical application of the product at the time it was purchased or delivered.
 - 8) The product was not used in the manner the product was originally intended to be used.
 - 9) The breakdown was caused by a reason which is not this company's responsibility, such as lightning or other disaster.
- (2) Furthermore, the warranty specified herein shall be limited to the purchased or delivered product alone.
- (3) The upper limit for the warranty range shall be as specified in item (1) above and any damages (damage to or loss of machinery or equipment, or lost profits from the same, etc.) consequent to or resulting from breakdown of the purchased or delivered product shall be excluded from coverage by this warranty.

1-3. Trouble diagnosis

As a rule, the customer is requested to carry out a preliminary trouble diagnosis. However, at the customer's request, this company or its service network can perform the trouble diagnosis on a chargeable basis. In this case, the customer is asked to assume the burden for charges levied in accordance with this company's fee schedule.

2. Exclusion of Liability for Loss of Opportunity, etc.

Regardless of whether a breakdown occurs during or after the free of charge warranty period, this company shall not be liable for any loss of opportunity, loss of profits, or damages arising from special circumstances, secondary damages, accident compensation to another company, or damages to products other than this company's products, whether foreseen or not by this company, which this company is not responsible for causing.

3. Repair Period after Production Stop, Spare Parts Supply Period (Holding Period)

Concerning models (products) which have gone out of production, this company will perform repairs for a period of 7 years after production stop, counting from the month and year when the production stop occurs. In addition, we will continue to supply the spare parts required for repairs for a period of 7 years, counting from the month and year when the production stop occurs. However, if it is estimated that the life cycle of certain electronic and other parts is short and it will be difficult to procure or produce those parts, there may be cases where it is difficult to provide repairs or supply spare parts even within this 7-year period. For details, please confirm at our company's business office or our service office.

4. Transfer Rights

In the case of standard products which do not include settings or adjustments in an application program, the products shall be transported to and transferred to the customer and this company shall not be responsible for local adjustments or trial operation.

5. Service Contents

The cost of purchased and delivered products does not include the cost of dispatching engineers or service costs. Depending on the request, these can be discussed separately.

6. Applicable Scope of Service

Above contents shall be assumed to apply to transactions and use of the country where you purchased the products. Consult the local supplier or Fuji for the detail separately.

Pro+

CORPORATION



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